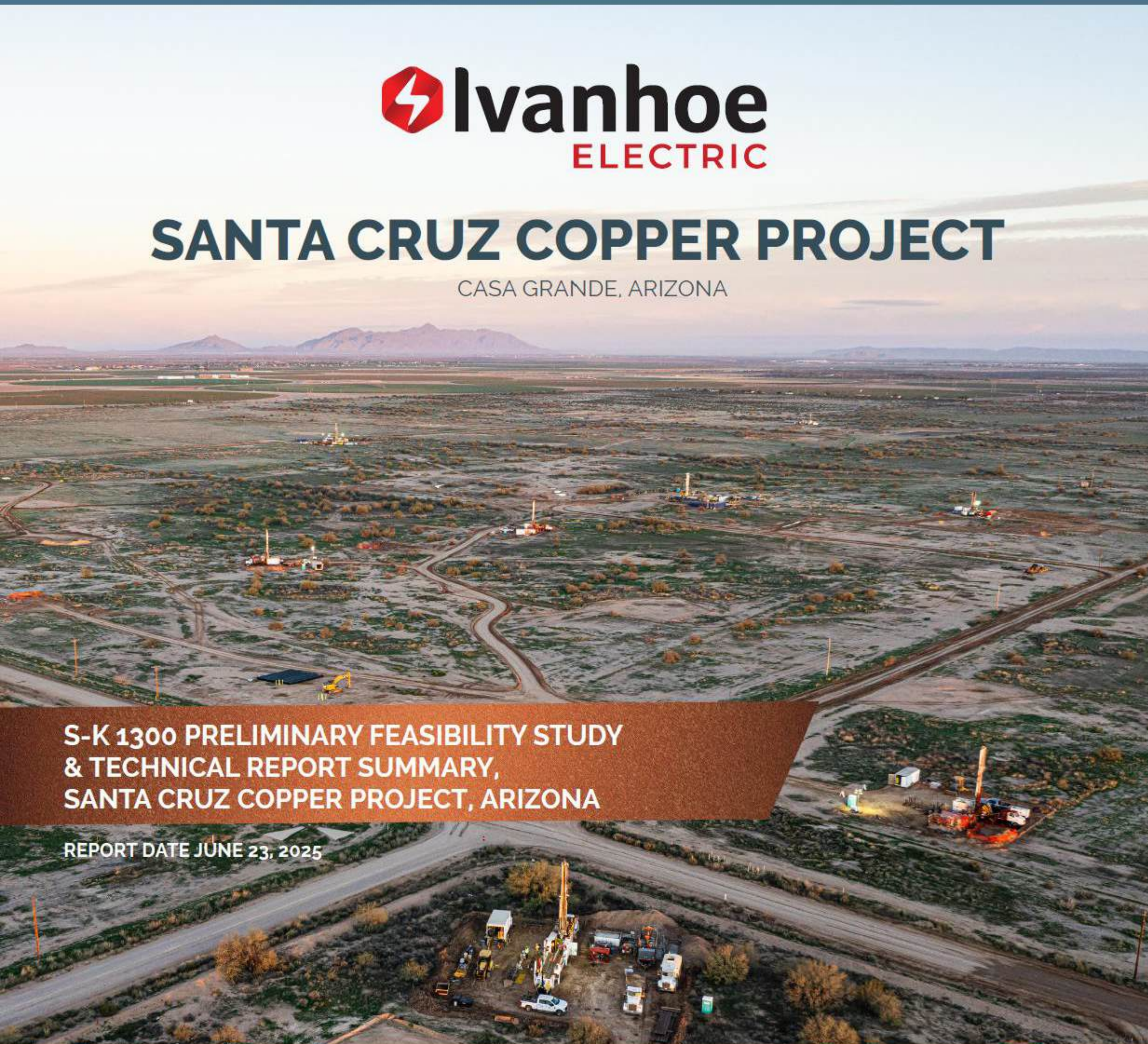
Ivanhoe ELECTRIC

SANTA CRUZ COPPER PROJECT

CASA GRANDE, ARIZONA



S-K 1300 PRELIMINARY FEASIBILITY STUDY & TECHNICAL REPORT SUMMARY, SANTA CRUZ COPPER PROJECT, ARIZONA

REPORT DATE JUNE 23, 2025

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S-K 1300 Preliminary Feasibility Study & Technical Report Summary,
Santa Cruz Copper Project, Arizona

Prepared for: Ivanhoe Electric Inc.
Report Date: June 23, 2025

Prepared by Qualified Persons from the following Third-Party Companies:

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Forward-Looking Statements

Certain statements in this Technical Report Summary constitute "forward-looking statements" or "forward-looking information" within the meaning of applicable US and Canadian securities laws. Such statements and information involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of Ivanhoe Electric, its projects, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or information. Such statements can be identified by the use of words such as "may," "would," "could", "will," "intend," "expect," "believe," "plan," "anticipate," "estimate," "scheduled," "forecast," "predict" and other similar terminology, or state that certain actions, events or results "may," "could," "would," "might" or "will" be taken, occur or be achieved. These statements reflect Ivanhoe Electric's current expectations regarding future events, performance and results and speak only as of the date of this Technical Report Summary.

Such statements in this Technical Report Summary include, without limitation: the projections, assumptions and estimates related to the Santa Cruz Copper Project, including, without limitation, those relating to development, capital and operating costs, production, grade, recoveries, metal prices, life of mine, mine sequencing, economic assumptions such as capital expenditures, cash flow and revenue, mine design, mining techniques and processes, timing of estimated production, equipment, staffing, emissions, use of land, estimates of mineral resources, use of energy storage technologies; the ability to produce 99.99% pure copper cathode; and the ability to secure state and local permits for the Santa Cruz Copper Project.

Forward-looking statements are based on the author's beliefs and assumptions and on information currently available. Such statements are subject to significant risks and uncertainties, and actual results may differ materially from those expressed or implied in the forward-looking statements due to various factors, including fluctuations in metal prices; risks related to inflation and changes in interest rates, discount rates, exchange rates, and taxes; risks due to the inherently hazardous nature of mining-related activities; uncertainties due to health and safety considerations; uncertainties related to environmental considerations, including, without limitation, climate change; uncertainties relating to obtaining approvals and permits, including renewals, from governmental regulatory authorities; uncertainties related to changes in law; uncertainty related to the availability and terms of capital; and those risk factors described in Ivanhoe Electric's Annual Report on Form 10-K and other disclosures made by Ivanhoe Electric with the U.S. Securities and Exchange Commission and Canadian securities regulators.

Although the authors believes that the assumptions and factors used in preparing the forward-looking statements in this Technical Report are reasonable, undue reliance should not be placed on such forward-looking statements, which only apply as of the date of this Technical Report, and no assurance can be given that such events will occur in the disclosed time frames or at all. The authors disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, other than as required by applicable law.

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1 Executive Summary

1.1 Introduction

This report was prepared as a technical report summary on the Santa Cruz Copper Project (the Project) in accordance with the Securities and Exchange Commission S-K regulations (Title 17, Part 229, Items 601 and 1300 through 1305) for Ivanhoe Electric by the following third-party firms: Fluor Canada Ltd. (Fluor), BBA USA Inc. (BBA), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell), Geosyntec Consultants, Inc. (Geosyntec), Haley & Aldrich, Inc. (H&A), INTERA Incorporated (INTERA), KCB Consultants Ltd. (KCB), Life Cycle Geo, LLC (LCG), Met Engineering, LLC (Met Engineering), Paterson & Cooke USA, Ltd. (P&C), Stantec Consulting Services Inc. (Stantec), and Tetra Tech, Inc. (Tetra Tech). None of the qualified persons is affiliated with the Company or any other entity that has an ownership, royalty, or other interest in the property.

1.2 Terms of Reference

Unless otherwise indicated, all financial values are reported in United States dollars (currency abbreviation: USD; currency symbol: US$) including all operating costs, capital costs, cash flows, taxes, revenues, expenses, and overhead distributions.

All capital and operating cost estimates meet the requirements of S-K 1300 and AACE Class 3, with an expected accuracy of -20% to +25%. A contingency of <15% has been applied to capital cost estimates.

All pricing is considered in first quarter (Q1) 2025 dollars.

Unless otherwise indicated, capital and operating costs do not include tariffs or escalations.

Totals may not sum correctly due to rounding.

This report uses U.S. English. Units may be in either metric or US customary units as identified in the text. A list of abbreviations and units of measure is provided in Section 24.

Mineral resources and mineral reserves are reported using the definitions in Subpart 229.1300 – Disclosure by Registrants Engaged in Mining Operations in Regulation S-K 1300 (S-K 1300).

This report contains forward-looking information; refer to the note regarding forward-looking information at the front of the report.

1.3 Property Setting

The project is a 92 km drive south of the greater Phoenix metropolitan area and is accessed via the West Gila Bend Highway (Highway 84) 11 km west of the city of Casa Grande, which has a population of approximately 57,700.

The greater Phoenix area is a major population center, with approximately 4.8 million people, and features an international airport, Phoenix Sky Harbor International Airport, and well-developed infrastructure and services that support the mining industry (Figure 1-1).

The climate in the project area is typical of the Sonoran Desert, with temperatures ranging from -7°C to 47°C (19°F to 117°F) and an annual precipitation average ranging from 76 to 500 mm (3 to 30 inches) per year. Mining and exploration activities can be performed year-round, as there are no limiting weather or accessibility factors.

Figure 1-1: Santa Cruz Copper Project Location

Source: Ivanhoe Electric, 2025.

1.4 Mineral Tenure, Ownership, Surface Rights, Royalties, Agreements & Permits

The Santa Cruz Copper Project is 100% owned by Ivanhoe Electric through its wholly-owned subsidiary, Mesa Cobre Land Holding Corp. (Mesa Cobre).

1.4.1 Mineral Tenure

In 2021, Ivanhoe Electric acquired 238 unpatented mining lode claims from Central Arizona Resources, Ltd. (CAR). In addition, Ivanhoe Electric acquired fee simple mineral title for two further land parcels: “CG100” and “Skull Valley”. In 2022, Ivanhoe Electric acquired the 0.08 km2 (20-acre) “Skull Valley” property from Skull Valley Capital, LLC in the southeastern area of the project and the 0.41 km2 (100.33-acre) “CG100” from CG 100 Land Partners LLC in the northeastern area of the project.

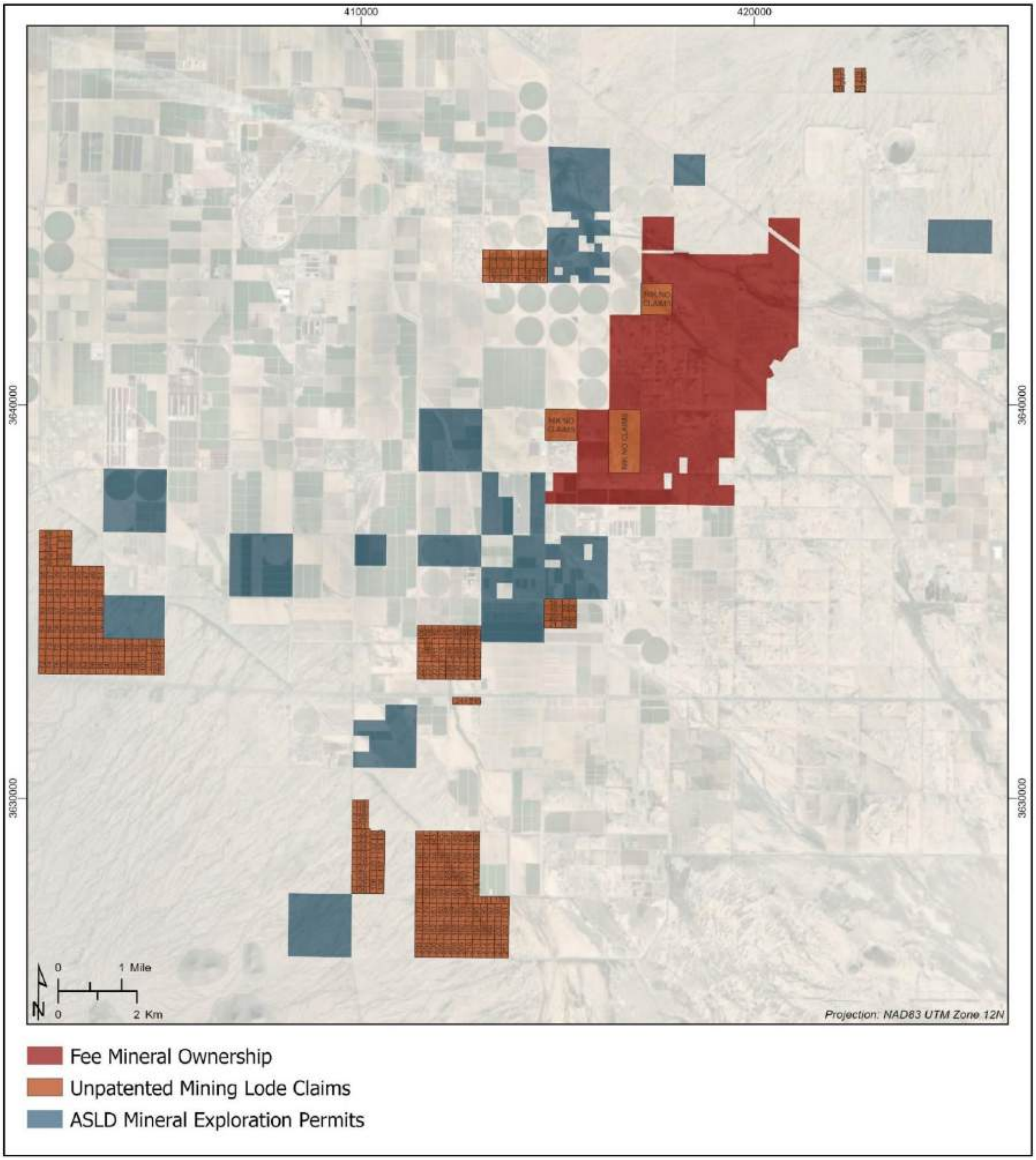
In 2023, Ivanhoe Electric acquired 16 Arizona State Land Department mineral exploration permits covering 27.95 km^2 (~6,900 acres) of state mineral land. In 2024, Ivanhoe Electric exercised the agreement with D.R. Horton Phoenix East Construction, Inc. (DRH), granting Ivanhoe Electric, through Mesa Cobre, 100% of the mineral title for 26.0 km^2 (~6,425 acres) of fee simple mineral estate, 39 federal unpatented mining lode claims (bringing the total claims controlled by Ivanhoe Electric to 277).

The total project area comprises fee simple land along with unpatented mining lode claims and Arizona State Land Department Mineral Exploration Permits. Annual renewal fees for the unpatented mining lode claims and mineral exploration permits have been made as required. The area of proposed mine activity lies on fee simple land. Mineral control is summarized in Table 1-1 and shown on Figure 1-2.

Table 1-1: Summary of Ivanhoe Electric’s Mineral Control

Land Designation	Area (km^2)
Fee Simple Mineral Ownership	25.98
Unpatented Mining Lode Claims (277 claims)	25.92
Arizona State Land Department Mineral Exploration Permits (16 permits)	30.47

Figure 1-2: Santa Cruz Copper Project Mineral Control Map

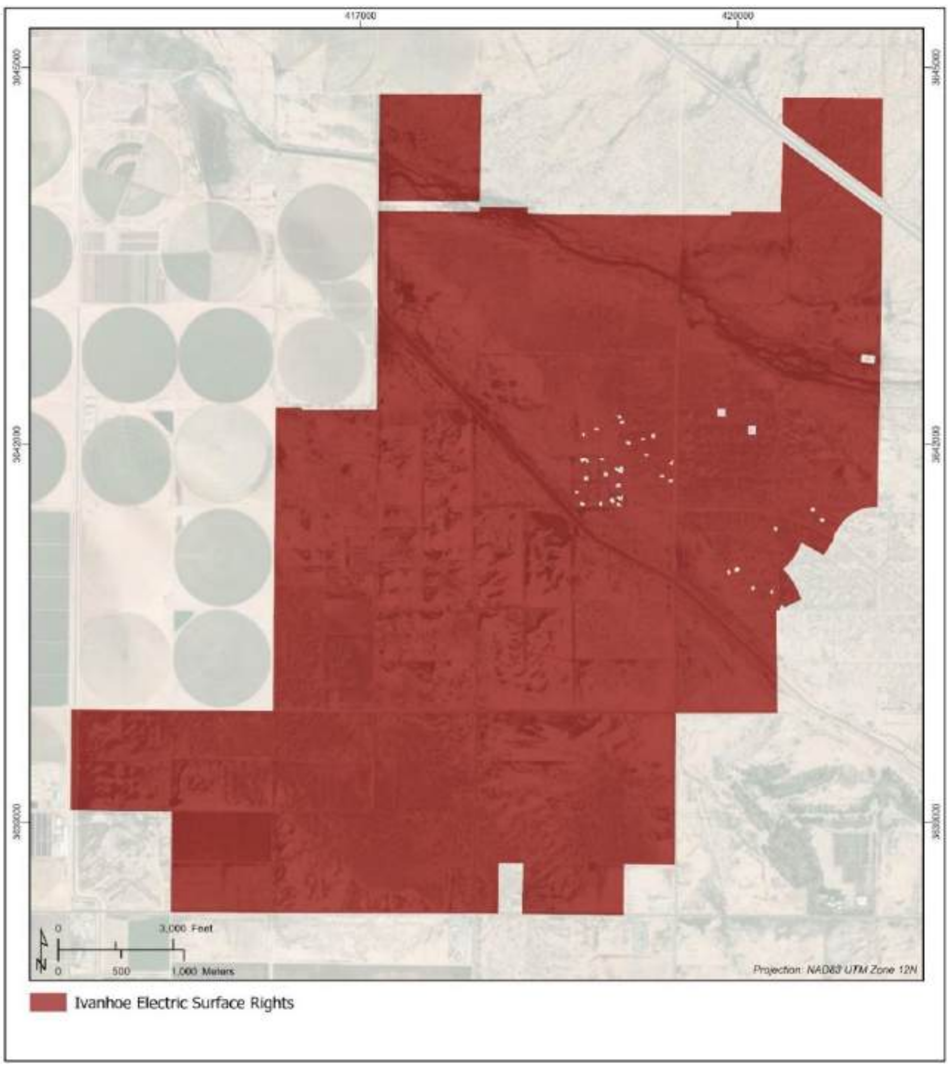


Source: Ivanhoe Electric, 2025.

1.4.2 Surface & Water Rights

In 2022, Ivanhoe Electric acquired the surface rights to two land parcels: the 0.08 km^2 (20-acre) Skull Valley property from Skull Valley Capital, LLC in the southeastern area of the project and a 0.41 km^2 (100.33-acre) land parcel "CG100" from CG 100 Land Partners LLC in the northeastern area of project. In August 2024, Ivanhoe Electric acquired the surface title to three 0.04 km^2 (10-acre) parcels located in various areas of the project along with the mineral rights from DRH. The majority of the surface rights for the Santa Cruz Copper Project were acquired in 2023. Surface rights are shown in Figure 1-3. Ivanhoe Electric acquired grandfathered irrigation rights and grandfathered Type 1 non-irrigation water rights in association with the private land purchased in 2023 and holds all necessary water rights for the life-of-mine plan envisaged in this report.

Figure 1-3: Ivanhoe Electric Surface Control Map



Source: Ivanhoe Electric, 2025

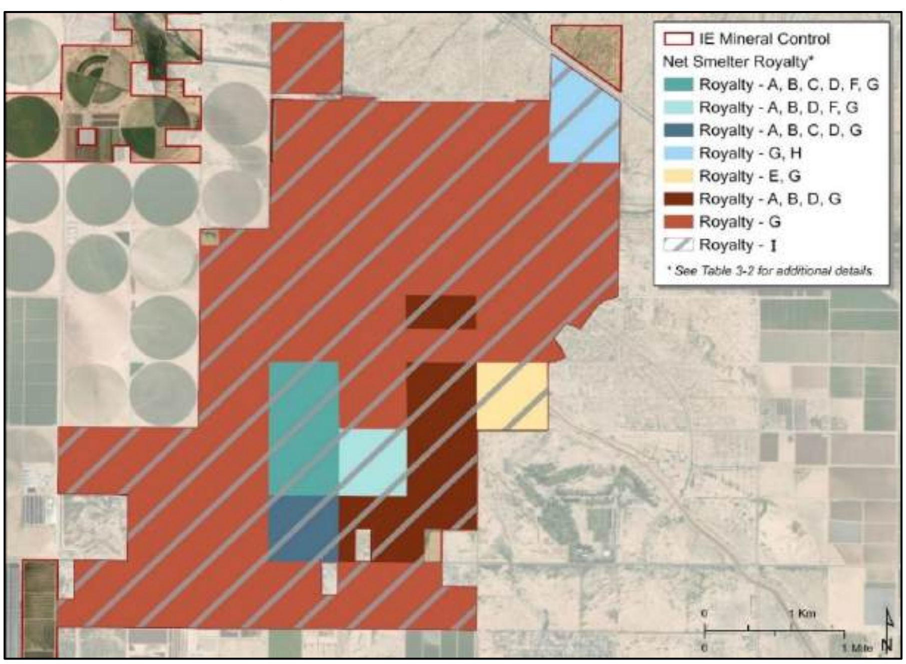
1.4.3 Royalties

There are eight royalties owners for the Santa Cruz, East Ridge, and Texaco deposits, as summarized in Table 1-2. Each royalty has its own distinct property description as shown in Figure 1-4.

Table 1-2: Royalties Applying to the Santa Cruz Copper Project

Royalty Owner	Royalty Description
Royalty Owner A	10% of 1/800th of the fair market value for refined copper, which amount is set by the value listed in the successor index to Metals Week as of the date the solution extraction / electrowinning (SX/EW) process is completed
Royalty Owner B	60% of 1/800th of the fair market value for refined copper, which amount is set by the value listed in the successor index to Metals Week as of the date the SX/EW process is completed
Royalty Owner C	2% net smelter return
Royalty Owner D	0.15% net smelter return
Royalty Owner E	½ of 1% net smelter return or ½ of 1% of 60% net smelter return if product is disposed of other than to a commercial smelter
Royalty Owner F	10% net smelter return (capped at $7 million)
Royalty Owner G	5% net smelter return
Royalty Owner H	1% net smelter return
Royalty Owner I	$0.015/lbs of copper of additional mineable reserve copper over 2 billion pounds (Blbs) as determined by the "Definitive Feasibility Study" or by production beyond the amount estimated in the "Definitive Feasibility Study"; the royalty owner has the option to require payment in Ivanhoe Electric common stock at a 10% discount to the five-day volume weighted average price

Figure 1-4: Extent of Royalties



Source: Ivanhoe Electric, 2025.

1.5 History

Copper mineralization, first discovered in the region in the 1960s, led to extensive drill programs across the project area. Exploration programs by several companies and joint ventures included diamond drilling and several geophysical surveys from the 1960s through the 1990s.

Ivanhoe Electric gained access to the land in August 2021 to start drill programs, completed a mineral resource estimate in 2022, an updated mineral resource estimate in early 2023, and an initial assessment in September 2023.

1.6 Geology & Mineralization

The Santa Cruz Copper Project is situated within the Southwestern Porphyry Copper Belt, which is home to numerous productive copper deposits. Notable examples in Arizona include Mineral Park, Bagdad, Resolution, Miami-Globe, San Manuel-Kalamazoo, Ray, Morenci, Sierrita, Twin Buttes, and the historically significant Sacaton Mine. These deposits are part of the larger physiographical area known as the Basin and Range Province, which covers much of the southwestern United States.

The porphyry copper deposits in the Southwestern Porphyry Copper Belt are the result of igneous activity during the Laramide Orogeny, which occurred between 50 and 80 million years ago. This geological event was driven by the subduction of the Farallon Tectonic Plate beneath the North American Tectonic Plate, resulting in the formation of a magmatic arc and the development of associated porphyry copper systems.

The project comprises four separate areas along a southwest-northeast corridor. These areas from southwest to northeast are known as the Southwest exploration area, the Santa Cruz deposit, the East Ridge deposit, and the Texaco deposit, all of which represent portions of one or more large porphyry copper systems separated by extensional Basin and Range normal faults. Each area has experienced variable periods of erosion, supergene enrichment, fault displacement, and tilting into their present positions.

Mineralization in the project area is divided into the following:

- Supergene copper oxide mineralization mainly consists of atacamite and chrysocolla, with smaller amounts of cuprous goethite, copper-bearing smectite clays, tenorite, cuprite, copper wad, and native copper.
- Secondary supergene sulfide mineralization is dominantly chalcocite, which replaces hypogene sulfide.
- Primary hypogene sulfide mineralization consists of chalcopyrite and molybdenite hosted within quartz-sulfide stringers, veins, and breccias.

1.7 Exploration, Drilling & Sampling

Ivanhoe Electric has completed geophysical surveys including two dimensional, three dimensional, multichannel seismic, reprocessing of proprietary Typhoon™ three-dimensional perpendicular pole dipole induced polarization data, and ambient noise tomography. The geophysical datasets from these surveys were used to assist with geological interpretation and improved drill targeting.

A comprehensive surface ionic leach sampling program has also been completed across the project to assess in detecting copper mineralization at depth.

Ivanhoe Electric has completed 149 infill drillholes totaling approximately 120,000 meters since the 2023 initial assessment, bringing the total to 329 drillholes and 279,164 meters of combined drilling for the project since initiating exploration activity in 2021. Combined with historical drilling, Ivanhoe Electric has data for over 469 drillholes totaling 330,118 meters of combined drilling. The mineral resource estimates are based on data from 329 drillholes totaling 279,164 meters of combined drilling.

Detailed core logging is performed by Ivanhoe Electric geologists through digital data input into MX Deposit. Data that are logged include lithology, alteration, mineralization, veining, petrophysical data, and geotechnical parameters, such as faults, joints, fractures, hardness, and rock quality (Q-system) parameters. Additional characterization fields such as rock colors, grain sizes, textures, and supergene weathering features were also captured.

Approximately 5,884 density measurements from 210 drillholes were measured for the Santa Cruz, East Ridge, and Texaco deposits.

Quality assurance and quality control for the Ivanhoe Electric drill programs consisted of inserting duplicates, blanks, and certified reference materials (standards) into the sample stream at set sampling intervals. BBA's review of the data indicated no material issues.

Ivanhoe Electric used 83 historical and 184 modern drillholes totaling over 70 km of geotechnical drilling to analyze geotechnical characterization of the Santa Cruz and East Ridge deposits. Historical drillholes were selected based on availability of rock quality designation data.

The groundwater flow model was calibrated and used to predict the residual passive inflows for the prefeasibility study mine plan. The predicted residual passive inflows resulting from the updated model, with mitigation measures of activated colloidal silica and grouting applied, indicate that the residual passive inflows for the first 10 years of the mine are at or below 6,000 gallons per minute (gal/min), compared to the 12,000 gal/min estimated in the initial assessment (IA) model, in addition to two years of 3,000 gal/min of active pumping (Ivanhoe Electric, 2023). From Years 11 through 25, the residual passive inflows in the updated model range from approximately 6,500 to 8,000 gal/min, compared to 15,000 to 18,000 gal/min predicted in the IA model (Ivanhoe Electric, 2023).

1.8 Data Verification

BBA personnel in the disciplines of geology, mineral resource estimation, mineral reserve estimation, and mining visited the project site in 2024. During the visit, BBA personnel reviewed and verified data acquisition procedures with Ivanhoe Electric personnel, visited active drill sites, and performed several other verification checks to ensure data integrity.

Based on the data made available, BBA considers that a reasonable level of verification has been completed and that no material issues were identified from the programs. It is BBA's opinion that the geological data collection and quality assurance and control procedures used by Ivanhoe Electric are consistent with current industry practices and that the geological database is of suitable quality to support a mineral resource estimate.

1.9 Metallurgical Testwork

Metallurgy and processing test work were directed by Met Engineering, LLC and conducted at McClelland Labs (MLI) in Sparks, Nevada, USA and at Blue Coast Research (BCR) in Parksville, British Columbia, Canada. Metallurgical testwork included the following:

- establishing copper recoveries, based on sequential coppers for chloride-assisted, weak-sulfuric acid, heap leaching of mineralized material at the Santa Cruz Copper Project.
- determining commercial operating parameters for heap leaching mineralized material at the Santa Cruz Copper Project, including salt usage, sulfuric acid usage, ore cure/agglomeration practices, leach cell cycle times for an on/off leach pad design, annual pregnant leach solution grades, and pregnant leach solution flow rate to solvent extraction.

A grade-recovery algorithm was developed based on sequential copper assays. For the life-of-mine processing, this equation produces a weighted average of 92.2% total copper recovery to cathode for leaching a 6-meter lift of ore crushed to 100% passing 9.5 mm for 180 days of irrigation utilizing an on/off leach pad.

There are no deleterious elements or factors that could have a significant effect on economic extraction of the copper in the mineralized material.

1.10 Mineral Resource Estimate

1.10.1 Estimation Methodology

The Santa Cruz deposit has approximately 194,000 meters of drilling in 226 drillholes; East Ridge has approximately 49,000 meters of drilling in 62 holes; and Texaco has approximately 36,000 meters of drilling in 41 holes.

Geological domains were developed for the project based on alteration, lithological, and mineralogical characteristics, incorporating regional and local structural information. Normal faults separate the mineralization at the Santa Cruz, East Ridge, and Texaco deposits.

The Santa Cruz deposit was divided into several mineral domains: exotic domain, verde domain, leach cap, oxide domain, chalcocite enriched domain, and primary mineralization domain. The East Ridge deposit consists of a mix of oxide and chalcocite enriched domains. The Texaco deposit consists of all domains except for leach cap and exotic. The domains were further divided into subdomains based on individual grade profiles, which align with controls on mineralization. The following terms are assigned to the subdomains; these represent a local definition of the grade profile: high-grade, medium-grade, and low-grade.

Exploratory data analysis was conducted to determine the nature of element distribution and correlation of grades within individual lithological units, and to identify high-grade outlier samples. Capping was not applied to copper values as significant outliers were not identified. Samples were composited to 2-meter intervals. Variograms were completed by subdomain for each deposit.

The resource estimation methodology constrains the mineralization by using hard wireframe boundaries. Ordinary kriging was employed for the Santa Cruz deposit, and inverse distance squared was selected for the East Ridge and Texaco deposits. Multiple search passes were used for each deposit. Search parameters were based on variography and continuity of mineralization.

Validation checks were completed on the mineral resource estimates. These included visual comparison of estimated grade to composite grade, domain conformity, swath plots, and comparisons to alternate estimation methods.

Indicated and inferred classification was applied to the Santa Cruz, East Ridge, and Texaco deposits based on BBA's review that included the examination of drill spacing, visual comparison, kriging variance, distance to the nearest composite, and search pass, along with the search ellipsoid ranges. Collectively, this information was used to produce an initial classification script followed by manual wireframe application to further limit the mineral resource classification.

Mineral resources used commodity prices based on long-term analyst and bank forecasts. In the opinion of BBA, this price is generally aligned with pricing over the last one, three, and five years; forward-looking pricing from internationally recognized banks is appropriate for use in a mineral resource estimate. Section 16 provides an explanation of the commodity price forecasts. The commodity price considered three-year trailing averages.

1.10.2 Mineral Resource Statement

The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA in accordance with the definition for mineral resources in S-K 1300 regulations. The in-situ mineral resource estimates for the Santa Cruz, East Ridge, and Texaco deposits, inclusive and exclusive of reserves, are presented in Tables 1-3 and 1-4, respectively.

Table 1-3: In-Situ Mineral Resource Estimate Inclusive of Reserves for Santa Cruz, East Ridge & Texaco

Deposit	Classification	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (kt)	Total Acid Soluble Copper (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)	Contained Gold (koz)	Contained Silver (koz)	Contained Copper (Mlbs)
Santa Cruz	Indicated	317,709	0.95	0.48	0.30	0.17	0.027	1.62	3,017	1,517	956	543	279	16,513	6,650
	Inferred	31,998	0.73	0.21	0.17	0.34	0.021	1.78	232	68	54	110	21	1,832	512
East Ridge	Indicated	8,742	1.00	0.45	0.39	0.16	0.014	0.68	88	40	34	14	4	191	193
	Inferred	48,676	0.89	0.44	0.12	0.33	0.006	0.40	436	216	57	163	9	623	960
Texaco	Inferred	341,345	0.78	0.06	0.27	0.45	0.028	0.81	2,664	218	920	1,537	302	8,850	5,873
All Deposits	**Indicated**	**326,450**	**0.95**	**0.48**	**0.30**	**0.17**	**0.027**	**1.59**	**3,104**	**1,557**	**989**	**558**	**283**	**16,704**	**6,844**
All Deposits	**Inferred**	**422,020**	**0.79**	**0.12**	**0.24**	**0.43**	**0.025**	**0.83**	**3,332**	**503**	**1,030**	**1,809**	**333**	**11,304**	**7,346**

Notes on mineral resources: **1.** The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA USA Inc., and are reported in accordance with the definition for mineral resources in S-K 1300. **2.** Mineral resources that are not mineral reserves do not have demonstrated economic viability. **3.** Mineral resources are reported in situ, inclusive of mineral reserves. **4.** The mineral resources for Santa Cruz, East Ridge, and Texaco deposit were completed using Datamine Studio RM software. **5.** The mineral resources are current at June 23, 2025. **6.** Mineral resources constrained assuming underground mining methods for the Santa Cruz deposit are reported at an NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; Texaco deposit is reported at a NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; and East Ridge deposit is reported at a NSR cutoff of US$40.00 for longhole stoping and US$50.00 for drift and fill. The cutoff reflects the total operating costs to define reasonable prospects for economic extraction by conventional underground mining methods. Material from within mineable shape-optimized wireframes has been included in the mineral resource. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb, gold price of US$1,900/oz, and silver price of US$24.00/oz. Process costs of US$7.00 to US$9.00 per processed tonne; direct mining costs between US$22.00 to US$40.00 per processed tonne reflecting various mining method costs (leach, long hole or drift and fill), mining general and administration costs of US$2.63 per processed tonne, onsite processing costs between US$31.63 to US$49.63 per processed tonne, along with variable royalties between 5.01% to 6.96% NSR, and a mining recovery of 100%. **7.** Mineral resources are estimated using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper, 0% for gold and 0% for silver. Recoveries for concentrator are 0% for acid soluble copper, 90% for cyanide soluble copper, 90% for residual copper, 59% for gold, and 69% for silver. **8.** Density was applied using weighted averages by deposit subdomain. **9.** Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.

Table 1-4: In-Situ Mineral Resource Estimate Exclusive of Reserves for Santa Cruz, East Ridge & Texaco

Deposit	Classification	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (kt)	Total Acid Soluble Cu (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)	Contained Gold (koz)	Contained Silver (koz)	Contained Copper (Mlbs)
Santa Cruz	Indicated	178,451	0.80	0.34	0.20	0.27	0.024	1.43	1,435	607	359	477	139	8,211	3,163
	Inferred	31,998	0.73	0.21	0.17	0.34	0.021	1.78	232	68	54	110	21	1,832	512
East Ridge	Indicated	4,407	0.94	0.43	0.31	0.20	0.015	0.71	41	19	14	9	2	101	91
	Inferred	48,676	0.89	0.44	0.12	0.33	0.006	0.40	436	216	57	163	9	623	960
Texaco	Inferred	341,345	0.78	0.06	0.27	0.45	0.028	0.81	2,664	218	920	1,537	302	8,850	5,873
All Deposits	**Indicated**	**182,859**	**0.81**	**0.34**	**0.20**	**0.27**	**0.024**	**1.41**	**1,476**	**625**	**373**	**486**	**141**	**8,312**	**3,254**
All Deposits	**Inferred**	**422,020**	**0.79**	**0.12**	**0.24**	**0.43**	**0.025**	**0.83**	**3,332**	**503**	**1,030**	**1,809**	**333**	**11,304**	**7,346**

Notes on mineral resources: **1.** The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA USA Inc., and are reported in accordance with the definition for mineral resources in S-K 1300. **2.** Mineral resources that are not mineral reserves do not have demonstrated economic viability. **3.** Mineral resources are reported in situ, inclusive of mineral reserves. **4.** The mineral resources for Santa Cruz, East Ridge, and Texaco deposit were completed using Datamine Studio RM software. **5.** The mineral resources are current at June 23, 2025. **6.** Mineral resources constrained assuming underground mining methods for the Santa Cruz deposit are reported at an NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; Texaco deposit is reported at a NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; and East Ridge deposit is reported at a NSR cutoff of US$40.00 for longhole stoping and US$50.00 for drift and fill. The cutoff reflects the total operating costs to define reasonable prospects for economic extraction by conventional underground mining methods. Material from within mineable shape-optimized wireframes has been included in the mineral resource. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb, gold price of US$1,900/oz, and silver price of US$24.00/oz. Process costs of US$7.00 to US$9.00 per processed tonne; direct mining costs between US$22.00 to US$40.00 per processed tonne reflecting various mining method costs (leach, long hole or drift and fill), mining general and administration costs of US$2.63 per processed tonne, onsite processing costs between US$31.63 to US$49.63 per processed tonne, along with variable royalties between 5.01% to 6.96% NSR, and a mining recovery of 100%. **7.** Mineral resources are estimated using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper, 0% for gold and 0% for silver. Recoveries for concentrator are 0% for acid soluble copper, 90% for cyanide soluble copper, 90% for residual copper, 59% for gold, and 69% for silver. **8.** Density was applied using weighted averages by deposit subdomain. **9.** Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.

1.10.3 Factors That May Affect the Mineral Resource Estimate

Areas of uncertainty that may materially impact the mineral resource estimates are as follows:

- changes to long-term metal price assumptions
- changes to the input values for mining, processing, and general and administrative (G&A) costs to constrain the estimate
- changes to local interpretations of mineralization geometry and continuity of mineralized subdomains
- changes to the density values applied to the mineralized zones
- changes to metallurgical recovery assumptions
- changes in assumptions of marketability of the final product
- variations in geotechnical, hydrogeological, and mining assumptions
- changes to assumptions with an existing agreement or new agreements
- changes to environmental, permitting, and social license assumptions
- logistics of securing and moving adequate services, labor, and supplies could be affected by epidemics, pandemics, and other public health crises, or geopolitical influence.

1.11 Mineral Reserve Estimate

1.11.1 Estimation Methodology

Underground mineral reserves were estimated by BBA. Estimates were prepared for the Santa Cruz deposit, a portion of the East Ridge deposit, and the Verde domain located within the Santa Cruz deposit. The primary mining method for both deposits employs longhole stoping without pillars, utilizing a primary and secondary stoping sequence. Additionally, a few small lenses within the East Ridge deposit use a drift-and-fill mining method. Stopes will be backfilled with cemented rockfill to the end of Q1 2029 and then all stopes will be backfilled after mining with paste backfill for the remainder of the mine life. Indicated mineral resources were converted to probable mineral reserves. Inferred mineral resources were not converted to mineral reserves; however, if inferred mineral resources fell within the mineral reserve designs, they were assumed to have zero grade.

The underground mine approach was designed using zones that were amenable to different mining methods based on geotechnical considerations, access requirements, deposit shape, orientation and grade, and mining depths. Waste or low-grade blocks in the stope shapes were treated as internal dilution. Mine designs were modified by including the capital and operating development needed to access the stopes, and the applicable infrastructure requirements.

Net smelter return (NSR) represents the gross revenue generated from the sale of a refined metal product (in this case, copper cathodes) after deducting all associated off-site costs. For a mine producing copper cathodes via heap leaching and SX/EW, the traditional "smelter" and "refining" charges inherent in concentrate sales are not applicable. Instead, the offsite deductions are specific to the direct sale of cathodes.

The primary metal produced at the Santa Cruz Copper Project is copper. While byproducts of gold and silver are present, the current heap leach SX/EW process does not recover these precious metals. As is common with polymetallic deposits, the cutoff value for mineral reserves is determined and expressed in terms of net smelter return value per tonne.

The NSR is calculated based on unit metal values, utilizing representative smelter contract terms, freight costs, and forecasted metal prices. The metal prices and metallurgical recovery rates used for NSR calculations are summarized in Table 1-5. Operating cost for cutoff value calculations are summarized in Table 1-6. Royalties are factored into each block of the mineral resource model.

Mineral reserves are assessed using commodity prices derived from long-term forecasts from analysts and banks. According to BBA, this pricing generally reflects the trends observed over the past one, three, and five years, and the forward-looking prices from internationally recognized banks are deemed appropriate for mineral reserve estimates.

Table 1-5: NSR Parameters

Product	Unit	Value
Acid Soluble Copper Recovery	%	98.8
Cyanide Soluble Copper Recovery	%	85.4
Residual Copper Recovery	%	35.1
Recoverable Copper	**%**	**90.9**
Net Recoverable Copper	**%**	**90.0**
Copper Price	$/lb	4.00

Table 1-6: Operating Costs for Cutoff Value Calculations

Criteria	Unit	Santa Cruz 30 m Longhole Leach	East Ridge Drift and Fill Leach	East Ridge 15 m Longhole Leach
Cathode Split	%	100.0	100.0	100.0
Onsite Costs				
Mining Costs – Direct	$/t processed	31.00	47.05	47.05
Processing Costs	$/t processed	10.32	10.32	10.32
G&A	$/t processed	2.63	2.63	2.63
Onsite Total	$/t processed	43.95	60.00	60.00
Onsite Rounded NSR Breakeven Cutoff	**$/t**	**44.00**	**60.00**	**60.00**

1.11.2 Mineral Reserve Statement

Indicated mineral resources were converted to probable mineral reserves. Inferred mineral resources were excluded from the mineral reserve estimate. Mineral reserves for the Santa Cruz Copper Project are estimated for the Santa Cruz deposit and a portion of the East Ridge deposit, as well as the Verde domain within the Santa Cruz deposit.

Mineral reserves are supported by a mine plan, engineering analysis, and modifying factors.

The point of reference for the mineral reserves is the point where the ore is delivered to the processing plant. Mineral reserves are reported on a 100% basis.

The mineral reserve estimate for the Santa Cruz Copper Project is shown in Table 1-7.

Table 1-7: Santa Cruz Copper Project Mineral Reserve Estimate

Deposit	Classification	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Contained Copper (kt)	Total Acid Soluble Cu (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)
Santa Cruz	Probable	132,061	1.08	0.62	0.41	0.05	1,430	820	544	65
East Ridge	Probable	4,112	1.03	0.46	0.44	0.12	42	19	18	5
Total	Probable	136,173	1.08	0.61	0.41	0.05	1,472	839	563	70

Notes: **1.** The mineral reserves in this estimate are current to June 23, 2025 and were independently prepared, including estimation and classification, by BBA USA Inc. They are reported in accordance with the definitions for mineral reserves in S-K 1300. **2.** The point of reference for the estimate is the point of delivery to the process facilities. **3.** The mineral reserves for the Santa Cruz and East Ridge deposits were completed using Deswik mining software. Mineral reserves are defined within stope designs that are prescribed by rock mechanics, considering the specific characteristics of deposits, mineral domains, mining methods, and the mining sequence. Transverse longhole stoping is the optimal mining method with uppers and cut & fill methods used where appropriate. Mining will occur in blocks, extracting ore from the bottom upwards, with paste backfill providing ground support to sustain a production rate of 20,000 tonnes per day for the first 15 years of operation. **4.** Mineral reserves are estimated at an NSR cutoff value of $43.95/t for longhole stoping and $60/t for longitudinal retreat stopes and drift and fill. The NSR values reflect the discrete metallurgical responses for each mineral reserve block using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb. **5.** Mineral reserves account for mining loss and dilution. **6.** Mineral reserves are a subset of the indicated mineral resource and do not include the inferred mineral resource. **7.** Rounding, as required by the guidelines, may result in apparent summation differences between tonnes, grade, and contained metal content.

1.11.3 Factors That May Affect the Mineral Reserve Estimate

Factors that may affect the mineral reserve estimate include the following:

- changes to long-term metal price assumptions
- changes to metallurgical recovery assumptions
- changes to the input assumptions used to derive the mineable shapes applicable to the assumed underground and open pit mining methods used to constrain the estimates
- changes to the forecast dilution and mining recovery assumptions
- changes to the cutoff grades used to constrain the estimates
- variations in geotechnical (including seismicity), hydrogeological, mining, and processing recovery assumptions
- changes to environmental, permitting, and social license assumptions.

1.12 Mining Methods

The Santa Cruz Copper Project is an undeveloped brownfield project where mineral reserves have been identified for two deposits: Santa Cruz and East Ridge.

The Santa Cruz deposit is located approximately 480 to 940 meters below the surface. Based on the mineralization's geometry and supporting geotechnical data, transverse underground longhole stoping has been selected as the most suitable mining method. Mining will be conducted in blocks, with ore being extracted from the bottom upward within each block while utilizing paste backfill to provide ground support. A sill pillar will be maintained between the blocks. The paste backfill is designed to be strong enough to allow adjacent filled stopes to be mined without requiring additional pillars.

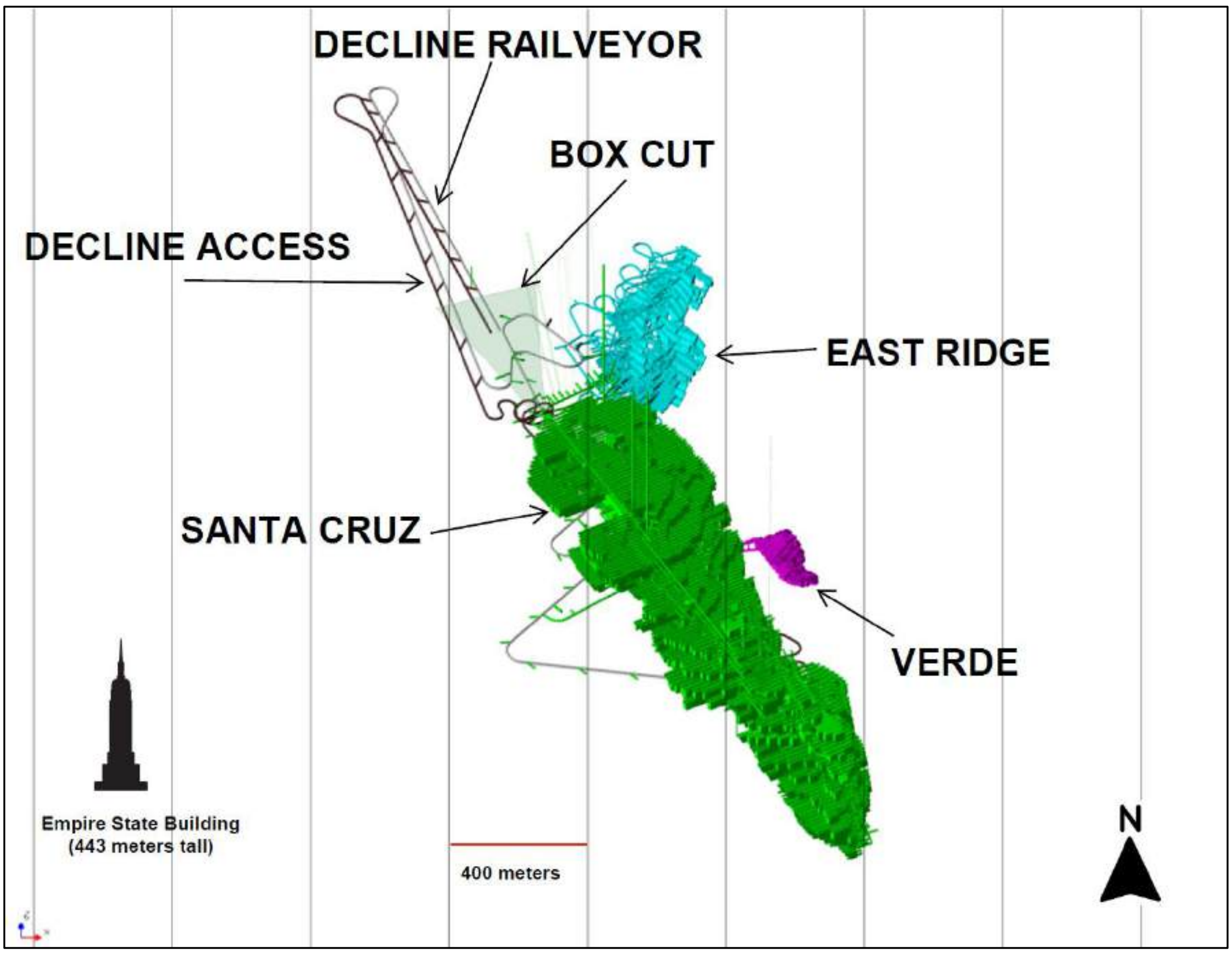
The stopes for the Santa Cruz deposit will have varying widths of 12 to 18 meters and lengths ranging from 10 to 17 meters, depending on the geotechnical domain, zone, and mining sequence (primary or secondary). The levels in the mine are spaced 30 meters apart. The Verde zone is a subdomain within the Santa Cruz deposit, and the production stopes in this area will be accessed from the Santa Cruz mine levels, featuring standard dimensions of 20 meters (height) x 15 meters (width) x 20 meters (length).

The East Ridge deposit is situated to the north of the main Santa Cruz deposit, approximately 310 to 790 meters below the surface. It consists of multiple tabular lenses and will be mined using a hybrid approach that combines longhole stoping and the drift-and-fill method, depending on the geometry of the orebody in each zone. At East Ridge, longhole stopes will measure 15 meters (height) x 10 meters (width) x 8 meters (length), accessed via longitudinal entries. For zones using the drift-and-fill method, the drifts will have dimensions of 5 meters (height) x 5 meters (width), with variable lengths determined by the local rock mass condition. Mining will begin with a drift sized at 5 meters (height) x 5 meters (width), followed by paste backfill and curing before the development of the next adjacent drift in the orebody.

Mine access will be provided through two decline drifts from the surface: one for main access and the other for a Railveyor system to handle materials. Ore will be transported from the stopes by load-haul-dump (LHD) equipment to an orepass system, which will transfer the ore from a chute to a conveyor system. From the conveyor system, it will be loaded onto the Railveyor and brought to surface. Main intake and exhaust raises will be developed to ensure the mine workings are adequately ventilated. The combined production target for the Santa Cruz and East Ridge deposits is approximately 20,000 t/d.

The Santa Cruz Copper Project encompasses three mining zones: Santa Cruz, Verde, and East Ridge (Figure 1-5). The Santa Cruz zone is the primary production area and is structurally divided into northern and southern regions.

Figure 1-5: Mining Zones of Santa Cruz and East Ridge Deposits, View Looking North



Source: Ivanhoe Electric, 2025.

Primary (first-pass) support will be installed in conjunction with the advance of excavation and will provide support and reinforcement. Any support applied at a later stage will be considered secondary (or second-pass) support. Excavation in rock will be performed via conventional (drill and blast) methods or with a roadheader machine.

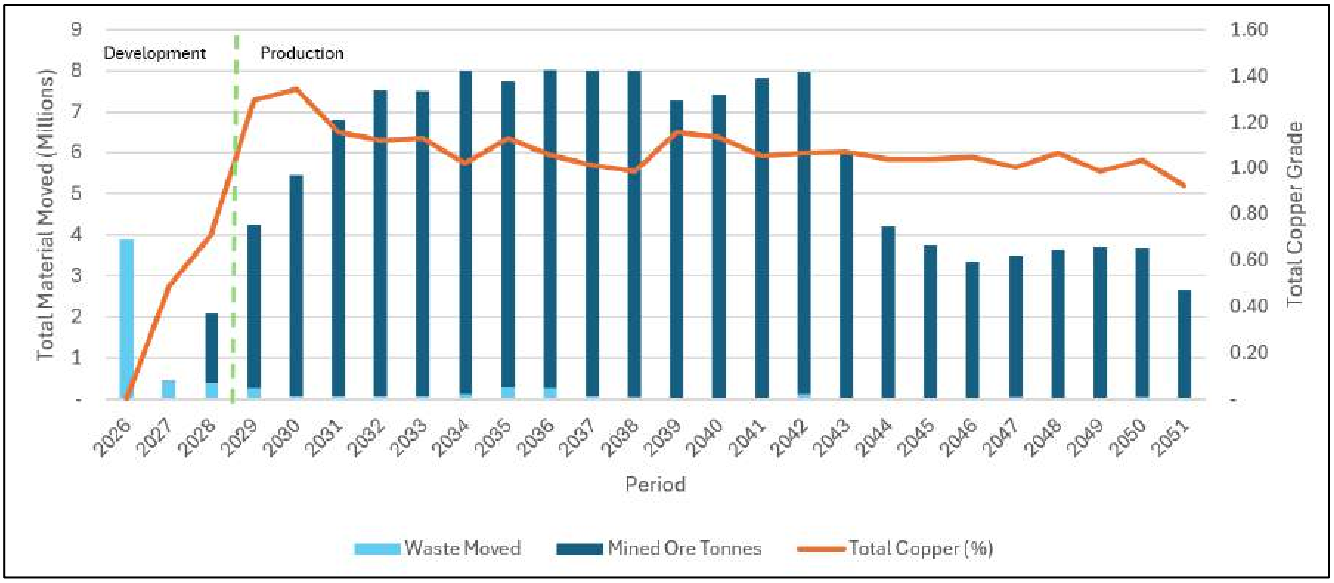
The Santa Cruz Copper Project mine life is expected to be 23 years with construction from 2026 to 2028 followed by schedule production to 2051. Table 1-8 summarizes the production in the mine plan. The "Ore" column represents the total development and production ore for Santa Cruz, Verde, and East Ridge mining zones.

Table 1-8: Santa Cruz Scheduled Production Summary

Year	Ore (kt)	Total Copper (%)	AsCu (%)	CNCu (%)	Cu_Res (%)	Ratio ASCU:TCU
2026	0	0.00	0.00	0.00	0.00	0.00
2027	28	0.48	0.34	0.05	0.10	0.70
2028	1,673	0.71	0.51	0.15	0.05	0.71
2029	3,973	1.29	0.99	0.26	0.04	0.77
2030	5,377	1.35	0.86	0.44	0.04	0.64
2031	6,737	1.15	0.61	0.51	0.04	0.53
2032	7,492	1.12	0.56	0.50	0.06	0.50
2033	7,439	1.13	0.56	0.52	0.06	0.49
2034	7,875	1.02	0.64	0.35	0.03	0.63
2035	7,441	1.13	0.72	0.39	0.02	0.64
2036	7,740	1.06	0.75	0.29	0.02	0.71
2037	7,937	1.01	0.58	0.38	0.05	0.57
2038	7,961	0.99	0.52	0.43	0.04	0.52
2039	7,256	1.15	0.49	0.59	0.08	0.42
2040	7,400	1.14	0.53	0.53	0.07	0.46
2041	7,819	1.05	0.51	0.48	0.06	0.49
2042	7,851	1.07	0.52	0.49	0.06	0.48
2043	5,956	1.07	0.68	0.34	0.05	0.64
2044	4,177	1.04	0.50	0.51	0.03	0.48
2045	3,732	1.04	0.67	0.31	0.06	0.65
2046	3,338	1.05	0.67	0.31	0.06	0.64
2047	3,453	1.00	0.69	0.26	0.05	0.69
2048	3,586	1.07	0.65	0.36	0.06	0.60
2049	3,655	0.99	0.52	0.41	0.06	0.53
2050	3,643	1.04	0.67	0.29	0.08	0.65
2051	2,636	0.92	0.66	0.14	0.12	0.71
Total	**136,173**	**1.08**	**0.62**	**0.41**	**0.05**	

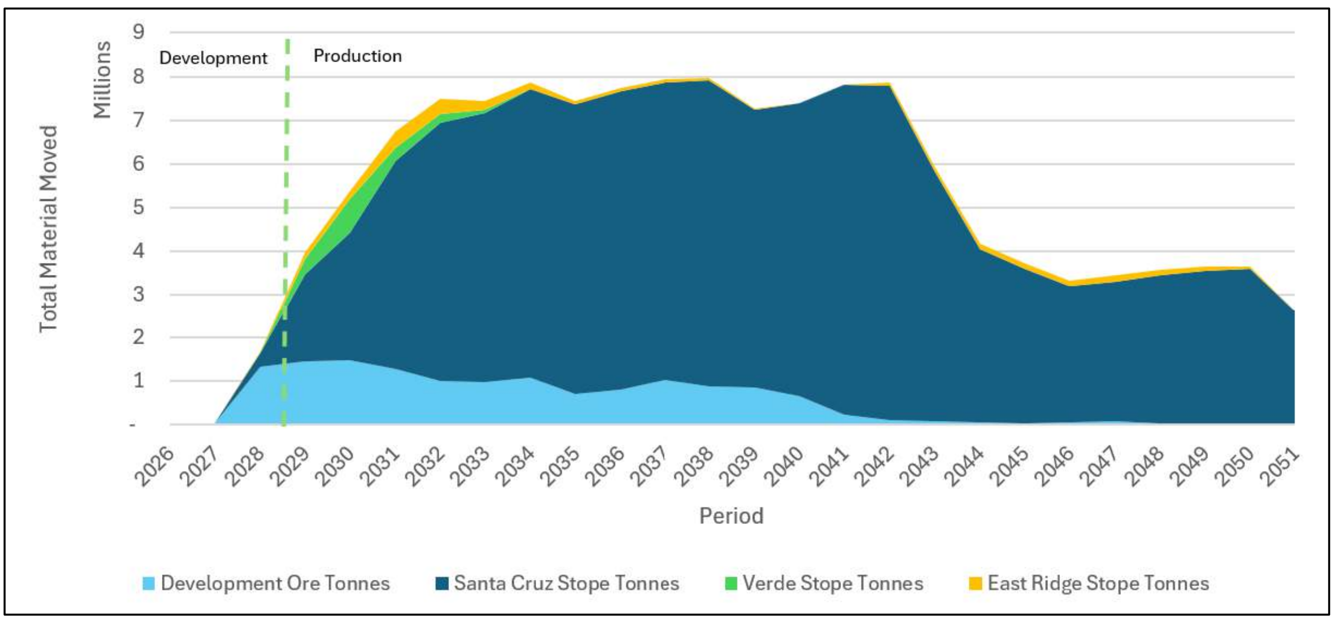
Figure 1-6 shows a tonne-grade graph for production and includes estimated waste rock. Figure 1-7 shows tonnes of material mined over the life-of-mine from the orebodies and development.

Figure 1-6: Santa Cruz Tonne – Grade Graph



Source: BBA, 2025.

Figure 1-7: Santa Cruz Tonnes of Mined Material



Source: BBA, 2025.

The injection of activated colloidal silica to reduce water flow around development excavations has been evaluated by Geosyntec for the project. During initial decline development where the twin declines pass through the upper portion of the Gila conglomerate and high hydraulic conductivity zones, standard ramp dewatering methods—in addition to methods like activated colloidal silica injection—support de-risking of early development.

Cemented paste backfill will be used as the primary backfill method to support the mining cycle at Santa Cruz Copper Project and facilitate the excavation of adjacent voids. Cemented rockfill is used for the initial nine months of stoping as production ramps up and spent ore becomes available from the on/off heap leach pad. Paste backfill from milled spent ore is used for the remainder of the life of mine. The spent ore requires conditioning prior to use in the backfill system to ensure suitable properties for paste backfill.

Grade control at the Santa Cruz mine will be enhanced through technology integrated into the materials handling system, such as cross-belt analyzers. Additionally, production hole sampling and onsite testing at the surface assay laboratory will be employed to reconcile results with the mine plan.

The underground ventilation system is designed to ensure efficient airflow and maintain appropriate working temperatures underground throughout the life of mine. Using a pull system with main exhaust fans, the system has a capacity of 940 m^3/s, supported by two declines and three primary ventilation shafts. All main fans are planned to be installed on the surface at East Ridge shaft and Santa Cruz shaft #1, while booster fans will be needed to regulate ventilation flow underground. Due to high ambient temperatures, mechanical cooling is provided by a central refrigeration plant with a peak capacity of 20 MW of refrigeration. The system features variable frequency drives and regulators to allow ventilation control underground, ensuring adequate air quality and efficient clearance of mine blast gases.

1.13 Recovery Methods

Process for the Santa Cruz Copper Project has been designed to cycle oxide and secondary sulfide ores through an on/off heap leach pad to produce a copper-rich pregnant leach solution (PLS) that will be processed in the onsite solvent extraction and electrowinning circuit for recovery.

The process designs were based on existing technologies and proven equipment. The process and refinery plant designs are based on the results of metallurgical testwork on the mineralized material at the Santa Cruz Copper Project. The designs are conventional.

The simplified overall process flow diagram is presented in Figure 1-8.

Ore produced from the underground mine will be processed using a heap leach and solvent extraction and electrowinning flowsheet to produce London Metal Exchange grade copper cathode. The heap leaching process will take place on an on/off pad. Spent ore will be removed from the leach pad and processed for paste backfill or stacked on a spent ore pile. Approximately 50% of the spent ore will be processed for use in paste backfill. Operations will be conducted 24 hours per day, 365 days per year for approximately 26 years at a design stacking rate of up to 22,000 t/d.

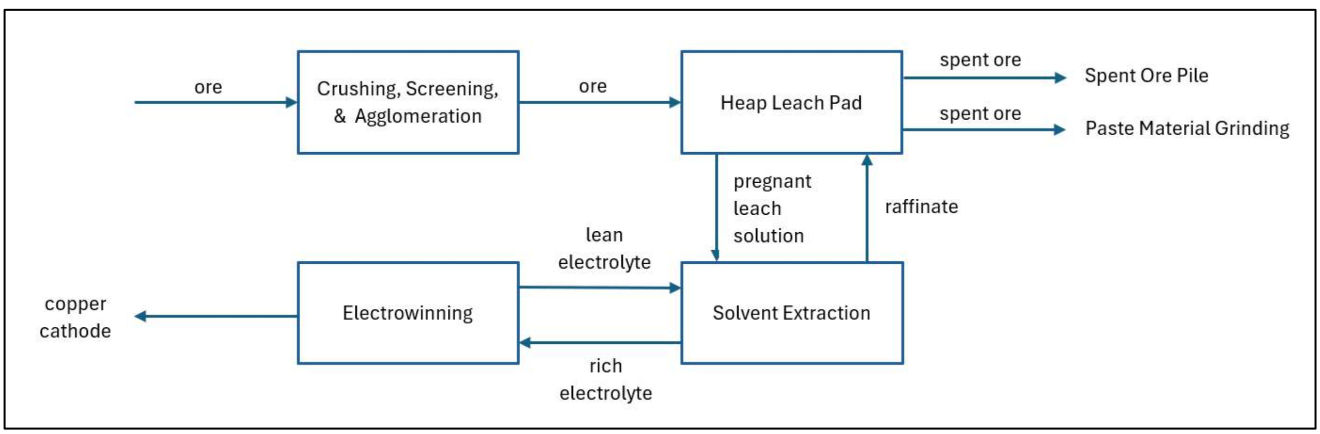
Run-of-mine ore will be delivered to surface at a diameter of less than 20 cm via the Railveyor. Ore from underground will be either fed, via a surge hopper, to crushing or diverted and conveyed to the coarse ore stockpile for future use. Fine ore (undersize from the crushing circuit) will be trucked to the agglomeration drums where sulfuric acid and sodium chloride can be added to facilitate agglomeration and leaching.

Crushed and agglomerated ore will be delivered to the leach pad via a combination of haul truck and overland conveying and stacking equipment. The final mobile conveyor will feed two self-propelled indexing conveyors in series, which in turn will feed the self-propelled mobile radial stacker. The cells will be 'retreat' stacked by the radial stacker in a 130-meter-wide, half-moon shape.

The on/off heap leach pad will be divided into seven cells, each 130 x 640 meters (Figure 1-8). There will be 25-meter-wide spacer strips between the cells effectively creating multiple leach pads and providing safety zones between the cells. The liner for the leach pad is comprised of a high-density polyethylene geomembrane overlaying a geosynthetic layer of clay overlaying prepared native foundation materials or grading fill.

Ore will be stacked at up to 22,000 t/d, and therefore it will take approximately 36 days to stack each cell at design production rate. Each of the cells will progress through cycles in sequence with each stacking cycle taking 36 days and an entire cell cycle taking 265 days.

Figure 1-8: Simplified Process Flowsheet



Source: Fluor, 2025.

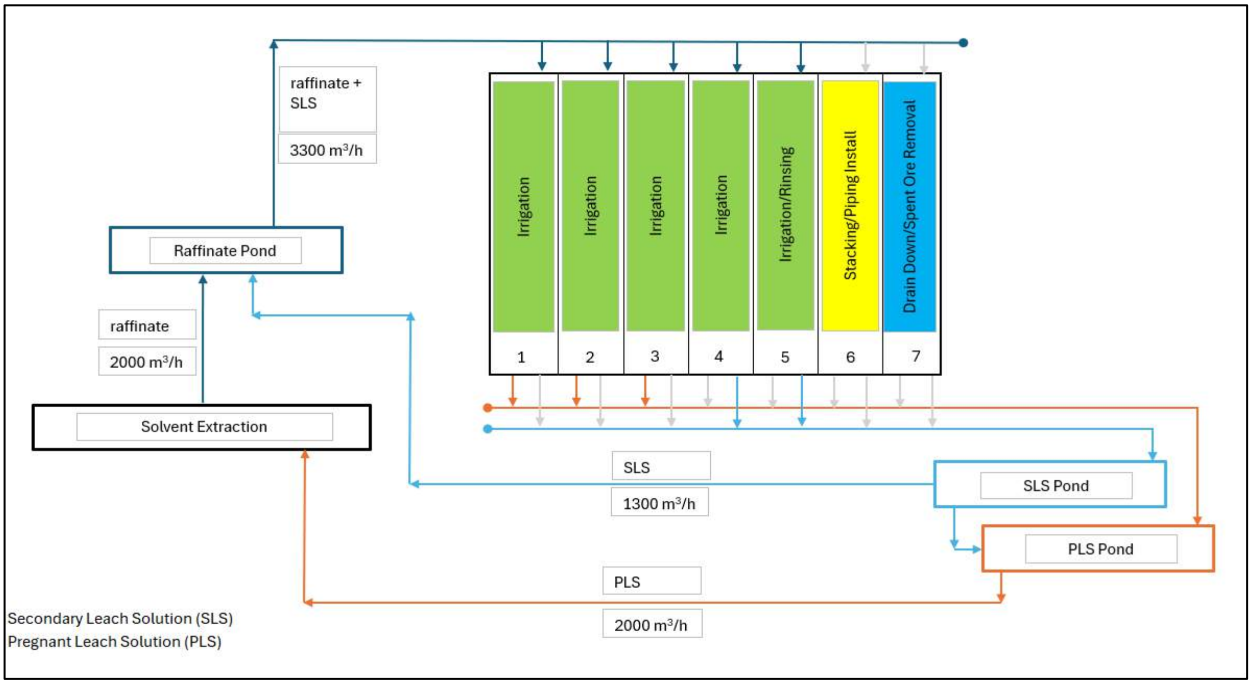
The cycles are as follows:

- stacking (36 days)
- piping connections and stacker relocation (2 days)
- irrigation five 36-day cycles (180 days)
- drain down, water rinse, drain down, and piping removal (30 days)

- spent ore removal (28 days)
- inspection and rehabilitation (2 days).

The cells will be irrigated with raffinate (depleted pregnant leach solution from the solution extraction process). Leach solution will report to the pregnant leach solution pond. At the end of the leach cycle, spent ore will be removed to the spent ore piles or the paste plant using loaders and trucks (Figure 1-9).

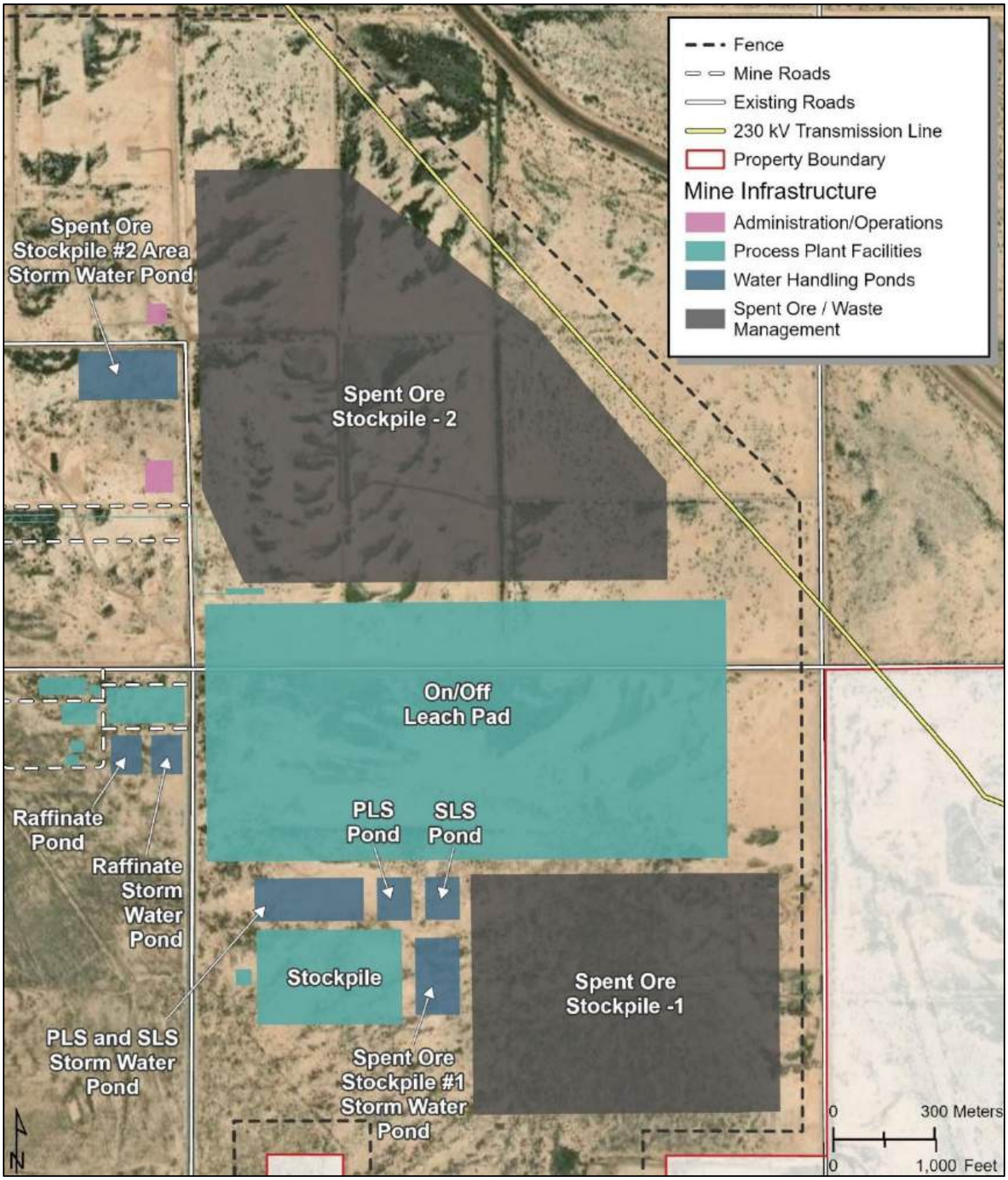
Figure 1-9: Seven-Cell Heap Leach and Solution Management



Source: Fluor, 2025.

Solution will be managed in a series of lined ponds, including the raffinate pond, raffinate storm water pond, pregnant leach solution pond, pregnant leach solution stormwater pond, secondary pregnant leach solution pond, and spent ore area stormwater ponds. The pond system has been sized to contain normal operating solutions and stormwater and to maintain separation between contact and non-contact water. The proposed locations of the solution management ponds are depicted in Figure 1-10.

Figure 1-10: Solution Management Ponds, Leach Pad, and Spent Ore Piles



Source: Fluor, 2025.

The solvent extraction circuit design comprises two parallel trains. Each train will consist of two extraction stages, two wash stages, and one strip stage.

The copper electrowinning tankhouse will comprise electrowinning cells with lead anodes and stainless-steel cathode blanks. Cathodes (copper electroplated onto stainless steel blanks) will be harvested manually using an overhead crane and bail. Cathodes will be stripped in an industry standard automated stripping machine and the washed blanks will be returned to the cells. Product cathode copper will be bundled, sampled, weighed, labeled, and shipped.

1.14 Infrastructure

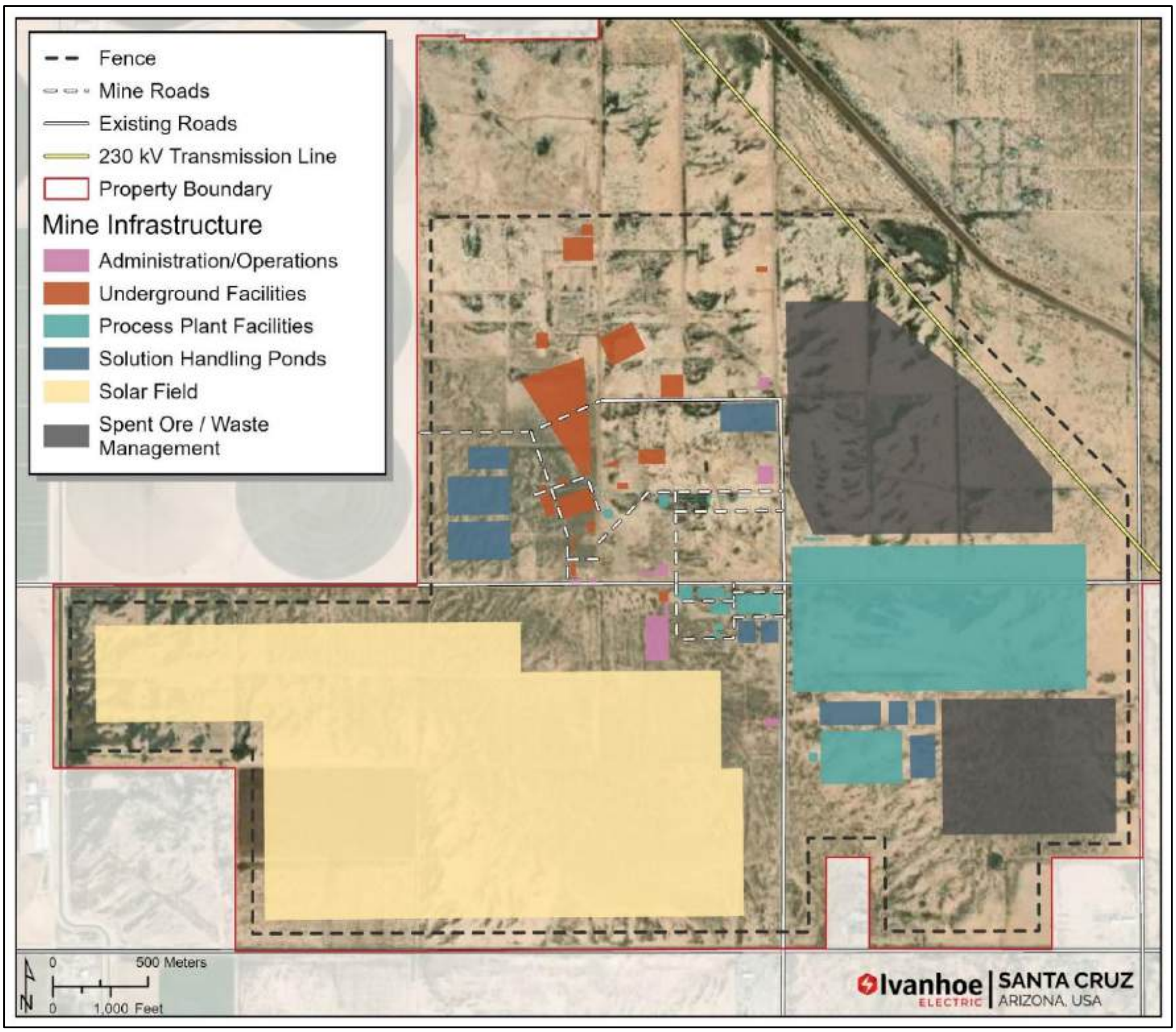
The Santa Cruz Copper Project site surface infrastructure comprises the following:

- an open excavation 60-meter-deep "box cut" ramp for accessing a twin decline portal to the underground mine workings
- three ventilation shafts to facilitate air flows to the underground mine workings
- primary mine ventilation fans, hardware, and ducting to control ventilation to the underground mine workings
- refrigeration plant to control temperatures in the underground mine workings
- ventilation bore for refrigeration
- rock crushing process plant and temporary stockpiles
- two spent ore facilities; north and south pads
- on/off leach pad with associated collection ponds and mobile stacking
- solution extraction and electrowinning process facilities
- mobile cement batch plant facility
- paste backfill batch facility
- maintenance, and warehouse facilities
- first aid/rescue building
- multiple various ancillary outbuildings
- entry security shack and various visitor and project parking spaces
- equipment delivery and open laydown/storage area
- multiple improved and unimproved access roads
- piping and pumping systems for process and water services

- explosives storage facility
- high-voltage transmission line and substation
- environmental monitoring facilities
- emergency power generation facility
- solar power and battery storage facility.

Key infrastructure locations are shown on Figure 1-11.

Figure 1-11: Santa Cruz Site Plan



Power for the project will be provided from a combination of onsite renewable energy supply and utility grid supply. The goal of the mine development is to achieve a minimum of 70% of the energy supply from renewable sources including onsite photovoltaic solar generation built by a third-party developer in conjunction with a Power Purchase Agreement (PPA) facilitated by local power provider Electrical District No. 3 (ED3) plus onsite battery energy storage system. The renewables facility was sized based on available area and to provide 40 MW of continuous power annually with over 90% load coverage.

The proposed onsite battery energy storage system consists of a lithium-ion system rated for 140 MW / 560 MWh. There is an additional opportunity to utilize the emerging vanadium redox flow battery technology. A percentage of the lithium-ion battery energy storage system could be replaced by a vanadium redox flow battery system. VRB Energy USA Inc. is the license holder of vanadium redox battery technology in the United States and is a wholly owned subsidiary of VRB Energy Inc., a subsidiary that is 90%-owned and controlled by Ivanhoe Electric.

The Santa Cruz Copper Project will have an estimated operating load of 78.7 MW and a forecast annual consumption of between 580,000 and 690,000 MWh during peak production years.

Water supply for process operations will be sourced from existing grandfathered Type I non-irrigation rights and mine dewatering. Potable water will be trucked in from the city. Trucked water will be stored in a tank to service the surface facilities.

Water management operations include systems of underground dewatering, water collection and conveyance facilities, water storage, water use, and various management options for discharge of excess water. Water not used for underground mining, the paste backfill plant, the process plant, and the on/off heap leach pad can be pumped to storage reservoirs. Rapid infiltration basins are used to capture non-contact stormwater runoff to prevent stormwater from coming into contact with mining operations.

Testwork confirmed the extracted groundwater quality will be acceptable for irrigation use when applied to suitable crops (e.g., cotton, alfalfa, pasture grasses) commonly grown in the vicinity of the project. The water distribution system is designed to distribute water to agricultural end-users, without treatment, and includes a side-stream water treatment process that may be used if the extracted groundwater does not meet the standards defined by end-users.

Onsite accommodations facilities are neither required nor planned. Personnel will reside in nearby settlements including Casa Grande, Maricopa, the Phoenix metropolitan area, and Tucson, and will commute to site by vehicle. Parking, security, fencing, and a gatehouse are included in the design.

The infrastructure buildings to be built on site include explosive magazine storage; cap magazine storage; core shack; process laboratory; security and main gate; fueling station; mine, plant operations building, changehouse, and mine dry; first aid and emergency rescue facilities; mining facility warehouse.

1.15 Market Studies & Contracts

Copper is a globally traded commodity that has established benchmark pricing in the form of exchanges such as the London Metals Exchange or Commodity Exchange Inc. The Santa Cruz Copper Project aims to produce copper cathode. Ivanhoe Electric plans to sell the copper in the United States.

Refined copper cathodes will be sold with reference to the prices on the Commodity Exchange or London Metals Exchange at an agreed-upon quotational period. An additional premium to the price will be negotiated with potential buyers. Factors affecting the premium will include the shape and chemical specification of the cathode, together with the geographical location of the delivery point in relation to where the cathode is going to be consumed.

This study uses a base copper price of $4.25 per pound, which is based on a review of the one-, three-, and five-year trailing averages, as well as consensus forecasts from major banks and a market study completed by Ocean Partners for Ivanhoe Electric.

Due to the shape, chemical composition, and origin point of the cathode, it is expected that a premium to the price will be negotiated with potential buyers that is marginally above the historical average. For financial modeling purposes, this premium is estimated at $0.14 per pound ($300 per tonne) (Ocean Partners, 2025).

Table 1-9 summarizes the one-, three-, and five-year trailing price for copper using the LME Grade A monthly average as well as consensus forecasts from the major banks (CIBC, 2025) and Ocean Partners (2025).

Table 1-9: Commodity Price Summary

	LME Trailing Average ($/lb)			Forecast ($/lb)				
	1-Year	3-Year	5-Year	2026	2027	2028	2029	Long-term
BBA[1]	4.22	3.96	3.95					
Banks Forecast[2]				4.36	4.52	4.65		4.31
Ocean Partners[3]				4.31	4.54	4.76	4.65	4.31

Notes: [1]BBA, Metal Pricing_R00, June 2025. [2]CIBC Consensus Commodity Prices – June 2025. [3]Ocean Partners, April 2025. LME = London Metals Exchange.

At this time, no sales agreements or contracts have been executed with vendors, contractors, or manufacturers.

1.16 Environmental, Closure & Permitting

Environmental studies have included examination of flora and fauna, threatened and endangered species, migratory birds, surface water mapping, cultural heritage, air quality, carbon intensity, surface water monitoring, groundwater monitoring, water quality, material characterization, and mine material environmental behavior.

Much of the property has been previously disturbed from its natural state. These disturbances include flood control features, such as the canal identified as the Santa Cruz Wash Canal, paved and unpaved roads, and agricultural practices. These disturbances have removed all potential natural surface water features that may have existed in this area. The only features within the property that possess characteristics of an ordinary high-water mark and may be potential Waters of the United States are the north branch of the Santa Cruz Wash and the constructed Santa Cruz Wash Canal.

The project is committed to responsible environmental management, with a particular focus on minimizing air quality impacts. The project is located within the West Pinal County PM_{10} (particulate matter emissions with a diameter less than 10 microns) nonattainment area. Accordingly, the project will take specific measures to control and effectively mitigate dust. These measures will be in alignment with both local and state requirements.

A groundwater monitoring program to continue collecting baseline water quality data was developed and implemented in October 2023. The objective of the monitoring plan is to establish a current baseline water quality profile for the site and help inform Ivanhoe Electric on best management practices for groundwater monitoring during and after mining operations.

The major permits for the project will require state, county, and local authorizations. Several of these permits have been issued for exploration activities and are in the process of being amended for project construction activities. Other permits for construction activities are in preparation or have been submitted. The remaining permit applications for construction and operations will be prepared and submitted as sufficient design and engineering information become available.

The eventual closure and reclamation of the Santa Cruz Copper Project will be directed and regulated under two separate but interconnected regulatory programs in Arizona: the Arizona State Mine Inspector and the Arizona Department of Environmental Quality. Both programs are well-established and statutes and rules are subject to licensing timeframes.

Once the facility has been sufficiently designed to advance to mine development and operation, Ivanhoe Electric will need to apply for and receive an Aquifer Protection Permit from the Arizona Department of Environmental Quality and submit and receive approval from the Arizona State Mine Inspector for a project reclamation plan. The closure approach and related closure cost estimates must be submitted following approval and before facility construction and operation.

Although an operational mined land reclamation plan has not yet been developed for the project, a preliminary closure cost estimate has been developed. Based on the conceptual design plan in this report, the closure costs for the Santa Cruz Copper Project are estimated at $35 million.

In alignment with Ivanhoe Electric's community engagement and partnership standards, the project is being developed with a well-defined strategy to establish and uphold the support of the surrounding communities. At present, the project has initiated outreach with Native American communities that have ancestral ties to the land. In addition, community outreach with local stakeholders, and community involvement and potential partnerships are actively being pursued and/or assessed.

1.17 Capital & Operating Cost Estimates

1.17.1 Capital Cost Estimate

For the Santa Cruz Copper Project, capital and operating costs were determined based on the mine plan and SX/EW plant design. The estimation process incorporated assessments of material and labor requirements derived from the design, analysis of the process flowsheet, and anticipated consumption of power and supplies.

Cost estimation is based on a combination of vendor and consumable quotes and an internal database. Approximately 80% of the capital estimate is based on detailed quotes with estimated labor installation. For the purposes of this study, initial capital expenditure is assumed to be costs incurred in 2026, 2027, and 2028. By the end of 2028, ore production from stopes has been established and the SX/EW plant has been installed to begin copper production. Additional mine and plant capital costs are incurred from 2029 and 2050 to continue meeting mine ramp up and production demands and are included in sustaining capital costs.

Total life-of-mine capital costs are $2.36 billion: $1.24 billion in initial capital and $1.28 billion in sustaining capital. Capital costs are summarized in Table 1-10.

Table 1-10: Estimated Total Capital Cost

Capital Costs Summary	Initial Cost ($M)	Sustaining Cost ($M)	Total LOM Capital Cost ($M)
Pre-production Mining Costs	89		89
Mining	688	1,193	1,881
Process	240	65	305
Surface Infrastructure	61	8	69
Indirects	46	7	53
EPCM	64	2	66
Contingency	48	5	53
Total Initial Capital	**1,236**		
Total Sustaining Capital		**1,281**	
Reclamation and Closure Costs*	2	-163	-161
Total Life-of-Mine Capital Costs	**1,238**	**1,118**	**2,355**

Note: Closure costs include land sales at the end of life of mine. Totals may not sum due to rounding.

1.17.2 Operating Cost Estimate

Total life-of-mine operating costs are $3.95 billion, as summarized in Table 1-11.

Table 1-11: Estimated Operating Costs

Category	$M Total	$/t Ore Processed	$/lb Copper Produced
Mining			
Consumables	1,239	9.22	0.41
Mobile Equipment	432	3.24	0.14
Haulage	39	0.29	0.01
Labor	626	4.73	0.21
Power	149	1.19	0.05
Mine Services and Indirect	55	0.40	0.02
Subtotal	**2,538**	**19.07**	**0.85**
SX/EW Plant and Infrastructure			
Consumables	276	2.03	0.09
Hauling and Mobile Equipment	177	1.30	0.06
Labor	185	1.36	0.06
Power	300	2.20	0.10
Maintenance	58	0.43	0.02
Subtotal	**996**	**7.31**	**0.33**
G&A	414	3.04	0.14
Total	**3,948**	**29.42**	**1.32**

Note: Totals may not sum due to rounding.

1.18 Economic Analysis

Based on the cash flow model, the after-tax financial model resulted in an IRR of 20.0% and an NPV of $1.4 billion using an 8% discount rate. The after-tax payback period, after start of operations, is 4.4 years. The pre-tax base case financial model resulted in an IRR of 22.0% and an NPV of $1.9 billion using an 8% discount rate.

The Santa Cruz Copper Project contemplates average annual copper cathode production of approximately 72,000 tonnes for the first 15 years of copper production and the average annual production is approximately 35,000 tonnes for the remaining 8 years of the life of mine.

The total life of mine is 23 years at an average C1 cash cost of $1.32 per pound of copper and sustaining cash costs of $2.01 per pound of copper.

A variable cut-off grade strategy optimizes recovery in the early years and maximizes mine life in the later years of the mine plan.

The financial analysis summary is shown in Table 1-12.

Table 1-12: Estimated Operating Costs

Description	Units	Life of Mine	First 15 Years
Production Data			
Mine Life	years	23	15
Reserve Tonnes	Mt	136	106
Copper Grade	%	1.08	1.10
Daily Throughput	t/d	15,000	20,000
Annual Copper Production	t/y	56,685	72,186
Total Copper Cathode Produced	kt	1,360	1,083
Recovery	%	92.2	92.4
Capital Costs			
Initial Capital	$M	1,236	-
Sustaining Capital	$M	1,281	1,176
Unit Costs			
Mining Cost	$/t processed	19.07	19.55
Processing Cost	$/t processed	7.31	7.02
General and Administrative Cost	$/t processed	3.04	3.03
Royalties	$/t processed	5.26	5.56
Total Operating Cost	$/t processed	34.68	35.16
Operating + Sustaining Cost	$/t processed	43.98	46.23
C1 Cash Cost	$/lb of copper	1.32	1.29
All-in-Sustaining Cost	$/lb of copper	2.01	1.99
Financial Analysis			
Copper Price	$/lb	4.25	4.25
Domestic Cathode Premium[1]	$/lb	0.14	0.14
Pre-Tax Cashflow	$M	6,148	4,501
Pre-Tax Net Present Value (8%)	$M	1,880	-
Pre-Tax Internal Rate of Return	%	22.0	-
After-Tax Cashflow	$M	4,961	3,637
After-Tax Net Present Value (8%)	$M	1,376	-
After-Tax Internal Rate of Return	%	20.0	-
After-Tax Payback Period	year	4.4	

[1] See Section 16 for a discussion on copper premium.

1.19 Risks

The risks associated with the Santa Cruz Copper Project are generally those expected with underground mining operations and include the accuracy of the mineral resource and mineral reserve models, and/or operational impacts.

In addition, the noted factors that may affect the mineral resource and mineral reserve estimates include:

- The capital cost estimates at mines under development may increase as construction progresses. This may negatively affect the economic analysis that supports the mineral reserve estimates.
- The life-of-mine plan assumes that the project can be permitted based on envisaged timelines. If the permitting schedule is delayed, this could impact costs and proposed production.
- The long-term reclamation and mitigation of the Santa Cruz Copper Project are subject to assumptions as to closure timeframes and closure cost estimates. If these cannot be met, there is a risk to the costs and timing.
- Climate changes could impact operating costs and ability to operate.
- Political risk from challenges to the current state or federal mining laws.

1.20 Opportunities

Potential opportunities for the project include the following:

- Upgrade of some or all the inferred mineral resources to higher-confidence categories, with additional drilling and supporting studies, such that this higher confidence material could potentially be converted to mineral reserves.
- Optimizing the mine plan based upon market conditions. At present, the production stopes are dictated by their copper content based upon a flat long term copper price.
- Completing additional underground core diamond drilling and development within the ore, there could be a reason to increase the width and/or height of the stopes, if geotechnical factors allow.
- Ivanhoe Electric holds a significant ground package that retains significant exploration potential for new operations proximal to the current mineral resource and mineral reserve estimates, with the support of additional studies.
- Ongoing leach testwork will focus on optimizing leach conditions to maximize copper recovery from chalcocite and reduce heap leach pad capital costs and SX circuit capital costs.
- Simplification and optimization of the ore crushing circuit should provide for an opportunity to reduce plant capital costs.
- Use of two decades of South American knowledge and expertise at applying chloride-assisted leach technology to inform construction of the on/off heap leach pad.

- The low elevation profile of the heap leach pad (6-meter lift on/off pad) and the flat topographic terrain should provide cost saving opportunities to use low head type pumps for pregnant leach solution, raffinate, and organic pumping that can use less expensive materials of construction for pumps like fiberglass, bromo-butyl rubber-lined carbon steel (not applicable for organic) and HDPE compared to exotic metal pumps resistant to this corrosion environment such as tantalum and titanium.
- There is potential for a considerable positive impact to the operating cost estimate by optimizing the paste backfill recipe and reducing the binder requirements.
- There is potential to increase material handling and throughput, further optimizing the mine plan.

1.21 Conclusions

Under the assumptions presented in this report, the Santa Cruz Copper Project consists of mineral resource and mineral reserve estimates that support a positive cash flow.

1.22 Recommendations

The recommended work programs to advance detailed engineering, operational readiness, permitting, and critical long-lead items total $22.4 million. The budget for recommended work is summarized in Table 1-13.

Table 1-13: Proposed Reagent & Process Consumables

Discipline	Cost ($M)
Permitting	1.4
Environmental Testing	1.0
Detailed Engineering – Surface & Underground	9.1
Long-Lead Items	3.7
Project Support	4.2
Contingency	3.0
Total	**22.4**

2 Introduction

2.1 Registrant for Whom the Report was Prepared

This technical report summary was prepared for Ivanhoe Electric, Inc. (Ivanhoe Electric) on the Santa Cruz Copper Project located in Arizona, United States (Figure 3-1).

The report was prepared by Fluor Canada Ltd. (Fluor), BBA USA Inc. (BBA), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell), Geosyntec Consultants, Inc. (Geosyntec), Haley & Aldrich, Inc. (H&A), INTERA Incorporated (INTERA), KCB Consultants Ltd. (KCB), Life Cycle Geo, LLC (LCG), Met Engineering, LLC (Met Engineering), Paterson & Cooke USA, Ltd. (P&C), Stantec Consulting Services Inc. (Stantec), and Tetra Tech, Inc. (Tetra Tech). None of the qualified persons is affiliated with the Company or any other entity that has an ownership, royalty, or other interest in the property.

2.2 Purpose of the Report

This report was prepared to be attached as an exhibit to support mineral property disclosure, including mineral resource estimates and mineral reserve estimates, for the Santa Cruz Copper Project in certain of Ivanhoe Electric's filings with the Securities and Exchange Commission.

Mineral resources are reported for the Santa Cruz, East Ridge, and Texaco deposits. Mineral reserves are reported for the Santa Cruz and East Ridge deposits.

2.3 Terms of Reference

Unless otherwise indicated, all financial values are reported in United States dollars (currency abbreviation: USD; currency symbol: US$) including all operating costs, capital costs, cash flows, taxes, revenues, expenses, and overhead distributions.

All capital and operating cost estimates meet the requirements of S-K 1300 and AACE Class 3, with an expected accuracy of -20% to +25%. A contingency of <15% has been applied to capital cost estimates.

All pricing is considered in Q1 2025 dollars.

Unless otherwise indicated, capital and operating costs do not include tariffs or escalations.

Totals may not sum due to rounding.

This report uses U.S. English. Units may be in either metric or US customary units as identified in the text. A list of abbreviations and units of measure is provided in Section 24.

Mineral resources and mineral reserves are reported using the definitions in Subpart 229.1300 – Disclosure by Registrants Engaged in Mining Operations in Regulation S-K 1300 (S-K1300).

This report contains forward-looking statements; refer to the note regarding forward-looking statements at the front of the report.

2.4 Report Date

Information in the report is current as of June 23, 2025.

2.5 Previous Technical Report Summaries

This technical report summary supersedes the previous technical report summary, “S-K 1300 Initial Assessment & Technical Report Summary” (September 2023).

2.6 Qualified Persons

This report was authored and compiled by third-party firms who are mining experts who meet the criteria for such according to 17 CFR § 229.1302(b)(1). Table 2-1 lists the contributions of each third-party firm.

In addition to their individual chapters, the third-party firms also contributed to Section 1, Executive Summary; Section 2.6, Qualified Persons, Section 2.7, Site Visits & Scope of Personal Inspection, Section 22, Interpretation and Conclusions; Section 23, Recommendations; and Section 24, References, according to their area of expertise.

A portion of the information was provided by the registrant, Ivanhoe Electric, as set forth in Section 25. The third-party firms have relied on the registrant for the information specified in Section 25.

2.7 Site Visits & Scope of Personal Inspection

Consulting QPs and support staff visited the project site. The scope of inspection by each discipline area is summarized in Table 2-2.

2.8 Information Sources

The reports and documents listed in Sections 24 and 25 were used to support the preparation of the report.

Table 2-1: Qualified Person Contributions

Legal Company Name	Abbreviation	Report Sections and Subsection Responsibility
Fluor Canada Ltd.	Fluor	1.1, 1.2, 1.13, 1.14, 1.17 to 1.20, 1.22, 2.1 to 2.8, 14.1 to 14.11, 15.1, 15.2, 18.1, 18.1.2, 18.2, 18.2.2, 18.2.3, 18.2.4, 18.3, 18.3.2, 18.3.3, 18.4, 21, 22.1, 22.12, 22.13, 22.16, 22.17, 22.19, 22.20, 23.1, 23.4, 23.6, 24, 25
BBA USA Inc.	BBA	1.1 to 1.8, 1.10 to 1.12, 1.15, 1.17 to 1.22, 2.3, 2.4, 2.6, 2.7, 2.8, 3.1 to 3.7, 4.1, 4.2, 4.3, 4.4, 5.1, 6.1 to 6.4, 7.1, 7.2, 7.3, 8.1 to 8.6, 9.1 to 9.9, 11.1 to 11.14, 12.1 to 12.5, 13.1 to 13.11, 16.1, 16.2, 16.3, 18.1, 18.1.1, 18.2, 18.2.1, 18.3, 18.3.1, 18.3.3, 19.1 to 19.4, 20, 21, 22.1, 22.2, 22.3, 22.4, 22.5, 22.6, 22.7, 22.9, 22.10, 22.11, 22.14, 22.16, 22.17, 22.18, 22.19, 22.20, 23.1, 23.4, 24, 25
Burns & McDonnell Engineering Company, Inc.	Burns & McDonnell	1.1, 1.2, 1.14, 1.22, 2.1 to 2.4, 2.6, 2.7, 2.8, 15.1.4.1, 15.2, 21, 22.1, 22.13, 23.1, 23.5, 24, 25
Geosyntec Consultants, Inc.	Geosyntec	1.1, 1.2, 1.12, 2.1, 2.2, 2.3, 2.4, 2.6, 2.7, 2.8, 13.7.2, 15.1.7, 21, 22.1, 22.11, 22.13, 23.1, 23.4, 24, 25
Haley & Aldrich, Inc.	H&A	1.1, 1.2, 1.16, 1.19, 1.20, 1.22, 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 17.4, 17.5, 17.6, 17.8, 21, 22.1, 22.15, 22.19, 23.1, 23.3, 24, 25
INTERA Incorporated	INTERA	1.1, 1.2, 1.7, 1.22, 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 7.4, 21, 22.1, 22.6, 22.19, 23.1, 23.4, 24, 25
KCB Consultants Ltd.	KCB	1.1, 1.2, 1.13, 1.19, 1.20, 1.22, 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 14.6.1, 14.6.2, 14.6.4, 21, 22.1, 22.12, 23.1, 23.4, 24, 25
Life Cycle Geo, LLC	LCG	1.1, 1.2, 1.16, 1.19, 1.20, 1.22, 2.1, 2.2, 2.3 to 2.8, 17.1.8, 17.3, 21, 22.1, 22,15, 22.19, 22.20, 23.1, 23.3, 24, 25
Met Engineering, LLC	Met Engineering	1.1, 1.2, 1.9, 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 10.1 to 10.5, 21, 22.1, 22.8, 23.1, 23.4, 24, 25
Paterson & Cooke USA, Ltd.	P&C	1.1, 1.2, 1.12, 1.22, 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 13.11.3, 18.3.2.2, 21, 22.1, 22.11, 22.19, 23.1, 23.4, 24, 25
Stantec Consulting Services Inc.	Stantec	1.1, 1.2, 1.12, 2.1, 2.2, 2.3, 2.5 to 2.8, 13.11.5, 21, 22.1, 22.11, 23.1, 22.4, 24, 25
Tetra Tech, Inc.	Tetra Tech	1.1, 1.2, 1.16, 1.19, 1.20, 1.22, 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 17.1, 17.2, 17.4, 17.5, 17.7, 21, 22.1, 22.15, 22.19, 23.1, 23.2, 23.3, 24, 25

Table 2-2: Site Visits

Area of Investigation	Company	Site Visit Date	Scope of Personal Inspection
Mineral Resource Estimates; Mineral Reserve Estimates; Geology; Geotechnical; Mine Planning; Underground Infrastructure	BBA	February 27, 2024 April 22 to 23, 2024 July 16 to 17, 2024 August 22 to 23, 2024	Reviewed past work, active work, active drill sites, geology controls, data capture processes, sample chain of custody, and drill logs and core. Verified data entry process and collar locations.
Process; Infrastructure	Fluor	August 13, 2024	Site tour and inspected proposed sites for processing facilities and surface infrastructure.
Metallurgical Testwork; Mineral Recovery; Infrastructure	Met Engineering	February 23, 2023	Reviewed core and inspected proposed sites for processing facilities.
Spent Ore Facility and Heap Leach Pad; Foundation Conditions – Geotechnical	KCB	July 13, 2023 January 13, 2024	Visited locations within the footprints of these structures for visual observation. Observed drilling and recovered drill core.
Hydrogeology	INTERA	August 10, 2023 November 5, 2023 May 27 to 29, 2024	Site tour, reviewed core and geology, hydrogeology drilling and testing kick-off, reviewed and developed the site hydrogeology model and discussed the groundwater model development.
Environmental	Tetra Tech	August 24, 2023	Site examination, visited core facility, and reviewed environmental components of the proposed project.
Geochemistry and Water Quality	LCG	July 13, 2022	Site examination, visited core facility, reviewed core and associated environmental and geochemical properties, discussed historical water quality and received project overview.
Closure	H&A	August 23, 2023	Site examination, visited core facility, overview of the project and discussed reclamation and closure components.
Power Sources	Burns & McDonnell	April 28, 2025	Viewed proposed location for renewables campus.
Ventilation	Stantec	February 28, 2025	Reviewed general site layout and topography.
Backfill	P&C	February 20, 2025	Site tour to proposed boxcut and paste plant locations. Visited nearby sources of potential paste feed sources.
Water Management	Geosyntec	November 5, 2024	Site tour and discussion of water management options.

3 Property Description

3.1 Location

The Santa Cruz Copper Project is located 11 km west of Casa Grande, Arizona, approximately 92 km south of Phoenix (Figure 1-1). It is approximately 9 km southwest of the Sacaton deposit, which was previously mined by ASARCO. The project includes a cluster of deposits and exploration areas that measure approximately 11 km long by 1.6 km wide.

Project centroid coordinates are at approximately -111.88212, 32.89319 (WGS84) in Township 6 S, Range 4 E, Section 24, NE Quarter. The Santa Cruz exploration area, including the Santa Cruz Copper Project, covers 82.37 km^2.

3.2 Property & Mineral Title

BBA has not independently verified the following information which is in the public domain and have sourced the data from Ivanhoe Electric including Hall (2025) and LaLonde (2025).

3.2.1 Fee Simple

“Fee simple” is the most common and absolute type of property ownership in the United States. By owning a fee simple estate, the property owner has control over the surface, subsurface, and mineral rights, as well as the rights to the air above the property. These rights can be split to different owners. Each of these rights (or all of them together) can then be sold, gifted, or bequeathed to another individual or entity by the property owner. No fees or renewals are due on owned fee simple land, only property taxes.

3.2.2 Lode Mining Claims

Unpatented Mining Lode Claims Federal (30 USC and 43 CFR) laws concerning mining claims on Federal land are based on an 1872 Federal law titled “An Act to Promote the Development of Mineral Resources of the United States.” Mining claim procedures still are based on this law, but the original scope of the law has been reduced by several legislative changes.

Most details regarding procedures for locating claims on Federal lands have been left to individual states, providing that state laws do not conflict with Federal laws (30 USC 28; 43 CFR 3831.1).

Mineral deposits are located either by lode or placer claims (43 CFR 3840). The 1872 Federal law requires a lode claim for “veins or lodes of quartz or other rock in place” (30 USC 26; 43 CFR 3841.1), and a placer claim for all “forms of deposit, excepting veins of quartz or other rock in place” (30 USC 35). The maximum size of a lode claim is 1,500 ft (457 m) in length and 600 ft (183 m) in width, whereas an individual or company can locate a placer claim as much as 20 acres (8 ha) in area.

Ivanhoe Electric controls 277 Unpatented Mining Lode Claims as part of the Santa Cruz property package. Unpatented Mining Lode Claims have annual maintenance fee requirements due on or before September 1st of every calendar year. Unpatented Mining Lode Claims give the claimant exclusive rights to the federal mineral estate on which they are located. All claims are currently in good standing and a table of claims is provided in Table 3-2 in Section 3.3.1.

3.2.3 Arizona State Land Department Mineral Exploration Permits

Mineral exploration permits are for lands held by Arizona State Trust and managed by Arizona State Land Department. Revenue generated goes to several public entities including kindergarten to grade 12 public education and state universities.

Mineral exploration permits are granted for five-year maximum term, provided annual renewals applications and fees are submitted. The permit holder can submit for a new mineral exploration permit at the end of the five-year term and will be “first in line” for another five-year mineral exploration permit term. Permit grants the holder the exclusive right to explore for minerals during the permit term. A permit does NOT grant exclusive access to surface, nor the right to mine (this would occur via a land auction or a mineral lease).

Arizona State Land Department (ASLD) mining exploration permits are held for five years and subject to annual renewal fees, which include $500 per permit plus $1 per acre rent plus work expenditures or an in-lieu fee of $10 per acre for Years 1 and 2 and $20 per acre for Years 3 through 5. If additional time beyond five years is required to continue characterization of an ore deposit, a new application for a mineral exploration permit must be submitted prior to the expiry of the permit.

3.2.4 Stock-Raising Homestead Act

The *Stock-Raising Homestead Act* of 1916 provided settlers patented surface ownership of federal lands for ranching purposes. Unlike previous homestead acts the 1916 Act separated surface rights from subsurface rights, resulting in split estates.

Some of Ivanhoe Electric’s 277 Unpatented Mining Lode Claims are located on the federal mineral rights associated with certain Stock-Raising Homestead Act Lands.

3.3 Ownership

The Santa Cruz Copper Project lies primarily on fee simple land. Surface and mineral titles, and associated rights, were acquired by Ivanhoe Electric as purchases and options on private parcels.

In 2019, Ivanhoe Electric’s predecessor, High Power Exploration Inc. (HPX), entered into an agreement with Central Arizona Resources, Ltd. (“CAR”) to access historical data, and stake 238 unpatented mining lode claims on the area around, and including, the Santa Cruz Copper Project. In 2021, Ivanhoe Electric was formed from a split from HPX, and then, through CAR, signed an Option Agreement with D.R. Horton Phoenix East Construction, Inc. (DRH) for the option to purchase the mineral, certain surface parcels, 39 unpatented claims on split estate land, and associated rights for the Santa Cruz Copper Project. Also in 2021, Ivanhoe

Electric, through CAR, signed a Surface Use Agreement with Legends Property, LLC (Legends) to enable access and exploration on the lands encompassed by the DRH Option. In 2022, Ivanhoe Electric consolidated 100% ownership of the project from CAR by assigning the agreements to its wholly-owned subsidiary, Mesa Cobre Land Holding Corp. (Mesa Cobre). In 2023, Legends formed Wolff-Harvard Ventures, LP ("Wolff-Harvard") as the party of title to the land.

3.3.1 Mineral Title Ownership

In 2021, Ivanhoe Electric acquired 238 unpatented mining lode claims from CAR. In addition, Ivanhoe Electric acquired fee simple mineral title for two further land parcels: "CG100" and "Skull Valley". In 2022, Ivanhoe Electric acquired the 20-acre "Skull Valley" property from Skull Valley Capital, LLC in the southeastern area of the project and a 100.33-acre "CG100" from CG 100 Land Partners LLC in the northeastern area of project.

In 2023, Ivanhoe Electric acquired 16 Arizona State Land Department mineral exploration permits covering 27.95 km^2 (~6,900 acres) of state mineral land with exploration potential. The permits expire at various dates ranging from November 2025 to May 2030.

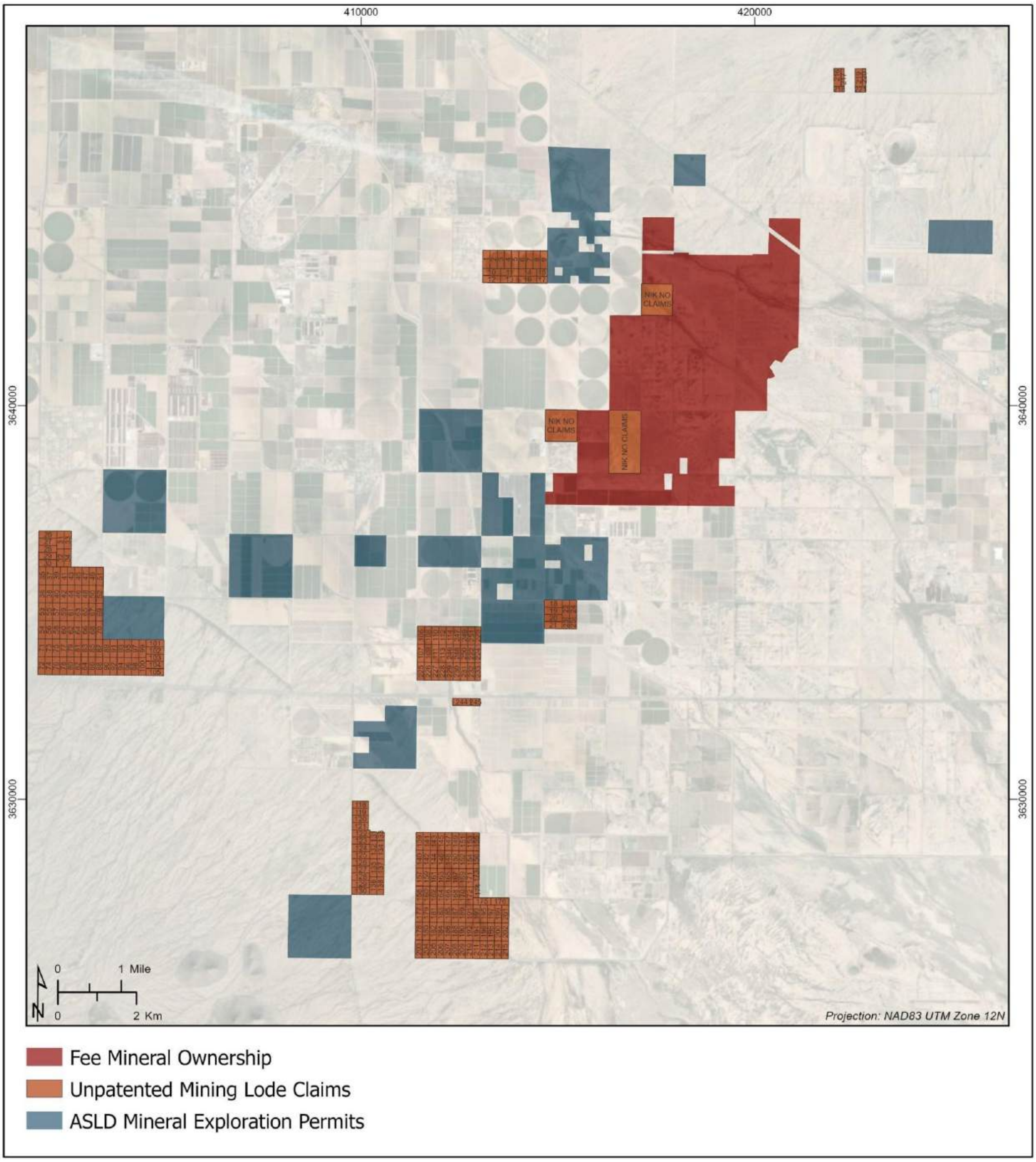
In 2024, Ivanhoe Electric exercised the agreement with DRH, granting Ivanhoe Electric, through Mesa Cobre, 100% of the mineral title for 26.0 km^2 (~6,425 acres) of fee simple mineral estate, 39 federal unpatented mining lode claims, and 2.6 km^2 (~642.5 acres) of Stock-Raising Homestead Act lands.

Unpatented mineral lode claims renew annually on September 1 with a fee of $200 per claim. Mineral title is summarized in Table 3-1 and shown on Figure 3-1. Claims are listed in Table 3-2.

Table 3-1: Summary of Ivanhoe Electric's Mineral Title

Land Designation	Area (km^2)
Fee Simple Mineral Ownership	25.98
Unpatented Mining Lode Claims (277 claims)	25.92
Arizona State Land Department Mineral Exploration Permits (16 permits)	30.47

Figure 3-1: Santa Cruz Copper Project Mineral Control Map



Source: Ivanhoe Electric, 2025.

Table 3-2: Unpatented Mining Lode Claims

Serial Number	Lead File Number	Legacy Serial Number	Legacy Lead File Number	Claim Name	Case Disposition	Claim Type	Next Payment Due Date
AZ101424918	AZ101424918	AMC47328	AMC47300	CHAVO NO 55	ACTIVE	LODE CLAIM	2025-09-02
AZ101339292	AZ101339292	AMC47333	AMC47300	NIK NO 5	ACTIVE	LODE CLAIM	2025-09-02
AZ101421434	AZ101421434	AMC47334	AMC47300	NIK NO 6	ACTIVE	LODE CLAIM	2025-09-02
AZ101315626	AZ101315626	AMC47335	AMC47300	NIK NO 7	ACTIVE	LODE CLAIM	2025-09-02
AZ101423475	AZ101423475	AMC47336	AMC47300	NIK NO 8	ACTIVE	LODE CLAIM	2025-09-02
AZ101314482	AZ101314482	AMC47337	AMC47300	NIK NO 9	ACTIVE	LODE CLAIM	2025-09-02
AZ101513061	AZ101513061	AMC47338	AMC47300	NIK NO 10	ACTIVE	LODE CLAIM	2025-09-02
AZ101404184	AZ101404184	AMC47339	AMC47300	NIK NO 11	ACTIVE	LODE CLAIM	2025-09-02
AZ101422640	AZ101422640	AMC47340	AMC47300	NIK NO 12	ACTIVE	LODE CLAIM	2025-09-02
AZ102524120	AZ102524120	AMC47341	AMC47300	NIK NO 13	ACTIVE	LODE CLAIM	2025-09-02
AZ101315734	AZ101315734	AMC47342	AMC47300	NIK NO 14	ACTIVE	LODE CLAIM	2025-09-02
AZ101403486	AZ101403486	AMC47347	AMC47300	NIK NO 19	ACTIVE	LODE CLAIM	2025-09-02
AZ101401035	AZ101401035	AMC47348	AMC47300	NIK NO 20	ACTIVE	LODE CLAIM	2025-09-02
AZ101422533	AZ101422533	AMC47349	AMC47300	NIK NO 21	ACTIVE	LODE CLAIM	2025-09-02
AZ101310451	AZ101310451	AMC47350	AMC47300	NIK NO 22	ACTIVE	LODE CLAIM	2025-09-02
AZ101404654	AZ101404654	AMC47351	AMC47300	NIK NO 23	ACTIVE	LODE CLAIM	2025-09-02
AZ101403046	AZ101403046	AMC47352	AMC47300	NIK NO 24	ACTIVE	LODE CLAIM	2025-09-02
AZ101400680	AZ101400680	AMC47353	AMC47300	NIK NO 25	ACTIVE	LODE CLAIM	2025-09-02
AZ101426616	AZ101426616	AMC47354	AMC47300	NIK NO 26	ACTIVE	LODE CLAIM	2025-09-02
AZ101420451	AZ101420451	AMC47355	AMC47300	NIK NO 27	ACTIVE	LODE CLAIM	2025-09-02
AZ101340104	AZ101340104	AMC47356	AMC47300	NIK NO 28	ACTIVE	LODE CLAIM	2025-09-02
AZ101339901	AZ101339901	AMC47357	AMC47300	NIK NO 29	ACTIVE	LODE CLAIM	2025-09-02
AZ101319426	AZ101319426	AMC47358	AMC47300	NIK NO 30	ACTIVE	LODE CLAIM	2025-09-02
AZ101515736	AZ101515736	AMC47359	AMC47300	NIK NO 31	ACTIVE	LODE CLAIM	2025-09-02
AZ101422970	AZ101422970	AMC47360	AMC47300	NIK NO 32	ACTIVE	LODE CLAIM	2025-09-02
AZ101424011	AZ101424011	AMC47361	AMC47300	NIK NO 33	ACTIVE	LODE CLAIM	2025-09-02
AZ101425394	AZ101425394	AMC47362	AMC47300	NIK NO 34	ACTIVE	LODE CLAIM	2025-09-02
AZ101425654	AZ101425654	AMC47363	AMC47300	NIK NO 35	ACTIVE	LODE CLAIM	2025-09-02
AZ102521618	AZ102521618	AMC47364	AMC47300	NIK NO 36	ACTIVE	LODE CLAIM	2025-09-02
AZ101513001	AZ101513001	AMC47365	AMC47300	NIK NO 37	ACTIVE	LODE CLAIM	2025-09-02
AZ101313279	AZ101313279	AMC47366	AMC47300	NIK NO 38	ACTIVE	LODE CLAIM	2025-09-02
AZ101510534	AZ101510534	AMC47367	AMC47300	NIK NO 39	ACTIVE	LODE CLAIM	2025-09-02
AZ101376637	AZ101376637	AMC47368	AMC47300	NIK NO 40	ACTIVE	LODE CLAIM	2025-09-02
AZ101406903	AZ101406903	AMC47369	AMC47300	NIK NO 41	ACTIVE	LODE CLAIM	2025-09-02
AZ101316806	AZ101316806	AMC47370	AMC47300	NIK NO 50	ACTIVE	LODE CLAIM	2025-09-02
AZ101515425	AZ101515425	AMC47371	AMC47300	NIK NO 51	ACTIVE	LODE CLAIM	2025-09-02
AZ101511715	AZ101511715	AMC47372	AMC47300	NIK NO 52	ACTIVE	LODE CLAIM	2025-09-02
AZ101515428	AZ101515428	AMC47373	AMC47300	NIK NO 53	ACTIVE	LODE CLAIM	2025-09-02
AZ101400730	AZ101400730	AMC47374	AMC47300	NIK NO 54	ACTIVE	LODE CLAIM	2025-09-02
AZ101871129	AZ101871129	AMC460163	AMC460163	SCX 1	ACTIVE	LODE CLAIM	2025-09-02
AZ101871130	AZ101871130	AMC460164	AMC460163	SCX 2	ACTIVE	LODE CLAIM	2025-09-02
AZ101871131	AZ101871131	AMC460165	AMC460163	SCX 3	ACTIVE	LODE CLAIM	2025-09-02
AZ101871132	AZ101871132	AMC460166	AMC460163	SCX 4	ACTIVE	LODE CLAIM	2025-09-02
AZ101871133	AZ101871133	AMC460167	AMC460163	SCX 5	ACTIVE	LODE CLAIM	2025-09-02
AZ101871134	AZ101871134	AMC460168	AMC460163	SCX 6	ACTIVE	LODE CLAIM	2025-09-02
AZ101871135	AZ101871135	AMC460169	AMC460163	SCX 7	ACTIVE	LODE CLAIM	2025-09-02
AZ101871136	AZ101871136	AMC460170	AMC460163	SCX 8	ACTIVE	LODE CLAIM	2025-09-02
AZ101871137	AZ101871137	AMC460171	AMC460163	SCX 9	ACTIVE	LODE CLAIM	2025-09-02
AZ101871138	AZ101871138	AMC460172	AMC460163	SCX 10	ACTIVE	LODE CLAIM	2025-09-02
AZ101871139	AZ101871139	AMC460173	AMC460163	SCX 11	ACTIVE	LODE CLAIM	2025-09-02
AZ101871140	AZ101871140	AMC460174	AMC460163	SCX 12	ACTIVE	LODE CLAIM	2025-09-02
AZ101871141	AZ101871141	AMC460175	AMC460163	SCX 13	ACTIVE	LODE CLAIM	2025-09-02
AZ101871142	AZ101871142	AMC460176	AMC460163	SCX 14	ACTIVE	LODE CLAIM	2025-09-02
AZ101871143	AZ101871143	AMC460177	AMC460163	SCX 15	ACTIVE	LODE CLAIM	2025-09-02
AZ101871144	AZ101871144	AMC460178	AMC460163	SCX 16	ACTIVE	LODE CLAIM	2025-09-02
AZ101871947	AZ101871947	AMC460179	AMC460163	SCX 17	ACTIVE	LODE CLAIM	2025-09-02
AZ101871948	AZ101871948	AMC460180	AMC460163	SCX 18	ACTIVE	LODE CLAIM	2025-09-02
AZ101871949	AZ101871949	AMC460181	AMC460163	SCX 19	ACTIVE	LODE CLAIM	2025-09-02
AZ101871950	AZ101871950	AMC460182	AMC460163	SCX 20	ACTIVE	LODE CLAIM	2025-09-02
AZ101871951	AZ101871951	AMC460183	AMC460163	SCX 21	ACTIVE	LODE CLAIM	2025-09-02
AZ101871952	AZ101871952	AMC460184	AMC460163	SCX 22	ACTIVE	LODE CLAIM	2025-09-02
AZ101871953	AZ101871953	AMC460185	AMC460163	SCX 23	ACTIVE	LODE CLAIM	2025-09-02
AZ101871954	AZ101871954	AMC460186	AMC460163	SCX 24	ACTIVE	LODE CLAIM	2025-09-02
AZ101871955	AZ101871955	AMC460187	AMC460163	SCX 25	ACTIVE	LODE CLAIM	2025-09-02
AZ101871956	AZ101871956	AMC460188	AMC460163	SCX 26	ACTIVE	LODE CLAIM	2025-09-02
AZ101871957	AZ101871957	AMC460189	AMC460163	SCX 27	ACTIVE	LODE CLAIM	2025-09-02
AZ101871958	AZ101871958	AMC460190	AMC460163	SCX 28	ACTIVE	LODE CLAIM	2025-09-02
AZ101871959	AZ101871959	AMC460191	AMC460163	SCX 29	ACTIVE	LODE CLAIM	2025-09-02
AZ101871960	AZ101871960	AMC460192	AMC460163	SCX 30	ACTIVE	LODE CLAIM	2025-09-02
AZ101871961	AZ101871961	AMC460193	AMC460163	SCX 31	ACTIVE	LODE CLAIM	2025-09-02
AZ101871962	AZ101871962	AMC460194	AMC460163	SCX 32	ACTIVE	LODE CLAIM	2025-09-02
AZ101871963	AZ101871963	AMC460195	AMC460163	SCX 33	ACTIVE	LODE CLAIM	2025-09-02
AZ101871964	AZ101871964	AMC460196	AMC460163	SCX 34	ACTIVE	LODE CLAIM	2025-09-02
AZ101871965	AZ101871965	AMC460197	AMC460163	SCX 35	ACTIVE	LODE CLAIM	2025-09-02

Serial Number	Lead File Number	Legacy Serial Number	Legacy Lead File Number	Claim Name	Case Disposition	Claim Type	Next Payment Due Date
AZ101871966	AZ101871966	AMC460198	AMC460163	SCX 36	ACTIVE	LODE CLAIM	2025-09-02
AZ101871967	AZ101871967	AMC460199	AMC460163	SCX 37	ACTIVE	LODE CLAIM	2025-09-02
AZ101872776	AZ101872776	AMC460200	AMC460163	SCX 38	ACTIVE	LODE CLAIM	2025-09-02
AZ101872777	AZ101872777	AMC460201	AMC460163	SCX 39	ACTIVE	LODE CLAIM	2025-09-02
AZ101872778	AZ101872778	AMC460202	AMC460163	SCX 40	ACTIVE	LODE CLAIM	2025-09-02
AZ101872779	AZ101872779	AMC460203	AMC460163	SCX 41	ACTIVE	LODE CLAIM	2025-09-02
AZ101872780	AZ101872780	AMC460204	AMC460163	SCX 42	ACTIVE	LODE CLAIM	2025-09-02
AZ101872781	AZ101872781	AMC460205	AMC460163	SCX 43	ACTIVE	LODE CLAIM	2025-09-02
AZ101872782	AZ101872782	AMC460206	AMC460163	SCX 44	ACTIVE	LODE CLAIM	2025-09-02
AZ101872783	AZ101872783	AMC460207	AMC460163	SCX 45	ACTIVE	LODE CLAIM	2025-09-02
AZ101872784	AZ101872784	AMC460208	AMC460163	SCX 46	ACTIVE	LODE CLAIM	2025-09-02
AZ101872785	AZ101872785	AMC460209	AMC460163	SCX 47	ACTIVE	LODE CLAIM	2025-09-02
AZ101872786	AZ101872786	AMC460210	AMC460163	SCX 48	ACTIVE	LODE CLAIM	2025-09-02
AZ101872787	AZ101872787	AMC460211	AMC460163	SCX 49	ACTIVE	LODE CLAIM	2025-09-02
AZ101872788	AZ101872788	AMC460212	AMC460163	SCX 50	ACTIVE	LODE CLAIM	2025-09-02
AZ101872789	AZ101872789	AMC460213	AMC460163	SCX 51	ACTIVE	LODE CLAIM	2025-09-02
AZ101872790	AZ101872790	AMC460214	AMC460163	SCX 52	ACTIVE	LODE CLAIM	2025-09-02
AZ101872791	AZ101872791	AMC460215	AMC460163	SCX 53	ACTIVE	LODE CLAIM	2025-09-02
AZ101872792	AZ101872792	AMC460216	AMC460163	SCX 54	ACTIVE	LODE CLAIM	2025-09-02
AZ101872793	AZ101872793	AMC460217	AMC460163	SCX 55	ACTIVE	LODE CLAIM	2025-09-02
AZ101872794	AZ101872794	AMC460218	AMC460163	SCX 56	ACTIVE	LODE CLAIM	2025-09-02
AZ101872795	AZ101872795	AMC460219	AMC460163	SCX 57	ACTIVE	LODE CLAIM	2025-09-02
AZ101872796	AZ101872796	AMC460220	AMC460163	SCX 58	ACTIVE	LODE CLAIM	2025-09-02
AZ101873617	AZ101873617	AMC460221	AMC460163	SCX 59	ACTIVE	LODE CLAIM	2025-09-02
AZ101873618	AZ101873618	AMC460222	AMC460163	SCX 60	ACTIVE	LODE CLAIM	2025-09-02
AZ101873619	AZ101873619	AMC460223	AMC460163	SCX 61	ACTIVE	LODE CLAIM	2025-09-02
AZ101873620	AZ101873620	AMC460224	AMC460163	SCX 62	ACTIVE	LODE CLAIM	2025-09-02
AZ101873621	AZ101873621	AMC460225	AMC460163	SCX 63	ACTIVE	LODE CLAIM	2025-09-02
AZ101873622	AZ101873622	AMC460226	AMC460163	SCX 64	ACTIVE	LODE CLAIM	2025-09-02
AZ101873623	AZ101873623	AMC460227	AMC460163	SCX 65	ACTIVE	LODE CLAIM	2025-09-02
AZ101873624	AZ101873624	AMC460228	AMC460163	SCX 66	ACTIVE	LODE CLAIM	2025-09-02
AZ101873625	AZ101873625	AMC460229	AMC460163	SCX 67	ACTIVE	LODE CLAIM	2025-09-02
AZ101873626	AZ101873626	AMC460230	AMC460163	SCX 68	ACTIVE	LODE CLAIM	2025-09-02
AZ101873627	AZ101873627	AMC460231	AMC460163	SCX 69	ACTIVE	LODE CLAIM	2025-09-02
AZ101873628	AZ101873628	AMC460232	AMC460163	SCX 70	ACTIVE	LODE CLAIM	2025-09-02
AZ101873629	AZ101873629	AMC460233	AMC460163	SCX 71	ACTIVE	LODE CLAIM	2025-09-02
AZ101873630	AZ101873630	AMC460234	AMC460163	SCX 72	ACTIVE	LODE CLAIM	2025-09-02
AZ101873631	AZ101873631	AMC460235	AMC460163	SCX 73	ACTIVE	LODE CLAIM	2025-09-02
AZ101873632	AZ101873632	AMC460236	AMC460163	SCX 74	ACTIVE	LODE CLAIM	2025-09-02
AZ101873633	AZ101873633	AMC460237	AMC460163	SCX 75	ACTIVE	LODE CLAIM	2025-09-02
AZ101873634	AZ101873634	AMC460238	AMC460163	SCX 76	ACTIVE	LODE CLAIM	2025-09-02
AZ101873635	AZ101873635	AMC460239	AMC460163	SCX 77	ACTIVE	LODE CLAIM	2025-09-02
AZ101873636	AZ101873636	AMC460240	AMC460163	SCX 78	ACTIVE	LODE CLAIM	2025-09-02
AZ101873637	AZ101873637	AMC460241	AMC460163	SCX 79	ACTIVE	LODE CLAIM	2025-09-02
AZ101874470	AZ101874470	AMC460242	AMC460163	SCX 80	ACTIVE	LODE CLAIM	2025-09-02
AZ101874471	AZ101874471	AMC460243	AMC460163	SCX 81	ACTIVE	LODE CLAIM	2025-09-02
AZ101874472	AZ101874472	AMC460244	AMC460163	SCX 82	ACTIVE	LODE CLAIM	2025-09-02
AZ101874473	AZ101874473	AMC460245	AMC460163	SCX 83	ACTIVE	LODE CLAIM	2025-09-02
AZ101874474	AZ101874474	AMC460246	AMC460163	SCX 84	ACTIVE	LODE CLAIM	2025-09-02
AZ101874475	AZ101874475	AMC460247	AMC460163	SCX 85	ACTIVE	LODE CLAIM	2025-09-02
AZ101874476	AZ101874476	AMC460248	AMC460163	SCX 86	ACTIVE	LODE CLAIM	2025-09-02
AZ101874477	AZ101874477	AMC460249	AMC460163	SCX 87	ACTIVE	LODE CLAIM	2025-09-02
AZ101874478	AZ101874478	AMC460250	AMC460163	SCX 88	ACTIVE	LODE CLAIM	2025-09-02
AZ101874479	AZ101874479	AMC460251	AMC460163	SCX 89	ACTIVE	LODE CLAIM	2025-09-02
AZ101874480	AZ101874480	AMC460252	AMC460163	SCX 90	ACTIVE	LODE CLAIM	2025-09-02
AZ101874481	AZ101874481	AMC460253	AMC460163	SCX 91	ACTIVE	LODE CLAIM	2025-09-02
AZ101874482	AZ101874482	AMC460254	AMC460163	SCX 92	ACTIVE	LODE CLAIM	2025-09-02
AZ101874483	AZ101874483	AMC460255	AMC460163	SCX 93	ACTIVE	LODE CLAIM	2025-09-02
AZ101874484	AZ101874484	AMC460256	AMC460163	SCX 94	ACTIVE	LODE CLAIM	2025-09-02
AZ101874485	AZ101874485	AMC460257	AMC460163	SCX 95	ACTIVE	LODE CLAIM	2025-09-02
AZ101874486	AZ101874486	AMC460258	AMC460163	SCX 96	ACTIVE	LODE CLAIM	2025-09-02
AZ101874487	AZ101874487	AMC460259	AMC460163	SCX 97	ACTIVE	LODE CLAIM	2025-09-02
AZ101874488	AZ101874488	AMC460260	AMC460163	SCX 98	ACTIVE	LODE CLAIM	2025-09-02
AZ101874489	AZ101874489	AMC460261	AMC460163	SCX 99	ACTIVE	LODE CLAIM	2025-09-02
AZ101874490	AZ101874490	AMC460262	AMC460163	SCX 100	ACTIVE	LODE CLAIM	2025-09-02
AZ101875304	AZ101875304	AMC460263	AMC460163	SCX 101	ACTIVE	LODE CLAIM	2025-09-02
AZ101875305	AZ101875305	AMC460264	AMC460163	SCX 102	ACTIVE	LODE CLAIM	2025-09-02
AZ101875306	AZ101875306	AMC460265	AMC460163	SCX 103	ACTIVE	LODE CLAIM	2025-09-02
AZ101875307	AZ101875307	AMC460266	AMC460163	SCX 104	ACTIVE	LODE CLAIM	2025-09-02
AZ101875308	AZ101875308	AMC460267	AMC460163	SCX 105	ACTIVE	LODE CLAIM	2025-09-02
AZ101875309	AZ101875309	AMC460268	AMC460163	SCX 106	ACTIVE	LODE CLAIM	2025-09-02
AZ101875310	AZ101875310	AMC460269	AMC460163	SCX 107	ACTIVE	LODE CLAIM	2025-09-02
AZ101875311	AZ101875311	AMC460270	AMC460163	SCX 108	ACTIVE	LODE CLAIM	2025-09-02
AZ101875312	AZ101875312	AMC460271	AMC460163	SCX 109	ACTIVE	LODE CLAIM	2025-09-02
AZ101875313	AZ101875313	AMC460272	AMC460163	SCX 110	ACTIVE	LODE CLAIM	2025-09-02
AZ101875314	AZ101875314	AMC460273	AMC460163	SCX 111	ACTIVE	LODE CLAIM	2025-09-02

Serial Number	Lead File Number	Legacy Serial Number	Legacy Lead File Number	Claim Name	Case Disposition	Claim Type	Next Payment Due Date
AZ101875315	AZ101875315	AMC460274	AMC460163	SCX 112	ACTIVE	LODE CLAIM	2025-09-02
AZ101875316	AZ101875316	AMC460275	AMC460163	SCX 113	ACTIVE	LODE CLAIM	2025-09-02
AZ101875317	AZ101875317	AMC460276	AMC460163	SCX 114	ACTIVE	LODE CLAIM	2025-09-02
AZ101875318	AZ101875318	AMC460277	AMC460163	SCX 118	ACTIVE	LODE CLAIM	2025-09-02
AZ101875319	AZ101875319	AMC460278	AMC460163	SCX 119	ACTIVE	LODE CLAIM	2025-09-02
AZ101875320	AZ101875320	AMC460279	AMC460163	SCX 120	ACTIVE	LODE CLAIM	2025-09-02
AZ101875321	AZ101875321	AMC460280	AMC460163	SCX 121	ACTIVE	LODE CLAIM	2025-09-02
AZ101875322	AZ101875322	AMC460281	AMC460163	SCX 122	ACTIVE	LODE CLAIM	2025-09-02
AZ101875323	AZ101875323	AMC460282	AMC460163	SCX 123	ACTIVE	LODE CLAIM	2025-09-02
AZ101875324	AZ101875324	AMC460283	AMC460163	SCX 124	ACTIVE	LODE CLAIM	2025-09-02
AZ101876144	AZ101876144	AMC460284	AMC460163	SCX 125	ACTIVE	LODE CLAIM	2025-09-02
AZ101876145	AZ101876145	AMC460285	AMC460163	SCX 126	ACTIVE	LODE CLAIM	2025-09-02
AZ101876146	AZ101876146	AMC460286	AMC460163	SCX 127	ACTIVE	LODE CLAIM	2025-09-02
AZ101876147	AZ101876147	AMC460287	AMC460163	SCX 128	ACTIVE	LODE CLAIM	2025-09-02
AZ101876148	AZ101876148	AMC460288	AMC460163	SCX 129	ACTIVE	LODE CLAIM	2025-09-02
AZ101876149	AZ101876149	AMC460289	AMC460163	SCX 130	ACTIVE	LODE CLAIM	2025-09-02
AZ101876150	AZ101876150	AMC460290	AMC460163	SCX 131	ACTIVE	LODE CLAIM	2025-09-02
AZ101876151	AZ101876151	AMC460291	AMC460163	SCX 132	ACTIVE	LODE CLAIM	2025-09-02
AZ101876152	AZ101876152	AMC460292	AMC460163	SCX 133	ACTIVE	LODE CLAIM	2025-09-02
AZ101876153	AZ101876153	AMC460293	AMC460163	SCX 134	ACTIVE	LODE CLAIM	2025-09-02
AZ101876154	AZ101876154	AMC460294	AMC460163	SCX 135	ACTIVE	LODE CLAIM	2025-09-02
AZ101876155	AZ101876155	AMC460295	AMC460163	SCX 136	ACTIVE	LODE CLAIM	2025-09-02
AZ101876156	AZ101876156	AMC460296	AMC460163	SCX 137	ACTIVE	LODE CLAIM	2025-09-02
AZ101876157	AZ101876157	AMC460297	AMC460163	SCX 138	ACTIVE	LODE CLAIM	2025-09-02
AZ101876158	AZ101876158	AMC460298	AMC460163	SCX 139	ACTIVE	LODE CLAIM	2025-09-02
AZ101876159	AZ101876159	AMC460299	AMC460163	SCX 140	ACTIVE	LODE CLAIM	2025-09-02
AZ101876160	AZ101876160	AMC460300	AMC460163	SCX 141	ACTIVE	LODE CLAIM	2025-09-02
AZ101876161	AZ101876161	AMC460301	AMC460163	SCX 142	ACTIVE	LODE CLAIM	2025-09-02
AZ101876162	AZ101876162	AMC460302	AMC460163	SCX 143	ACTIVE	LODE CLAIM	2025-09-02
AZ101876163	AZ101876163	AMC460303	AMC460163	SCX 144	ACTIVE	LODE CLAIM	2025-09-02
AZ101876164	AZ101876164	AMC460304	AMC460163	SCX 145	ACTIVE	LODE CLAIM	2025-09-02
AZ101717758	AZ101717758	AMC460305	AMC460163	SCX 146	ACTIVE	LODE CLAIM	2025-09-02
AZ101717759	AZ101717759	AMC460306	AMC460163	SCX 147	ACTIVE	LODE CLAIM	2025-09-02
AZ101717760	AZ101717760	AMC460307	AMC460163	SCX 148	ACTIVE	LODE CLAIM	2025-09-02
AZ101717761	AZ101717761	AMC460308	AMC460163	SCX 149	ACTIVE	LODE CLAIM	2025-09-02
AZ101717762	AZ101717762	AMC460309	AMC460163	SCX 150	ACTIVE	LODE CLAIM	2025-09-02
AZ101717763	AZ101717763	AMC460310	AMC460163	SCX 151	ACTIVE	LODE CLAIM	2025-09-02
AZ101717764	AZ101717764	AMC460311	AMC460163	SCX 152	ACTIVE	LODE CLAIM	2025-09-02
AZ101717765	AZ101717765	AMC460312	AMC460163	SCX 153	ACTIVE	LODE CLAIM	2025-09-02
AZ101717766	AZ101717766	AMC460313	AMC460163	SCX 154	ACTIVE	LODE CLAIM	2025-09-02
AZ101717767	AZ101717767	AMC460314	AMC460163	SCX 155	ACTIVE	LODE CLAIM	2025-09-02
AZ101717768	AZ101717768	AMC460315	AMC460163	SCX 156	ACTIVE	LODE CLAIM	2025-09-02
AZ101717769	AZ101717769	AMC460316	AMC460163	SCX 157	ACTIVE	LODE CLAIM	2025-09-02
AZ101717770	AZ101717770	AMC460317	AMC460163	SCX 158	ACTIVE	LODE CLAIM	2025-09-02
AZ101717771	AZ101717771	AMC460318	AMC460163	SCX 159	ACTIVE	LODE CLAIM	2025-09-02
AZ101717772	AZ101717772	AMC460319	AMC460163	SCX 160	ACTIVE	LODE CLAIM	2025-09-02
AZ101717773	AZ101717773	AMC460320	AMC460163	SCX 161	ACTIVE	LODE CLAIM	2025-09-02
AZ101717774	AZ101717774	AMC460321	AMC460163	SCX 162	ACTIVE	LODE CLAIM	2025-09-02
AZ101717775	AZ101717775	AMC460322	AMC460163	SCX 163	ACTIVE	LODE CLAIM	2025-09-02
AZ101717776	AZ101717776	AMC460323	AMC460163	SCX 164	ACTIVE	LODE CLAIM	2025-09-02
AZ101717777	AZ101717777	AMC460324	AMC460163	SCX 165	ACTIVE	LODE CLAIM	2025-09-02
AZ101717778	AZ101717778	AMC460325	AMC460163	SCX 166	ACTIVE	LODE CLAIM	2025-09-02
AZ101718617	AZ101718617	AMC460326	AMC460163	SCX 167	ACTIVE	LODE CLAIM	2025-09-02
AZ101718618	AZ101718618	AMC460327	AMC460163	SCX 168	ACTIVE	LODE CLAIM	2025-09-02
AZ101718619	AZ101718619	AMC460328	AMC460163	SCX 169	ACTIVE	LODE CLAIM	2025-09-02
AZ101718620	AZ101718620	AMC460329	AMC460163	SCX 170	ACTIVE	LODE CLAIM	2025-09-02
AZ101718621	AZ101718621	AMC460330	AMC460163	SCX 171	ACTIVE	LODE CLAIM	2025-09-02
AZ101718622	AZ101718622	AMC460331	AMC460163	SCX 172	ACTIVE	LODE CLAIM	2025-09-02
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AZ101718624	AZ101718624	AMC460333	AMC460163	SCX 174	ACTIVE	LODE CLAIM	2025-09-02
AZ101718625	AZ101718625	AMC460334	AMC460163	SCX 175	ACTIVE	LODE CLAIM	2025-09-02
AZ101718626	AZ101718626	AMC460335	AMC460163	SCX 176	ACTIVE	LODE CLAIM	2025-09-02
AZ101718627	AZ101718627	AMC460336	AMC460163	SCX 177	ACTIVE	LODE CLAIM	2025-09-02
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AZ101718634	AZ101718634	AMC460343	AMC460163	SCX 184	ACTIVE	LODE CLAIM	2025-09-02
AZ101718635	AZ101718635	AMC460344	AMC460163	SCX 185	ACTIVE	LODE CLAIM	2025-09-02
AZ101718636	AZ101718636	AMC460345	AMC460163	SCX 186	ACTIVE	LODE CLAIM	2025-09-02
AZ101718637	AZ101718637	AMC460346	AMC460163	SCX 187	ACTIVE	LODE CLAIM	2025-09-02
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AZ101719457	AZ101719457	AMC460348	AMC460163	SCX 189	ACTIVE	LODE CLAIM	2025-09-02
AZ101719458	AZ101719458	AMC460349	AMC460163	SCX 190	ACTIVE	LODE CLAIM	2025-09-02

Serial Number	Lead File Number	Legacy Serial Number	Legacy Lead File Number	Claim Name	Case Disposition	Claim Type	Next Payment Due Date
AZ101719459	AZ101719459	AMC460350	AMC460163	SCX 191	ACTIVE	LODE CLAIM	2025-09-02
AZ101719460	AZ101719460	AMC460351	AMC460163	SCX 192	ACTIVE	LODE CLAIM	2025-09-02
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AZ101719462	AZ101719462	AMC460353	AMC460163	SCX 194	ACTIVE	LODE CLAIM	2025-09-02
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AZ101719470	AZ101719470	AMC460361	AMC460163	SCX 202	ACTIVE	LODE CLAIM	2025-09-02
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AZ101720299	AZ101720299	AMC460368	AMC460163	SCX 209	ACTIVE	LODE CLAIM	2025-09-02
AZ101720300	AZ101720300	AMC460369	AMC460163	SCX 210	ACTIVE	LODE CLAIM	2025-09-02
AZ101720301	AZ101720301	AMC460370	AMC460163	SCX 211	ACTIVE	LODE CLAIM	2025-09-02
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AZ101720303	AZ101720303	AMC460372	AMC460163	SCX 213	ACTIVE	LODE CLAIM	2025-09-02
AZ101720304	AZ101720304	AMC460373	AMC460163	SCX 214	ACTIVE	LODE CLAIM	2025-09-02
AZ101720305	AZ101720305	AMC460374	AMC460163	SCX 215	ACTIVE	LODE CLAIM	2025-09-02
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AZ101871147	AZ101871147	AMC460391	AMC460163	SCX 232	ACTIVE	LODE CLAIM	2025-09-02
AZ101871148	AZ101871148	AMC460392	AMC460163	SCX 233	ACTIVE	LODE CLAIM	2025-09-02
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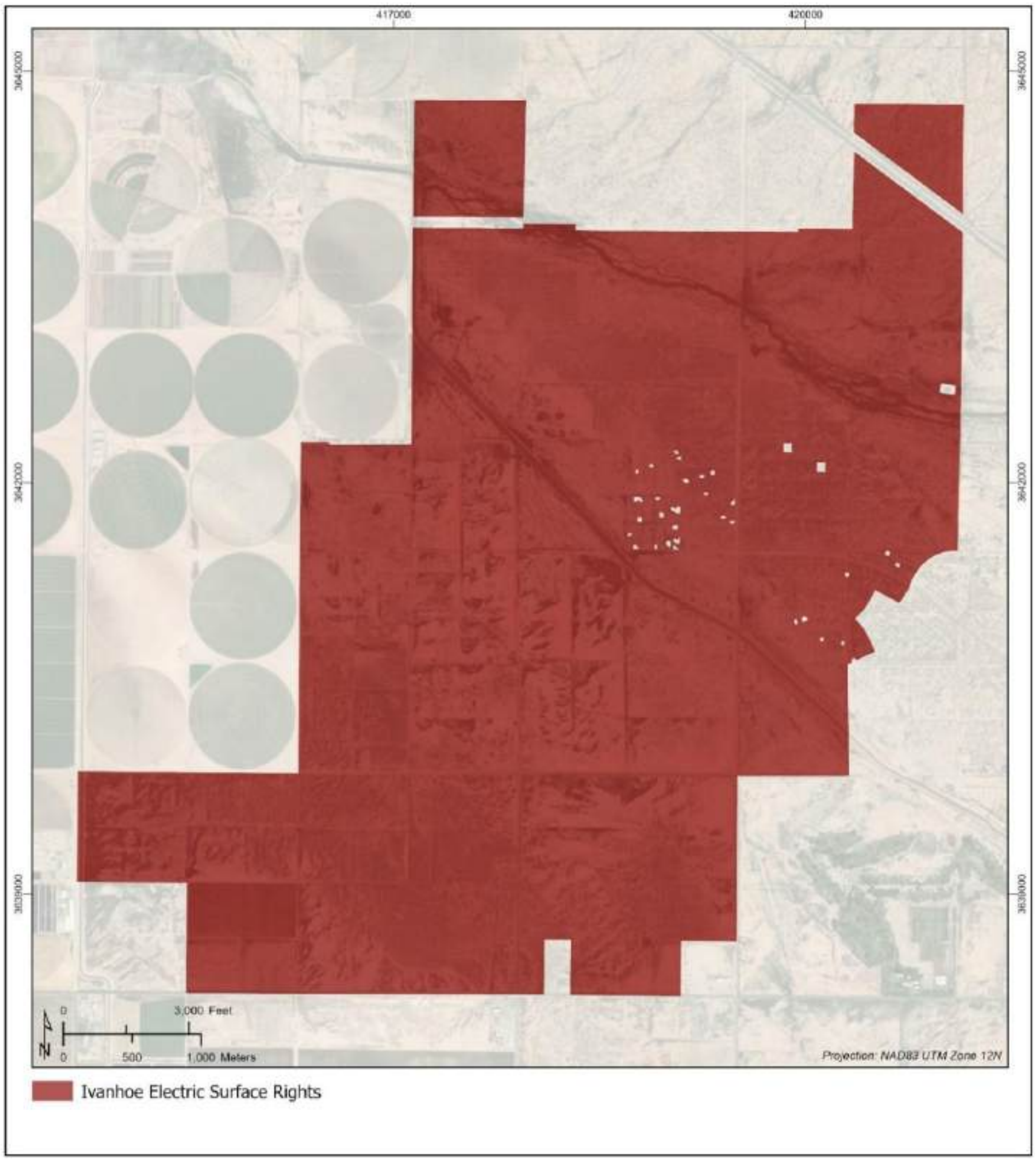
AZ101871155	AZ101871155	AMC460399	AMC460163	SCX 250	ACTIVE	LODE CLAIM	2025-09-02
AZ101871156	AZ101871156	AMC460400	AMC460163	SCX 251	ACTIVE	LODE CLAIM	2025-09-02

3.3.2 Surface Title Ownership

In 2022, Ivanhoe Electric acquired the surface rights to two land parcels: the 0.08 km^2 (20 acre) "Skull Valley" property from Skull Valley Capital, LLC in the southeastern area of the project and a 0.41 km^2 (100.33 acre) land parcel "CG100" from CG 100 Land Partners LLC in the northeastern area of project. In August 2024, Ivanhoe Electric acquired the surface title to 3 0.04 km^2 (10-acre) parcels located in various areas of the project as part of the subject property in the DRH purchase. A surface title map is shown on Figure 3-2.

Figure 3-2: Ivanhoe Electric Surface Control Map



Source: Ivanhoe Electric, 2025.

In May 2023, Ivanhoe Electric exercised the option to acquire the surface title to ~24.2 km^2 (5,975 acres) encompassing the Santa Cruz Copper Project from Wolff-Harvard. To close the purchase, Ivanhoe Electric paid $34.3 million, including $5.1 million of previously paid deposits. Ivanhoe Electric also issued a secured promissory note to the seller in the principal amount of approximately $82.6 million over a period of 4.5 years. The promissory note includes an annual interest rate of prime plus 1.0%. As of June 13, 2025, a total of $36.6 million remains to be paid to Wolff-Harvard. In the event that Ivanhoe Electric elects to begin mine construction prior to completing the final principal payment, the full outstanding balance will be paid prior to commencement of major mine construction activities.

3.3.3 Water Rights

Ivanhoe Electric acquired grandfathered irrigation rights and grandfathered Type 1 non-irrigation water rights in association with the private land purchased in 2023 and holds all necessary water rights for the life-of-mine plan envisaged in this report. Water is further discussed in Sections 7, 13, 15, and 17.

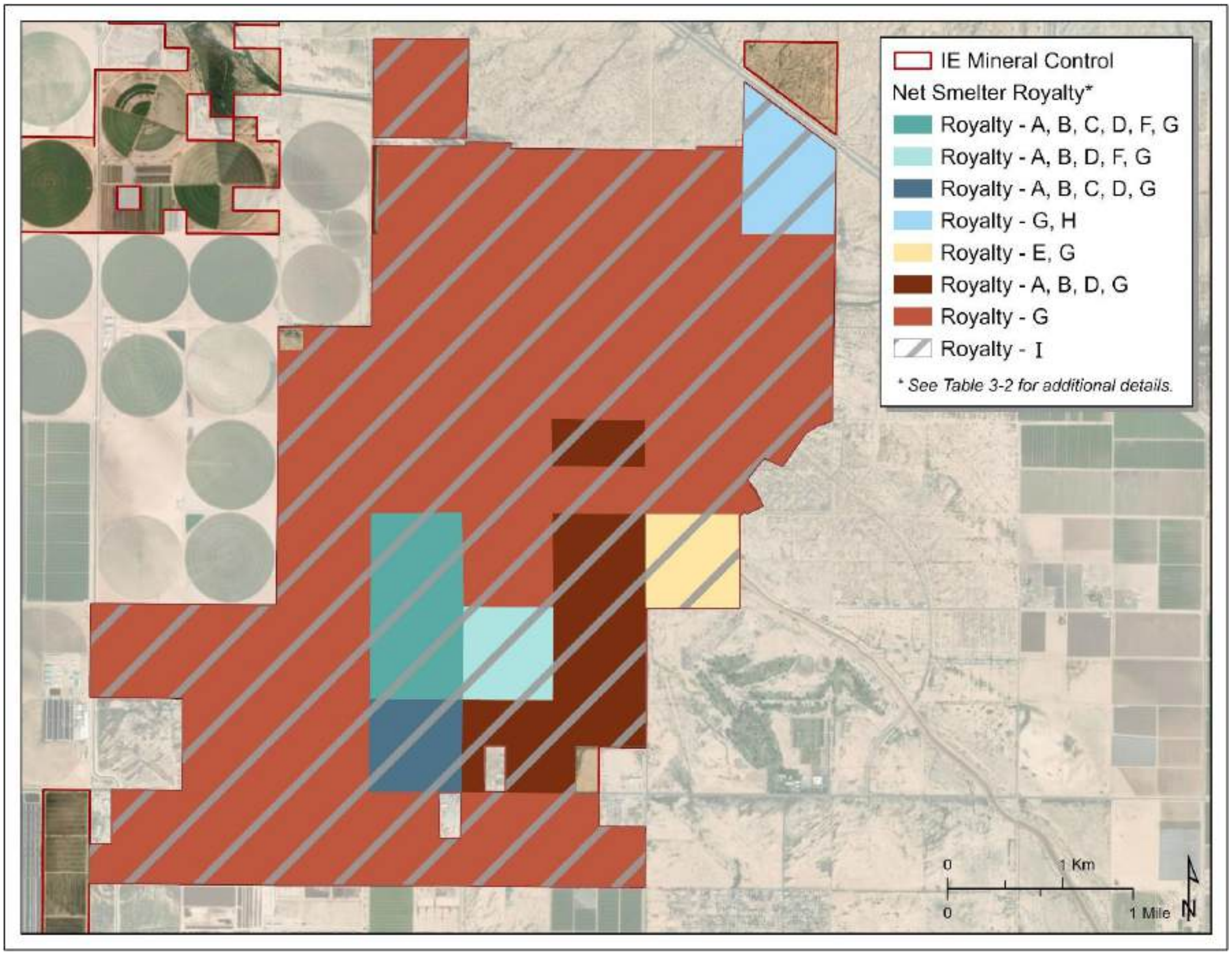
3.4 Royalties

Noted royalties on future mineral development of the project are summarized in Table 3-3 and Figure 3-3.

Table 3-3: Royalties Applying to the Santa Cruz Copper Project

Royalty Owner	Royalty Description
Royalty Owner A	10% of 1/800th of the fair market value for refined copper, which amount is set by the value listed in the successor index to Metals Week as of the date the SX-EW process is completed
Royalty Owner B	60% of 1/800th of the fair market value for refined copper, which amount is set by the value listed in the successor index to Metals Week as of the date the SX-EW process is completed
Royalty Owner C	2% NSR
Royalty Owner D	0.15% NSR
Royalty Owner E	½ of 1% NSR or ½ of 1% of 60% NSR if product is disposed of other than to a commercial smelter
Royalty Owner F	10% NSR (capped at $7 million)
Royalty Owner G	5% NSR
Royalty Owner H	1% NSR
Royalty Owner I	$0.015/pound of copper of Additional Mineable Reserve Copper over 2 billion pounds as determined by the “Definitive Feasibility Study” or by production beyond the amount estimated in the “Definitive Feasibility Study”; the royalty owner has the option to require payment in Ivanhoe Electric common stock at a 10% discount to the five-day volume weighted average price

Figure 3-3: Extent of Royalties



Source: Ivanhoe Electric, 2025.

3.5 Encumbrances

The Santa Cruz Copper Project is located on a large private land package which may reduce lengthy permitting timelines that result from federal land management permitting processes.

Permitting and permitting conditions are discussed in Section 17.2 of this report.

3.5.1 Environmental Assessments

A 2023 Phase I Environmental Site Assessment, completed by Environmental Site Assessments, Inc. identified an aquifer exemption on a small portion of the property and agrochemical contamination of soils in former crop fields. While the aquifer exemption is representative of a controlled recognized environmental condition, further assessment of the agrochemical contamination will be required prior to earthwork for redevelopment of these areas.

3.6 Violations & Fines

Ivanhoe Electric advised BBA that as of June 13, 2025, no material violations or fines were imposed during 2025 by any regulatory authority that would affect the planned work for the Santa Cruz Copper Project as presented in this report.

3.7 Significant Factors & Risks that May Affect Access, Title, or Work Programs

To the extent known to BBA, there are no other known significant factors and risks that may affect access, title, or the right or ability to perform work on the properties that comprise the Santa Cruz Copper Project that are not discussed in this report.

4 Accessibility, Climate, Resources, Infrastructure & Physiography

4.1 Accessibility

The project is approximately 60 km, or a 92 km drive, south of the greater Phoenix metropolitan area and is accessed via the West Gila Bend Highway (Highway 84) 11 km west of the city of Casa Grande, which has a population of approximately 57,700. The greater Phoenix area is a major population center, with approximately 4.8 million people, and features an international airport, Phoenix Sky Harbor International Airport, and well-developed infrastructure and services that support the mining industry.

4.2 Climate

The climate in the project area is typical of the Sonoran Desert, with temperatures ranging from -7°C to 47°C (19°F to 117°F) and an annual precipitation average ranging from 76 to 500 millimeters (3 to 30 inches) per year. Precipitation occurs as frequent low-intensity winter rains during December and January and violent summer “monsoon” thunderstorms during July and August.

The Santa Cruz Copper Project site contains no surface water resources. Storm runoff water from the site is drained toward the Santa Cruz River by minor tributaries to the Santa Rosa and North Santa Cruz washes.

Any future mining operation will be conducted year-round. Exploration activities can be performed year-round as there are no limiting weather or accessibility factors.

4.3 Local Resources

Electrical power is available along Midway Road with a high-voltage line running beside the Maricopa-Casa Grande Highway along the northern edges of the Santa Cruz Copper Project area. An east-west rail line parallels the highway and passes through Casa Grande. A natural gas line is available along Clayton Road on the southern side of the project area.

The cities of Casa Grande, Maricopa, and Phoenix can supply sufficient electricity, skilled labor, and supplies for the project.

Infrastructure that will be required to support any future operations is discussed in Sections 13, 14, and 15 of this report. These report sections also discuss potential water sources, electricity, personnel, and supplies for the life-of-mine plan in the prefeasibility study.

4.4 Physiography

The Santa Cruz Copper Project is in the Middle Gila Basin, entirely within the Sonoran Desert Ecoregion of the Basin and Range Physiographic Province. The area is characterized by low, jagged, mountain ranges separated by broad, alluvial-filled basins. This portion of the Sonoran Desert is sparsely vegetated with greater variability near washes and in areas that have long lain fallow. Catclaw acacia, mesquite, creosote bush, bursage, and salt cedar are common near washes and abandoned areas.

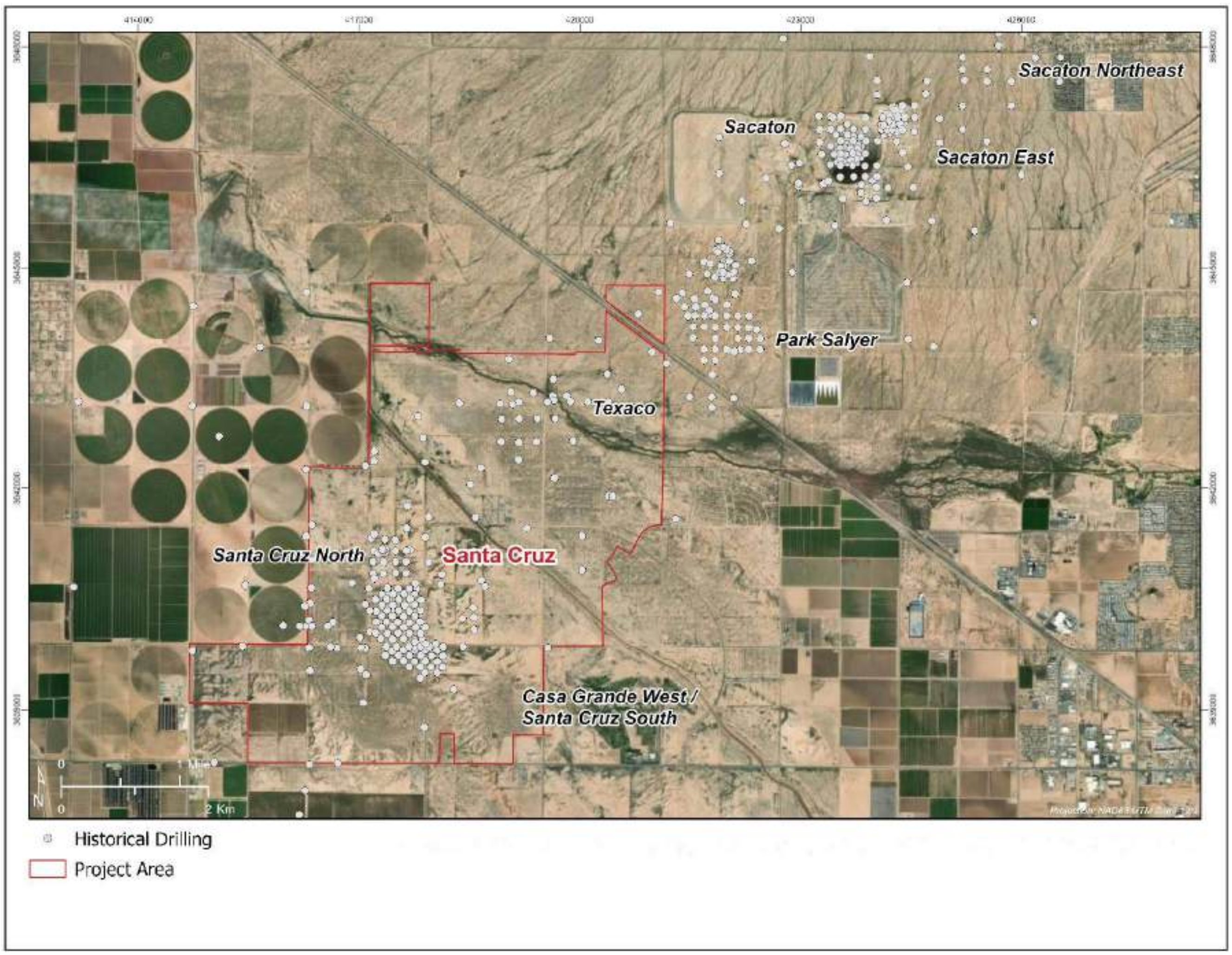
The project area is flat and featureless. It has an elevation of 403 ±5 meters above sea level (masl) and slopes gently to the northwest. Much of the project area has been used for irrigated agriculture; the decaying remnants of an extensive system of wells and concrete-lined ditches are still present, as are the alignments of furrows despite decades of lying fallow. Efforts at real estate development in the 1990s and 2000s have also left visible remnants with preliminary roadworks and some planting (palm trees) overlying the previous agricultural remains. Soils proximal to washes tend to be more sand- and gravel-rich, while soils in old agricultural areas are more silt- and clay-rich.

5 History

5.1 Historical Exploration

Three main deposits, shown on Figure 5-1, form part of the current project area: Texaco (in the northeast), Santa Cruz North (southwest of Texaco), and Casa Grande West / Santa Cruz South (the southernmost deposit).

Figure 5-1: Historical Drill Collars, Deposit, & Exploration Area Names



Source: Ivanhoe Electric, 2025.

Work completed on the project area is summarized in Table 5-1.

Table 5-1: Project History

Year	Operator	Comment
1961–1962	ASARCO	Discovered copper mineralization; completed geophysical surveys (induced polarization (IP), resistivity, seismic reflection, and magnetics). Completed six drillholes and identified the Sacaton deposit.
1964 –1965	ASARCO	Expanded exploration efforts across the Casa Grande Valley. Completed 16 drillholes but no additional mineralization was discovered.
1970 –1971	ASARCO	Reviewed available data and concluded additional exploration was warranted.
1973	Newmont Mining, Hanna Mining, Getty Oil Corp. (Getty Oil) and Quintana Corp.	Initiated the Covered Area Project (CAP) managed by David Lowell.
1974 –1980	ASARCO Santa Cruz Inc. and Freeport McMoRan Copper & Gold Inc. (ASARCO-Freeport)	Initiated Santa Cruz Joint Venture (SCJV). Acquired additional ground around the Santa Cruz North deposit area. 1974: Three drillholes, encountered porphyry-style mineralization over what became the Santa Cruz North deposit. 1975: Four drillholes at Santa Cruz North, one at Texaco. 1976: One drillhole at Casa Grande, six at Texaco. 1977: Drilled six holes at Texaco and 12 at Casa Grande. 1979: Four drillholes at Santa Cruz North. 1980: Six drillholes at Santa Cruz North.
1974 –1984	ASARCO	Mined the Sacaton deposit using open pit methods. Initiated underground mining, but this was discontinued due to low copper prices.
1974 –1992	Hanna Mining, Getty Oil	CAP project team focused their attention on the Santa Cruz system (referred to as the Casa Grande Project). Evidence for porphyry-style mineralization, in the form of a leached cap was found around what became the Casa Grande West deposit. Hanna Mining took over as project operator in 1977, with Getty Oil providing funding. Tightly spaced drilling continued until 1982, when a combination of factors, including low copper prices, led to the project being mothballed. 1975: Drilled two holes at Casa Grande, 2 holes at Santa Cruz North and 1 hole at Texaco. 1976: Drilled two holes at Casa Grande North, 14 holes at Casa Grande. 1977: One hole drilled at Texaco, 45 at Casa Grande. 1978: One hole drilled at Santa Cruz, 31 holes at Casa Grande. 1979: Drilled six holes at Casa Grande and Santa Cruz North. 1981: Two drillholes at Santa Cruz North. 1982: Two drillholes at Santa Cruz North.
1990	ASARCO-Freeport, Texaco	Entered into a joint venture on the Texaco land position.
1988 – 1998	US Bureau of Reclamation, ASARCO-Freeport	Joint venture in-situ copper mining leach project between ASARCO-Freeport, and the US Bureau of Reclamation. Field testing began in 1988, and the test wells were constructed in 1989 in a five-point pattern with one injection well centered between four extraction wells. Salt tracer tests were conducted in 1991; permits for the use of sulfuric acid were received in 1994; and the solvent extraction-electrowinning (SX/EW) pilot plant was completed in 1995. Leach testing commenced in 1996, continued until December 1997 when congressional funding through the US Bureau of Reclamation ceased. Pumping continued until the end of February 1998. Plant placed on care and maintenance. The final research report was never made public; however, a newsletter from the project was circulated in March 1998, which noted that 35,000 pounds of copper were extracted.
1996	ASARCO-Freeport	11 drillholes at Texaco.
2003	D.R. Horton (DRH)	Purchased from ASARCO-Freeport.
2007	DRH and Legends	Legends acquires surface rights from DRH.
2019	High Power Exploration, Ltd. (HPX)	Ivanhoe Electric predecessor, HPX, signs an agreement with Central Arizona Resources (CAR) for access to historical data throughout the area as well as 238 unpatented mining lode claims.
2021	Ivanhoe Electric	Ivanhoe Electric is formed via a split from HPX. All Santa Cruz agreements are transferred to Ivanhoe Electric.
2021	Ivanhoe Electric-CAR	Agreements signed with DRH and Legends for subsurface and surface rights. Work programs including drilling, geochemical, geophysical, and geological exploration commence.
2021	Ivanhoe Electric	Issues first mineral resource estimate.
2022	Ivanhoe Electric	Ivanhoe Electric consolidates 100% ownership of the project from CAR.
2022	Ivanhoe Electric	Issues updated mineral resource estimate.
2023	Legends	Legends is acquired by Wolff-Harvard Ventures, LP (Wolff-Harvard).
2023	Ivanhoe Electric	Issues initial assessment.
2024	Ivanhoe Electric	Exercises options with DRH and Wolff-Harvard to complete acquisition of subsurface and surface ownership.

6 Geological Setting, Mineralization & Deposit

6.1 Regional Geology

The Santa Cruz Copper Project is located within an approximately 600 km long northwest-to-southeast-trending metallogenic belt known as the Southwestern Porphyry Belt, which extends from northern Mexico into the southwestern United States. The belt includes many productive porphyry copper deposits in Arizona, such as Mineral Park, Bagdad, Resolution, Miami-Globe, San Manuel-Kalamazoo, Ray, Morenci, and the neighboring Sacaton Mine (Figure 6-1).

These porphyry copper deposits are located within a broader physiographic region known as the Basin and Range Province which occupies the majority of the southwestern United States and northwestern Mexico. This region is predominantly characterized by alternating linear sub-parallel mountain chains separated by broad, flat valleys formed by regional tectonic extension during the mid- to late-Cenozoic period.

The basement geological units of Arizona consist of formations developed during the Paleoproterozoic collisional orogeny that were subsequently stitched together by anorogenic granitic plutonic suites within the Mesoproterozoic. Basement Proterozoic lithologies at the Santa Cruz site are represented by three primary units: Pinal schist, Oracle granite, and diabase intrusions.

The Pinal schist is a metasedimentary to metavolcanic schist that represents the oldest and most expansive basement rock within southern Arizona. Proterozoic anorogenic granitic complexes were emplaced into the Pinal schist between 1450 to 1350 Ma. Continental rifting during the Mesoproterozoic introduced both Paleo- and early-Mesoproterozoic granitic complexes to the surface, where they were subsequently buried beneath younger Neoproterozoic rocks of the Apache Group, which represent a very shallow intracontinental basin. These rocks were intruded and dilated by successive diabase intrusions around 1100 Ma related to the separation of the Rodinia supercontinent. Throughout the Paleozoic era, Arizona was situated within a craton characterized by significant disconformities in the stratigraphy, interpreted to represent relative transgressive and regressive changes in sea level. Continental shortening throughout the Cretaceous is contemporaneous with diachronous magmatism within the same location (Tosdal and Wooden, 2015). Cessation of magmatic activity during the Paleocene period marked the onset of erosion of the uplifted arc, which is presently located southwest of the Colorado Plateau.

6.2 Metallogenic Setting

The porphyry copper deposits of the Southwestern Porphyry Belt are the genetic product of igneous activity during the Laramide Orogeny (80 to 50 Ma). Laramide porphyry systems near the Santa Cruz Copper Project define a prominent southwest-to-northeast linear trend orthogonal to the trend of the Laramide magmatic arc environment.

During the tectonic extension of the mid-Cenozoic period, the Laramide volcanic arc and associated porphyry copper systems were variably dismembered, tilted, and buried beneath a complex mixture of basin sediments such as the Casa Grande Valley. However, before burial and concealment by sedimentary cover, many of Arizona's Laramide porphyry copper systems underwent supergene enrichment processes, which significantly enhanced their economic value as mineral deposits.

Figure 6-1: Regional Geology of the Southwestern Porphyry Belt & the Copper Porphyry Deposits Adjacent to the Project

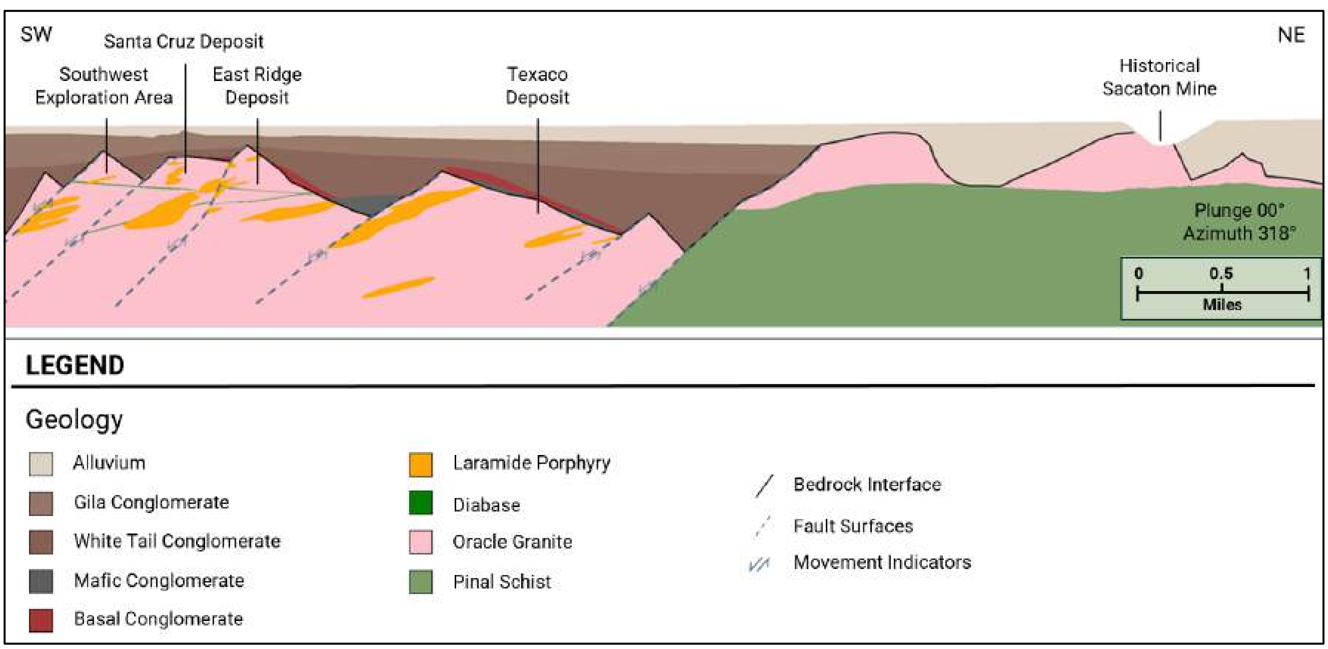
Source: Ivanhoe Electric, 2023.

Supergene enrichment in the project area demonstrates evidence of multiple enrichment cycles, indicated by the presence of several obliquely oriented chalcocite and oxide-copper blankets formed from successive syn-tilting enrichment events. These obliquely oriented blankets are interpreted to have formed due to syn-rotation enrichment and subsequent overprinting of newer supergene blankets over the previous ones. Cycled supergene enrichment processes such as these are observed throughout the Tertiary period and subsequently ceased with the deposition of basin sediments and concealment of the bedrock below which altered the hydrology. The earliest supergene enrichment at the Santa Cruz deposit is believed to have occurred during the Eocene epoch (Tosdal and Wooden, 2015). Supergene alunite from the nearby Sacaton porphyry copper deposit, approximately 8.5 km from the Santa Cruz deposit, was potassium-argon (K-Ar) dated to 41 Ma (Cook, 1994).

6.3 Santa Cruz Copper Project Geology

The Santa Cruz Copper Project consists of four separate areas of interest along a southwest-northeast trend which continues in line with the neighboring historical Sacaton mine. These areas, from southwest to northeast, are referred to as (1) the Southwest exploration area, (2) the Santa Cruz deposit, (3) the East Ridge deposit, and (4) the Texaco deposit. Each of these deposits or areas represents portions of one or more porphyry copper systems that have been dissected and separated as a result of extensional Basin and Range normal faulting. Likewise, each area has experienced variable periods of erosion, supergene enrichment, fault displacement, and tilting into their present positions due to Basin and Range extensional faulting (Figure 6-2).

Figure 6-2: Generalized Cross-Section of the Santa Cruz – Sacaton System



Source: Ivanhoe Electric, 2024.

6.3.1 Santa Cruz Bedrock Lithologies

Bedrock geology at the Santa Cruz Copper Project is largely dominated by Oracle granite (1450 to 1350 Ma) with lesser proportions of Proterozoic diabase intrusions (1100 Ma), variably dipping 15° to the south-southeast, and Laramide porphyry intrusions (75 Ma), dipping at ~30° to 40° to the north-northwest.

6.3.1.1 Oracle Granite

The Oracle granite is predominantly characterized as a coarse-grained biotite granite with large pink- or salmon-colored orthoclase feldspars approximately 32 to 38 mm across which gives the rock a pink- to pink-gray mottled appearance on fresh surfaces.

The groundmass comprises uniformly sized 5 mm grains of clear white feldspar and glassy quartz with greenish-black masses of biotite and magnetite. Composition suggests it should be classed as quartz monzonite rather than granite. Surface exposures are typically of light-buff color. Alteration minerals include sericite, secondary biotite, and secondary orthoclase.

6.3.1.2 Diabase

The Proterozoic diabase is a coarse-grained rock characterized by a composition predominantly of plagioclase feldspar, pyroxene, and olivine. Plagioclase feldspar and pyroxene, ranging from labradorite to bytownite, often exhibit crystal twinning and characteristic lathy ophitic to subophitic textures. Accessory minerals include minor amounts of iron-titanium oxides, magnetite and ilmentite, which contribute to the magnetic properties of the rock, apatite, and occasionally biotite or hornblende.

The diabase intrusions are interpreted to have been emplaced as horizontal to sub-horizontal sills, rather than vertical to subvertical dykes, though infrequent subvertical dykes are recognized in nearby locales. Due to its iron and magnesium-rich composition, occurrences of diabase are often congruent with increased hypogene and supergene copper mineralization, relative to other lesser reactive rocks.

Petrographic thin section analysis indicates that the diabase is predominantly associated with secondary biotite and epidote as hydrothermal alteration products.

6.3.1.3 Laramide Porphyry

The Laramide porphyry intrusions are variable in composition but are collectively regarded as the causative intrusive for primary hypogene mineralization within the Santa Cruz Copper Project. The porphyry intrusions typically characterized as a quartz monzonite composition (35% quartz, 6% biotite, 29% feldspar, 30% K-feldspar, and plagioclase) with 40% phenocrysts averaging 1.5 mm and 60% aplitic to aphanitic groundmass. Quartz phenocrysts are less than 10 mm, sub-spherical, and comprise approximately 25% of the phenocrysts. Biotite makes up 15% of the phenocrysts and are less than 5 mm. Subhedral plagioclase phenocrysts, 60%, are generally less than 7 mm.

There are two distinct groups of Laramide-aged porphyry intrusions. One contains quartz phenocrysts of less than 5% by volume and is generally associated with increased biotite phenocrysts, as well as increased biotite content in the groundmass, typically resulting in a darker color for this unit. The other variant contains a greater abundance of quartz phenocrysts (>5%) and is often described as being more siliceous and lighter in color. These two distinct groups of Laramide-aged porphyry are formally referred to as the "granodiorite porphyry" and "latite porphyry," respectively.

A third Laramide porphyry consists of a biotite-quartz feldspar monzonite porphyry comprising 15% biotite, 25% K-feldspar, 40% plagioclase and 20% quartz, with 15% phenocrysts consisting of 20% biotite, 70% plagioclase and 10% quartz in an aphanitic 15% biotite, 30% K-feldspar, 35% plagioclase, 20% and quartz groundmass with an 0.06 mm average crystal size.

Alteration minerals within mineralized Laramide intrusions are variable depending on the porphyry endmember but are dominated by hydrothermal biotite, sericite, and lesser orthoclase feldspar.

6.3.1.4 Pinal Schist

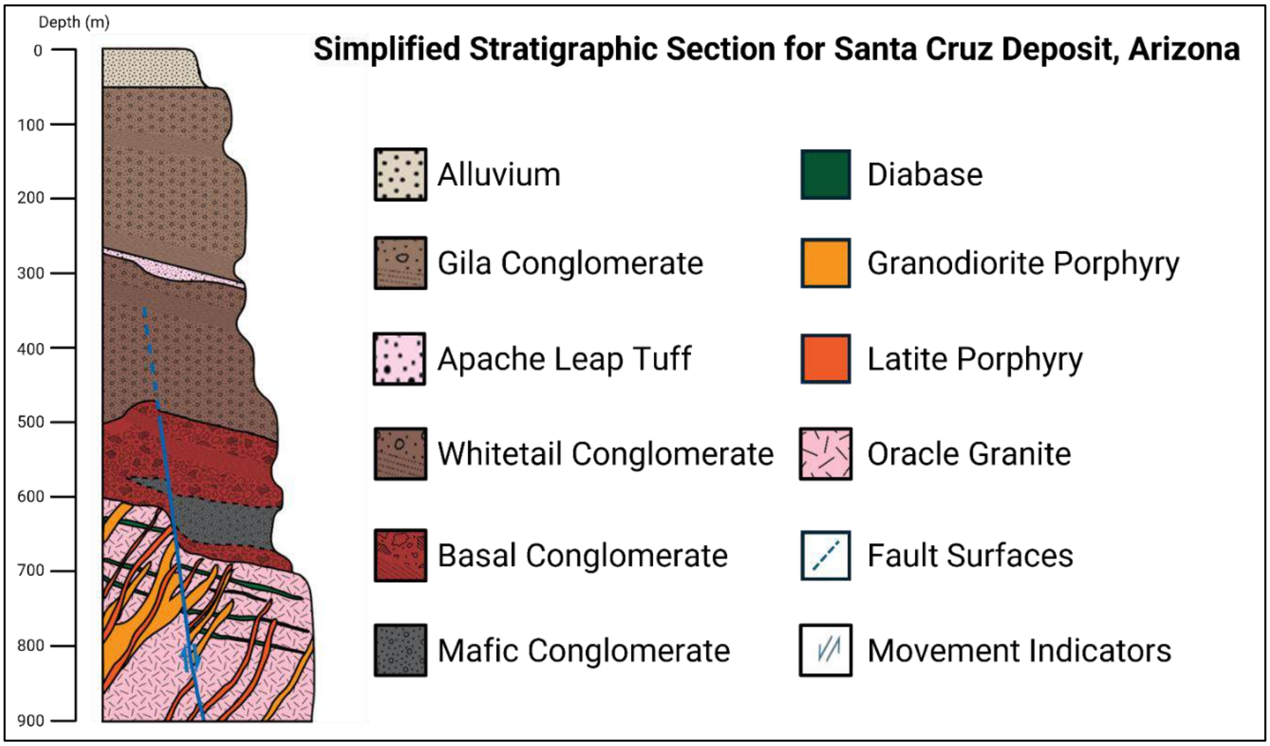
The Pinal schist has not been intersected within the project area but is interpreted to occur at depth based on the regional geology. The unit typically consists of medium- to high-grade metamorphic rocks derived from sedimentary to volcanic protoliths. As part of the broader suite of Proterozoic metamorphic rocks in southern Arizona, the Pinal schist is exposed in mountain ranges such as the Santa Catalina and Rincon Mountains. Structurally, the unit is often intensely deformed, exhibiting multiple generations of folding and faulting, and is intruded by younger granitic bodies such as the Oracle granite.

6.3.2 Basin Fill Lithologies

Directly overlying the erosional surface of the bedrock units is a series of sedimentary and volcaniclastic rocks. These rocks consist of predominantly syn-extensional erosional sediments and cobble conglomerates, airfall volcanic tuffs, and andesitic basalts associated with flows or volcaniclastic deposits. The sediments and cobble conglomerate units include alluvium, Gila conglomerate, Whitetail conglomerate, and basal conglomerate. The Gila and Whitetail conglomerates are separated stratigraphically and conformably by a narrow marker bed of rhyolitic Apache Leap tuff (20 Ma), usually of no greater thickness than 1 m. Basaltic flows and volcaniclastic deposits are represented by the mafic conglomerate which exists variably above, below, or intercalated within the basal conglomerate and/or lower Whitetail conglomerate.

The syn-extensional sedimentary units and morphology are well-understood across the project area through numerous core-from-surface drilling intersections. A simplified stratigraphic column is shown in Figure 6-3.

Figure 6-3: Simplified Stratigraphic Section of Santa Cruz Copper Project



Source: Ivanhoe Electric, 2025.

6.3.2.1 Alluvium

The project area is characterized by an extensive layer of Quaternary alluvium, ranging from 80 to 100 m in thickness. This geological formation primarily comprises alternating layers of fine-grained sand, silt, and clay, interspersed with occasional fragments of caliche and iron oxides. Minimal variation is observed within the vertical profile, which indicates consistent depositional conditions across the project area. The presence of caliche fragments and subtle iron oxide staining within the alluvium points towards periodic episodes of soil formation and diagenetic alterations under semi-arid climatic conditions typical of Arizona.

6.3.2.2 Gila Conglomerate

The Tertiary Gila conglomerate consists of alternating beds of rounded to sub-rounded to sub-angular cobble to lesser boulder conglomerates, composed of mixed lithologies specific to the regional area, and beds of moderately sorted sand and gravel pebble conglomerates. These beds collectively average 150 to 300 m in thickness across the project area, and reach their thickest intersections over paleo-valleys controlled by buried extensional structural block configurations, and exhibit a conformable relationship with the underlying Apache Leap tuff.

The regional aquifer starts about 150 m below the surface in the Gila conglomerate, extending through different layers until it reaches bedrock. This water table is consistent across the project area.

6.3.2.3 Apache Leap Tuff

The Tertiary Apache Leap tuff, characterized as a rhyolitic airfall tuff, primarily consists of a devitrified quartzofeldspathic cryptocrystalline groundmass with infrequent compressed pumice fragments observable within thicker and less weathered intersections. This unit, interpreted to be horizontal to sub-horizontal across the Casa Grande Valley, can occur as multiple layers within a single section. The tuff displays a conformable relationship with the underlying Whitetail conglomerate.

6.3.2.4 Whitetail Conglomerate

The Tertiary Whitetail conglomerate, temporally and characteristically regarded as the stratigraphically lower and earlier equivalent of the Gila conglomerate, consists of alternating beds of mostly angular to sub-angular cobble to boulder conglomerates, composed of mixed lithologies specific to the regional area, with periodically interbedded layers of moderately to poorly sorted sand and gravel pebble conglomerates. Interpreted to represent a period of higher intensity erosion, the unit collectively averages 100 to 400 m in thickness across the project area. The thickest intersections are found over paleo-valleys controlled by extensional structural block configurations. It displays a conformable relationship with the underlying basal conglomerate or mafic conglomerate and an unconformable relationship with the underlying Oracle granite or Laramide porphyry.

6.3.2.5 Mafic Conglomerate

The Tertiary mafic conglomerate is characterized as a monomictic volcaniclastic unit composed of tightly compacted angular to sub-angular pebble to cobble-sized clasts of basaltic material. The unit is markedly distinguished from other sedimentary units by the sharp difference in clast composition and clast abundance, with little matrix support. Within the lower sedimentary sequence of the Santa Cruz deposit, the unit typically forms thin and relatively flat layers ranging from 1 to 3 m thick, which can be found above, below, or intercalated with the Basal conglomerate and/or Whitetail conglomerate. These thin layers generally dip to the southeast at ~5° to 15°. The unit shows a conformable relationship with the underlying basal conglomerate or Whitetail conglomerate and an unconformable relationship with the underlying Oracle granite or Laramide porphyry.

6.3.2.6 Basal Conglomerate

Tertiary basal conglomerate is characterized as a tightly compacted, monomictic conglomerate consisting of angular cobble- to boulder-sized clasts of Oracle granite. The unit is also markedly distinguished from other units by a sharp and significant introduction or increase in total hematitic iron oxidation throughout the rock mass. The unit averages 25 to 100 m thickness across the project area, reaching the thickest intersections at the base of paleo-valleys due to surface erosion, slope degradation, or mass wasting. The unit displays a conformable relationship with the underlying mafic conglomerate or an unconformable relationship with the underlying Oracle granite.

6.3.3 Alteration

Hydrothermal alteration at the Santa Cruz Copper Project is variable across the project area and largely dependent on the proximity and position relative to causative Laramide porphyry intrusions. Hypogene hydrothermal alteration assemblages consist predominantly of quartz, secondary biotite, secondary orthoclase, magnetite, sericite, and phengite. Low-temperature broad overprints are present consisting of illite and smectite, lesser kaolinite (which occurs primarily in the Oracle granite), and late chlorite and calcite. Rare subordinate phases such as epidote, albite, and tremolite may also occur locally.

Supergene alteration is the latest overprint, which is the product of surface weathering, oxidation, and heated meteoric groundwater. The breakdown of sulfides results in sulfuric acid that can lead to the formation of limonite, alunite, jarosite, and kaolinite-bearing assemblages. Supergene alteration, as a result of heated meteoric groundwater, occurs as smectite clay alteration of mafic to intermediate-composition igneous rocks, smectite alteration along Miocene Basin and Range faults, and broad pervasive illite-smectite alteration overprints.

6.3.4 Structural Geology

The project area lies within the Basin and Range geological province, within a domain that has experienced a high degree of extensional tectonism. Faulting is intimately associated with mineralization and the current deposit configuration in several ways. The extensional fault systems that are recognized in the project area have a transport direction towards the southwest.

Major, deep-seated, northeast-to-southwest-striking basement structures controlled Laramide-age intrusive emplacement and metal endowment during transpressional arc magmatism. These structures are interpreted as detachment faults that have been reactivated multiple times, potentially serving as transfer faults for dextral offset during Basin and Range extension. Post-mineral faulting in the project area shows evidence of two generations of normal faulting in a northwest-southeast direction. This caused significant rotation and offset of fault blocks, with the earliest generation exhibiting a sub-horizontal configuration and the latest showing a sub-vertical configuration. The detachment fault has not been intersected within the project area but is believed to be at depth based on regional geology and fault block orientation.

Post-emplacement faulting has controlled and affected groundwater dynamics and the mobilization and deposition of copper through supergene enrichment processes. These faults also played a role in shaping the paleotopographical landscape and had a controlling influence on the development and distribution of exotic copper mineralization within paleodrainages. Internal faults in the Santa Cruz deposit have been modeled using active seismic geophysics, geotechnical analysis, and geological diamond drillhole logs.

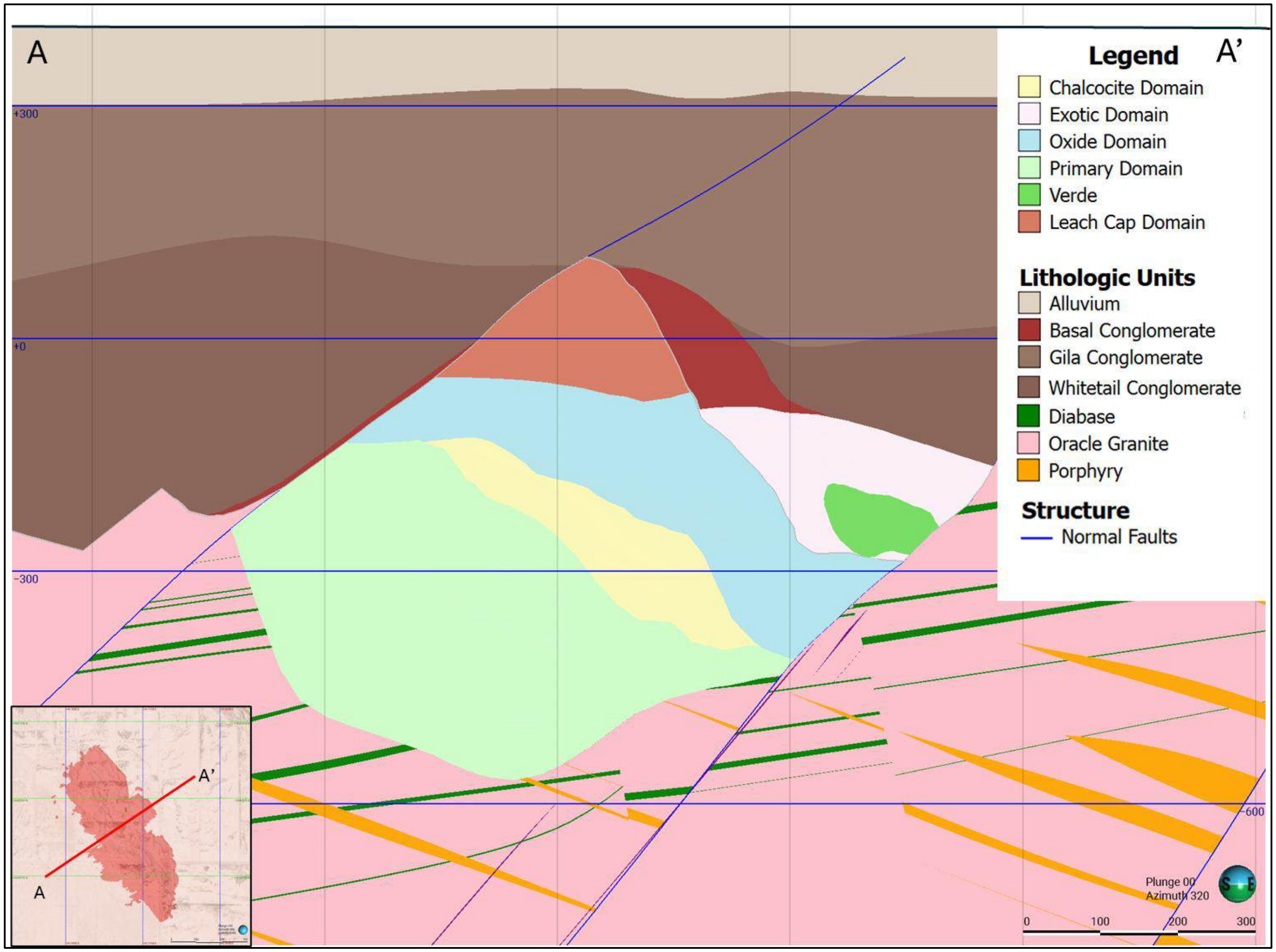
6.3.5 Property Mineralization

Mineralization at the Santa Cruz Copper Project is summarized in Table 6-1. Figures 6-4 to 6-6 show cross-sections of the Santa Cruz, East Ridge, and Texaco deposits, respectively.

Table 6-1: Deposit & Mineralization Summary of the Santa Cruz Copper Project

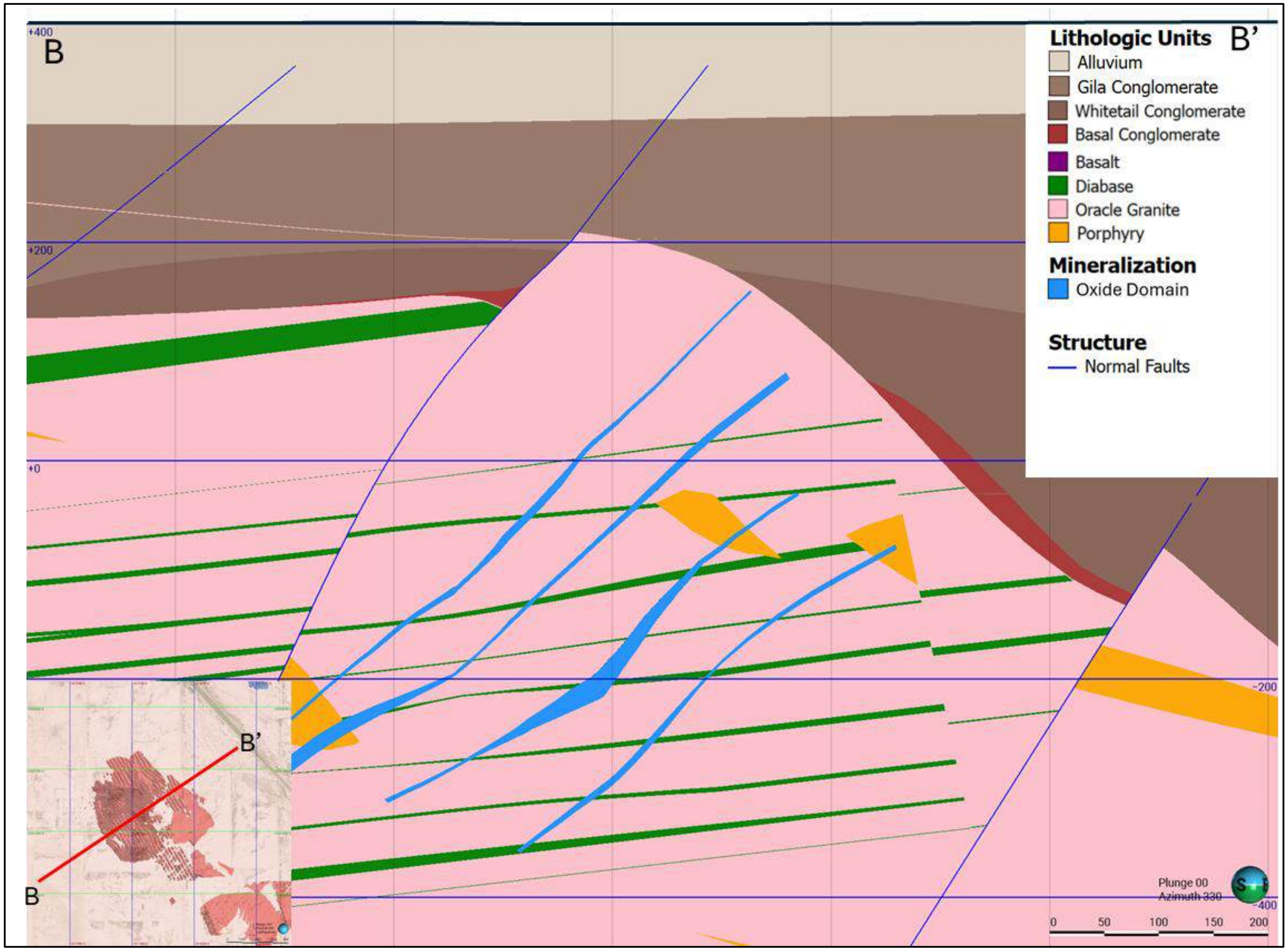
Deposit	Dimensions	Lithology	Structure	Alteration	Mineralization
Santa Cruz Deposit	The Santa Cruz deposit is approximately 2,000 m long and 700 m wide. Mineralization occurs from about 400 m below the surface at 0 m above sea level to a depth of approximately -600 m below sea level.	Precambrian Oracle granite, Laramide porphyry, Precambrian diabase	Basin and Range extensional faulting	Pervasive sericite overprint associated with moderate density stockwork quartz veinlets. Higher temperature alteration is displayed as secondary biotite, chlorite, and minor secondary orthoclase. Low-temperature supergene weathering overprints hydrothermal alteration as illite, smectite, and lesser kaolinite.	**Supergene:** The uppermost exotic copper mineralization is primarily hosted in overlying clastic and volcanic rocks. The supergene stratigraphy comprises zoned mineralization, with chrysocolla at the top, followed by atacamite, and then chalcocite. There is evidence of post-rotational supergene enrichment horizons, indicating two or more supergene sulfide events. **Hypogene:** Primary sulfide mineralization includes chalcopyrite, pyrite, and minor molybdenite, which are hosted in quartz-sulfide stringers, veinlets, veins, and breccias. Additionally, finely to coarsely disseminated copper sulfides are found within vein envelopes associated with hydrothermal porphyry mineralization.
East Ridge Deposit	The East Ridge deposit consists of discrete subparallel zones. East Ridge North occurs as four dipping, subparallel zones from 4 to 8 m thick, 500 to 700 m long along strike, and 300 to 600 m extent along dip with an average dip of 35° to 45°. East Ridge South consists of two shallowly dipping, subparallel zones from 5 to 15 m thick, approximately 300 m long along strike and 600 m in extent down dip with an average dip of 15°.	Precambrian Oracle granite, Laramide porphyry, Precambrian diabase	Basin and Range extensional faulting	Pervasive sericite overprint associated with low to moderate density stockwork quartz veinlets. Higher temperature alteration is displayed as secondary biotite, magnetite, and minor secondary orthoclase. Low-temperature supergene weathering overprints hydrothermal alteration as illite, smectite, and lesser kaolinite.	**Supergene:** Correlative and partially displaced from the Santa Cruz deposit. Supergene sulfide mineralization consists of thin, stacked intervals displaced from those in the Santa Cruz deposit by Basin and Range faulting. Chrysocolla and atacamite is broadly distributed near the fault-controlled paleo valley between the Santa Cruz and East Ridge deposits. **Hypogene:** Primary sulfide mineralization is correlative and displaced from the Santa Cruz deposit and includes broad zones of low to moderate density quartz-sulfide veins consisting of chalcopyrite, pyrite, and molybdenite. Small zones of mineralized hydrothermal breccia are in the north portion of East Ridge.
Texaco Deposit	The Texaco deposit is approximately 1,500 m long and 650 m wide. The highest intercept of mineralization occurs at about 450 m below surface at -50 m below sea level, while the deepest intercept is at approximately -720 m below sea level. The deposit is tabular and dipping, and these dimensions represent the highest and lowest intersections of mineralization with an average thickness of 150 m.	Precambrian Oracle granite, Laramide porphyry, Precambrian diabase	Basin and Range extensional faulting	Pervasive sericite in groundmass and stockwork quartz-sericite-pyrite veins. Higher temperature alteration is associated with quartz-molybdenite veins, secondary, biotite and magnetite within thin veinlets. Low-temperature supergene weathering overprints hydrothermal alteration as illite, smectite, and lesser kaolinite.	**Supergene:** Supergene mineralization at Texaco contains significantly less copper oxide and copper chloride mineralization compared to the Santa Cruz deposit, although a well-developed leached cap exists. Veined and disseminated chalcocite exists in sub-horizontal blankets that have been tilted due to faulting and extension. **Hypogene:** Primary sulfide mineral assemblages consist of chalcopyrite, pyrite, molybdenite hosted in quartz-sulfide veins, veinlets, vein breccia and breccias, as well as fine to coarsely disseminated sulfides within vein envelopes. Chalcopyrite and pyrite occur as sulfide cement within breccias. Hypogene mineralization at Texaco forms a distinct zoning pattern of chalcopyrite-molybdenite to chalcopyrite to pyrite from core to shell.
Southwest Exploration Area	The dimensions of the Southwest exploration area are yet to be determined as the deposit boundaries remain undefined.	Precambrian Oracle granite, Laramide porphyry	Basin and Range extensional faulting	Higher temperature alteration assemblage consisting of sericite, secondary biotite, magnetite, and secondary orthoclase. Significant supergene weathering is not observed within the Southwest exploration area.	**Supergene:** Supergene mineralization at the Southwest exploration area consists of weakly disseminated and partially enriched sulfides with chalcocite and/or bornite rims. **Hypogene:** Hypogene mineralization within the Southwest exploration area is characterized by limited drilling that encountered bedrock at approximately 1,000 m depth. Sulfide mineralization includes pyrite and chalcopyrite that occur as chemical cement within a magmatic-hydrothermal breccia and sparse quartz-sulfide veining.

Figure 6-4: Geological Cross-Section of Santa Cruz Deposit Looking Northwest



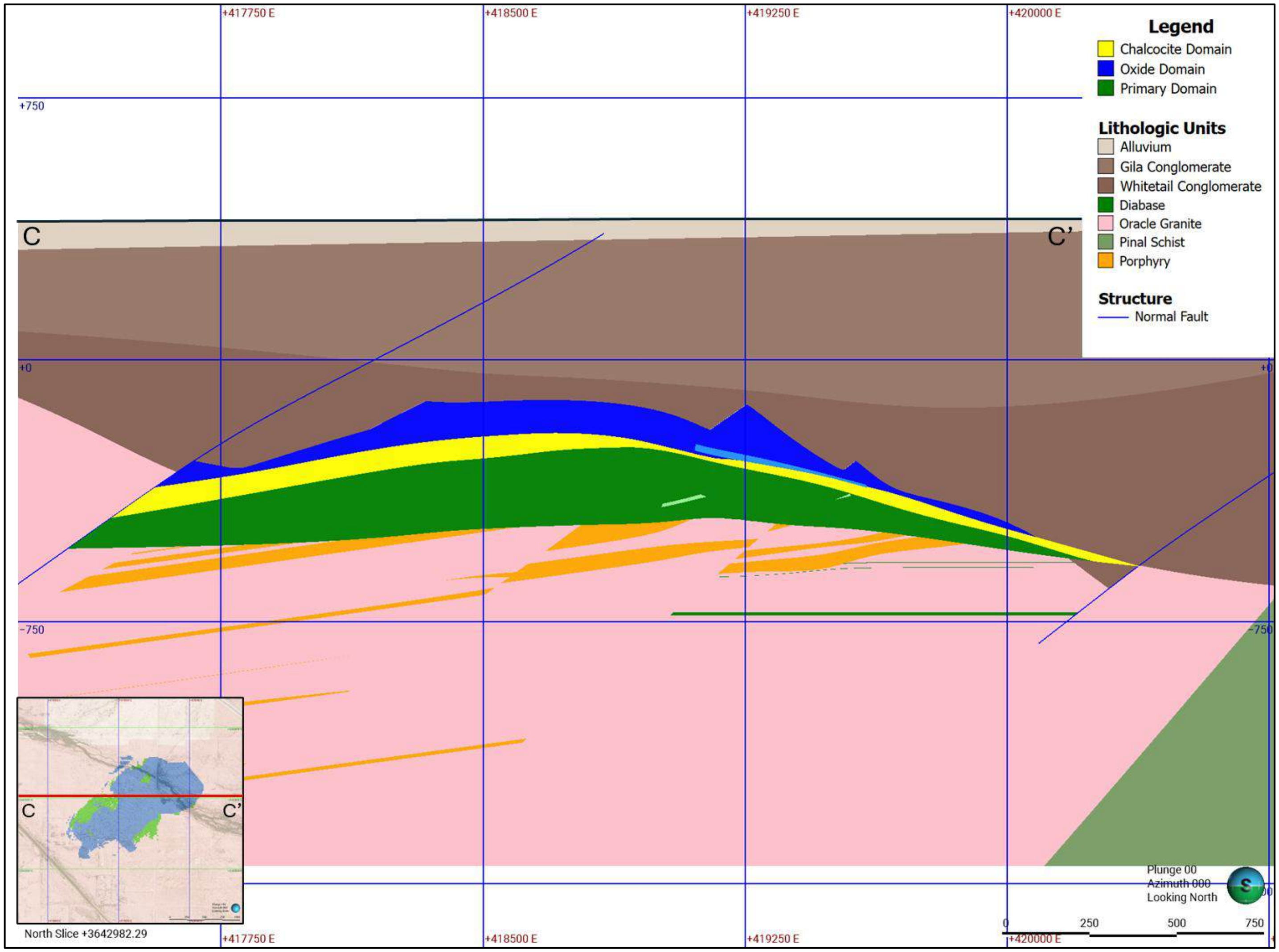
Source: Ivanhoe Electric, 2025.

Figure 6-5: Geological Cross-Section of the East Ridge Deposit, Looking Northwest



Source: Ivanhoe Electric, 2025.

Figure 6-6: Geological Cross-Section of the Texaco Deposit, Looking North

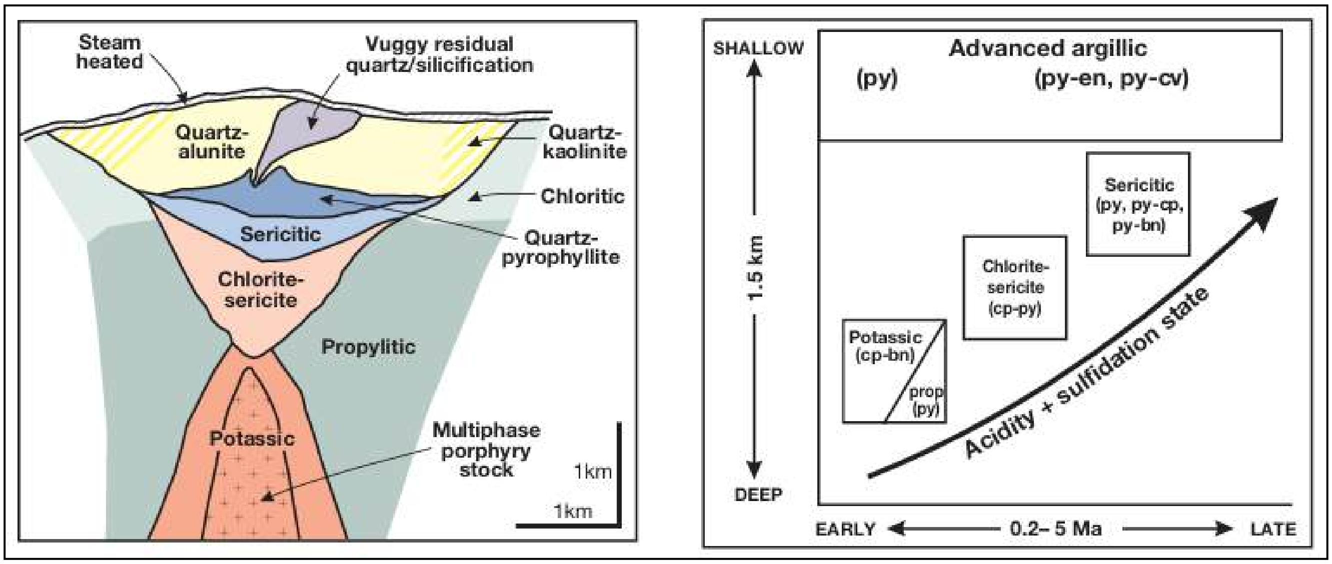


Source: Ivanhoe Electric, 2025.

6.4 Deposit Types

Porphyry copper deposits (Figure 6-7) form in areas of shallow magmatism within subduction-related tectonic environments (Sillitoe, 2010).

Figure 6-7: Simplified Alteration and Mineralization Zonation Model of a Porphyry Copper Deposit



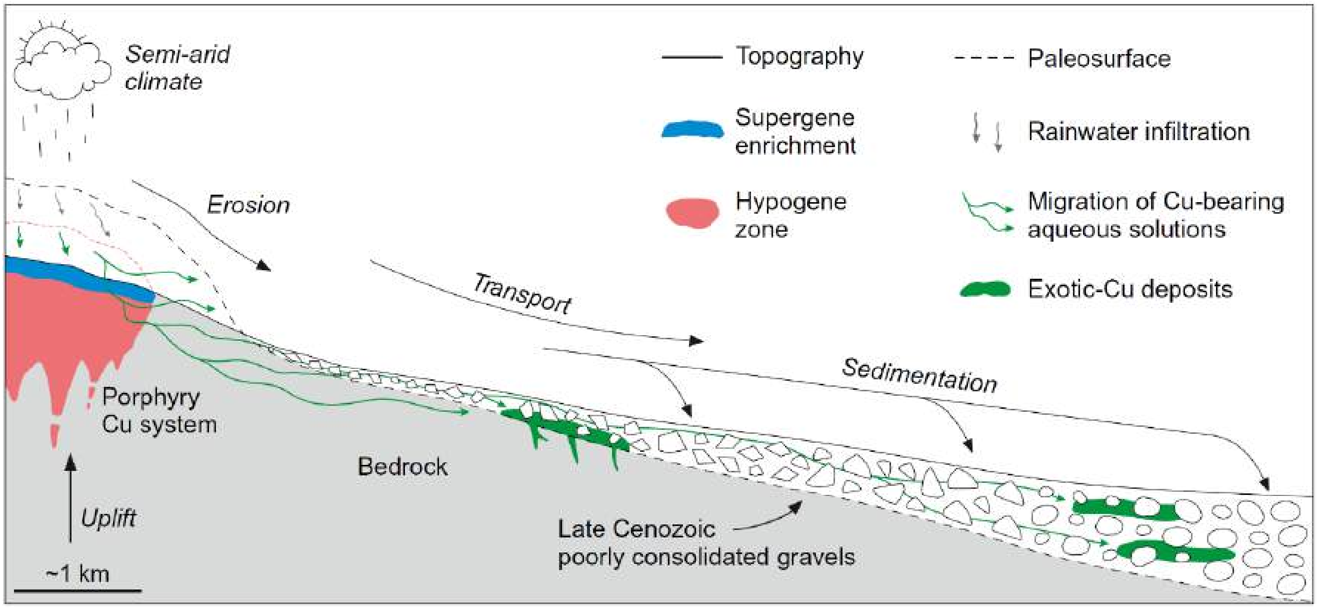
Source: Sillitoe, 2010.

As shown in Figure 6-7, the deposits in the project area have the typical characteristics of a porphyry copper deposit defined by Berger et al. (2008):

- Copper-bearing sulfides are localized in a network of fracture-controlled stockwork veinlets and as disseminated grains in the adjacent altered rock matrix.
- Alteration and mineralization at 1 to 4 km depth are genetically related to magma reservoirs emplaced into the shallow crust (6 km to over 8 km), predominantly intermediate to silicic in composition, in magmatic arcs above subduction zones.
- Intrusive rock complexes associated with porphyry copper mineralization and alteration are predominantly in the form of upright-vertical cylindrical stocks and/or complexes of dykes.
- Zones of phyllic-argillic and marginal propylitic alteration overlap or surround a potassic alteration assemblage.
- Copper may also be introduced during overprinting phyllic-argillic alteration events.

Primary hypogene mineralization occurs as disseminations and in stockworks of veins, in hydrothermally altered, shallow intrusive complexes and their adjacent country rocks (Berger et al., 2008). Sulfides of the hypogene zone are dominantly chalcopyrite and pyrite. The hydrothermal alteration zones and vein paragenesis of porphyry copper deposits are well-known and provide an excellent tool for advancing exploration. Schematic cross-sections of typical alteration zones and associated minerals are presented in Figure 6-8.

Figure 6-8: Schematic Representation of an Exotic Copper Deposit

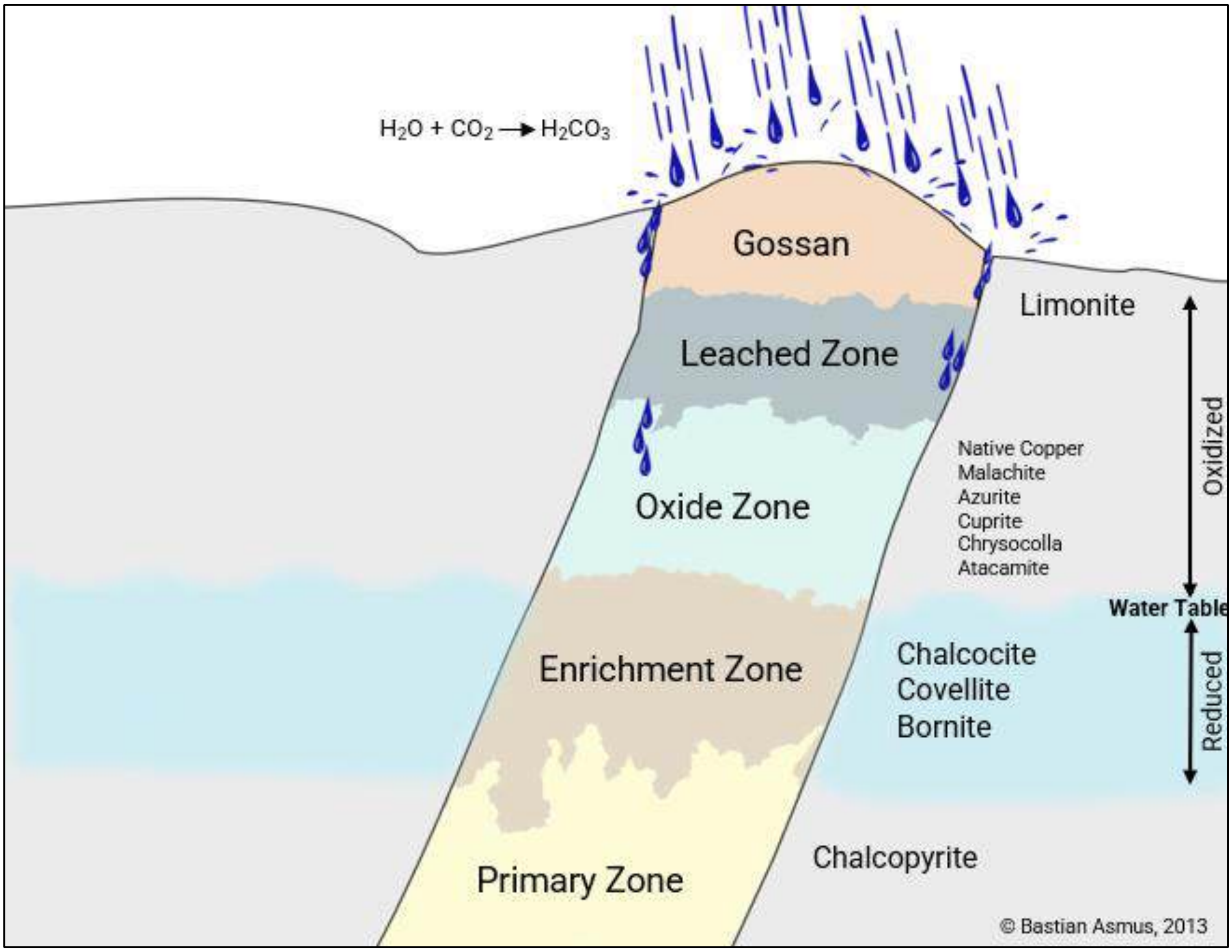


Source: Fernandez-Mote et al. (2018); modified after Münchmeyer (1996) and Sillitoe (2005).

Supergene enrichment processes are a common feature of many porphyry copper systems located in certain physiogeographical regions (semi-arid). It can result in upgrading of low-grade porphyry copper sulfide mineralization into economically significant accumulations of supergene copper species (copper oxides, halides, carbonates, etc.). This is particularly important in the southwestern United States. Supergene enrichment occurs when a porphyry system is uplifted to shallow depths and is exposed to surface oxidation processes. This leads to the copper being leached from the hypogene mineralization during weathering of primarily pyrite, which generates significant sulfuric acid in oxidizing conditions, and redeposits the copper below the water table as supergene copper sulfides such as chalcocite and covellite. Figure 6-9 illustrates a schematic section through a secondary enriched porphyry copper deposit, identifying the main mineral zones formed as an overprint from the weathering of the hypogene system.

The project area has a history of oxidation and leaching that resulted in the formation of enriched chalcocite horizons, and later stages of oxidation and leaching, which modified the supergene copper mineralization by oxidizing portions of it in place and mobilizing some of the chalcocite to a greater depth (Figure 6-9). This process is associated with descending water tables and or erosion and uplift of the system, or changes in climate, or hydrogeological systematics.

Figure 6-9: Typical Copper Porphyry Cross-Section and Associated Minerals



Source: modified from Asmus, B. (2013).

7 Exploration

7.1 Geophysics and Geochemistry

Various exploration programs have been conducted in the project area by different operators starting in the 1960s. These are summarized in Section 5, and where relevant to the Santa Cruz Copper Project, are also summarized in the following sub-sections.

7.1.1 Geophysical Exploration

7.1.1.1 Historical Surveys

Ivanhoe Electric compiled historical geophysical survey information on the project area completed by previous operators (refer to Table 5-1).

Historical induced polarization (IP) survey reports indicate that extraneous responses in IP surveys at Sacaton and Santa Cruz resulted from groundwater present in the valley sediments and conglomerates. Controlled source audio-frequency magnetotelluric surveys were considered promising for tracking leachate detectability with salt doping/tracing.

7.1.1.2 Ivanhoe Electric

Ivanhoe Electric has completed geophysical surveys including ground gravity, seismic refraction tomography, proprietary Typhoon™ three-dimensional perpendicular pole dipole induced polarization (3D PPD IP), ground magnetics, multichannel analysis surface wave, and controlled source audio-frequency magnetotellurics. The geophysical datasets from these surveys were used to assist with geological interpretation and improved drill targeting. The surveys and results are summarized in Table 7-1. Maps detailing the location of the surveys, survey design, and sample results are shown in Figures 7-1 through 7-3.

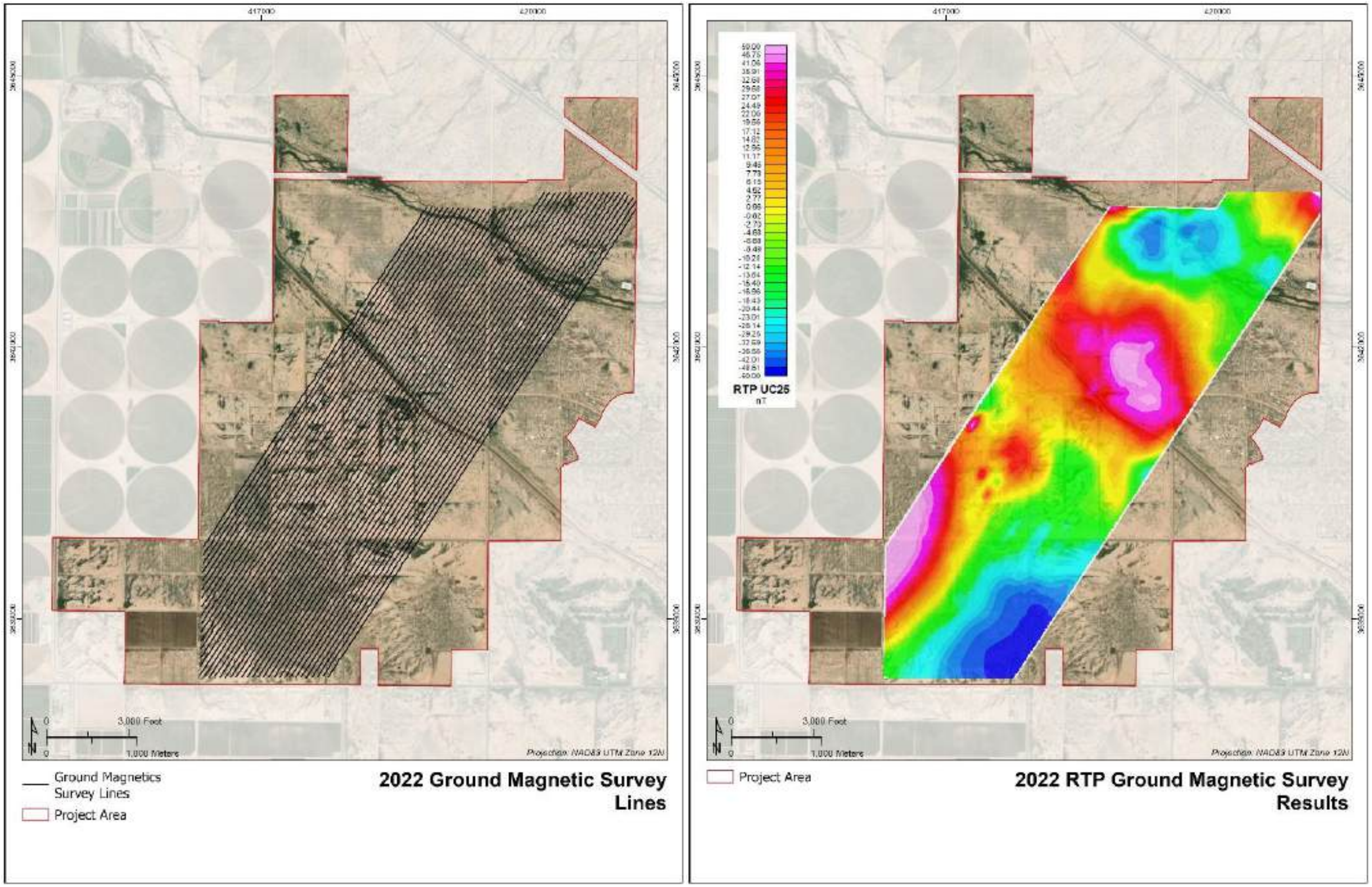
Table 7-1: Geophysical Assessments Conducted on the Santa Cruz and Texaco Deposits from 2022 to 2024

Year	Technique	Purpose	Results
2022	Ground gravity	To understand the depth to basement, the characteristics of the post-mineral cover, and the pre-mineral basement. When integrated with seismic data, which provides superior vertical resolution, the combination yields high-resolution insights into key geological relationships in the subsurface.	Gravity data, combined with seismic datasets, was used to estimate depths to basement outside of drilled domains. This data helped improve the modeling of geological contacts, structures, and post-mineral cover geometries, aiding in drillhole planning and mine design optimization.
	2D surface seismic refraction tomography	To determine bedrock depth and subsurface topography within a discrete 1.5 by 1.2 km region northwest of the Santa Cruz deposit.	The seismic tomographic survey helped model the depth to basement within the survey area. It revealed that the cover sequence generally consists of low-velocity materials, which enabled the delineation of the basement contact in nearby zones. Certain gravels near the basement interface exhibited high seismic velocities due to varying degrees of induration and lithification. Some domains of crystalline basement showed anomalously low velocities, attributed to extensive hydrothermal alteration and supergene leaching.
	Typhoon™ (3D PPD IP)	The aim was to address subsurface chargeability anomalies from disseminated sulfides and to analyze resistivity and conductivity data from the 3D PPD survey. This would help define geological features like lithological, alteration, mineralization domains, and water table configuration.	Results revealed strong chargeability anomalies that correspond with areas of known porphyry-style mineralization previously confirmed through drilling such as disseminated sulfide mineralization such as pyrite and chalcopyrite.
	Ground magnetics	To resolve structures and geological relationships in the subsurface.	The results revealed subsurface features such as faults and magnetic variations. Interpretation in Santa Cruz and Texaco deposits faced interference from steel drill casings and possibly abandoned rods. Despite this, magnetic anomalies at historical drill sites helped verify the accuracy of recorded collar locations.
2023	Quantum-audio magnetotellurics	To obtain broad magnetic and resistivity datasets across the property for regional context and interpretation of subsurface structural and alteration features.	The survey sensor, suspended beneath the helicopter, experienced vibrational and rotational noise, leading to low-quality data with a poor signal-to-noise ratio. Consequently, the dataset was unusable for creating higher-order derivative products like resistivity models or magnetic inversions, and was excluded from operational workflows.
2024	3D and 2D seismic and multichannel analysis surface wave	High-resolution seismic imaging was conducted to de-risk capital development and provide interpretive data on stratigraphic contacts and structures. Additionally, two multichannel surface wave survey lines were completed to inform near-surface shear wave velocity for planned infrastructure.	The integration of 2D, 3D seismic, and multichannel analysis surface wave survey results reduced geological uncertainty by clarifying lithological boundaries and fault geometries, improving capital planning.
	Typhoon™ data reprocessing	The 2022 Santa Cruz Copper Project Typhoon™ 3D PPD IP survey data was reprocessed using a new suite of QA/QC tools and newly introduced machine learning techniques to identify and filter erroneous readings within the raw data.	The refined data served as updated input for creating a new 3D chargeability and resistivity inversions. The resulting 3D inversions and report featured smoother geometries with less distortion from cultural noise.
	Ambient noise tomography	To map the thickness of the conglomerates, detect any lateral velocity variation within the bedrock, and detect structural features for additional geological context.	The modeled results showed that the passive seismic data delineated stratigraphic and structural features relevant to porphyry copper exploration, increasing confidence in geologic interpretations.

Figure 7-1: 2022 Gravity Survey Station Plan (Left) & Gravity Survey Results (Right)

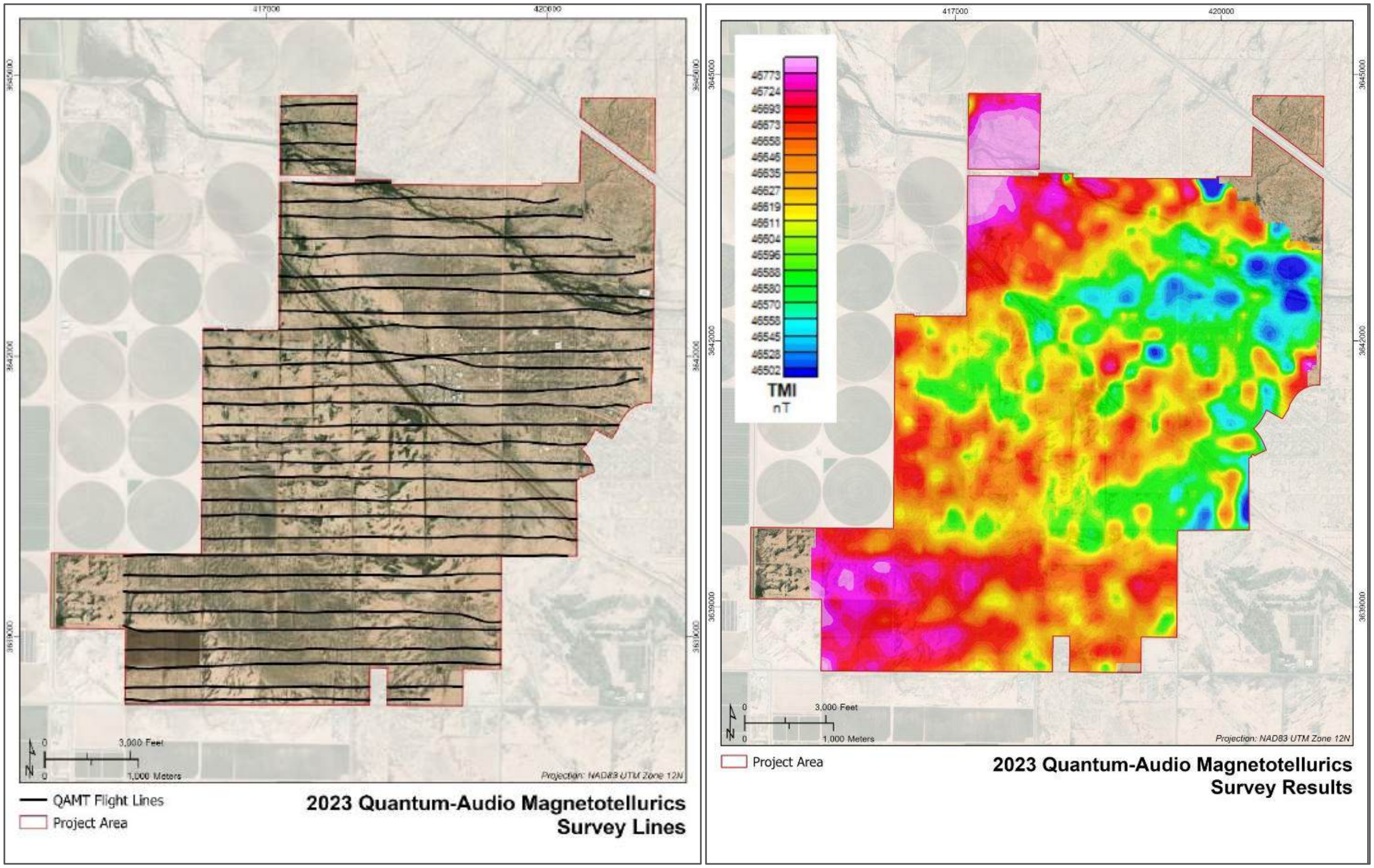
Note: Shows complete Bouguer gravity anomaly at reduction density of 2.3 g/cm^3. Source: Ivanhoe Electric, 2025.

Figure 7-2: Ground Magnetics Survey Results



Note: Ground magnetics survey lines are shown on the left and TMI RTP ground magnetics results are shown on the right. Source: Ivanhoe Electric, 2025.

Figure 7-3: Quantum Audio Magnetotellurics Survey Lines



Source: Ivanhoe Electric, 2025.

7.1.2 Geochemical Exploration

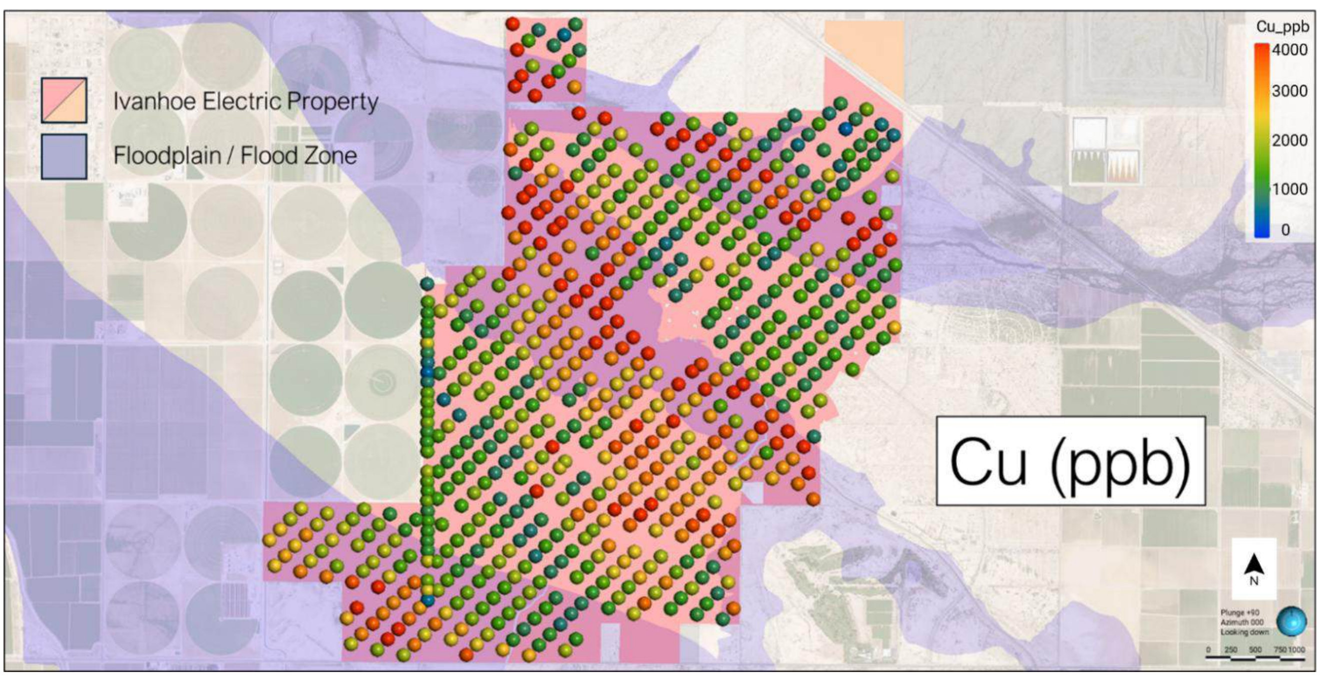
The deposits at the Santa Cruz Copper Project are deep and most sampling has been the result of drilling. Drilling results are discussed in Section 7.2.

Ivanhoe Electric conducted a partial ionic leach sampling survey through ALS Laboratories in Tucson, Arizona. The geochemical datasets have been used to assist with geological interpretation and improved drill targeting.

A comprehensive surface ionic leach sampling program was completed across the entire project area in two phases to assess the utility of this survey method in detecting copper mineralization at depth. A total of 815 surface samples were collected by Ivanhoe Electric along approximately 30 sampling lines across both sampling phases. The program aimed to validate the survey methodology and explore its potential to enhance targeting and geological interpretation efforts.

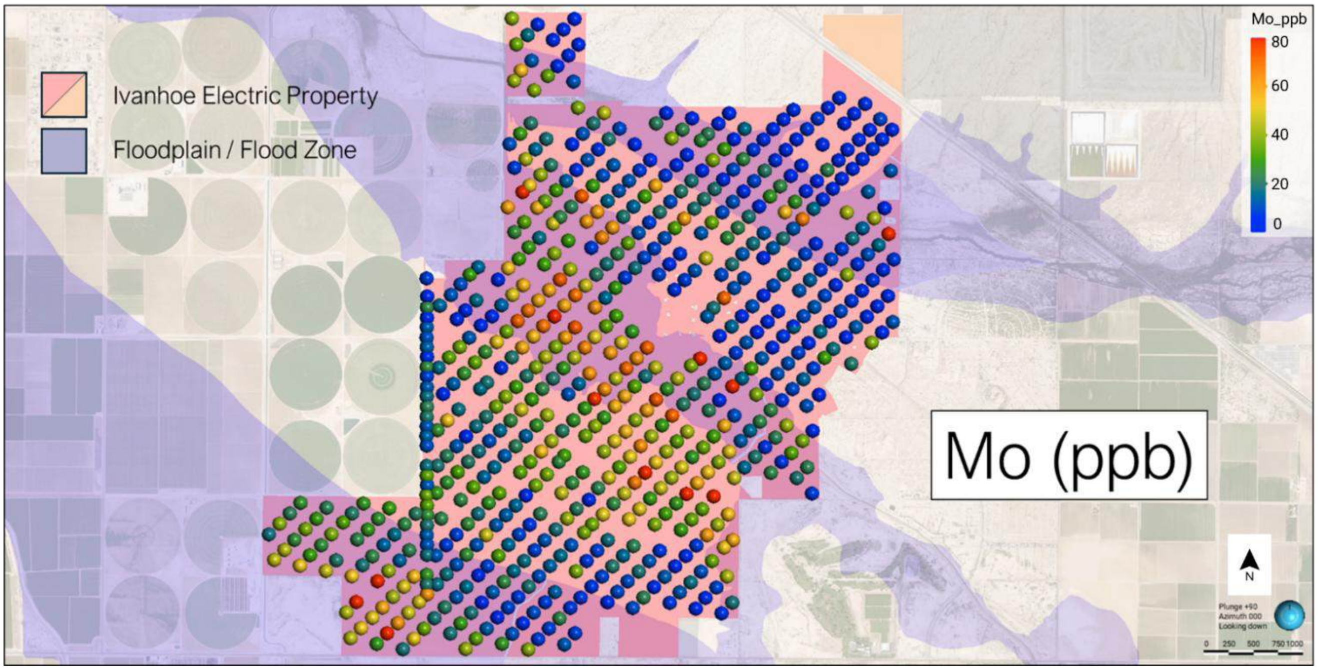
Survey sample sites were collected from approximately 30 northeast-southwest oriented sampling lines, with each line spaced approximately 223 m apart in the northwest-southeast direction, with samples collected at roughly 130 to 150 m spacing in the northeast-southwest direction. Line lengths were variable to conform to the property boundary. Samples were not collected from a small residential area within the property. Each sample was analyzed for 61 elements using a static sodium cyanide leach method in conjunction with various common chelating leaching agents. The sampling results for copper and molybdenum are shown in Figures 7-4 and 7-5, respectively.

Figure 7-4: Geochemical Exploration Map – Copper



Source: Ivanhoe Electric, 2024.

Figure 7-5: Geochemical Exploration Map – Molybdenum



Source: Ivanhoe Electric, 2024.

7.1.3 Qualified Person's Interpretation of the Exploration Information

The exploration primarily conducted by Ivanhoe Electric provided vectors to geophysical and geochemical anomalies that were drill tested. This work further developed the understanding of copper mineralization within the project area.

7.2 Drilling

Drilling within the Santa Cruz Copper Project property totals 469 drillholes for 330,118 meters of drilling. Of this total, 329 drillholes for 279,164 meters were used in support of the mineral resource. The 140 drillholes excluded from the estimation do not intersect the deposit or did not have relevant information for estimation, such as shallow sonic holes with no assay samples taken.

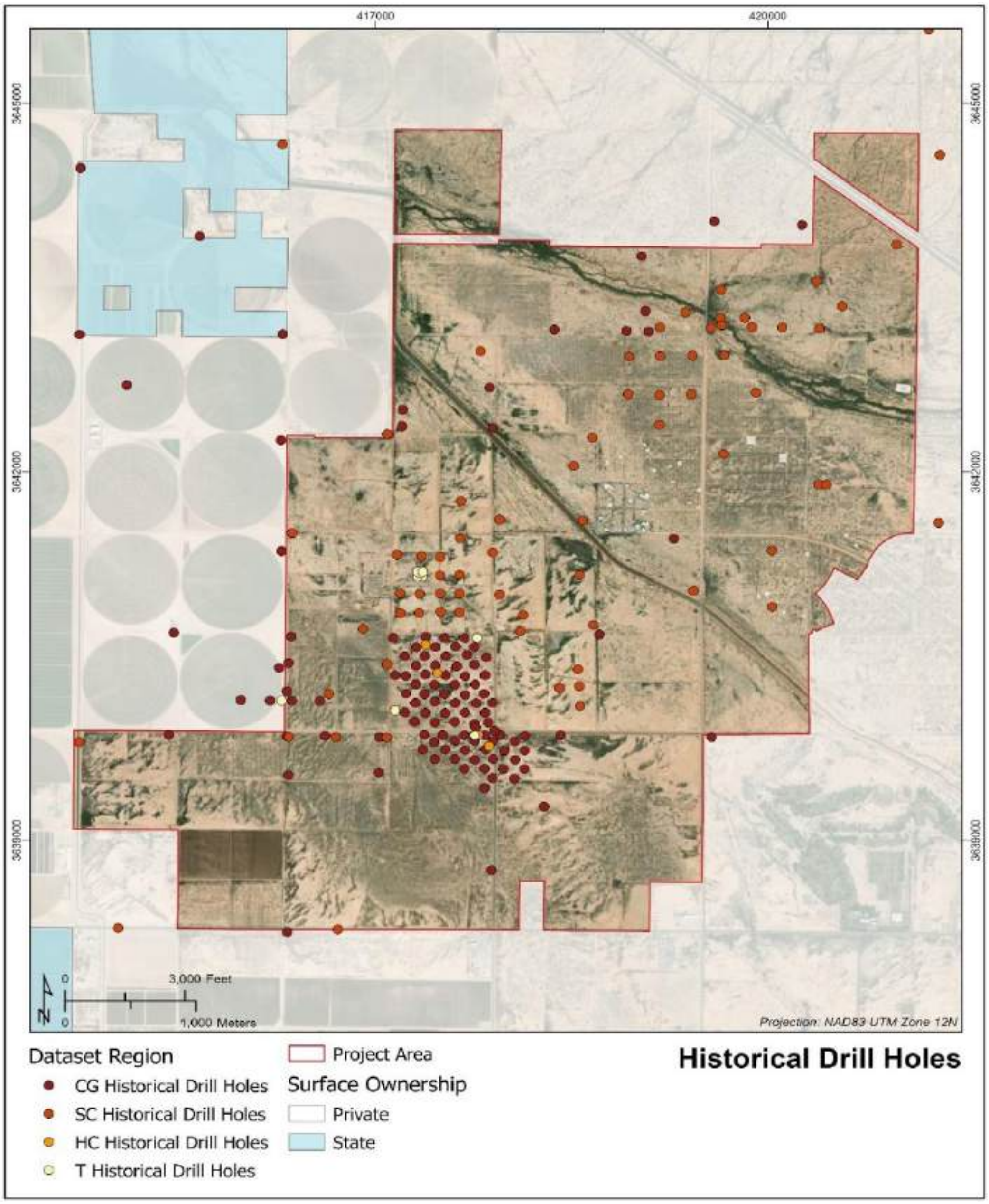
7.2.1 Historical Drilling

The historical drilling within the project area can be separated into several series: CG (Hanna-Getty), SC (ASARCO), and T and HC drilling (related to the in-situ program described in Section 5). A summary of drilling production by each series is provided in Table 7-2; collar locations are shown in Figure 7-6.

Table 7-2: Summary of Available Data by Region

Description	Dataset Region				Total
	CG	SC	HC	T	
Total Number of Holes	122	80	5	5	212
Total Drilled (m)	102,563	62,754	3,622	2,295	165,317

Figure 7-6: Plan Map of Historical Drillhole Collars



Source: Ivanhoe Electric, 2025.

7.2.1.1 Santa Cruz & East Ridge Deposits

Historical drilling at the Santa Cruz deposit consisted of 108,301 m of core from 126, 47.26 mm diameter (NQ) drillholes completed between 1965 to 1996. Historically, these two deposits were undifferentiated, thus drilling totals are cumulative for both deposits. The historical drill core is currently unavailable for review except for sparse, skeletonized core boxes from a single historical drillhole CG-037.

A program was conducted to check the collar locations of a selection from the drillhole database using a professionally licensed surveying company, D2 Land Surveying. Based on the transformation for these spot-checked drillholes, collar locations were adjusted. All historical drilling was conducted vertically. For the Santa Cruz deposit, the drilling was completed along 100 m spaced section lines with drillholes spaced 90 to 100 m apart on each section line.

7.2.1.2 Texaco Deposit

Historical Texaco deposit drilling consists of 23,848 m of core from 27 NQ drillholes completed between 1975 and 1997. The drillholes in this deposit area are in the “SC” drillhole series. The historical core is predominantly unavailable for review with the exception of sparse, skeletonized boxes from historical drillholes SC-066 and SC-069A. A program was conducted to check the collar locations of a selection of historical drillholes from the database using a professionally licensed surveying company, D2 Land Surveying. Based on the transformation for these spot-checked drillholes, collar locations were adjusted. All historical drilling was conducted vertically. For the Texaco deposit, the drilling was completed along 100 to 200 m spaced section lines with drillholes spaced 200 m apart on each section line. The average drill section and spacing in the Texaco deposit is approximately 200 m and varies between approximately 90 and 250 m.

7.2.2 Ivanhoe Electric Drill Programs

7.2.2.1 Overview

Ivanhoe Electric has completed 286 holes totaling more than 175 km of combined drilling since initiating activity on the Santa Cruz Copper Project in 2021 (Table 7-3).

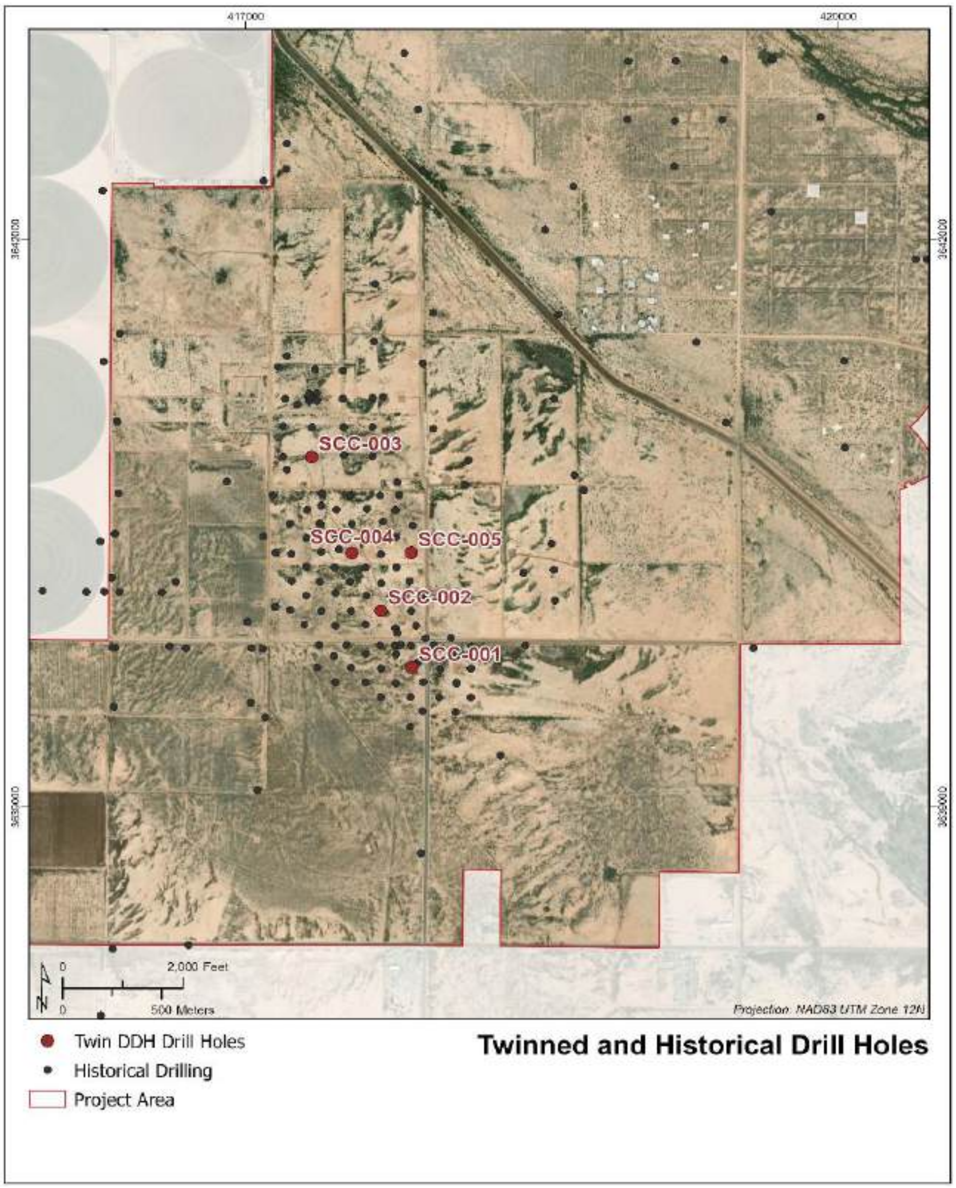
In 2021, Ivanhoe Electric initially completed five core drillholes totaling 4,739 m within the Santa Cruz deposit to twin historical drillholes for data validation (Figure 7-7). Drilling was a mixture of rotary pre-collar through the barren Tertiary sediments and core drilling through the target areas and shoulders. All samples from within the interpreted mineralized zone were assayed for total copper (%), acid soluble copper (%), cyanide soluble copper (%), and molybdenum (%). The collar locations, downhole surveys, geological logging, sampling, and assaying between the two sets of drillholes were used to determine if historical data were valid and would not bias the geological model or mineral resource estimate.

All five historical hole assays aligned with the 2021 Ivanhoe Electric core drilling assays. The 2021 core drilling assays were of higher resolution due to smaller sample sizes and validated the ASARCO assays.

Table 7-3: Drillhole Summary by Year

Year	Number of Holes	Total Meters Drilled
2021	6	6,005
2022	106	60,117
2023	81	60,995
2024	93	47,469
Total	**286**	**174,586**

Figure 7-7: Plan Map of the Twinned Drillholes & Historical Drillhole Collars



Source: Ivanhoe Electric, 2024.

Drilling occurred in multiple areas of the Santa Cruz Copper Project, including in the Southwest exploration area, Santa Cruz deposit, East Ridge deposit, and Texaco deposit (Table 7-4).

Table 7-4: Drillhole Summary by Deposit

Deposit	Total Drilling			Ivanhoe Electric Drilling		
	Number of Drillholes	Meters	Meters Intersecting Deposit	Number of Drillholes	Meters	Meters Intersecting Deposit
Santa Cruz	226	194,463	72,074	142	114,368	42,684
East Ridge	62	48,878	18,070	38	29,356	11,159
Texaco	41	35,823	8,170	14	12,703	3,442
Total	**329**	**279,164**	**98,314**	**194**	**156,427**	**57,285**

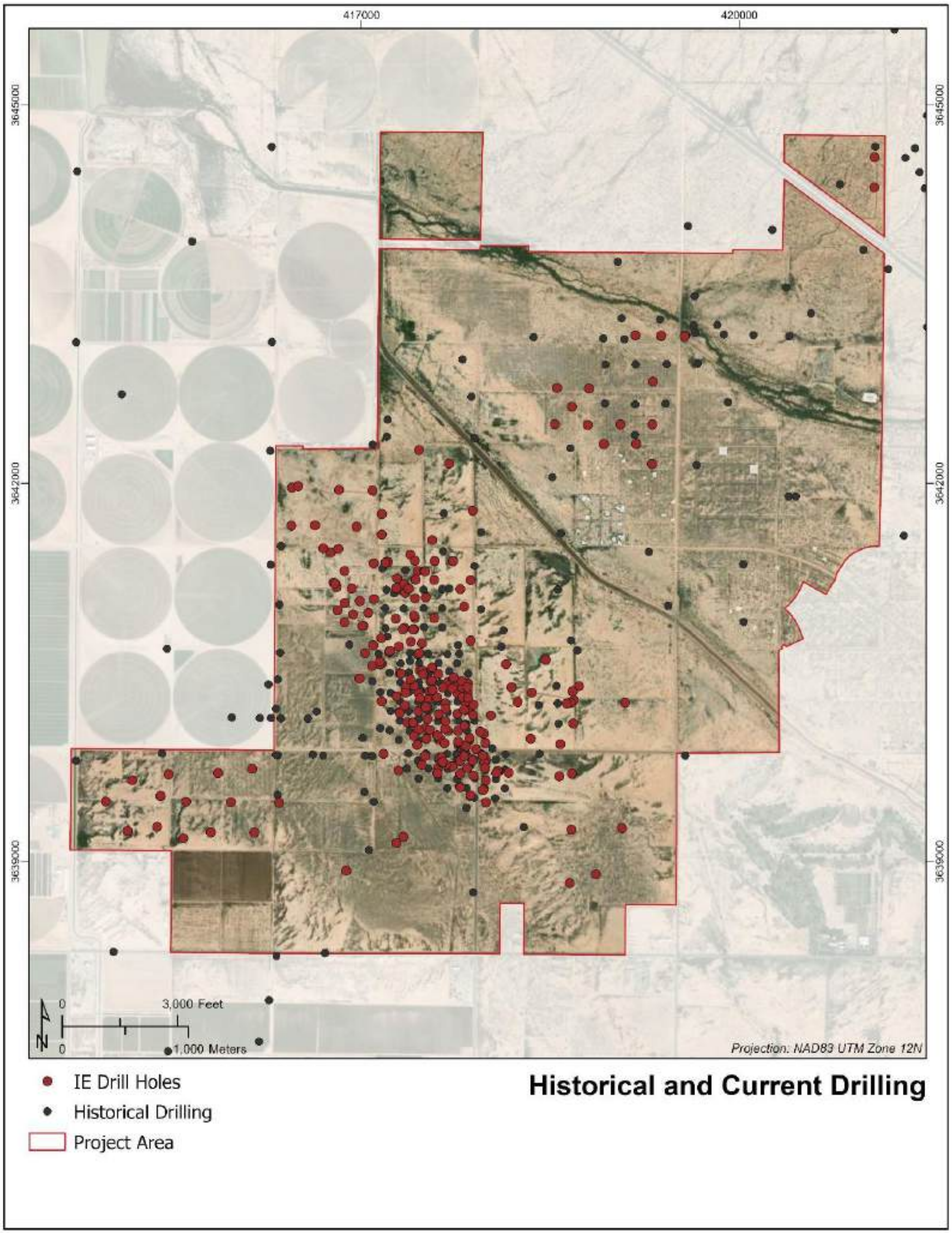
Much of the drilling was focused on definition and metallurgical drilling within the Santa Cruz and East Ridge deposit areas with secondary exploration drilling in the other project areas. The number of assays, by deposit, are shown in Table 7-5.

Table 7-5: Number of Assays by Assay Type & Deposit

Assay Type	Santa Cruz Deposit	East Ridge Deposit	Texaco Deposit
Total Copper (TCu)	34,591	7,567	3,808
Acid Soluble Copper (ASCu)	30,635	5,280	2,401
Cyanide Soluble Copper (CNCu)	25,868	5,251	2,490
Gold (Au)	14,646	1,244	1,297
Silver (Ag)	24,261	5,143	2,204

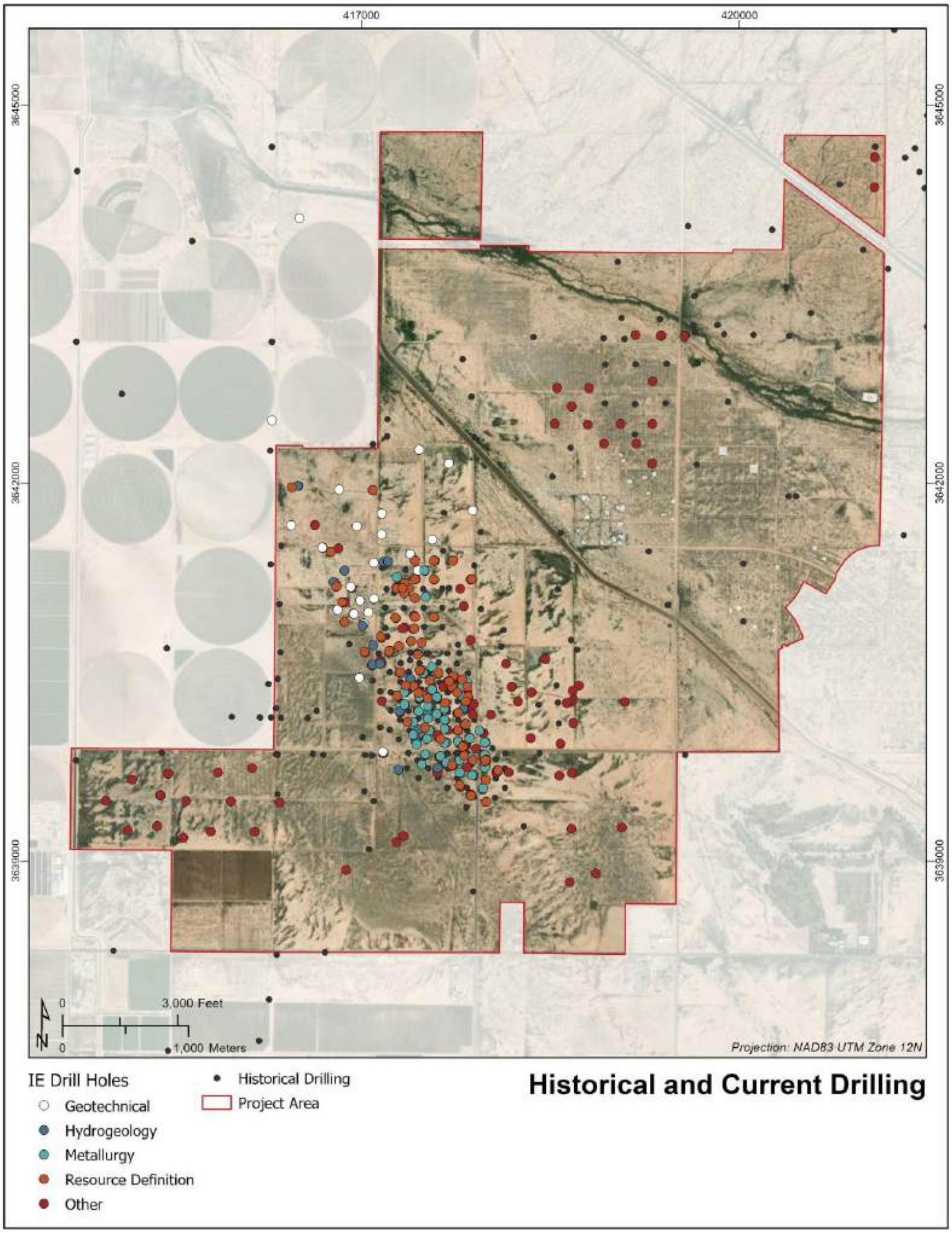
Drill collar locations for Ivanhoe Electric's and historical drilling are identified on Figure 7-8. Drill collar locations by program are shown on Figure 7-9.

Figure 7-8: Plan Map of Historical & Ivanhoe Electric Drillhole Collar Locations



Source: Ivanhoe Electric, 2024.

Figure 7-9: Plan Map of Historical & Ivanhoe Electric Drill Collar Locations by Program



Source: Ivanhoe Electric, 2024.

7.2.2.2 Drill Methods

Drilling was performed using a variety of drilling equipment and methodologies including coring, reverse circulation, tricone rotary, and shallow sonic boring (Table 7-6). The drilling equipment and methodology used was dependent on the target objective and target depth. Most drilling performed during 2021 and 2022 used standard PQ diamond coring from the surface to maximize the amount of core sample recovered for use in multiple sampling and testing programs. Tricone or rotary with HQ core tails was used when targets did not require large-diameter coring for bulk material, allowing for a more cost-efficient approach.

Reverse-circulation (RC) and sonic drilling were also used in 2022 for rapid characterization of bedrock interface underneath sedimentary cover, soil, and clay horizons in the upper alluvial and overburden sediments, and conglomerate units. Table 7-6 also summarizes drilling contractors and equipment who performed operations for the project.

Drillhole abandonment procedures were designed to meet or exceed Arizona’s mandated requirements. Most drilling reached or exceeded depths over 100 m and followed state-approved borehole abandonment methods.

Table 7-6: Drilling Equipment & Contractors

Drilling Contractor	Drilling Type	Equipment Models
Major Drilling Internation Inc.	Core, rotary with core tails	LF160, LF230, LF350
National EWP	Core, rotary with core tails, well	Schramm T-130, LF230
T&J Enterprises, Inc.	Reverse circulation	HRC 1500 (Custom)
Layne Christensen Company	Well	Atlas Copco RD-20, Schramm T-130, Schramm T-200, 60T
Cascade Environmental	Sonic	LF600

7.2.2.3 Logging

Detailed core logging is performed by Ivanhoe Electric geologists through digital data input into MX Deposit. Data logged included lithology, alteration, mineralization, veining, petrophysical data, and geotechnical parameters such as faults, joints and fractures, hardness, and rock quality designation (RQD). Additional characterization fields such as rock colors, stain colors, grain sizes, textures, and supergene weathering features were also captured.

The core logging and geological database consists of five major rock types, including 47 major lithologies congruent with historically logged lithologies, 21 lithological textures, 17 alteration types, and 15 lithological structures. There are 28 unique economic and gangue minerals recorded in the current database.

Photographs of all drill core were taken, both wet and dry, and are stored digitally in Imago software.

7.2.2.4 Recovery

Recovery was collected by logging geologists digitally into MX Deposit for all core drilled. Recovery was measured as a percentage of the length of rock measured by core loggers over the drilled interval. The average recovery is 90% with areas of lower recovery typically seen in sedimentary overburden units and structures.

7.2.2.5 Collar Surveying

Collar surveying was performed by Environmental Field Services, LLC, upon completion and abandonment of the drillholes. Each survey job used the NGS (National Geodetic Survey) benchmark "CZ2366" as the primary benchmark for all subsequent work. Data collection was done by an Arizona state licensed land surveyor and survey technician using a Trimble R8S Integrated GNSS and Trimble TC83 data collector with collected data validated to fall within acceptable tolerances of Arizona State minimum standards for survey work.

Data were delivered after the completion of a job and data validation via email in Excel spreadsheets as positional coordinates for drillhole collars in NAD 83 United States State Plane coordinate system in international feet. These were then converted from State Plane to UTM Zone 12N and from international feet to meters using ESRI ArcPro by Ivanhoe Electric. The converted survey coordinates then entered MX Deposit and superseded any other existing collar information for use in geographical and modeling software.

7.2.2.6 Downhole Surveying

Downhole surveying during the 2021 to 2024 drilling programs was conducted using a REFLEX EZ Gyro and IMDEX OMNIx42 multi-shot gyroscopic surveying tool taken within each drillhole during drilling at 30 m increments for continuous tracking, and then after hole completion from the bottom in 150 m increments as the tool is being pulled from the completed drillhole for check analysis.

Depending on technical utility, many drillholes were also surveyed using borehole geophysical surveying probes through Southwest Exploration Services, LLC. or International Directional Services Inc. Each borehole was surveyed for 4RX sonic-gamma (sampled every 0.06 m), acoustic televiewer (sampled every 0.003 m), E-logs-gamma (sampled every 0.06 m), and a gamma caliper test for fluid temperature conduction (sampled every 0.06 m). The downhole surveying has also allowed for the calibration of post-drilling information to ensure that deviation surveying was correct and lithological and mineralogical contacts were logged properly. The downhole surveying was also used to collect accurate oriented structural measurements.

7.2.2.7 Density

There are no records of density measurements from historical drill core from the Santa Cruz and Texaco deposits. Further details on density by Ivanhoe Electric are in Section 8.4.

7.2.2.8 Comment on Material Results & Interpretation

Drill spacing varies from approximately 60 to 100 m in most of the deposit areas to about 200 m spacing in the less drilled areas. Procedures for 2021-2024 drilling, collar surveying, and geological and geotechnical logging are consistent with industry-standard practices. Procedures for pre-2021 data collection are not recorded in the information provided to BBA.

Review of recovery data indicated no correlation between grade and zones of lower recovery. Overall, BBA considers the drill data to be acceptable to support mineral resource and mineral reserve estimation.

7.3 Geotechnical

Ivanhoe Electric has used 83 historical and 184 modern drillholes totaling over 70 km of drilling with geotechnical data metrics captured serving as the basis for analysis supporting geotechnical characterization of the Santa Cruz and East Ridge deposits. Drill core and photos are not available for any of the historical drillholes and Q-system parameters are not available.

7.3.1 Sampling Methods & Laboratory Determinations

Ivanhoe Electric processed diamond drill core to collect RQD data, Q data (quality of a rock mass), rock hardness, fracture statistics, and laboratory strength testing. Point load testing, uniaxial compressive strength (UCS), triaxial compressive strength, unified soils classification system, small-scale direct shear, Cerchar abrasivity, and Brazilian disc tension testing were determined by laboratory testing at laboratory strength testing by Call & Nicholas, Inc. in Tucson, Arizona. Laboratory tests were performed in accordance with the American Society of Testing and Materials (ASTM), the International Society for Rock Mechanics (ISRM), and the British Standards (BS), and testing equipment calibrations were provided as a quality control measure.

Five sonic drillholes assessed and characterized the alluvium and sediments through sampling, sediment logging, and Atterburg limits for clay behavior under the Unified Soil Classification System.

Acoustic borehole image logs from televiewer surveys from 72 core holes helped to orient and identify the dominant joint orientation and fabric in the overburden and bedrock rock masses.

Results were grouped by lithology and mode of failure. Laboratory results for point load testing, uniaxial compression strength, and triaxial testing in which the failure took place through pre-existing weak planes or joints were not used for parameter estimations.

7.3.2 Comment on Results

Logging data and laboratory testing results are generally consistent with the description of the rock mass. Methods and data collected are consistent with generally accepted industry standard of practice as described in using the Q-System (Norwegian Geotechnical Institute, 2022). Laboratory testing is in accordance with standard ASTM guidelines.

7.4 Hydrogeological Investigations

The area around the Santa Cruz Copper Project has undergone numerous hydrogeological studies since the 1970s to evaluate the geological and hydrogeological properties and the mining feasibility of the area. Historical wells, where hydraulic tests were conducted and the hydrogeology data was available for the prefeasibility-level hydrogeology investigation, are shown in Figure 7-11. The historical data combined with recently collected hydrogeological data, have informed the hydrogeological conceptual site model for the project and were incorporated into the groundwater flow model to estimate the projected groundwater inflows for the mine plan.

7.4.1 Hydrogeological Data Collection

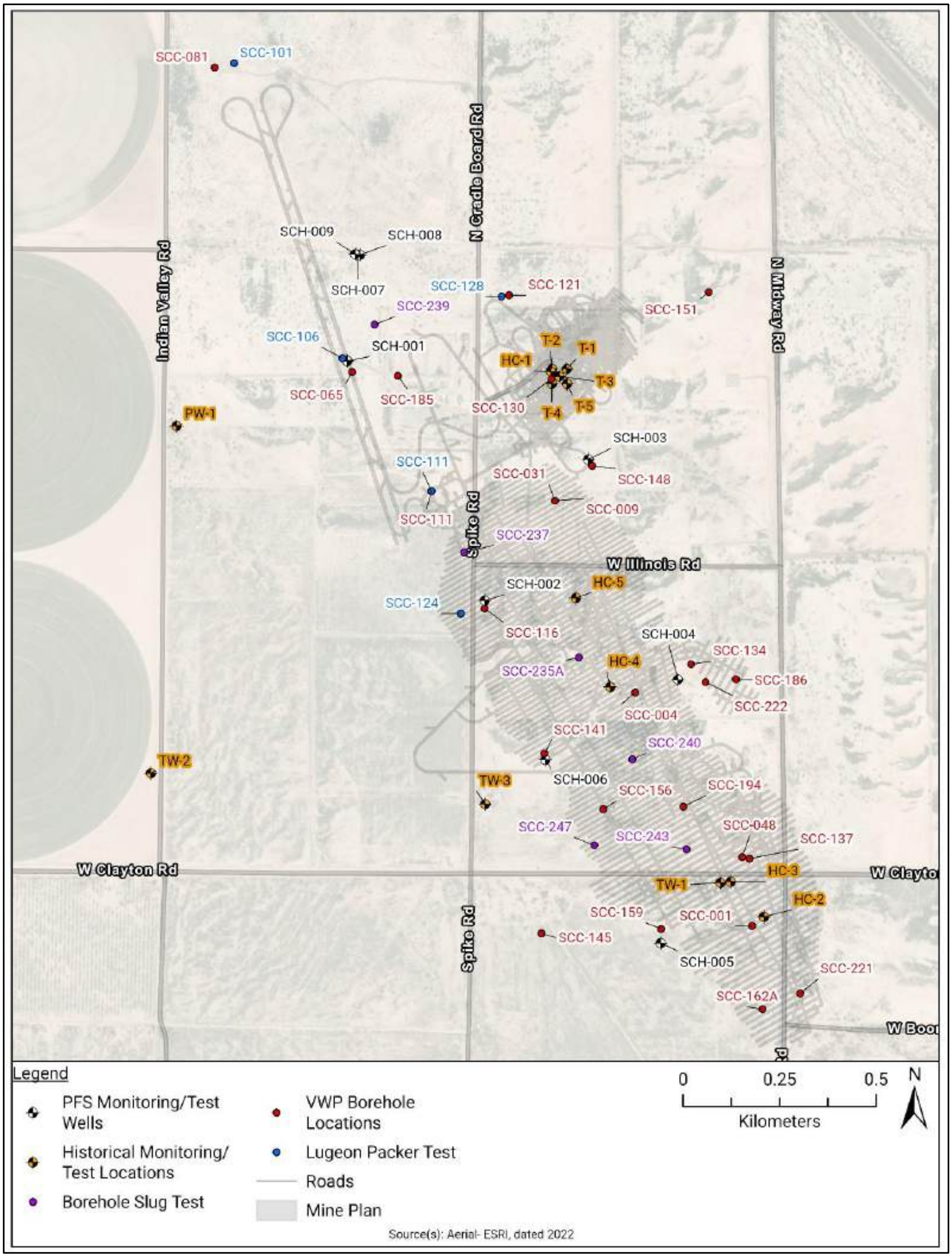
To support the initial assessment, a baseline hydrogeological model was developed in 2022 and 2023, incorporating Lugeon packer test data from exploration boreholes conducted by Ivanhoe Electric and Montgomery & Associates (Montgomery & Associates, 2023). The Lugeon packer tests were completed at depths ranging from 182.1 to 684.6 m below ground surface in exploration boreholes SCC-101, -106, -111, -124, and -128 (Figure 7-10).

The prefeasibility study hydraulic testing program was conducted from October 2023 through October 2024 by Ivanhoe Electric and INTERA and included 56 additional hydraulic tests performed at 14 locations (Figure 7-10). The hydraulic testing was conducted in six new groundwater monitoring wells (SCH-001, -002, -003, -004, -005, and -006) and TW-1 using several different types of test methods, including packer tests, step tests, and constant rate pumping tests depending on the location and formation properties (INTERA, 2025). To test areas within the mine plan for the Santa Cruz Copper Project, slug packer tests were also conducted in six exploration boreholes (SCC-235A, -237, -239, -240, -243, and -247) (Figure 7-10). In addition, Geosyntec performed a constant rate test in borehole SCH-007 (Figure 7-10).

A total of 48 prefeasibility study tests, 24 initial assessment tests, and 30 re-analyzed historical tests were used to determine the hydraulic properties of the hydrogeological units, along with two tests from the Pinal Active Management Area Model (Pinal model). Eighteen tests were used to define the hydraulic properties of the overburden units and 84 tests were used to define the hydraulic properties of the bedrock units (Table 7-7). Since the alluvium is not saturated in the vicinity of the project area, the hydraulic properties for the alluvium are from the Pinal model (ADWR, 2019) and not from the hydraulic testing program. The historical and recent hydraulic test analysis results were used to refine the hydrogeological conceptual site model and groundwater flow characteristics, improving the predictive capability of the groundwater flow model for the project.

A total of 109 grouted-in vibrating wire piezometers (VWPs) were installed within 25 core holes (Figure 7-10). These instruments were installed to provide pressure responses during the prefeasibility study hydraulic tests in 2023 and 2024.

Figure 7-10: Historical (Pre-Ivanhoe Electric) & Current Groundwater Monitoring & Testing Locations



7.4.2 Hydrogeological Conceptual Site Model

For the hydrogeological conceptual site model and the project area groundwater flow model, the overburden geology, and mineral domains in both the Santa Cruz mine area and East Ridge mine area were subdivided into hydrogeological units based on specific hydraulic properties with distinct influence on storage or movement of groundwater, such as hydraulic conductivity or specific storage. Thirteen hydrogeological units were identified in the project area that align with the geological domains and include four overburden units and nine bedrock units. The hydraulic conductivity values presented in Table 7-7 were determined from the hydraulic tests conducted in the area, including re-analyzed historical test data as well as recent test data from the initial assessment and prefeasibility study.

Table 7-7: HGU Hydraulic Conductivity Estimates from Current & Historical Tests Conducted in the Project Area

Hydrogeological Unit (HGU)	Hydraulic Conductivity Minimum (cm/s)	Hydraulic Conductivity Maximum (cm/s)	Hydraulic Conductivity Geometric Mean (cm/s)	No. of Hydraulic Conductivity Tests
Alluvium*	1.2E-02	2.3E-02	1.7E-02	2
Conglomerate North	4.4E-06	5.2E-02	7.0E-03	8
Conglomerate South	1.4E-04	1.4E-02	1.1E-03	7
Basal Conglomerate	3.3E-06	1.3E-04	1.9E-05	3
Leach Cap	3.5E-08	1.4E-03	2.1E-05	13
Santa Cruz Oxide	2.2E-09	3.1E-04	1.5E-06	10
Santa Cruz Chalcocite	1.5E-08	7.1E-06	4.4E-07	5
Santa Cruz Primary Mineralized	1.2E-06	2.7E-05	6.5E-06	5
Santa Cruz Primary Unmineralized	9.7E-08	1.0E-04	3.1E-06	8
Santa Cruz Unmineralized	3.5E-08	2.7E-03	8.5E-05	14
East Ridge Mineralized	5.2E-06	6.4E-05	1.8E-05	17
East Ridge Unmineralized	1.6E-07	9.9E-07	4.7E-07	4
Fault Zone	2.6E-06	3.8E-03	1.4E-04	8

*Hydraulic conductivity estimates for alluvium are from Liu et al. (2014).

Groundwater flow characterization of the project area was informed by both the regional data from wells surrounding the project area and data collected within the project area as part of the hydrogeological investigations during the initial assessment and prefeasibility study. Groundwater movement within the conglomerate units generally flows westward toward areas of historically high groundwater withdrawal for agricultural irrigation.

7.4.3 Groundwater Flow Model & Results

To develop a groundwater flow model, the Pinal model (ADWR, 2019) was modified to enable the simulation of the bedrock head field and to more accurately represent the water supply pumping stresses after 2015. Then, using the USGS MODFLOW-6 groundwater flow code (MF6) (Langevin et al., 2017), the groundwater flow model was developed as an inset model to the modified regional Pinal model and calibrated with recent water level observations to reflect current flow conditions within the project area. The spatial extent of the inset groundwater flow model was developed to ensure sufficient distance from the mine to assess potential regional effects from bedrock dewatering. The hydraulic properties within the inset groundwater flow model were assigned based on the spatial distribution and hydraulic properties of the hydrogeological units (Table 7-7).

The groundwater flow model integrates both the known hydraulic properties of the hydrogeological units and inferred geology, geology from outside the project area, along with hydraulic properties from the surficial alluvium down to the bedrock, using parameters calibrated from the Pinal model as well as recently collected data and reanalyzed historical data. The groundwater flow model was calibrated using measured water levels and the calibration was assessed through standard statistical comparisons between simulated and observed groundwater levels. Following model calibration, the model was used to predict the long-term (mine life) groundwater inflow into mine developments and assess changes in surrounding water levels. Initial model runs were used to identify zones with higher inflows. Based on the initial model runs, mitigation strategies were selected and modifications to the mine plan design were applied by the mining engineers to reduce groundwater inflows. To reduce the residual passive inflows, mitigation measures were developed by Ivanhoe Electric and their mine engineers, and included:

- Activated colloidal silica application to the decline and Railveyor and other mine developments within conglomerate HGUs.
- Grout application to all mine developments within the leach cap HGU, the fault zone HGU, and all East Ridge developments. The mine plan was designed to avoid intersection with the fault zone HGU but some small intersections exist.

Although shotcrete will be used in the underground mine workings it will not be relied upon to effectively limit groundwater inflow and is not used as a mitigation measure in the model. Concrete will be used in the underground workings as structural control in the vent shafts, haulage chutes, and portions of orepass raises and was applied in both the mitigation and no-mitigation simulations.

The results of the groundwater flow modelling demonstrated a significant reduction of between 2,000 gal/min to more than 4,000 gal/min in total residual passive inflow with the mitigation measures applied (Figure 7-11). The model results indicate that the mine developments intersect the water table at the beginning of 2027, and with the activated colloidal silica mitigation applied to the decline as it passes through the conglomerates, the inflows to the decline are approximately 500 gal/min in 2027 (blue line in Figure 7-11). Inflows to the decline increase in 2028 when the decline enters bedrock and grouting replaces the activated colloidal silica as the mitigation measure. During peak mining periods, by applying the mitigation measures, inflows range from approximately 6,000 to 8,000 gal/min (blue line in Figure 7-11)

(INTERA, 2025). The substantial reduction in inflows by applying the mitigation measures highlights the effectiveness of the measures at sealing off key mine features.

Figure 7-11: Comparison of Residual Passive Inflow for the No-Mitigation Scenario & Mitigation Scenario

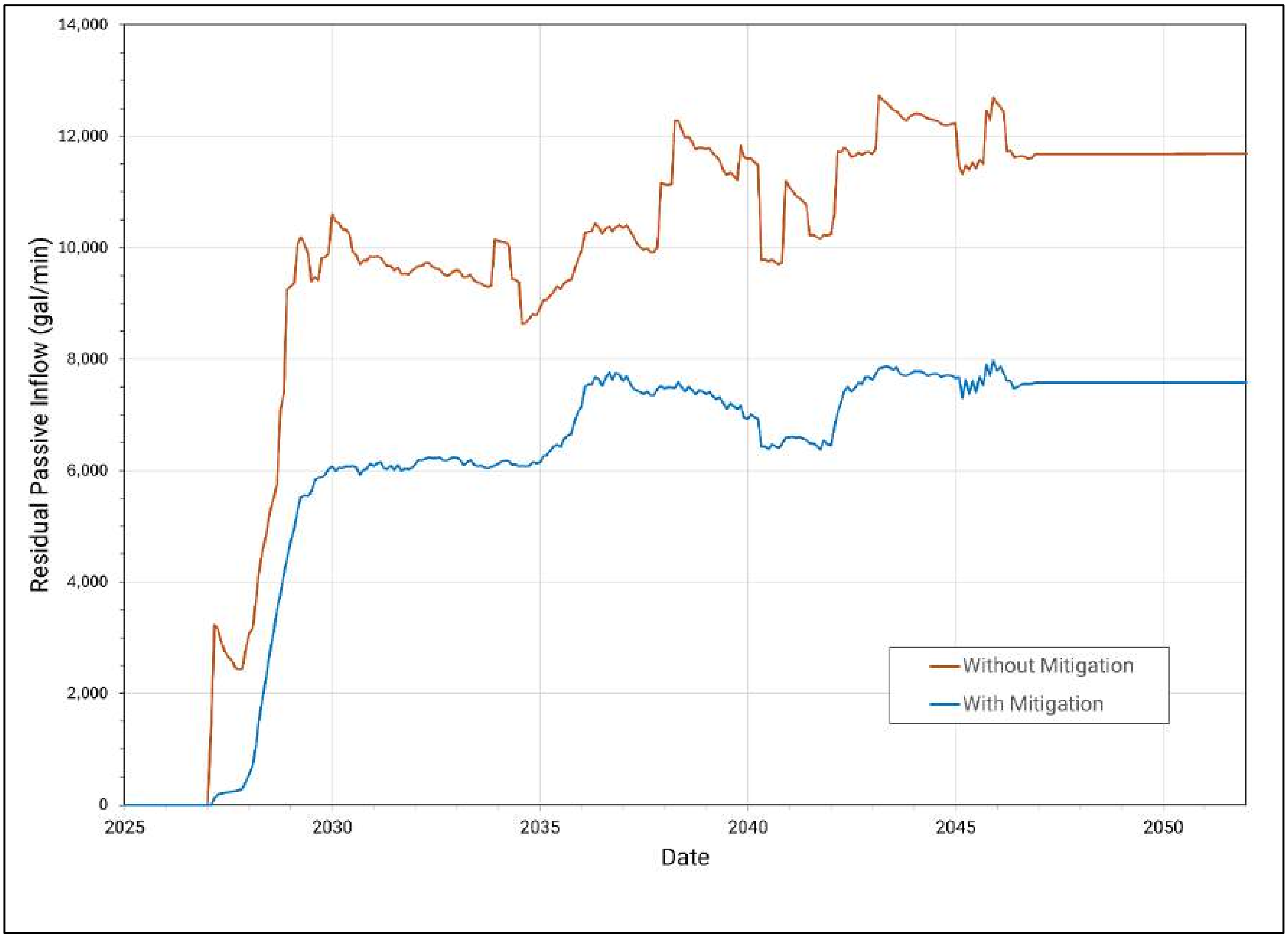
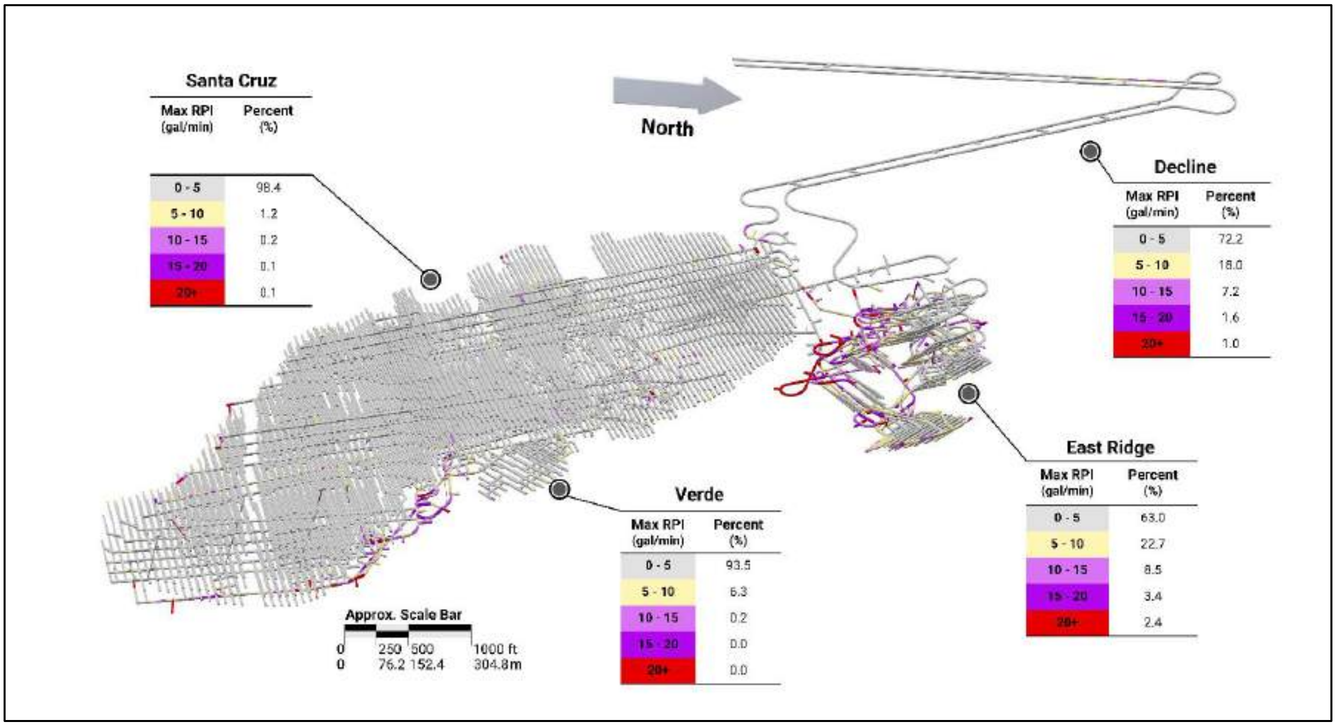


Figure 7-11 shows the maximum residual passive inflows and the percentage of mine workings within the range of residual passive inflows estimated from the groundwater flow model with mitigation measures (INTERA, 2025). The residual passive inflow for the decline is reduced due to the application of activated colloidal silica in the conglomerates and grouting in the bedrock with 72.2% of the decline having a maximum residual passive inflow of 0 to 5 gal/min (Figure 7-12).

Most of the Santa Cruz mine workings, 98.4% in the Santa Cruz deposit and 93.5% of the Verde domain, show 0 to 5 gal/min maximum residual passive inflow (Figure 7-12). The areas of lower residual passive inflow represent both stopes—that are only open for short periods during mining and have no inflow—and regions of low hydraulic conductivity in the Santa Cruz oxide HGU and the Santa Cruz chalcocite HGU.

Mine developments in East Ridge have the highest amount of maximum residual passive inflows, with 63% of mine workings within the East Ridge deposit having a range of 0 to 5 gal/min inflows, 22.7% with 5 to 10 gal/min inflows, 8.5% with 10 to 15 gal/min inflows, 3.4% with 15 to 20 gal/min inflows, and 2.4% with more than 20 gal/min inflows (Figure 7-12). The groundwater flow model indicates that increased inflows in East Ridge are primarily from the East Ridge mineralized HGU; however, the fault zone HGU, between the Santa Cruz deposit and the East Ridge deposit, may be contributing to the inflows as well (INTERA, 2025).

Figure 7-12: Model Estimates of Maximum Residual Passive Inflows to Mine Workings



Note: Max RPI = maximum residual passive inflows.

7.4.4 Comment on Results

The resulting groundwater model uses hydraulic testing and updated hydrogeological understanding to model groundwater inflows and supports future economic extraction of mineralized material.

8 Sample Preparation, Analysis & Security

8.1 Assay Laboratory Selection

Table 8-1 details the labs used for analysis and time periods.

Table 8-1: Labs Used for Analysis & Time Periods

Dates	Assay Laboratories
September 2021 – December 2022	Skyline, SGS, American Assay Labs
December 2022 – May 2023	Skyline, SGS
May 2023 – June 2025	SGS, ALS Global

The four laboratories used from September 2021 to December 2022 are certified by the International Standards Organization (ISO), demonstrating technical competence for a defined scope and the operation of a laboratory quality management system (ISO 17025) and were independent of Ivanhoe Electric. Additionally, Skyline was certified as ISO 9001, indicating that the quality management system conforms to the requirements of the International Standards. SGS Burnaby conformed to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation. American Assay carried approval from the State of Nevada Department of Conservation and Natural Resources Division of Environmental Protection. Issues with analytical quality at American Assay Labs in early 2022 lead to Ivanhoe Electric discontinuing work with this laboratory.

The five laboratories used from December 2022 to May 2023 are recognized by the International Standard (ISO 17025) for demonstrating technical competence for a defined scope and the operation of a laboratory quality management system . Additionally, Skyline is recognized by ISO 9001, indicating that the quality management system conforms to the requirements of the international standard. SGS Burnaby conforms to requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation. ALS North Vancouver and Tucson conform to the requirements of ISO/IEC 17025 for specific analytical procedures as listed on their scope of accreditation. In May 2023, due to quality assurance/quality control (QA/QC) concerns in the preparation department at Skyline, Ivanhoe Electric discontinued work with this laboratory.

8.1.1 2021 to 2022

Drill core from the Santa Cruz Copper Project was sampled under the direct supervision of the project's managing staff.

Samples collected in 2021-2022 were cut lengthwise, either in half or in four quarters, using an NTT Coresaw diamond-bladed saw or a Husqvarna® table saw. Each sample, consisting of one-half or one-quarter of the drill core, was placed in a plastic sample bag labeled with the sample number and sealed with a zip tie. This bag was then placed in a burlap sample bag, also labeled with the sample number, with a sample tag inserted between the plastic and burlap bags. The sample tag corresponded with the tag stapled to the core box containing the remaining half or three-quarters of the drill core for cataloging and storage. The burlap sample bags were then grouped in batches of 25, placed in large, labeled plastic bags, sealed with zip ties, and transported to the laboratory facility in large fold-out plastic bins. Quarter core was used for a subset of holes and quarter core duplicates were determined to have roughly equivalent variance to half core duplicates.

8.1.2 2023 to 2024

Drill core from the Santa Cruz Copper Project was sampled under the direct supervision of the project's managing staff.

Samples collected in 2023 and 2024 were cut lengthwise in half, using the NTT Coresaw diamond-bladed saw. Each sample consisted of one-half of the split drill core, which was placed in an 8 mm thick, 18" x 24" plastic sample bag labeled with the sample number in black Sharpie® and a sample tag affixed to the outside of the plastic bag via a chemical seal. The sample tag affixed to the outside of the sample bag corresponded with the tag stapled to the core box where the remaining half-core was placed for cataloging and storage. The plastic sample bags were then placed in large, fold-out plastic bins or super sacks on pallets for transport to the laboratory facility.

8.1.3 Ionic Leach

Ivanhoe Electric collected samples in the spring of 2024 for mobile metal ion analysis via ALS's ionic leach program. Sample preparation was completed by ALS Tucson and prepared samples were sent to ALS North Vancouver for ionic leach analysis.

Sample collection consisted of removing the top 10 to 15 cm of soil using a stainless-steel trowel and then removed any contaminated soil from the area with a plastic trowel. The plastic trowel was cleaned with a wire brush followed by a plastic brush before the sample was collected. Approximately 1 kg of material was collected 30 cm below the layer that was removed and placed into a quart-sized plastic Ziplock bag. Bags were labeled with a sample ID and tag, organized into groups of 200, and placed into larger rice bags or cloth bags to be transported to the laboratory.

8.2 Sample Preparation & Analysis

8.2.1 Skyline Assayers & Laboratories

Half of the total drill core samples taken during August 2022 to May 2023 and all the drill core samples taken during the September 2021 to August 2022 core drilling programs were prepared and analyzed at Skyline. The samples were crushed from the split core to prepare a total sample of up to 5 kg at 75% passing 6 mm. Samples were then riffle split, and a 250 g sample was pulverized with standard steel to plus 95% passing at 150 µm.

After sample pulp preparation, the samples were analyzed using the following methods:

- All samples were analyzed for total copper using multi-acid digestions with an atomic absorption spectrometry (AAS) finish. The lower limit of detection is 0.01% for total copper, with an upper detection limit of 10%.
- Sequential analyses (SEQ) for cyanide soluble copper and acid soluble copper were conducted via multi-acid leaching with an AAS finish. The lower limit of detection is 0.005%, with an upper detection limit of 10%.
- Molybdenum was prepared using multi-acid digestion and analyzed using ICP-OES. This analysis has a lower detection limit of 0.001%.
- Samples greater than 10% Cu with a 20% threshold were analyzed again using a long iodine method.

8.2.2 SGS Laboratories

All samples taken during the May 2023 to June 2024 diamond drilling program were prepared and analyzed at SGS Burnaby, Tempe, or Lakefield. The other half of the total drill core samples taken during the August 2022 to May 2023 diamond drilling program and not sent to Skyline, were prepared and analyzed at SGS Burnaby or Lakefield. The samples were crushed from the split core to prepare a total sample of up to 9 kg at 6 mm. Samples were then riffle split, and a 250 g sample was crushed to 75% passing at 2 mm. The sample was then pulverized with standard steel to plus 85% passing at 75 µm. After sample pulp preparation, the samples were analyzed using the following methods:

- All samples were analyzed for total copper using a sodium peroxide fusion with an inductively coupled plasma atomic emission spectroscopy (ICP-AES) finish. The lower limit of detection is 0.001% for total copper, with an upper detection limit of 5%.
- Three-stage SEQ for cyanide soluble and acid soluble copper were conducted via multi-acid leaching with an AAS finish. For SEQ copper analyses, the lower limit of detection is 0.005%, with an upper detection limit of 100% using a separate subsample than what was used for the total copper analysis.
- Molybdenum was prepared using a sodium peroxide fusion with an inductively coupled plasma atomic emission spectroscopy (ICP-AES) finish. The lower limit of detection is 0.001% for total molybdenum with an upper detection limit of 5%. Multi-element analysis was prepared using a 33-element, four-acid digestion and analyzed using a combined ICP-OES and inductively coupled plasma mass spectroscopy (ICP-MS) package.
- Gold was prepared using a 30 g fire assay and analyzed using an AAS finish. This analysis has a lower limit of detection of 5 ppb, with an upper detection of 10,000 ppb or 1 ppm.
- Silver was prepared using a four-acid digestion and analyzed using a combined ICP-OES and ICP-MS package. This analysis has a lower detection limit of 0.02 ppm and an upper detection limit of 100 ppm.
- Samples greater than 5% Cu, with a 60% threshold, were reanalyzed using a short iodide titration overlimit.
- Samples greater the 60% Cu were reanalyzed using electrogravimetry, with a 95% Cu threshold.

8.2.3 ALS Laboratories

In spring 2024, Ivanhoe Electric collected surface samples for mobile metal ion analysis at ALS Tucson and ALS North Vancouver via an ionic leach program. A 50 g sample was taken directly from the field bag with no pre-treatment to reduce any chances of contamination. Processing of the 50 g sample was carried out in a dedicated ionic preparation laboratory in North Vancouver.

Copper, gold, silver, and molybdenum were analyzed via a static sodium cyanide leach utilizing the chelating agents ammonium chloride, citric acid, ethylenediaminetetraacetic acid (EDTA) and the leachant buffered at an alkaline pH of 8.5. The leachant solution was analyzed using an ICP-MS finish. Lower limits for all elements were as follows: Cu 1 ppb, Au 0.01 ppb, Ag 0.05 ppb, and Mo 0.2 ppb.

8.2.4 American Assay Laboratories

Two drillholes from the 2021 drill campaign were prepared and analyzed at American Assay Laboratories. Due to issues with analytical quality, Ivanhoe Electric discontinued work with this facility.

8.2.5 Historical Core Assay Sample & Analysis

Historically, samples from both Texaco and Santa Cruz drilling were sent to Skyline to be assayed for standard total copper and non-sulfide copper methods. Samples were crushed and split; a 250 to 500 mg sample was then prepared in the following ways:

- Total copper analysis samples were dissolved using a mixture of hydrochloric acid (HCl), nitric acid (HNO_3) and perchloric acid ($HClO_4$) over low heat. The mixture was then measured using AAS.
- Non-sulfide copper was dissolved using a mixture of sulfuric acid (H_2SO_4) and sulfurous acid (H_2SO_3) over moderate to high heat. This mixture was then filtered, diluted, and measured using AAS. No information on the historical analytical detection limits is available.

8.3 Quality Assurance/Quality Control Procedures

Analytical QC measures involve internal and external laboratory procedures implemented to monitor the precision and accuracy of the sample preparation and assay data. These measures are important to identify potential sample sequencing errors and to monitor for contamination of samples.

8.3.1 2021 to 2022

Ivanhoe Electric submitted a blank, standard, or duplicate sample on every seventh sample with an approximate insertion rate of 4.8% for all QC types. Sampling and analytical QA/QC protocols typically involved taking half-core field duplicate samples and inserting QC samples (certified reference material (CRM) and blanks), to monitor the reliability of the assay results throughout the drill program.

8.3.2 2023 to 2024

Ivanhoe Electric submitted a coarse blank and an analytical blank, a certified reference material (CRM or standard), or a duplicate sample on every sixth sample to increase the insertion rate of QC samples to meet or exceed 5% per sample type. Field duplicates were submitted at an average insertion rate of 4.6% in 2023 and 4.8% in 2024. Supplemental coarse reject duplicates and pulverization duplicates depending on grade were also submitted.

8.3.3 Santa Cruz Sampling

8.3.3.1 Standards

During the 2023-2024 drilling campaigns, Ivanhoe Electric submitted ten different CRMs from OREAS, Geostats Ply., CDN Resources Laboratory Ltd., and MEG LLC. CRMs were chosen to be matrix and mineralization matched, as well as represent copper grades seen throughout the deposits. A barren, low-grade, mid-grade, and high-grade CRM was used for both oxide and sulfide copper material. All CRMs are certified for copper analysis, eight are certified for multi-element analysis and gold fire-assay, and nine are certified for silver analysis.

A review of the CRM results identified minimal laboratory failures at Skyline and SGS. Few measurements go above or below three standard deviations. When measurements produced results above or below three standard deviations, the laboratory would recalibrate and reanalyze the sample. Figure 8-1 shows performance charts for the most frequently used oxide and primary sulfide CRMs for the Santa Cruz deposit.

Ivanhoe Electric created two high-grade matrix matched standards in late 2023 to control assay grades above 2% copper. One standard was made at 2.076% copper (SCHG01), and the other at 3.405% (SCHG02) copper. These standards were received in late spring 2024, and round robin certification was obtained in May 2024.

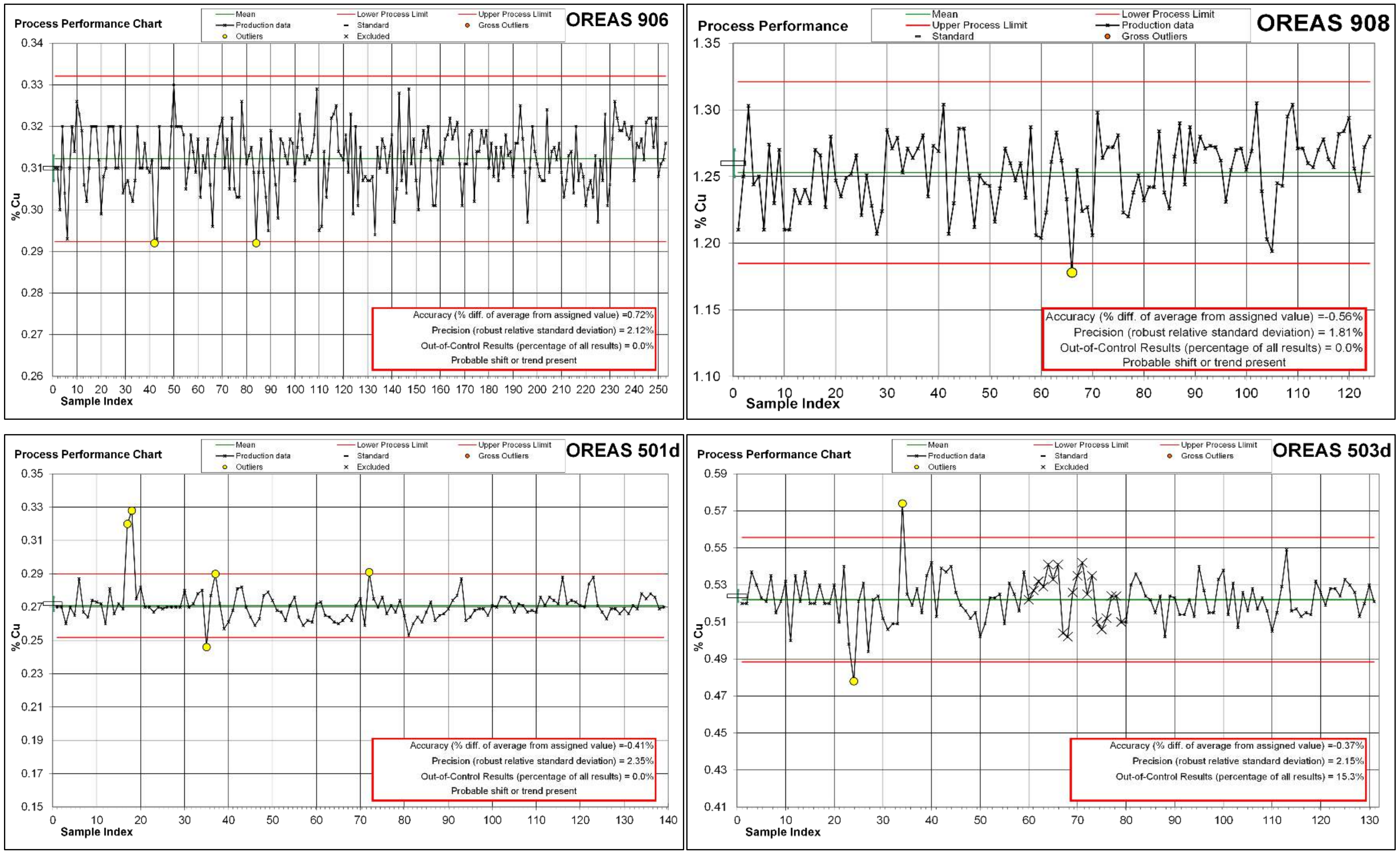
8.3.3.2 Blanks

As part of its QA/QC process for the Santa Cruz deposit, Ivanhoe Electric used coarse (1”) granite material from Pioneer Landscaping to assess contamination in assay samples. Ivanhoe Electric submitted 158 coarse granite blanks to Skyline and 1,127 coarse granite blanks to SGS during the 2023 and 2024 drilling campaigns. No significant carryover of elevated metals was evident in blanks measured at Skyline or at SGS. A threshold of ±0.02% Cu was accepted for blank samples. If a sample did not initially pass, it was reanalyzed.

8.3.3.3 Duplicates

Ivanhoe Electric submitted 136 field duplicates from the Santa Cruz deposit to Skyline and 949 field duplicates to SGS during the 2023 and 2024 drilling campaigns as a part of its QA/QC process. The results of the field duplicates are in good agreement for total copper (%), acid soluble copper (%) and cyanide soluble copper (%).

Figure 8-1: Certified Reference Material Performance Charts for Santa Cruz Deposit



Source: Ivanhoe Electric, 2025.

8.3.4 East Ridge & Texaco Sampling

8.3.4.1 Standards

During the 2022 drilling campaign, Ivanhoe Electric submitted ten CRMs for drilling carried out within the East Ridge deposit and nine CRMs for drilling conducted within the Texaco deposit. A review of the CRM results showed minimal failures from Skyline or SGS for samples submitted from either deposit. In the rare instance of failure (outside three standard deviations), the laboratory re-calibrated their equipment and re-analyzed the batch.

8.3.4.2 Blanks

During the 2023-2024 drilling campaigns, Ivanhoe Electric submitted 289 for the East Ridge deposit and 171 coarse granite blanks for the Texaco deposit to Skyline and SGS as part of its QA/QC process. No significant carryover of elevated metals was evident in blanks measured at Skyline or SGS. A threshold of ±0.02% Cu was accepted for blank samples. If the samples did not initially pass, they were reanalyzed.

8.3.4.3 Duplicates

During the 2023-2024 drilling campaign, Ivanhoe Electric submitted field duplicates for the East Ridge and Texaco deposits as a part of its QA/QC process. For the East Ridge deposit, 49 field duplicates were submitted to Skyline and 235 field duplicates to SGS. For the Texaco deposit, 26 field duplicates were submitted to Skyline and 110 field duplicates to SGS. All samples appear to be in reasonable agreement. Slight to moderate differences can be explained by a “nugget” effect and geological inconsistencies in mineralization.

8.4 Density

A total of 5,884 density measurements from 210 core drillholes exist for the Santa Cruz, East Ridge, and Texaco deposits. Measurements were calculated using the weight in air versus the weight in water method (Archimedes).

Density values were relatively consistent per domain, and an estimated density value would be very similar to an assigned value. Values were assigned to blocks based on subdomains per deposit. Due to a significant increase in measurements, East Ridge and Texaco have sufficient sample density to assign specific averages per deposit and domain (Table 8-2). Texaco subdomains lacked sufficient samples for unique values.

Measurements were calculated using the weight in air versus the weight in water method (Archimedes)by applying the following formula:

$$Density = \frac{Weight\ in\ Air}{(Weight\ in\ Air - Weight\ in\ Water)}$$

Table 8-2: Santa Cruz Copper Project Density Measurements

Lithology	Average Density
Alluvium	1.96
Gila Conglomerate	2.18
Apache Leap Tuff	2.25
Whitetail Conglomerate	2.33
Lacustrine Sediments	2.60
Mafic Conglomerate	2.34
Basal Conglomerate	2.39
Diabase	2.61
Laramide porphyry	2.56
Oracle granite	2.54
Pinal Schist	2.65

Source: Ivanhoe Electric, 2024.

8.5 Security & Storage

The drill core from Santa Cruz, East Ridge, and Texaco were stored in wax impregnated core boxes and transported from the drill rig to the core shack. After being logged, the core boxes were palletized, weatherized, and stored in Ivanhoe Electric's secure drill core storage facilities. The drill core storage facilities are surrounded by gated chain-link fencing and locked for security purposes. All samples for analyses were transported by courier to the laboratories in Tucson, Tempe, North Vancouver, or Burnaby.

8.6 BBA Opinion

BBA was supplied with raw QA/QC data and has carried out an independent review of the results for Ivanhoe Electric's sampling programs. It is the QP's opinion that the sample preparation, security, and analytical procedures used are consistent with standard industry practices and that the data is suitable for mineral resource and mineral reserve estimation.

9 Data Verification

9.1 Data Verification Procedures

BBA performed several verification checks to ensure the data integrity of the Santa Cruz Copper Project, including the data associated with the Santa Cruz, East Ridge, and Texaco deposits. BBA also completed data analysis and validation, as described in Section 11.

9.2 BBA Site Visit 2024

BBA completed an initial site visit to the project area, including the Santa Cruz, East Ridge, and Texaco deposits, from February 27 to March 1, 2024. BBA personnel were accompanied by Ivanhoe Electric management and geologists.

An additional inspection of site was completed by BBA from April 22 to 23, 2024.

Activities carried out during the site visits included the following:

- reviewed work completed on the project as well as the geological, geotechnical, and geographical setting
- reviewed active work, including active drill sites
- reviewed the site's geology, mineralization, and structural controls
- reviewed the data capture process including logging, sampling, analytical, and quality assurance and quality control (QA / QC) procedures
- reviewed the chain of custody of samples from the sampling process to the sample dispatch
- reviewed drill logs, drill core, storage facilities, and collected samples for assay verification purposes
- confirmed both historical and Ivanhoe Electric drillhole collar locations
- verified the data entry process into the drillhole database system.

Ivanhoe Electric employs a rigorous QA / QC protocol, including the routine insertion of field duplicates, blanks, and certified reference standards. BBA received a monthly QA / QC report from Ivanhoe Electric and was provided with all QA / QC data prior to the site visits.

The geological data collection procedures and the chain of custody were found to be consistent with current industry practices and follow Ivanhoe Electric's internal procedural documentation. BBA verified the quality of geological and sampling information collected by Ivanhoe Electric and confirmed the data are fit for use in the creation of geological and mineralized models and that the data are appropriate for use in the mineral resource and mineral reserve estimation.

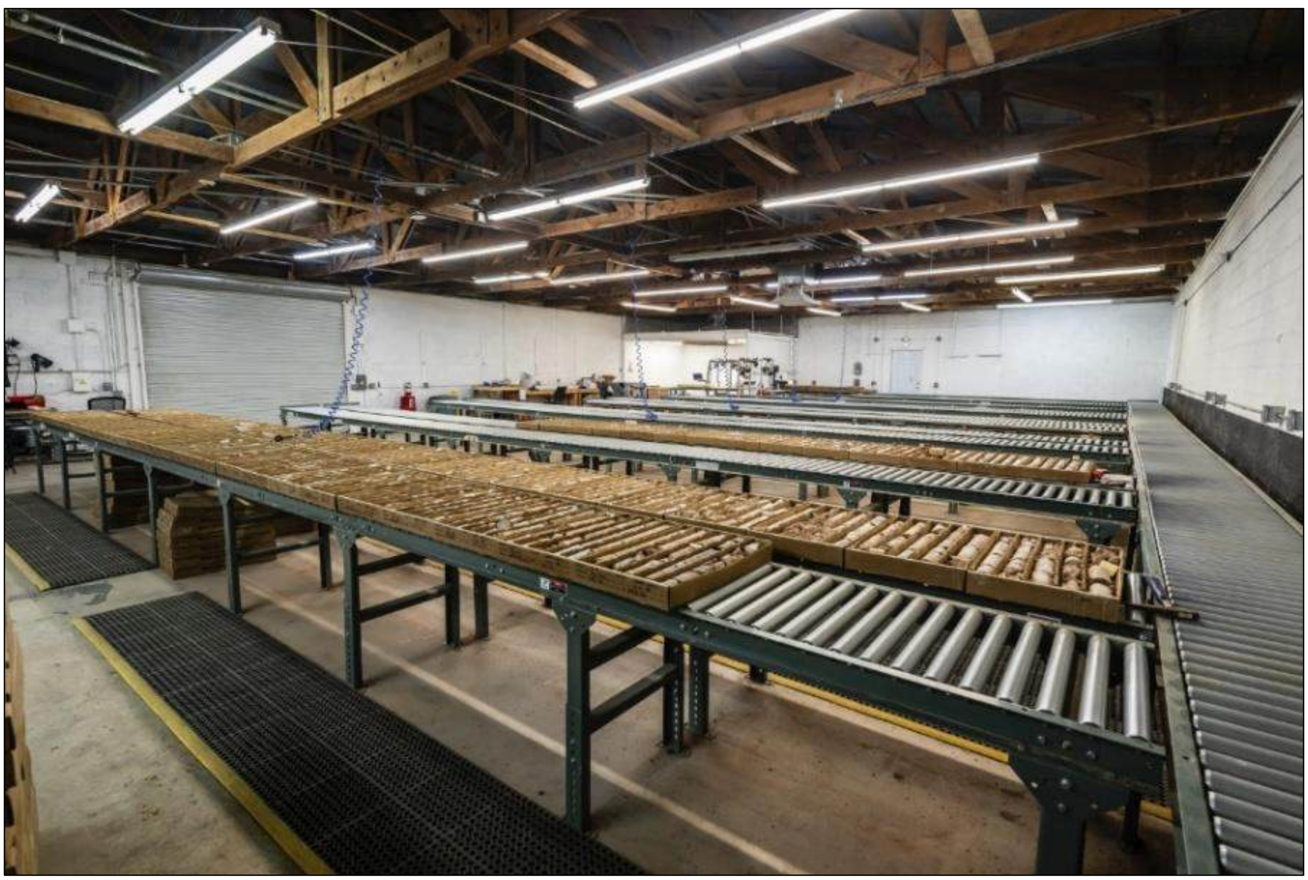
9.3 Field Collar Validation

While visiting the project site, BBA and Ivanhoe Electric personnel verified 51 collar locations using a Garmin GPSMAP 62 handheld global positioning system (GPS) unit. These collar readings compared to the recorded collar locations in the project database; deviations between these two readings were within the expected resolution of the handheld units. Three drillholes that were noted to have a GPS deviation greater than 10 m were resurveyed by a third-party group using a differential GPS system. The resurveyed coordinates obtained by Ivanhoe Electric returned coordinate values within a reasonable tolerance of the GPS coordinates obtained by BBA.

9.4 Core Logging, Sampling & Storage Facilities

The drillholes are logged, photographed, and sampled on site at the Ivanhoe Electric core logging facility (Figure 9-1). Drill core is palletized, winterized, and stored at Ivanhoe Electric's core storage facilities. The core samples, pulps, and coarse rejects are kept at the core logging facility or at Ivanhoe Electric's core storage facilities.

Figure 9-1: Core Logging Facility, Casa Grande, Arizona



Source: Ivanhoe Electric, 2024.

Ivanhoe Electric drillhole recordings are stored in a commercial geological database management system, MX Deposit. Data are logged and entered directly into the software. The software has been extensively customized for Ivanhoe Electric and the Santa Cruz Copper Project, including defined pick lists and calculated fields, which enable data integrity checks at the data entry stage. Geotechnical measurements are also taken and entered directly in MX Deposit with the same validation and data integrity checks. Select drillholes were surveyed with a suite of televiewer probes, including acoustic borehole imaging, which characterized the orientation and properties of discontinuities using WellCAD software.

Core loggers have access to Ivanhoe Electric's standard operating procedures and work instruction documentation for logging and sampling, which includes a standardized drill inspection checklist for standardizing and enforcing core logging procedures. QA/QC samples, including blanks, duplicates, and standards, are appropriately selected and inserted into the sampling workflow. Documentation, the data collection process, and geotechnical logs are subject to routine internal audits by senior staff and management to ensure consistent and accurate collection of data by the Ivanhoe Electric team.

9.5 Independent Sampling

BBA selected sample intervals from eight holes drilled on the Santa Cruz deposit. Twenty verification samples were collected (Table 9-1) from the existing assay database.

Sample material for the verification samples were the pulp rejects from previously submitted Ivanhoe Electric samples. Pulp rejects were sent to BBA's office in Sudbury, Ontario, Canada, where the sample numbers were validated, and were then submitted to ALS Sudbury for preparation and then analyzed at ALS North Vancouver. ALS is certified by the International Standards Organization (ISO), demonstrating technical competence for a defined scope and the operation of a laboratory quality management system (ISO 17025) and is independent of Ivanhoe Electric. The ALS sample workflow uses the same aliquot when testing for acid soluble copper and cyanide soluble copper.

The BBA check assay results from ALS were compared to Ivanhoe Electric's sample database. The results are summarized in Table 9-1 for total copper (%), acid soluble copper (%), and cyanide soluble copper (%). Two samples, or 10% of the assays checked, showed sample variances significantly greater than 10%. All other results, regardless of analytical method, were within reasonable tolerances for the deposit type and no material biases were evident.

Table 9-1: Original Assay Values vs. BBA Check Sample Assay Values

Sample Number	From	To	Original Sample			BBA Check Samples		
			Total Cu (%)	Acid Soluble Cu (%)	Cyanide Soluble Cu (%)	Total Cu (%)	Acid Soluble Cu (%)	Cyanide Soluble Cu (%)
694731	884.00	885.00	1.05	0.02	0.26	1.10	0.02	0.29
694736	888.00	889.00	1.10	0.01	0.10	1.12	0.04	0.09
695558	840.00	841.00	2.72	0.00	0.43	2.68	0.10	0.48
695641	911.00	912.00	1.04	0.01	0.08	1.04	0.04	0.08
SCC-056_334	600.00	601.00	3.52	3.40	0.03	3.65	3.34	0.02
SCC-056_345	609.00	610.00	1.61	1.50	0.01	1.64	1.36	0.01
SCC-056_381	639.80	640.90	3.52	0.22	3.03	3.46	0.34	2.88
SCC-056_403	659.00	660.00	2.73	0.20	2.40	2.69	0.30	2.16
SCC-057_149	640.00	641.00	2.78	2.33	0.38	2.89	2.19	0.33
SCC-057_171	659.00	660.00	6.23	0.74	5.24	6.05	0.72	4.74
SCC-057_185	670.80	671.80	1.44	1.38	0.01	1.43	1.25	0.01
SCC-057_215	697.00	698.00	1.25	0.23	0.00	1.25	1.23	0.01
SCC-057_268	740.78	742.19	1.96	0.14	1.83	1.97	0.16	1.85
SCC-057_278	749.00	750.00	2.63	0.10	2.62	2.76	0.15	2.67
SCC-084_100	747.00	749.00	4.05	3.92	0.01	4.03	3.99	0.01
SCC-125_046	598.00	600.00	1.31	1.23	0.01	1.30	1.34	0.01
SCC-178_054	591.00	593.00	1.03	0.98	0.00	1.01	1.07	0.05
SCC-178_059	599.00	601.00	0.93	0.87	0.00	0.95	0.69	0.01
SCC-178_133	708.00	710.00	0.71	0.45	0.06	0.57	0.48	0.06
SCC-186_067	647.00	649.00	3.59	3.86	0.01	3.81	3.20	0.01

9.6 Twin Hole Analysis

In 2021, Ivanhoe Electric drilled five twin holes with the intention of verifying five historical drillholes. All five twin hole assays aligned with the historical drilling, validating the historical ASARCO cyanide soluble assays.

Between 2021 and 2024, several holes drilled for resource estimation purposes were evaluated against nearby historical holes of different vintages. The results were consistent with the 2021 validation. Due to different sample lengths and differences in analytical methods, a direct comparison of assay intervals is not representative of the results; however, geological contacts were consistent between the holes and composited assays.

9.7 Database Validation

BBA completed a spot check verification of the assay database for each deposit, as follows:

- Santa Cruz deposit – approximately 10% (3,700) of the 37,000 assays.
- East Ridge deposit – approximately 10% (800) of the 8,000 assays.
- Texaco deposit – approximately 10% (390) of the 3,900 assays.

The geology was validated for lithological units from Ivanhoe Electric's Leapfrog lithological model. The geological contacts aligned with the core contacts and are acceptable for use. Datamine software also has a validation routine when importing the data. No errors were recorded.

Due to the re-analyses to determine cyanide soluble copper within the historical samples, there are instances where cyanide soluble copper is greater than total copper. It has been determined that the historical cyanide soluble assays are valid as they align with recent drillhole assays. Therefore, a cap has been applied to historical cyanide soluble assays such that they must not exceed the associated total copper value by 20% for each sample, as these results are from separate sample splits and this variance in values is expected. Likewise, any acid soluble assays that exceed the associated total copper value by 20% are capped.

9.8 Review of Company's QA / QC

BBA conducted an independent review of Ivanhoe Electric's QA / QC procedures as part of the validation process and believes that the company has a robust QA / QC process in place, as described in Section 9.5.

9.9 BBA Opinion

It is BBA's opinion that the geological data collection and QA / QC procedures used by Ivanhoe Electric are consistent with current industry practices and that the geological database is of suitable quality to support the mineral resource estimates, mineral reserve estimates, and mine planning.

10 Mineral Processing & Metallurgical Testing

10.1 Test Laboratories

During the over 60-year history of exploration around the project area, a significant number of metallurgical studies and accompanying laboratory-scale tests have been completed by external consultants. Since Ivanhoe Electric acquired the property in 2021, metallurgy and processing testwork has been directed by Met Engineering, LLC (Met Engineering) and conducted at McClelland Labs (MLI) in Sparks, Nevada, USA and at Blue Coast Research (BCR) in Parksville, British Columbia, Canada. The laboratories performed metallurgical testing to industry standards using industry-accepted procedures. MLI meets the requirements of AC89 Accreditation Criteria for Testing Laboratories from the International Accreditation Service (IAS) and with ISO 17025. The labs are independent of Ivanhoe Electric.

10.2 Metallurgical Testwork

After the Initial Assessment was published in September 2023, various trade-off studies were completed. In late 2023 a proposed float-leach process flowsheet was pursued where the mineralized material would be floated producing a salable copper-gold-silver concentrate, followed by sulfuric acid leaching of the tailings using solvent extraction (SX) / electro-winning (EW) technology to produce copper cathode. This flowsheet successfully delivered high copper recovery while producing both salable concentrate and copper cathode. Testwork continued to evaluate alternatives and ultimately arrived at a flowsheet of dynamic heap leaching of the ore followed by SX/EW to produce copper cathode for sale in the US marketplace and eliminated production of copper concentrates that likely would have necessitated selling them into the Asian or European markets because of limited copper smelting capacity in the US.

10.2.1 Column Leach Testing

Column leach studies simulating heap leaching were completed in 2024 and 2025 at the MLI and BCR laboratories. Exploratory testwork at MLI established operating parameters that were used on later variability testwork completed at BCR. The BCR variability program optimized leach parameters for the Santa Cruz oxide and chalcocite mineral domains resulting in refining reagent consumption while maximizing recovery.

10.2.1.1 Sample Selection

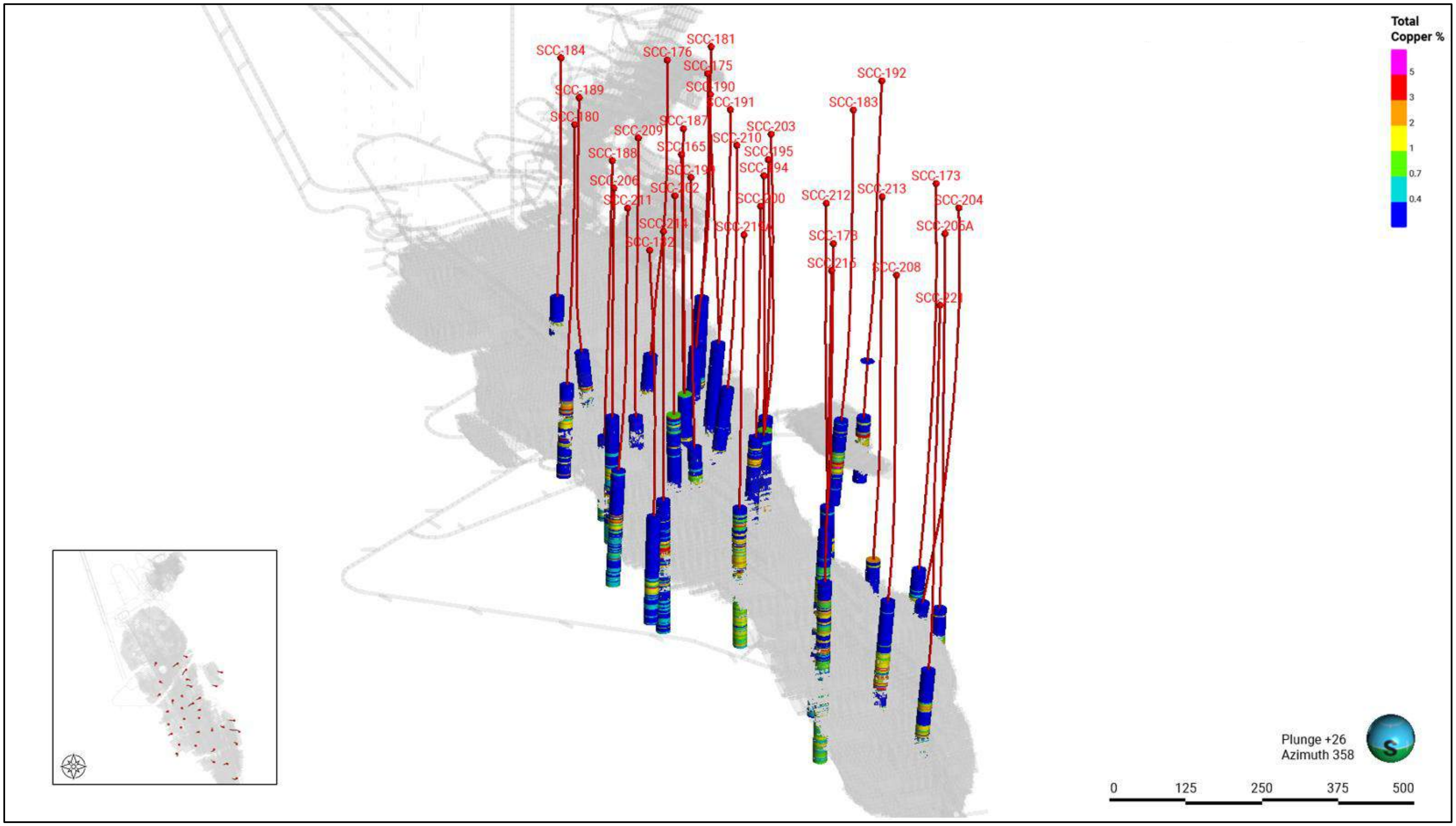
Fifty-six samples consisting of PQ-size drill core halves from the 2023 to 2024 Ivanhoe Electric drilling program were selected for variability analyses and building nine master composites, representing the mineralized material, for column leach testing. Sample intervals are continuous with an average length of 20 m and a minimum calculated total copper grade of 0.7%. Table 10-1 identifies the individual samples that were selected to create each of the nine master composite samples. The master composites provide broad spatial coverage of the Santa Cruz and Verde domains within the mine design (Figure 10-1). Expected mine plan feed variability is captured by samples representing the oxide, chalcocite, and transitional mineral domains. All lithologies found within the mineralized material are also represented, which includes pure Oracle granite samples and samples with mixtures of porphyry and diabase dikes.

Table 10-1: Sample Selection for Master Composites for Column Leach Testing

Sample ID / Master Composite ID	Drillhole ID	From (m)	To (m)	Mineral Domain	Lithology
A – High Grade Oxide Ore					
VAR053	SCC-173	765.00	796.00	Oxide Cu Zone	Oracle Granite / Porphyry
VAR061	SCC-183	625.00	659.00	Oxide Cu Zone	Oracle Granite
VAR069	SCC-192	640.00	673.26	Oxide Cu Zone	Oracle Granite
VAR073	SCC-195	583.00	611.00	Oxide Cu Zone	Oracle Granite
VAR090	SCC-211	556.00	584.00	Oxide/Enrichment Transition Zone	Oracle Granite
B – High Grade Oxide Ore					
VAR059	SCC-181	613.00	633.37	Oxide Cu Zone	Oracle Granite
VAR062	SCC-184	517.00	535.70	Oxide Cu Zone	Oracle Granite / Porphyry
VAR063	SCC-187	644.00	660.28	Chalcocite Enrichment Zone	Oracle Granite / Porphyry
VAR064	SCC-188	524.54	538.02	Oxide Cu Zone	Oracle Granite
VAR093	SCC-214	557.00	584.00	Oxide Cu Zone	Oracle Granite
VAR094	SCC-215	598.46	615.00	Oxide Cu Zone	Oracle Granite
C – High Grade Chalcocite Ore					
VAR054	SCC-173	862.06	885.00	Chalcocite Enrichment Zone	Oracle Granite
VAR060	SCC-182	592.52	614.33	Oxide Cu Zone	Porphyry / Oracle Granite
VAR078	SCC-202	584.00	601.00	Chalcocite/Primary Transition Zone	Oracle Granite / Porphyry
VAR082	SCC-205A	915.00	945.00	Oxide/Enrichment Transition Zone	Oracle Granite / Porphyry
VAR103	SCC-221	885.00	916.69	Chalcocite Enrichment Zone	Oracle Granite
D – Moderate Grade Chalcocite Ore					
VAR063	SCC-187	644.00	660.28	Chalcocite Enrichment Zone	Oracle Granite / Porphyry
VAR066	SCC-189	643.00	669.00	Chalcocite Enrichment Zone	Oracle Granite / Porphyry
VAR071	SCC-194	738.23	763.78	Chalcocite/Primary Transition Zone	Oracle Granite / Porphyry
VAR076	SCC-199	584.00	614.00	Chalcocite/Primary Transition Zone	Oracle Granite
VAR077	SCC-200	646.00	673.00	Chalcocite Enrichment Zone	Oracle Granite
E – Moderate Grade Mixed Ore					
VAR057	SCC-178	659.08	690.07	Oxide Cu Zone	Porphyry
VAR066	SCC-189	643.00	669.00	Chalcocite Enrichment Zone	Oracle Granite / Porphyry
VAR083	SCC-206	510.00	533.00	Oxide Cu Zone	Porphyry/ Oracle Granite
VAR092	SCC-213	840.00	857.10	Oxide Cu Zone	Oracle Granite / Porphyry
VAR099	SCC-210	593.00	616.00	Oxide/Enrichment Transition Zone	Porphyry/ Oracle Granite
F – Moderate Grade Oxide Ore					
VAR053	SCC-173	765.00	796.00	Oxide Cu Zone	Oracle Granite / Porphyry
VAR055	SCC-175	615.00	632.21	Oxide Cu Zone	Oracle Granite / Porphyry
VAR061	SCC-183	625.00	659.00	Oxide Cu Zone	Oracle Granite
VAR066	SCC-189	643.00	669.00	Chalcocite Enrichment Zone	Oracle Granite / Porphyry
VAR069	SCC-192	640.00	673.26	Exotic Cu Zone	Oracle Granite
VAR073	SCC-195	583.00	611.00	Oxide Cu Zone	Oracle Granite
VAR076	SCC-199	584.00	614.00	Chalcocite/Primary Transition Zone	Oracle Granite
VAR090	SCC-211	556.00	584.00	Oxide/Enrichment Transition Zone	Oracle Granite
G – Moderate Grade Oxide Ore					
VAR056	SCC-176	590.40	615.00	Oxide Cu Zone	Oracle Granite
VAR061	SCC-183	625.00	659.00	Oxide Cu Zone	Oracle Granite
VAR062	SCC-184	517.00	535.70	Oxide Cu Zone	Oracle Granite / Porphyry
VAR067	SCC-190	617.00	643.20	Oxide Cu Zone	Oracle Granite
VAR068	SCC-191	590.89	614.00	Oxide Cu Zone	Oracle Granite / Porphyry
VAR085	SCC-208	795.50	825.51	Chalcocite Enrichment Zone	Oracle Granite
VAR091	SCC-212	766.00	793.00	Oxide Cu Zone	Oracle Granite
VAR092	SCC-213	840.00	857.10	Oxide Cu Zone	Oracle Granite / Porphyry
VAR093	SCC-214	557.00	584.00	Oxide Cu Zone	Oracle Granite
H – Moderate Grade Mixed Ore					
VAR052	SCC-165	582.00	612.00	Chalcocite Enrichment Zone	Porphyry / Oracle Granite
VAR080	SCC-203	614.00	644.00	Oxide Cu Zone	Oracle Granite / Porphyry
VAR081	SCC-204	875.00	907.00	Oxide/Enrichment Transition Zone	Oracle Granite
VAR082	SCC-205A	915.00	945.00	Oxide/Enrichment Transition Zone	Oracle Granite / Porphyry
VAR088	SCC-209	554.00	583.00	Oxide/Enrichment Transition Zone	Oracle Granite
I – High Grade Chalcocite Ore					
VAR058	SCC-180	523.75	544.00	Chalcocite/Primary Transition Zone	Oracle Granite / Porphyry
VAR086	SCC-208	886.00	917.00	Chalcocite Enrichment Zone	Oracle Granite
VAR098	SCC-178	800.00	818.00	Primary Zone	Oracle Granite
VAR102	SCC-219A	644.00	674.00	Chalcocite/Primary Transition Zone	Oracle Granite
VAR103	SCC-221	885.00	916.69	Chalcocite Enrichment Zone	Oracle Granite

Source: Met Engineering, 2025.

Figure 10-1: Spatial Distribution of the Variability & Master Composite Samples



Source: Met Engineering, 2025.

10.2.1.2 Ore Characterization

SGS Advanced Mineralogy (SGS) in Ontario, Canada, analyzed 106 ore samples from Ivanhoe Electric's testing programs at MLI and BCR. The samples received were ground to an approximate P_{80} of 150 µm. The mineralogical work was conducted with a TESCAN integrated mineral analyzer (TIMA-X), electron probe micro-analysis (EPMA), laser ablation by inductively coupled plasma mass spectrometry (LA by ICP-MS), X-ray diffraction analysis (XRD), and chemical assays.

The ore characterization summary for the master composites (A-I) and the variability samples that constitute them are presented in Table 10-2. The abbreviation "CNCu" in the table header represents the cyanide-soluble copper measured in the sample. It is strictly an analytical measurement to indicate the level of secondary sulfide copper present. Cyanide is not used in the proposed Santa Cruz metallurgical process flowsheet.

The modal mineralogy across composites is generally consistent, with minimal variability in the abundance of quartz, potassium feldspar, and plagioclase. The predominant lithology in the variability and master composite samples is mostly Oracle granite. However, master composite E exhibits less quartz (40%) and higher amounts of biotite (5%) and smectite (8%). This variation is attributed to a higher proportion of porphyry in the samples.

Atacamite constitutes, on average, 60% of the oxide copper across all master composites. It is also the primary source of chloride, accounting for 88% of the deportment, which shows a strong correlation between chloride and the oxide mineral domain.

Secondary sulfide copper is mainly chalcocite, comprising 98% of the deportment in the master composites, with covellite and bornite rare and only representing only 2% of the secondary sulfide copper deportment.

Chalcocite and pyrite are the main sources of sulfur in the master composites, contributing to a cumulative deportment of 74%. Cuprous goethite and sulphates make up a lesser amount of the sulfur deportment with a combined 13%. The sulfur content is highest in master composite C, D, and I, which represent high-grade chalcocite ore.

Iron is found in a wider range of minerals than other elements discussed. These minerals include cuprous goethite, muscovite/illite, biotite, iron oxides, and pyrite. Cuprous goethite contains the largest abundance of iron at 34% with muscovite/illite as the second most prominent at 20%. Biotite and pyrite iron deportment is more variable between individual composites but represents a combined 23% of the overall iron.

Table 10-2: Master Composite and Variability Samples

Sample ID	Total Cu %	Sequential Coppers %			Sulfur Assay %	Copper Deportment Mineralogy								Selected Modal Mineralogy %								Selected Assays %							
		ASCu	CNCu	ResCu	Total S	Atacamite	Chrysocolla	Cu-Goethite	Cu-Mica	Other Cu	Chalcocite	Chalcopyrite	Other Cu-Sulfides	Quartz	K-Feldspars	Biotite	Muscovite/Ilite	Carbonates	Pyrite	Iron Oxides	Smectites	Chlorine	Fluorine	Calcium	Iron	Magnesium	Aluminum	Potassium	Manganese
Master Composites																													
A	1.48	1.36	0.07	0.05	0.06	0.90	0.18	0.10	0.07	0.13	0.09	0.00	0.00	48.76	26.37	0.45	16.38	0.01	0.03	0.23	2.87	0.14	0.07	0.07	1.36	0.15	6.24	4.57	0.01
B	1.43	1.36	0.04	0.04	0.04	0.71	0.31	0.15	0.09	0.10	0.08	0.00	0.00	44.56	27.15	0.78	15.93	0.01	0.01	0.26	4.51	0.21	0.07	0.07	1.70	0.19	6.54	4.10	0.01
C	1.44	0.55	0.88	0.02	0.76	0.23	0.09	0.09	0.03	0.05	0.91	0.01	0.01	45.69	30.12	0.96	14.34	0.07	0.82	0.22	2.30	0.04	0.06	0.08	1.91	0.19	6.12	4.25	0.01
D	1.36	0.14	1.10	0.12	0.84	0.00	0.00	0.05	0.00	0.05	1.09	0.11	0.02	45.81	30.53	1.82	12.99	0.02	0.82	0.17	2.34	0.01	0.07	0.07	1.91	0.24	6.37	4.90	0.01
E	1.31	0.82	0.44	0.05	0.26	0.35	0.09	0.16	0.07	0.15	0.49	0.02	0.01	40.32	24.09	5.57	12.01	0.14	0.16	0.30	8.11	0.12	0.11	0.24	2.49	0.54	7.40	3.92	0.01
F	1.28	0.92	0.26	0.09	0.40	0.61	0.11	0.10	0.04	0.09	0.28	0.06	0.02	48.15	25.23	1.42	15.88	0.02	0.46	0.26	3.07	0.11	0.08	0.06	2.00	0.25	6.33	4.33	0.01
G	1.18	0.95	0.21	0.01	0.12	0.69	0.07	0.09	0.02	0.07	0.22	0.00	0.00	42.63	38.50	1.24	9.62	0.07	0.01	0.22	2.97	0.16	0.05	0.14	1.32	0.21	6.31	4.87	0.01
H	1.21	0.75	0.44	0.02	0.30	0.32	0.09	0.09	0.03	0.07	0.56	0.00	0.01	44.99	32.31	0.63	12.71	0.24	0.18	0.17	3.41	0.11	0.06	0.25	1.27	0.17	6.47	4.54	0.01
I	1.47	0.16	1.21	0.10	0.99	0.00	0.00	0.05	0.00	0.05	1.16	0.16	0.04	47.19	29.83	0.52	13.13	0.05	0.90	0.22	2.15	0.01	0.06	0.12	1.75	0.15	6.22	4.52	0.01
Variability Samples																													
VAR053	1.01	0.94	0.02	0.053	0.01	0.57	0.20	0.09	0.08	0.07	0.00	0.00	0.00	45.61	30.88	4.41	10.72	0.03	0.24	0.17	2.97	0.12	0.07	0.07	1.08	0.20	6.93	5.72	0.01
VAR054	1.51	0.62	0.88	0.007	0.35	0.25	0.02	0.07	0.01	0.03	1.10	0.00	0.00	42.76	38.76	0.43	11.47	0.04	0.02	0.24	1.23	0.09	0.05	0.07	1.31	0.18	6.83	4.79	0.01
VAR055	0.77	0.72	0.04	0.02	0.03	0.47	0.07	0.12	0.01	0.04	0.08	0.00	0.00	49.95	28.19	0.03	13.66	0.01	0.11	0.17	2.46	0.15	0.07	0.04	2.00	0.22	6.72	5.30	0.01
VAR057	1.27	0.99	0.24	0.04	0.10	0.39	0.09	0.18	0.13	0.16	0.38	0.00	0.01	43.56	34.75	0.10	11.99	0.07	0.28	0.25	1.53	0.13	0.14	0.14	2.60	0.67	7.73	4.02	0.01
VAR059	0.79	0.76	0.00	0.02	0.03	0.52	0.02	0.10	0.01	0.09	0.05	0.00	0.00	40.66	37.11	3.60	9.16	0.02	0.34	0.30	2.02	0.16	0.05	0.01	1.18	0.10	6.56	4.58	0.01
VAR060	1.84	0.88	0.92	0.04	1.78	0.04	0.29	0.11	0.07	0.09	1.17	0.01	0.01	45.07	33.55	0.02	13.39	0.00	1.78	0.06	1.68	0.02	0.10	0.14	3.35	0.33	7.36	3.83	0.01
VAR061	1.81	1.79	0.01	0.01	0.03	1.55	0.09	0.07	0.03	0.04	0.01	0.00	0.00	43.07	34.73	1.12	13.19	0.01	0.00	0.07	3.72	0.16	0.10	0.07	1.45	0.14	5.93	3.01	0.00
VAR062	0.99	0.89	0.07	0.03	0.11	0.43	0.23	0.10	0.04	0.08	0.13	0.00	0.00	36.26	47.50	1.09	9.39	0.11	0.01	0.17	0.98	0.12	0.06	0.14	1.68	0.34	7.04	5.62	0.01
VAR063	0.81	0.13	0.67	0.01	0.32	0.00	0.00	0.06	0.00	0.04	0.69	0.01	0.01	44.65	33.41	1.75	11.19	0.02	0.00	0.38	3.46	0.01	0.07	0.09	1.96	0.42	7.20	5.21	0.01
VAR064	2.10	2.06	0.00	0.03	0.02	1.79	0.02	0.17	0.01	0.05	0.01	0.00	0.00	39.22	20.10	7.95	12.49	0.04	0.04	0.28	11.98	0.45	0.09	0.07	2.85	0.18	6.56	3.52	0.01
VAR066	1.42	0.13	1.00	0.29	1.62	0.00	0.00	0.07	0.00	0.05	0.79	0.26	0.07	49.97	28.78	0.02	12.50	0.00	0.00	0.22	3.32	0.01	0.09	0.07	3.42	0.49	6.77	4.60	0.01
VAR069	1.83	1.8	0.01	0.02	0.06	1.61	0.05	0.07	0.02	0.04	0.01	0.00	0.00	47.79	14.12	0.79	21.13	0.04	2.59	0.18	5.21	0.16	0.08	0.07	1.52	0.13	6.03	3.43	0.00
VAR071	1.80	0.16	1.37	0.27	0.68	0.00	0.00	0.03	0.00	0.02	1.38	0.32	0.03	60.79	6.42	0.02	25.24	0.01	0.00	0.36	2.43	0.01	0.05	0.07	1.57	0.13	6.51	5.94	0.01
VAR073	1.71	1.69	0.01	0.01	0.01	1.52	0.05	0.04	0.01	0.02	0.00	0.01	0.00	40.99	36.79	3.49	8.91	0.01	0.04	0.18	4.12	0.28	0.04	0.07	0.86	0.09	6.25	6.02	0.00
VAR076	1.42	0.11	1.30	0.01	1.14	0.00	0.00	0.00	0.00	0.01	1.33	0.01	0.01	54.45	12.31	0.12	21.83	0.01	0.01	0.55	3.39	0.01	0.05	0.07	1.43	0.10	6.46	5.58	0.00
VAR077	1.38	0.17	1.18	0.03	0.45	0.00	0.00	0.04	0.00	0.09	1.22	0.00	0.01	45.67	21.27	4.20	15.69	0.04	1.93	0.22	3.38	0.01	0.07	0.07	1.32	0.12	6.51	5.04	0.01
VAR078	0.95	0.36	0.55	0.04	1.14	0.00	0.11	0.05	0.03	0.06	0.62	0.01	0.03	57.05	12.65	0.02	22.18	0.01	0.00	0.48	2.51	0.01	0.07	0.05	2.39	0.30	6.51	4.33	0.01
VAR082	1.01	0.76	0.23	0.02	0.14	0.39	0.03	0.09	0.02	0.07	0.35	0.00	0.00	50.26	22.12	2.45	15.97	0.07	1.49	0.14	2.67	0.14	0.05	0.21	1.27	0.21	6.35	6.02	0.02
VAR083	1.44	1.33	0.02	0.08	0.04	0.81	0.23	0.19	0.07	0.12	0.01	0.00	0.00	42.04	41.76	0.69	9.71	0.07	0.00	0.16	1.25	0.25	0.12	0.14	2.69	0.31	7.67	3.79	0.01
VAR084	0.69	0.44	0.02	0.23	0.07	0.00	0.20	0.25	0.04	0.21	0.01	0.00	0.00	48.03	15.26	2.23	17.45	0.02	0.00	0.32	8.08	0.01	0.15	0.39	5.61	1.35	7.41	4.35	0.03
VAR086	2.14	0.22	1.91	0.01	0.69	0.00	0.00	0.06	0.00	0.05	2.00	0.01	0.03	25.12	25.06	19.51	2.86	0.09	0.05	0.65	12.11	0.01	0.05	0.29	1.38	0.11	6.35	5.40	0.01
VAR089	1.21	0.14	0.93	0.14	0.55	0.00	0.00	0.08	0.00	0.04	0.86	0.12	0.07	46.11	28.42	0.19	14.92	0.01	0.14	0.25	3.18	0.01	0.06	0.29	2.27	0.40	6.56	5.84	0.01
VAR090	1.63	1.18	0.31	0.14	0.22	0.14	0.31	0.15	0.10	0.42	0.44	0.00	0.01	33.15	33.50	4.89	5.28	0.29	0.00	0.49	4.40	0.05	0.08	0.07	1.90	0.16	6.51	4.96	0.00
VAR092	0.85	0.73	0.10	0.02	0.18	0.27	0.02	0.18	0.02	0.24	0.13	0.00	0.00	36.41	33.30	3.78	12.55	0.02	0.00	0.40	7.32	0.12	0.06	0.73	3.01	0.67	7.09	4.98	0.03
VAR095	1.10	1.05	0.01	0.04	0.02	0.77	0.07	0.19	0.02	0.07	0.00	0.00	0.00	45.24	37.82	0.11	11.10	0.00	0.00	0.21	1.31	0.16	0.11	0.01	2.39	0.42	7.57	5.64	0.01

10.2.1.3 Results

Two heap leach approaches were examined using the standard column leach test methods:

- conventional bacteria-assisted, weak sulfuric acid, ferric-sulfate heap leaching of mixed oxide and secondary sulfide copper minerals (decades-old technology)
- newer, but widely used in South America, chloride-assisted, weak sulfuric acid, ferric-sulfate heap leaching of mixed oxide and secondary sulfide copper minerals (in use since the 2000s).

The conventional bacteria-assisted, weak sulfuric acid, ferric-sulfate heap leaches were quickly found at MLI to not be practical because the high levels of naturally-occurring chloride in the mineralized material are toxic to the bacteria. Fortunately, all the bacterial column leaches transitioned into successful chloride-assisted leaches.

All column leach tests were performed with 3 m deep beds of material using 4-inch diameter columns. The best operating parameters, evaluated at MLI, are listed below:

- particle size (evaluated by bottle roll testing and by column tests): 100% passing 0.5 inches
- amount of acid applied in the cure/agglomeration step: 3 to 5 kg/t
- amount of chloride (salt) added in the cure/agglomeration step: 2.5 to 5.0 kg/t
- raffinate application rate: 8 L/h/m^2
- length of the cure/agglomeration step: 7 days

The best column leach results achieved at MLI were 95.6% total copper recovery in 81 days of leaching on a sample containing 1.68% TCu distributed as 72% ASCu, 27% CNCu, and 1% CuRes.

These results were used to develop the follow-on mineral process testing studies at BCR in H1 2025 to support this technical report summary. The focus of the BCR studies was on establishing copper recoveries based on sequential coppers and/or mineralogical copper deportments by using chloride-assisted, weak-sulfuric acid, heap leaching of mineralized material from the oxide and chalcocite mineral domains. The BCR studies were also carried out to determine the commercial operating parameters for heap leaching, such as:

- salt usage
- sulfuric acid usage
- ore cure/agglomeration practices
- column leach cycle times for an on/off leach pad design:
  - raffinate irrigation rate and time
  - operating column leach moisture level

  - drain-down time
  - residual moisture content after drain-down
  - copper level in the residual moisture
- annual pregnant leach solution grades
- flow rate of pregnant leach solution to solvent extraction.

METSIM modeling results were used to interpret test results and inform the process design criteria.

Nine 3 m x 0.15 m diameter column leaches were set up using material from the master composites. All the column leaches were operated as chloride-assisted, weak sulfuric acid heap leaches to extract copper from copper oxides and secondary copper sulfides. Leaching was performed in an open cycle (once through solution) format. Operating conditions were kept the same in each column leach except for the cure acid, which varied from 3 to 10 kg/t depending on the predicted net acid consumption from earlier agitation leach tests. Irrigation times varied from 36 days on high oxide copper samples to 90 days on high chalcocite samples.

All the column leaches ran in open circuit format using a synthetic raffinate solution containing elements that mimic a mature commercial raffinate maintaining 100 g/L of chloride. The columns all operated without any solution flow issues.

The column leaches were operated in a temperature-controlled enclosure. The temperature was kept at 30°C to mimic expected average temperatures at the Santa Cruz Copper Project site.

10.2.1.3.1 Copper Recovery

Total copper recovery (calculated from the metallurgical balances from the products [residue and pregnant leach solution]) ranged from 80% to 97% with most results near or above 90% (four out of nine tests were above 95%). The lower recoveries occurred on within samples dominated by slower leaching chalcocite mineralogy.

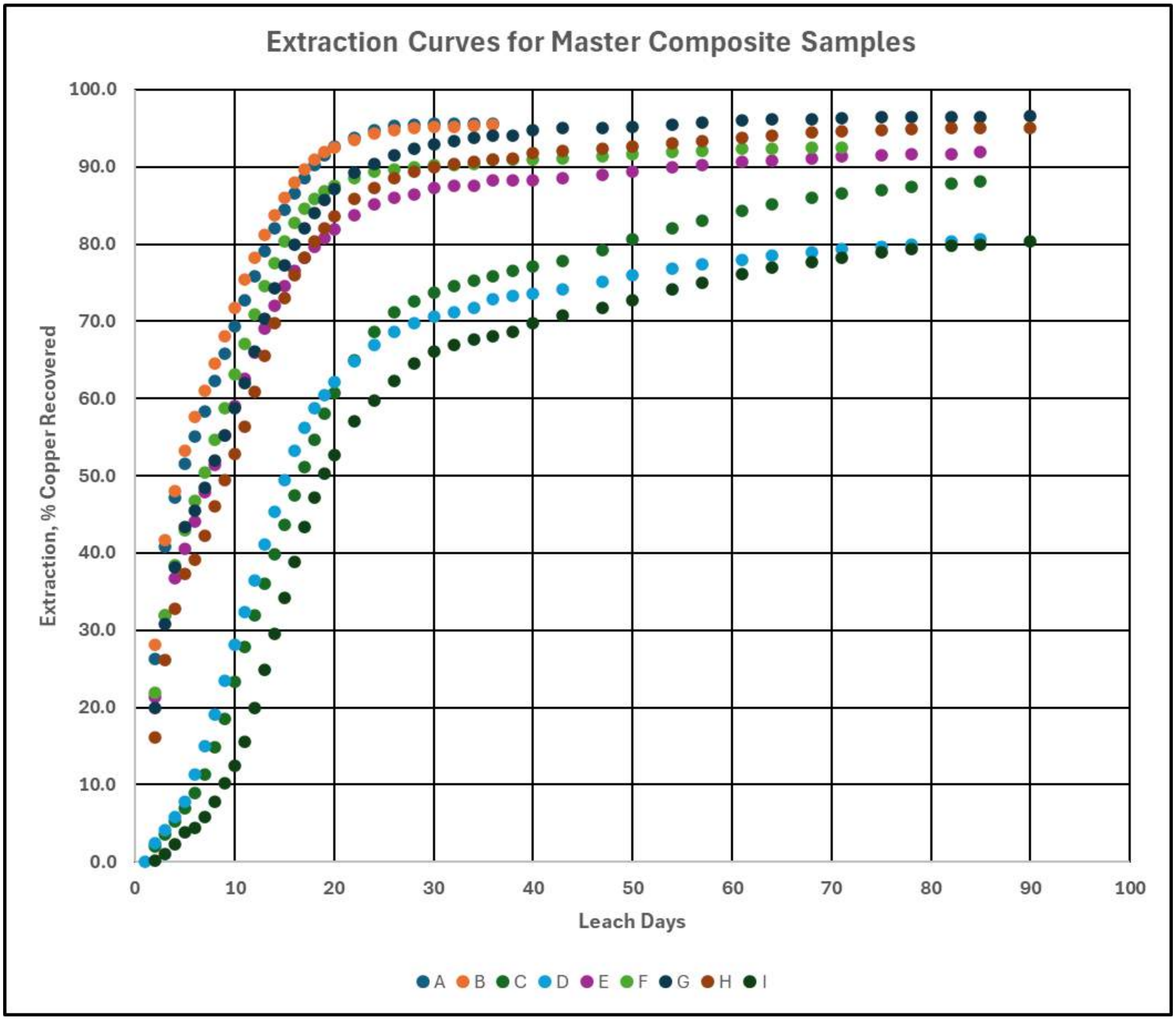
The head and sequential copper recoveries were calculated from the size-by-size feed and tail assays. (The calculation is [1 – {tail assay / feed assay}] x 100.) The total copper recovery calculated in this case can differ somewhat from the actual total copper recovery (reported above) calculated from the metallurgical balance from the products (residue and pregnant leach solution), but in this test program they were the same.

- Size-by-size total copper recovery ranged from 80% to 97% with most recoveries above 90%.
- Acid soluble copper recovery ranged from 91% to 99% with most above 98%.
- Cyanide soluble copper recovery ranged from 76% to 93% with most above 85%. Lower recoveries were related to low chalcocite feed grades in all instances.

10.2.1.3.2 Recovery as a Function of Time

When each column leach test was completed, the calculated total copper in the feed was determined from column leach products, copper in pregnant leach solution, and copper left unleached in the column leach residue. The total copper value was used to derive the copper extracted for each day of leaching and an extraction curve was constructed as shown in Figure 10-2 for all nine column tests. Most of the feed copper leached from six out of the nine columns in 60 days (over 90% recovery). The three slower leaching columns C, D, and I contained high levels of chalcocite. Their leach curves showed they were still leaching after 90 days (88%, 81%, and 80% extraction, respectively) when all the tests were stopped and would have leached to a higher extraction level if the time had been extended.

Figure 10-2: Copper Leach Rate Profiles for Columns A through I



Source: Met Engineering, 2025.

10.2.1.3.3 Effect of Particle Size on Recovery

There were three column tests run at BCR on minus 25.4 mm material to compare their recoveries against the same samples at minus 12.7 mm leached under the same conditions. These had lower recoveries than their corresponding column leaches leaching minus 12.7 mm samples, ranging from 7% to 23% less recovery. These results confirm the P_{100} of 12.7 mm was the better crush size for optimum extraction.

Additionally, to evaluate the effect of particle size, the residues for each of the columns were screened and each size fraction (1.7 through 6.7 mm) assayed for total copper, acid soluble copper, cyanide soluble copper, and residual copper. Recoveries of total copper, acid soluble copper, cyanide soluble copper and residual copper for each size fraction were calculated based on the assays of the same size fraction in the column head sample and the assays of total copper, acid soluble copper, cyanide soluble copper and residual copper in the residue.

The average recoveries for total copper and cyanide soluble copper for each of the five individual size fractions show that recovery increases as particle size decreases. This trend is consistent with the shrinking core model of leaching and proper accessibility. The average recovery for acid soluble copper for each of the five individual size fractions shows that recovery increases only slightly as particle size decreases.

There was a clear increase in the extraction of chalcocite in the size-by-size test results at 6.7 mm. Particle sizes below 6.7 mm experience a 7.5% higher recovery of chalcocite compared to particles above 6.7 mm. The size-by-size copper recovery analysis was used to predict the improvement in total copper recovery for each master composite test if the material had been crushed to 100% passing 9.5 mm. The recovery algorithm in Section 10.2.1.4 accounts for this improved recovery.

10.2.1.3.4 Copper Recovery / Acid Consumption / Leach Cycle Time Relationship

The relationship between copper recoveries, acid consumption, pregnant leach solution grade, and leach cycle time for each of the nine columns tested was evaluated. For samples of the oxide domain mineralization and for the oxide to chalcocite transition domain mineralization, results indicated that 90% or more of the copper will leach out in a 3 m column leach within 60 days. Another 30 days of leaching only increases recovery by 2% in these mineral domains. For samples of chalcocite domain mineralization, results indicated that 76% to 84% of the copper will leach out in a 3 m column leach within 60 days. Another 30 days of leaching increased recovery by 4% and the extraction curves were still showing an upward trend.

Pregnant leach solution copper levels trended lower as the leach cycle progressed and correlated well with the amount of oxide copper versus the amount of secondary copper present in the sample. For example, higher oxide copper produced higher pregnant leach solution grade (10 g/L Cu) early in the cycle compared to samples high in secondary copper (7 g/L Cu).

10.2.1.3.5 Key Reagents

Chloride occurred naturally in most master composite samples. The natural chloride level was augmented by the addition of salt in the agglomeration stage of each test. Enough sodium chloride was added to each master composite to bring the chloride level to 7 kg/t of feed. The synthetic irrigation solution used in the open circuit mode was maintained at 100 g/L chloride.

The acid added in the cure/agglomeration step varied from 3 to 10 kg/t. This resulted in acid usage ranging from 1 to 10 kg/t of feed. Most of the acid consumption values were less than 5 kg/t.

10.2.1.4 Copper Recovery Algorithm

Column test results at 3 m bed depths were used to generate a grade recovery algorithm to predict copper recovery to cathode of leaching minus 9.5 mm feed material in a 6 m lift for 180 days. The algorithm described below is based on a regression analysis of the total copper recovery for each test against the sequential copper assays for the feed in each test.

General equation format:

TCu Recovery to cathode = constant + A x ASCu + B x CNCu + C x CuRes, constant includes discount factor from pregnant leach solution *extraction to cathode and scaling factors.*

Regression result:

TCu Recovery to cathode = 97.85 + (-0.0531) x ASCu + (-6.783) x CNCu + (-55.108) x CuRes with an upper cap of 96 and a lower cap of 0

For life-of-mine processing, this equation produces a weighted average of 92.2% TCu recovered to cathode.

Copper recoveries should be confirmed in a pilot test in full height 6 m columns operating in closed circuit for future commercial design purposes.

10.2.1.5 Summary of Results

Most of the column leach tests completed their leach cycles in 60 days, after which usually less than four additional percentage points of copper recovery were achieved with an additional 30 days of leaching. Most of the column tests had achieved 90% total copper recovery or higher at 90 days. The exceptions were samples C, D, and I, which had the most cyanide soluble copper (0.95%,1.12%, and 1.17% CNCu, respectively) of the samples by a significant margin compared to the other samples (average of 0.25% CNCu and ranging from 0.05% to 0.62%).

Higher total copper recoveries can be expected for the mineralized material with higher ratios of acid soluble copper to total copper. When the proportion of cyanide soluble copper increases the total copper recovery decreases somewhat.

The application of chloride assisted, weak sulfuric acid heap leaching has been applied successfully for two decades in South America.

10.3 Metallurgical Variability

The copper recovery variability of the Santa Cruz oxide mineral domain is small, ranging from 93% to 97% total copper recovery. Copper recovery variability for the mixed oxide and chalcocite mineral domain is small as well, ranging from 93% to 95% total copper recovery. Copper recovery variability for the chalcocite mineral domain is wider; it ranges from 84% to 92% total copper recovery.

The copper recovery of the chalcocite mineral domain is less than for the oxide mineral domain which is likely due to slower leaching kinetics in the chalcocite mineral domain.

Sulfuric acid usage is the other parameter of interest for variability. Acid consumption does not follow a particular pattern related to the mineral domain. The consumption is generally low, except for master composite-E, which is considered moderate at 10 kg/t and is due to elevated biotite level in this sample. Acid usage ranged from 1 to 10 kg/t, with most values below 5 kg/t.

10.4 Deleterious Elements

There are no deleterious elements in the mineralized material or leach solution that pose a significant threat to cathode quality or project development.

The current solvent extraction design, with two wash stages and a loaded organic coalescer, mitigates potential damage from high pregnant leach solution chloride levels affecting electroplating stainless-steel blanks.

10.5 Met Engineering Opinion

Industry-standard studies were performed as part of process flowsheet development and facility design. Test samples are representative of the mineralization. Subsequent production experience and focused investigations guided facility alterations and process changes.

Testwork was performed on mineralization from the project area to support a preliminary feasibility study on the potential processing route and metallurgical performance. The testwork results are satisfactory to support a heap leach SX-EW process design.

11 Mineral Resource Estimates

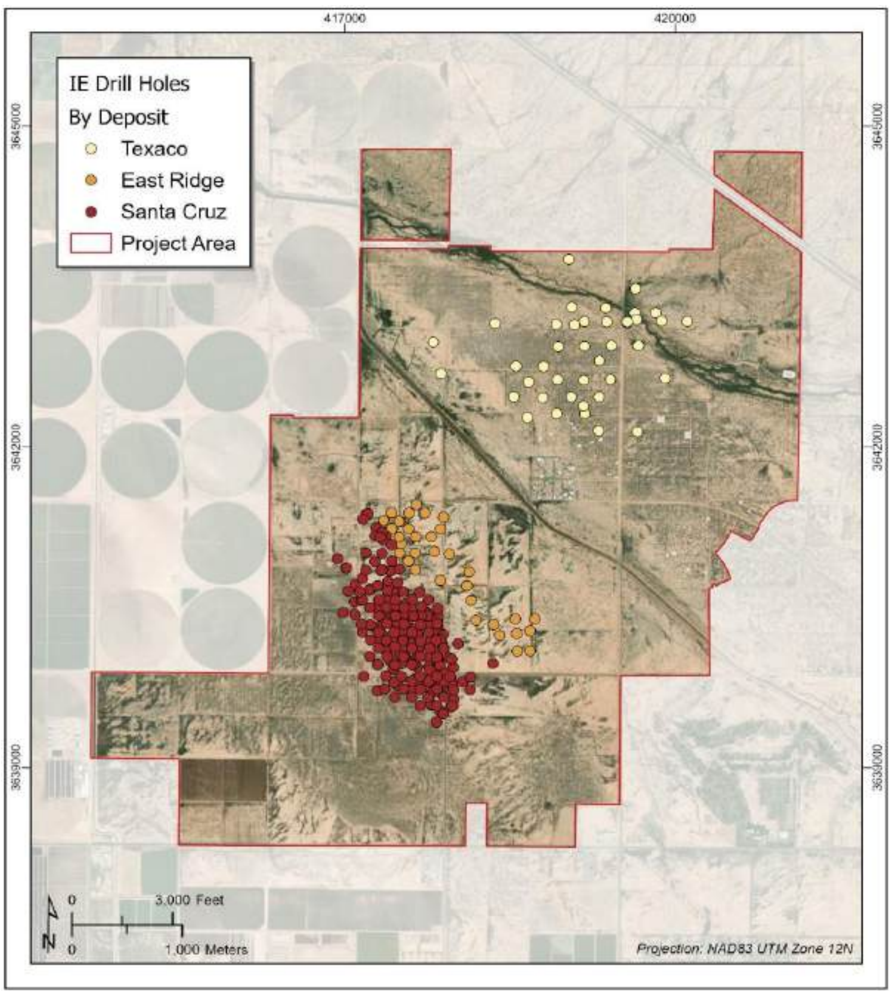
11.1 Deposits

The mineral resource estimates for the Santa Cruz, East Ridge, and Texaco deposits are detailed in this section. The Southwest Exploration Area is not included in the mineral resource estimates.

11.2 Drillhole Database

The Santa Cruz deposit has 194,463 m of core drilling in 226 drillholes; East Ridge has 62 holes totaling 48,878 m; and Texaco has 41 drillholes totaling 35,823 m (Figure 11-1 and Table 7-4). A breakdown of the number of assays used within each mineral resource estimate is provided in Table 7-5.

Figure 11-1: Plan View of Santa Cruz Copper Project Diamond Drilling by Deposit



Source: Ivanhoe Electric, 2025.

11.3 Geological Domaining

Geological domains were developed within the Santa Cruz Copper Project based on alteration, lithological, and mineralogical characteristics, incorporating regional and local structural information. Local, normal fault structures separate the mineralization at the Santa Cruz, East Ridge, and Texaco deposits. Local fault zones were created by Ivanhoe Electric using Seequent's Leapfrog Geo v2023.2.3 (Leapfrog) geological software.

The Santa Cruz deposit was divided into three primary mineralization domains: (1) leach cap, (2) weathered supergene enrichment, and (3) primary hypogene mineralization. Each primary geological domain was further subdivided into domains and subdomains (Table 11-1). The leach cap was added after additional drilling exhibited a continuous area of leached material distinct from the supergene domain.

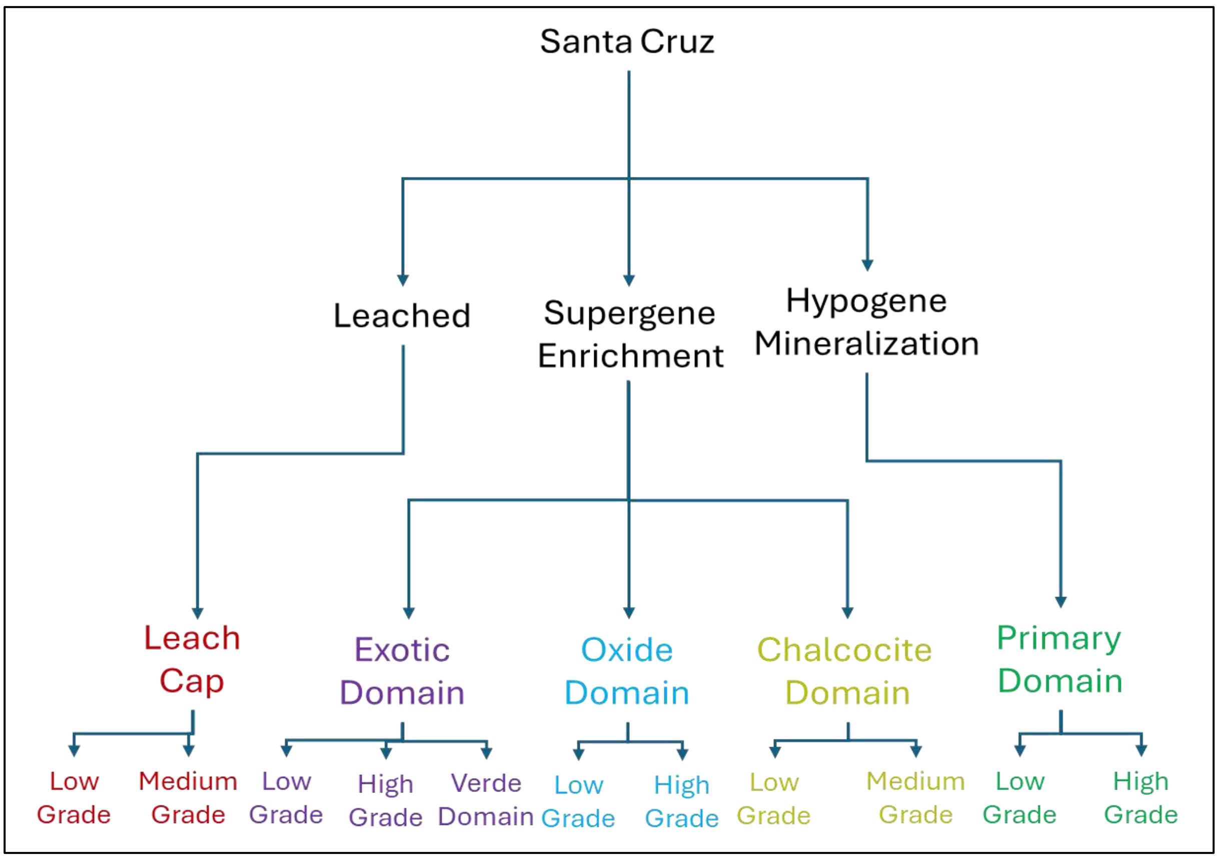
Table 11-1: Santa Cruz, East Ridge & Texaco Geological Domains

Primary Geological Domain	Domain	Subdomain Name	Domain Code
Santa Cruz Deposit			
Leached	Leach Cap (Mostly Unmineralized, Some Acid Soluble Copper)	Low-Grade	20
		Medium-Grade	21
Supergene Enrichment	Exotic (Tertiary-Hosted Exotic Copper)	Low-Grade	10
		High-Grade	11
		Verde Domain (Mineralized)	12
		Verde Domain (Unmineralized)	13
	Oxide (Primarily Acid Soluble Copper)	Low-Grade	30
		High-Grade	31
	Chalcocite-Enriched (Primarily Cyanide Soluble Copper)	Low-Grade	40
		Medium-Grade	41
Hypogene Mineralization	Primary (Primary Sulfide Copper)	Low-Grade	50
		High-Grade	51
East Ridge Deposit			
Weathered Supergene Enrichment	Exotic (Tertiary-Hosted Exotic Copper)	Low-Grade	341
	Oxide (Primarily Acid and Cyanide Soluble Copper)	Low-Grade (North)	301
		Medium-Grade (North)	311
		Low-Grade (South)	401
		Medium-Grade (South)	411
Texaco Deposit			
Weathered Supergene Enrichment	Oxide (Primarily Acid Soluble Copper)	Low-Grade	221
		Medium-Grade	222
	Chalcocite-Enriched (Primarily Cyanide Soluble Copper)	Medium-Grade	232
Hypogene Mineralization	Primary (Primary Sulfide Copper)	Low-Grade	211
		Medium-Grade	212

The East Ridge deposit is predominantly structurally controlled and consists of a mix of oxide and enrichment; therefore, it has fewer domains. East Ridge is also split into the north and south domains, as no continuity has been observed between the two mineralized zones. The Texaco deposit consists of all domains except for the leach cap and exotic domains; however, this may be refined through additional drilling.

Collectively, each of these domains was divided into subdomains based on their individual grade profiles, which align with mineralization controls. A schematic for Santa Cruz, East Ridge, and Texaco deposit hierarchies is outlined in Figure 11-2. The following terms, which represent a local definition of the grade profile, are assigned to the subdomains: high-grade (HG), medium-grade (MG), and low-grade (LG).

Figure 11-2: Santa Cruz Primary Mineralization Domains, Domains & Subdomains

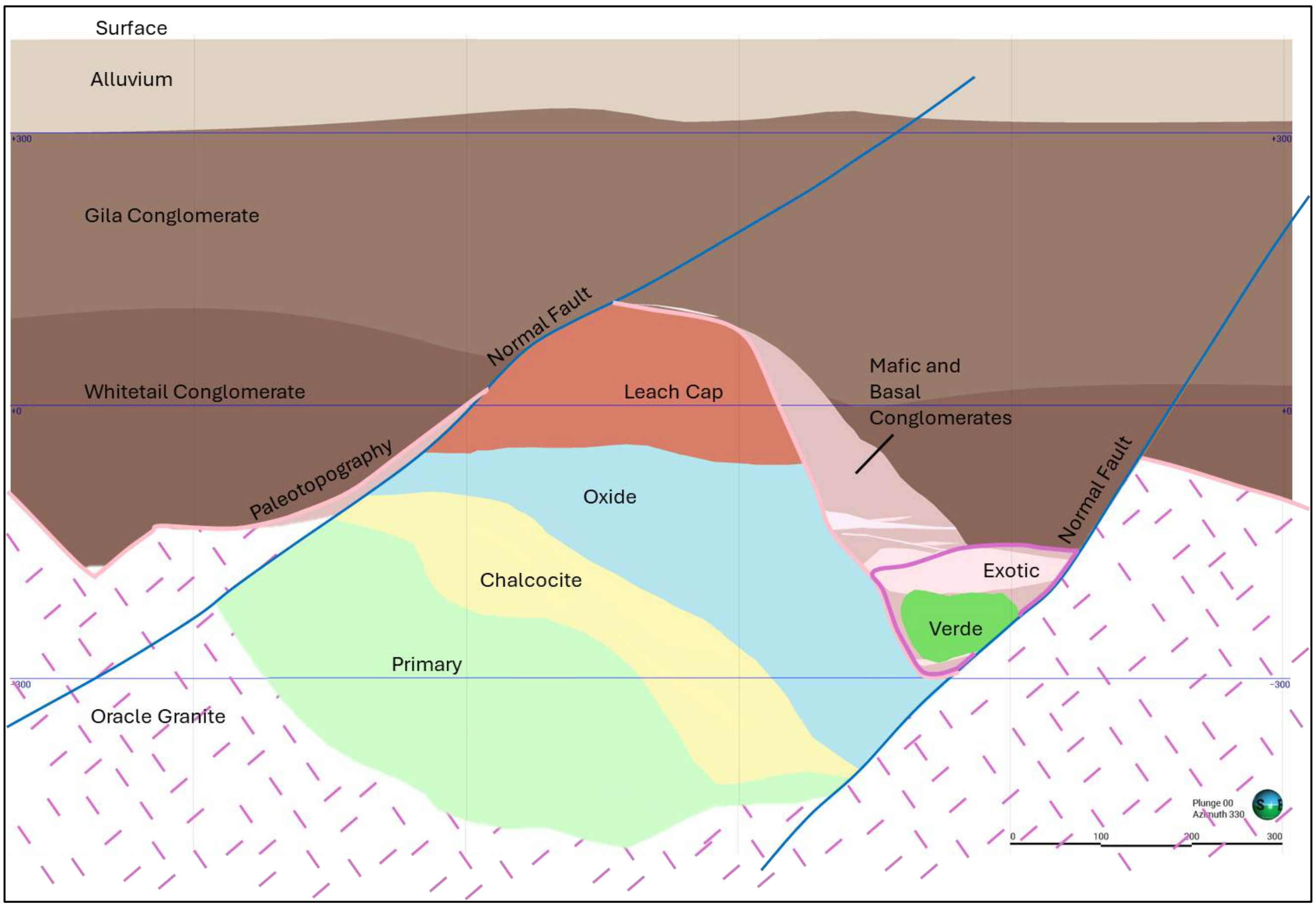


Note: East Ridge is defined by exotic and oxide domains, while Texaco is defined by oxide, chalcocite, and primary domains. Source: Ivanhoe Electric, 2025.

Exotic copper is present at Santa Cruz and East Ridge deposits in varying degrees and is hosted in tertiary sediments. All other styles of copper mineralization are hosted within the Oracle granite and intrusive dikes and terminate at the contact of the tertiary sediments. The current drilling indicates that the basal faults within the region truncate the copper mineralization at depth.

The Oracle granite hosts the Laramide porphyry, commonly associated with brecciation and primary copper mineralization. Secondary supergene copper mineralization is separated vertically from the primary hypogene mineralization, occurring as the oxide and chalcocite-enriched domains. The oxide domain is defined by an elevated (approximately 70% and greater) ratio of acid soluble copper to total copper, while the chalcocite-enriched domain is defined by an elevated (approximately 70% and greater) ratio of cyanide soluble copper to total copper. High-grade copper oxides follow the trend of the paleo-water table, as percolating meteoric water dissolved primary copper minerals and transported copper to the water table, where copper oxide minerals precipitated due to change in pH and oxidation-reduction conditions. The chalcocite enrichment domain also follows the paleo-water table, where deposition occurred just below the water table and likely before formation of the oxide domain. The primary domain considers the residual copper, which is the total copper minus the acid soluble copper and cyanide soluble copper (i.e., residual Cu = TCu – ASCu – CNCu). The leach cap is mostly barren but has one known discrete mineralized body, predominantly copper oxides. Figure 11-3 is a conceptual example of the Santa Cruz deposit domaining. Table 11-2 shows the volume of the mineralized wireframes.

Figure 11-3: Santa Cruz Deposit Domain Idealized Cross-Section



Note: Cross-section looking northwest, ±50 m wide.

Table 11-2: Volume of Santa Cruz Wireframe Domains

Domain	Domain Code	Wireframe Volume
Santa Cruz		
Exotic Low-Grade	10	20,062
Exotic High-Grade	11	1,034
Exotic – Verde	12	1,068
Leach Cap Low-Grade	20	90,011
Leach Cap Medium-Grade	21	989
Oxide Low-Grade	30	95,410
Oxide High-Grade	31	24,832
Chalcocite Low-Grade	40	50,029
Chalcocite Medium-Grade	41	9,452
Primary Low-Grade	50	145,107
Primary High-Grade	51	4,928
East Ridge		
Exotic	341	16,519
Oxide Low-Grade – North	301	486,575
Oxide Medium-Grade – North	311	9,148
Oxide Low-Grade – South	401	91,805
Oxide Medium-Grade – South	411	3,949
Texaco		
Oxide Low-Grade	221	630,350
Oxide Medium-Grade	222	2,367
Chalcocite Medium-Grade	232	219,277
Primary Low-Grade	211	659,611
Primary Medium-Grade	212	4,994

Source: Ivanhoe Electric, 2025.

Mineralization wireframes adhere to known controls on mineralization, such as the paleo water-table for supergene mineralization and dike orientation for primary mineralization. The mineralization hosted in the Oracle granite bedrock is constrained by the bedrock interface above, and laterally by the northwest-striking normal faults. The high-grade subdomains have a minimum thickness of 5 m and mostly constrain an average grade of 2.0% TCu. Due to geological heterogeneity, while portions of the high-grade wireframes incorporate grades below 2.0%, these intercepts occur along the mineralized trend. Laterally these high-grade wireframes are delineated by half the distance to the closest external drillhole. When no nearby drilling exists, the lateral extents are constrained to approximately 30 m, or half the average deposit drillhole spacing. Medium-grade subdomains mostly constrain an average grade of 1.0% TCu and above.

There is some overlap of the chalcocite mineralization within the Oxide domain, but this constitutes approximately 20% or less of the mineralization in the domain. It is difficult to fully parse the mineralization types, as faulting, rotation, and water table fluctuation over time cause complex overprinting of the various copper mineralization types.

Implicit domain modeling was completed in Leapfrog to represent known controls on high-grade and low-grade mineralization, with explicit control lines employed to ensure a reasonable interpretation.

11.4 Data Preparation

11.4.1 Exploratory Data Analysis

The exploratory data analysis was conducted on raw drillhole data to determine the nature of the element distribution, the correlation of grades within domains, and the identification of high-grade outlier samples. A combination of descriptive statistics, histograms, probability plots, and X-Y scatter plots were used to analyze the grade population of the data using Snowden Supervisor v9.0. The findings were used to help define modeling procedures and parameters used in the mineral resource estimate. Gold and silver were added to the resource based on flotation testwork and are being considered for recovery later in the mine life. Molybdenum was removed as it was not considered for later recovery.

Descriptive statistics were used to analyze the grade distribution and continuity of each sample population, determine the presence of outliers, and identify correlations between grade and rock types for each mineral subdomain.

Individual drillhole tables (e.g., collar, survey, assay, etc.) were merged to create one single master de-surveyed drillhole file in Datamine Studio RM v2.0.66.0.

Prior to grade estimation, the data were prepared using the following methods:

1. All drillhole assays that intersected a wireframe within each domain were assigned a set of codes representative of the domain, wireframe number, and mineralization type.
2. The drillhole assay data were combined in Datamine to a single static drillhole file, which was then "flagged" to intersecting copper mineralization subdomains outlined by the wireframe coding process.
3. High-grade outlier assays in each domain were reviewed.

11.4.2 Assay Intervals at Minimum Detection Limits

Unsampled intervals in the database were set to half the detection limit (LLD) per variable. Pending assay results were left absent, and core loss/void zones were also left absent. Gold values were set to half LLD in modern holes and left absent in historical holes, as gold assays were only run on select samples within ore zones.

11.4.3 Compositing

Assays captured within all wireframes were composited to 2.0 m regular intervals based on the observed modal distribution of assay lengths. The Initial Assessment used 3.0 m composites as the database was mostly historic data sampled at 3.0 m intervals. An option to use slightly variable composite lengths was chosen to redistribute short composites at domain edges. All composite assays were generated within each mineral domain with no overlaps along boundaries. The composite assays were validated statistically to ensure there was no loss of data or significant change to the mean grade of each assay population.

11.4.4 Outlier Analysis & Capping

Grade outliers that are much higher than the general population of assays have the potential to bias (inflate) the quantity of metal estimated in a block model. Geostatistical analysis using X-Y scatter plots, cumulative probability plots, and decile analysis was used to analyze the composited drillhole assay data for each subdomain to determine appropriate grade capping. Statistical analysis was performed independently on all subdomains. After thorough review of the statistics, it was determined that copper capping was not necessary for any of the deposits, as the distribution does not contain numerous outliers, and that capping did not have a significant effect on the final resource. Compositing helped reduce the effect of outliers. Gold capping was applied for East Ridge for values above 1 ppm.

11.4.5 Density

A total of 5,884 density measurements from 210 core drillholes exist for the Santa Cruz, East Ridge, and Texaco deposits. Measurements were calculated using the weight in air versus the weight in water method (Archimedes).

Density values were relatively consistent per domain, and an estimated value would be very similar to an assigned value. Values were assigned to blocks based on subdomains per deposit. East Ridge and Texaco have sufficient sample density to assign unique values by domain. Texaco subdomains lacked sufficient samples for unique values. Table 11-3 gives average density values for geological domains in each deposit.

Table 11-3: Density Values Measured for the Project by Geological and Resource Domain

Project Lithological Units	Subdomain	Average Density (g/cm^3)
Alluvium	-	1.96
Gila Conglomerate	-	2.18
Whitetail Conglomerate	-	2.33
Basal Conglomerate	-	2.39
Mafic Conglomerate	-	2.34
Oracle Granite (Unmineralized)	-	2.54
Santa Cruz Domains	**Subdomain**	**Average Density (g/cm^3)**
Exotic	Low-Grade	2.36
	High-Grade	2.37
	Verde	2.58
Leach Cap	Low-Grade	2.48
	Medium-Grade	2.57
Oxide	Low-Grade	2.48
	High-Grade	2.54
Chalcocite Enriched	Low-Grade	2.51
	Medium-Grade	2.54
Primary	Low-Grade	2.57
	High-Grade	2.57
East Ridge Domains	**Subdomain**	**Average Density (g/cm^3)**
Exotic	Low-Grade	2.38
Oxide	North Low-Grade	2.53
	North Medium-Grade	2.56
	South Low-Grade	2.44
	South Medium-Grade	2.47
Texaco Domains	**Subdomain**	**Average Density (g/cm^3)**
Oxide	Low-Grade	2.46
	Medium-Grade	2.46
Chalcocite Enriched	Medium-Grade	2.56
Primary	Low-Grade	2.54
	Medium-Grade	2.54

11.4.6 Block Model Strategy & Analysis

A series of upfront test modeling was completed to define an estimation methodology to meet the following criteria:

- represents the Santa Cruz Copper Project geological and structural controls
- accounts for the variability of grade, orientation, and continuity of mineralization
- provides control on the smoothing (grade spreading) of grades and the influence of outliers
- accounts for most of the mineralization within the Santa Cruz Copper Project
- is robust and repeatable within the mineral domains.

Multiple interpolation test scenarios were evaluated to determine the optimum process and parameters to achieve the intended criteria. Each scenario was based on nearest neighbor (NN), inverse distance squared (ID^2), inverse distance cubed (ID^3), and ordinary kriging (OK) interpolation methods. All test scenarios were evaluated based on global statistical comparisons, visual comparisons of composite assays versus block grades, swath averages, and the assessment of overall smoothing. Based on the testing results, it was determined that the final resource estimation methodology would constrain the mineralization by using hard wireframe boundaries to control mineralization. OK was selected as the most applicable interpolation method for the Santa Cruz deposit, and ID^2 was selected for the East Ridge and Texaco deposits.

11.4.7 Assessment of Spatial Grade Continuity

Datamine, Leapfrog, and Snowden Supervisor were used to determine the geostatistical relationships of the Santa Cruz Copper Project. Variography was performed on composite data for each deposit per domain (Tables 11-4 to 11-6). Experimental variograms were calculated from the composited assay data for each element to determine the approximate dimensions and orientations of the search ellipses.

The following were considered for each analysis:

- Downhole variograms were created and modeled to define the nugget effect.
- Experimental semi-variograms were calculated to determine directional variograms for the major, semi-major, and minor orientations.
- Variograms were modeled using an exponential model with practical range and a normalized sill of 1.

Directional variograms were modeled using the nugget defined in the downhole variography and the ranges for the major, semi-major, and minor directions. Gold and silver values for Santa Cruz and Texaco were estimated by ID^2 for the final values.

Variography for East Ridge and Texaco were used for the OK estimate, which was run for validation purposes only, while variography helped inform the ranges and orientations of search ellipses.

Table 11-4: Santa Cruz Variography Parameters

Domain	Variable	Rotation Angles			Axes	Nugget	C1	Structure 1			C2	Structure 2		
		1	2	3				Range 1	Range 2	Range 3		Range 1	Range 2	Range 3
Exotic Low-Grade	TCu %	80	10	180	Z-X-Z	0.20	0.42	26	129	7	0.38	170	150	15
	ASCu %	80	10	180	Z-X-Z	0.20	0.42	26	129	7	0.38	170	150	15
	CNCu %	80	10	180	Z-X-Z	0.20	0.42	26	129	7	0.38	170	150	15
Exotic High-Grade	TCu %	80	10	180	Z-X-Z	0.20	0.42	26	129	7	0.38	170	150	15
	ASCu %	80	10	180	Z-X-Z	0.20	0.42	26	129	7	0.38	170	150	15
	CNCu %	80	10	180	Z-X-Z	0.20	0.42	26	129	7	0.38	170	150	15
Verde Domain	TCu %	115	30	165	Z-X-Z	0.20	0.38	26	97	16	0.42	120	100	30
	ASCu %	115	30	165	Z-X-Z	0.20	0.38	26	97	16	0.42	120	100	30
	CNCu %	115	30	165	Z-X-Z	0.20	0.38	26	97	16	0.42	120	100	30
Leach Cap Low-Grade	TCu %	60	30	165	Z-X-Z	0.20	0.37	30	20	20	0.43	200	135	60
	ASCu %	60	30	165	Z-X-Z	0.20	0.37	30	20	20	0.43	200	135	60
	CNCu %	60	30	165	Z-X-Z	0.20	0.37	30	20	20	0.43	200	135	60
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
Leach Cap Medium-Grade	TCu %	180	150	0	Z-X-Z	0.20	0.50	22	50	10	0.30	190	100	30
	ASCu %	180	150	0	Z-X-Z	0.20	0.50	22	50	10	0.30	190	100	30
	CNCu %	180	150	0	Z-X-Z	0.20	0.66	80	50	25	0.14	150	100	30
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
Oxide Low-Grade	TCu %	60	30	165	Z-X-Z	0.20	0.37	30	20	20	0.43	200	135	60
	ASCu %	60	30	165	Z-X-Z	0.20	0.37	30	20	20	0.43	200	135	60
	CNCu %	60	30	165	Z-X-Z	0.20	0.37	30	20	20	0.43	200	135	60
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
Oxide High-Grade	TCu %	60	30	165	Z-X-Z	0.05	0.20	22	50	10	0.75	190	100	30
	ASCu %	60	30	165	Z-X-Z	0.05	0.20	22	50	10	0.75	190	100	30
	CNCu %	60	30	165	Z-X-Z	0.05	0.20	80	50	25	0.75	150	100	30
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
Chalcocite Enriched Low- Grade	TCu %	60	45	170	Z-X-Z	0.10	0.36	199	159	59	0.54	200	160	60
	ASCu %	60	45	170	Z-X-Z	0.10	0.39	162	71	59	0.51	200	135	60
	CNCu %	60	45	170	Z-X-Z	0.10	0.36	199	159	59	0.54	200	160	60
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
Chalcocite Enriched Medium-Grade	TCu %	60	45	170	Z-X-Z	0.20	0.67	70	134	20	0.13	190	135	45
	ASCu %	60	45	170	Z-X-Z	0.20	0.34	25	75	20	0.46	200	135	45
	CNCu %	60	45	170	Z-X-Z	0.20	0.67	70	134	20	0.13	190	135	45
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
Primary Low-Grade	TCu %	160	140	-120	Z-X-Z	0.20	0.43	44	224	20	0.37	270	225	45
	ASCu %	160	140	-120	Z-X-Z	0.20	0.24	134	138	45	0.56	250	250	50
	CNCu %	160	140	-120	Z-X-Z	0.20	0.24	134	138	45	0.56	250	250	50
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
Primary High-Grade	TCu %	160	140	-120	Z-X-Z	0.20	0.43	44	224	20	0.37	270	225	45
	ASCu %	160	140	-120	Z-X-Z	0.20	0.24	134	138	45	0.56	250	250	50
	CNCu %	160	140	-120	Z-X-Z	0.20	0.24	134	138	45	0.56	250	250	50
	Au ppb	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40
	Ag ppm	160	140	-120	Z-X-Z	0.20	0.40	50	69	7	0.40	170	150	40

Table 11-5: East Ridge Variography Parameters

Domain	Variable	Rotation Angles			Axes	Nugget	C1	Structure 1			C2	Structure 2		
		1	2	3				Range 1	Range 2	Range 3		Range 1	Range 2	Range 3
Oxide Low-Grade and Medium-Grade	TCu %	230	40	44	Z-X-Z	0.15	0.30	35	90	20	0.55	190	130	30
	ASCu %	230	40	44	Z-X-Z	0.15	0.30	35	90	20	0.55	190	130	30
	CNCu %	230	40	44	Z-X-Z	0.15	0.30	35	90	20	0.55	190	130	30
	Au ppb	230	40	44	Z-X-Z	0.15	0.30	35	90	20	0.55	190	130	30
	Ag ppm	230	40	44	Z-X-Z	0.15	0.30	35	90	20	0.55	190	130	30

Table 11-6: Texaco Variography Parameters

Domain	Variable	Rotation Angles			Axes	Nugget	C1	Structure 1			C2	Structure 2		
		1	2	3				Range 1	Range 2	Range 3		Range 1	Range 2	Range 3
Oxide Low-Grade and Medium-Grade	TCu %	60	8	15	Z-Y-X	0.27	0.52	144	51	85	0.20	413	111	102
	ASCu %	60	8	15	Z-Y-X	0.08	0.85	38	117	85	0.06	577	300	102
	CNCu %	60	8	15	Z-Y-X	0.09	0.45	46	103	102	0.46	251	326	210
Chalcocite Enriched Medium-Grade	TCu %	60	8	15	Z-Y-X	0.23	0.67	207	147	78	0.10	379	237	94
	ASCu %	60	8	15	Z-Y-X	0.08	0.46	234	99	20	0.46	357	304	94
	CNCu %	60	8	15	Z-Y-X	0.18	0.44	29	240	78	0.39	434	288	94
Primary Low-Grade and Medium-Grade	TCu %	145	17	-8	Z-Y-X	0.20	0.58	357	151	67	0.22	534	304	227
	ASCu %	145	17	-8	Z-Y-X	0.01	0.48	390	237	78	0.42	468	586	94
	CNCu %	145	17	-8	Z-Y-X	0.10	0.88	160	106	78	0.02	381	171	94

11.4.8 Block Model Definition

The block model shape and size are typically a function of the geometry of the deposit, the density of assay data, drillhole spacing, and the selected mining unit. The block model prototype parameters are listed in Table 11-7. All three deposits employed the same prototype parameters.

Table 11-7: Block Model Definition Parameters

Item	Block Origin (m)	Block Maximum (m)	Subdomain Block Dimension (m)	Low-Grade Block Dimension (m)	Texaco Low-Grade Parent Dimension (m)	Minimum Sub-Block (m)
Easting	414,200	421,500	5	10	20	2.5
Northing	3,637,800	3,644,800	5	10	20	2.5
Elevation	-1,200	500	5	5	10	2.5

The block models were not rotated and are constrained by surface topography. The resource estimation was conducted using Datamine within the NAD 83 UTM Zone 12 N projection grid.

11.4.9 Search Strategy

Search orientations for each deposit were based on the shape of the modeled mineral domains and variography. Three nested searches were performed on all domains.

Tables 11-8 to 11-10 display the Santa Cruz, East Ridge, and Texaco search parameters, respectively. The search distances were based upon the variography ranges outlined in Table 11-8. The search radius of the first search was based on 50% of the range of the variogram, the second search is 80% of the range, and the third search pass is 200% of the range.

Search strategies used an ellipsoidal search with a minimum and maximum number of composites and a maximum number of composites per hole for each block. Blocks that did not meet these criteria do not appear in the estimate.

Gold and silver are estimated with unique parameters as these do not have the same controls as copper throughout the deposit.

Table 11-8: Santa Cruz Block Model Search Parameters

Santa Cruz Copper Project – Total Copper							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Exotic LG/HG	80	10	180	3	1	3	85	75	8	3	8	2	136	120	12	3	8	2	187	165	17	3	8	2
Verde	0	0	0	3	1	3	60	50	30	3	8	2	96	80	48	3	8	2	132	110	66	3	8	2
Leach Cap LG	60	30	165	3	1	3	100	68	30	3	8	2	160	108	48	3	8	2	220	149	66	3	8	2
Leach Cap MG	180	150	0	3	1	3	95	50	30	3	8	2	152	80	48	3	8	2	209	110	66	3	8	2
Oxide LG	60	30	165	3	1	3	100	100	30	3	6	2	160	160	48	3	6	2	220	220	66	2	6	2
Oxide HG	60	30	165	3	1	3	100	100	30	3	6	2	160	160	48	3	6	2	220	220	66	2	6	2
Chalcocite LG	60	45	170	3	1	3	100	80	30	3	8	2	160	128	48	3	8	2	220	176	66	3	8	2
Chalcocite MG	60	45	170	3	1	3	95	68	23	3	8	2	152	108	36	3	8	2	209	149	50	3	8	2
Primary LG	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2
Primary HG	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2
Santa Cruz Copper Project – Acid Soluble Copper							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Exotic LG/HG	80	10	180	3	1	3	85	75	8	3	8	2	136	120	12	3	8	2	187	165	17	3	8	2
Verde	0	0	0	3	1	3	60	50	30	3	8	2	96	80	48	3	8	2	132	110	66	3	8	2
Leach Cap LG	60	30	165	3	1	3	100	68	30	3	8	2	160	108	48	3	8	2	220	149	66	3	8	2
Leach Cap MG	180	150	0	3	1	3	95	50	30	3	8	2	152	80	48	3	8	2	209	110	66	3	8	2
Oxide LG	60	30	165	3	1	3	100	100	30	3	6	2	160	160	48	3	6	2	220	220	66	2	6	2
Oxide HG	60	30	165	3	1	3	100	100	30	3	6	2	160	160	48	3	6	2	220	220	66	2	6	2
Chalcocite LG	60	45	170	3	1	3	100	80	30	3	8	2	160	128	48	3	8	2	220	176	66	3	8	2
Chalcocite MG	60	45	170	3	1	3	95	68	23	3	8	2	152	108	36	3	8	2	209	149	50	3	8	2
Primary LG	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2
Primary HG	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2
Santa Cruz Copper Project – Cyanide Soluble Copper							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Exotic LG/HG	80	10	180	3	1	3	85	75	8	3	8	2	136	120	12	3	8	2	187	165	17	3	8	2
Verde	0	0	0	3	1	3	60	50	30	3	8	2	96	80	48	3	8	2	132	110	66	3	8	2
Leach Cap LG	60	30	165	3	1	3	100	68	30	3	8	2	160	108	48	3	8	2	220	149	66	3	8	2
Leach Cap MG	180	150	0	3	1	3	95	50	30	3	8	2	152	80	48	3	8	2	209	110	66	3	8	2
Oxide LG	60	30	165	3	1	3	100	100	30	3	6	2	160	160	48	3	6	2	220	220	66	2	6	2
Oxide HG	60	30	165	3	1	3	100	100	30	3	6	2	160	160	48	3	6	2	220	220	66	2	6	2
Chalcocite LG	60	45	170	3	1	3	100	80	30	3	8	2	160	128	48	3	8	2	220	176	66	3	8	2
Chalcocite MG	60	45	170	3	1	3	95	68	23	3	8	2	152	108	36	3	8	2	209	149	50	3	8	2
Primary LG	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2
Primary HG	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2
Santa Cruz Copper Project – Au, Ag							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
All Domains	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2

Note: LG = low-grade; MG = medium-grade and HG = high-grade. Source: BBA, 2024.

Table 11-9: East Ridge Block Model Search Parameters

East Ridge Project - Total Copper							Pass 1						Pass 2						Pass 3					
	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
Domain	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Exotic	0	0	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
Oxide North LG	240	40	0	3	1	3	100	100	50	3	8	2	160	160	80	3	8	2	220	220	110	3	8	2
Oxide North MG	240	40	0	3	1	3	100	100	50	3	8	2	160	160	80	3	8	2	220	220	110	3	8	2
Oxide South LG	135	25	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
Oxide South MG	135	25	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
East Ridge Project - Acid Soluble Copper							Pass 1						Pass 2						Pass 3					
	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
Domain	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Exotic	0	0	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
Oxide North LG	240	40	0	3	1	3	100	100	50	3	8	2	160	160	80	3	8	2	220	220	110	3	8	2
Oxide North MG	240	40	0	3	1	3	100	100	50	3	8	2	160	160	80	3	8	2	220	220	110	3	8	2
Oxide South LG	135	25	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
Oxide South MG	135	25	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
East Ridge Project - Cyanide Soluble Copper							Pass 1						Pass 2						Pass 3					
	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
Domain	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Exotic	0	0	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
Oxide North LG	240	40	0	3	1	3	100	100	50	3	8	2	160	160	80	3	8	2	220	220	110	3	8	2
Oxide North MG	240	40	0	3	1	3	100	100	50	3	8	2	160	160	80	3	8	2	220	220	110	3	8	2
Oxide South LG	135	25	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
Oxide South MG	135	25	0	3	1	3	100	100	30	3	8	2	160	160	48	3	8	2	220	220	66	3	8	2
East Ridge Project - Au, Ag							Pass 1						Pass 2						Pass 3					
	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
Domain	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
All Domains	160	140	-120	3	1	3	125	125	25	3	8	2	200	200	40	3	8	2	275	275	55	3	8	2

Note: LG = low-grade; MG = medium-grade and HG = high-grade. Source: BBA, 2024.

Table 11-10: Texaco Block Model Search Parameters

Texaco Project - Total Copper							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Oxide LG	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Oxide MG	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Chalcocite	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Primary LG	145	17	-8	3	2	1	80	80	30	3	8	2	160	160	60	3	8	2	320	320	120	3	8	2
Primary MG	145	17	-8	3	2	1	80	80	30	3	8	2	160	160	60	3	8	2	320	320	120	3	8	2
Texaco Project - Acid Soluble Copper							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Oxide LG	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Oxide MG	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Chalcocite	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Primary LG	145	17	-8	3	2	1	80	80	30	3	8	2	160	160	60	3	8	2	320	320	120	3	8	2
Primary MG	145	17	-8	3	2	1	80	80	30	3	8	2	160	160	60	3	8	2	320	320	120	3	8	2
Texaco Project - Cyanide Soluble Copper							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
Oxide LG	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Oxide MG	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Chalcocite	60	8	15	3	2	1	50	80	30	3	8	2	100	160	60	3	8	2	200	320	120	3	8	2
Primary LG	145	17	-8	3	2	1	80	80	30	3	8	2	160	160	60	3	8	2	320	320	120	3	8	2
Primary MG	145	17	-8	3	2	1	80	80	30	3	8	2	160	160	60	3	8	2	320	320	120	3	8	2
Texaco Project - Au, Ag							Pass 1						Pass 2						Pass 3					
Domain	Search Rotation			Search Axes			Search Distances			Number of Samples			Search Distances			Number of Samples			Search Distances			Number of Samples		
	Rot. 1	Rot. 2	Rot. 3	Axis 1	Axis 2	Axis 3	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole	Dist. 1	Dist. 2	Dist. 3	Min.	Max.	Max. Per Hole
All Domains	145	17	-8	3	2	1	80	80	30	3	8	2	160	160	60	3	8	2	320	320	120	3	8	2

Note: Abbreviations used in the table are low grade (LG), medium grade (MG) and high grade (HG). Source: BBA, 2024.

11.5 Block Model Validation

The Santa Cruz deposit block model was estimated using NN, ID^2, ID^3, and OK interpolation methods for global comparisons and validation purposes. The OK method was selected for the Santa Cruz mineral resource estimate over ID^2, ID^3, and NN because it was the most representative approach for the deposit. The East Ridge and Texaco deposit block models were estimated using NN, ID^2, ID^3, and OK, and the ID^2 method was selected for the mineral resource estimates. The density and quantity of drilling were insufficient in East Ridge and Texaco to produce confident variography for the final estimate.

11.5.1 Statistical Comparison

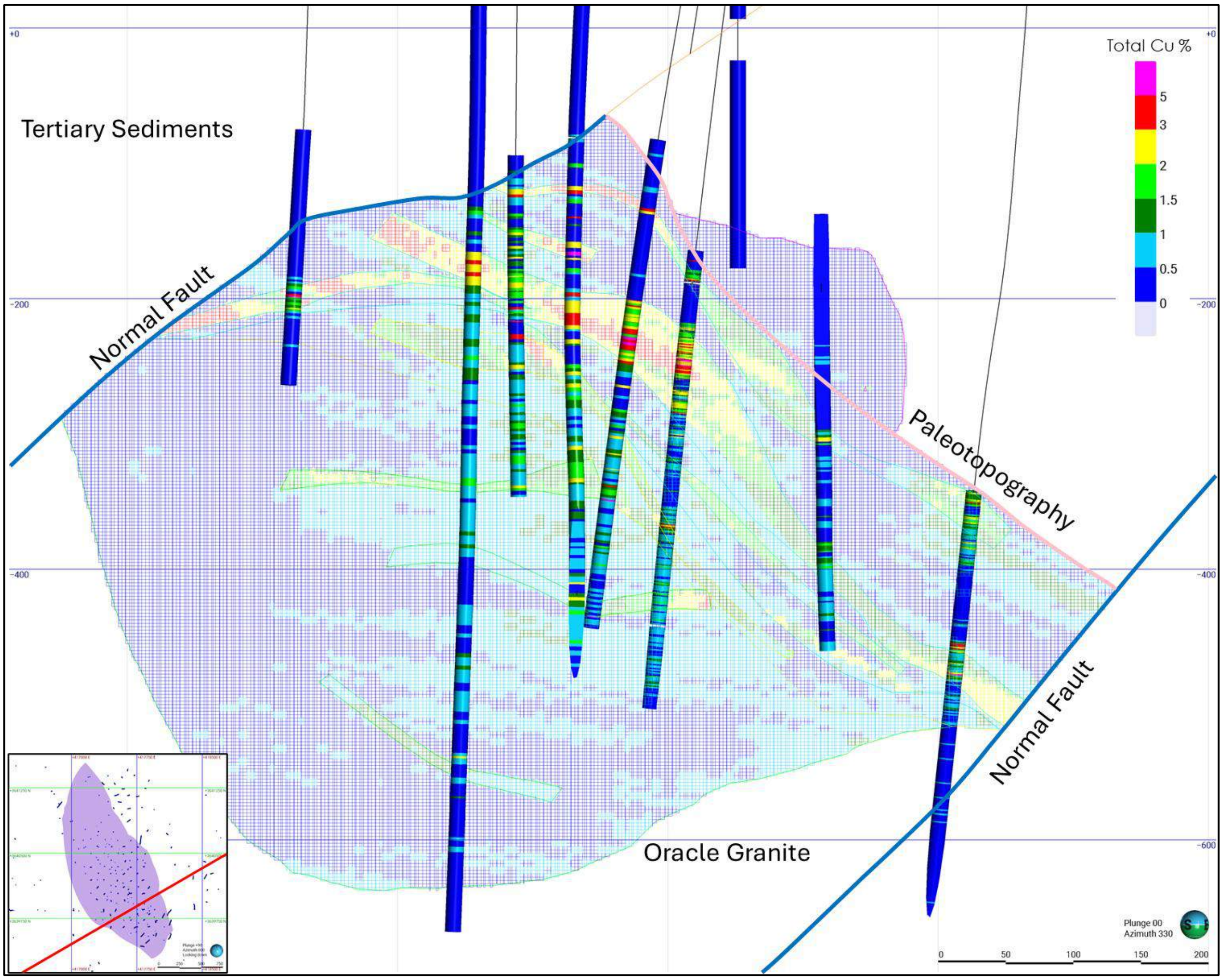
The global block model statistics by domain were compared between the OK, ID^2, ID^3, and NN methods and the composite drillhole data. The results of this comparison provided validation of the final estimate compared to various estimation methods.

11.5.2 Visual Comparison

The validation of the interpolated block model employed visual assessments and validation plots of block grades against assay grades and composites. The result demonstrated good agreement between local block estimates and nearby samples without excessive smoothing in the block model.

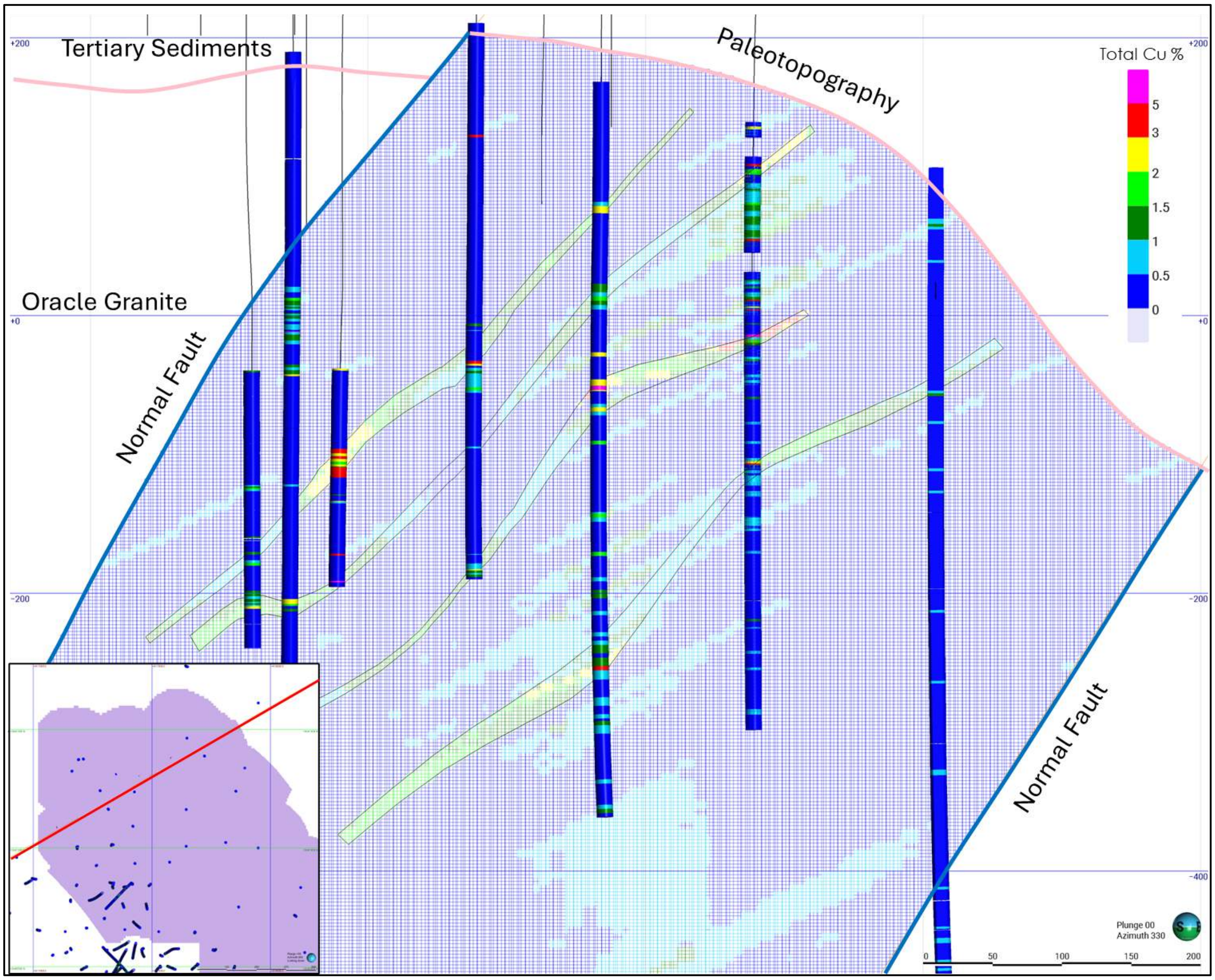
Figures 11-4 to 11-6 provide examples of visual block model validation, displaying total copper in the block model and drillholes, as well as domains for Santa Cruz, East Ridge, and Texaco.

Figure 11-4: Santa Cruz Block Model Validation with Drillholes & Total Copper Percent



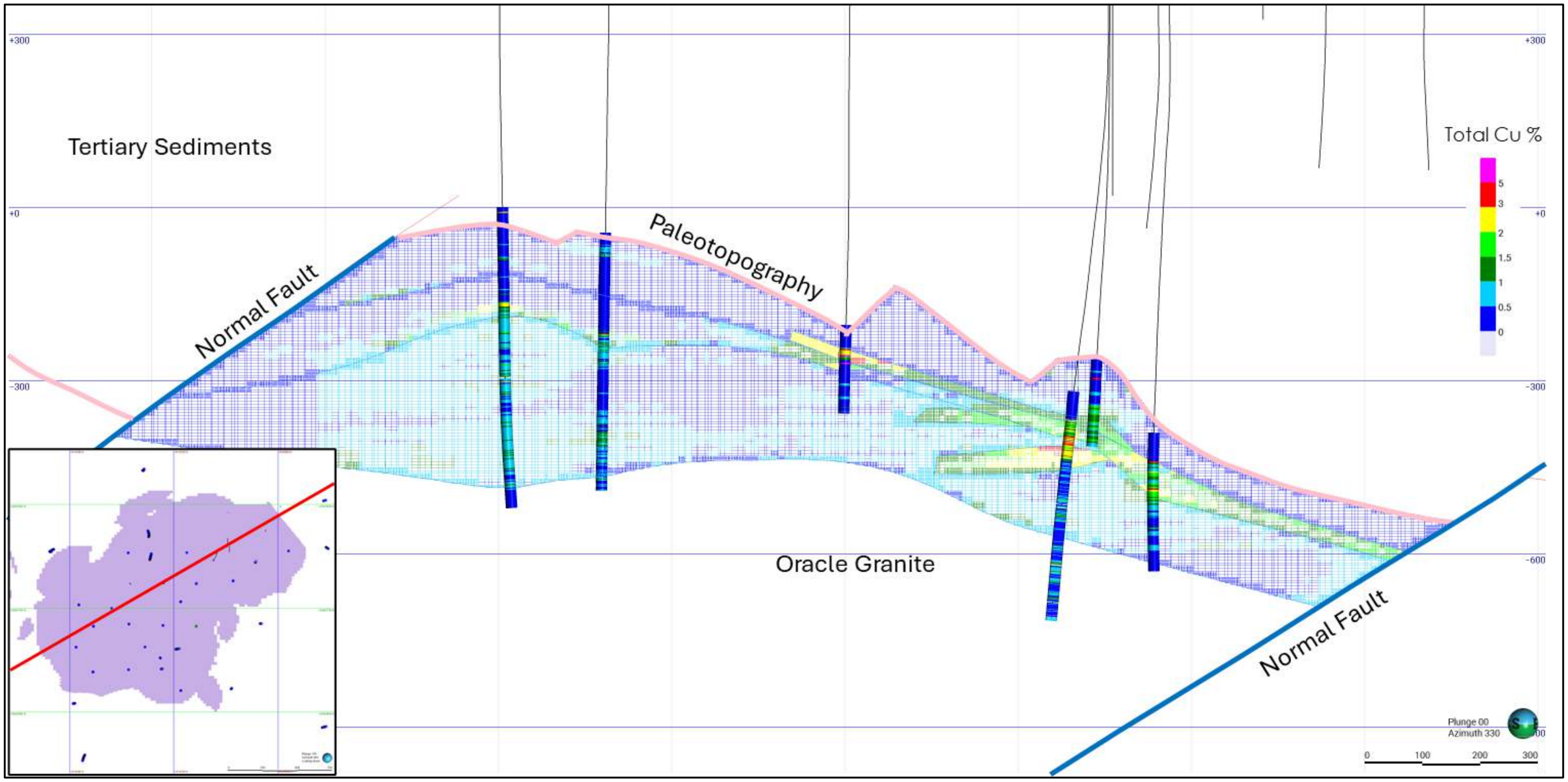
Note: Figure shows cross-section looking northwest, ±50 m width. Source: BBA, 2025.

Figure 11-5: East Ridge Block Model Validation with Drillholes & Total Copper Percent



Note: Figure shows cross-section looking northwest, ±50 m width. Source: BBA, 2025.

Figure 11-6: Texaco Block Model Validation of Total Copper Percent

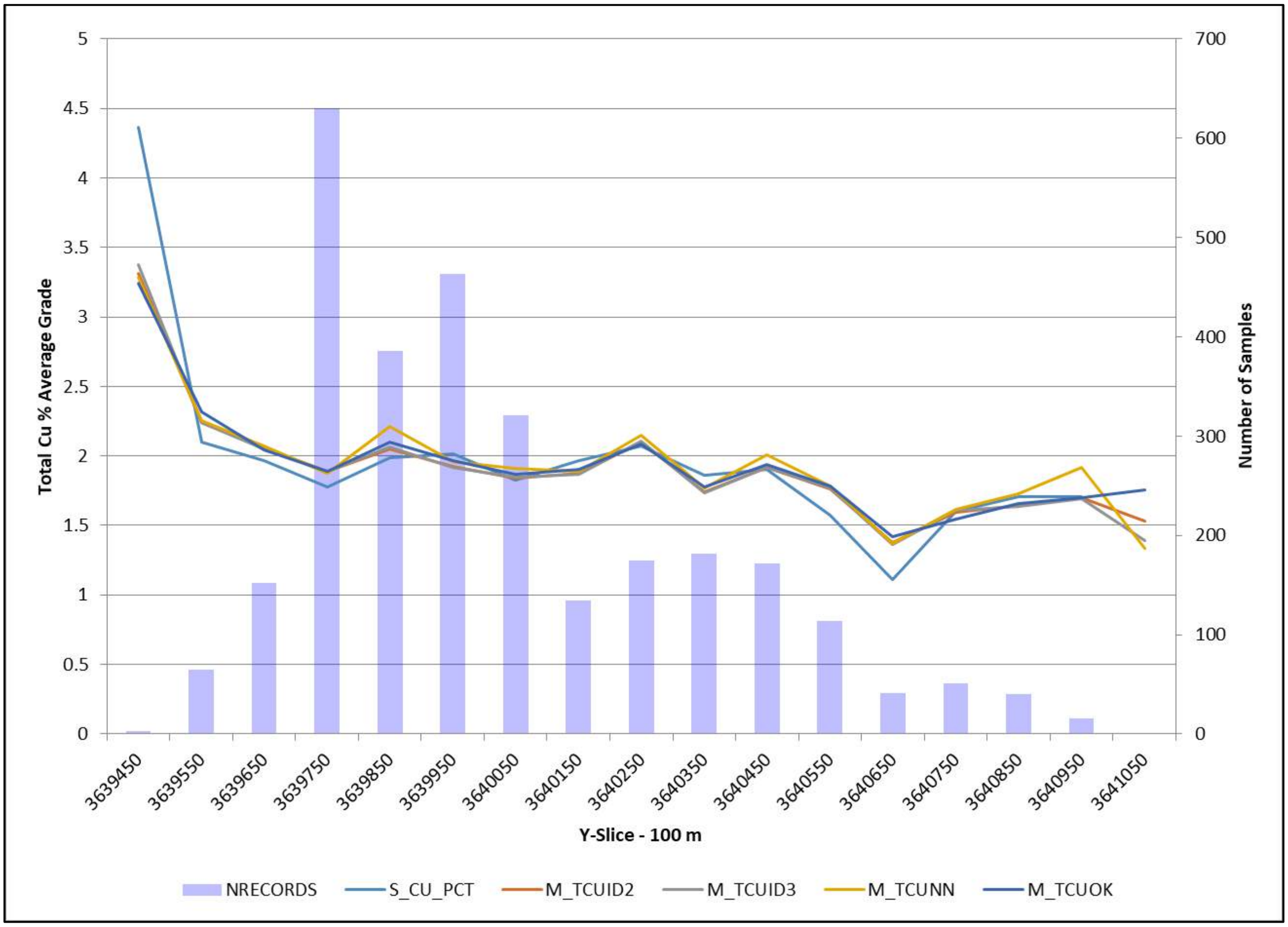


Note: Figure shows cross-section looking northwest, ±50 m width. Source: BBA, 2025.

11.5.3 Swath Plots

A series of swath plots were generated for total copper, acid soluble copper, and cyanide soluble copper from slices throughout each deposit for various domains. They compare the block model grades for NN, ID^2, ID^3, and OK to the drillhole composite grades to evaluate potential local grade bias. A review of the swath plots did not identify bias in the model that is material to the mineral resource estimate. Figure 11-7 shows a swath plot for Santa Cruz high-grade oxide domain total copper as an example.

Figure 11-7: Santa Cruz High-Grade Oxide Domain Swath Plot, Total Copper % in Y-Direction



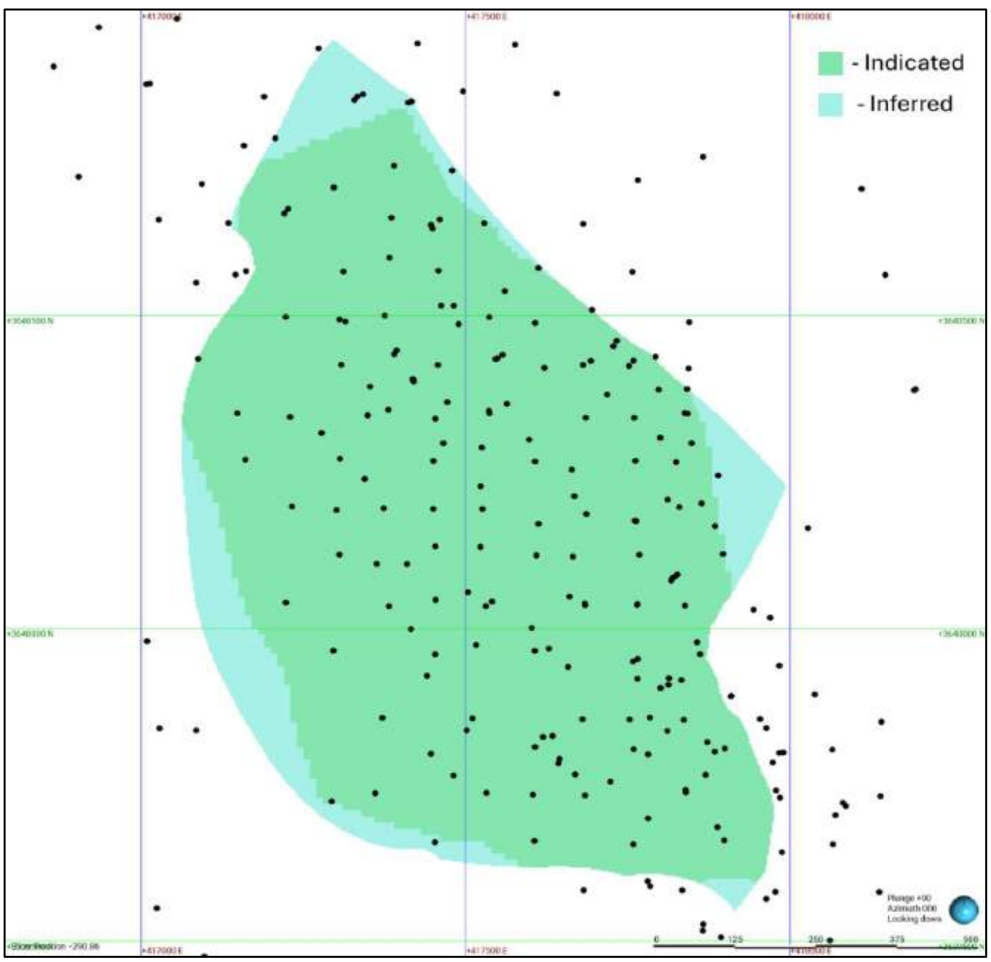
Source: BBA, 2025. Note: S_CU_PCT is sample total copper grade, M_TCUID² is the estimated ID^2 total copper grade, M_TCUID³ is the estimated ID^3 total copper grade, M_TCUNN is the estimated NN total copper grade, and M_TCUOK is the estimated OK total copper grade.

11.6 Mineral Resource Classification

The mineral resource estimate was classified in accordance with S-K 1300 definitions. Mineral resource classifications were assigned to broad regions of the block model based on the BBA's confidence and judgment related to geological understanding, continuity of mineralization in conjunction with data quality, spatial continuity based on variography, estimation parameters, data density, and block model representativeness.

Indicated and inferred classifications were applied to Santa Cruz, East Ridge, and Texaco based on a full review that included the examination of drill spacing, visual comparison, kriging variance, distance to the nearest composite, and search volume estimation (the estimation pass in which each block was populated) along with the search ellipsoid ranges. Collectively, this information was used to produce an initial classification script followed by manual wireframe application to further limit the mineral resource classification (Figure 11-8).

Figure 11-8: Plan View of Resource Classification for Santa Cruz with Indicated & Inferred Classifications & Drill Collar Locations



Uncertainties that could affect the mineral resource estimates include historical assay instrument precision, historical geological logging data quality, and changes to the structural model. The indicated mineral resource is supported by significant modern drilling, reducing the uncertainty due to historical drill and assay data. The inferred mineral resource lacks the level of geologic confidence due to the uncertainty in areas of limited geological information.

Most of the first search pass results were classified as indicated, while the second search pass results were evaluated with further criteria, including a kriging variance of 0.65 or less as well as geological confidence. The indicated mineral resource has an average drillhole spacing of 60 m. Small, internal zones of inferred results within large swaths of indicated results were not broken out, as these represent noise. The third search pass results are classified as inferred, as they represent estimates beyond the modeled spatial continuity of the values.

While most of the East Ridge deposit is classified as inferred, there is a small portion of indicated mineral resource where dense infill and validation drilling was completed in recent campaigns. The indicated mineral resource has an average drillhole spacing of 65 m.

The Texaco deposit is classified as inferred, as the area is defined by historical drilling which has yet to be validated with modern drilling with >150 m spacing.

11.7 Commodity Pricing

Mineral resources used commodity prices based on long-term analyst and bank forecasts. In the opinion of the QP, this price is generally aligned with pricing over the last one, three, and five years; forward-looking pricing from internationally recognized banks is appropriate for use in a resource estimate. Section 16 provides an explanation of the commodity price forecasts. The commodity price considered three-year trailing averages.

11.8 Reasonable Prospects of Economic Extraction

The mineral resources were estimated using Datamine to create the block models for the Santa Cruz, Texaco, and East Ridge deposits, and Deswik.CAD 2024.1 and Deswik.SO 5.1 software to create reasonable mineable shapes.

To demonstrate reasonable prospects for economic extraction for the Santa Cruz, East Ridge, and Texaco mineral resource estimates, representative minimum mining unit shapes were created using Deswik's mineable stope optimizer (MSO) tool. This MSO tool constrains and evaluates the block model based on economic and geometric parameters (Table 11-11), thereby generating potentially mineable shapes.

The Santa Cruz deposit was assumed to be developed as a long-life operation consisting of an underground longhole stoping plan with some drift and fill, and an initial mining rate of 20,000 t/d to produce a copper concentrate. East Ridge was assumed to be a longhole stoping plan at 3,500 t/d, while the Texaco deposit was assumed to be a longhole stoping plan at 7,000 t/d.

Table 11-11: Input Parameter Assumptions

Criteria	Unit	Santa Cruz 20,000 t/d	Santa Cruz 20,000 t/d	East Ridge Exotic 340 to 590 t/d	East Ridge 3,500 t/d	Texaco 7,000 t/d	Texaco 7,000 t/d
		30 m Long Hole	30 m Long Hole	6 m X 9 m Drift and Fill	15 m Long Hole	30 m Long Hole	30 m Long Hole
		Leach	Concentrator	Leach	Leach	Leach	Concentrator
Cathode Split	%	100.0	0.0	100.0	100.0	100.0	0.0
Concentrate Split	%	0.0	100.0	0.0	0.0	0.0	100.0
Onsite Costs							
Mining Costs – Direct	$/t	22.00	22.00	40.00	30.00	22.00	22.00
Processing Costs	$/t	7.00	9.00	7.00	7.00	7.00	9.00
General & Administrative	$/t	2.63	2.63	2.63	2.63	2.63	2.63
Onsite Total	$/t	31.63	33.63	49.63	39.63	31.63	33.63
Rounded NSR Cutoff	**$/t**	32.00	34.00	50.00	40.00	32.00	34.00
Copper Equivalent	**%**	0.40	0.43	0.62	0.49	0.40	0.43

The mineral resource is comprised of all material found within the MSO wireframes generated for Santa Cruz at a cutoff of $32.00 NSR per tonne processed heap leach and $34.00 NSR for concentrator longhole stoping, $40.00 NSR cutoff for East Ridge longhole stoping, and $50.00 for drift and fill, $32.00 NSR copper cutoff for heap leach, and $34.00 for concentrator for Texaco longhole stoping.

Input assumptions per processing method are detailed in Table 11-12. Gold and silver are reported as possible commodities based on flotation testwork, as other processing techniques may be incorporated at the project.

Table 11-12: Smelting Terms – Copper Concentrate Input Assumptions

Description	Unit	Value
Treatment Charge	$/t	80.00
Copper Refining	$/lbs payable	0.08
Copper Payable Chalcocite Concentrate	%	90.1
Copper Payable Chalcopyrite Concentrate	%	96.2
Copper Deduction (Concentrate <30%)	%	0.0
Copper Concentrate Losses	%	0.2
Gold Payable	%	92.0
Silver Payable	%	90.0
Gold Deduction	g/t	1.00
Silver Deduction	g/t	30.00

11.9 NSR Cutoff

The mineral resources are reported at a net smelter return (NSR) cutoff of $32.00 to $50.00 depending on deposit and type of underground production. The NSR calculation is dependent on mineral processing.

If the acid soluble copper percentage is greater than 0.05%, the following leach NSR equation is used:

$$NSR\ per\ tonne\ milled = \$67.82 * \%\ CNCu + \$12.83 * \%CuRes + \$79.54 * \%\ ASCu + \$0.00 * Au\ ppb + \$0.00 * Ag\ ppm$$

If the acid soluble copper percentage is less than or equal to 0.05%, the following concentrator NSR equation is used:

$$NSR\ per\ tonne\ milled = \$67.55 * \%\,CNCu + \$67.55 * \%CuRes + \$0.00 * \%\,ASCu + \$0.03 * Au\ ppb + \$0.48 * Ag\ ppm$$

Where:

"% CNCu" is percent cyanide soluble copper

"% CuRes" is percent residual copper, or percent total copper minus percent acid soluble copper minus percent cyanide soluble copper

"% ASCu" is percent acid soluble copper

"Au ppb" is parts per billion of gold

"Ag ppm" is parts per million of silver.

Residual copper percent is a calculated value; however, analyses were completed at external laboratories that confirmed the calculated values were similar to the analyzed values.

Copper equivalent grade is calculated as:

$$\frac{NSR}{Copper\ Price * Average\ Copper\ Recovery * Conversion\ Ratio: tonnes - pounds}$$

11.10 Mineral Resource Estimate

The mineral resource estimate is reported in situ for the Santa Cruz, East Ridge, and Texaco deposits, including and excluding reserves, in Tables 11-13 and 11-14. These tables are not additive.

Individual mineral resource estimates for the Santa Cruz, East Ridge, and Texaco deposits are presented in Tables 11-15, 11-16, and 11-17, respectively. These tables are not additive.

Figure 11-9 shows the general location and geometry of the three deposits.

Table 11-13: In-Situ Mineral Resource Estimate Inclusive of Mineral Reserves for Santa Cruz, East Ridge & Texaco

Deposit	Classification	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (kt)	Total Acid Soluble Copper (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)	Contained Gold (koz)	Contained Silver (koz)	Contained Copper (Mlbs)
Santa Cruz	Indicated	317,709	0.95	0.48	0.30	0.17	0.027	1.62	3,017	1,517	956	543	279	16,513	6,650
	Inferred	31,998	0.73	0.21	0.17	0.34	0.021	1.78	232	68	54	110	21	1,832	512
East Ridge	Indicated	8,742	1.00	0.45	0.39	0.16	0.014	0.68	88	40	34	14	4	191	193
	Inferred	48,676	0.89	0.44	0.12	0.33	0.006	0.40	436	216	57	163	9	623	960
Texaco	Inferred	341,345	0.78	0.06	0.27	0.45	0.028	0.81	2,664	218	920	1,537	302	8,850	5,873
All Deposits	**Indicated**	**326,450**	**0.95**	**0.48**	**0.30**	**0.17**	**0.027**	**1.59**	**3,104**	**1,557**	**989**	**558**	**283**	**16,704**	**6,844**
All Deposits	**Inferred**	**422,020**	**0.79**	**0.12**	**0.24**	**0.43**	**0.025**	**0.83**	**3,332**	**503**	**1,030**	**1,809**	**333**	**11,304**	**7,346**

Notes on mineral resources: **1**. The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA USA Inc., and are reported in accordance with the definition for mineral resources in S-K 1300. **2.** Mineral resources that are not mineral reserves do not have demonstrated economic viability. **3.** Mineral resources are reported in situ, inclusive of mineral reserves. **4.** The mineral resources for Santa Cruz, East Ridge, and Texaco deposit were completed using Datamine Studio RM software. **5.** The mineral resources are current at June 23, 2025. **6.** Mineral resources constrained assuming underground mining methods for the Santa Cruz deposit are reported at an NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; Texaco deposit is reported at a NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; and East Ridge deposit is reported at a NSR cutoff of US$40.00 for longhole stoping and US$50.00 for drift and fill. The cutoff reflects the total operating costs to define reasonable prospects for economic extraction by conventional underground mining methods. Material from within mineable shape-optimized wireframes has been included in the mineral resource. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb, gold price of US$1,900/oz, and silver price of US$24.00/oz. Process costs of US$7.00 to US$9.00 per processed tonne; direct mining costs between US$22.00 to US$40.00 per processed tonne reflecting various mining method costs (leach, long hole or drift and fill), mining general and administration costs of US$2.63 per processed tonne, onsite processing costs between US$31.63 to US$49.63 per processed tonne, along with variable royalties between 5.01% to 6.96% NSR, and a mining recovery of 100%. **7.** Mineral resources are estimated using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper, 0% for gold and 0% for silver. Recoveries for concentrator are 0% for acid soluble copper, 90% for cyanide soluble copper, 90% for residual copper, 59% for gold and 69% for silver. **8.** Density was applied using weighted averages by deposit subdomain. **9**. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.

Table 11-14: In-Situ Mineral Resource Estimate Exclusive of Mineral Reserves for Santa Cruz, East Ridge & Texaco

Deposit	Classification	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (kt)	Total Acid Soluble Cu (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)	Contained Gold (koz)	Contained Silver (koz)	Contained Copper (Mlbs)
Santa Cruz	Indicated	178,451	0.80	0.34	0.20	0.27	0.024	1.43	1,435	607	359	477	139	8,211	3,163
	Inferred	31,998	0.73	0.21	0.17	0.34	0.021	1.78	232	68	54	110	21	1,832	512
East Ridge	Indicated	4,407	0.94	0.43	0.31	0.20	0.015	0.71	41	19	14	9	2	101	91
	Inferred	48,676	0.89	0.44	0.12	0.33	0.006	0.40	436	216	57	163	9	623	960
Texaco	Inferred	341,345	0.78	0.06	0.27	0.45	0.028	0.81	2,664	218	920	1,537	302	8,850	5,873
All Deposits	**Indicated**	**182,859**	**0.81**	**0.34**	**0.20**	**0.27**	**0.024**	**1.41**	**1,476**	**625**	**373**	**486**	**141**	**8,312**	**3,254**
All Deposits	**Inferred**	**422,020**	**0.79**	**0.12**	**0.24**	**0.43**	**0.025**	**0.83**	**3,332**	**503**	**1,030**	**1,809**	**333**	**11,304**	**7,346**

Notes on mineral resources: **1.** The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA USA Inc., and are reported in accordance with the definition for mineral resources in S-K 1300. **2.** Mineral resources that are not mineral reserves do not have demonstrated economic viability. **3.** Mineral resources are reported in situ, exclusive of mineral reserves. **4.** The mineral resources for Santa Cruz, East Ridge, and Texaco deposit were completed using Datamine Studio RM software. **5.** The mineral resources are current at June 23, 2025. **6.** Mineral resources constrained assuming underground mining methods for the Santa Cruz deposit are reported at an NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; Texaco deposit is reported at a NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; and East Ridge deposit is reported at a NSR cutoff of US$40.00 for longhole stoping and US$50.00 for drift and fill. The cutoff reflects the total operating costs to define reasonable prospects for economic extraction by conventional underground mining methods. Material from within mineable shape-optimized wireframes has been included in the mineral resource. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb, gold price of US$1,900/oz, and silver price of US$24.00/oz. Process costs of US$7.00 to US$9.00 per processed tonne; direct mining costs between US$22.00 to US$40.00 per processed tonne reflecting various mining method costs (leach, long hole or drift and fill), mining general and administration costs of US$2.63 per processed tonne, onsite processing costs between US$31.63 to US$49.63 per processed tonne, along with variable royalties between 5.01% to 6.96% NSR, and a mining recovery of 100%. **7.** Mineral resources are estimated using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper, 0% for gold and 0% for silver. Recoveries for concentrator are 0% for acid soluble copper, 90% for cyanide soluble copper, 90% for residual copper, 59% for gold and 69% for silver. **8.** Density was applied using weighted averages by deposit subdomain. **9.** Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.

Table 11-15: In-Situ Santa Cruz Deposit Mineral Resource Estimate Exclusive of Reserves

Classification	Domain	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (kt)	Total Acid Soluble Cu (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)	Contained Gold (koz)	Contained Silver (koz)	Contained Copper (Mlbs)
Indicated	Exotic	7,239	0.85	0.71	0.07	0.06	0.002	0.01	61	52	5	4	1	2	135
	Verde	1,690	1.88	1.44	0.36	0.09	0.046	1.39	32	24	6	2	2	76	70
	Leach Cap	6,573	0.79	0.61	0.02	0.15	0.011	0.29	52	40	1	10	2	62	114
	Oxide	62,756	0.88	0.72	0.13	0.03	0.027	1.30	550	450	85	21	55	2,618	1,213
	Chalcocite	26,201	0.77	0.06	0.62	0.11	0.024	1.94	201	15	161	28	21	1,637	444
	Primary	73,990	0.73	0.04	0.14	0.56	0.025	1.60	538	26	101	412	59	3,817	1,187
	Total	**178,450**	**0.80**	**0.34**	**0.20**	**0.27**	**0.024**	**1.43**	**1,435**	**607**	**359**	**477**	**139**	**8,211**	**3,163**
Inferred	Exotic	137	0.61	0.55	0.01	0.05	0.003	0.01	1	1	0	0	0	0	2
	Verde	1	0.00	0.00	0.00	0.00	0.000	0.00	0	0	0	0	0	0	0
	Leach Cap	212	0.65	0.48	0.01	0.16	0.005	0.25	1	1	0	0	0	2	3
	Oxide	10,653	0.76	0.54	0.22	0.00	0.026	1.40	81	58	23	0	9	479	179
	Chalcocite	1,740	0.76	0.14	0.54	0.08	0.019	1.43	13	2	9	1	1	80	29
	Primary	19,256	0.70	0.03	0.11	0.56	0.018	2.05	136	6	21	108	11	1,272	299
	Total	**31,998**	**0.73**	**0.21**	**0.17**	**0.34**	**0.021**	**1.78**	**232**	**68**	**54**	**110**	**21**	**1,832**	**512**

Notes on mineral resources: **1.** The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA USA Inc., and are reported in accordance with the definition for mineral resources in S-K 1300. **2.** Mineral resources that are not mineral reserves do not have demonstrated economic viability. **3.** Mineral resources are reported in situ, exclusive of mineral reserves. **4.** The mineral resources for Santa Cruz, East Ridge, and Texaco deposit were completed using Datamine Studio RM software. **5.** The mineral resources are current at June 23, 2025. **6.** Mineral resources constrained assuming underground mining methods for the Santa Cruz deposit are reported at an NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; Texaco deposit is reported at a NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; and East Ridge deposit is reported at a NSR cutoff of US$40.00 for longhole stoping and US$50.00 for drift and fill. The cutoff reflects the total operating costs to define reasonable prospects for economic extraction by conventional underground mining methods. Material from within mineable shape-optimized wireframes has been included in the mineral resource. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb, gold price of US$1,900/oz, and silver price of US$24.00/oz. Process costs of US$7.00 to US$9.00 per processed tonne; direct mining costs between US$22.00 to US$40.00 per processed tonne reflecting various mining method costs (leach, long hole or drift and fill), mining general and administration costs of US$2.63 per processed tonne, onsite processing costs between US$31.63 to US$49.63 per processed tonne, along with variable royalties between 5.01% to 6.96% NSR, and a mining recovery of 100%. **7.** Mineral resources are estimated using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper, 0% for gold and 0% for silver. Recoveries for concentrator are 0% for acid soluble copper, 90% for cyanide soluble copper, 90% for residual copper, 59% for gold and 69% for silver. **8.** Density was applied using weighted averages by deposit subdomain. **9.** Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.

Table 11-16: In-Situ East Ridge Deposit Mineral Resource Estimate Exclusive of Reserves

Classification	Domain	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (kt)	Total Acid Soluble Cu (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)	Contained Gold (koz)	Contained Silver (koz)	Contained Copper (Mlbs)
Indicated	Oxide	4,407	0.94	0.43	0.31	0.20	0.015	0.71	41	19	14	9	2	101	91
	Total	**4,407**	**0.94**	**0.43**	**0.31**	**0.20**	**0.015**	**0.71**	**41**	**19**	**14**	**9**	**2**	**101**	**91**
Inferred	Exotic	8,557	0.94	0.34	0.02	0.57	0.003	0.16	80	29	2	49	1	45	177
	Oxide	40,120	0.89	0.47	0.14	0.28	0.007	0.45	355	187	55	113	9	577	784
	Total	**48,676**	**0.89**	**0.44**	**0.12**	**0.33**	**0.006**	**0.40**	**436**	**216**	**57**	**163**	**9**	**623**	**960**

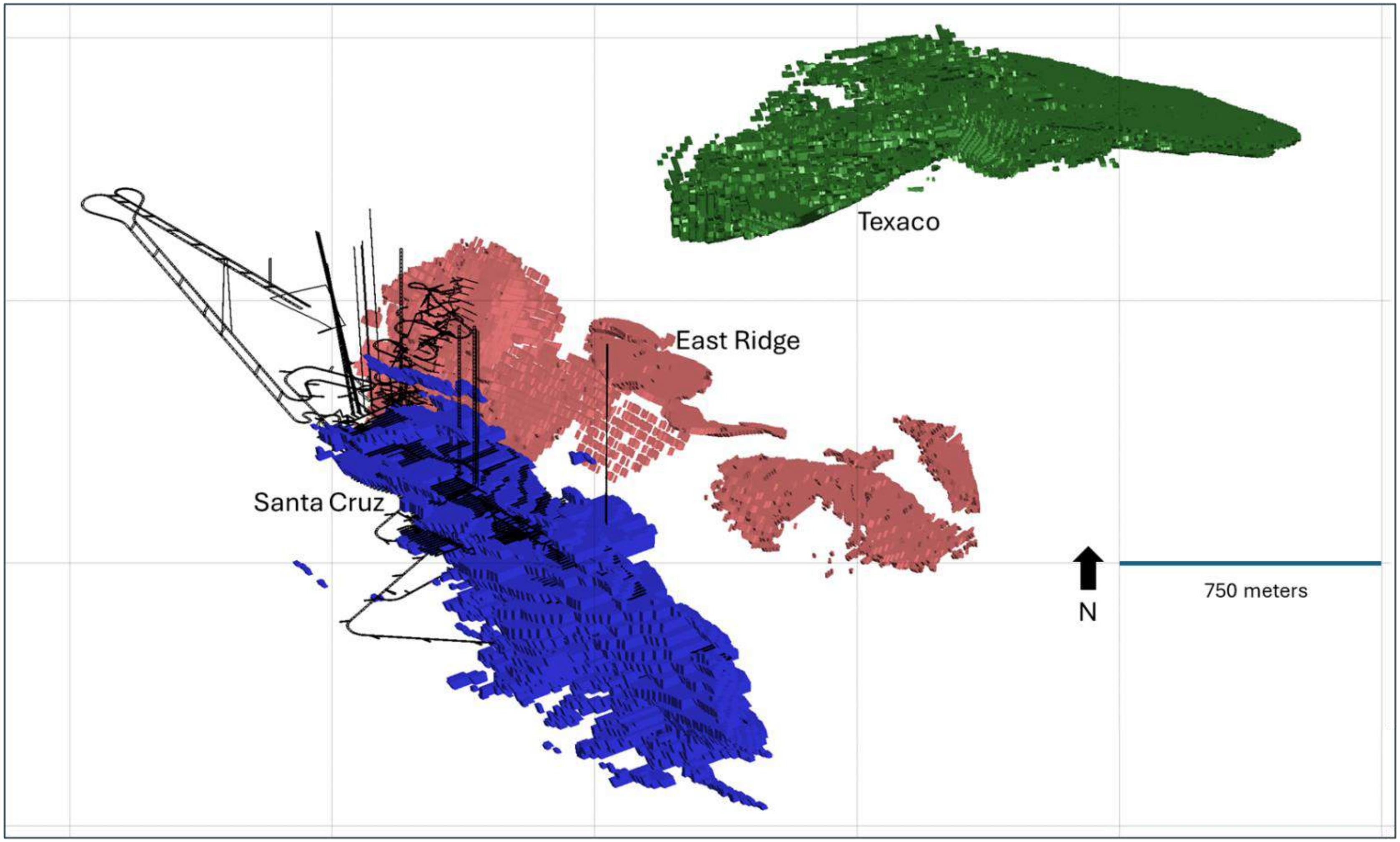
Notes on mineral resources: **1.** The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA USA Inc., and are reported in accordance with the definition for mineral resources in S-K 1300. **2.** Mineral resources that are not mineral reserves do not have demonstrated economic viability. **3.** Mineral resources are reported in situ, exclusive of mineral reserves. **4.** The mineral resources for Santa Cruz, East Ridge, and Texaco deposit were completed using Datamine Studio RM software. **5.** The mineral resources are current at June 23, 2025. **6.** Mineral resources constrained assuming underground mining methods for the Santa Cruz deposit are reported at an NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; Texaco deposit is reported at a NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; and East Ridge deposit is reported at a NSR cutoff of US$40.00 for longhole stoping and US$50.00 for drift and fill. The cutoff reflects the total operating costs to define reasonable prospects for economic extraction by conventional underground mining methods. Material from within mineable shape-optimized wireframes has been included in the mineral resource. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb, gold price of US$1,900/oz, and silver price of US$24.00/oz. Process costs of US$7.00 to US$9.00 per processed tonne; direct mining costs between US$22.00 to US$40.00 per processed tonne reflecting various mining method costs (leach, long hole or drift and fill), mining general and administration costs of US$2.63 per processed tonne, onsite processing costs between US$31.63 to US$49.63 per processed tonne, along with variable royalties between 5.01% to 6.96% NSR, and a mining recovery of 100%. **7.** Mineral resources are estimated using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper, 0% for gold and 0% for silver. Recoveries for concentrator are 0% for acid soluble copper, 90% for cyanide soluble copper, 90% for residual copper, 59% for gold and 69% for silver. **8.** Density was applied using weighted averages by deposit subdomain. **9.** Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.

Table 11-17: In-Situ Texaco Deposit Mineral Resource Estimate

Classification	Domain	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (kt)	Total Acid Soluble Cu (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)	Contained Gold (koz)	Contained Silver (koz)	Contained Copper (Mlbs)
Inferred	Oxide	31,329	0.62	0.48	0.17	0.00	0.020	0.54	193	150	53	0	20	546	426
	Chalcocite	74,873	0.96	0.06	0.71	0.19	0.010	0.71	717	47	529	141	25	1,719	1,580
	Primary	235,143	0.75	0.01	0.14	0.59	0.032	0.90	1,754	21	338	1,395	245	6,826	3,867
	Total	**341,345**	**0.78**	**0.06**	**0.27**	**0.45**	**0.028**	**0.81**	**2,664**	**218**	**920**	**1,537**	**302**	**8,850**	**5,873**

Notes on mineral resources: **1.** The mineral resources in this estimate were independently prepared, including estimation and classification, by BBA USA Inc., and are reported in accordance with the definition for mineral resources in S-K 1300. **2.** Mineral resources that are not mineral reserves do not have demonstrated economic viability. **3.** Mineral resources are reported in situ, exclusive of mineral reserves. **4.** The mineral resources for Santa Cruz, East Ridge, and Texaco deposit were completed using Datamine Studio RM software. **5.** The mineral resources are current at June 23, 2025. **6.** Mineral resources constrained assuming underground mining methods for the Santa Cruz deposit are reported at an NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; Texaco deposit is reported at a NSR cutoff of US$32.00 for heap leach and US$34.00 for concentrator; and East Ridge deposit is reported at a NSR cutoff of US$40.00 for longhole stoping and US$50.00 for drift and fill. The cutoff reflects the total operating costs to define reasonable prospects for economic extraction by conventional underground mining methods. Material from within mineable shape-optimized wireframes has been included in the mineral resource. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb, gold price of US$1,900/oz, and silver price of US$24.00/oz. Process costs of US$7.00 to US$9.00 per processed tonne; direct mining costs between US$22.00 to US$40.00 per processed tonne reflecting various mining method costs (leach, long hole or drift and fill), mining general and administration costs of US$2.63 per processed tonne, onsite processing costs between US$31.63 to US$49.63 per processed tonne, along with variable royalties between 5.01% to 6.96% NSR, and a mining recovery of 100%. **7.** Mineral resources are estimated using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper, 0% for gold and 0% for silver. Recoveries for concentrator are 0% for acid soluble copper, 90% for cyanide soluble copper, 90% for residual copper, 59% for gold and 69% for silver. **8.** Density was applied using weighted averages by deposit subdomain. **9**. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.

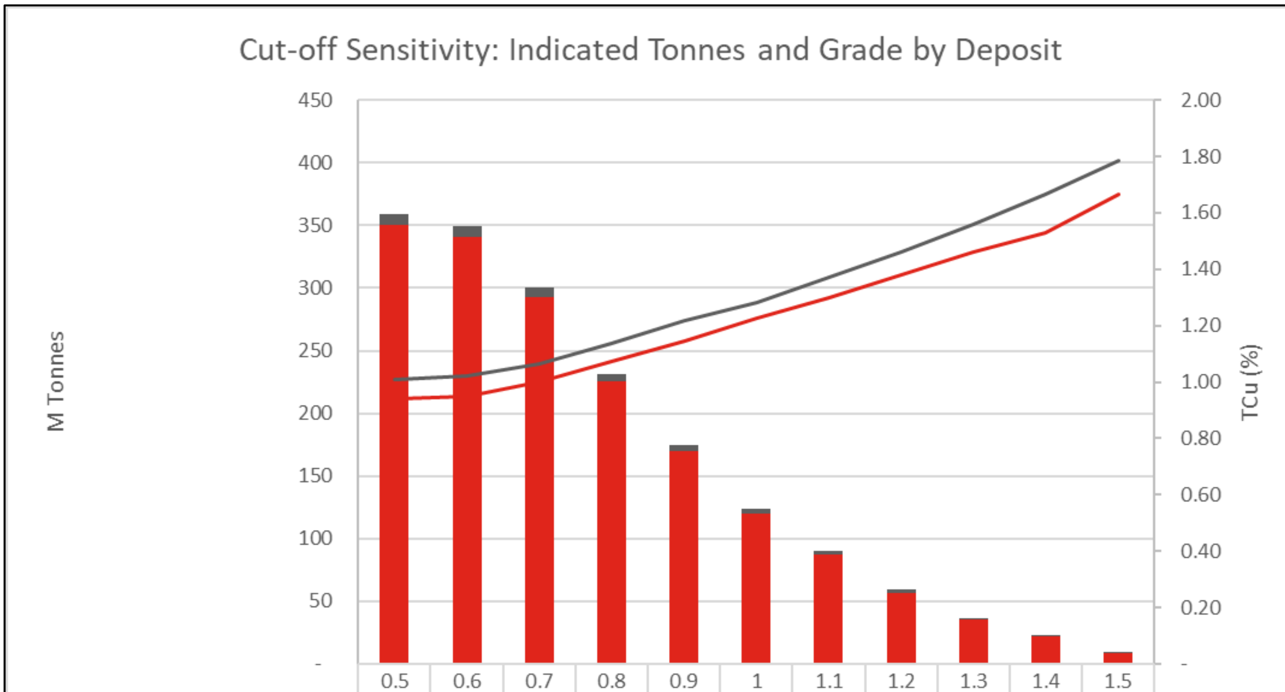
Figure 11-9: Oblique View of Santa Cruz, East Ridge & Texaco Resources



11.11 Mineral Resource Sensitivity to Reporting Cutoff

The sensitivity of the updated Santa Cruz, East Ridge, and Texaco mineral resource estimates to copper (%) cutoff is summarized in Figures 11-10 and 11-11 across all interpolation methods. The resource cutoff uses NSR, but copper equivalent cutoffs can be used for comparison.

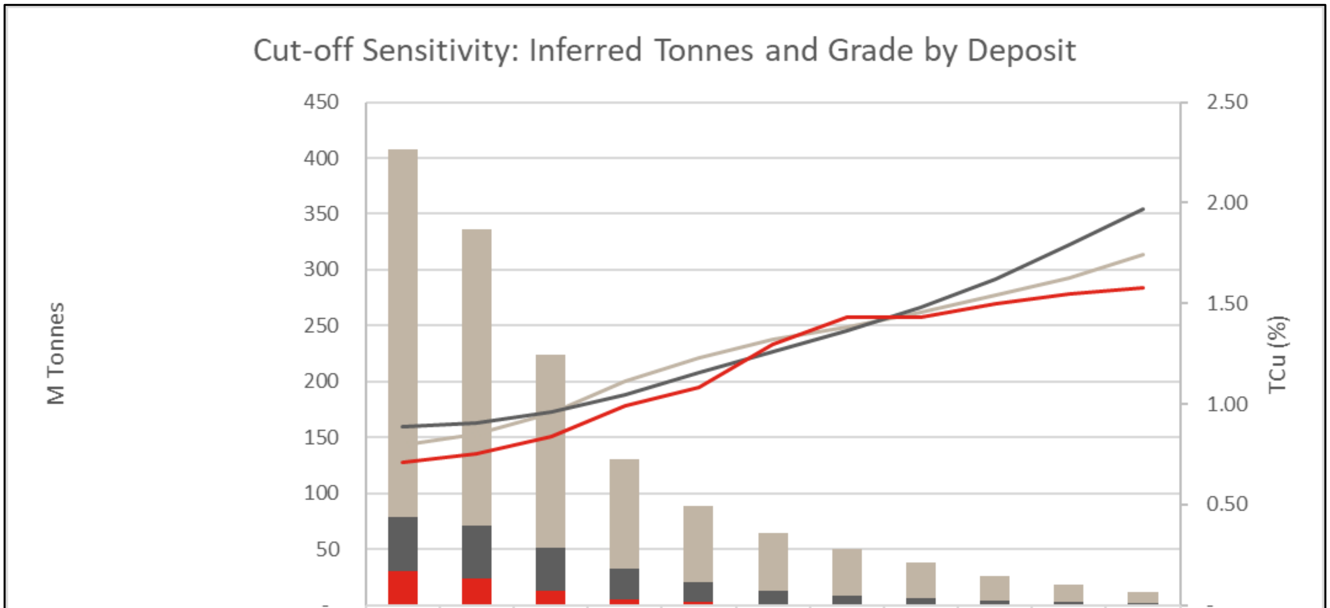
Figure 11-10: Copper Cutoff Sensitivity for Santa Cruz & East Ridge – Indicated Tonnes & Grade



	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5
East Ridge MTonnes	9	8	8	6	5	4	3	2	1	1	1
Santa Cruz MTonnes	350	341	293	225	170	120	87	57	35	22	9
East Ridge Tcu Grade (%)	1.01	1.02	1.07	1.14	1.22	1.28	1.37	1.46	1.56	1.67	1.79
Santa Cruz Tcu Grade (%)	0.94	0.95	1.00	1.07	1.15	1.23	1.30	1.38	1.46	1.53	1.67

Note: Texaco resources are classified as inferred, and therefore not present. Source: Ivanhoe Electric, 2025.

Figure 11-11: Copper Cutoff Sensitivity for Santa Cruz, East Ridge & Texaco – Inferred Tonnes & Grade



	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5
Texaco MTonnes	329	266	174	98	68	52	42	32	23	16	10
East Ridge MTonnes	49	47	38	27	17	12	8	5	3	2	1
Santa Cruz MTonnes	30	24	13	5	3	1	1	1	0	0	0
Texaco Tcu Grade (%)	0.79	0.85	0.95	1.11	1.23	1.32	1.38	1.46	1.54	1.63	1.74
East Ridge Tcu Grade (%)	0.89	0.90	0.96	1.04	1.16	1.26	1.36	1.48	1.62	1.79	1.97
Santa Cruz Tcu Grade (%)	0.71	0.75	0.84	0.99	1.08	1.30	1.43	1.43	1.50	1.55	1.58

Source: Ivanhoe Electric, 2025.

11.12 Differences in Resource Model Iterations

The current resource model iterations have changed significantly when compared to the iterations released in the initial assessment. Factors that have influenced changes in the resource are as follows:

- significant addition of new drilling to all three deposits, with expansion drilling at Texaco contributing to overall resource growth
- change in interpretation of deposits based on new information
- understanding of structural influence on the deposit
- discovery of historical data issues in East Ridge.

11.13 Factors That May Affect Mineral Resources

Areas of uncertainty that may materially impact the mineral resource estimates are as follows:

- changes to long-term metal price assumptions
- changes to the input values for mining, processing, and general and administrative (G&A) costs to constrain the estimate
- changes to local interpretations of mineralization geometry and continuity of mineralized subdomains
- changes to the density values applied to the mineralized zones
- changes to metallurgical recovery assumptions
- changes in assumptions of marketability of the final product
- variations in geotechnical, hydrogeological, and mining assumptions
- changes to assumptions with an existing agreement or new agreements
- changes to environmental, permitting, and social license assumptions
- logistics of securing and moving adequate services, labor, and supplies could be affected by epidemics, pandemics, and other public health crises, or geopolitical influence.

11.14 BBA Opinion

BBA is not aware of any environmental, legal, title, taxation, socioeconomic, marketing, political, or other relevant factors that would materially affect the estimation of mineral resources that are not discussed in this report.

BBA is of the opinion that the mineral resources for the project, which were estimated using industry-accepted practices, have been prepared and reported using S-K 1300 definitions.

Technical and economic parameters and assumptions applied to the mineral resource estimate are based on parameters received from Ivanhoe Electric and reviewed within the BBA technical team to determine if they were appropriate. All issues relating to all relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved with further work.

12 Mineral Reserve Estimate

12.1 Basis of Estimate

Underground mineral reserves were estimated by BBA. Estimates were prepared for the Santa Cruz deposit, a portion of the East Ridge deposit, and the Verde domain located within the Santa Cruz deposit. The primary mining method for both deposits employs longhole stoping without pillars, utilizing a primary and secondary stoping sequence. Additionally, a few small lenses within the East Ridge deposit use a drift-and-fill mining method. Stopes will be backfilled with cemented rockfill to the end of Q1 2029 and then all stopes will be backfilled after mining with paste backfill for the remainder of the mine life. Indicated mineral resources were converted to probable mineral reserves. Inferred mineral resources were not converted to mineral reserves; however, if inferred mineral resources fell within the mineral reserve designs, they were assumed to have zero grade.

12.2 Underground Mine Estimates

Mineral reserve estimates are based on the mineral resource 3D block models. Stope shapes were created based on individual zone and lens geometry. Each mining region has a distinct approach and is divided into smaller mining areas. There are two primary stoping methods used: transverse and longitudinal, along with one drifting method known as drift and fill. These methods are selected based on the thickness of the ore body and the available access routes. The majority of the ore extracted will be mined using the transverse method as discussed in Section 13.9, Mine Design.

The mineral reserve stopes were designed using Deswik Stope Optimizer software. The stope optimization process was guided by economic prospectivity and geotechnical parameters specific to the rock type, the orebody orientation and regions, and the mining sequence. The initial Deswik Stope Optimizer runs were conducted with no recovery and no dilution applied. Recovery and dilution factors were applied after the stopes were generated to calculate the final tonnes and grade of the reserves. Mining recovery and dilution are discussed in Section 13.

Based on engineering considerations, lower grade blocks may be included in stope designs if their development is proposed in conjunction with other blocks. While low-grade blocks do not warrant the required development, they are considered economically viable if developed in conjunction with the other blocks. Similarly, evaluation of extraction method or ground conditions may result in lower-grade blocks being included in the mineral reserve estimate.

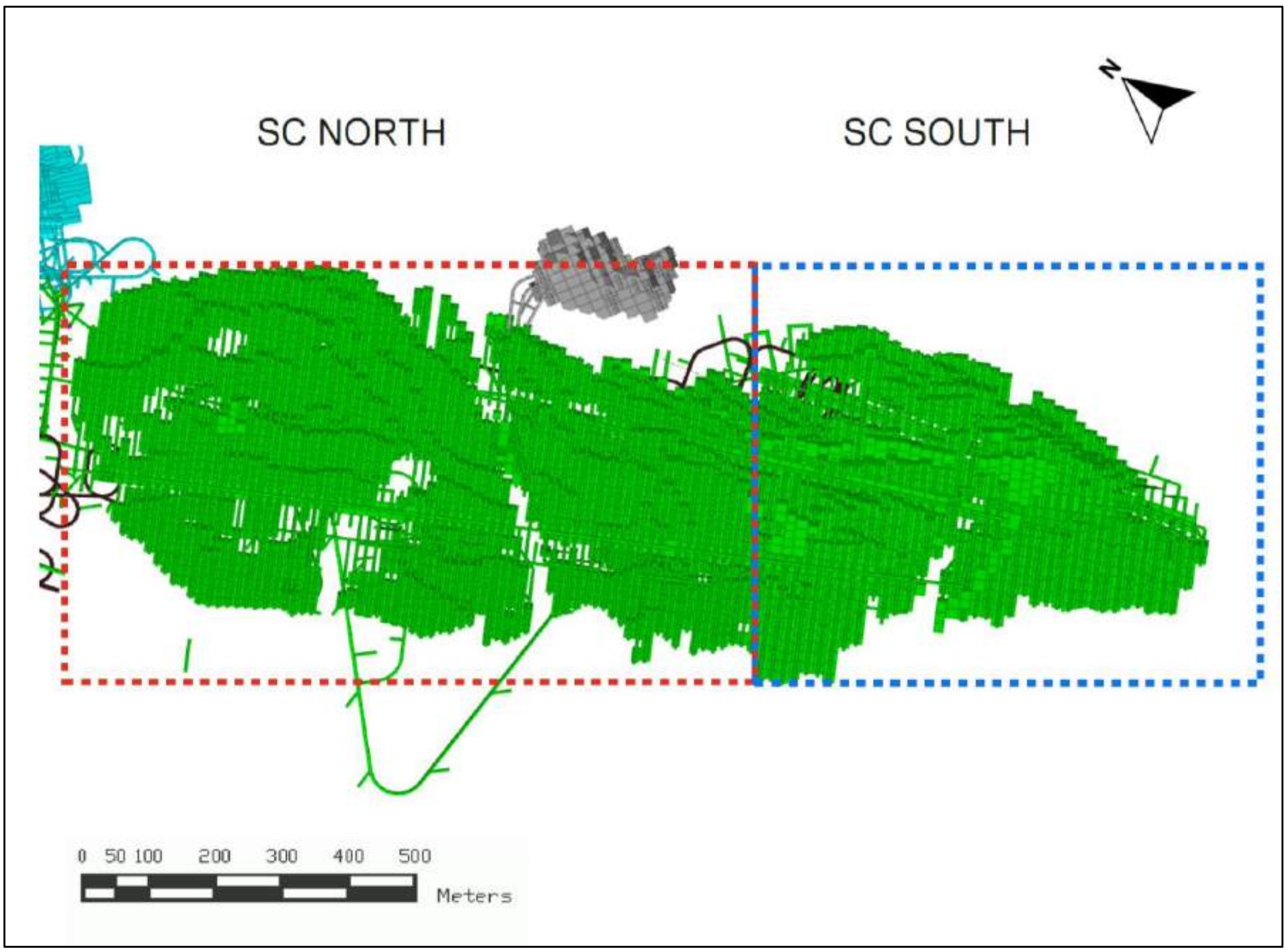
12.2.1 Santa Cruz

The mining approach for the Santa Cruz region involves bulk mining. The stopes vary in size between the North and South zones and by domain (Table 12-1 and Figure 12-1).

Table 12-1: Summary of Stope Sizes by Domain & Sequence

Domains	Geotechnical Region	Primary / Secondary (Height x Width x Length)
Chalcocite	North	P: 30 m x 12 m x 17 m S: 30 m x 15 m x 20 m
	South	P: 30 m x 15 m x 23 m S: 30 m x 18 m x 25 m
Oxide	North	P: 30 m x 12 m x 13 m S: 30 m x 15 m x 15 m
	South	P: 30 m x 15 m x 15 m S: 30 m x 18 m x 17 m

Figure 12-1: Santa Cruz North-South Divide



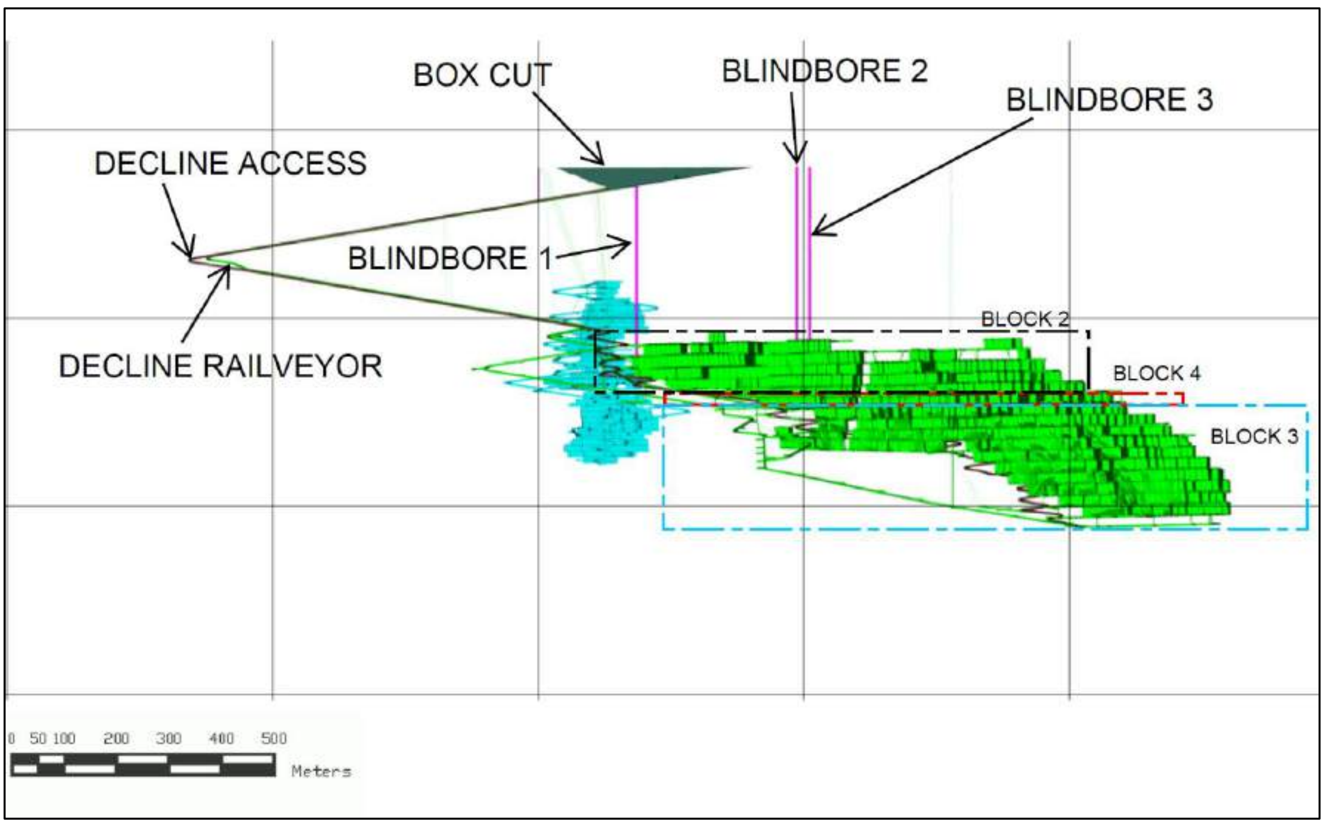
Source: Ivanhoe Electric, 2025.

The region is divided into several mining areas: Blocks 2, 3, and 4 (see Figure 12-2). Block 4 serves as a sill pillar, separating Blocks 2 and 3 (due to changes in the mine plan development, Block 1 was incorporated into Block 2). The primary mining method is transverse downhole stoping, executed in a primary-secondary sequence, with selective uphole stopes. Transverse stoping offers greater flexibility in drilling patterns, improved visibility of drawpoints, and enhanced ore recovery. Although this method typically requires more waste development to access multiple fronts, in Santa Cruz the main level haulage drifts and stope accesses will be developed within the orebody itself.

The main haulage drift will run parallel to the orebody, while stope access drives are oriented perpendicular from the hangingwall to the footwall. Production stoping will occur simultaneously at multiple locations on either side of the main haulage drift. In areas where only bottom sill access is available, uphole drilling will be employed.

Major infrastructure will be located near access points and main ramps, with charging stations strategically placed to ensure efficient distances from active mining areas. Due to Santa Cruz's irregular mineralization and significant geotechnical constraints, some areas may be mined using a primary-primary or other modified sequence. At the end of the mine life, retreat mining will recover stopes near ore passes as they are decommissioned along the main haulage drifts.

Figure 12-2: Santa Cruz Mining Areas (looking Northeast)

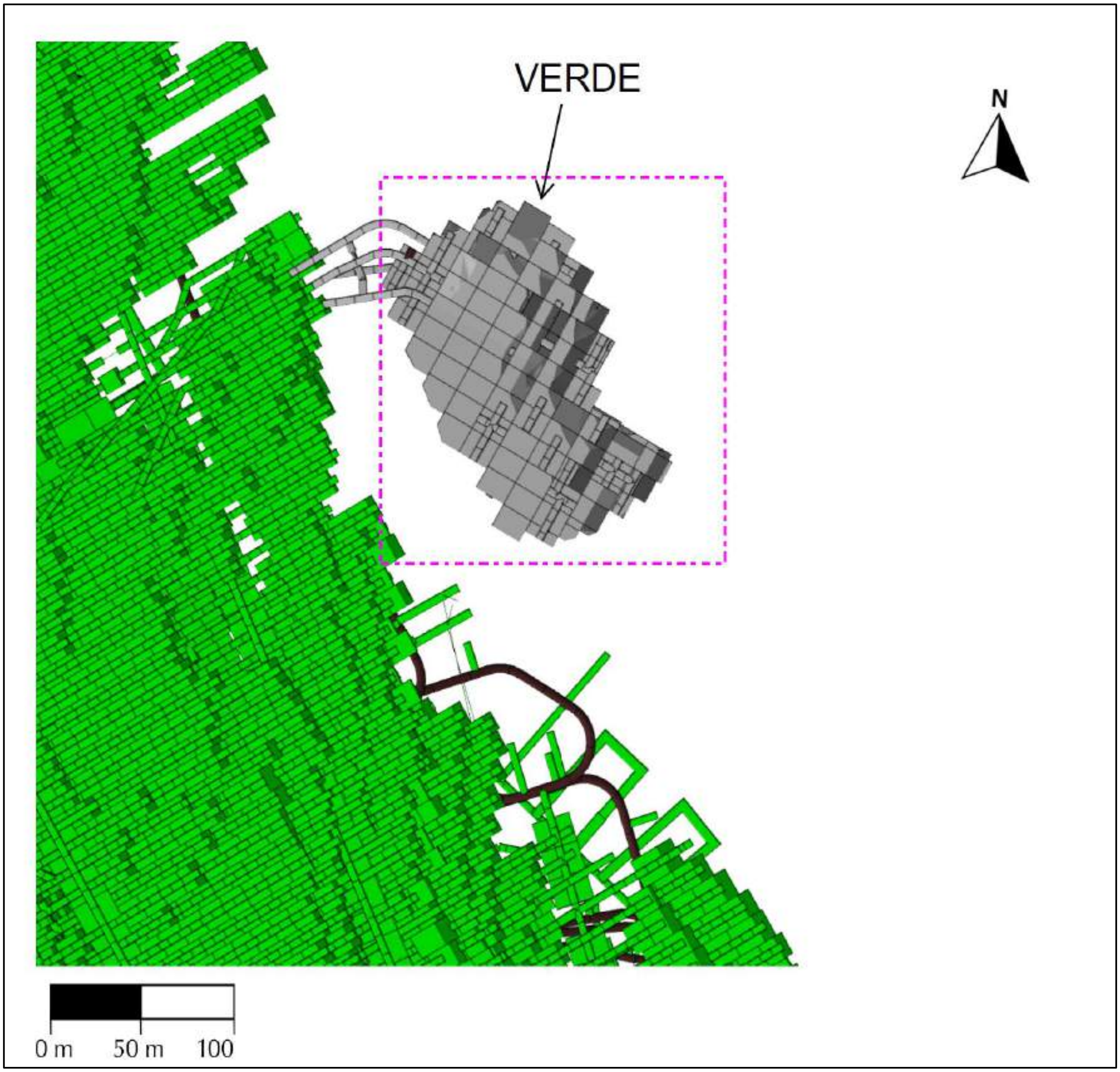


Source: Ivanhoe Electric, 2025.

12.2.2 Verde

The Verde mining region is a mineralized area situated within the hangingwall of the Santa Cruz deposit, which will be accessed through the Santa Cruz development (Figure 12-3). The mining will involve longitudinal primary-primary stope mining, measuring 20 m high x 15 m wide x 20 m long. Some undercut drifts will be created at the bottom of the stopes to maximize ore recovery from the area.

Figure 12-3: Verde Mining Region



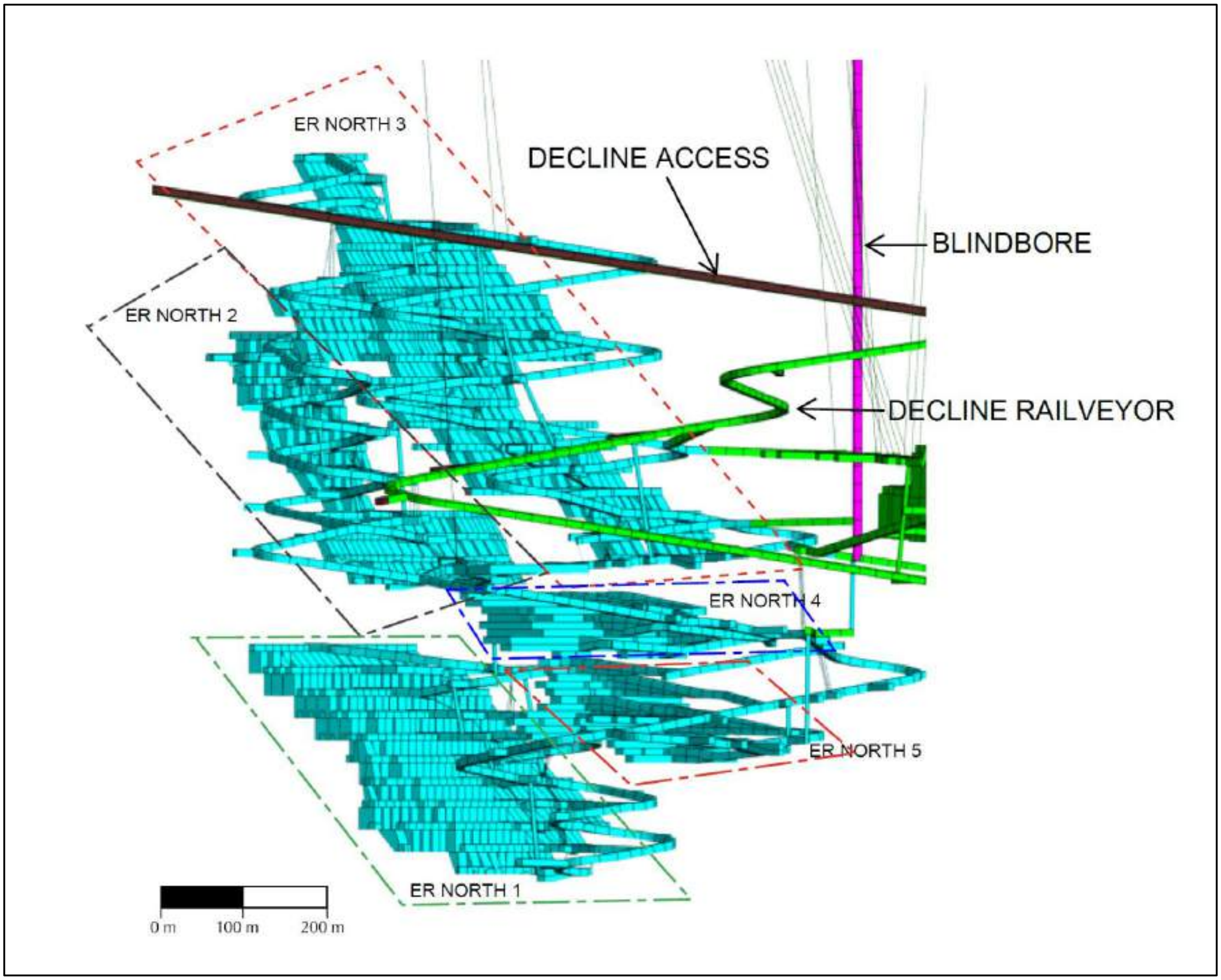
Source: Ivanhoe Electric, 2025.

12.2.3 East Ridge

The East Ridge mining area will use selective mining techniques that are adapted to the varying orientations of the mining areas. The mining areas of East Ridge North 1, 2, and 3 will be primarily developed using downhole longitudinal stoping (Figure 12-4). The dimensions for these stopes will be 15 m high x 10 m wide x 8 m long, with some additional uphole stopes as needed.

In contrast, mining areas North 4 and 5 will employ a drift and fill method in increments of 5 m height due to the relatively shallow dip of the lenses in these sections. The mining sequence for this approach will follow a retreat pattern, starting from the outside and moving toward the center, and from the footwall to the hangingwall.

Figure 12-4: East Ridge Mining Areas (looking West)



Source: Ivanhoe Electric, 2025.

12.3 Net Smelter Return & Cutoff Value

Net smelter return (NSR) represents the gross revenue generated from the sale of a refined metal product (in this case, copper cathodes) after deducting all associated off-site costs. For a mine producing copper cathodes via heap leaching and solvent extraction / electrowinning (SX/EW), the traditional "smelter" and "refining" charges inherent in concentrate sales are not applicable. Instead, the offsite deductions are specific to the direct sale of cathodes.

The primary metal produced in Santa Cruz will be copper. While byproducts of gold and silver are present, the current heap leach SX/EW process does not recover these precious metals. As is common with polymetallic deposits, the cutoff value for mineral reserves is determined and expressed in terms of net smelter return value per tonne.

The NSR is calculated based on unit metal values, using representative smelter contract terms, freight costs, and forecast metal prices. The metal prices and metallurgical recovery rates used for NSR calculations are summarized in Table 12-2. Royalties are factored into each block of the mineral resource model.

Table 12-2: NSR Parameters

Product	Unit	Value
Acid Soluble Copper Recovery	%	98.8
Cyanide Soluble Copper Recovery	%	85.4
Residual Copper Recovery	%	35.1
Recoverable Copper	**%**	**90.9**
Net Recoverable Copper	**%**	**90.0**
Copper Price	$/lb	4.00

Mineral reserves are assessed using commodity prices derived from long-term forecasts from analysts and banks. According to BBA, this pricing generally reflects the trends observed over the past one, three, and five years, and the forward-looking prices from internationally recognized banks are deemed appropriate for reserve estimates. Section 16 offers a detailed explanation of the commodity price forecasts, which consider a three-year trailing average timeframe.

The Santa Cruz operating costs used as the basis for cutoff value calculations are presented in Table 12-3.

Table 12-3: Operating Costs for Cutoff Value Calculations

Criteria	Unit	Santa Cruz 30 m Longhole Leach	East Ridge Drift and Fill Leach	East Ridge 15m Longhole Leach
Cathode Split	%	100.0	100.0	100.0
Onsite Costs				
Mining Costs – Direct	$/t Processed	31.00	47.05	47.05
Processing Costs	$/t Processed	10.32	10.32	10.32
G&A	$/t Processed	2.63	2.63	2.63
Onsite Total	$/t Processed	43.95	60.00	60.00
Onsite Rounded NSR Breakeven Cutoff	**$/t**	**44.00**	**60.00**	**60.00**

12.4 Mineral Reserve Estimate

Mineral reserves as at June 23, 2025 are summarized in Table 12-4. The point of reference for the estimate is the point of delivery to the process facilities.

Longhole stoping, and drift and fill mining methods are used in this mineral reserve estimate, as discussed in Section 13.9.

Production designs are created based on the geometries relevant to the mining methods, as discussed in Section 13. Mineral reserve estimates are based on the mineral resource 3D block models. Mineable shapes are created based on individual zones and lens geometries around the production locations that meet the NSR cutoff threshold, while also ensuring that adverse pillar geometries are not created that could become unstable, and that mining does not cease near a problematic structure. Production locations outside the mineral reserve outlines are not included in mineral reserves. Once designs are completed, access ramps and other supporting infrastructure are designed.

The production design wireframes are evaluated against the model to generate tonnes and grades for each location. Internal portions of the mineralized zones that did not meet the NSR cutoff value are treated as waste. This mineralized material could be included in the mineable shapes and the mineral reserves by applying a marginal cutoff value as the material will have to be mined to gain access to other areas of the mineral reserve.

Table 12-4: Santa Cruz Copper Project Mineral Reserve Estimate

Deposit	Classification	Tonnes (kt)	Total Copper (%)	Acid Soluble Copper (%)	Cyanide Leach Copper (%)	Residual Copper (%)	Contained Copper (kt)	Total Acid Soluble Cu (kt)	Total Cyanide Cu (kt)	Total Residual Cu (kt)
Santa Cruz	Probable	132,061	1.08	0.62	0.41	0.05	1,430	820	544	65
East Ridge	Probable	4,112	1.03	0.46	0.44	0.12	42	19	18	5
Total	Probable	136,173	1.08	0.61	0.41	0.05	1,472	839	563	70

Notes: **1.** The mineral reserves in this estimate are current to June 23, 2025 and were independently prepared, including estimation and classification, by BBA USA Inc. They are reported in accordance with the definitions for mineral reserves in S-K 1300. **2.** The point of reference for the estimate is the point of delivery to the process facilities. **3.** The mineral reserves for the Santa Cruz and East Ridge deposits were completed using Deswik mining software. Mineral reserves are defined within stope designs that are prescribed by rock mechanics, considering the specific characteristics of deposits, mineral domains, mining methods, and the mining sequence. Transverse longhole stoping is the optimal mining method with uppers and cut & fill methods used where appropriate. Mining will occur in blocks, extracting ore from the bottom upwards, with paste backfill providing ground support to sustain a production rate of 20,000 tonnes per day for the first 15 years of operation. **4.** Mineral reserves are estimated at an NSR cutoff value of $43.95/t for longhole stoping and $60/t for longitudinal retreat stopes and drift and fill. The NSR values reflect the discrete metallurgical responses for each mineral reserve block using metallurgical recoveries for heap leach of 96% for acid soluble copper, 83% for cyanide soluble copper, 22% for residual copper. Underground mineable shapes optimization parameters include a long-term copper price of US$4.00/lb. **5.** Mineral reserves account for mining loss and dilution. **6.** Mineral reserves are a subset of the indicated mineral resource and do not include the inferred mineral resource. **7.** Rounding, as required by the guidelines, may result in apparent summation differences between tonnes, grade, and contained metal content.

12.5 Factors That May Affect Mineral Reserves

Mineral reserves are subject to risks typically associated with high-production underground longhole stoping operations. These risks could materially impact the reserves and include, but are not limited to, the following:

- variations in realized metal prices compared to initial assumptions
- fluctuations in mining, processing, and general and administrative (G&A) costs used to determine the cutoff grade
- changes in the interpretation of mineralization geometry or the continuity of mineralized zones
- modifications to geotechnical or hydrogeological assumptions, potentially causing schedule delays, increased dilution, or reduced recoveries
- variations in mining and metallurgical recovery rates
- shifts in long-term assumptions regarding payability, marketability, and penalty terms
- alterations in mining development or geotechnical conditions that could lead to additional unplanned dilution
- adjustments to current mining methods where specific zones or lenses allow
- assumptions related to ongoing access to the site, retention of mineral tenure, obtaining necessary environmental, mining, and other regulatory permits, and maintaining a social license to operate with relevant stakeholders.

13 Mining Methods

13.1 Introduction

This report envisions underground mining of the Santa Cruz and East Ridge deposits.

The Santa Cruz deposit lies 480 to 940 m below the surface. For this deposit, transverse underground longhole stoping has been selected as the optimal mining method. Mining will occur in blocks, extracting ore from the bottom up, with paste backfill providing ground support. A sill pillar will be mined at the end of the project's life, and the backfill will be designed to support adjacent filled stopes without needing extra pillars.

Stopes in the Santa Cruz deposit will range from 12 to 18 m in width and 10 to 17 m in length, with levels spaced 30 m apart. The Verde subdomain's stopes will have standard dimensions of 20 m in height, 15 m in width, and 20 m in length.

The East Ridge deposit is located 310 to 790 m below the surface, comprising several lenses and using a hybrid mining approach of longhole stoping and drift-and-fill methods. Longhole stopes will measure 15 m x 10 m x 8 m (H x W x L), while drift-and-fill drifts will be 5 m x 5 m, with variable lengths. Mining will begin with a 5 m x 5 m drift, followed by backfill and curing before developing adjacent drifts.

Access to the mine will be facilitated by two decline drifts: one for main access and another for a Railveyor system. Ore will be transported from stopes to the surface via load-haul-dump (LHD) vehicles, an orepass system, and a Railveyor system. The combined production average for the Santa Cruz and East Ridge deposits is approximately 20,000 t/d.

13.2 Geotechnical Considerations

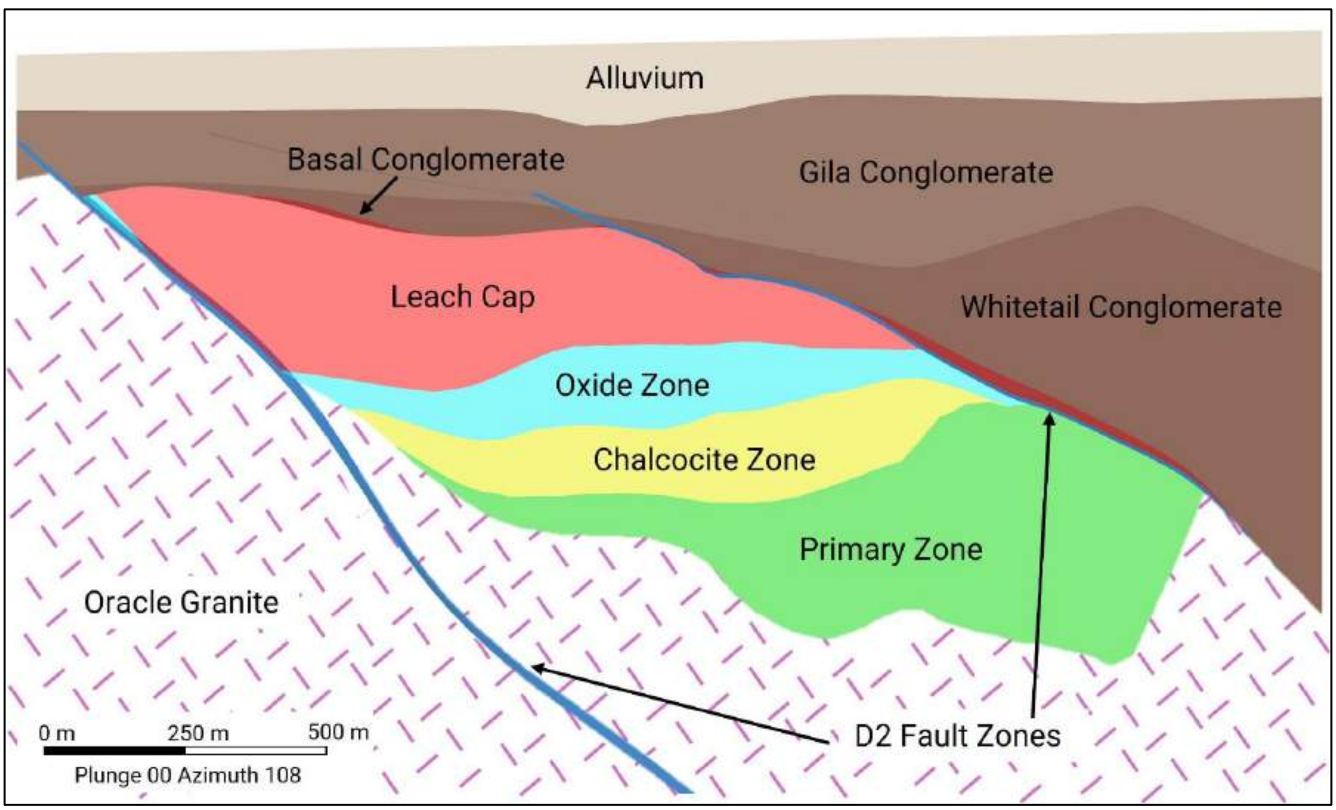
Geotechnical criteria used in the mine optimization were provided in Section 7.3.

Geotechnical domains (Table 13-1 and Figure 13-1) were established to reflect material deposition type and alteration characteristics. Geotechnical domains have differing geotechnical qualities.

Table 13-1: Geotechnical Domains

Unit	Abbreviation	Note
Alluvium	Alv,	Uppermost unit.
Conglomerate	CGL	The conglomerate deposit is characterized vertically as the Gila conglomerate, overlying the Whitetail, basal, and mafic conglomerate horizons.
Oracle Granite	GR	Santa Cruz and East Ridge zones.
Leach Cap	LC	Santa Cruz zone.
Oxide	OX	Santa Cruz zone, Verde zone (Verde OX mineralization, within an envelope of Verde slide (SL) lithology), East Ridge zone (ERNOx_medium-grade ore zone and ERNOx_low-grade host rock).
Chalcocite	CN	Santa Cruz zone.
Primary	PR	Santa Cruz zone.
Faults	(Weak or Shear Zones) and D2 Fault Zone	Santa Cruz zone.
Secondary Lithologies		Diabase and undifferentiated porphyry units.

Figure 13-1: Santa Cruz Geotechnical Domain Profile, North-South Section Looking East



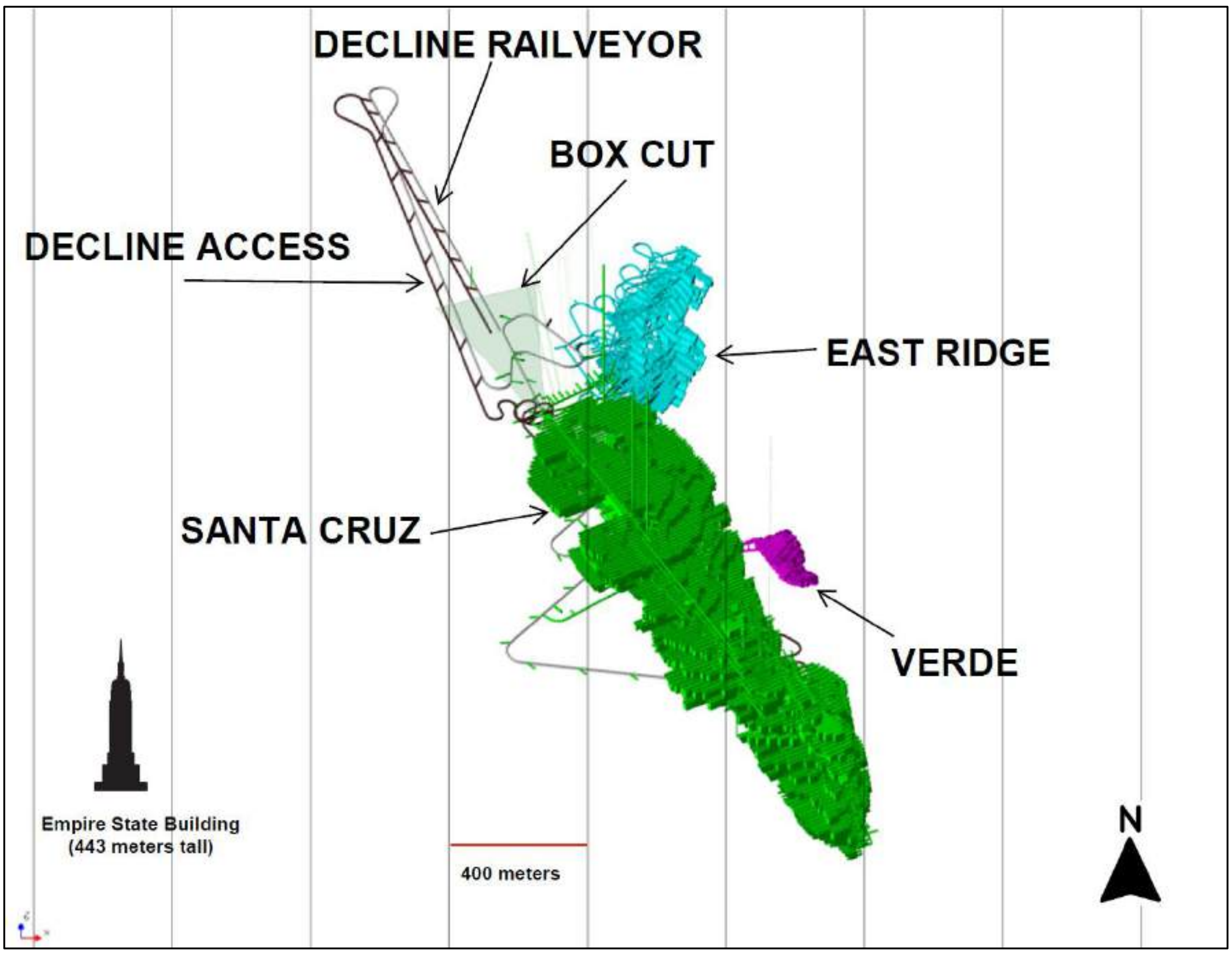
Source: Ivanhoe Electric, 2025.

13.3 Mining Zones

The Santa Cruz Copper Project will consist of three mining zones: Santa Cruz, Verde, and East Ridge (Figure 13-2). The Santa Cruz zone represents the main area of mine production. The Santa Cruz zone is divided structurally into north and south regions (refer to Figure 12-1).

The Santa Cruz area is characterized by the presence of groundwater inflows, varying by geotechnical and hydrogeological domain. Mining plans have been de-risked by using a minimum 5 m offset for production areas from high-risk domains, including the primary zone, Gila conglomerate, leach cap, and the D2 fault zone.

Figure 13-2: Mining Zones of Santa Cruz Copper Project, View Looking North



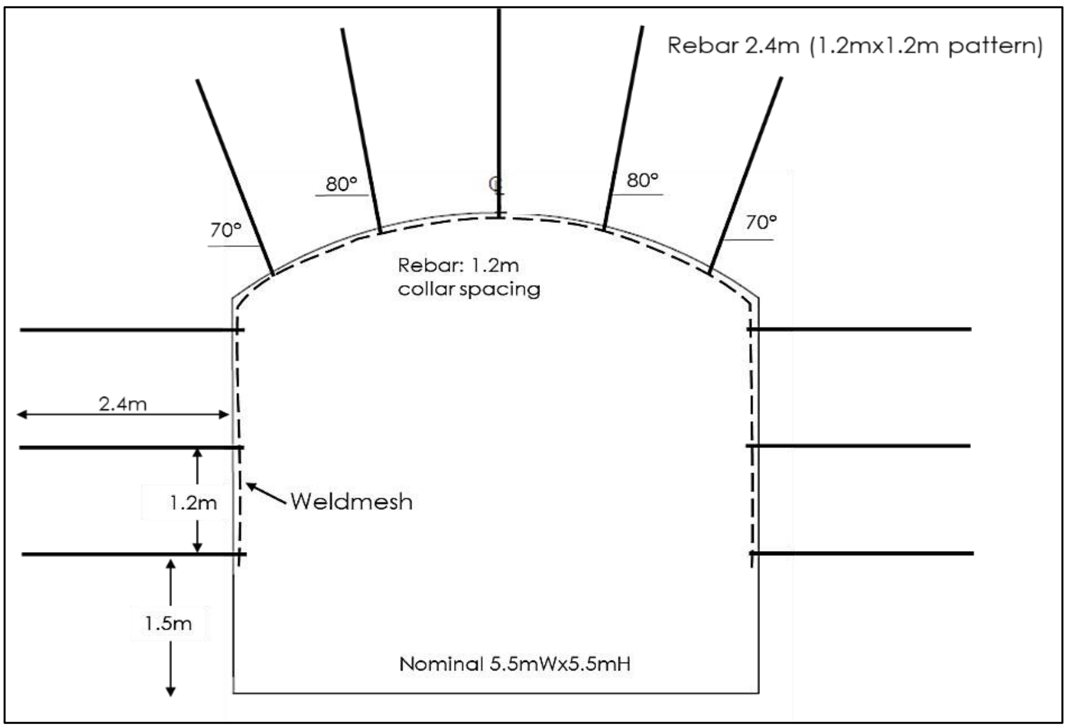
Source: Ivanhoe Electric, 2025.

13.4 Ground Support

Ground control measures are applied systematically to ensure safe workplaces, limit dilution and overbreak, and stabilize weak rock masses, particularly in the vicinity of high-risk domains.

Ground support descriptions per Support Category are summarized on the following page in Table 13-2. An example of bolting patterns associated with Support Category 1 for nominal 5.5 m x 5.5 m (W x H) development is shown in Figure 13-3.

Figure 13-3: Bolting Pattern Associated with Conventional (Drill & Blast) Development, Support Category 1 (Not to Scale)



Source: BBA, 2025.

Primary (first-pass) support will be installed in in cycle with excavation advance and will provide supporting and reinforcing functions. Excavation advance in rock will be performed via conventional (drill and blast) methods (Table 13-2) or with a roadheader machine (Table 13-3).

Decline (ramp) development and lateral Railveyor drifts in rock are to be excavated by either conventional (drill and blast) or roadheader methods. Roadheader support categories are summarized in Table 13-3.

Shotcrete used for long-term access and Support Categories 1S, 2S, and 3 will be applied over mesh. Support Category 4 will be fiber-reinforced shotcrete when applied.

Table 13-2: Ground Support Categories for Conventional (Drill & Blast) Development

Support Category	Q Value	Estimated RMR76\GSI	Lithological Domain	Advance Length	Ground Support description
Category 1	> 2.0	> 50	Oxide, Chalcocite, Verde, Oracle Granite	4.0 m (13 ft)	2.4 m #7 rebar on 1.2 m x 1.2 m (4 ft x 4 ft) spacing with welded mesh (100 mm / 6 Ga.) to within 1.5 m of sill.
Category 1 (Shotcrete)			Decline Development		Optional (non-systematic) application of 50 mm (2") shotcrete over weldmesh screening; as local rock mass conditions require.
Category 2	0.7 - 2.0	41 - 50	Primary, Lower Range Oxide, Chalcocite, Verde, Oracle Granite	3.0 m (10 ft)	2.4 m #7 rebar on a 1.2 m x 0.8 m (4 ft x 2.5 ft) bolting pattern with welded mesh (100 mm / 6 Ga.) to within 1.5 m of sill.
Category 2 (Shotcrete)			Decline Development and. Railveyor Drifts		Support as above, followed by application of 50 mm (2") shotcrete over weldmesh screening.
Category 3	0.07 - 0.7	20 - 40	Fault Seams/Zones, Leach Cap	2.0 m (6.5 ft)	100 mm (4") shotcrete down to sill (two passes of 50 mm each). Prior to the second shotcrete application (pass): install 2.4 m #7 rebar on a 1.2 m x 0.8 m (4 ft x 2.5 ft) bolting pattern with welded mesh (100 mm / 6 Ga.) to within 1.0 m of sill.
Category 4	< 0.07	< 20	Development Connection from Sed. Zone into Hard Rock (Oxide, Chalcocite, Verde, Oracle Granite). Development through faults	1.5 m (5 ft)	75 mm (3") of fiber-reinforced shotcrete (FRS) down to the sill, followed by 2.4 m #7 rebar, installed with 6 Ga. weldmesh screen on 1.2 m x 0.8 m bolting pattern to within 1.0 m of sill. Install #7 rebar lattice girders, spaced each 2.4 m, and encased in 150 mm (6") standard (not FRS) shotcrete. Spiling (forepoling) pre-support may be required.

Notes: **1.** Due to limited excavation stand-up time, support category 3 and support category 4 are to be installed with minimum delay (typically immediately following completion of drift blast and mucking cycle). **2.** Install galvanized weldmesh screen in permanent development. Non-galvanized ("black") weldmesh can be used in temporary development.

Table 13-3: Ground Support Categories for Roadheader Development

Support Category	Q value	Anticipated Visual Indications of Rock Mass Stability (Example)	Advance Length	Ground Support Description & Sequence
RH 1	> 2.0 (GSI >50)	Smooth excavation surface, minimal (minor) structural disturbance.	7 m	Initial support pass = standard shotcrete application (50 mm / 2 in) onto excavated rock surfaces (down to sill). Second support pass = installation of 2.4 m #7 rebar on 1.2 m x 1.2 m (4 ft x 4 ft) pattern to within 1.5 m of sill with welded mesh (100 mm / 6 Ga).
RH 2	0.7 - 2.0 (GSI 41 – 50)	Irregular to smooth excavation surface, release of localized rock blocks (kinematic (wedge) instability).	7 m	Initial support pass = standard shotcrete application (50 mm / 2 in; non-FRS) onto excavated rock surfaces (down to sill). Second support pass = installation of 2.4 m #7 rebar on a 1.2 m x 0.8 m bolting pattern with welded mesh (100 mm / 6 Ga) to within 1.5 m of sill.
RH 3	0.07 - 0.7 (GSI 20 – 40)	Over-excavation of roadheader profile due to localized rock mass instability and the presence of weak rock seams (example: fault zones). Unravelling risk if left unsupported for 72 hours following initial excavation.	7 m	100 mm (4 in) standard shotcrete down to sill (two passes of 50 mm each). Prior to the second shotcrete application (pass): install 2.4 m #7 rebar on a 1.2 m x 0.8 m (4 ft x 2.5 ft) bolting pattern with welded mesh (100 mm / 6 Ga) to within 1.0 m of sill.
RH 4	< 0.07 (GSI <20)	Over-excavation of roadheader profile due to rock mass instability. Unravelling/caving risk if left unsupported for 24 hours following initial excavation. Presence of fault.	4 m	75 mm (3 in) of FRS down to sill, followed by installation of 2.4 m #7 rebar on 1.2 m x 0.8 m spacing with welded mesh (100 mm / 6 Ga) down to within 1.0 m of sill. Install #7 rebar lattice girder spaced each 2.4 m and encased in 150 mm (6 in) standard shotcrete. Spiling (forepoling) pre-support as required.

Notes: Due to limited excavation stand-up time, Support Category RH3 and Support Category RH4 is to be installed with minimum delay, (typically: immediately following completion of drift advance and mucking cycle). Install galvanized weldmesh screen in permanent development. Non-galvanized (“black”) Weldmesh can be used in temporary development.

13.5 Secondary Support

As a minimum, secondary ground support will be required to reinforce stope brow areas. Brow support will consist of three parallel rings of cablebolts spaced approximately 2.5 m apart. The initial cablebolt ring will be located approximately 2 m from the planned stope brow. Systematic cablebolting of the secondary ore drifts is likely required due to wedge potential, reduced rock mass quality, and/or rock mass relaxation (stress relief) at the stope sill horizon. Cablebolting of secondary stopes drifts may require installation of 0-Gauge weldmesh straps ("screen straps") with a tensioned bearing plate. The screen straps would be installed across the drift, with each cable ring.

13.6 Boxcut & Decline Access

The twin portals are each planned at 7.26 m wide x 5.44 m high (23.8 ft x17.8 ft) in the alluvium, will be approximately 27.3 m (89.5 ft) apart, and is planned to be excavated from a trapezoidal-shaped 60 m deep boxcut, with parallel sides measuring 300 m at the top of the box cut and 44 m at the entrance of the boxcut for the ramp decline. The decline will be at 15% downgrade to a depth of 60 m below the surface to begin the entrance portal for the underground mine. The distance between portal entrance at the entrance of the boxcut ramp will be 405 m. The distance from the top of the box cut at surface elevation to the entrance of the boxcut at surface elevation will be 500 m.

13.7 Groundwater

A discussion on groundwater is provided in Section 7.4.

13.7.1 Faults & Grouting Program

Pre-grouting of declines will occur for locations that pass through water-bearing fault zones using drilling holes approximately 235 m from above. The fault zones of the Santa Cruz Copper Project are high hydraulic conductivity zones with weaker rock mass characteristics.

A grouting program was developed to address water-bearing fault zones during mine development. At the end of the mine life, stopes that vertically align with the water-bearing fault zones will be paste filled to seal the water-bearing structure. Following this backfilling procedure, remnant stopes will be mined from these locations.

13.7.2 Activated Colloidal Silica Injection

The injection of activated colloidal silica to reduce water flow around development excavations was evaluated by Geosyntec for the project. During initial decline development where the twin declines pass through the saturated Gila Conglomerate (a zone of high hydraulic conductivity), standard ramp dewatering methods—activated colloidal silica gel injection will be used to support de-risking of early development.

13.7.3 Ramp Dewatering

During initial decline development and until major pumping stations with boreholes to surface are established, development contractors will use face dewatering pumps and temporary pump skids with pump boxes in a daisy-chain configuration. Peak maximum inflow from 2026 to 2030 is expected to be 379 L/s (6,000 gal/min) during twin decline development. Once major pumping stations are established level sumps will be developed in each decline to collect ramp inflows and pump to the nearest major pumping station.

13.7.4 Mining Area Dewatering

Peak maximum inflow during the mine life is expected to be 505 L/s (8,000 gal/min). Typically, water on mine levels will flow in ditches along level development at a 2% negative gradient to a gravity sump near the level entrance. Gravity sumps will use twin boreholes to gravity transfer water to the sump on the level below. On levels and locations in the mine where gravity flow cannot be achieved, level sumps will be developed. These level sumps will be set up as dirty water systems, utilizing Wilson-style sumps with submersible pumps. Each level includes two Wilson sumps and submersible pumps for redundancy.

At the level directly above the major and minor pumping stations, de-grit plants will be used in an independent excavation, with gravity-fed and pumped water to a main pipe header that feeds a de-grit plant rated to handle peak flows. Solids will be extracted from the water via a screw conveyor, where they can be collected. From the de-grit plant, the filtered water will be directly piped to twin boreholes that feed into the live sump of major/minor pump stations.

The major and minor pump stations will include two multi-stage centrifugal pumps, each rated for peak inflows with a 25% surge capacity. Pumps will be arranged in an operating/standby configuration. The pumps will be fed by flooded suction using a live sump contained behind a concrete dam wall. The live sump is sized to optimize the pump cycle times. On main collection levels, major/minor pump stations will have a large excavation sized for 6 hours of peak water inflows specific to each station location.

Mine water will be pumped from the major/minor pump stations to surface via cased boreholes. For pump stations located deep within the mine, intermediate pump stations will be used to limit borehole lengths. The dewatering system of the East Ridge orebody will be independent from the Santa Cruz orebody. At the East Ridge orebody, level sumps/minor pump stations will be located at the bottom of each mining horizon and will feed one dedicated major pump station to surface. Major pump station locations for the Santa Cruz orebody have been strategically placed based on mining production horizons and schedule; the Verde orebody will use the dewatering infrastructure of the Santa Cruz orebody. In horizons with high dewatering inflows, two major/minor pump stations have been included in the design to mitigate risk of failure at any single pump station in the system.

13.8 Mining Areas

13.8.1 Dilution

In the longhole stope and cut-and-fill design stage, the planned excavation shapes often cannot perfectly align with the mineralized outlines. Due to the extensive tabular nature of the Santa Cruz orebody, internal stopes may experience unplanned dilution from adjacent mineralized stopes or backfilled stopes.

In the case of the East Ridge orebody, the mineralization is also tabular, and for most zones within this deposit, external dilution consists of uneconomic material from the periphery of the mining block. Therefore, internal dilution (or planned dilution) in the East Ridge mining region primarily depends on the geometry of the orebody and the minimum mining width. This type of dilution is predominantly observed in longitudinal access stopes. Dilution may be controlled and/or minimized through suitable blasting practices.

The dilution percentage is defined as tonnes of dilution material divided by tonnes of mineralized material, as follows:

$$\text{Dilution \%} = \frac{\text{Tonnes of Dilution Material}}{\text{Tonnes of Mineralized Material}} \text{ X } 100$$

13.8.2 Longhole Stoping Dilution

Santa Cruz orebody longhole stopes are based on a fixed height of 30 meters, East Ridge a level height of 15 meters, and the Verde domain a level height of 20 meters. Perimeter stopes in both orebodies contain internal dilution, and all stopes include unplanned dilution from neighboring previously-mined backfilled stopes.

A primary (planned) dilution of 3% was selected for all longhole stopes. A secondary (unplanned) dilution of 9% was selected for both longhole stoping and drift-and-fill production wireframes. Dilution is expected primarily from stope walls adjacent to pastefill with 3% for primary stopes with a single face and 9% for secondary stopes with three faces.

13.8.3 Drift-and-Fill Dilution

The minimum mining width for drift-and-fill mining in East Ridge is 5 meters. Drift-and-fill development contains limited internal dilution within the proposed mining shapes on the perimeter of the target zone of mineralization. A dilution of 5% was applied to drift-and-fill production shapes versus longhole stoping methods (9% secondary dilution).

13.8.4 Mining Recovery Factor

Mining recoveries and dilution percentages were determined based on rock mechanics considerations, empirical methods, data from operating underground mines in the region, and BBA subject matter expertise.

Table 13-4 summarizes the forecast mining recoveries by orebody and stope type.

Table 13-4: Summary of Mining Recoveries by Stope Type

Stope Type	Value	Unit
Recovery Downhole Stopes Santa Cruz / Verde	94	%
Recovery Uphole Stopes	85	
Recovery Sill Pillar Stopes	40	
Recovery Drift-and-Fill	94	
Recovery East Ridge Stopes	90	

13.8.5 Development Allowance

An additional development allowance of 5% was added to all underground mine development which including, level accesses, main level haulage drives, and remucks to account for back slashes, side slashes, and additional infrastructure excavations added in medium- and short-range mine design.

13.9 Mine Design

The final mine outline is shown in Figure 13-2.

13.9.1 Santa Cruz Orebody – Transverse Longhole Stoping

Longhole stopes at the Santa Cruz orebody will vary in size between the orebody and geotechnical region. Table 13-5 shows stope sizes.

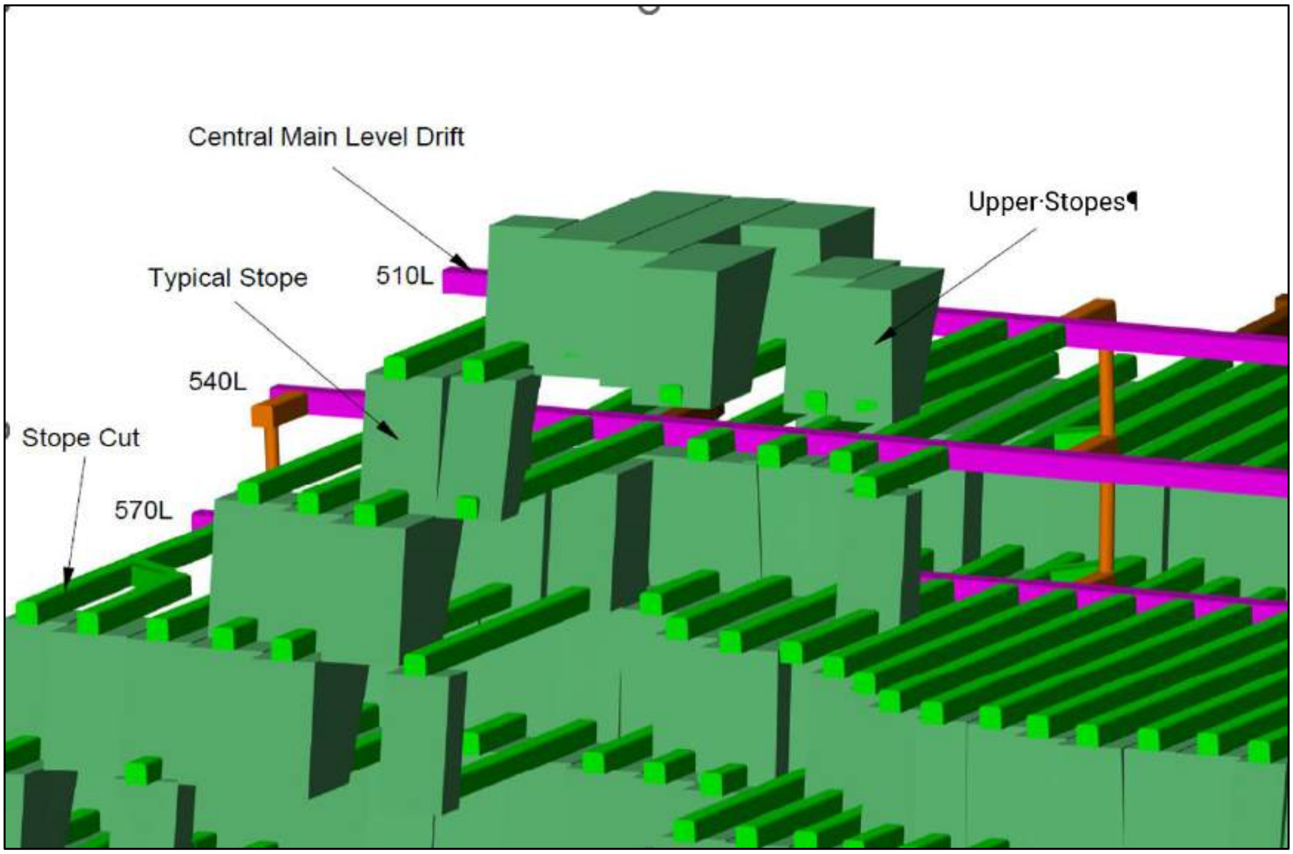
Table 13-5: Santa Cruz Orebody Stope Sizes

Domain	Geotechnical Region	Primary / Secondary (Height x Width x Length)
Cyanide	North	P: 30 m x 12 m x 17 m S: 30 m x 15 m x 20 m
	South	P: 30 m x 15 m x 23 m S: 30 m x 18 m x 25 m
Oxide	North	P: 30 m x 12 m x 13 m S: 30 m x 15 m x 15 m
	South	P: 30 m x 15 m x 15 m S: 30 m x 18 m x 17 m

Each stope will have a 5 meters x 5 meters (W x H) access drift above and below. For typical stopes, production drilling will be completed from the access drift above; however, in certain locations, upper stopes can be drilled from below. These stopes have been assigned a lower mining recovery factor.

Transverse stopes will be developed perpendicular (transverse) to the strike of the orebody (Figure 13-4).

Figure 13-4: Transverse Longhole Stoping in the Santa Cruz Orebody (Looking Southwest)



Source: BBA, 2025.

Access drifts will be driven from the hanging wall, and stopes will be mined across the full width of the orebody, creating large, open voids. Primary stopes will be mined first, leaving unmined ore (secondary stopes) between them for support. Once a primary stope is mined out, it will be backfilled with pastefill to provide structural support. After the pastefill has cured and reached the required strength, adjacent secondary stopes can be mined, using the filled primary stopes as stable walls. In the case of Santa Cruz, a central access drift will be used instead of a conventional footwall drift to keep development in stable rock mass conditions and increase available production areas.

After ore extraction, a plug of high-binder paste backfill will be placed first, followed by mass fill with a lower binder content. The pastefill will be allowed to cure, reaching sufficient strength to act as a working platform and to support subsequent mining operations. Paste backfill strength will be verified through paste backfill sampling and laboratory testing before advancing to the next mining phase.

Transverse longhole stoping in the Santa Cruz orebody will follow a lateral and vertical chevron primary-secondary mining sequence, retreating from the hanging wall. A pastefill plant on surface and an underground reticulation system will supply paste to backfill open stopes. A central main level drive with perpendicular stope cuts to the northeast and southwest will be used to access production stopes. This central access design helps achieve the 20,000 to 22,000 t/d average production rate by increasing the quantity of available stoping locations.

13.9.2 Verde Orebody – Longhole Stoping

The Verde mine levels will be accessed via the Santa Cruz mine levels at similar elevations. Verde orebody access will pass through a sedimentary conglomerate zone where a grouting program will be required to reduce water inflow. Due to the challenging geological setting, development in Verde will be limited to main access drifts and top and bottom stope cuts. Level sumps and electrical stations will be used on the closest Santa Cruz mine level.

Maximum stope dimensions for the Verde orebody are planned to be 20 m x 15 m x 20 m (H x W x L).

13.9.3 East Ridge Orebody– Longitudinal Longhole Stoping

Stope dimensions for the East Ridge orebody are as follows:

- Longhole stope dimensions: 15 m x 10 m x 8 m (H x W x L)
- Ore zone areas with hanging wall dip of less than 55° will be mined with alternative mining methods (drift-and-fill)

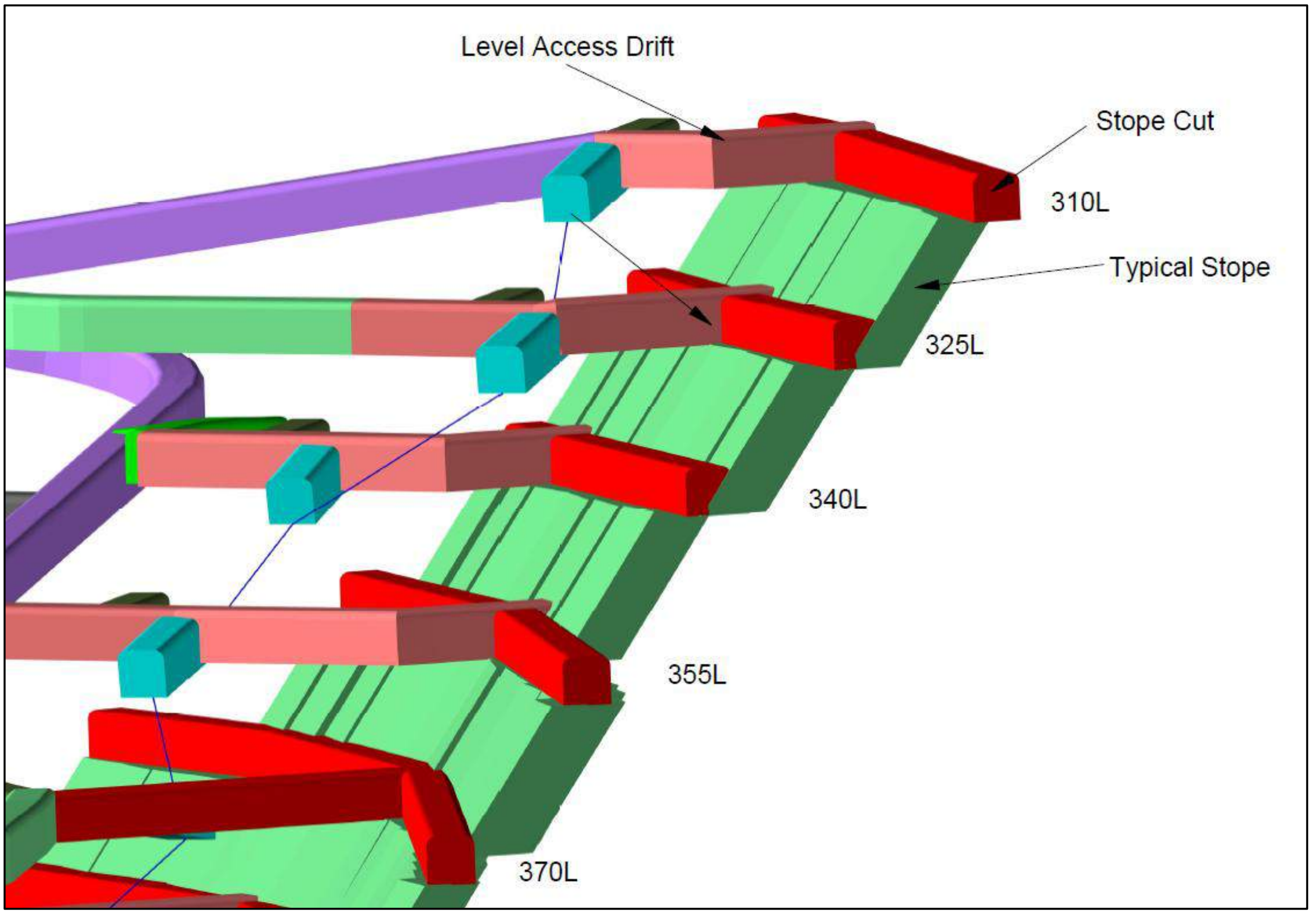
Longitudinal stoping is an underground mining technique primarily used for narrow to moderately wide, steeply dipping orebodies (Figure 13-5).

In this method, stopes are developed parallel to the strike length of the orebody, allowing for continuous extraction along the orebody's length. The orebody is divided into longitudinal panels along its strike. Each panel is mined sequentially from one end to the other, and from the bottom upwards (overhand).

After a stope is mined out, the void is filled with pastefill. The pastefill is pumped into the stope to provide ground support and allow adjacent or overlying stopes to be safely mined. Longitudinal stoping with pastefill is particularly effective for narrow vein orebodies with steep dips as present in certain lenses of East Ridge.

The East Ridge orebody also contains zones suitable for transverse longhole stoping, like the Santa Cruz orebody, where the orebody geometry is sufficiently wide for this approach.

Figure 13-5: Longitudinal Longhole Stoping in East Ridge Zone (Looking Northwest – Not to Scale)



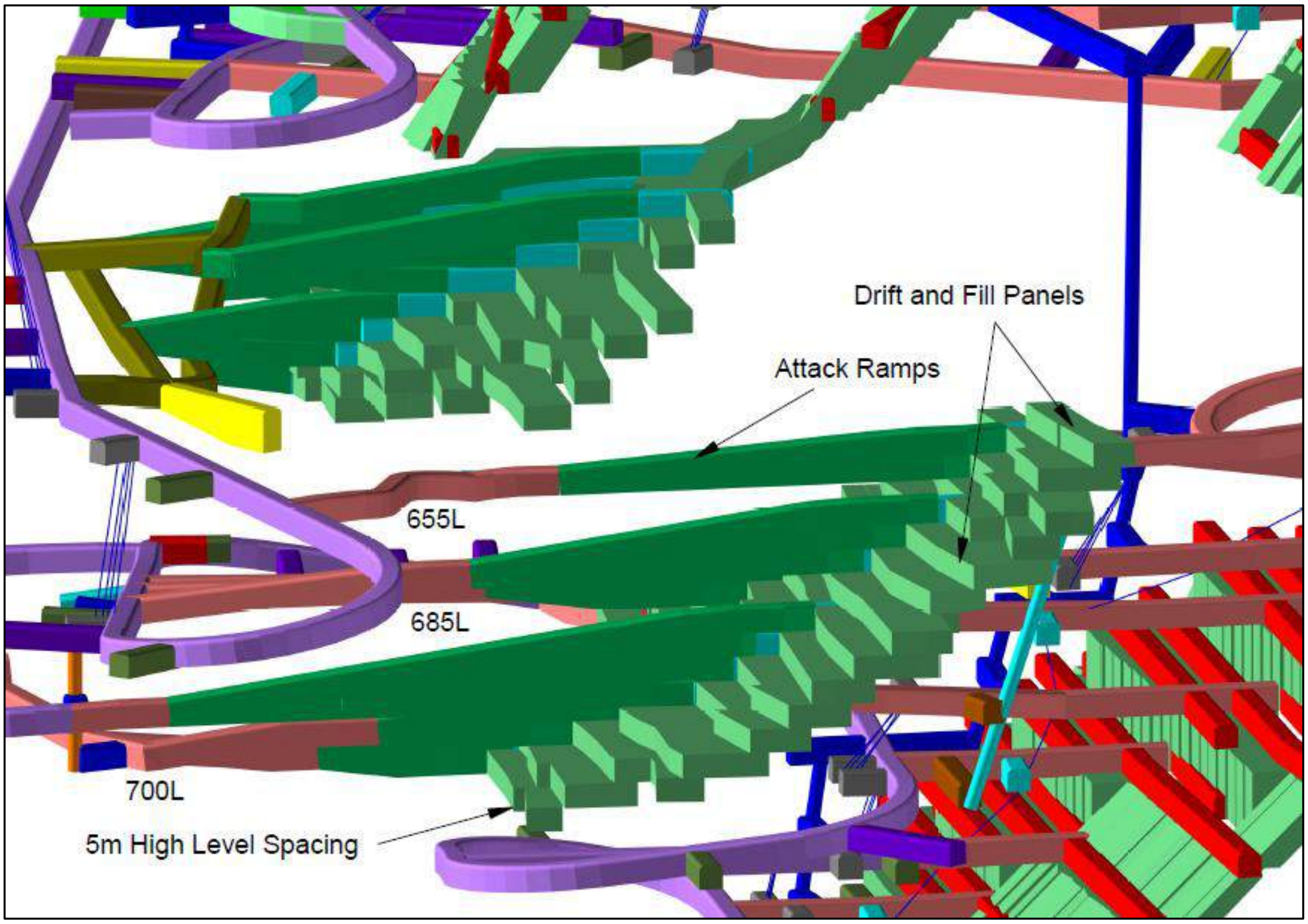
Source: BBA, 2025.

13.9.4 East Ridge – Drift-and-Fill

Bottom-up drift-and-fill mining is an underground mining technique used to extract orebodies that are narrow, irregular, or weakly consolidated. This method involves mining horizontal drifts of the orebody, starting from the lowest level, and progressing upwards (Figure 13-6). After each drift is mined out, the resulting void will be backfilled using paste backfill before the next slice above is mined.

Mining begins at the bottom of the orebody, where drifts will be excavated along the ore zone. After a drift is mined, it will be backfilled with paste backfill. This material will be pumped into the mined-out drift, where it will set and provide ground support. Once the paste backfill has cured and is strong enough to support equipment and personnel, mining will advance to the next drift above. The filled lower drift will serve as a stable working platform for the next level.

Figure 13-6: Drift-and-Fill Mining in the East Ridge Zone (Looking Northwest – Not to Scale)



Source: BBA, 2025.

Due to the challenging ground conditions present at East Ridge, drift-and-fill mining offers several advantages for specific lenses. These advantages include smaller open spans during mining, sequential backfilling to maintain ground stability and selective mining for the challenging orebody geometry. The selective nature of drift-and-fill mining minimizes dilution and maximizes ore recovery.

13.9.5 Development

Initial twin decline development is planned with a roadheader and tunnel excavator where the design passes through sedimentary units and maintains a straight trajectory with sufficient clearance for the roadheader to operate. During decline development in sedimentary units, lattice girders and extensive re-enforcement will be used due to the low strength of the material. In sedimentary units, a near-circular profile was selected for strength in the presence of high pore water pressure.

Conventional drill and blast development is planned for internal ramps and mine level development in the Santa Cruz, Verde, and East Ridge orebodies. Drill and blast methods allow for higher productivity in multiple heading scenarios and for equipment to operate in tighter radius turns. Table 13-6 summarizes the lateral and vertical development dimensions.

Table 13-6: Santa Cruz Mine Lateral & Vertical Development Dimensions

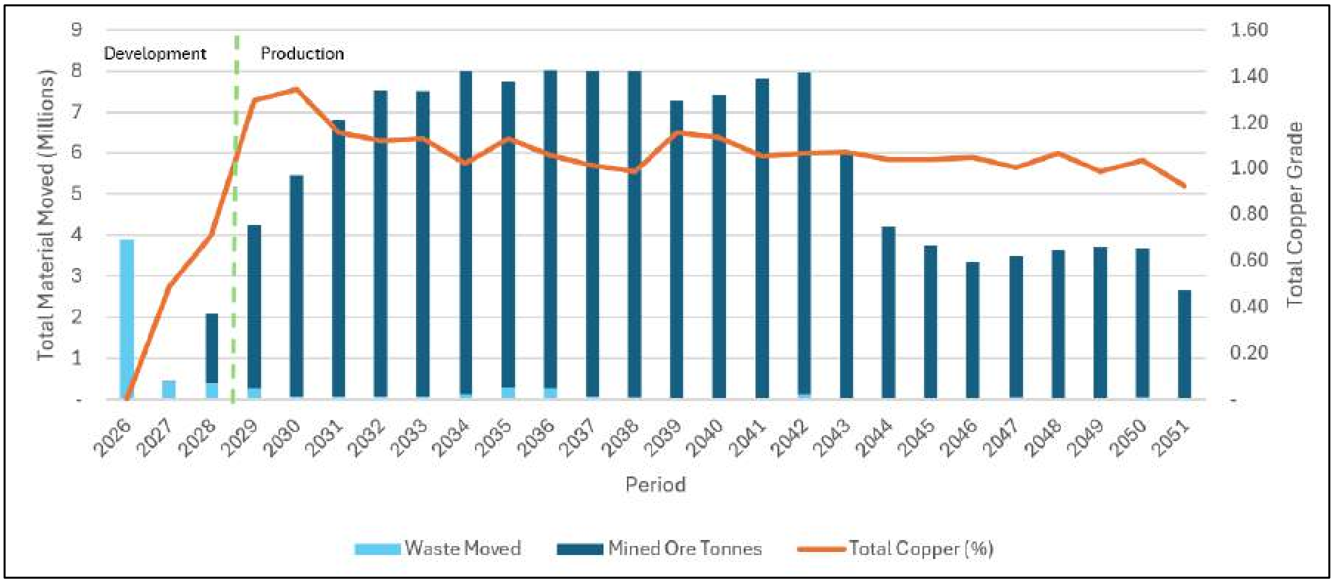
Development Activity	Dimensions
Lateral Development	
Decline	
Decline Access, Decline Railveyor, Decline Crosscuts, Electrical – Railveyor	Decline Alluvium 7.2 MW x 5.4 MH
Decline Access, Decline Railveyor, Decline Crosscuts, Electrical – Railveyor	Decline Bedrock Class 4 5.7 MW x 5.6 MH
Decline Access, Decline Crosscuts	Arch 5.0 MW x 5.5 MH
Decline Crosscuts, Electrical – Railveyor, Roadheader Pulloff	Arch 5.0 MW x 5.0 MH
Infrastructure	
Batch Plant Storage, Electrical – Battery Charge Station, Electrical – Conveyor Switchroom, Electrical – Mine Switchroom, Electrical – Power Substation, Electrical – Power Substation, Electrical – Primary Switchroom , Electrical – Primary Switchroom, Electrical – Pump Switchroom, Electrical – Secondary Switchroom, Electrical – Temporary Switchroom, Latrine, Magazine – Caps, Magazine – Powder, Orepass Access, Remuck, Services Station, Stope Cut, Storage – Ballast, Storage – Construction, Storage – Development, Sump – Level, Sump – Pump Room, Vent Access, Electrical Hole Receiving Station.	Arch 5.0 MW x 5.0 MH
Electrical – Temporary Switchroom	Decline Alluvium 7.2 MW x 5.4 MH
Electrical – Temporary Switchroom	Decline Bedrock Class 4 5.7 MW x 5.6 MH
Level Access, Main Level Haulage Drive, Conveyor Level, Ramp, Refueling Station	Arch 5.0 MW x 5.5 MH
Refuge Station	Arch 6.0 MW x 5.0 MH
Sump – Level	Arch 5.0 MW x 6.67 MH
Sump – Pump Room	Arch 6.5 MW x 6.5 MH
Sump – Pump Room	Arch 5.5 MW x 5.5 MH
Sump – Pump Room	Arch 7.5 MW x 8.5 MH
Electrical Hole Receiving Station	Arch 6.0 MW x 5.0 MH
Vertical Development	
Orepass, Vent Raise	Round 3.0 m Diameter
Shaft (Blind Bore Development)	Round 6.5 m Diameter
Vent Raise	Round 4.0 m Diameter
Hole – Dewatering	Round 0.15 m (6")*
Hole – Dewatering, Hole – Electrical, Hole – Pastefill	Round 0.30 m (12")
Hole – Dewatering	Round 0.35 m (14")

Note: * Based on final groundwater model, 10-inch lines will be used where 6-inch lines are shown in model. This is captured in the cost model.

13.10 Production Schedule

The Santa Cruz life-of-mine is expected to be 23 years, from 2029 to 2051, following three years of construction. Figure 13-7 and Table 13-7 shows the production included in the mine plan. Remnant stopes will have higher associated mining costs due to operational challenges. The “Ore” column represents the total development and production ore for Santa Cruz, Verde, and East Ridge orebodies. Figure 13-8 shows tonnes of material mined over the life of mine from the orebodies and development.

Figure 13-7: Santa Cruz Tonne – Grade Graph

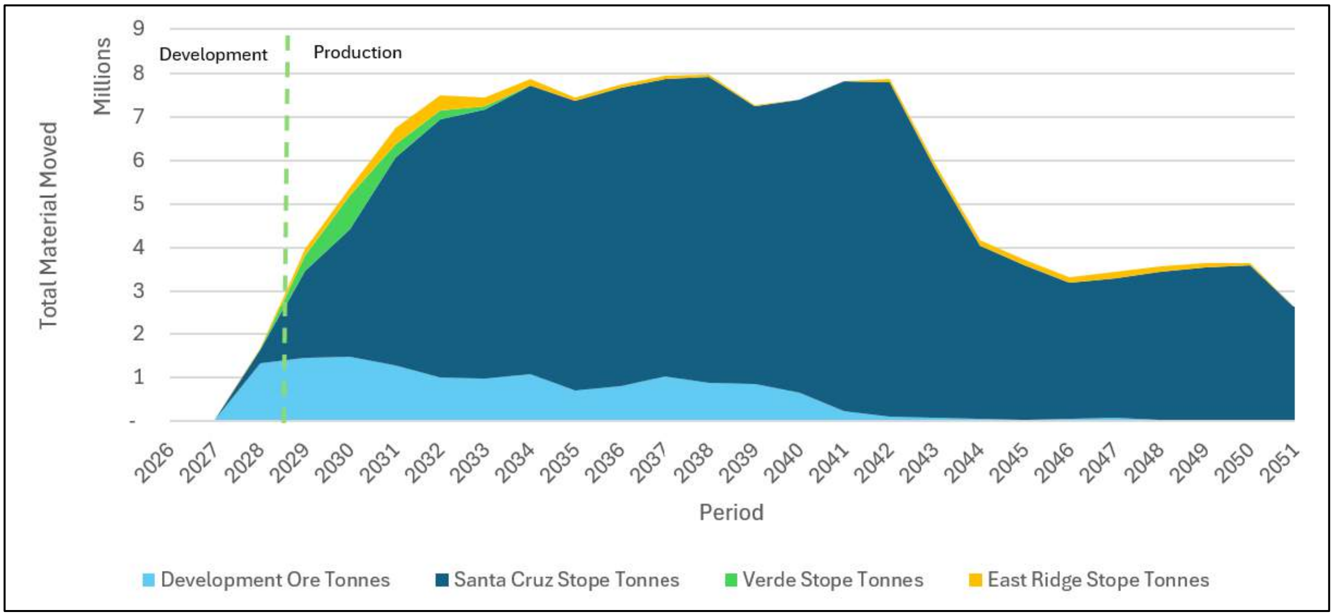


Source: BBA, 2025.

Table 13-7: Santa Cruz Production Summary

Year	Ore (kt)	Total Copper (%)	CNCu (%)	AsCu (%)	Cu_Res (%)	Ratio ASCU:TCU
2026	0	0.00	0.00	0.00	0.00	0.00
2027	28	0.48	0.05	0.34	0.10	0.70
2028	1,673	0.71	0.15	0.51	0.05	0.71
2029	3,973	1.29	0.26	0.99	0.04	0.77
2030	5,377	1.35	0.44	0.86	0.04	0.64
2031	6,737	1.15	0.51	0.61	0.04	0.53
2032	7,492	1.12	0.50	0.56	0.06	0.50
2033	7,439	1.13	0.52	0.56	0.06	0.49
2034	7,875	1.02	0.35	0.64	0.03	0.63
2035	7,441	1.13	0.39	0.72	0.02	0.64
2036	7,740	1.06	0.29	0.75	0.02	0.71
2037	7,937	1.01	0.38	0.58	0.05	0.57
2038	7,961	0.99	0.43	0.52	0.04	0.52
2039	7,256	1.15	0.59	0.49	0.08	0.42
2040	7,400	1.14	0.53	0.53	0.07	0.46
2041	7,819	1.05	0.48	0.51	0.06	0.49
2042	7,851	1.07	0.49	0.52	0.06	0.48
2043	5,956	1.07	0.34	0.68	0.05	0.64
2044	4,177	1.04	0.51	0.50	0.03	0.48
2045	3,732	1.04	0.31	0.67	0.06	0.65
2046	3,338	1.05	0.31	0.67	0.06	0.64
2047	3,453	1.00	0.26	0.69	0.05	0.69
2048	3,586	1.07	0.36	0.65	0.06	0.60
2049	3,655	0.99	0.41	0.52	0.06	0.53
2050	3,643	1.04	0.29	0.67	0.08	0.65
2051	2,636	0.92	0.14	0.66	0.12	0.71
Total	**136,173**	**1.08**	**0.41**	**0.62**	**0.05**	-

Figure 13-8: Santa Cruz Tonnes of Mined Material



Source: BBA, 2025.

13.11 Mining Operations

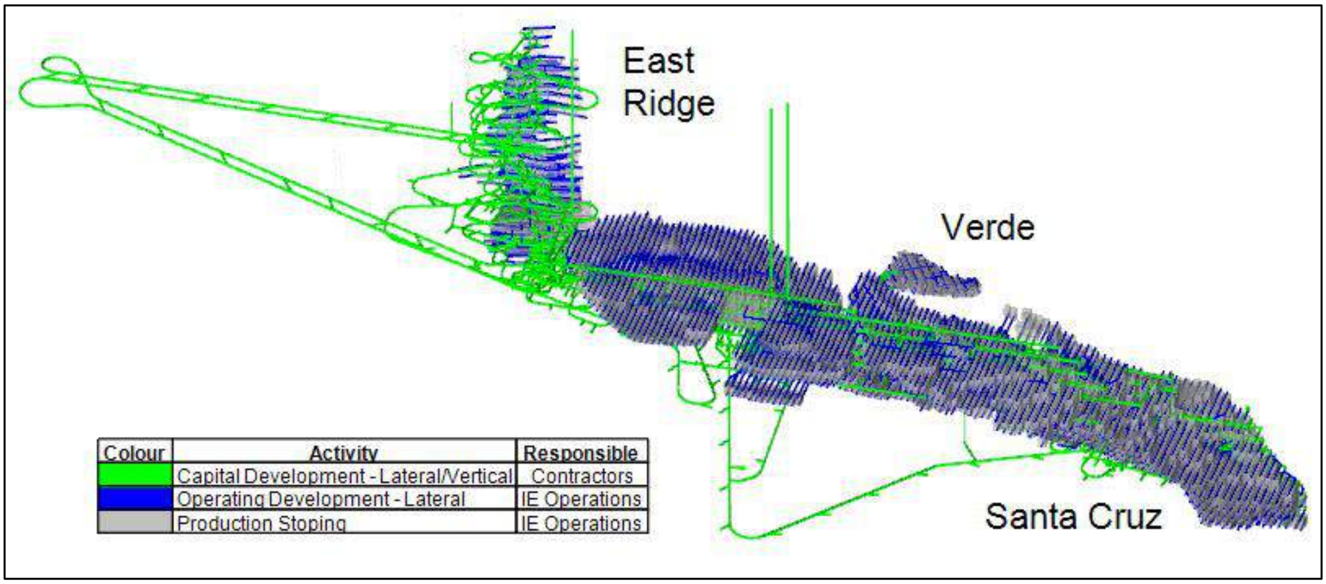
13.11.1 Capital vs. Operating Development

Santa Cruz mine development will be divided between mining contractors for capital development, and Ivanhoe Electric personnel for operating development and production (Figure 13-9).

Contractor mining companies will bring experienced personnel and offer a short ramp-up period during early stages of the project. Contractor mining will be used for the boxcut excavation, lateral decline development with a roadheader, and drill and blast (capital) lateral development. Contractors will also be used for vertical development activities, including drilling, shaft sinking, and raiseboring (i.e., ventilation shafts, ventilation raises, orepasses, electrical, paste and dewatering service holes).

Ivanhoe Electric operations personnel will be responsible for production activities, including stope cut development excluding the first 13 m of the haul drift , truck haulage, production drilling, and stope mucking.

Figure 13-9: Santa Cruz Mine Capital vs. Operating Development & Production



Note: Isometric view looking Northeast. Source: BBA, 2025.

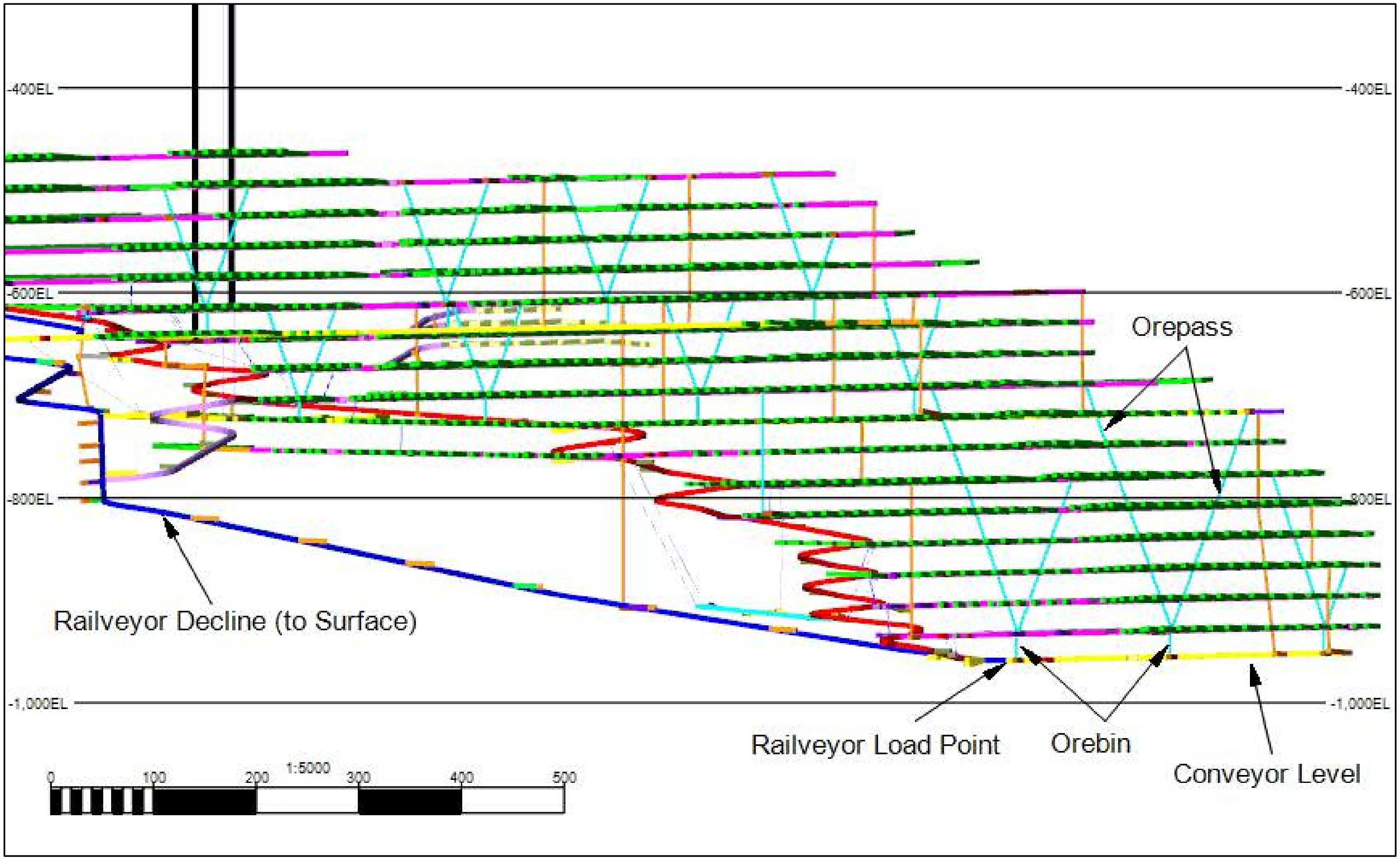
13.11.2 Underground Material Handling System

In the Santa Cruz zone, ore will be transported by LHD from stopes to an orepass system, transferred by chute to a conveyor system, and then loaded on the Railveyor and brought to surface. At East Ridge, LHDs at stopes and drift-and-fill zones will load haul trucks, and material will be trucked to a dedicated Railveyor load point and brought to surface by the Railveyor.

Due to the planned high production rate from the Santa Cruz deposit, four to eight orepass accesses will be required on each level, depending on the overall length of the level. Orepasses are designed in V-formations with a 70° dip and 3 m diameter. This design increases the number of accesses available for production on levels above the conveyor loading level. Orepasses will be steel-lined in high-impact zones near the top of the ore bins. Steel-lined ore bins with average height of 40 m are planned at the bottom of each orepass system. Ore bins will feed a chute system to a small picking conveyor; the picking conveyor will then transfer material to the main conveyor on a conveyor loading level. Material will be transported on the conveyor system to the intersection with the Railveyor decline where material is loaded into Railveyor cars.

Self-cleaning magnets will be installed strategically at material transfer points to remove tramp steel introduced from mining activities. Conveyor levels will contain three to four ore bins depending on level length, and multiple conveyors legs for on-demand operation of certain orepass/ore bin systems as required for production. Figure 13-10 illustrates the material handling overview including the designed orepass system.

Figure 13-10: Santa Cruz Orepass System – Section View Looking Northeast



Source: BBA, 2025.

The Railveyor system is planned as a loop hybrid system. After loading, each train will travel forward to the unloading point. Once empty, the train will autonomously travel back to the loading point on a return track.

In the initial capital cost estimate, the Railveyor system includes drive station mechanical and electrical components, train cars, a 40 lb/yd steel track and associated materials, and control system components (i.e., communication cables, PLCs). The system will be capable of handling an average of 22,000 t/d production under ideal operating conditions. Mine production rates will fluctuate depending on the quantity of available production areas at different stages in the mine schedule. It is expected that the higher system capability of 22,000 t/d will be required to achieve a mine average production rate of 20,000 t/d during peak production years.

13.11.3 Backfill

Cemented paste will be used as the primary means of backfill to support the mining cycle and allow excavation of the adjacent voids. Cemented rockfill utilizing waste rock from the decline development will be used while stoping is ramping up through Q1 2029 and backfill demand is low. This coincides with initial availability of spent ore from the on/off pad as feed material for the paste system. Cemented paste backfill produced from milled spent ore will then be used for the remainder of the mine life. The milled spent ore requires conditioning prior to use in the backfill system to establish suitable properties for use as pastefill.

Mine backfill demand ramps up over the first two years of production (2029 and 2030) to ~1.6 Mm^3 of voids to be filled in 2030. During this initial phase, a single paste backfill production module and dedicated 8-inch pipeline underground distribution system with a design capacity of 250 m^3/h is planned. In 2030, the estimated annual paste plant utilization peaks at approximately 74% for one module. A second backfill production module and parallel 8-inch pipeline underground distribution system is planned to start production by the end of 2030. Backfill demand increases to nearly 2.3 Mm^3 in 2031 and levels off around 3 Mm^3 per year over the remainder of the life of mine.

A paste backfill system rarely operates at a fixed operating point and the inputs into the system will naturally change through variation in the orebody and what is upstream of the paste plant. It is important to include flexibility within the system to accommodate for varying paste plant feeding material properties, paste backfill rheology, and other changes in process parameters. For the routing and paste pump pressure capacity of the underground distribution system, a yield stress range of between 150 and 450 Pa is specified. The expected paste solids concentration is in the range of 72% to 76% solids by weight for milled spent ore.

13.11.3.1 Milled Spent Ore Pastefill

Paste backfill testwork was completed on three milled spent ore samples produced at laboratory scale. A 300 to 500 µm top size was demonstrated to contain adequate fines to produce a stable paste and was carried forward in the design. Mineralogy consists primarily of quartz (~50%) and feldspars (~35%) with low contents of reactive clays, micas, and sulfides and are not expected to inhibit paste backfill strength gain. Although the use of milled spent ore as a paste plant feed material is not common, the material did not exhibit any problematic material properties or chemistry hindering backfill performance given neutralization and chloride washing are completed upstream.

Ivanhoe Electric has garnered interest from suppliers to specifically provide slag cement for the paste backfill requirements. Paste testwork from the previous project study that used tailings produced from a milling, leaching and flotation process flow sheet for pastefill feed material is still considered a valid proxy for the milled spent ore pastefill feed as the mineralogy, chemistry and particle condition post washing and neutralization are similar. This UCS testwork with slag cement has been carried into the binder usage estimate, noting that: a) The tailing from the previous study was milled to a finer PSD with the coarsening of the milled spent ore demonstrated though testwork to be slightly beneficial to paste backfill strength gain; b) Commercial slag cement is preblended with alkali activators and a ratio of cement clinker which will differ between suppliers; c) Particularly for this paste backfill application, sufficient cement clinker must be present to achieve the early cure times required for the mining cycle and to prevent potential retarding of the cement hydration from residual chlorides and sulfates levels in the spent ore. This will need further testing prior to implementation, which is planned to proceed immediately post-study.

Spent ore requires chloride washing, pH neutralization with lime, and milling to produce a suitable feed material for paste. The spent ore is milled through an open circuit ball mill (no recirculation or cyclone sizing) to produce a high solids concentration discharge. The solids and water inputs are metered to maintain sufficient solids to feed the paste circuit without the requirement for dewatering at the paste plant. The mill material will discharge into a hopper and be pumped through an overland pipeline to the paste plant and paste mixer. In the mixer, trim water and binder will be added according to a programmed recipe to produce paste at the desired solids concentration and binder content.

The paste will overflow the mixer into a paste hopper that supplies a hydraulic piston paste pump. The paste will be pumped by pipeline via adjacent boreholes and the underground distribution system throughout the mine to the desired underground stopes. Binder will be delivered from the manufacturer’s terminal to silos at the paste plant for metering into the mixer. A 1,200-tonne storage silo will provide sufficient binder for two days of paste operation with 120-tonne dosing silos providing buffer for metering. A clean water tank will supply water for metering into the mixer and pipeline flushing. A dedicated high-pressure flush pump will flush the underground distribution system when a paste pour is complete or as an emergency backup to clear the underground distribution system.

Two independent, parallel, modules with mixer, binder dosing silo with weigh belt and feeder, paste pump and pipeline will be installed for a combined design capacity of 500 m^3/h. This will allow one or both modules to operate, filling two different stopes at a time.

13.11.3.2 Underground Distribution System

The paste will be pumped from the paste plant through two parallel boreholes (one for each operating paste module) located adjacent to the paste plant. The boreholes will enter the mine in a designated paste cuddy off the interconnecting drift between the Santa Cruz and East Ridge regions. Both pipelines will be routed along the back of the mine drift to Santa Cruz region with a transfer station to allow either line to be connected to East Ridge region through a series of spools. Both lines will be carried down the north side of the Santa Cruz region primarily through interlevel boreholes. At each borehole level breakthrough, a transition in a cuddy will be constructed to allow access for either line to a level or bypass to lower levels. In the lower levels of the mine, where mining occurs bottom up, the pipelines will follow the ramp system until level accesses are developed.

The paste backfill system is designed to operate under full flow conditions to minimize pipeline wear due to free fall and/or slack flow. The selection of the pipeline size is primarily based on ensuring that friction losses are minimized during normal operation.

13.11.3.3 Paste Strength Requirements

Placed paste strength requirements are summarized in Table 13-8.

Table 13-8: Paste Strength Requirements

Strength Requirement	Fill Strength Target (UCS)	Cycle Time for Exposure
Sidewall Exposure – Santa Cruz Domain (30 m)	375 to 500 kPa (15 to 23 m span)	10 to 14 days
Sidewall Exposure – Verde Domain (20 m)	325 kPa (15 m span)	4 to 7 days
Undercut (Sill Exposure) – Plug Pour (15 m High)	1,600 kPa	On exposure
Undercut (Sill) Mass Pour (Above 15 m Height)	Per sidewall exposure/minimum paste strength/cap strength	Per sidewall exposure
Plug (Per Barricade Loading Assumption)	210 kPa	2 days

13.11.4 Grade Control

Grade control will be facilitated using technology integrated into the materials handling system (e.g., cross-belt analyzers). Additionally, production hole sampling and onsite testing at the surface assay laboratory will be used to reconcile results against the mine plan.

13.11.5 Mine Ventilation & Refrigeration

The underground mine ventilation system was designed as a pull system, with the exhaust fans providing the negative pressure to ventilate the mine. All main fans are planned to be installed on surface, at the East Ridge ventilation shaft and the Santa Cruz ventilation shaft #1, while some booster fans will be required to control the ventilation flow underground.

The design ventilation capacity of the system is 940 m^3/s, with the airflow provided from two declines and three ventilation shafts and one short raise feeding the declines close to the portals. Due to the ambient temperatures, the temperatures underground cannot be maintained below the maximum reject temperatures with ventilation only, so mechanical cooling is required. Cooling will be provided at the intakes through the central refrigeration plant with overland insulated piping and bulk air coolers installed adjacent to the portals and at the Santa Cruz shaft #2.

For flexibility and efficient operation of the ventilation system, all main fans and boosters will be equipped with variable frequency drives. This allows the speed of the fans to be adjusted according to the airflow required. The system has been designed to allow ventilation on demand, to monitor and control the ventilation system through automated regulators installed at the internal raise accesses. This ensures that adequate air quality is maintained on all working levels.

13.11.5.1 Airflow Requirements

The Santa Cruz ventilation system is designed to meet the minimum design velocity requirements at each active heading, ensuring sufficient airflow for heat and diesel dilution is provided in compliance with regulatory standards. This approach ensures good air quality and allows for the efficient clearance of mine blast gases.

The airflow requirements for the Santa Cruz mine ventilation system are determined by the greater of 12.5 m^3/s (based on a velocity of 0.5 m/s for a 5 m x 5 m heading) or 0.063 m^3/s per operating horsepower in the active development/production heading. Cooling will be provided as necessary to manage heat. The overall ventilation system is designed for 940 m^3/s to support the planned development and production activities. The ventilation milestones staged requirements are as follows:

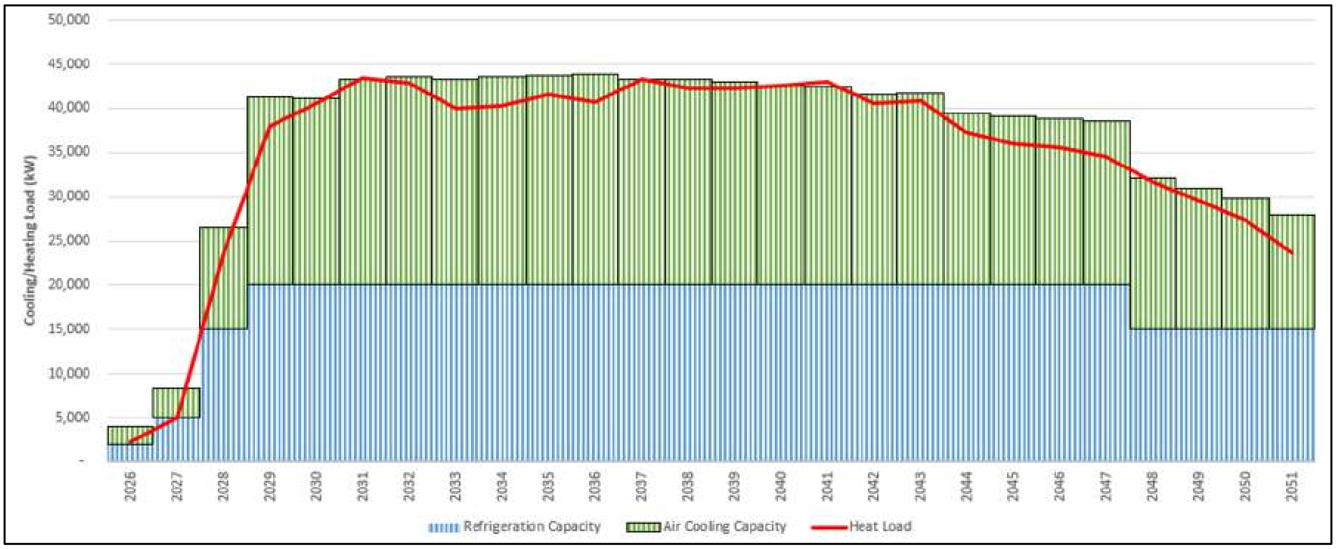
- Stage 1: Declines Development (Q4 2027) .... 165 m^3/s
- Stage 2: East Ridge Shaft Established (Q1 2028) .... 320 m^3/s
- Stage 3: Santa Cruz Shaft #1 Established (Q3 2028) .... 450 m^3/s
- Stage 4: Santa Cruz Shaft #2 Established (Q4 2029) .... 770 m^3/s
- Stage 5: Block 3 Flowthrough Established (2036) .... 920 m^3/s
- Stage 6: Life of Mine (2040) .... 940 m^3/s

The ventilation is provided through two surface main fan stations at the East Ridge shaft and the Santa Cruz shaft #1. These fans will have a bifurcated arrangement, with fans installed in parallel and ducting connecting to a 5.5 m diameter raise.

13.11.5.2 Cooling Requirements

Due to the location of the mine, cooling will be required to condition the intake ventilation air. The cooling requirements considered the heat from the mobile equipment, auto-compression, strata heat, broken rock, fissure water ingress, and electrical loads. The peak ventilation cooling required is 20 megawatts of refrigeration (MWr) as outlined in Figure 13-11.

Figure 13-11: Ventilation Cooling/Heat Load throughout Life of Mine



Source: Stantec, 2025.

Cooling will be provided through a centralized refrigeration plant. The refrigeration plant will have four chillers, each rated to provide 5 MWr of cooling capacity at the bulk air coolers, and four cooling towers to reject the heat from each chiller. The chillers, cooling towers, and bulk air coolers will be staged as additional cooling duty is required by the mine. The refrigeration plant is planned to have a total capacity of 20 MWr, with the bulk air coolers located at the intake portals raise and Santa Cruz Shaft #2. A cooling duty of 10 MWr is planned at each of these locations.

13.11.5.3 System Description

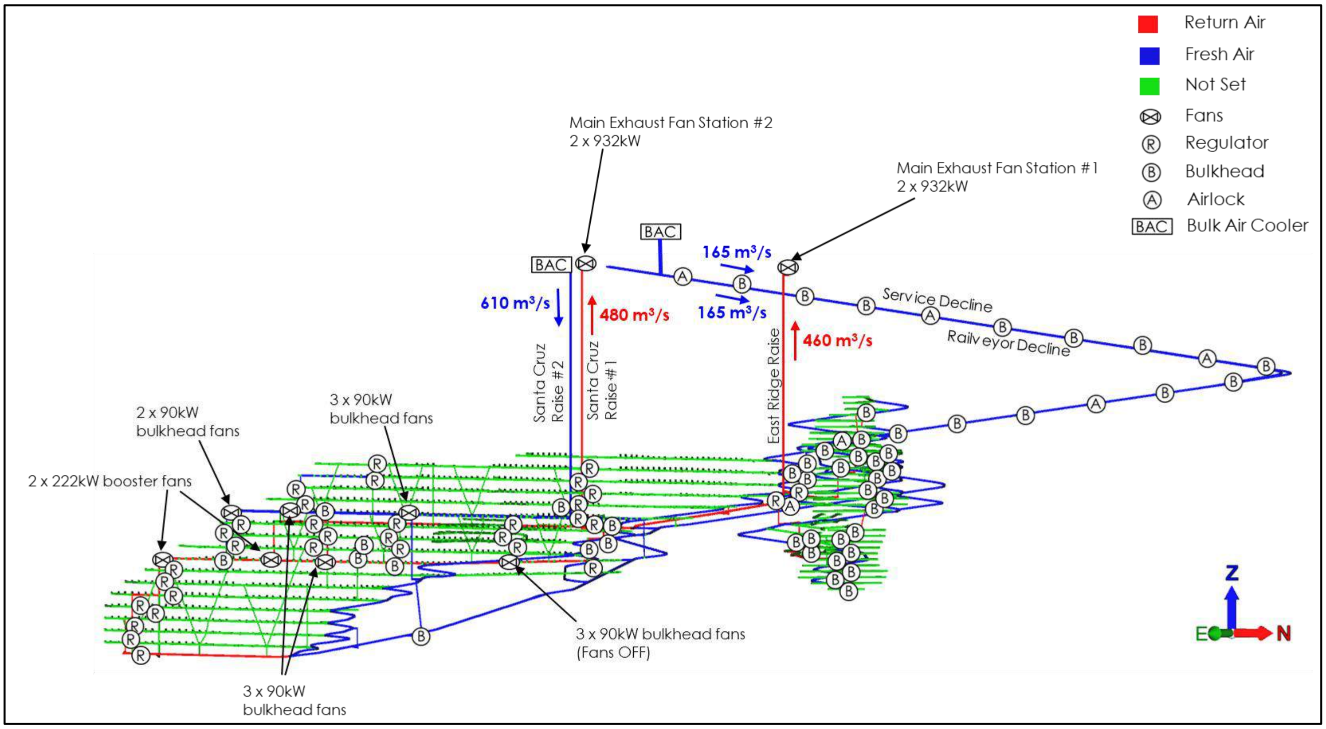
Access to the mine is planned through two declines: a service decline and a Railveyor decline (for handling materials). To support the development of the twin declines, flowthrough ventilation will be established, with fresh air being pushed through one decline and exhausted through the other. The declines will be ventilated through bulkhead fans at the bottom of the short intake raise close to the portals.

Roadheaders are planned for some of the headings. Ventilation for headings being developed with a roadheader will incorporate an exhausting ducted system with a wet scrubber for dust control. The intake air will be conditioned initially with a skid-mounted rental air handling system; this will later be replaced with a permanent bulk air cooler.

The development will proceed in stages, with shafts (East Ridge, Santa Cruz #1, Santa Cruz #2) established to support ventilation and production. Bulkheads, internal raises, and booster fan stations will be installed to direct the ventilation. Some of the bulkheads will include doors to allow access and louver regulators to control the airflow, with air quality stations monitoring the air flow. Auxiliary fans will be installed at the levels and ramps, and ducted to production or development headings as required.

Airflow to the mining areas will be provided through the twin declines and Santa Cruz Shaft #2. The exhaust from the mining areas will be directed either to (1) internal raises onto the conveyor levels and then to the main exhaust shafts; or (2) directly to the main exhaust shafts (East Ridge shaft and Santa Cruz Shaft #1). A schematic showing the planned life-of-mine ventilation is provided in Figure 13-11.

Figure 13-12: Life-of-Mine Ventilation Schematic



Note: For clarity, auxiliary fans / ducts for development and production are not shown. Source: Stantec, 2025.

13.11.5.4 Auxiliary Ventilation

The auxiliary ventilation for the development and production headings[1] is planned to employ a forced ventilation system, with the fans pushing fresh air to the heading from the closest flowthrough ventilation, and exhaust from the heading returning through the drift. The auxiliary fans were sized based on the heading length and the mining activity. For production headings, a single auxiliary fan will be capable to support two active headings. Dampers will be installed within the ducting to control the flow to the heading, with 15 m^3/s provided to each active production heading. One auxiliary fan will be capable of supporting two headings. While for the development headings, a dedicated development fan will be required per heading, with 30 m^3/s provided to each development heading.

[1] Except for roadheader development, which will employ an exhausting system as described in Section 13.11.5.3.

13.11.6 Underground Infrastructure

Proposed underground infrastructure will include the following:

- A compressed air system, supplied by large air compressors located on surface. The main compressed air lines will be installed down the twin declines.
- Process water will consist of a gravity-fed system from a surface pond via a raw water pump. Cased boreholes will be used to send process water between level service stations.
- An electrical system will be installed to support the Railveyor system, road header development, production mining and infrastructure, development and construction, BEV charging stations, conveyors, and surface ventilation fans. The system will include incoming 13.8 kV feeds, power distribution, power substation, primary substation, secondary substation, infrastructure substation, mining substation, major and minor pumping substations, and conveyor substation.
- Leaky feeder and long-term evolution (LTE) cables will be installed in the mine for underground communications.
- A control room on surface will allow supervisory control and data acquisition (SCADA) for monitoring and operation. There will also be a tele-remote control room for equipment operation, a server room that contains PLCs and cabinets, and multiple operator stations for LHDs and production drills. Variable frequency drives and starters for pumps, fans and other underground installations will be connected through the network to the PLC for monitoring and control.
- Fuel stations will be available for diesel, lubricant, hydraulic fluid, and engine oil.
- A battery charging station for BEVs will be provided.
- Bulk underground explosives storage, and separate detonator storage areas for development and production, are included in the design.

13.11.7 Personnel

The labor force will be divided into contractor and Ivanhoe Electric operations personnel. Peak numbers will include 432 Ivanhoe Electric personnel and 107 mine contract staff.

13.11.8 Mining Equipment Fleet

The mobile equipment fleet will consist of a combination of diesel, diesel/electric, and battery electric vehicles. In early development stages before charging infrastructure is constructed, diesel equipment will be primarily deployed. From the start of operations, development equipment will be composed of a diesel/BEV hybrid fleet (for few equipment types like emulsion loaders, LHDs, personnel carriers, etc.). The diesel equipment will transition to BEV-type equipment will be complete by 2033. During full production, BEV LHDs will be used instead of diesel equipment to reduce fuel and ventilation costs.

All mining equipment purchased by Ivanhoe Electric will be financed to reduce initial capital requirements. The financed equipment will be replaced with purchased equipment, Table 13-9 summarizes the mobile equipment required to be purchased by year. Contractor equipment fleet requirements are summarized in Tables 13-10 to 13-14. Major paste plant preparation and equipment are summarized in Table 13-15.

Table 13-9: Peak Equipment Quantities Per Year – Owner's Fleet – Operating Development & Stoping

Equipment Type	Motive Power	Peak Year	Count
Emulsion Loader (Development) – Diesel	Diesel/Electric	2028	2
Emulsion Loader (Development) – Electric	BEV/Electric	2033	3
Bolter	Diesel/Electric	2033	10
Boom Truck	Diesel	2031	6
Cable Bolter	Diesel/Electric	2031	3
Raise Bore (Production Slot)	Diesel/Electric	2023	6
Emulsion Loader (Production) – Diesel	Diesel/Electric	2029	2
Emulsion Loader (Production) – Electric	BEV/Electric	2034	4
Forklift – Diesel	Diesel	2029	2
Forklift – Battery Electric	BEV	2033	4
Jumbo	Diesel/Electric	2030	4
LHD – Diesel	Diesel	2031	6
LHD – Battery Electric	BEV	2033	11
Cleanup LHD	Diesel	2029	2
Longhole Drill	Diesel/Electric	2031	7
Scissor Lift – Diesel	Diesel	2028	2
Scissor Lift – Battery Electric	BEV	2033	4
Shotcrete Sprayer	Diesel/Electric	2028	8
Transmixer	Diesel	2028	2
Truck	Diesel	2031	4
Rock breaker	Diesel	2030	2
Fuel/Lube truck	Diesel	2028	2
Grader	Diesel	2028	1
Telehandler	Diesel	2031	3
Mechanic Truck	Diesel	2030	2
Personnel Carrier (32-person)	Diesel	2031	4
Safety – Diesel	Diesel	2028	1
Safety – Battery Electric	BEV	2033	1
Engineering/Surveyor/Geology – Diesel	Diesel	2028	3
Engineering/Surveyor/Geology	BEV	2033	5
Shifter – Diesel	Diesel	2031	4
Shifter – Battery Electric	BEV	2033	6
Rescue Vehicle	Diesel	2028	1
Explosive transport truck	Diesel	2028	2
Mobile Batch Plant	Diesel	2028	2
Total			

Table 13-10: Contractor's Fleet – Capital Decline Development – in Alluvium & Conglomerate

Equipment Type	2026	2027
Tunnel Excavator	2	2
Loading Excavator	2	2
Underground Haul Truck	2	2
Load Haul Dump Truck	2	2
Telehandler with Suspended Personnel Platform	2	2
Shotcrete Sprayer	2	2
Transmixer	2	2
Total	**18**	**18**

Table 13-11: Contractor's Fleet – Capital Development – in Bedrock

Equipment Type	2027	2028	2029	2035
Road Header	2	2	2	1
Loading Excavator	2	4	4	2
Underground Haul Truck	2	2	2	1
Load Haul Dump Truck	2	2	2	1
Telehandler with Suspended Personnel Platform	2	2	2	1
Shotcrete Sprayer	2	4	4	2
Transmixer	2	2	2	1
Total	**14**	**18**	**18**	**10**

Table 13-12: Contractor's Fleet – Capital Development – in Bedrock – Other Equipment

Equipment Type	2029	2030	2035
Powder Truck	1	1	1
Ammonium Nitrate / Fuel Oil (ANFO) Pot	1	1	1
Load/Haul/Dump (LHD)	1	1	1
Total	**3**	**3**	**3**

Table 13-13: Contractor's Fleet – Capital Development – in Bedrock – Support Equipment

Equipment Type	2029	2030	2035
Grader	1	1	1
Service/Lube Truck	1	1	1
Service Truck	1	1	1
Flatbed Pickup	1	1	1
Diesel Buggies	3	3	3
Scissor Deck	1	1	1
Watertruck	1	1	1
Total	**9**	**9**	**9**

Table 13-14: Total Equipment Quantities Per Year – Contractor's Fleet – Other Capital Development

Equipment Type	Peak Year	Quantity
Jumbo	2028	4
Explosives Loader	2028	3
Load/Haul/Dump (LHD)	2028	4
Bolter	2028	6
Shotcrete	2028	1
Transmixer	2028	2
Scissor Lift	2028	4
Forklift	2028	2
Personnel Carrier	2028	4
Trucks	2028	2
Raisebore (for Vertical Development)	2028	1
Total		**34**

Table 13-15: Total Equipment Quantities Per Year – Contractor's Fleet – Paste Preparation Plant

Equipment Type	Peak Year	Quantity
Paste Material Prep Ball Mill	2028	1
Continuous Paste Mixer	2028	2
Paste Pump	2028	2
Binder Storage Silo	2028	1
Binder Dosing Silo	2028	2
Flush Pump	2028	2
Total		**10**

14 Process & Recovery Methods

14.1 Process Method Selection

Process for the Santa Cruz Copper Project has been designed to cycle oxide and secondary sulfide ores through an on/off heap leach to produce a copper-rich pregnant leach solution (PLS) that will be processed in the onsite solvent extraction / electrowinning (SX/EW) circuit for recovery.

The process designs were based on existing technologies and proven equipment. The process and refinery plant designs are based on the results of metallurgical testwork on the mineralized material at the Santa Cruz Copper Project. The designs are conventional.

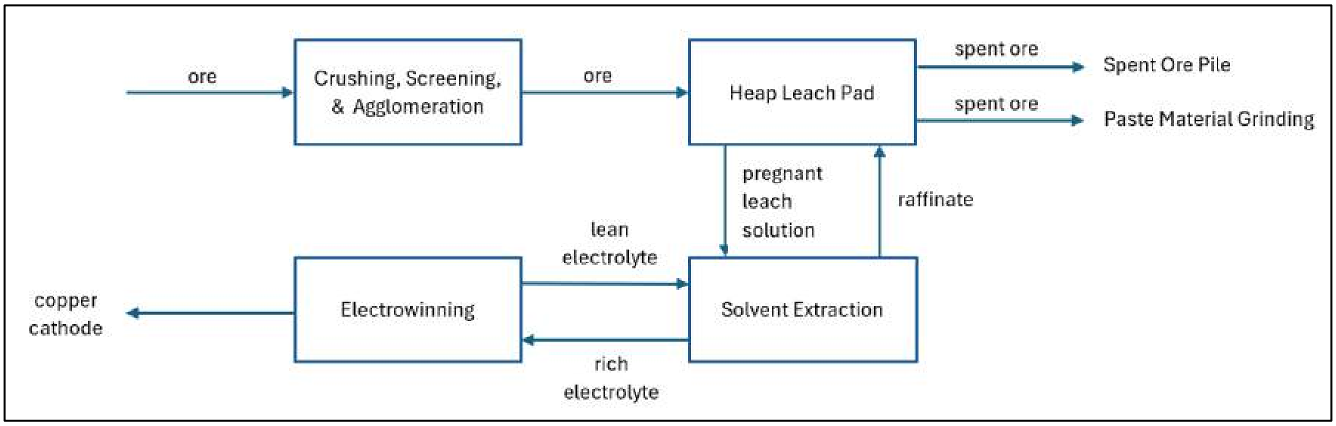
14.2 Processing Overview & Flowsheets

The proposed Santa Cruz Copper Project processing facilities will include the following operations:

- coarse ore stockpile
- primary crushing
- secondary crushing
- tertiary crushing
- agglomeration
- heap leaching
- solvent extraction (SX)
- electrowinning (EW)
- reagent preparation and distribution
- water treatment and distribution
- compressed air

A simplified overall process flow diagram is presented in Figure 14-1.

Figure 14-1: Simplified Process Flowsheet



Source: Fluor, 2025.

14.3 Metallurgical Design Basis

Metallurgical design parameters for the facilities are based on the metallurgical testwork discussed in Section 10. The key metallurgical parameters derived from the metallurgical testwork program are presented in Table 14-1.

Table 14-1: Key Metallurgical Testwork Parameters

Description	Unit	Design Value
Heap Leach Feed Particle Size	mm	sub-9.5
Bulk Density for Stacking & Volumetric Calculations	t/m^3	1.6
Ore Solids Density	t/m^3	2.77
Sodium Chloride (NaCl) Addition to Agglomeration	kg/t	1
Acid Addition	kg/t	6
Irrigation Rate	$L/h/m^2$	8
Residual Moisture	wt %	6.0
Overall Copper Recovery	%	92.2
Concentration of Soluble Copper in Residual Moisture	g/L	0.35
Bond Work Index of Spent Ore	kWh/t	14.9
Crusher Work Index of Ore	kWh/t	4.0

14.4 Process Plant

Ore produced from the underground mine will be processed using a heap leach and SX/EW flowsheet to produce London Metal Exchange (LME) Grade A copper cathode. The heap leaching process will take place on an on/off pad. Spent ore will be removed from the on/off leach pad and processed for paste backfill or placed in a spent ore storage facility. Approximately 50% of the spent ore will be processed for use in paste backfill. Operations will be conducted 24 hours per day, 365 days per year for approximately 24 years at a design daily stacking rate of up to 22,000 tonnes.

14.4.1 Major Process Equipment Design Criteria and Selection

Major process design criteria are presented in Table 14-2. Major process equipment specifications are presented in Table 14-3.

Table 14-2: Major Process Design Criteria

Description	Unit	Value
Operating Information		
Crushing & Agglomeration Annual Operating Hours	h/y	6,570
SX/EW Annual Operating Hours	h/y	8,497
Ore Production		
Life-of-Mine Ore Production	Mt	136
Stacking Rate	t/d	22,000
Plant Feed Grade (Life of Mine)		
Acid Soluble Copper	%	0.63
Cyanide Soluble Copper	%	0.42
Residual Copper	%	0.05
Total Copper	%	1.09
Recovery		
Life-of-Mine Total Copper Recovery	%	92.2
Design Annual Copper Production	t/y	76,000
Heap Leaching (On/Off Pad)		
Cell Dimensions	L x W (m)	640 x 130
Number of Cells	no.	7
Lift Height (Single Lift)	m	6.0
Leach Solution		
Pregnant Leach Solution / Raffinate Flow Rate (Average)	m^3/h	2,000
Secondary Leach Solution Flow Rate (Average)	m^3/h	1,300

Table 14-3: Major Process Equipment

Item	Number	Description
Primary Crusher	1	C160 Jaw
Secondary Crusher	1	MP1000
Tertiary Crusher	2	MP1000
Tertiary Screen	2	3 m x 6.7 m inclined; double-deck; banana
Heap Leach Stacking System	1	Mobile conveyors with radial stacker
SX Circuit	2	Two trains each of (two extraction + two wash + one strip)
EW Circuit	1	124 cells with 84 cathodes each, 2.3 m^2 per cathode
EW Rectifier	2	Output current (maximum) 67 kA / 287 V

14.5 Crushing, Agglomeration & Stacking

14.5.1 Crushing

Run-of-mine ore will be delivered to surface at sub 20 cm diameter via Railveyor. Ore from underground will be either fed, via surge hopper, to the jaw crusher for primary crushing or diverted and conveyed to the coarse ore stockpile for future use. From the underground Railveyor, ore will be introduced to a vibrating grizzly feeder that will divert fines around the primary crusher, thereby reducing the required crusher volumetric throughput. The primary crusher will be a jaw-type crusher. A metal removal magnet and subsequent metal detector situated on the grizzly feed conveyor will be used to remove and prevent tramp metal from underground from entering the jaw crusher.

Crushed ore discharged from the primary crusher will be combined with grizzly undersize and fed to the secondary crusher, which will operate in open circuit. The secondary crusher will be a cone crusher of the same model as the tertiary crusher; however, it will be operated with a different liner set and different close side setting. Secondary crusher discharge will be combined with tertiary crusher discharge and fed to the tertiary crusher closing screens. The two tertiary closing screens will be large banana-type, dual-deck screens. Screen undersize (crushing circuit product), at 100% passing 9.5 mm, will be conveyed to two truck loadout hoppers. The loadout hoppers will serve to buffer the continuous crushing circuit to the batch mode trucking operation. Ore will be trucked from the crushing circuit to the portable agglomeration drums located at the leach pad. Crushing circuit product screen oversize will be returned to the tertiary crushing feed conveyor for further crushing. The tertiary crushing circuit will comprise two cone crushers arranged in parallel configuration.

Dust generated during crushing, screening, and conveying will be captured using dry-type dust collectors and controlled using mist generators where appropriate. The crushing circuit will be located outdoors, and maintenance lifting will be performed by mobile crane.

14.5.2 Agglomeration

Fine ore (undersize from the tertiary crushing circuit screens) will be trucked to the agglomeration drums where sulfuric acid and sodium chloride can be added to facilitate agglomeration and leaching. Haul trucks will dump into a surge hopper from where two apron feeders will supply the two parallel agglomeration drums. Feed to the agglomeration drums will be measured for the ratio addition of reagents. The agglomeration drums will be mounted on a mobile module that will be relocated to each cell of the on/off pad as required. The salt silo will be located near the truck loadout hoppers and salt will be added to each truck loadout hopper via screw conveyor based on a tonnage ratio. Acid will be trucked to the mobile agglomeration module and transferred to a day tank from which a metering pump will add the desired amount of acid to the drum. Salt will be received in bulk and blown into a silo for storage.

14.5.3 Stacking

Crushed ore will be delivered to the leach pad via a combination of haul truck and overland conveying and stacking equipment. Agglomerated ore will discharge onto a transfer conveyor which will feed a series of grasshopper-type mobile conveyors. The final mobile conveyor will feed two self-propelled indexing conveyors in series, which in turn will feed the self-propelled mobile radial stacker. The cells will be ‘retreat’ stacked by the radial stacker in a 130 m wide half-moon shape.

14.6 On/Off Heap Leach

14.6.1 On/Off Heap Leach Pad

The on/off heap leach pad will be underlain by a liner system, comprising:

- a high-density polyethylene geomembrane, overlying:
- a geosynthetic clay liner, overlying:
- prepared native foundation materials or compacted grading fill.

The liner system will be overlain by a drainage system comprising perforated pipes at 6 m spacing, installed in 0.5 m thick drainage layer of select, processed ore and/or waste rock. The perforated pipes will connect to a main collector pipe which runs down the center of each cell that conveys solution to the collection ponds. The drainage system has been sized to convey the design irrigation rate (8 L/h/m^2) and a 100-year, 24-hour storm event.

The stability of the on/off heap leach pad was analyzed under static and pseudo-static loading conditions and meets the criteria for the factor of safety outlined in the Arizona Mining BADCT Guidance Manual (ADEQ 2005). Laboratory testing results on project-specific materials (e.g., spent ore, liner system interfaces) were used to estimate engineering parameters for the stability models.

14.6.2 Solution Management

Solution will be managed in a series of lined ponds, as follows:

- raffinate pond
- raffinate storm water pond
- pregnant leach solution pond
- pregnant leach solution stormwater pond
- secondary pregnant leach solution (SLS) pond
- spent ore area storm water ponds.

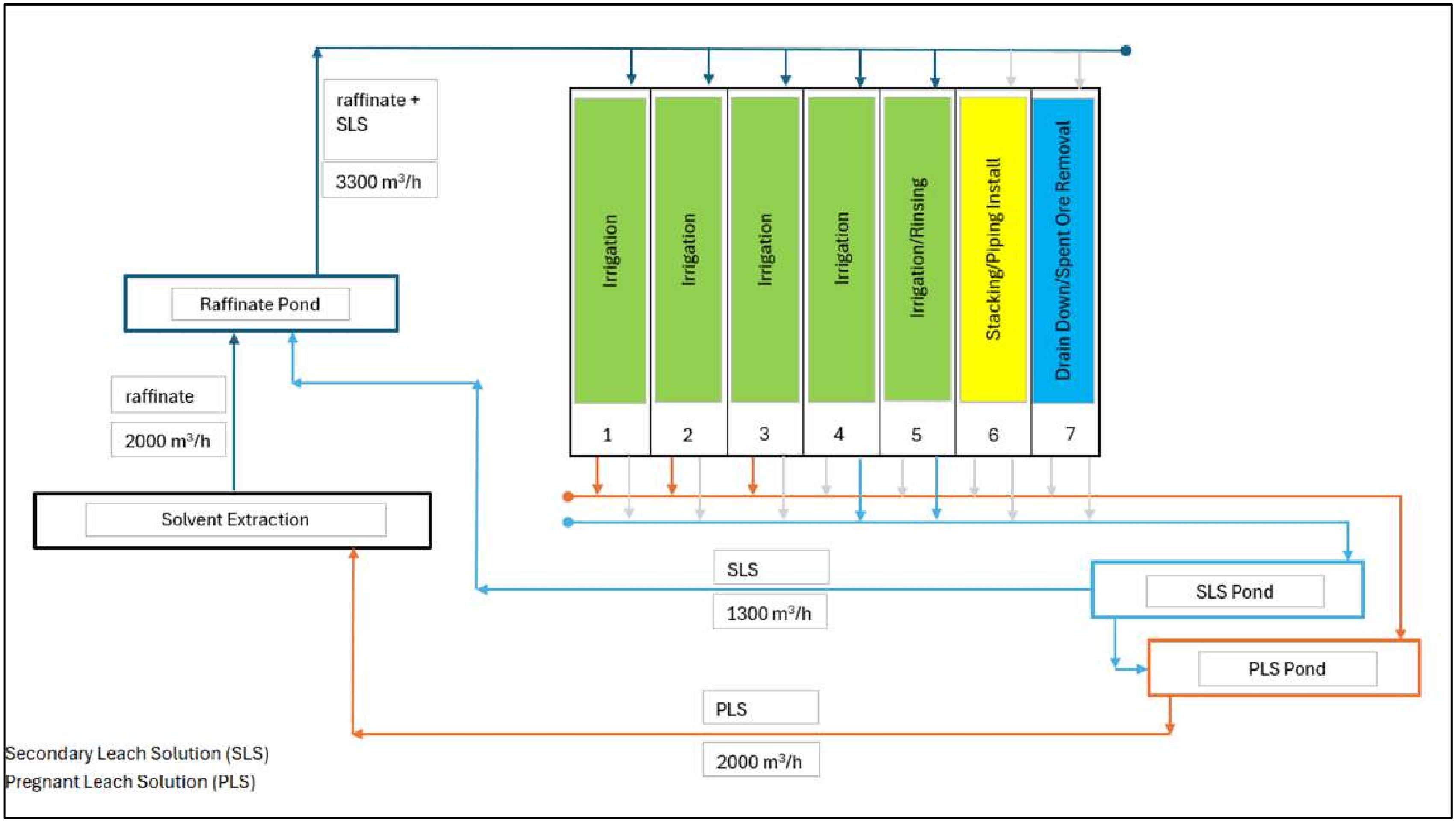
The pond system has been sized to contain normal operating solutions and stormwater. The entire site will be fenced to reduce the risk of danger to wildlife. Water that accumulates in the stormwater ponds will be periodically pumped to the primary solution ponds to maintain the level and prevent discharge to the environment. The liner systems for each pond follow Prescriptive BADCT guidelines for process solution ponds (ADEQ 2005), and comprise:

- a UV resistant high-density polyethylene geomembrane, overlying:
- a leachate collection and removal system (LCRS) comprising a geonet, gravity-draining to a sump to allow for leak monitoring and leachate removal, overlying:
- a high-density polyethylene geomembrane, overlying:
- a geosynthetic clay liner, overlying:
- prepared native foundation materials, compacted grading fill, or compacted pond embankment fill.

The SLS pond and solution management will be used to support extended leach cycles during secondary sulfide leaching by returning selected copper solutions to the top of the heap leach pad thereby achieving high copper extractions.

The proposed locations of the solution management ponds are depicted in Figure 14-2. The design of the heap leach facility is planned to be operated as zero-discharge.

Figure 14-2: Seven-Cell Heap Solution Management



Source: Fluor, 2025.

14.6.3 Heap Leach Process

The on/off heap leach pad will be divided into seven cells, each with dimensions of 130 m x 640 m and a spacer strip of 25 m wide between the cells, effectively creating multiple leach pads. Initial capital will include three cells and associated spacer strips. An additional cell and associated strip will be required in Years 2 and 3 of operation, respectively, and the two final cells and a single spacer will be required in Year 4 of operation.

The cells will be 'retreat' stacked by radial stacker in a 130 m wide half-moon shape. Agglomerated ore will be fed to the stacker by mobile conveyors. The leach stack (single lift at angle-of-repose) height will be 6 meters.

Ore will be stacked at 22,000 t/d; therefore, it will take approximately 36 days to stack each cell at design production rate. Each of the cells will progress through the following cycles in sequence with each stacking cycle taking 36 days and an entire cell cycle taking 265 days:

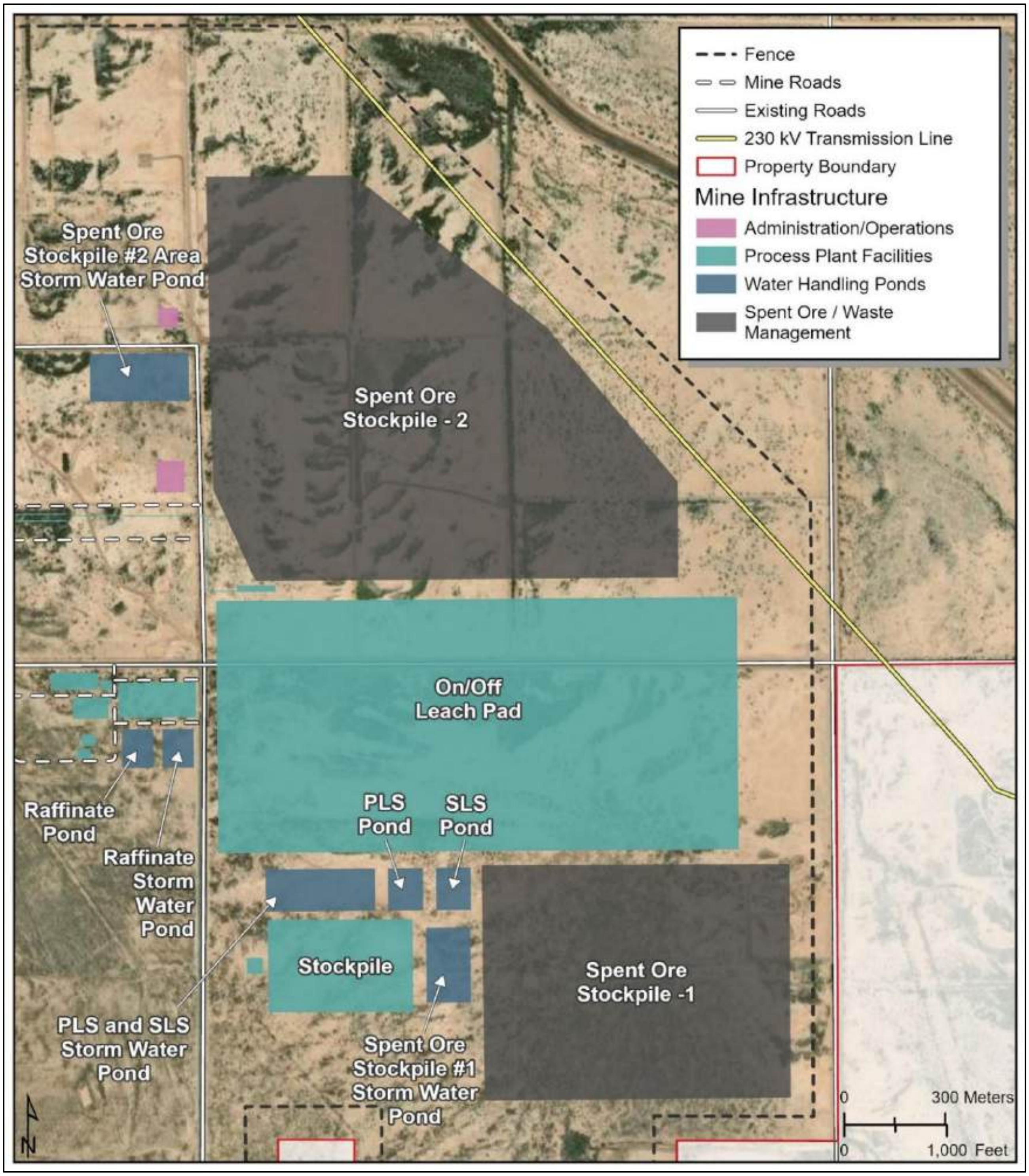
- stacking (36 days)
- piping connections and stacker relocation (2 days)
- irrigation in five 36-day cycles (180 days)
- drain down, water rinse, drain down, and piping removal (30 days)
- spent ore removal (28 days)
- inspection and rehabilitation (2 days).

The cells will be irrigated with raffinate (depleted pregnant leach solution from the SX process). Leach solution will report to the pregnant leach solution pond. At the end of the leach cycle, spent ore will be removed using loaders and trucks.

Pregnant leach solution will report to the solvent extraction circuit and raffinate will return to the heap from solvent extraction at a flowrate of 2,000 m^3/h. The pad configuration and solution management presented in Figure 14-3 are planned.

Secondary sulfides in the ore will require oxygen for leaching. Air will be supplied to each cell by blowing air using two dedicated fans per cell. In total, there will be 14 fans; however, only six will be operating at any given time. Air piping will also be installed in a gravel layer of select, processed ore / waste rock beneath the stacked ore at an elevation above the drainage system. For each cell, two fans will discharge to an air header. The air tubes will have perforated air holes for air distribution.

Figure 14-3: Solution Management Ponds, Leach Pad & Spent Ore Piles



Source: Ivanhoe Electric, 2025

14.6.4 Spent Ore Management

Due to geometry constraints of the site, two spent ore piles are proposed. The first will be constructed south of the leach pad and will contain approximately the first six years of production and will be constructed during the first year of operations and staged as appropriate, growing to the south as required. The second spent ore stock pile will be constructed north of the leach pad with the capacity to contain the remainder of the spent ore. Figure 14-3 shows the proposed location of the spent ore piles.

Spent ore (leached) will be left on the heap leach pad to drain for 10 days. Upon completion of irrigation piping removal, the spent ore will be removed using loaders and excavators and trucked to either the relevant spent ore pile or the paste backfill preparation plant. Following removal, the heap leach pad will be inspected and rehabilitated as required prior to the start of the next cycle that will begin with stacking.

The spent ore piles will be underlain by a high-density polyethylene geomembrane on top of prepared foundation or compacted grading fill. The geomembrane will be covered by a 1-meter-thick, compacted, protection layer of carefully placed spent ore. The portion of the stockpiles below the ultimate piles slopes will be compacted for pile stability. Runoff water will be collected in adjacent ponds for reuse in the process. Ultimately, the spent ore waste piles will be shaped, covered, and vegetated once production has ceased.

Additionally, during ramp-down years it will be possible to leave spent ore on the on/off pad, creating a third waste pile if required.

14.6.5 Solvent Extraction

In the solvent extraction plant, copper is selectively removed (extracted) from the aqueous pregnant leach solution in mixers, using an “organic” extractant. The denser aqueous and lighter organic phases are then separated in settlers. This leaves the aqueous solution (now termed “raffinate”) containing all other solutes (notably chloride, acid, and iron) which is returned to the heap leach via the raffinate pond. Any residual aqueous solution entrained in the organic phase is removed in a washing stage.

Next, the copper-loaded organic is stripped using a highly acidic solution from the electrowinning plant (lean electrolyte), whereby the copper is transferred at a higher concentration to the electrolyte (now termed “rich electrolyte”) and delivered to the electrowinning plant for recovery as cathode.

The solvent extraction circuit design comprises two parallel trains. Each train will consist of two extraction stages, two wash stages, and one strip stage.

Organic will be circulated through the extraction, washing, and stripping stages. A surge tank with pumps for loaded organic will be situated between the final extraction stage and the (first) wash stage. Entrained aqueous will be drained from this tank and returned to the extraction circuit.

Pregnant leach solution from the leach pad will be pumped through the two extraction settlers in series in countercurrent fashion with barren organic to extract copper. The barren organic will become loaded organic and will enter an organic surge tank. The loaded organic will then be pumped through the wash stage(s) to the strip settler. Water will be added to the wash stages to remove as much of the high-chloride aqueous as possible via dilution. The cleaned organic will then proceed to the strip stage.

Lean-electrolyte will be fed to the strip stage where it will extract copper from the loaded organic to form rich-electrolyte. This stream of rich electrolyte will enter a surge tank and be pumped through a coalescing column to remove the majority of the entrained organic. The partially cleaned rich electrolyte will be stored in another surge tank and then pumped through dual media filters to reduce the entrained organic to approximately 5 ppm. These filters will be periodically backwashed with demineralized water, which will be returned to the raffinate. The electrolyte product will then enter an electrowinning cell feed tank system where it will be mixed with a portion of the lean electrolyte and reagents to form electrowinning cell feed electrolyte. This electrolyte will be pumped to the electrowinning circuit. The electrowinning circuit will require a higher flowrate than the strip settler, so the flow will be increased by circulating cell return lean electrolyte.

Initially, only one solvent extraction train will be installed together with the tank farm, treatment, and PLS and raffinate pond facilities. As the PLS solution flow grows, a second train will be constructed during the second year of operation for use in Year 3.

14.7 Electrowinning

The copper electrowinning tankhouse will comprise electrowinning cells with calcium-tin-lead rolled plate anodes and stainless-steel cathode blanks. Cathodes (copper electroplated onto stainless steel blanks) will be harvested manually using an overhead crane and bail. Positioning devices on the crane and cells will assist the crane operator with alignment. Cathodes will be stripped in an industry standard automated stripping machine and the washed blanks will be returned to the cells. Product cathode will be bundled, sampled, weighed, labeled, and shipped.

The electrowinning cells and stripping machine will be located within a building. The cells will be individually covered to contain acid mist that naturally evolves from the solution surface. Covered cells will provide a safe working environment for the operators and capture acid mist prior to release to the atmosphere. Captured cell gases and aerosols will be scrubbed prior to release to the environment.

14.7.1 Reagent Preparation & Distribution

Sulfuric acid, guar, cobalt sulfate, extractant, diluent, and sodium chloride will be used in the process (Table 14-4). Where appropriate, reagent mix tanks will be provided with bag breakers and dust collectors. Each reagent makeup area will be equipped with independent containment and a dedicated sump. Bagged reagents will be stored under cover in the site warehouse.

Table 14-4: Proposed Reagent & Process Consumables

Reagent & Consumables	Units	Consumption Rate
Reagents		
Sodium Chloride	kg/t_{ore}	1.0
Sulfuric Acid	kg/t_{ore}	6
Makeup Water	kg/t_{ore}	723
Guar	$kg/t_{cathode}$	0.18
Cobalt Sulfate	$kg/t_{cathode}$	0.29
Extractant	$kg/t_{cathode}$	2.53
Diluent	$kg/t_{cathode}$	7.11
Liners and Grinding Media		
Primary Crusher – Liners	set/y	2
Secondary & Tertiary Crushers – Liners	set/y	9

14.8 Raw Water

Makeup water (water sourced by natural means that has not been treated) will be sourced from existing grandfathered Type I non-irrigation rights and mine dewatering. Mine dewatering will report to a surface pond for storage, sedimentation, and eventual discharge to agricultural end users. A portion of the makeup water will be used untreated by the process, while a portion will be treated in the reverse-osmosis plant and used for the wash settlers, reagent mixing, and electrowinning circuit. Mine dewatering will provide a sufficient supply of makeup water for the life-of-mine plan.

Further discussion of water is discussed in Sections 3.2.3, 15.6, 15.7, and 17.2.

14.9 Air Supply

A compressed air distribution system will be included to supply required process air to the plant—primarily to the crusher area. Instrument air will be included for instrumentation and controls.

14.10 Power

Power supplies are discussed in Section 15.5.

14.11 Personnel

The process personnel count is 121 persons. See Section 18.3.2.1.3 for a breakdown of crew for each circuit.

15 Infrastructure

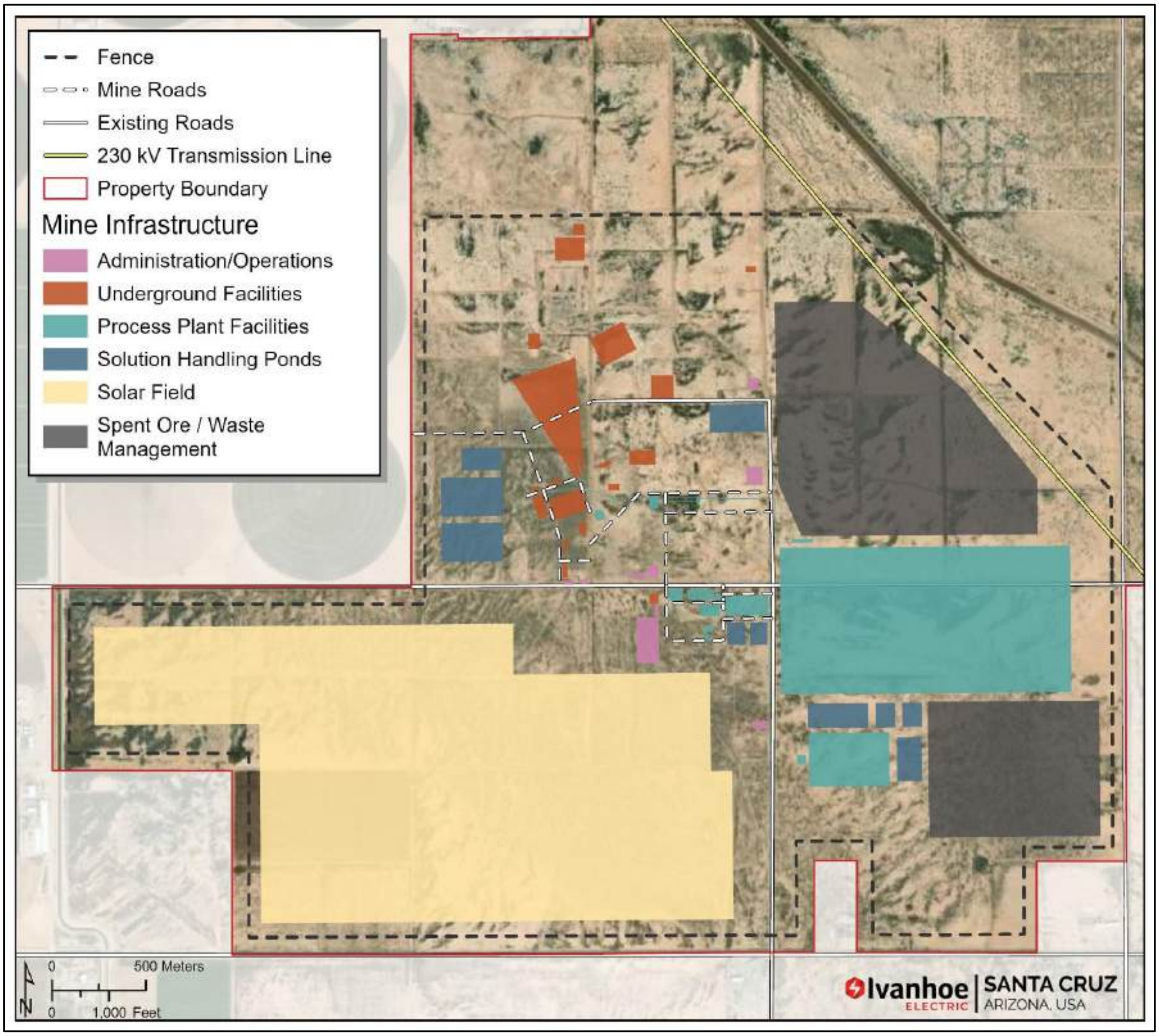
15.1 Surface Infrastructure

The Santa Cruz Copper Project site surface infrastructure comprises the following:

- an open excavation 60 m deep "box cut" ramp for accessing a twin decline portal to the underground mine workings
- three ventilation shafts to facilitate air flows to the underground mine workings
- primary mine ventilation fans, hardware, and ducting to control ventilation to the mine workings
- refrigeration plant to control temperatures in the underground mine workings
- ventilation bore for refrigeration
- rock crushing process plant and temporary stockpiles
- two spent ore facilities; north and south pads
- on/off leach pad with associated collection ponds and mobile stacking
- SX/EW process facilities
- mobile cement batch plant facility
- paste backfill preparation and pumping facility
- maintenance and warehouse facilities
- first aid/rescue building
- multiple various ancillary outbuildings
- entry security shack and various visitor and employee parking spaces
- equipment delivery and open laydown/storage area
- multiple improved and unimproved access roads
- piping and pumping systems for process and water services
- explosives storage facility
- high-voltage transmission line and substation
- environmental monitoring facilities
- emergency power generation facility
- solar power and battery storage facility.

Key infrastructure locations are shown on Figure 15-1.

Figure 15-1: Santa Cruz Site Plan



Source: Ivanhoe Electric, 2025.

15.1.1 Roads & Logistics

The project is accessed by all-weather road networks, as discussed in Section 4, along with rail and air access.

15.1.2 On/Off Leach Pads

On/off heap leach pads are discussed in Section 14.6.

15.1.3 Spent Ore Storage Facilities

Spent ore storage facilities are discussed in Section 14.6.1.

15.1.4 Power & Electrical

Power for the project will be provided from a combination of onsite renewable energy supply and utility grid supply. The goal of the mine development is to achieve a minimum of 70% of the energy supply from renewable sources. The renewables sources will include onsite solar generation and a battery energy storage system (Section 15.1.4.1) as well as the option of "Green Select" (power from renewable sources) from the local power utility provider, ED3, based on availability.

15.1.4.1 Renewable Power

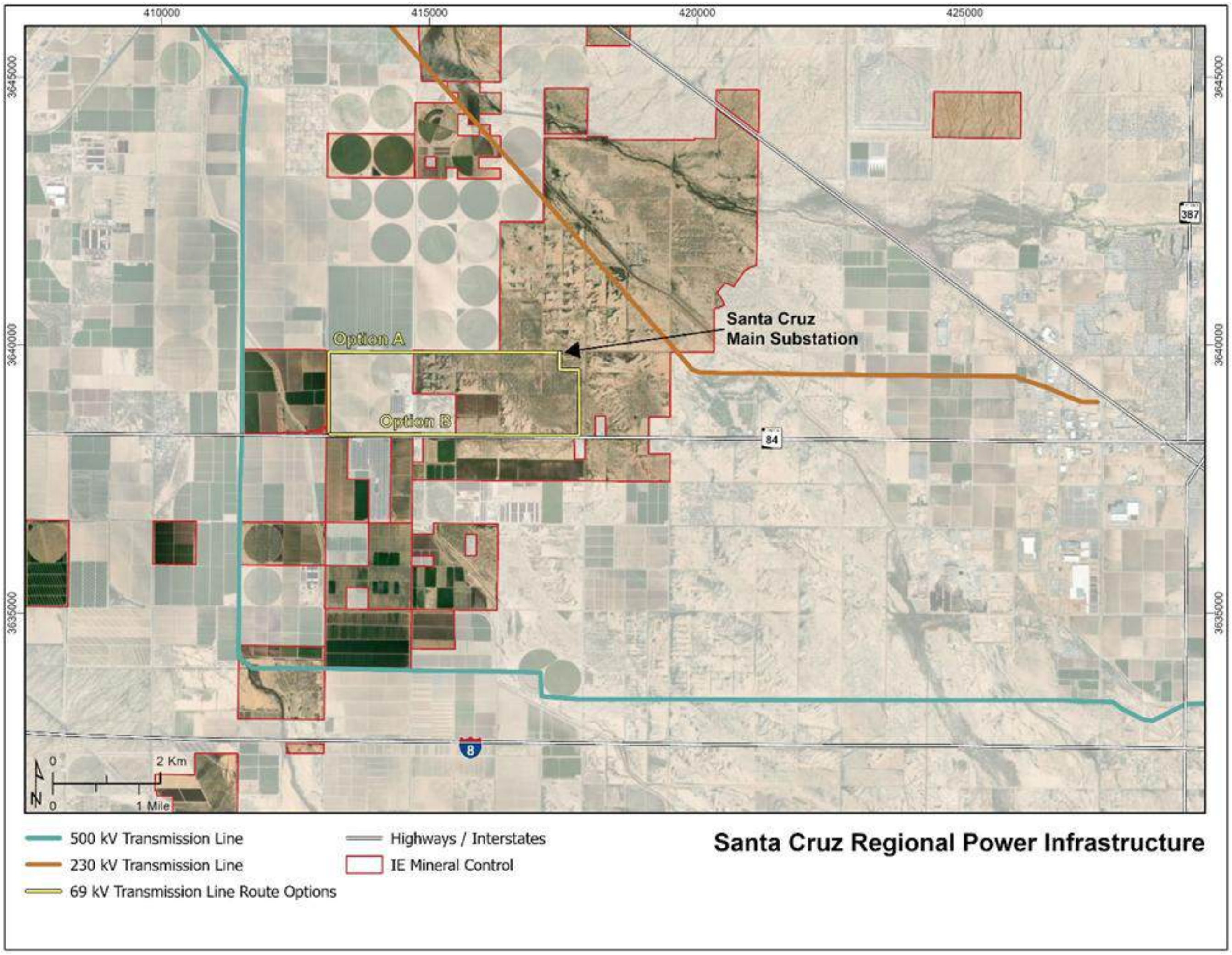
This report proposes a hybrid power system consisting of onsite photovoltaic (PV) solar generation built by a third-party developer in conjunction with a Power Purchase Agreement (PPA) facilitated by local power provider ED3 plus onsite battery energy storage to help meet site power demands in addition to utility-provided grid power. The renewables facility was sized based on available area and to provide 40 MW of continuous power annually with over 90% load coverage. The solar plus battery energy storage system (BESS) facility will have seasonal efficiency fluctuations due to the difference in daily sun exposure between summer and winter. The "de-rate" target (~15 MW) for the proposed system will be able to service in the wintertime to a 90% confidence level based on the used weather data set. The solar output was calculated utilizing a P_{90} meteorological data set.

The proposed onsite BESS consists of a lithium-ion (Li-ion) system rated for 140 MW / 560 MWh. There is an additional opportunity to utilize the emerging vanadium redox flow battery (VRFB) technology. A percentage of Li-ion BESS could be replaced by a VRFB system. VRB Energy USA Inc. is the license holder of vanadium redox battery technology in the United States and is a wholly owned subsidiary of VRB Energy Inc., a subsidiary that is 90%-owned and controlled by Ivanhoe Electric.

15.1.4.2 Utility Power

Regular, grid-supplied power will be sourced from Pinal County Electrical District Number 3 (ED3), which is a small, local supplier to the Maricopa-Stanfield area. ED3's jurisdiction also includes the Maricopa Stanfield irrigation and drainage district. Figure 15-2 shows the existing power transmission lines and the potential routing options for the 69 kV transmission line installation. Option A routes the 69 kV transmission line north from Sexton Substation along Anderson Road and turns east on Clayton to the main substation. Option B routes the 69 kV transmission line in the ADOT right-of-way east on Highway 84, located on the north side of the highway, then turns north just before Midway Road to the main substation.

Figure 15-2: Transmission Lines Near the Santa Cruz Copper Project



Source: Ivanhoe Electric, 2025.

15.1.4.3 Power Distribution

The nearest ED3 substation (Sexton) is to the west at the northeast corner of the intersection of Highway 84 and South Anderson Road, 5 km from the planned Santa Cruz main substation at the project site. Long-term grid power to the site will be from a new 69 kV transmission line from Sexton, installed and operated by ED3. At the Santa Cruz main substation, power will be dropped from 69 kV to 13.8 kV for site-wide power distribution.

15.1.4.4 Power Consumption

The Santa Cruz Copper Project will have an estimated operating load of 78.7 MW and a forecast annual consumption of between 580,000 and 690,000 MWh during peak production years.

The estimated operating load for the underground mine equipment is forecast to average 42.5 MW with peak operating power around 52 MW. The estimated total annual energy consumption attributed to the underground mine over the life of mine is estimated to average 300,000 MWh/y, peaking approximately 368,000 MWh/y.

The average estimated operating load of the Santa Cruz Paste Plant is 13.4 MW; with the average annual power consumption at 77,000 MWh/y, peaking at approximately 109,000 MWh/y.

The estimated average operating load for the Santa Cruz surface facilities is forecast to be 25.9 MW; the estimated annual power consumption during peak production years is forecast to be approximately 223,000 MWh/y.

15.1.5 Gas Pipelines

A natural gas pipeline crosses the project area and accesses various adjacent residential customers, farms, and businesses. There is currently no plan for the use of natural gas during project development or operations, so the section of the natural gas pipeline that crosses through the proposed facilities will be abandoned and relocated during early-stage project development.

15.1.6 Water Supply

Water supply for processing operations will be sourced from existing grandfathered Type I non-irrigation rights and mine dewatering, as discussed in Section 14.8.

Potable water will be trucked in from the city. Trucked water will be stored in a tank to service the surface facilities.

15.1.7 Water Management

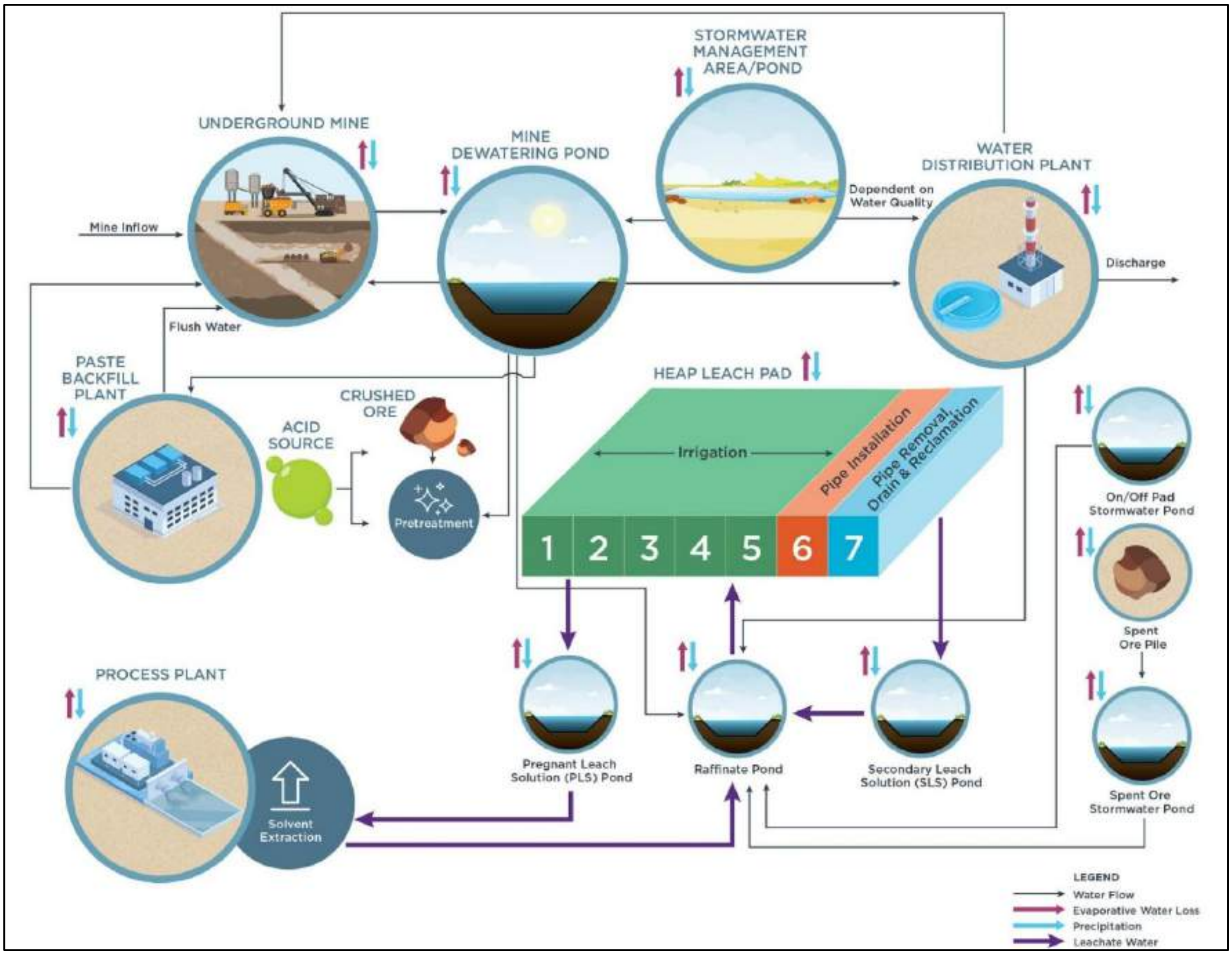
Water management operations include systems of underground dewatering, water collection and conveyance facilities, water storage, water use, and various management options for discharge of excess water. Water not used for underground mining, the paste backfill plant, the process plant, and the on/off heap leach pad will be pumped to storage reservoirs. Rapid infiltration basins are used to capture non-contact stormwater runoff to prevent stormwater from coming into contact with mining operations.

Testwork completed confirmed that the extracted groundwater quality will be acceptable for irrigation use when applied to suitable crops (e.g., cotton, alfalfa, pasture grasses) commonly grown in the vicinity of the project. The water distribution system is designed to distribute water to agricultural end-users, without treatment, and includes a side-stream water treatment process that may be used if the extracted groundwater does not meet the standards defined by end-users.

15.1.7.1 Water Balance

The site-wide water balance has been developed to help with understanding the various water flows of the mine infrastructure for the project. The site-wide water balance is based on the process flow diagram presented in Figure 15-3 and is used to predict potential water use, surpluses, and deficits for the site and mine water management infrastructure, including the mine dewatering ponds, stormwater management ponds, pregnant leach solution pond, and secondary pregnant leach solution pond, over the life of mine and into post-closure. Ultimately, there are four primary water use demands for the project: underground process, on/off heap leach pad, process plant, and paste backfill plant.

Figure 15-3: Water Balance Process Flow Diagram



Source: Geosyntec, 2025.

The primary source of water for use on the project is the underground mine water inflows encountered while developing the mine workings. Mine inflows and process waters will be collected within the underground mine water management infrastructure and pumped to the mine dewatering ponds on surface for on-site usage, off-site distribution, and, if needed, treatment. The annual dewatering estimate is approximately 15.85 Mm^3/y at peak development. The water balance described below focuses on the first 10 years of mine development with an estimated average inflow of 11 Mm^3/y. Approximately 99,500 m^3/y is estimated to be required for underground mine processing needs. Details on the heap leach pad process are provided in Section 14.6. Additionally, evaporative losses outside of the heap leach pad are estimated to be approximately 305,000 m^3/y; total evaporative losses are estimated at 5.25 Mm^3/y. The ratios of water used between each process are anticipated to remain relatively constant throughout the life of mine. Excess water will be stored within ponds for future onsite water use or conveyed off site for agricultural end-users.

The paste backfill plant will use a portion of spent ore to create a paste that is returned to the underground mine. The plant will use water from the mine dewatering pond to create a slurry that consists of approximately 25% water and 75% solids.

Stormwater can additionally be used as makeup water for various processing activities throughout the site. Contact water runoff from the leach pad, spent ore stockpile, and process plant will be collected in segregated stormwater ponds to act as makeup water reservoirs for the raffinate pond or will be conveyed to the mine dewatering pond. This stormwater management pond is sized to accept approximately 50,000 m^3 of runoff, and the spent ore stormwater management pond is sized to accept approximately 22,000 m^3 of runoff.

Water losses on site will include evaporation, particularly at the on/off leach pad, water distribution center, process plant stormwater management pond, and as moisture retained in the spent ore. Evaporative and retained moisture losses at the on/off leach pad are conservatively estimated to be approximately 4.5 Mm^3/y. As a result, it is anticipated that makeup water demands could range between 230 to 950 m^3/h. Evaporative losses from the ponds on site are estimated to be 180,000 m^3/y.

Based on preliminary findings, sufficient water is anticipated to be available for the facilities that require water reuse at site.

15.1.7.2 Water Treatment

The results from the groundwater quality and flow models (Section 7) have been used to develop a water treatment and distribution strategy for groundwater extracted during mining operations and for collected stormwater. Groundwater extraction flow rates are defined based on the groundwater inflow model developed by INTERA, which is further discussed in Section 7.4.3. Results from the groundwater inflow model indicate increasing groundwater extraction flows over the life of mine, with extraction flows from approximately 22.71 m^3/h in February 2027 to approximately 1,806 m^3/h in November 2045. The treatment and distribution systems will be built in stages to accommodate the varying groundwater extraction flow rates. This phased approach provides multiple benefits, allowing time to gain insight on the site's actual water flows and quality so that distribution and treatment design can be expanded or modified, if required.

15.1.8 Built Infrastructure

15.1.8.1 Camps & Accommodation

Onsite accommodations facilities are neither required nor planned. Personnel will reside in nearby settlements including Casa Grande, Maricopa, the Phoenix metropolitan area, and Tucson, and will commute to site by vehicle. Parking, security, fencing, and a gatehouse are included in the design.

15.1.8.2 Ancillary buildings

The following is a list of infrastructure buildings to be built on site:

- explosive magazine storage
- cap magazine storage
- core shack
- process lab
- security / main gate
- fueling station
- mine/plant operations building
- change house / mine dry
- first aid and emergency rescue facilities
- mining facility warehouse.

15.2 QP Opinion

Fluor is of the opinion that the infrastructure needs and sources are well-understood and have been interpreted from reliable studies and evaluations by experts in this field.

The level of assessment and design are appropriate for level of engineering and represent good industry practice.

16 Market Study

16.1 Market Information

Ocean Partners (2025) completed a market study for Ivanhoe Electric on copper and precious metals for the Santa Cruz Copper Project. The QP reviewed the study and has summarized the findings of this study in this section.

Copper is a globally traded commodity that has established benchmark pricing in the form of exchanges such as the London Metals Exchange (LME) or Commodity Exchange Inc. (COMEX). Copper obtained from mining is sold as a concentrate, copper cathode, or as a precipitate with high copper content.

The Santa Cruz Copper Project aims to produce copper cathode. Ivanhoe Electric plans to sell the copper in the United States.

Refined copper cathodes will be sold with reference to the COMEX or LME price at an agreed-upon quotational period. An additional premium to the price will be negotiated with potential buyers. Factors affecting the premium will include the shape and chemical specification of the cathode, together with the geographical location of the delivery point in relation to where the cathode is going to be consumed.

16.2 Study Price & Sales Terms

This study uses a base copper price of $4.25/lb, which is based on a review of the one-, three-, and five-year trailing averages, as well as consensus forecasts from major banks and Ocean Partners.

Due to the shape, chemical composition, and origin point of the copper cathode, it is expected that a premium to the price will be negotiated with potential buyers that is marginally above the historical average. For financial modeling purposes, this premium is estimated at $0.14 per pound ($300 per tonne) (Ocean Partners, 2025). The copper price is summarized in Table 16-1.

Table 16-1: Copper Price Summary

Metric	Unit	Total
Copper	$/lb	4.25
Copper Cathode Premium	$/lb	0.14
Total	**$/lb**	**4.39**

BBA cautions that price forecasting is an inherently forward-looking exercise that is dependent upon numerous assumptions. The uncertainty around timing of supply and demand forces has the potential to create a volatile price environment, and BBA fully expects that the price will move significantly above and below the selected price over the life of the project.

Given the expected volatility, BBA believes the selected price is a reasonable estimate for evaluating a long-term mining asset (20+ years). It aligns with both historical and anticipated long-term pricing.

Table 16-2 summarizes the one-, three-, and five-year trailing price for copper using the LME Grade A monthly average as well as consensus forecasts from the major banks (CIBC, 2025) and Ocean Partners (2025).

Table 16-2: Commodity Price Summary

	LME Trailing Average ($/lb)			Forecast ($/lb)				
	1-Year	3-Year	5-Year	2026	2027	2028	2029	Long-term
BBA[1]	4.22	3.96	3.95					
Banks Forecast[2]				4.36	4.52	4.65		4.31
Ocean Partners[3]				4.31	4.54	4.76	4.65	4.31

Notes: 1. BBA, Metal Pricing_R00, June 2025. 2. CIBC Consensus Commodity Prices – June 2025. 3. Ocean Partners, April 2025.

16.3 Contracts

At this time, no sales agreements or contracts have been executed with vendors, contractors, or manufacturers.

Major contracts that will be required include:

- contract labor for underground access and ventilation
- major material procurement for all process facilities and electrical infrastructure
- power purchase agreements for renewables and grid power, inclusive of local utility
- contract labor for process and surface infrastructure construction.

Copper cathode will be sold at mine-gate.

17 Environmental Studies, Permitting & Plans, Negotiations or Agreements with Local Individuals or Groups

17.1 Baseline & Supporting Studies

17.1.1 Flora & Fauna

Undisturbed uplands within and surrounding the property are open with a shrubland community dominated by creosote bush, saltbush, burroweed (*Isocoma tenuisecta*), desert ironwood (*Olneya tesota*), barrel cactus (*Echinocactus* spp.), white thorn (*Acacia constricta*), and velvet mesquite shrubs (*Prosopis velutina*). Much of the project area contains abandoned agricultural fields. These abandoned agricultural areas contain the same vegetation community as the less-disturbed areas but with an appreciably higher annual grass and forb component. The North Branch Santa Cruz Wash supports xeroriparian vegetation dominated by velvet mesquite, wolfberry (*Lycium* sp.) creosote bush, and crucifixion thorn (*Canotia holacantha*). Desert broom (*Baccharis sarothroides*), Mexican palo verde (*Parkinsonia aculeata*), desert hackberry (*Celtis ehrenbergiana*), cocklebur (*Xanthium strumarium*), and nonnative and invasive tamarisk (*Tamarix* sp.) are present along the North Branch Santa Cruz Wash in low densities, as well as a lone Fremont cottonwood (*Populus fremontii*). Bermuda grass (*Cynodon dactylon*) and other grasses and forbs line the irrigation levee that confines the Santa Cruz Wash.

Wildlife species activity observed within or close to the property include coyote (*Canis latrans*), javelina (*Tayassu tajacu*), gray fox (*Urocyon cinereoargenteus*), round-tailed ground squirrel (*Xerospermophilus tereticaudus*), common raven (*Corvus corax*), phainopepla (*Phainopepla nitens*), Cooper's hawk (*Accipiter cooperii*), great blue heron (*Ardea herodias*), mourning dove (*Zenaida macroura*), black-tailed jackrabbit (*Lepus californicus*), greater roadrunner (*Geococcyx californianus*), turkey vulture (*Cathartes aura*), and hummingbird spp. (family *Trochilidae*). Carp spp. (family *Cyprinidae*) and catfish spp. (family *Ictaluridae*) were observed in the East Main canal bordering a portion of the southwest corner of the project area. These wildlife species are typical of the local landscape and reflective of the mixed land use of the property and surroundings which include active and abandoned agricultural fields, irrigation canals, ponds, and undeveloped Sonoran Desert.

17.1.2 Special Status Species

Special-status species include species designated by the United States Fish and Wildlife Service as endangered, threatened, proposed for listing, or candidate for listing under the *Endangered Species Act* and species protected under the *Bald and Golden Eagle Protection Act*, Endangered Species Act-listed, proposed, and candidate species. The federal protection status, known suitable habitat, total range, and distribution in Arizona was evaluated, and it was determined that there are no endangered species with potential to occur within the project area. No United States Fish and Wildlife Service-designated or proposed critical habitat occurs within the project area. A search of the Heritage Data Management System using the Arizona Game and Fish Department Online Environmental Review Tool found no records of endangered species listed special-status species within 3 miles (5 km) of the project area.

Two *Bald and Golden Eagle Protection Act* species (golden eagle and bald eagle) were determined to have some potential to occur within the project area. A review of publicly-available bald eagle sighting records in the area (ebird, 2023) show eagles perching on transmission poles and irrigation pivots to the west of the project area, likely foraging in the agricultural field, irrigation canals, and ponds. There are no breeding behavior observations in the records. An incidental take permit from the United States Fish and Wildlife Service may be required for construction activities within 660 ft (201 m) or blasting within a half-mile (0.8 km) of an active eagle nest. As there are no known eagle nests in the area at this time, the project is not expected to need an incidental take permit. Bald eagle use of the properties to the west of the project will continue to be tracked, and best management practices will be implemented to protect bald eagles as required.

Ivanhoe Electric will continue monitoring changes in special-status plant and animal species protections throughout the life of the project and implement best management practices to avoid "take" of listed species should they occur on the property in the future.

17.1.3 Migratory Bird Treaty Act

The *Migratory Bird Treaty Act* is intended to ensure the sustainability of all protected migratory bird species and currently includes protection of 1,106 avian species. During active construction, pre-construction clearance surveys are conducted weekly within the project area to avoid the incidental take of migratory birds.

Nesting migratory bird species identified in the project area include the horned lark (*Eremophila alpestris*), red-tailed hawk (*Buteo jamaicensis*), mourning dove (*Zenaida macroura*), band-tailed pigeon (*Colombidea* sp.), nighthawk (*Chordeilinae* sp.), verdin (*Auriparus flaviceps*), northern mockingbird (*mimus polyglottos*) cactus wren (*Campylorhynchus brunneicapillus*), raven (*Corvus corax*), ground sparrow (*Spizella pusilla*), greater roadrunner (*Geococcyx californianus*), and western burrowing owl (*Athene cunicularia* ssp. *hypugaea*) (WestLand, 2023 and 2024).

All employees and contractors are trained on *Migratory Bird Treaty Act* requirements and the project's migratory bird survey and monitoring protocols. Pre-construction clearance surveys and implementation of beneficial practices and procedures to protect migratory bird species will continue throughout the life of the project.

17.1.4 Surface Water Mapping

Under Section 404 of the *Clean Water Act* the United States Army Corps of Engineers is responsible for regulating the discharge of fill to surface water features determined to be Waters of the United States. A geographical information system (GIS) delineation of the ordinary high-water mark within the surface water features of the project area was developed, using current, publicly available aerial photography and subsequent, targeted field reconnaissance. This delineation was created based on the practices typically used by the United States Army Corps of Engineers in assessing ephemeral channels in the arid southwest.

Much of the project area has been previously disturbed from its natural state. These disturbances include flood control features, such as the canal identified as the Santa Cruz Wash Canal, paved and unpaved roads, and agricultural practices. These disturbances have removed all potential natural surface water features that may have existed in the area. The only features within the project area that possess characteristics of an ordinary high-water mark are the North Branch of the Santa Cruz Wash and the constructed Santa Cruz Wash Canal.

The North Branch of the Santa Cruz Wash is the downgradient extension of the Santa Cruz River between the Santa Cruz Flats to the south and the confluence with the Gila River to the north. This feature possesses the characteristics of an ordinary high-water mark, including changes in soil character, debris, scour, and an abrupt change in plant communities. Based on the observed vegetation, it is possible that the channels of this feature may possess adjacent wetlands. The constructed Santa Cruz Wash Canal also serves a similar function as the North Branch, namely channeling flows from the Santa Cruz River northward through the City of Maricopa and the Ak-Chin Indian Community, towards the confluence with the Gila River to the north.

The Santa Cruz Copper Project area has an approved jurisdictional delineation in which the United States Army Corps of Engineers determined that the portion of the Santa Cruz Wash running through the project area is ephemeral. The U.S. Supreme Court decision in Sackett v. the Environmental Protection Agency invalidated portions of the March 20, 2023, definition of waters of the United States (the 2023 WOTUS Rule), including use of the concept of "significant nexus" for determining *Clean Water Act* jurisdiction. Under the current definition of waters of the United States, amended on September 8, 2023, to conform to the Sackett decision [88 Fed. Reg. 61964 (the Conforming Rule)], tributaries like the features within the Santa Cruz Copper Project area must be "relatively permanent standing or continuously flowing bodies of water" to be jurisdictional waters of the United States. Given the United States Army Corps of Engineers' previous determination that the tributaries within the project area are ephemeral, it would be reasonable to assume that these features cannot be Waters of the United States under the Conforming Rule.

The Arizona Department of Environmental Quality has identified washes and tributaries previously regarded as potentially Waters of the United States before the Sackett decision as non-Waters of the United States but protected by the State. The Santa Cruz River between Baumgartner Road and the Ak-Chin Indian Community falls into this category and has been identified as water that is non-Waters of the United States but protected by the State. Although the language specifying the reach of the Santa Cruz Wash can be found in the code, the exact path between Baumgartner Road and the Ak-Chin Indian Community has not been identified by the Arizona Department of Environmental Quality. The project area is within the general geographic location identified in the administrative code. Ivanhoe Electric will adhere to the requirements of the State and not discharge into the wash without appropriate permits in place.

The United States Army Corps of Engineers retains the final authority for determining the presence of Waters of the United States and to date has not been asked to provide its concurrence with this delineation. However, the project has been designed to avoid impacting potential Waters of the United States and is not expected to require a permit under Section 404 of the *Clean Water Act*.

17.1.5 Cultural Heritage

An archeological evaluation of the project area was completed in 2005 and 2006 (Foster et al., 2006). In 2022, Ivanhoe Electric completed a Class III cultural survey to reassess 20 previously recorded sites (Middleton, 2022) and their eligibility for listing in the National Register of Historic Places. Of the 20 sites reassessed, five sites were eligible for listing in the National Register of Historic Places: two Euro-American sites and three prehistoric ancestral sites. Despite there being no federal permitting or requirements under Section 106 of the *National Prehistoric Preservation Act* for private lands, the Ivanhoe Electric team is committed to working directly with descendant communities to help preserve and protect places of important cultural value. Ivanhoe Electric has developed and implemented an archeological Monitoring and Discovery Plan for the three National Register of Historic Places -eligible prehistoric ancestral sites located within the Santa Cruz Copper Project area. Although Ivanhoe Electric intends to avoid significant ancestral sites during project development, it is necessary to both monitor and preserve the known prehistoric archeological resources in the long-term and to have a designated protocol in case of inadvertent discovery during earth-moving activities outside of known site boundaries.

17.1.6 Air Quality

Ivanhoe Electric is seeking a Class II air quality permit from the Pinal County Air Quality Control District, currently under review, to meet power requirements during the Santa Cruz Copper Project's construction phase. The project obtains annual fugitive dust permits and will continue to update and renew these, as required, to manage dust from mining, material handling, transportation, stockpiling, and wind erosion, ensuring compliance with tailored dust control measures. Situated in the West Pinal County PM_{10} nonattainment area, the project will adopt targeted dust mitigation strategies suitable for the arid climate, adhering to local and state regulations.

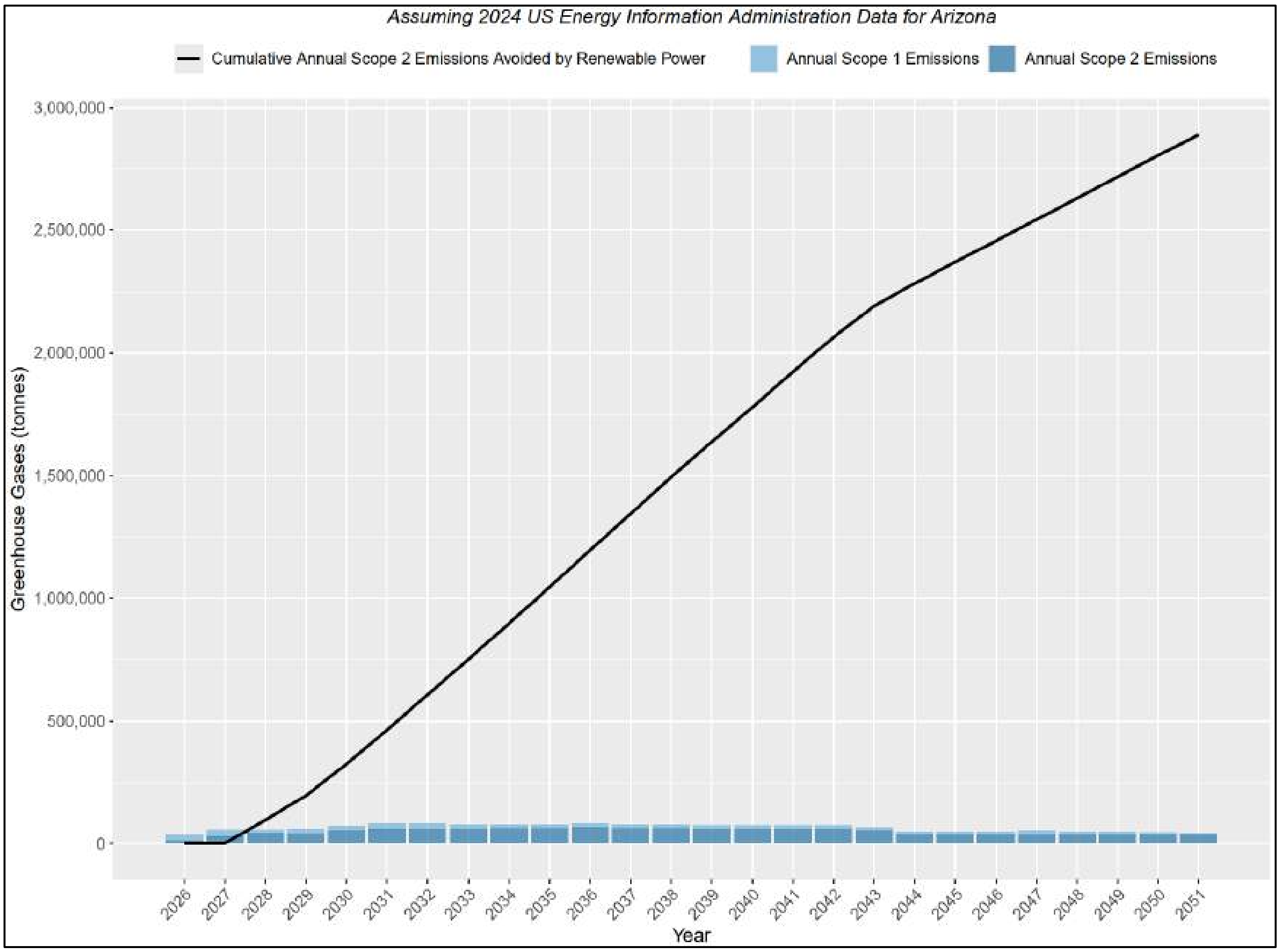
Key air pollutants include dust (i.e., windblown dust, mining activities, and material handling), and combustion emissions (i.e., generators and other fuel-burning equipment). The project will amend the Class II air quality permit to include process emission sources for the full life of mine and is expected to be classified as a synthetic minor source. As a synthetic minor source, emissions will be kept below major source thresholds through operational limits and control technologies. Mitigation strategies encompass water sprays and enclosures for material handling, enhanced dust suppression (e.g., chemical suppressants, paved roads, reduced speed limits, limiting operations during high winds), emission controls for generators to minimize combustion emissions, and ongoing monitoring, maintenance, and staff training to ensure effective emission controls and regulatory compliance.

17.1.7 Carbon Intensity

Ivanhoe Electric performed a carbon impact assessment for the Santa Cruz Copper Project, analyzing Scope 1 and Scope 2 emissions over its operational life, and compared the project's carbon intensity to copper mining industry benchmarks. Scope 1 emissions, stemming from onsite fuel combustion, explosives, and refrigerant leaks, were calculated using emission factors from the United States Code of Federal Regulations and industry standards. Scope 2 emissions, arising from electricity used for ore crushing, grinding, and ancillary operations, were estimated based on regional utility emission factors.

The project plans to implement onsite solar generation combined with utility-provided carbon neutral power, expected to supply a total of 70% renewable energy by 2029, substantially lowering Scope 2 emissions (see Figure 17-1 for avoided carbon dioxide equivalent [CO_2e] emissions). Global warming potentials are drawn from the Intergovernmental Panel on Climate Change Fourth Assessment Report, converting greenhouse gas emissions into carbon dioxide equivalent.

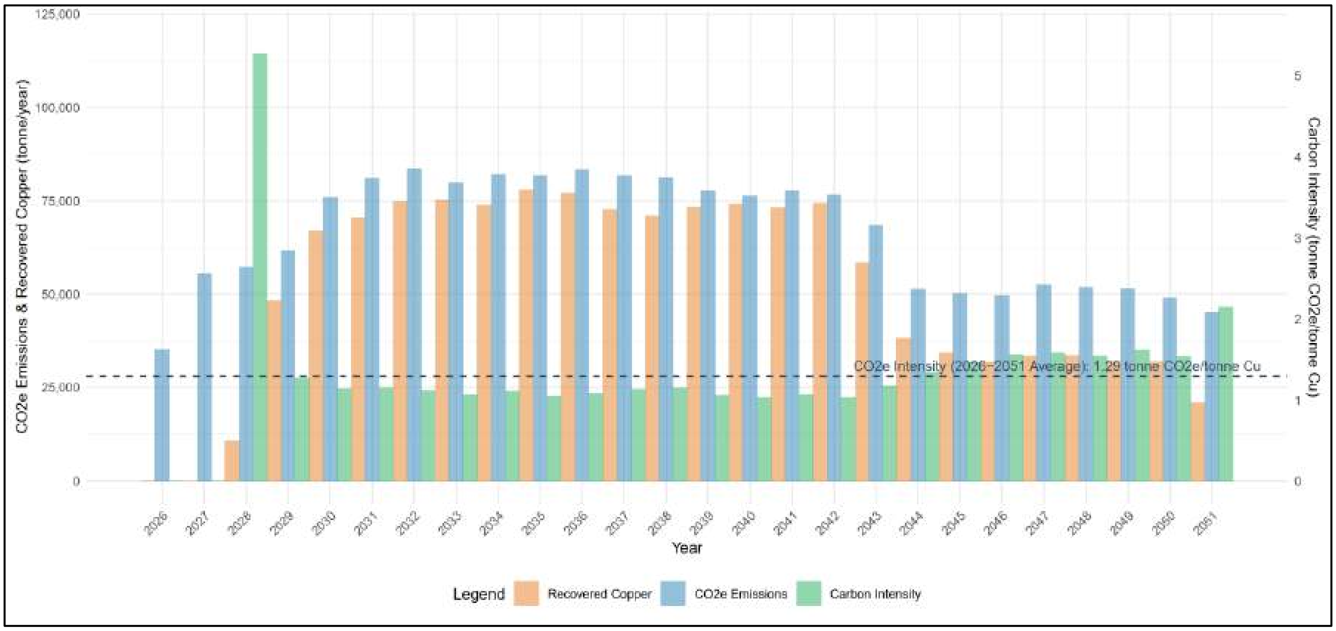
Figure 17-1: Scope 1 & 2 CO_2e Emissions & Avoided Emissions



Source: Tipple Consulting, 2023.

The Santa Cruz Copper Project anticipates an average carbon intensity of 1.29 tonnes of carbon dioxide equivalent per tonne of copper, decreasing to 1.19 tonnes during active mining (2028 to 2051). This is significantly below the 2018 industry average of 3.1 tonnes carbon dioxide equivalent per tonne for copper cathode, and is expected to decline to 1.5 tonnes by 2050. By producing only copper cathode, the project avoids emissions from downstream processing. The renewable microgrid enables one of the lowest carbon intensities in the industry (see Figure 17-2 for annual and total intensities), highlighting Ivanhoe Electric's dedication to sustainable and innovative mining practices.

Figure 17-2: Annual CO_2e Emissions & Intensities (Maximum 70% Renewable)



Note: The carbon intensity in 2028 appears elevated because it is calculated as a function of recovered copper (i.e., tonnes of CO_2e per tonne of copper). A relatively low volume of recovered copper that year leads to a higher intensity valued, even if total emissions remain relatively consistent. Source: Tipple Consulting, 2023.

17.1.8 Surface Water Monitoring

A surface water monitoring program was implemented in January 2024. Surface water samples are collected and analyzed from three set locations on site: the Santa Cruz Wash Canal, the North Branch of the Santa Cruz Wash, and the confluence of both surface waterbodies as they exit the project site. Samples are collected and analyzed quarterly.

The objective of baseline surface water sampling activities is to evaluate the current condition of surface water in the North Branch of the Santa Cruz Wash and the Santa Cruz Wash Canal. Baseline data will inform parties of conditions in the canal and wash prior to the onset of mining activities and help inform Ivanhoe Electric of any potential impacts to these bodies of water in the future.

17.1.9 Groundwater Monitoring & Water Quality

17.1.9.1 Historical Water Quality

Area water quality, summarized from a dataset spanning 77 wells with data collected from 1976 to 2000, were reviewed to understand historic baseline conditions (LCG, 2023). Current (2023 to 2025) water quality is summarized in Section 17.1.9. A review of the historical water quality indicates that area bedrock and overburden water quality generally meet Arizona Department of Environmental Quality's Numeric Aquifer Water Quality Standard with the few following exceptions:

- Water quality in many overburden wells exceeds Aquifer Water Quality Standard for gross alpha (15 pCi/L) with concentrations as high as 50 pCi/L (uncorrected for natural uranium or radon).
- Numerous overburden wells and a few bedrock wells indicate arsenic above Aquifer Water Quality Standard (0.01 mg/L [revised proposed standard]) with concentrations approaching 0.04 to 0.05 mg/L.
- Nitrate concentrations in a number of overburden wells exceeds Aquifer Water Quality Standard (44 mg/L) with concentrations as high as 55 mg/L.

It is suspected that elevated baseline nitrate concentrations are associated with agricultural activities, whereas the arsenic and gross alpha exceedances are likely tied to local water-rock reactions between overburden and mineralized bedrock and baseline groundwater, as supported by the ongoing materials characterization program (refer to Section 17.1.10).

17.1.9.2 Current Water Quality

A groundwater monitoring program to continue collecting baseline water quality data was developed and implemented in October 2023. The objective of the monitoring plan is to establish a current baseline water quality profile for the site and help inform Ivanhoe Electric on the best management practice for groundwater monitoring during and after mining operations. The plan was used to provide the water quality predictions.

The program currently includes four rehabilitated historical wells, all in the overburden, and seven new monitoring wells. A summary of predominant overburden and bedrock water quality is as follows:

- pH
  - Overburden pH is typically circumneutral (x = 7.2), with the majority of measurements above pH 6.3.
  - Mean bedrock pH is ~8.6.
- Oxidation-reduction potential
  - Conditions in the bedrock, as expected, are on average more reducing (x = -193 mV) than those in the overburden (x = 38 mV).
- Major ion chemistry
  - Overburden wells are generally sodium-dominant with mixed anion (bicarbonate, chloride, sulfate) proportions.
  - Bedrock wells are also sodium-dominant, but with lower calcium and magnesium proportions, and with lower alkalinity (e.g., proportionally chloride and sulfate dominant).
- Trace element chemistry
  - As has been observed in the historical well water quality, arsenic, and gross alpha exceedances of Aquifer Water Quality Standard are consistently observed in recent water quality from overburden wells. Future Aquifer Water Quality Standards for uranium are likely to be lower, and it is expected that consistent uranium exceedances will also occur in overburden wells.
  - Bedrock wells regularly exceed Aquifer Water Quality Standard for fluoride, although not substantially.

For operational water management purposes, it is possible to classify and segregate overburden from bedrock groundwater based on concentration differences and multivariate forensic signatures. The overburden aquifer tends to have distinctly higher concentrations of gross alpha, uranium, arsenic, nitrate, calcium, magnesium, strontium, and alkalinity and distinctly lower concentrations of fluoride, radium-226, radium-228, sodium, sulfate, chloride, lithium, and molybdenum than the bedrock aquifer.

Multivariate analysis indicates that the forensic signatures of bedrock and overburden waters are likely also clearly distinct and that each water type can be identified and operationally managed based on their chemistry alone. Almost all overburden waters sampled to date are chemically similar to one another with positive correlation between gross alpha, phosphorous, sulfate, toluene, boron, potassium, bromide, lithium, and alkalinity. Bedrock waters are more chemically variable than overburden waters, but multivariate correlations are observed in bedrock waters between radium-226, radium-228, arsenic, iron, fluoride, calcium, chloride, zinc, nickel, barium, and silica. These signatures are preliminary, based on the limited dataset available; additional water quality data will be used to further refine the forensic signature.

17.1.10 Material Characterization & Water Quality Predictions

Material characterization studies were initiated in 2022 and are currently ongoing. The purpose of mine material characterization studies for the Santa Cruz Copper Project is to advance the site environmental conceptual model and to understand both long-term material environmental behavior and environmental risks associated with various planned waste facilities as well as the underground workings. More specific objectives include identifying material types (or classes) to be managed, either as waste or borrow material, providing clear segregation criteria for Ivanhoe Electric, and initiating the processes of developing long-term water quality predictions and evaluating materials and water management alternatives.

Sample numbers for materials selected for characterization were proportional to anticipated excavated mass and projected waste and ore tonnages, based on project mine planning and geometallurgical planning by the project team. Sampling and testing also incorporate the estimated diversity of lithological, mineralogical, mineralization, oxidation, alteration, and environmental characteristics observed in exploration drill core and processed mine materials. The material characterization team used prior experience with the geochemistry of porphyry copper deposits in Arizona and elsewhere to provide general background relevant to the expected environmental performance at the Santa Cruz Copper Project.

The environmental characterization test program was developed both to meet Arizona Best Available Demonstrated Control Technology guidance for permitting purposes and to support project feasibility, design, and future operational and post-closure needs. The program follows the general tiered approach prescribed in the Arizona Best Available Demonstrated Control Technology manual (Arizona Department of Environmental Quality, 2005), with Tier IA static test methods including acid-base accounting and bulk chemistry conducted on the entire subset; Tier IB static test methods including the meteoric water mobility procedure leach test and mineralogy by X-ray diffraction conducted on a subset of the Tier 1A materials; and Tier 2 methods including the longer-term humidity cell leach tests conducted on an even smaller subset selected to best represent the range of materials and environmental characteristics observed in Tier 1 test results. In all, the test program is robust, currently with over 200 drill core samples characterized according to Tier 1A. Additionally, 11 Tier 2 humidity cells have been tested, some for over a year, all for Phase A (mine access) materials. The initiation of 20+ Phase B (mine area materials) humidity cells is planned for mid-year 2025. The testing program for the Phase B characterization work also includes Tier 1A and 1B testing for processed mine materials including spent ore and leach raffinate. Additional spent ore and raffinate samples and paste backfill cylinders are currently being generated by the project for environmental characterization work in 2025.

17.1.10.1 Mine Material Types

Anticipated mine material types can be developed into three broad project classes, as follows:

- Mine access material (characterization testing Phase A) – Includes both overburden and bedrock material that must be mined to access the targeted mineralized area. The mine access material will be stored on the surface during or after development of underground access to the mine area. Access area overburden and bedrock material have been extensively sampled and characterized by Tier 1A, Tier 1B, and Tier 2 laboratory tests.
- Mine area material (characterization testing Phase B) – includes mineralized bedrock that will be excavated predominantly as ore for processing, with accompanying minor waste rock. A considerable set of mineralized bedrock samples has already been characterized by Tier 1A and Tier 1B tests; Tier 2 tests conducted on mine access (Phase A) bedrock are likely a proxy for the environmental behavior of mine area bedrock material; humidity cells for mine area (Phase B) bedrock will be initiated in 2025. Additional samples are anticipated for all characterization tiers in future years, both to fill knowledge gaps and to further support detailed design and evaluation of future mine water and material management alternatives.

17.1.11 Mine Material Environmental Behavior

Results of the various characterization programs that have been completed indicate that the following broad conclusions below can be drawn about expected environmental behavior of various material types that will comprise future waste facilities.

All overburden (mine access material) material has very low to non-detectable levels of sulfide and total sulfur, the source of acid-generating potential, and variable levels of acid-neutralizing potential. In the overburden sample population, acid-neutralizing potential consistently exceeds acid-generating potential therefore overburden materials can be safely classified as non-acid-generating. The considerable sources of acid-neutralizing potential indicate that overburden material is potentially useful as borrow/construction material that would not generate acidic and associated metalliferous drainage (i.e., acid mine drainage/metals leaching). Overburden material also exhibits low-level arsenic and uranium-leaching potential, although this is mitigated by the fact that these constituents already exceed Arizona Department of Water Resources criteria in baseline area groundwater. Mine access bedrock material is likely to have similar environmental characteristics to mine area bedrock and can be used as a reliable surrogate for mine area bedrock at this time.

Mine area mineralized bedrock is a mix of potentially acid-generating and non-potentially acid-generating materials. These bedrock materials exhibit variable levels of acid-generating potential but all have very little acid-neutralizing potential. Based on the currently inferred sample populations, bedrock appears likely to be 38% non-acid-generating, 56% acid generating, and approximately 6% classified as uncertain. Potentially acid generating materials that become acidic are likely to exhibit drainage quality with pH as low as 3.5 and with high concentrations of sulfate and metals that substitute for sulfur (chalcophile) and iron (siderophile) in sulfide minerals (e.g., arsenic, cadmium, copper, selenium etc.). Humidity cell test results suggest that in some cases acidic conditions could form in less than one year under atmospheric/ambient conditions. The lack of acid-neutralizing potential in most potentially acid generating mine materials further suggests that lag times will generally be short (a few years or less). For bedrock samples that are non-potentially acid generating, there is still potential for materials to leach low levels of oxy-anions (e.g., antimony, arsenic, selenium) and natural uranium and presumably some natural uranium decay products.

Spent ore material is expected to exhibit weak acid-generating potential, primarily due to the very low concentrations of iron sulfides that are expected to be present in the processed oxide ore. The neutralization capacity of the spent material is also expected to be negligible, as most carbonate minerals will be depleted during sulfuric acid leaching. Any remaining buffering is likely limited to slow-reacting silicate minerals, which may partially neutralize any residual minor amounts of acidity generated post-leaching. Residual leaching solutions retained within the spent ore are anticipated to be acidic and contain elevated concentrations of total dissolved solids, halides, and trace metals, primarily due to evapo-concentration and the recycling of leach solutions. Contact water from the spent ore pad is expected to reflect these constituents; water quality will be highly dependent on operational rinsing practices, and the extent to which solid phase precipitation reduces constituent loads somewhat. Paste backfill is not expected to be acid generating, as the alkaline binding agents used in the mix are anticipated to neutralize the minor potential acidity from the low concentrations of residual sulfides. In addition, the paste structure is expected to limit oxygen diffusion to sulfide minerals, thereby reducing the rate of sulfide oxidation. Metal leaching from the paste backfill will be further assessed through ongoing geochemical testing.

17.1.11.1 Water Quality Predictions

Underground water quality predictions were developed, with focus on seepage chemistry to be collected from underground workings during operations. The objective of this modeling is to support development of the operational surface water management strategy as this water will be pumped to the surface during operations. The modeling relied on two scenarios, a Base and Upper Case, which were developed to simulate expected and upper-bound conditions, respectively. Key aspects of the predictions are summarized here:

- Based on seepage rates into the underground stopes and workings substantial solute input from the disturbed rock zone would be required to meaningfully alter baseline dewatering water chemistry over time.
- The Base Case is considered more representative of the expected average life-of-mine underground water quality than the Upper Case. Upper Case scenarios are designed to characterize potential maximum solute concentrations and highlight existing uncertainties to be addressed in detailed design.

- Base Case predictions and associated sensitivity scenarios indicate that dewatering water chemistry generally reflects the geochemical characteristics of the overburden and bedrock aquifers. Exceedances of potential water-quality criteria are typically predicted where baseline non-contact water chemistry approaches or exceeds regulatory thresholds.
- Cadmium and selenium, elevated under baseline conditions, are predicted to exceed Arizona Department of Environmental Quality reference values across several percentile levels in all scenarios and sensitivities.

17.2 Permitting & Authorizations

The primary permits for the project will require state, county, and local authorizations. Several of these permits have been issued for exploration activities and are in the process of being amended for project construction activities. Other permits for construction activities are in preparation or have been submitted. The remaining permit applications for construction and operations will be prepared and submitted as sufficient design and engineering information become available. Table 17-1 lists the major federal, state, and local permits required for the project.

Table 17-1: Permits Table

Jurisdiction	Agency	Permit Needed & Description	Comment
Federal	US Environmental Protection Agency	Resource Conservation and Recovery Act – Hazardous Waste Management	Waste accumulation threshold will determine when hazardous waste ID number (permit) is required.
Federal	US Fish and Wildlife Service	Migratory Bird Treaty Act	Ongoing monitoring and implementation of beneficial practices throughout life of project.
Federal	US Environmental Protection Agency	Class V Underground Injection Control Permit for mine backfill	Permit by rule or individual permit depending on materials characterization and pre-application discussion with agency; Underground Injection Control program expected to be under state jurisdiction by 2027.
State	Arizona Department of Environmental Quality	Aquifer Protection Permit	Facility-specific permit for heap leach, spent ore, temporary development rock, truck wash, and ponds.
State	Arizona Department of Environmental Quality	Recycled Water Discharge Permit for redistribution of excess treated water to priority users	For distribution of treated water for third party uses (e.g., irrigated crops).
State	Arizona Department of Water Resources	45-513 – Groundwater Withdrawal Permit to withdraw groundwater for dewatering purposes in an Active Management Area	Project is within the Pinal Active Management Area.
State	Arizona State Mine Inspector	Mined Land Reclamation Plan	Closure plans developed as part of initial assessment / prefeasibility study.
State	Arizona Department of Transportation	Encroachment Permit for access off Hwy 84	Traffic impact analysis completed.
County	Pinal County Air Quality Control District	Air Quality Control Permit – determined by quantity of emissions from stationary sources and process emissions	Required for any industrial operation that has the potential to emit 5.5 pounds per day or 1 ton per year of any regulated air pollutant is required to obtain a permit from Pinal County Air Quality. Submitted March 2025 for construction activities and under agency review.
County	Pinal County Air Quality Control District	Pinal County Dust Control Permit – West Pinal Non-Attainment	Existing permit will be amended as needed.
City	City of Casa Grande	Special Flood Hazard Area Development Permit for proposed development within a floodplain	Likely not required as facilities have been designed to avoid development within Special Flood Hazard Areas.
City	City of Casa Grande	General Plan Amendment – major amendment to city plan	Required to include mining operations and infrastructure within city limits. Obtained February 2025.
City	City of Casa Grande	Major Site Plan/Planned Area Development Plan – major amendment to existing plan	Required to accommodate industrial use/mining operations in a Planned Area Development zone. Obtained February 2025.

The following permits have been obtained for exploration activities and are in the process of being amended for project construction activities:

- Arizona State Mine Inspector Mined Land Reclamation Plan (issued for exploration activities, amendment for construction activities has been submitted, an additional amendment will be needed for final facility design).
- Pinal County Dust Control Permit (issued for exploration activities, will be amended as needed to accommodate construction activities).
- City of Casa Grande Special Flood Hazard Area Development Permit (issued for exploration activities, in the renewal process, likely not needed for construction as flood plains have been avoided).

The following permits for construction activities are in preparation or have been submitted:

- Pinal County Air Quality Control District Class II Air Permit (submitted for construction activities and under agency review, will be amended for operations).
- Arizona Department of Environmental Quality Aquifer Protection Permits (for ponds, rock storage, and truck wash — general permit applications in preparation).
- Arizona Department of Water Resources 45-513 Groundwater Withdrawal Permit (application in preparation).
- Arizona Department of Transportation Encroachment Permit for access off Highway 84 (application in preparation).

The following permits for construction and operation will be prepared and submitted as design and engineering details become available:

- US Environmental Protection Agency Class V Underground Injection Control Permit (for mine backfill).
- Arizona Department of Environmental Quality Aquifer Protection Permits (for the heap leach and spent ore storage facilities).
- Arizona Department of Environmental Quality Recycled Water Discharge Permit (for discharge of treated water, if necessary).

Land use authorizations from the City of Casa Grande, including a General Plan Amendment and Major Amendment to a Planned Area Development Zone, have been obtained to allow mining activities and infrastructure within the project site.

17.3 Waste & Spent Ore Disposal, Site Monitoring, & Water Management

This section discusses the requirements and plans for waste and spent ore disposal, site monitoring, and water management during operations and after mine closure. Operators must demonstrate within their mine plans and permit applications that pollutant discharges will be prevented or managed to prevent contaminants of concern from traveling beyond points of compliance. Arizona Best Available Demonstrated Control Technology stipulates the following for planning for materials and water management and design of storage facilities:

- Applicant must develop a waste characterization plan for the Arizona Department of Environmental Quality. A site-specific sampling and analysis plan has been submitted to the Arizona Department of Environmental Quality and is continuously revised as new test material becomes available.
- Waste facilities can be designed with pre-designated engineered containment (prescriptive approach) under the assumption that facilities will be discharging, and that the discharge will require management.
- Waste facilities can also be individually designed which places the burden on the operator to demonstrate facility discharge will not result in downgradient impacts to aquifer, vadose zone, or land surface.
- Required long-term monitoring for compliance with facility Aquifer Protection Permit will be dictated by the conditions of the permit.

Based on Arizona Best Available Demonstrated Control Technology guidance for materials and water management and the results of characterization testing performed to date, the following plans will be required for waste and spent ore disposal, site monitoring, and water management during operations and following mine closure:

- Metal Leaching/Acid Rock Drainage Management Plan – Must include definitions and classification criteria for potentially metal-leaching and acid-generating materials, handling and storage plan, monitoring plan, sampling plan, and contingency plan.
- Heap Leach and Spent Ore Operations, Maintenance, and Surveillance Manual – Must include information such as governance, facility description, operational requirements, maintenance requirements, surveillance requirements, and linkages with the emergency response plan.
- Site-Wide Water Management Plan – Must include information specific to the leaching and spent ore facilities, protection against floods, seepage management, discharge management, risks of discharge to the receiving environment, water quality and quantity mitigation measures, and a trigger response plan for upset conditions.
- Site-Wide Surface Water and Groundwater Monitoring Plan – Must include information such as monitoring objectives, methods, rationale for the monitoring locations/depths, water quality parameters to be monitored, sampling frequency and period, analytical testing procedures, QA/QC methods, and reporting requirements.
- Post-Closure Monitoring and Maintenance Plan – Must include information specific to the heap leach and spent ore facilities, such as environmental monitoring requirements, annual safety inspections, and post-closure maintenance requirements for the closure cover system and stormwater controls.

17.4 Post-Performance or Reclamations Bonds

The eventual closure and reclamation of the Santa Cruz Copper Project will be regulated under two interconnected regulatory programs. Both programs are well-established in Arizona and the statutes and rules are subject to licensing timeframes. The agencies are required by statute to issue approvals when credible applications are deemed administratively and technically complete.

- Arizona Revised Statutes authorizes the Arizona State Mine Inspector to establish mined land reclamation requirements. The Arizona State Mine Inspector's primary role in this context is the approval (or denial) of mined land reclamation plans submitted by all metalliferous and aggregate mining units and exploration operations with surface disturbances greater than five acres on private lands.
- Arizona Revised Statutes also authorizes the Arizona Department of Environmental Quality to regulate discharges (or potential discharges) to an aquifer or vadose zone in the State or requires those who operate a facility that discharges to obtain an Aquifer Protection Permit. While considered an operational permit, the Aquifer Protection Permit program also considers the eventual cessation of operations and the restoration of vadose and aquifer conditions.

17.5 Status of Permit Applications

17.5.1 Arizona State Mine Inspector – Reclamation Plan

Although exploration activities conducted by Ivanhoe Electric are subject to the approved exploration level reclamation plan (approved September 27, 2023), Ivanhoe Electric must submit and obtain approval for an amended mined land reclamation plan prior to initiating actual mining operations. However, certain facilities needed for mine development, general construction and site improvements, or advanced exploration, such as excavating a decline, can be covered under an amended exploration level reclamation plan. Unreclaimed disturbances from prior or ongoing exploration activities can simply be incorporated into the disturbance footprint of the operating plan or reclaimed under the existing exploration level plan.

Future mining operations will require a mined land reclamation plan as established in Chapter 5 of Title 11 in the Arizona Revised Statutes. The plan can be developed once Ivanhoe Electric has completed at least 75% design drawings for all surface disturbances and structures at the site. The closure of discharging facilities as defined in Aquifer Protection Permit rules (such as heap leach and spent ore storage units, process ponds and waste rock stockpiles) must be included within the approved plan even though the detailed plans to closing these facilities are also documented in the Aquifer Protection Permit and approved by the Arizona Department of Environmental Quality.

17.5.2 Arizona Department of Environmental Quality – Aquifer Protection Permit

Future mining operations that are the subject of this document will require an approved Aquifer Protection Permit as established in Chapter 2, Title 49 of the Arizona Revised Statutes. The Aquifer Protection Permit facilities required to support decline development and construction activities will be authorized under general permits and will include contact water ponds, a temporary stockpile, and a truck wash. Pre-application meetings for these facilities have been completed with the Arizona Department of Environmental Quality and a determination of applicability was received July 8, 2024. General Aquifer Protection Permit applications for these facilities are being prepared concurrently with design drawings of these facilities.

The on/off heap leach and spent ore facilities will require an Aquifer Protection Permit. Although the Arizona Department of Environmental Quality does allow pre-application meetings and certain preliminary permitting activities to be conducted under 30% design drawings, the Aquifer Protection Permit can only be approved once Ivanhoe Electric has completed at least 75% design drawings for all surface disturbances and structures that are subject to the permit. Consequently, the project design status for these facilities prevents any substantive Aquifer Protection Permit activities at this time.

The closure of discharging facilities as defined in Aquifer Protection Permit rules (such as heap leach and spent ore repositories, process ponds and waste rock stockpiles) must be included within the approved reclamation plan even though the detailed plans and approach to closing these facilities are documented in the Aquifer Protection Permit and approved by the Arizona Department of Environmental Quality. Costs for closing these facilities must be addressed in the Aquifer Protection Permit application package although Arizona Revised Statutes expressly prohibits duplicative bonding requirements.

17.5.3 Known Requirements for Post-Performance or Reclamation Bonds

Aside from the reclamation plan for exploration and development activities at the site, Ivanhoe Electric has no current obligations to tender post-mining performance or reclamation bonds for the project. Once the facility achieves the level of design necessary to advance to mine development and operation, Ivanhoe Electric will need to submit and gain approval of an Arizona Department of Environmental Quality -approved Aquifer Protection Permit and an Arizona State Mine Inspector-approved reclamation plan. The closure approach and related closure cost estimates must be submitted following approval and before facility construction and operation can begin.

Although an operational mined land reclamation plan has not yet been developed for the planned operations at the Santa Cruz Copper Project, a preliminary closure cost estimate has been developed. Based on the conceptual design plan described in this document, the estimated closure costs for the project are $35 million.

17.5.4 Adequacy of Current Reclamation Plans

Although facility plans have not progressed sufficiently to develop detailed reclamation permits for future operations, Ivanhoe Electric has commissioned the required background studies and preliminary permitting to support current exploration activities. Further, we fully expect that the current planning efforts will provide sufficient design and operational detail to support an administratively and technically complete Mined Land Reclamation Plan.

17.6 Mine Closure

The present level of design considered in this document is insufficient to generate closure or reclamation plans as required by the Arizona State Mine Inspector and the Arizona Department of Environmental Quality for facility construction and operation. It is possible, based on the revised conceptual mine plans and facility layout discussed herein, to contemplate certain closure and reclamation obligations and approaches for the site elements described in the subsections below.

17.6.1 Waste, Development Rock, Heap Leach & Spent Ore Closure & Reclamation Approach

Required geochemical characterization will inform the need as well as means and methods for capping and covering these materials to prevent stormwater contamination and seepage that could impact the vadose zone or underlying aquifer. If characterization of these materials suggest that the “wastes” are geochemically inert, then isolation measures needed to prevent water-rock interactions are rendered unnecessary. Although preliminary geochemical evaluations are favorable, sufficient geochemical modeling has not been completed to determine if these materials will be inert.

The Arizona State Mine Inspector will not address or review the adequacy of closure or capping systems in the reclamation plan. However, the Arizona State Mine Inspector will require a geotechnical analysis to demonstrate that the stockpiles are safe and stable under static and pseudo-static conditions.

17.6.2 General Grading & Revegetation Approach

There are typically no grading or revegetation requirements included in an approved Aquifer Protection Permit. The Arizona State Mine Inspector-approved reclamation plan will address all grading, site recontouring, and revegetation requirements. To the extent practicable, the plan will recommend grading and recontouring to restore surface topography and drainage patterns. Roads and other compacted areas must be ripped and scarified to encourage the success of revegetation efforts. Material stockpiles should be graded and contoured to reduce erosive effects of rainfall events, enhance long-term stability, and reduce ponding and infiltration.

Inert materials (such as broken concrete and asphalt) generated from facility decommissioning activities can be buried on site without a permit provided those materials are categorically inert or are determined to be inert via approved testing protocols.

17.6.3 Process Area & Pond Closure Reclamation Approach

The approved closure approach will require that all process liquids, reagents, and solid residues be removed from the ponds and leaching circuits. These facilities can be rinsed with the resultant liquids evaporated but remaining sludges and sediments must be characterized and profiled for offsite transportation and disposal or recovery in accordance with Aquifer Protection Permit and hazardous waste rules and regulations. Once drained and cleaned, pond liners can be perforated and buried on site or transported from the property as solid waste.

The Arizona State Mine Inspector-approved reclamation plan will not address pond closure, but any remaining surface depressions must be regraded to achieve the safe and stable condition requirements of the reclamation rules. These efforts would typically be addressed in the general grading and reclamation approach discussed in the Reclamation Plan.

All solid wastes, laboratory and assay chemicals, and general household wastes must be removed from the structures prior to structural decommissioning. These materials must be recycled or characterized and profiled for appropriate offsite transportation and disposal.

17.6.4 Structural Decommissioning Approach

The Arizona Department of Environmental Quality -approved Aquifer Protection Permit closure plan will not specifically address the decommissioning of surface structures aside from the requirement that any process liquids or residues are not discharged in an uncontrolled manner.

The Arizona State Mine Inspector-approved reclamation plan will address structural decommissioning efforts to the extent that closure cost estimates include the demolition and removal of all surface facilities not specifically excluded from the plan. The Arizona State Mine Inspector rules do allow for the retention of specific structures such as water wells, utility infrastructure, or buildings where these structures can enhance the productive post-mining use of the property. These facilities must be specifically identified in the approved plan and excluded from reclamation.

Inert materials (such as broken concrete and asphalt) generated from facility decommissioning activities can be buried on site without permit provided those materials are categorically inert or are determined to be inert via approved testing protocols. These efforts would typically be addressed in the general grading and reclamation approach section of the reclamation plan.

17.6.5 Underground Operations Closure Approach

The Arizona Department of Environmental Quality approved Aquifer Protection Permit will require that all fuels, chemicals, wastes, and explosives used in the development and operation of underground operations be removed and disposed to prevent potential impacts to mine flooding. Fluid-containing equipment and machinery left underground must be drained and any contaminated materials must be removed and properly disposed.

Geochemical and hydrological modeling required in the Aquifer Protection Permit should predict the resulting rock-water and water-water interactions occurring as a consequence of mine flooding. If these interactions have the potential to impact the aquifer above a specific alert level as measured at the approved points of compliance, then actions prescribed in the Aquifer Protection Permit must be implemented. Sufficient geochemical and hydrological modeling has not yet been completed to assess this possibility.

The Reclamation Plan to be approved by the Arizona State Mine Inspector will require that the mine portal and any associated escape or ventilation shafts be appropriately closed and sealed to establish long-term safety and stability.

17.6.6 Aquifer Restoration & Post-Closure Monitoring Approach

Post-closure monitoring related to the Aquifer Protection Permit may include confirmation sampling related to the clean closure of any process areas or individual discharging facilities and the long-term monitoring of groundwater conditions across the site following closure. Ivanhoe Electric will be required to maintain, survey, and routinely sample the monitoring well network, including the various point of compliance wells, until such time as groundwater conditions have stabilized and regulated constituents of interest are not at risk of exceeding an alert level at any of the points of compliance. It is estimated that post-closure monitoring will be required for at least ten years depending on the speed at which the aquifer recovers from dewatering and aquifer conditions stabilize. Once groundwater conditions have stabilized and Arizona Department of Environmental Quality grants closure, Ivanhoe Electric must abandon all monitoring and point-of-compliance wells in accordance with the Aquifer Protection Permit.

The Arizona State Mine Inspector-approved reclamation plan will require site monitoring to document the effectiveness of grading and reclamation efforts including the success of revegetation. The plan will require the maintenance of fencing, signage and other site barriers, the removal of trash or wildcat dumping, and the repair of any erosion damage to capped and covered structures. . Following revegetation success after at least four growing seasons, the Arizona State Mine Inspector can determine that the site has been successfully reclaimed and return all or part of the reclamation bond established with the Arizona State Mine Inspector.

Certain facilities (like a spent ore repository, for instance) may not achieve clean closure and would thus require long-term monitoring and periodic involvement by the Engineer of Record. Depending on the geochemical characteristics of the repository waste, how quickly these facilities dewater, and the long-term stability of the containment areas, certain types of legacy facilities may not ever be released and declared closed. However, characterization and design efforts at the site have not progressed sufficiently to determine the long-term closure requirements of any facilities.

17.7 Local Individuals & Groups

In alignment with Ivanhoe Electric's community engagement and partnership standards, the Santa Cruz Copper Project is being developed with a well-defined strategy to establish and uphold the support of the surrounding communities. At present, the project has initiated outreach with Native American communities that have ancestral ties to the land, community outreach with local stakeholders, community involvement, and is actively assessing potential partnerships within the local community.

Ivanhoe Electric recognizes the need to keep stakeholders well informed about the project's potential economic and community benefits and Ivanhoe Electric's commitment to safety and the environment. To achieve this, the Ivanhoe Electric team has initiated meetings with various key groups, including local community leaders, neighboring communities, and regional- and state-level representatives. A community working group has been implemented and has been meeting quarterly since November 2023. Consistent communication will continue through the community working group platform. This group provides a forum for stakeholder involvement and allows interested community members to engage with the team and stay informed about the project as it progresses.

Furthermore, the Ivanhoe Electric team recognizes the potential impacts of noise and dust from the proposed activities and is taking proactive steps to address them. During the facility design phase, engineering controls will be incorporated to minimize noise and dust disturbances and maintain harmony with the surrounding community. Ivanhoe Electric plans to create an all-encompassing environmental, social, and governance framework designed to effectively address community concerns and ensure that the Santa Cruz Copper Project operates in a socially responsible manner.

17.8 QP Opinion

H&A is of the opinion that this report adequately addresses the federal and state permitting and closure standards that will impact the closure and reclamation of the project.

LCG is of the opinion that this report adequately addresses the environmental assessments, including geochemical materials characterization and baseline water quality studies. The work performed meets industry standards, reflects current regulatory requirements, and is appropriate for the current level of design and planning.

Tetra Tech is of the opinion that this report adequately addresses environmental assessments, permits, and plans, as well as negotiations and agreements with local entities. The plans and permitting requirements are adequate for the current level of design and planning.

18 Capital & Operating Costs

18.1 Basis for Cost Estimates

Accurate estimation of capital and operating costs is fundamental to assessing the economic viability of a proposed project. Together with projected revenues and other anticipated expenses, these cost estimates provide the foundation for the financial analysis detailed in Section 19.

For the Santa Cruz Copper Project, capital and operating costs were determined based on the mine plan and SX/EW plant design. The estimation process incorporated assessments of material and labor requirements derived from the design, analysis of the process flowsheet, and anticipated consumption of power and supplies.

All capital and operating cost estimates meet the requirements of S-K 1300 and AACE Class 3, with an expected accuracy of -20% to +25%. A contingency of <15% has been applied to capital cost estimates. All pricing is considered in Q1 2025 dollars. Inflation or escalation are not considered.

Cost estimation is based on a combination of vendor and consumable quotes and internal database. Approximately 80% of the capital estimate is based on detailed quotes with estimated labor installation. For the purposes of this study, initial capital expenditure is assumed to be costs incurred in 2026, 2027, and 2028. By the end of 2028, ore production from stopes has been established and the SX/EW plant infrastructure has been installed to begin copper production. Additional mine and plant capital costs are incurred from 2029 and 2050 to continue meeting mine ramp up and production demands and are included in sustaining capital costs.

Standard rates for fuel and power were used in the estimate and are summarized as follows:

- diesel fuel cost of 0.076 $/L
- current electricity rate of 0.091 $/kWh until 2027
- estimated electricity rate of 0.0728 $/kWh from 2028 to end of mine life.

18.1.1 Mining Costs

Mining equipment requirements were determined based on the mine production schedule and estimates for scheduled production time, mechanical availability, equipment utilization, and operating efficiency. Annual operating hours for each equipment type were projected, with the assumption that each unit will be used until it reaches its planned service life, after which replacement units will be added to the fleet as necessary. The capital cost estimate for mining equipment also includes major equipment rebuild (overhaul) costs.

The mining equipment capital cost estimate is based on the following assumptions:

- All replacement units are assumed to be new purchases.
- Freight and spare parts costs were included in the equipment costs.

- Equipment rebuilds are included at appropriate intervals within the capital cost estimate.
- Contingency is included in the mining equipment capital cost estimate, ranging from 5% (where budgetary quotes are available) to 14.9% (for estimates based on first-principles build-ups).

Labor estimates were based on unit rates, MTOs and installation factors for an underground operation using based on first-principles build-ups.

All consumables estimates were based on first-principles build-ups.

18.1.2 Process and Infrastructure Costs

This section discusses the methodology for estimating process and infrastructure capital costs.

Equipment capacities, duty specifications, and quantities were established using process flowsheets, design criteria, material mass balances, and engineering calculations. Design drawings and vendor budget quotations were used to develop layouts, the 3D model, and drawings to support the generation of MTOs for all earthworks, concrete, steel, piping, and electrical components.

The inputs below were also used to estimate process plant and infrastructure (non-mining) operating costs:

- Continuous operations, 24 hours per day and 365 days per year, with an availability of 92%, for a total of 8,059 operating hours per year with two 12-hour shifts.
- Shift-based personnel work a four-week-on, four-week-off roster, with four shift panels.
- Annual throughput, head grade, and production that serve as the basis for production-based operational parameters are based on the mine plan provided by BBA.

MTOs were priced by budget quotation or in-house data. Estimated quantities generated through MTOs have a design allowance added to allow for overbuy, cut, and waste. Labor rates were estimated based on in-house databases and benchmarked against local contractor quotations.

Total direct hours were calculated using a site adjustment factor model that incorporates efficiency losses bases on craft availability, working at height, workweek, climate, and project size.

Engineering and procurement and construction management costs have been estimated as a percentage of the total project cost based on historical data. Engineering and procurement as well as construction management services will be provided by a combined team of Ivanhoe Electric and contract personnel.

Other indirect costs included in the estimate are as follows:

- temporary facilities, construction equipment, and construction services
- freight and logistics

- spare parts
- first fills
- vendor representatives
- pre-commissioning and startup.

18.2 Capital Cost Estimate

Table 18-1 summarizes the initial and sustaining capital cost estimates for the Santa Cruz Copper Project.

Table 18-1: Estimated Total Capital Cost

Capital Costs Summary	Initial Cost ($M)	Sustaining Cost ($M)	Total LOM Capital Cost ($M)
Preproduction Mining Costs	89	-	89
Mining	688	1,193	1,881
Process	240	65	305
Surface Infrastructure	61	8	69
Indirects	46	7	53
EPCM	64	2	66
Contingency	48	5	53
Total Initial Capital	**1,236**	**-**	**-**
Total Sustaining Capital	**-**	**1,281**	**-**
Reclamation and Closure Costs	2	-163	-161
Total Life-of-Mine Capital Costs	**1,238**	**1,118**	**2,355**

Note: Closure costs include land sales at the end of mine life. Totals may not sum due to rounding.

18.2.1 Mining Capital Costs

The total mining capital cost estimate is $2,051 million, which includes $857 million of initial capital and a sustaining capital of $1,193 million.

Mine development costs are determined from the mining schedule created by BBA (Section 13.11.8). The mine schedule includes meters of development during the pre-production period. Site-specific rock mass characteristics and hydrogeological information were used as inputs to estimate the cost of this development. Estimated initial capital costs by area are shown in Table 18-2.

Table 18-2: Estimated Mining Capital Cost

Mining Capital Costs	Initial Capital Cost ($M)	Sustaining Cost ($M)	Total LOM Capital Cost ($M)
Capitalized Operating Expenditures	89		89
Capital Development	487	448	935
Mobile Equipment	20	464	484
Mines Services	180	274	455
Royalty Payment		7	7
Subtotal	**776**	**1,193**	**1,970**
Indirects	12		12
EPCM	28		28
Contingency	41		41
Total	**857**	**1,193**	**2,051**

Note: *Includes cost of a one-time royalty payment of $7 million.

Sustaining capital is required to maintain mine infrastructure critical for ongoing operations. The sustaining capital cost estimate includes costs for, construction, and commissioning of infrastructure items.

The cost estimates are based on vendor-supplied budgetary quotes and cost models from BBA with input from Ivanhoe Electric. Sustaining capital costs support the production schedule over the 23-year mine life. Capital costs are shown in Table 18-3.

Table 18-3: Estimated Mining Sustaining Capital Cost

Item	Sustaining Capital Cost ($M)
Capital Development Cost	448
Mobile Equipment	464
Mine Services	274
Total*	**1,186**

18.2.2 Process Facilities & Infrastructure Capital Costs

The Santa Cruz process capital cost estimate reflects the costs associated with the process equipment and facilities, and the infrastructure buildings and equipment.

The total capital cost (including initial and sustaining costs) for the Santa Cruz process facilities and infrastructure totals $518 million (Table 18-4). Sustaining capital includes the second train in the SX plant, the balance of the heap leach pad cells, and the second spent ore stockpile.

Table 18-4: Estimated Process Facilities and Infrastructure Capital Cost Summary

SX/EW and Surface Infrastructure Cost Summary	Initial Capital Cost ($M)	Sustaining Cost ($M)	Total LOM Capital Cost ($M)
Capitalized Operating Expenditure	31		31
Crushing	101	20	121
Heap leach	59	29	88
SX/EW	80	17	97
Surface Infrastructure	61	8	69
Subtotal	**332**	**74**	**406**
Indirects	37	7	44
EPCM	37	2	39
Contingency	24	5	29
Total Estimate	**430**	**88**	**518**

18.2.3 Owner's Costs and Indirects

Owner's costs include the following:

- Owner's engineering team
- Owner's project management team
- previous studies and other sunk costs
- front-end engineering design study
- metallurgical testing and simulation studies
- geotechnical drilling and services
- environmental services
- permitting costs
- land acquisition costs
- operation and maintenance manuals
- startup costs
- community stakeholder costs
- insurance costs
- legal fees
- financing costs
- taxes
- duties and tariffs
- currency exchange
- escalation
- Owner's contingency (management reserve)
- security
- recruiting and training.

Indirect capital costs may include the following:

- temporary facilities and services
- freight and logistics
- spare parts
- first fills
- vendor representation
- pre-commissioning and startup.

18.2.4 Engineering Procurement and Construction Management

Engineering procurement and construction management (EPCM) includes the costs for detailed engineering for construction, procurement of major equipment and an Integrated Construction Management team.

Detailed engineering efforts have been included in the vendor and contractor supplied quotations.

18.3 Operating Cost Estimate

Total life-of-mine operating costs are $3.95 billion as summarized in Table 18-5.

Table 18-5: Estimated Operating Costs

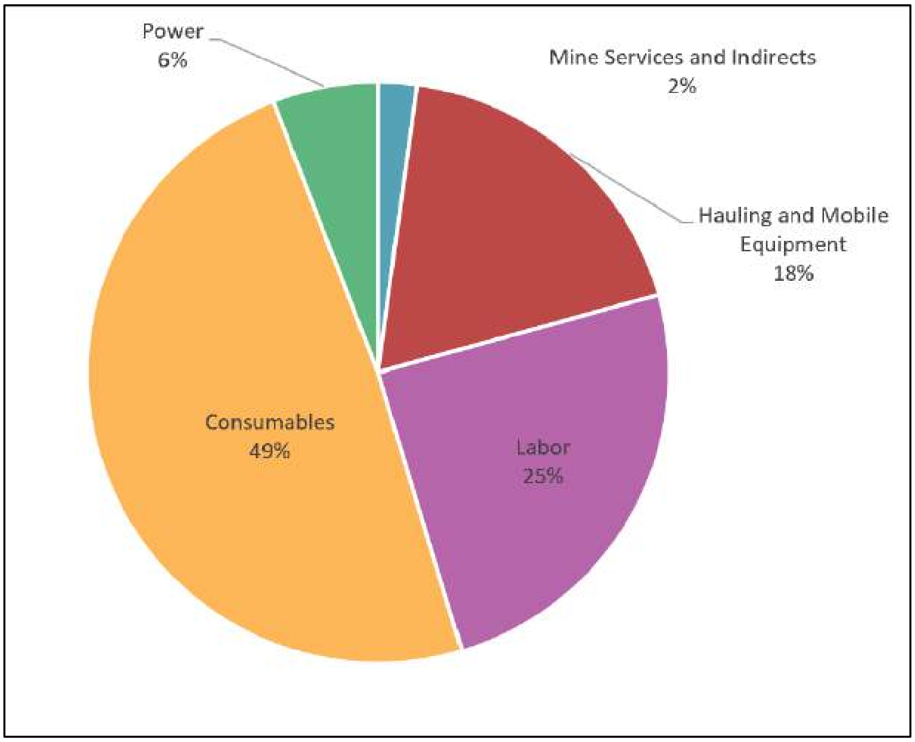
Category	$M Total	$/t Ore Processed	$/lb Copper
Mining			
Consumables	1,239	9.22	0.41
Mobile Equipment	432	3.24	0.14
Haulage	39	0.29	0.01
Labor	626	4.73	0.21
Power	149	1.19	0.05
Mine Services and Indirect	55	0.40	0.02
Subtotal	**2,538**	**19.07**	**0.85**
SX/EW Plant and Infrastructure			
Consumables	276	2.03	0.09
Hauling and Mobile Equipment	177	1.30	0.06
Labor	185	1.36	0.06
Power	300	2.20	0.10
Maintenance	58	0.43	0.02
Subtotal	**996**	**7.31**	**0.33**
G&A	414	3.04	0.14
Total	**3,948**	**29.42**	**1.32**

Note: Totals may not sum due to rounding.

18.3.1 Mine Operating Costs

The life-of-mine mining operating costs by category are presented in Figure 18-1.

Figure 18-1: Life-of-Mine Mining Operating Costs by Category



Source: BBA, 2025.

Mine operating costs include the following categories:

- consumables
  - lateral development
  - production stope preparation
  - production drilling
  - production blasting
  - production backfill
  - production drifting

- mobile equipment
  - maintenance costs
  - fuel costs
  - battery rentals
  - charger rentals
- haulage
  - Railveyor maintenance
  - conveyor maintenance
- power
- mine services and indirects
  - instrumentation, communication, and automation
  - ventilation
  - others.

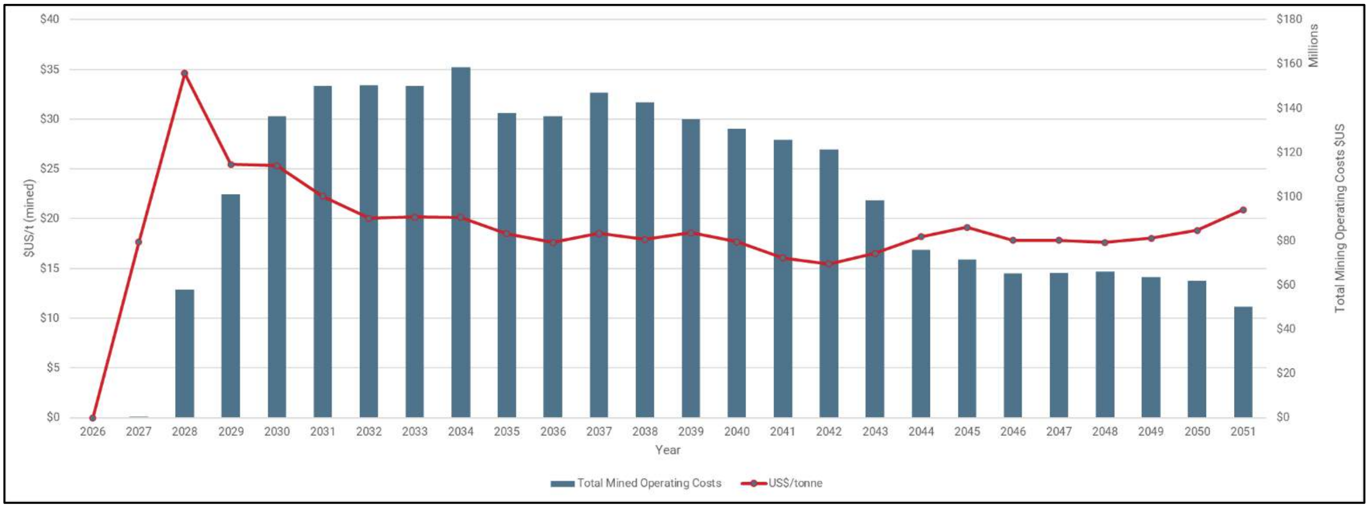
A summary of the mine operating costs for the life of mine is presented in Table 18-6. The yearly cost operating profile is shown in Figure 18-2.

Table 18-6: Mine Operating Cost Summary for the Life of Mine

Category	$M Total	$/t Ore Processed	$/lb Copper
Consumables	1,239	9.22	0.41
Mobile Equipment	432	3.24	0.14
Haulage	39	0.29	0.01
Labor	626	4.73	0.21
Power	149	1.19	0.05
Mine Services and Indirect	54	0.40	0.02
Total	**2,538**	**19.07**	**0.85**

Note: Approximately $61 million of the mining costs are transferred to capitalized operating expenditures.

Figure 18-2: Yearly Mine Operating Cost Profile



Source: BBA, 2025.

18.3.1.1 Mine Operating Costs

The mine operating cost estimate is based on the following key inputs and assumptions:

- average in-situ densities as follows:
  - ore density 2.54 t/m^3
  - waste density 2.51 t/m^3
- 365 operating days per year
- two 12-hour shifts per day
- 9.5 hours of productive time per shift
- all capital mine development completed by mining contractor
- waste is trucked to the nearest Railveyor location in 2028; the Railveyor transports the waste to surface
- Railveyor used in stages to switch between transporting ore and waste
- equipment quantities are only for Owner-operated equipment (operating development and stoping).

18.3.1.1.1 Underground Labor

Key input and assumptions used to estimate the underground labor requirement are as follows:

- Load-Haul-Dump (LHD)
  - All longhole stope LHDs will be operated tele-remotely from a control room throughout the shift. High production demands will require multiple mining equipment operating on the levels, thereby increasing the amount of interaction with the LHDs.
  - All lateral development LHDs will be operated tele-remotely from a control room only during shift change. During shifts, they will be operated by a person in the cab. These operators will share the duties of relocating the production LHDs within different zones.
- Longhole Drills
  - All longhole drills will be operated autonomously from a control room both during shifts and shift changes.
  - Two people in the control room will monitor the production drills, while three people will be located underground for drill alignment and bit changes.
  - Personnel will be cross-trained in multiple equipment to increase useable hours and reduce the overall labor requirement. For example: the same operator will be capable of operating the jumbo, bolter, and development LHD.

18.3.1.1.2 Equipment Database

- Mobile equipment costs are a mix of leasing at the beginning of the project and purchase after the lease period. No financing information is available for Maclean, Chevrolet, Toyota; therefore, the following assumptions are made:
  - The downpayment is 15% of the sale price.
  - The total cost including interest is 18% over the sale price.

18.3.1.1.3 Haulage Costs

Key input and assumptions that were made to estimate haulage costs are as follows:

- The Railveyor will begin operating in 2028.

18.3.1.1.4 Indirect Costs

Key input and assumptions related to indirect costs are as follows:

- All indirect costs for East Ridge will be carried by Santa Cruz.
- Indirect costs for 2026 and 2027 are accounted for in the capital cost estimate. The operating cost model includes indirect costs from 2028 to the end of mine life.

18.3.1.1.5 Mine Lateral Development

Key operating cost input and assumptions related to mine lateral development are as follows:

- All capital development is contractual. Costs will be retrieved from contractor quotes.
- 5% of category 1 ground support class and 10% of categories 2 and above will be rehabilitated each year.

18.3.1.1.6 Production Stoping

Key operating cost input and assumptions for production stoping are as follows:

- Stope preparation and backfill includes costs for both longhole stoping and drift and fill.
- For uppers stopes, costs for consumables have been assumed to be 10% higher.
- Uppers/Stoping ratio is 2.23% over the life-of-mine tonnage. This ratio is used to arrive at tonnages for stoping and uppers from 2044 to the end of the mine life.

18.3.1.2 Paste Backfill Preparation Operating Costs

The paste preparation plant operating cost estimate encompasses the following processing steps:

- spent ore grinding
- spent ore neutralization.

The items identified in Table 18-7 were used as primary inputs to the paste preparation plant operating cost estimate.

Table 18-7: Paste Preparation Operating Cost Primary Inputs

Category	Unit	Value
Dry Tonnage Processed	t/y	4,278,000*
Electricity Rate (at Point of use) by Ivanhoe Electric	$/MWh	72.80
Quicklime	$/kg	0.33
Binder	$/t	195
Grinding Media	$/kg	0.78
Ball Mill Liners	$/kg	1.50

Note: * Maximum observed in 2042.

The inputs below were also used in to estimate the paste preparation operating costs:

- Continuous operations, 24 hours per day and 365 days per year, with an availability of 92%, for a total of 8,059 operating hours per year with two 12-hour shifts.

18.3.1.2.1 Paste Preparation Operating Cost by Type

The estimated annual operating cost has been divided into fixed and variable cost types. The annual fixed costs are approximately $601,902 (3%) while the variable costs are approximately $18.08 per tonne of spent ore processed. Fixed processing costs include labor; while variable processing costs include maintenance, consumables, and electricity make up the remaining 97%.

18.3.1.2.2 Paste Preparation Operating Cost by Category

Paste preparation operating costs were divided into the following four categories:

- labor
- maintenance
- consumables
- electricity.

18.3.1.2.3 Labor

Non-mine labor requirements were determined by Ivanhoe Electric in the form of a paste backfill material preparation plant staffing plan. In total, 4.75 persons per shift were costed for paste backfill material preparation operations at an average inclusive cost of $68,789 per person. The partial persons are maintenance staff shared with the processing plant operations.

18.3.1.2.4 Maintenance

Maintenance costs were factored from the direct capital cost estimate of mechanical, electrical, and instrumentation and controls equipment associated with the paste backfill material preparation area. A factor of 2% was applied to the capital cost of mechanical equipment to determine the annual maintenance parts cost. A factor of 2% was applied to the capital cost of electrical equipment and 2% to the capital cost of instrumentation equipment to determine the annual maintenance parts cost. These maintenance costs exclude labor, which is included under the labor category. This cost represents the annual spare parts and lubrication cost required to maintain the processing equipment.

18.3.1.2.5 Consumables

The consumption of consumables was derived from calculations based on metallurgical testwork and first principles and priced using vendor quotations.

18.3.1.2.6 Electricity

The electrical rate was applied to the estimated consumed power loads extracted from the electrical load list, which was in turn derived from the installed power of the mechanical equipment.

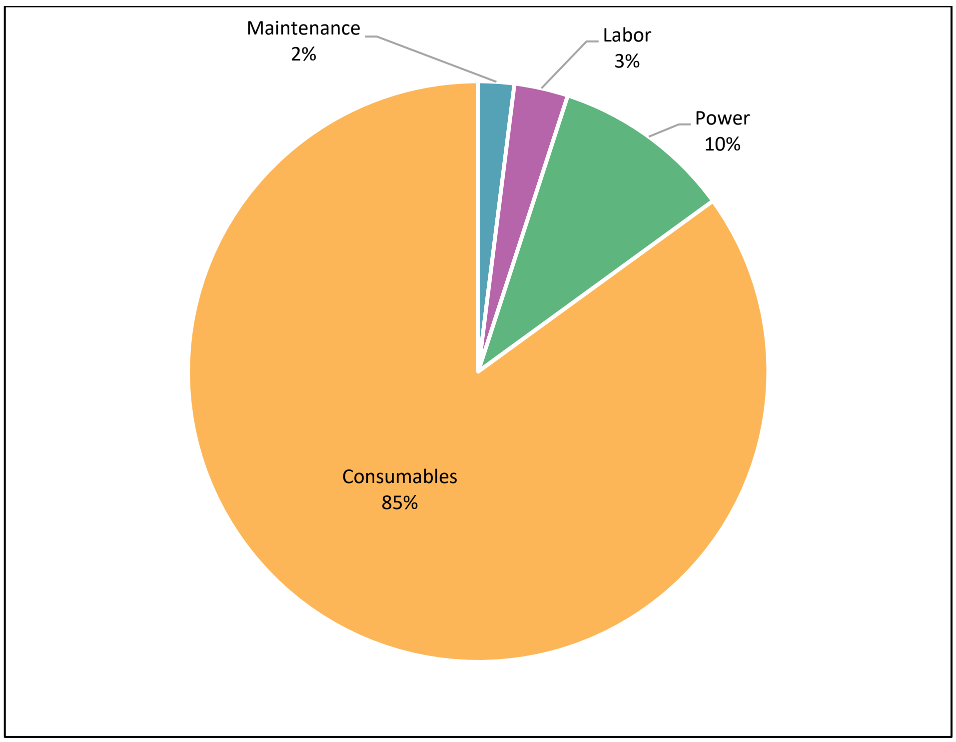
The estimated life-of-mine annual paste preparation operating costs are summarized by category in Table 18-8.

Table 18-8: Estimated Life-of-Mine Paste Preparation Plant Operating Costs by Category

Area	Life-of-Mine Unit Cost	
	$/t Spent Ore Processed	$/lb Cu
Labor	0.52	0.012
Maintenance	0.34	0.008
Consumables	15.90	0.362
Electricity	1.85	0.042
Total	**18.61**	**0.424**

The life-of-mine paste backfill material preparation operating costs by category are presented graphically in Figure 18-3.

Figure 18-3: Estimated Life-of-Mine Paste Backfill Material Preparation Operating Cost Percentage by Category



Source: P&C, 2025.

18.3.2 Process and Infrastructure Operating Costs

A summary of the process and infrastructure operating costs for the mine life is presented in Table 18-9.

Table 18-9: SX/EW and Infrastructure Operating Cost Summary for the Life of Mine

Category	Total ($M)	$/t Ore Processed	$/lb Copper
Consumables	276	2.03	0.09
Hauling and Mobile Equipment	177	1.30	0.06
Labor	185	1.36	0.06
Power	300	2.20	0.10
Maintenance	58	0.43	0.02
Total	**996**	**7.31**	**0.33**

18.3.2.1 SX/EW Plant Operating Cost

The SX/EW plant operating cost estimate encompasses the following processing steps:

- primary crushing
- agglomeration
- ore handling and stacking
- leach solution pumping and heap leach operations
- solvent extraction
- electrowinning
- haulage and storage of spent ore.

18.3.2.1.1 Process Plant Operating Cost by Type

The total estimated annual operating cost has been divided into fixed and variable cost types. Annual fixed costs are approximately $8.7 million (19%). The average variable costs over the life of mine are approximately $6.04 per tonne of ore processed (81%).

Fixed processing costs include labor. Variable processing costs include hauling and mobile equipment, maintenance, consumables, and electrical consumption.

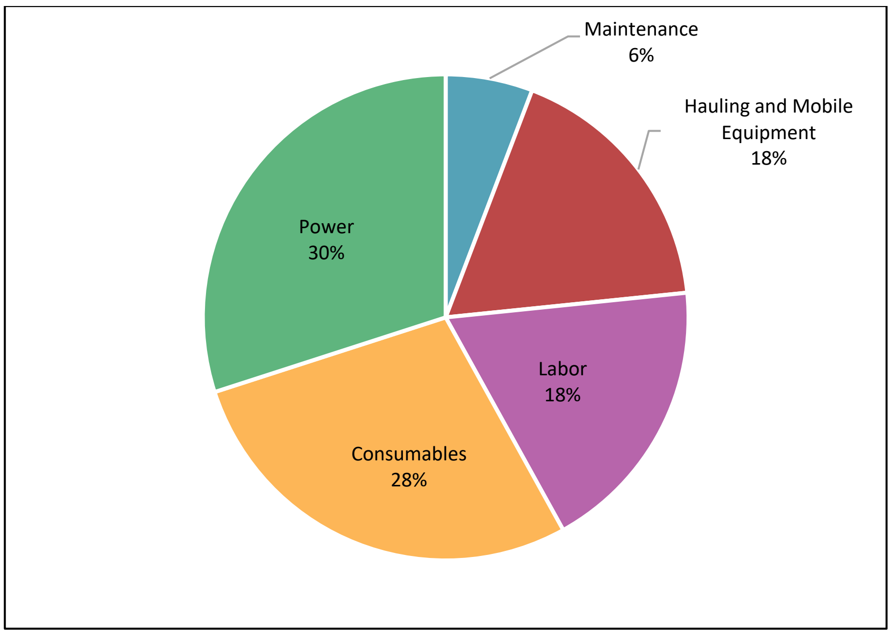
18.3.2.1.2 Process Plant Operating Cost by Category

Processing plant operating costs were divided into the following five categories:

- labor
- hauling and mobile equipment
- maintenance
- consumables
- electricity.

The life-of-mine process plant operating costs by category are presented in Figure 18-4.

Figure 18-4: Process Plant Operating Percentage by Category (Life-of-Mine Average)



Source: Fluor, 2025.

18.3.2.1.3 Labor

In total, 121 persons were costed for processing and infrastructure operations at an average inclusive cost of $71,860 per person.

18.3.2.1.4 Hauling & Mobile Equipment

Annual diesel fuel consumption for onsite mobile equipment is estimated based on fleet size, annual fleet operating hours, and fuel consumption for each piece of mobile equipment. A fleet of 53 pieces of mobile equipment were assigned to the processing plant and infrastructure areas including forklifts, pickups, cranes, grader vacuum trucks, manlifts, etc. Hauling of spent ore from the on/off pad to the paste processing area (50%) and spent ore pile (50%) was estimated using a local contractor quotation supplied by Ivanhoe Electric of $0.45/km/m^3$.

18.3.2.1.5 Maintenance

Maintenance costs were factored from the direct capital cost estimate of mechanical, electrical, and instrumentation and controls equipment. A factor of 2% was applied to the capital cost of mechanical equipment to determine the annual maintenance parts cost. A factor of 2% was applied to the capital cost of electrical equipment and 2% to the capital cost of instrumentation equipment to determine the annual maintenance parts cost. These maintenance costs exclude labor, which is included under the labor category. This cost represents the annual spare parts and lubrication cost required to maintain the processing equipment.

18.3.2.1.6 Consumables

Consumable consumption was derived from calculations based on metallurgical testwork and first principles with pricing provided by vendor quotations.

18.3.2.1.7 Electricity

The electric rate was applied to the estimated consumed power loads extracted from the electrical load list, which was in turn derived from the installed power of the mechanical equipment. Power consumption during ramp-up and ramp-down years was factored based on annual throughput relative to the design annual throughput.

18.3.3 General & Administrative Operating Costs

General and administrative (G&A) costs include mine management, human resources, accounting, environmental, health and safety, laboratory, community relations, communications, legal, insurance, training and other costs not relating to mining or processing.

19 Economic Analysis

19.1 Methodology Used

BBA prepared a cash flow model to evaluate the Santa Cruz Copper Project on a real basis. This model was prepared on a monthly basis for the first five years (2026 to 2030), quarterly for the next five years (2031 to 2035), and annual basis for the remainder of the project (2036 to 2071). Active mine closure starts in 2052 followed by passive closure in 2055. This section presents the main assumptions used in the cash flow model and the resulting indicative economics.

The economic model is based on the mine plan as outlined in Section 13. The economic results of the project do not include inferred resources.

Capital and operating costs were developed in Section 18 and the build-ups and associated accuracy, and contingency can be found in those sections.

All results and technical and cost information are presented in this section on a 100% basis reflective of Ivanhoe Electric's ownership, unless otherwise noted.

As with the capital and operating costs and pricing forecasts, the economic analysis is inherently a forward-looking exercise. These estimates rely upon a range of assumptions and forecasts that are subject to change depending upon macroeconomic conditions, operating strategy and new data collected through future study and operation.

19.2 Financial Model Parameters

All costs incurred prior to the model start date are considered sunk costs. The potential impact of these costs on the economics of the project is not evaluated. This includes exploration expenditures and working capital as these items are assumed to have a zero balance at model start.

The model continues several years beyond the mine life to incorporate closure costs in the cash flow analysis.

The discount rate select is 8%. Discounting was conducted on a monthly basis for the initial five years, transitioned to a quarterly basis during the subsequent five years on a mid-quarter period, and then proceeded annually for the remainder of the project on a mid-year period. Discounting commenced in the second month.

Start of the project is considered January 1, 2026. All pricing is considered in Q2 2025 dollar. No inflation or escalation is considered.

19.2.1 Pricing

Modeled prices are based on prices developed in Section 16 of this report, including copper price. Only copper cathode is modeled. Any other metals present are not considered in the model.

19.2.2 Royalties

The project is subject to several royalties as outlined in previous sections. These royalties vary in rate and area of influence. The material subject to royalties was provided in the mining schedule and the appropriate rates were applied in the model. The royalties are calculated after the removal of the leaching and extraction costs. This approach results in an approximate royalty rate of approximately 5.7% and totaling approximately $715.8 million over the life of the project.

19.2.3 Taxes

The project is subject to a combined state and federal income tax rate of 25.9%. Taxable income is determined based on gross revenue, minus allowable deductions, including royalties, offsite costs, operating costs, tax depreciation, depletion, and net operating losses incurred, among other specific state and federal tax adjustments. Project capital costs are depreciated using the Modified Accelerated Cost Recovery System (MACRS) applicable to the specific categories of mine development and infrastructure.

Property taxes are included in operating costs as a line-item within G&A costs. Estimates are based on the Arizona Department of Revenue guidelines, discussions with tax experts, and market precedents for operating mines in Arizona. Property taxes are modeled utilizing the cost approach for the initial five years and split between the income and cost approaches for the remaining life of mine.

The project is modeled as being subject to Arizona Mineral Severance Tax payable at a rate of 2.5% on gross revenue minus allowable deductions.

19.2.4 Working Capital

The assumptions for working capital in this analysis are summarized in Table 19-2. The change in working capital over the life of the project is zero.

Table 19-1: Summary of Working Capital

Working Capital	Days
Days per Year	365
Days in Accounts Receivable	15
Days of Cost of Good Sold in Inventory	10
Days in Accounts Payable	90

19.3 Economic Analysis

The economic analysis metrics are prepared on annual pre- and after-tax basis.

The results of the analysis are presented in Table 19-3. The results show that with a copper price of $4.25/lb, a copper premium of $0.14/lb, the project yields an after-tax net present value (NPV) of $1.4 billion at 8%, and an after-tax internal rate of return (IRR) of 20.0%, and a payback period of 4.4 years from construction start.

Table 19-2: Economic Analysis Results

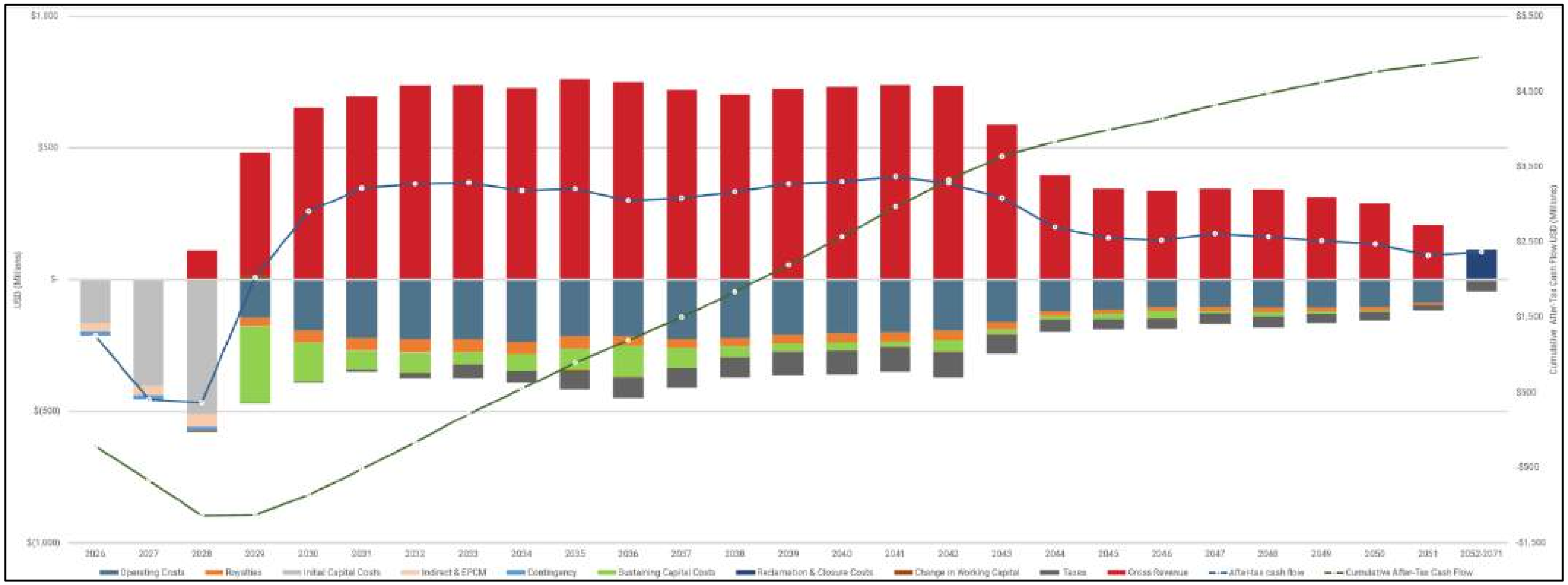
Description	Units	Life of Mine	First 15 Years
Production Data			
Mine Life	years	23	15
Reserve Tonnes	Mt	136	106
Copper Grade	%	1.08	1.10
Daily Throughput	t/d	15,000	20,000
Annual Copper Production	t/y	56,685	72,186
Total Copper Cathode Produced	Kt	1,360	1,083
Recovery	%	92.2	92.4
Capital Costs			
Initial Capital	$M	1,236	-
Sustaining Capital	$M	1,281	1,176
Unit Costs			
Mining Cost	$/t processed	19.07	19.55
Processing Cost	$/t processed	7.31	7.02
General and Administrative Cost	$/t processed	3.04	3.03
Royalties	$/t processed	5.26	5.56
Total Operating Cost	$/t processed	34.68	35.16
Operating + Sustaining Cost	$/t processed	43.98	46.23
C1 Cash Cost	$/lb copper	1.32	1.29
All-in-sustaining Cost	$/lb copper	2.01	1.99
Financial Analysis			
Copper Price	$/lb	4.25	4.25
Domestic Cathode Premium[1]	$/lb	0.14	0.14
Pre-tax Cashflow	$M	6,148	4,501
Pre-tax Net Present Value (8%)	$M	1,880	-
Pre-Tax Internal Rate of Return	%	22.0	-
After-tax Cashflow	$M	4,961	3,637
After-tax Net Present Value (8%)	$M	1,376	-
After-tax Internal Rate of Return	%	20.0	-
After-Tax Payback Period	year	4.4	

[1] See Section 16 for discussion on copper premium.

This estimated cash flow is inherently forward-looking and dependent upon numerous assumptions and forecasts, such as macroeconomic conditions, mine plans and operating strategy, that are subject to change.

The annual and cumulative cash flows are presented on an annual basis in Figure 19-1 and Table 19-4.

Figure 19-1: Annual and Cumulative Cash Flow



Source: BBA, 2025.

Table 19-3: Cash Flow Model

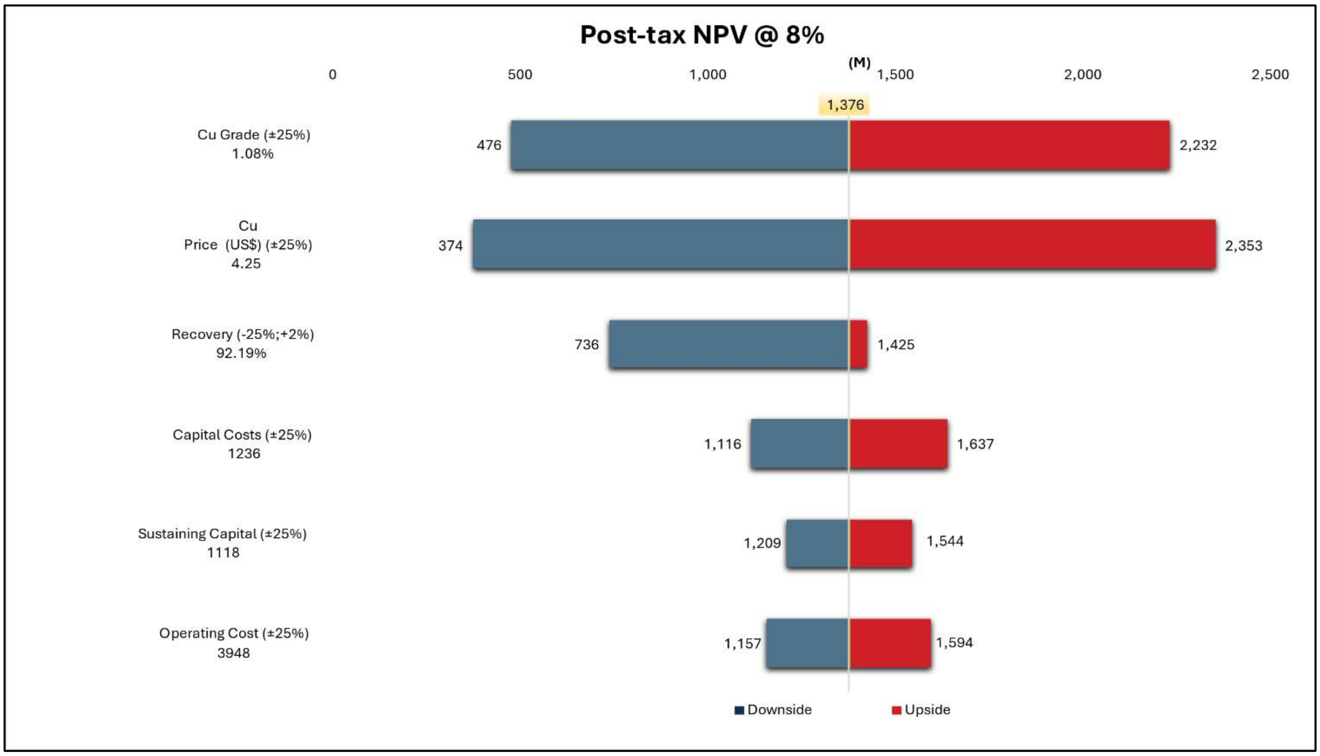
Description	LOM Total	Units	Pre-Production			Production																			Closure
			YR-3	YR-2	YR-1	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10	YR11	YR12	YR13	YR14	YR15	YR16	YR17	YR18	YR19-23	YR24-43
			2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047-2051	2052-2071
SX/EW Feed Production Tonnage	136.2	Mt	0.00	0.03	1.67	3.97	5.38	6.74	7.49	7.44	7.87	7.44	7.74	7.94	7.96	7.26	7.40	7.82	7.85	5.96	4.17	3.74	3.67	16.64	0.00
Recovered Copper Production	2,999	Mlbs	-	-	25	106	148	158	168	169	166	174	171	164	161	165	167	169	168	134	90	79	77	342	-
Assumptions																									
Base Copper Price	4.25	$/lb	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	0.00
Copper Cathode Premium	0.14	$/lb	0.00	0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
Total Copper Price	4.39	$/lb	4.25	4.25	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	0.00
Gross Revenue	**13,167**	**$M**	**-**	**-**	**109**	**466**	**648**	**694**	**740**	**742**	**727**	**763**	**752**	**719**	**705**	**725**	**733**	**742**	**736**	**589**	**396**	**346**	**337**	**1,499**	**-**
Operating Costs	3,948	$M	0	0	0	143	194	221	225	226	236	215	215	226	220	209	204	199	194	162	120	113	104	508	17
Royalties	716	$M	0	0	6	32	45	48	52	51	47	48	35	34	33	34	34	35	35	28	18	16	16	69	0
Capital Costs																									
Initial Capital Costs	1,077	$M	168	405	504	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Indirect & EPCM	119	$M	28	34	48	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contingency	53	$M	15	16	17	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sustaining Capital Costs	1,267	$M	0	0	0	292	146	69	75	47	65	81	118	78	42	32	32	21	47	17	14	21	28	43	0
Reclamation & Closure Costs	-113	$M	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-115
Change in Working Capital	0	$M	0	0	3	-17	-4	-2	1	0	-2	6	2	-3	1	2	1	1	1	1	1	0	1	1	1
Taxes	1,187	$M	0	0	0	2	7	9	19	50	44	69	79	75	76	85	89	94	94	73	45	39	38	169	29
Cash Flow Results																									
Pre-Tax Cash Flow	**6,148**	**$M**	**-213**	**-455**	**-469**	**12**	**265**	**355**	**383**	**418**	**381**	**413**	**380**	**385**	**410**	**448**	**461**	**485**	**460**	**382**	**244**	**196**	**188**	**880**	**139**
Cumulative Pre-Tax Cash Flow		$M	-213	-668	-1,136	-1,125	-860	-508	-122	297	677	1,090	1,470	1,856	2,265	2,713	3,174	3,659	4,119	4,501	4,745	4941	5,129	6,009	6,148
After-Tax Cash Flow	**4,961**	**$M**	**-213**	**-455**	**-469**	**9**	**258**	**346**	**364**	**368**	**337**	**344**	**301**	**310**	**334**	**363**	**372**	**391**	**366**	**309**	**199**	**158**	**150**	**712**	**106**
Cumulative After-Tax Cash Flow		$M	-213	-668	-1,136	-1,127	-869	-523	-159	210	547	891	1,192	1,502	1,836	2,198	2,571	2,962	3,328	3,637	3,836	3,994	4,144	4,855	4,961

19.4 Sensitivity Analysis

BBA performed a sensitivity analysis to determine the relative sensitivity of the project's NPV to a number of key parameters (Figure 19-2). This is accomplished by flexing each parameter upwards and downwards by 25%, except recovery which is assumed to not exceed 95%. Within the constraints of this analysis, the project appears to be most sensitive to copper grade and copper recovery.

BBA cautions that this sensitivity analysis is for information only and notes that these parameters were flexed in isolation within the model and are assumed to be uncorrelated with one another which may not be reflective of reality. Additionally, the amount of flex in the selected parameters may violate physical or environmental constraints present at the operation.

Figure 19-2: Sensitivity Analysis Results



Source: BBA, 2025.

20 Adjacent Properties

There are no adjacent properties that are relevant to the Santa Cruz Copper Project.

21 Other Relevant Data & Information

There is no other data or information relevant to the Santa Cruz Copper Project.

22 Interpretations & Conclusions

22.1 Introduction

The third-party firms who authored this report as qualified persons note the following interpretations and conclusions in their areas of responsibility, based on review of data available for this report.

22.2 Property Setting

The Santa Cruz Copper Project is located in Arizona where mining activities have been carried out for over 100 years. The local and regional infrastructure and supply of goods available to support mining operations is well-established. Personnel with experience in mining-related activities are available in the district. There are excellent transportation routes that access central Arizona.

There are no significant topographic or physiographic issues that would affect the Santa Cruz Copper Project. Vegetation is typically sparse. The most common current land use is growing cotton and cattle feedlots.

Mining operations are expected to be able to be conducted year-round.

22.3 Mineral Tenure, Surface Rights, Water Rights, Royalties & Agreements

The Santa Cruz exploration area, including the Santa Cruz Copper Project, covers 82.37 km^2. In 2021, Ivanhoe Electric acquired 238 unpatented mining lode claims. In addition, Ivanhoe Electric acquired fee simple mineral title for two further land parcels: CG100 and Skull Valley. In 2022, Ivanhoe Electric acquired the 20-acre Skull Valley property in the southeastern area of the project and a 100.33-acre “CG100” in the northeastern area of project.

In 2023, Ivanhoe Electric acquired 16 Arizona State Land Department mineral exploration permits covering 27.95 km^2 (~6,900 acres) of state mineral land. In May 2023, Ivanhoe Electric acquired the surface title to ~24.2 km^2 (5,975 acres) encompassing the Santa Cruz Copper Project.

In 2024, Ivanhoe Electric was granted 100% of the mineral title for 26.0 km^2 (~6,425 acres) of fee simple mineral estate, 39 federal unpatented mining lode claims, and 2.6 km^2 (~642.5 acres) of Stock-Raising Homestead Act lands.

Ivanhoe Electric acquired grandfathered irrigation rights and grandfathered Type 1 non-irrigation water rights in association with the private land purchased in 2023 and holds all necessary water rights for the life-of-mine plan envisaged in this report.

There are numerous royalties that apply to the property and planned mining operations. Royalty payments vary depending on the amount of refined copper produced and the net smelter return values.

A 2023 Phase I Environmental Site Assessment, completed by Environmental Site Assessments, Inc. identified an aquifer exemption on a small portion of the property and agrochemical contamination of soils in former crop fields. While the aquifer exemption is representative of a controlled recognized environmental condition, further assessment of the agrochemical contamination will be required prior to earthwork for redevelopment of these areas.

To the extent known to BBA, there are no other known significant factors and risks that may affect access, title, or the right or ability to perform work on the properties that comprise the Santa Cruz Copper Project that are not discussed in this report.

22.4 Geology & Mineralization

The deposits within the Santa Cruz Copper Project area are considered to be porphyry copper deposits of the Southwestern Porphyry Belt, defined by a combination of hypogene and supergene mineralization segmented by normal faults.

The geological understanding of the mineralogy, lithology, alteration, and structural controls on mineralization is sufficient to support estimation of mineral resources and mineral reserves, and can support mine planning.

22.5 History

The project area has over 60 years of exploration history conducted by various operators targeting definition and expansion of copper mineralization.

22.6 Exploration, Drilling & Sampling

Drilling within the Santa Cruz Copper Project totals 469 drillholes for 330,118 m of drilling. Of this total, 329 drillholes for 279,164 m were used in support of the mineral resource estimate. Drilling is predominantly vertically-oriented from the surface, which is appropriate to intersect the sub-horizontal mineralization.

Sampling methods, sample preparation, analysis and security conducted prior to Ivanhoe Electric's involvement were in accordance with exploration practices and industry standards at the time the information was collected. Current sampling methods are acceptable for mineral resource and mineral reserve estimation. Sample preparation, analysis and security are currently performed in accordance with general industry standards.

Current QA/QC protocols meet industry standard insertion rates for blanks, standards, and duplicates. These control samples adequately control issues with contamination, precision, accuracy, and sampling errors. Assay and geological information collected from drillholes is considered sufficient for interpretation of the deposit and mineral resource estimation.

Geotechnical data were used to develop an understanding of the rock quality throughout the deposits and surrounding rocks and to plan ground support methods.

A three-dimensional numerical groundwater model was constructed to understand the groundwater system and predict water inflows during mining operations. The groundwater flow model indicates residual passive inflows in the first 10 years of mining at or below 6,000 gallons per minute.

22.7 Data Verification

Validation checks are performed by Ivanhoe Electric personnel on data used to support estimation comprise checks on surveys, collar coordinates, lithology data (cross-checking from photographs and core library), and assay data. Errors were rectified in the database prior to data being approved for use in resource estimation.

Reviews performed by external consultants were undertaken in support of pre-feasibility level studies and in support of technical reports, producing independent assessments of the database quality. No significant problems with the database, sampling protocols, flowsheets, check analysis program, or data storage were noted.

BBA considers a reasonable level of verification has been completed, and that no material issues have been unidentified from the programs undertaken.

BBA requested that information, conclusions, and recommendations presented in the body of this report be reviewed by Ivanhoe Electric staff as a further level of data verification. Feedback from the reviewers was incorporated into the report as required.

BBA reviewed the reports and are of the opinion that the data verification programs completed on the data collected from the project are consistent with industry best practices and that the database is sufficiently error-free to support the geological interpretations and mineral resource and mineral reserve estimation, and mine planning.

22.8 Metallurgical Testwork

Metallurgical studies have been conducted to evaluate alternative process flowsheet configurations, including the chosen flowsheet of weak acid, chloride-assisted, heap leaching. If the project prepares to advance to basic engineering and construction, it is recommended that leach testwork continues to quantify geometallurgical variability, optimize leach conditions, and provide input to process design criteria.

22.9 Mineral Resource Estimates

All mineralogical information, exploration drill data, and background information were provided to BBA by Ivanhoe Electric.

Mineral resources are reported using the mineral resource definitions set out in S-K 1300 and are reported exclusive of mineral reserves. The reference point for the estimate is in situ. Mineral resources are reported on a 100% ownership basis.

Factors that may affect the mineral resource estimates include: changes to long-term metal price assumptions; changes to the input values for mining, processing, and general and administrative (G&A) costs to constrain the estimate; changes to local interpretations of mineralization geometry and continuity of mineralized subdomains; changes to the density values applied to the mineralized zones; changes to metallurgical recovery assumptions; changes in assumptions of marketability of the final product; variations in geotechnical, hydrogeological, and mining assumptions; changes to assumptions with an existing agreement or new agreements; changes to environmental, permitting, and social license assumptions; logistics of securing and moving adequate services, labor, and supplies could be affected by epidemics, pandemics, and other public health crises, or geopolitical influence.

22.10 Mineral Reserve Estimates

Mineral reserves were converted from measured and indicated mineral resources. Inferred mineral resources were not converted to mineral reserves; however, if inferred mineral resources fell within the mineral reserve designs, they were assumed to have zero grade.

All current mineral reserves will be exploited using underground mining methods. Mineral reserves were estimated using longhole stoping and drift-and-fill methods. Mineral resources were converted to mineral reserves using a detailed mine plan, an engineering analysis, and consideration of modifying factors. Modifying factors include the consideration of dilution and ore losses, underground mining methods, metallurgical recoveries, permitting, and infrastructure requirements.

Mineral reserves are reported using the definitions set out in S-K 1300. The reference point for the estimate is the point of delivery to the process facilities. Mineral reserves are reported on a 100% ownership basis.

Factors that may affect the mineral reserve estimate include: changes to long-term metal price assumptions; changes to metallurgical recovery assumptions; changes to the input assumptions used to derive the mineable shapes applicable to the assumed underground and open pit mining methods used to constrain the estimate; changes to the forecast dilution and mining recovery assumptions; changes to the cutoff grades used to constrain the estimate; variations in geotechnical (including seismicity), hydrogeological, mining, and processing recovery assumptions; and changes to environmental, permitting, and social license assumptions.

22.11 Mining Methods

Mining operations can be conducted year-round.

Underground mining will be conducted using conventional long-hole stoping or drift-and-fill methods. The underground mine plans are based on the current knowledge of geotechnical, hydrogeological, mining, and processing information.

The life-of-mine plan assumes 136.1 Mt ore and waste rock will be mined and 124.9 Mt of ore will be treated.

22.12 Recovery Methods

The designs for the process facilities were based on metallurgical testwork. The designs are conventional to the global copper industry.

Factors that may produce variations in recovery due to the day-to-day changes in ore type or combinations of ore type being processed. These variations are expected to trend to the forecast recovery value for monthly or longer reporting periods.

22.13 Infrastructure

New infrastructure will be required to support proposed operations for the Santa Cruz Copper Project. Power will be transmitted from a local provider to an onsite substation along with an onsite renewable power campus. The water management system will be installed to collect mine dewatering, contact, and non-contact water, stormwater, and process water.

Structures will be installed on site to support maintenance, laboratory testing, emergency services, security, change-house, and mine warehouse facilities.

22.14 Market Studies

A price of $4.25 per pound copper is based on a review of the one-, three-, and five-year trailing averages, as well as consensus forecasts from major banks and Ocean Partners.

Due to the shape, chemical composition, and origin point of the cathode, it is expected that a premium to the price will be negotiated with potential buyers that is marginally above the historical average; this premium is estimated at $0.14 per pound ($300 per tonne).At this time, no sales agreements or contracts have been executed with vendors, contractors, or manufacturers.

22.15 Environmental, Permitting & Social Considerations

Baseline and supporting environmental studies were completed to assess pre-existing environmental and social conditions and to support decision-making processes during permitting, design, construction, operations, and closure. Characterization studies were completed for flora and fauna, special status species, surface water mapping, air quality, cultural resources, groundwater quality, and material environmental behavior.

Plans were developed and implemented to address aspects of operations such as waste, migratory bird protection measures, fugitive dust management, reclamation, spill prevention and contingency planning, water management, and noise levels.

Stakeholder engagement is a primary pillar of Ivanhoe Electric's community relations and social performance strategy and includes development of a community working group, participation, sponsorship, and support in local activities; city council and county meetings; serving on boards and committees; and one-to-one engagement. From this engagement, Ivanhoe Electric listens to, and partners with, local organizations to identify a social investment strategy.

At present, the project has initiated outreach with Native American communities that have ancestral ties to the land, community outreach with local stakeholders, community involvement, and is actively assessing potential partnerships within the local community.

22.16 Capital Cost Estimates

All capital and operating cost estimates meet the requirements of S-K 1300 and AACE Class 3, with an expected accuracy of -20% to +25%. A contingency of <15% has been applied to capital cost estimates. All pricing is considered in Q1 2025 dollars. Inflation or escalation are not considered.

Capital costs included funding for infrastructure, underground dewatering, underground mine equipment, and surface equipment.

The overall capital cost estimate for the life of mine is $2.4 billion.

22.17 Operating Cost Estimates

Operating costs were based on estimations and are projected through the life-of-mine plan, and are at minimum at a prefeasibility level of confidence, having an accuracy level of – 20% to +25%. No contingency was applied to operating cost estimates.

Costs were estimated from supplier issued quotes. Labor and energy costs were based on budgeted rates applied to headcounts and energy consumption estimates.

The life-of-mine operating costs are estimated at $3.95 billion. The average mining costs over the life of mine are $19.07/t processed, process costs are $7.31/t processed, and general and administrative costs are $3.04/t processed.

22.18 Economic Analysis

Based on the cash flow model, the after-tax financial model resulted in an IRR of 20.0% and an NPV of $1.4 billion using an 8% discount rate. The after-tax payback period, after start of operations, is 4.4 years.

The pre-tax base case financial model resulted in an IRR of 22.0% and an NPV of $1.9 B using an 8% discount rate.

The Santa Cruz Copper Project contemplates average annual copper cathode production of approximately 72,000 tonnes for the first 15 years of copper production and the average annual production is approximately 35,000 tonnes for the remaining 8 years of life of mine.

The total mine life is 23 years at an average C1 cash cost of $1.32 per pound of copper and sustaining cash costs of $2.01 per pound of copper.

A variable cut-off grade strategy optimizes recovery in the early years and maximizes mine life in the later years of the mine plan.

A sensitivity analysis was completed by flexing each parameter upwards and downwards by 25%, except recovery which is assumed to not exceed 95%. Within the constraints of this analysis, the project appears to be most sensitive to copper grade and copper recovery.

22.19 Risks & Opportunities

Factors that may affect the mineral resource and mineral reserve estimates were identified in Section 11.13 and Section 12.5, respectively.

22.19.1 Risks

The risks associated with the Santa Cruz Copper Project are generally those expected with underground mining operations and include the accuracy of the mineral resource and mineral reserve models, and/or operational impacts.

In addition, the noted factors that may affect the mineral resource and mineral reserve estimates include:

- The capital cost estimates at mines under development may increase as construction progresses. This may negatively affect the economic analysis that supports the mineral reserve estimates.
- The life-of-mine plan assumes that the project can be permitted based on envisaged timelines. If the permitting schedule is delayed, this could impact costs and proposed production.
- The long-term reclamation and mitigation of the Santa Cruz Copper Project are subject to assumptions as to closure timeframes and closure cost estimates. If these cannot be met, there is a risk to the costs and timing.
- Climate changes could impact operating costs and ability to operate.
- Political risk from challenges to the current state or federal mining laws.

22.19.2 Opportunities

Potential opportunities for the project include the following:

- Upgrade of some or all the inferred mineral resources to higher-confidence categories, with additional drilling and supporting studies, such that this higher confidence material could potentially be converted to mineral reserves.
- Optimizing the mine plan based upon market conditions. At present, the production stopes are dictated by their copper content based upon a flat long term copper price.
- Completing additional underground diamond drilling and development within the ore, there could be a reason to increase the width and/or height of the stopes, if geotechnical factors allow.

- Ivanhoe Electric holds a significant ground package that retains significant exploration potential for new operations proximal to the current mineral resource and mineral reserve estimates, with the support of additional studies.
- Ongoing leach testwork will focus on optimizing leach conditions to maximize copper recovery from chalcocite and reduce heap leach pad capital costs and SX circuit capital costs.
- Simplification and optimization of the ore crushing circuit should provide for an opportunity to reduce plant capital costs.
- Use of two decades of South American knowledge and expertise at applying chloride-assisted leach technology to inform construction of the on/off heap leach pad.
- The low elevation profile of the heap leach pad (6-m lift on/off pad) and the flat topographic terrain should provide cost saving opportunities to use low head type pumps for PLS, raffinate and organic pumping that can use less expensive materials of construction for pumps like fiberglass, bromo-butyl rubber-lined carbon steel (not applicable for organic) and HDPE compared to exotic metal pumps resistant to this corrosion environment such as tantalum and titanium.
- There is potential for a considerable positive impact to the operating cost estimate by optimizing the paste backfill recipe and reducing the binder requirements.
- There is potential to increase material handling and throughput, further optimizing the mine plan.

22.20 Conclusions

Under the assumptions presented in this report, the Santa Cruz Copper Project consists of mineral resource and mineral reserve estimates that support a positive cash flow.

23 Recommendations

23.1 Recommended Work Program Budget

The recommended work programs to advance detailed engineering, operational readiness, permitting, and critical long-lead items total $22.4 million. The budget for recommended work is summarized in Table 23-1.

Table 23-1: Recommended Work Program Budget

Discipline	Cost ($M)
Permitting	1.4
Environmental Testing	1.0
Detailed Engineering – Surface & Underground	9.1
Long-Lead Items	3.7
Project Support	4.2
Contingency	3.0
Total	**22.4**

23.2 Permitting

- Continue permitting activities and agency engagement for Pinal County Class II air permit, City of Casa Grande Major Site Plan, Arizona Department of Environmental Quality Aquifer Protection, Arizona Department of Water Resources dewatering permit, EPA Class V UIC Permit.
- As the facility engineering progresses, advance the closure and reclamation design and engage Arizona State Mining Inspector to obtain an approved mined land reclamation plan for mining operations.
- Continue working with the community working group to keep local stakeholders informed about the project's potential economic and community benefits, as well as the company's commitment to safety and the environment.
- Continue outreach with Native American communities that have ancestral ties to the land.

23.3 Environmental Testing

- Continue environmental baseline data collection to support major local, county, and state permitting programs.
- The initiation of 20+ Phase B (mine area materials) humidity cells is planned for mid-year 2025. The testing program for the Phase B characterization work also includes Tier 1A and 1B testing for processed mine materials including spent ore and leach raffinate. Additional spent ore and raffinate samples and

paste backfill cylinders are currently being generated by the project for environmental characterization work in 2025.

- Additional characterization of heap leach spent ore and associated raffinate.

23.4 Detailed Engineering

23.4.1 Surface

The following work plans are recommended to investigate capital and operating cost opportunities, reduce, or remove operating risks, and attempt to improve metallurgical performance of the heap leach:

- ore flow and crusher circuit optimization
- SX circuit configuration and technology evaluation
- site layout optimization
- leach pad grading and drainage optimization
- testwork to optimize leach conditions and to reduce reagent consumption.

The following key studies to advance to detailed engineering of the heap leach pad, spent ore stockpile, and solution collection pond:

- Hydraulic testing on select ore / waste rock to determine whether it is suitable for the heap leach pad drainage layer. Test the resistance of the material to long-term contact with process solutions to ensure the material will not degrade over time.
- Perform laboratory testing on selected geosynthetics using process solutions to confirm compatibility.
- Estimate seepage rates from the heap leach pad and spent ore stockpiles and estimate seepage water quality.

23.4.2 Underground

- Detailed underground engineering design for the boxcut, ramp, roadheader development, and ventilation blind bore shafts.
- Additional geotechnical drilling to support the proposed boxcut.
- Additional geotechnical drilling to support the blind bore ventilation shaft development.
- Phased-study of activated colloidal silica sealing project within specific areas of the proposed decline.
- Detailed design of the Railveyor materials handling system to maintain schedule for long-lead procurement items.

- Paste backfill testing to optimize cement binder content and quantities and establish supply chain and logistics with key providers and their facility upgrades.

23.5 Long-Lead Items

- Purchase an interim substation, including a transformer and switchgear, to meet early and interim power loads.

23.6 Project Support

- Staffing to support early works.
- Implement a procurement management system.
- Optimize the documents management system.
- Implement a project management system.
- Implement a safety management system.

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24.2 Units of Measurement & Abbreviations

Abbreviation / Unit	Description
~	Approximately
˚C	Degrees Celsius
°	Degrees
°F	Degrees Fahrenheit
3D	Three-dimensional
A	Ampere
AACE	American Association of Cost Engineering
AAS	Atomic absorption spectrometry
ABA	Acid base accounting
Ag	Silver
AG	Autogenous grinding
Ai	Bond abrasion index
Alv	Alluvium
ANFO	Ammonium nitrate / fuel oil
ASCu	Acid-soluble copper
ASLD	Arizona State Land Department
ASTM	American Society of Testing and Materials
Au	Gold
B	Billion
BBA	BBA USA Inc.
BCR	Blue Coast Research
BEV	Battery electric vehicle
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
BWi	Bond ball work index
C$ or CAD	Canadian dollar
CAPEX	Capital cost estimate
CAR	Central Arizona Resources, Ltd.
CCTV	Closed-circuit television
CDA	Canadian Dam Association
CGL	Conglomerate
CIL	Carbon in leach
cm	Centimeter
cm/s	Centimeter per second
CN	Cyanide
CNCu	Cyanide soluble copper
COMEX	Commodity Exchange Inc.
CoV	Coefficient of variation
CRM	Certified reference material
Cu	Copper
CuRes	Residual copper
CWi	Bond crushing work index
d	Day
DRH	D.R. Horton Phoenix East Construction, Inc.

Abbreviation / Unit	Description
EDF	Environmental design flood
EDTA	Ethylenediaminetetraacetic acid
EGL	Effective grinding length
EMP	Environmental management plan
EPC	Engineering, procurement, and construction
EPCM	Engineering, procurement, and construction management
Fe	Iron
FEL	Front-end loader
Fluor	Fluor Canada Ltd.
FS	Feasibility study
g	Gram
G&A	General and administrative
g/L	Grams per liter
g/t	Grams per tonne
gal/min	Gallons per minute
Geosyntec	Geosyntec Consultants, Inc.
GPS	Global positioning system
GR	Oracle Granite
GRG	Gravity recoverable gold
GWh	Gigawatt-hour
h	Hour
H	Height
H&A	Haley & Aldrich, Inc.
h/y	Hours per year
H_2SO_3	Sulfurous acid
H_2SO_4	Sulfuric acid
Ha	Hectare
HCL	Hydrochloric acid
HDPE	High-density polyethylene
HG	High grade
HGU	Hydrogeological Unit
hp	Horsepower
HPX	High Power Exploration Inc.
HQ	Drill core size (63.5 mm)
HSE	Health, safety, environment
HV	High voltage
HVAC	Heating ventilation and air-conditioning
I&CS	Instrumentation and control system
IA	Initial assessment
ICP-AES	Inductively coupled plasma atomic emission spectroscopy
ID^2	Inverse distance squared
ID^3	Inverse distance cubed
INTERA	INTERA Incorporated
ISO	International Standards Organization
ISRM	International Society for Rock Mechanics

Abbreviation / Unit	Description
J	Joule
k	Kilo or thousand
K-Ar	Potassium-argon
KCB	KCB Consultants Ltd.
kg	Kilogram
kg/m^3	Kilogram per cubic meter
kg/t	Kilogram per tonne
km	Kilometer
km^2	Square kilometer
koz	Thousand ounces
kPa	Kilopascal
kV	Kilovolt
kVA	Kilovolt-ampere
kW	Kilowatt
kWh	Kilowatt-hour
kWh/t	Kilowatt-hour per tonne
L	Liter
L/h/m^2	Liters per hour per square meter
LC	Leach Cap
LCG	Life Cycle Geo, LLC
LCRS	Leachate collection and removal system
LG	Low grade
LHDs	Load-haul-dump equipment
LLD	Detection limit
LME	London Metal Exchange
LTE	Long-term evolution
Ma	Million years ago
masl	Meters above sea level
Material take-offs	MTOs
Met Engineering	Met Engineering, LLC
MG	Medium grade
mg/L	Milligram per liter
min	Minute
ML	Megaliter
ML/ARD	Metal leaching and acid rock generating
MLI	McClelland Labs
mm	Millimeter
MPa	Megapascal
MSO	Mineable stope optimizer
Mt	Million tonnes
Mt/y	Million tonnes per year
MVA	Megavolt-ampere
MW	Megawatt
MWr	Megawatts of refrigeration
NAG	Non-acid-generating (rockfill material)

Abbreviation / Unit	Description
NGOs	Non-governmental organizations
NGS	National Geodetic Survey
NN	Nearest neighbor
NPAG	Non-potentially acid generating
NQ	Drill core size (47.26 mm)
NSR	Net smelter return
O	Oxygen
OEM	Original equipment manufacturer
OH&S	Occupational health and safety
OK	Ordinary kriging
OX	Oxide
P&C	Paterson & Cooke USA, Ltd.
P&ID	Piping and instrument diagram
P_{80}	Particle size at which 80% of the material will pass
Pa	Pascal
PAG	Potentially acid generating
PAX	Potassium amyl xanthate
PCS	Process control system
PFD	Process flow diagram
PFS	Pre-feasibility study
pH	Potential hydrogen
PLC	Programmable logic controller
PLS	Pregnant leach solution
PMF	Probable maximum flood
ppb	Parts per billion
PPD IP	Perpendicular pole dipole induced polarization
ppm	Parts per million
PQ	Drill core size (85 mm)
PR	Primary
PV	Photovoltaic
QA/QC	Quality assurance / quality control
RC	Reverse circulation
RMR	Rock mass rating
ROM	Run of mine
rpm	Revolutions per minute
RQD	Rock quality designation
RWi	Bond rod work index
s	Second
SAR	Species at risk
SCADA	Supervisory control and data acquisition
SEQ	Sequential analyses
SG	Specific gravity
S-K 1300	Disclosure by Registrants Engaged in Mining Operations in Regulation S-K 1300
SLS	Secondary pregnant leach solution
Stantec	Stantec Consulting Services Inc.

Abbreviation / Unit	Description
SX/EW	Solvent extraction / electrowinning
t	Tonne
t/d	Tonnes per day
t/h	Tonnes per hour
t/y	Tonnes per year
TCu	Total copper
Tetra Tech	Tetra Tech, Inc.
TSP	Total suspended particulate
UCF	Undiscounted cash flow
UCS	Uniaxial compressive strength
UPS	Uninterruptible power supply
US$ or USD	United States dollar
V	Volt
VRFB	Vanadium redox flow battery
VSD	Variable-speed drive
VWPs	Vibrating wire piezometers
W	Width
WOTUS	Waters of the United States
wt %	Weight percentage
y	Year
$\mu g/m^3$	Micron per cubic meter

25 Reliance on Information Provided by the Registrant

25.1 Introduction

The companies who authored this report consider it reasonable to rely on Ivanhoe Electric for the information identified in the subsections below, because it employed industry professionals with considerable expertise in order to collect the information in these areas.

25.2 Macroeconomic Trends

Information relating to inflation, interest rates, discount rates, and taxes was obtained from Ivanhoe Electric.

This information is used in the economic analysis in Section 19. It supports the reasonable prospects of economic extraction for the mineral resource estimates in Section 11 and the assumptions used in demonstrating the economic viability of the mineral reserve estimates in Section 12.

25.3 Markets

Information relating to market studies / markets for product, market entry strategies, marketing and sales contracts, product valuation, product specifications, transportation costs, agency relationships, material contracts (e.g., mining, transportation, handling, hedging arrangements, and forward sales contracts) was obtained from Ivanhoe Electric.

This information is used in the market studies in Section 16 and in the economic analysis in Section 19. It supports the reasonable prospects of economic extraction for the mineral resource estimates in Section 11 and the assumptions used in demonstrating the economic viability of the mineral reserve estimates in Section 12.

25.4 Legal Matters

Information relating to mineral tenure (payments to retain property rights), surface rights, water rights, royalties, encumbrances, easements and rights-of-way, violations and fines, permitting requirements, and the ability to maintain and renew permits was obtained from Ivanhoe Electric.

This information is used in support of the property description and ownership information in Section 3, the permitting and mine closure descriptions in Section 17, and the economic analysis in Section 19. It supports the reasonable prospects of economic extraction for the mineral resource estimates in Section 11 and the assumptions used in demonstrating the economic viability of the mineral reserve estimates in Section 12.

25.5 Environmental Matters

Information relating to baseline and supporting studies for environmental permitting and monitoring requirements, ability to maintain and renew permits, emissions controls, closure planning, closure and reclamation bonding and bonding requirements, sustainability accommodations, and monitoring for, and compliance with, requirements relating to protected areas and protected species was obtained from Ivanhoe Electric.

This information is used when discussing ownership information in Section 3, the permitting and closure discussions in Section 17, and the economic analysis in Section 19. It supports the reasonable prospects of economic extraction for the mineral resource estimates in Section 11 and the assumptions used in demonstrating the economic viability of the mineral reserve estimates in Section 12.

25.6 Stakeholder Accommodations

Information relating to social and stakeholder baseline and supporting studies, hiring and training policies for workforce from local communities, partnerships with stakeholders (including national, regional, and state mining associations; trade organizations; state and local chambers of commerce; economic development organizations; Native American communities: non-governmental organizations; and state and federal governments), and the community relations plan was obtained from Ivanhoe Electric.

This information is used in the social and community discussions in Section 17 and the economic analysis in Section 19. It supports the reasonable prospects of economic extraction for the mineral resource estimates in Section 11 and the assumptions used in demonstrating the economic viability of the mineral reserve estimates in Section 12.

25.7 Governmental Factors

Information relating to taxation and royalty considerations, monitoring requirements and frequency, bonding requirements, violations and fines, and risks due to changes in regulations and policies was obtained from Ivanhoe Electric.

This information is used in the discussion on royalties and property encumbrances in Section 3, the permitting and mine closure descriptions in Section 17, and the economic analysis in Section 19. It supports the reasonable prospects of economic extraction for the mineral resource estimates in Section 11, the assumptions used in demonstrating the economic viability of the mineral reserve estimates in Section 12, and risks due to changes in regulations and policies in Section 22.19.1.