NI 43-101 TECHNICAL REPORT
FLORENCE COPPER PROJECT

PINAL COUNTY, ARIZONA

QUALIFIED PERSONS:
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Effective Date: March 15, 2023
Report Date: March 30, 2023

TABLE OF CONTENTS

TABLE OF CONTENTS – *Cont'd*

Section

SECTION 1

SUMMARY

SECTION 1: SUMMARY

Table of Contents

Page

List of Tables

1.1 Executive Summary

This report describes the Taseko Mines Limited (Taseko) updated life of mine plan, mineral reserve estimate and economics for the Florence Copper Project (FCP) in Pinal County, Arizona. The plan proposes an In-Situ Copper Recovery (ISCR) well field supplying a solvent extraction and electrowinning (SX/EW) process plant with economic copper grade of pregnant leach solution (PLS) for a period of at least 22 years. The commercial production facility will produce an average of 85 million pounds per year of LME Grade A copper cathode at full capacity.

The FCP presents a unique opportunity to construct a commercial scale ISCR facility that has low initial capital and operating costs, minimal environmental impact and is located in a secure mining friendly jurisdiction. The economics of the project, which are summarized in Table 1-1 below, are based on a conservative long-term copper price of US$3.75/lb.

Table 1-1: Project Highlights

	Value
Pre-Tax NPV at 8%	US$1,090 million
Pre-Tax IRR	49%
After-Tax NPV at 8%	US$930 million
After-Tax IRR	47%
After-Tax Payback Period	2.6 years
Initial Capital	US$232 million
Operating Costs:	US$1.11 / lb

The report has been prepared for Taseko, a producing issuer, under the supervision of Richard Tremblay, P.Eng., MBA, Richard Weymark, P.Eng., MBA, and Robert Rotzinger, P.Eng. Mr. Tremblay is employed by the Company as Sr. Vice President Operations, Mr. Weymark is Vice President Engineering and Robert Rotzinger is Vice President Capital Projects. All three are "Qualified Persons" (QPs) as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

The FCP is located midway between the major urban centers of Phoenix and Tucson Arizona in the American southwest copper belt and has paved highway, rail, and power access immediately adjacent to the property. The property consists of two land parcels: 1,145 acres held in fee simple ownership, and 160 acres of Arizona State Trust Lands held under Arizona State Mineral Lease 11-26500. Florence Copper LLC (Florence Copper), an indirect wholly owned subsidiary of Taseko, holds the mineral rights within the resource area and the property has three royalty agreements in place. The climate is amenable to year-round operations with hot summers, mild winters, and precipitation typical of the semi-arid Sonoran Desert location.

1.1 Executive Summary – *Cont'd*

The deposit consists of a large porphyry copper sulfide system overlain by a thick and intensely fractured oxidized layer. The oxidized zone is saturated with ground water that is separated from the upper drinking, agriculture, and industrial use aquifer by a thick layer of dense low permeability clay. It is also separated from the deep groundwater by the relatively impervious sulfide system. This unique, geological and hydrological combination makes the oxidized zone ideal for the ISCR method of extraction.

The FCP has been extensively explored over many years by multiple owners. The report details the geography, ownership, geology, hydrogeology, and mineralization, and the methods and data utilized, in determining a measured and indicated mineral resource of 363 million tons grading 0.35%. The report goes on to describe in detail the ISCR and SX/EW methods, the mine plan and the economic parameters used to define the reserve limits which result in a proven and probable mineral reserve of 320 million tons grading 0.36% copper containing 2.3 billion pounds of in-situ copper. The resources and reserves are based on conservative copper price of $3.50/lb and $3.05/lb respectively. Details of these estimates are presented in Table 1-2 and Table 1-3 below.

Table 1-2: Florence Project Oxide Mineral Resources (Effective December 31, 2022)

Class	Tons (000,000's)	%TCu Grade	Contained Cu (000,000's lbs)
Measured	292	0.34	1,997
Indicated	71	0.39	552
M+I	**363**	**0.35**	**2,549**
Inferred	42	0.32	266

1. Mineral Resources follow CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).
2. Mineral Resources are reported inclusive of Mineral Reserves.
3. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
4. Mineral Resources are confined to the Oxide and Transition zones inside a "reasonable prospects of eventual economic extraction" boundary assuming ISCR extraction methods using the following assumptions: $3.50 Cu price, $31,600/acre for core hole abandonment, $240,400/acre for cultural mitigations in identified Cultural Sites, $149,600 + $263/foot well drilling costs, $160/ton acid cost, $45.30/ton acid applied for well field operating costs, 1.2% surface losses, $0.10/lb Cu for electrowinning cost, $0.12/lb Cu G&A cost, $0.69/ton reclamation cost, $0.02/lb Cu shipping cost, 7% NSR royalties on ALSD land, 3% NSR royalties on freehold land, and 2.5% royalties on net profit.
5. Mineral Resources are reported without a cut-off grade to reflect the nature of the ISCR extraction method proposed.
6. Tonnage factors of 13.5 ft3/ton and 13.13 ft3/ton have been applied corresponding to 8% porosity in the upper oxide zone and 5% porosity in the lower oxide and transition zones.
7. Numbers may not add due to rounding.

1.1 Executive Summary – *Cont'd*

Table 1-3: Proven and Probable Reserve Estimate (Effective December 31, 2022)

Category	Tons (000,000's)	%TCu Grade	Contained Cu (000,000's lbs)
Proven	258	0.35	1,812
Probable	63	0.40	503
Total	**320**	**0.36**	**2,316**

1. Mineral Reserves follow CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).
2. Mineral Reserves are contained within Florence Copper's Mineral Resources.
3. Mineral Reserves are assumed to be extracted using ISCR extraction methods using the following assumptions: $3.05 Cu price, $31,600/acre for core hole abandonment, $240,400/acre for cultural mitigations in identified Cultural Sites, $149,600 + $263/foot well drilling costs, $160/ton acid cost, $45.30/ton acid applied for well field operating costs, 1.2% surface losses, $0.10/lb Cu for electrowinning cost, $0.12/lb Cu G&A cost, $0.69/ton reclamation cost, $0.02/lb Cu shipping cost, 7% NSR royalties on ALSD land, 3% NSR royalties on freehold land, and 2.5% royalties on net profit.
4. Mineral Reserves are reported without a cut-off grade and on a fully diluted basis to reflect the nature of the ISCR extraction method proposed.
5. Tonnage factors of 13.5 ft^3/ton and 13.13 ft^3/ton have been applied corresponding to 8% porosity in the upper oxide zone and 5% porosity in the lower oxide and transition zones.
6. Numbers may not add due to rounding.

Florence Copper has operated a demonstration scale ISCR facility referred to as the Production Test Facility (PTF) beginning in December 2018. Operation of the PTF under commercial leaching conditions continued to June 2020 which was followed by a 4-month leaching ramp-down period. By the end of October 2020, the SX/EW plant was shutdown and the PTF subsequently transitioned to demonstration of the rinsing phase which is still in progress. The PTF produced over 1 million pounds of copper and was successful in demonstrating that hydraulic control could be achieved and maintained and confirmed that the oxide ore zone behaves hydrologically as an equivalent porous media, thereby ensuring protection of underground sources of drinking water.

While the PTF was not designed nor permitted to run a full leach cycle to determine ultimate ore block recoveries, the opportunity was taken to evaluate previous laboratory test work assumptions, test operational controls and strategies, and collect generated scale up process data which has facilitated the development of a more sophisticated leaching model calibrated to the observed performance of the PTF well field.

The refined leach model predicts copper extraction, PLS grade and acid consumption over time for an ore block based on its grade (total copper and acid soluble copper) and the acid application rate (flow and raffinate acidity) selected. The production performance from each ore block will be dynamic and a function of the commercial extraction plan. The total recovery to copper cathode is conservatively projected to be 65.8% at an average PLS grade of 1.7 g/L for the project.

1.1 Executive Summary – *Cont'd*

The FCP site has been the subject of numerous environmental studies dating as far back as the 1970's. These studies have been incorporated into the operations and closure plans for the project and included in the capital and operating costs as appropriate. Permits for commercial operations are required under both the Arizona Department of Environmental Quality (ADEQ) Aquifer Protection Permit (APP) and the United States Environmental Protection Agency (USEPA) Underground Injection and Control (UIC) programs. Florence Copper has received a commercial APP from ADEQ and issuance of the commercial UIC permit by the USEPA is pending.

In-situ recovery, which has been used successfully in the mineral extraction industry for over 50 years, does not involve many of the activities typically associated with conventional open pit mining as there is no physical handling or relocation of material required. The FCP will not require blasting, loading, hauling, dumping, crushing, or conveying of material, resulting in significantly less environmental impacts. During operations, it will consume less energy, emit less carbon and consume less water per pound of copper produced and generate significantly less dust compared to a conventional open pit mine.

The long-term environmental benefits of the ISCR method are that no open excavation, waste rock piles, heap leach piles, or tailings storage areas are generated, resulting in a much smaller footprint that does not significantly alter the site topography. The well sites are unobtrusive and easily removed such that in closure the land can be returned to its original state for future use. As a result, the FCP potentially offers an environmentally superior domestic source of copper production for the green economy.

In the QPs' opinion the geological data, project design, capital and operating cost estimates and marketing assumptions used are appropriate for purposes of defining and demonstrating resources and reserves as prescribed by NI 43-101.

As the commercial permitting processes and detailed project engineering required to advance the project to commercial operations are both underway the QPs are not making any further recommendations.

SECTION 2

INTRODUCTION

SECTION 2: INTRODUCTION

Table of Contents

Page

2.1 Introduction

This technical report has been prepared for Taseko Mines Limited (Taseko) a company existing under the British Columbia Business Corporations Act and having its head office at 1040 West Georgia Street, Vancouver, British Columbia, Canada.

The purpose of this report is to document the updated Florence Copper Project life of mine plan, mineral reserve estimate and economics that incorporate the technical and environmental work completed since 2017, including operation of the Production Test Facility (PTF) since December 2018.

The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Taseko at the time of preparation of this report;
- Assumptions, conditions, and qualifications as set forth in this report;
- Data, reports, and opinions supplied by Taseko and other third party sources listed as references.

The Qualified Persons (QPs) responsible for the content of this report are Richard Tremblay, P.Eng., MBA, Richard Weymark, P.Eng., MBA, and Robert Rotzinger, P.Eng.

Mr. Tremblay supervised the preparation of Sections 1 through 5, 19, 20 and 23 through 27 and has reviewed the mineral tenure, permitting and bonding requirements and long-term commodity price assumptions. He has been employed by Taseko since July 2014. Mr. Tremblay has visited the site on numerous occasions in his current position as Sr. Vice President, Operations. His most recent personal inspection of the property occurred from February 13th to 17th, 2023.

Mr. Weymark supervised the preparation of Sections 6 through 12, 14 and 15 of this report and has reviewed the methods used to estimate grade and tonnage in the geological model. In addition, the drilling, sampling, QA/QC, sample preparation, analytical methods and data verification activities were reviewed under his supervision. Mr. Weymark’s current position is Vice President, Engineering and he has been employed by Taseko since July 2018. His most recent personal inspection of the property occurred from March 10th to 13th, 2020.

2.1 Introduction – *Cont'd*

Mr. Rotzinger supervised the preparation of Sections 13, 16 through 18, 21 and 22 of this report and has reviewed the methods used to determine the well field design, the long range mine plan, capital and operating cost estimates and directed the updated economic evaluation. Mr. Rotzinger's current position is Vice President, Capital Projects and he has been employed by Taseko since June 1999. His most recent personal inspection of the property occurred from February 15th to 17th, 2023.

Measurement units used in this report are a combination of US and metric, and currency is expressed in US dollars unless stated otherwise.

2.2 Abbreviations

Abbreviation	Unit or Term
%	Percent
°	degree (degrees)
°C	degrees Centigrade
µ	micron or microns, micrometer or micrometers
A	Ampere
a/m^2	amperes per square meter
AA	atomic absorption
A.A.C.	Arizona Administrative Code
ACD	annular conductivity devices
ACHP	Advisory Council on Historic Preservation
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AFY	acre-feet per year
AL	Alert Level
AMA	Active Management Area
amsl	above mean sea level
APP	Aquifer Protection Permit
APS	Arizona Public Service
AQL	Aquifer Quality Limit
A.R.S.	Arizona Revised Statutes
ASCu	acid soluble copper
ASLD	Arizona State Land Department
ASMIO	Arizona State Mine Inspector's Office
AZPDES	Arizona Pollutant Discharge Elimination System
BADCT	Best Available Demonstrated Control Technology
BIA/SCIP	Bureau of Indian Affairs / San Carlos Irrigation Project
BC	Brown & Caldwell
BE	biological evaluation
bft^3	billion cubic feet
BLM	US Department of the Interior, Bureau of Land Management
cfm	cubic feet per minute
CIM	Canadian Institute of Mining, Metallurgy and Petroleum

2.2 Abbreviations – *Cont'd*

Abbreviation	Unit or Term
cm	Centimeter
cm^2	square centimeter
cm^3	cubic centimeter
CoG	cut-off grade
Crec	core recovery
Cu	Copper
dia.	Diameter
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
ESA	Endangered Species Act
FA	fire assay
famsl	feet above mean sea level
F	Fahrenheit
FCP	Florence Copper Project
ft	foot (feet)
ft^2	square foot (feet)
ft^3	cubic foot (feet)
ft^3/st	cubic foot (feet) per short ton
g	Gram
g/L	gram per liter
g/st	grams per short ton
G&A	general and administrative
gal	Gallon
g-mol	gram-mole
gpm	gallons per minute
Ha	hectares
HDPE	High Density Polyethylene
hp	horsepower
HPTP	Historic Property Treatment Plan
ICP	inductively coupled plasma
ID2	inverse-distance squared
ID3	inverse-distance cubed

2.2 Abbreviations – *Cont'd*

Abbreviation	Unit or Term
IGFR	grandfathered irrigation rights
ILS	Intermediate Leach Solution
IRC	Internal Revenue Code
IRR	Internal Rate of Return
ISCR	In-Situ Copper Recovery
in	inch
kg	kilograms
km	kilometer
km^2	square kilometer
kst	thousand short tons
kst/d	thousand short tons per day
kst/y	thousand short tons per year
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour
kWh/st	kilowatt-hour per short ton
L	liter
L/sec	liters per second
lb	pound
LHD	Load-Haul-Dump truck
LLDPE	Linear Low Density Polyethylene Plastic
LoM	Life-of-Mine
M	meter
m.y.	million years
m^2	square meter
m^3	cubic meter
Ma	million years ago
MEMP	Mineral Extraction and Metallurgical Processing Permit
mg/L	milligrams/liter
mi	mile
mi^2	square mile
Mlb	million pounds

2.2 Abbreviations – *Cont'd*

Abbreviation	Unit or Term
mm	Millimeter
mm^2	square millimeter
mm^3	cubic millimeter
MOA	Memorandum of Agreement
MSHA	Mine Safety and Health Administration
Mst	million short tons
Mst/y	million short tons per year
MVA	megavolt ampere
MW	million watts
NAD83	1983 North American Datum
NEPA	National Environmental Policy Act of 1969 (as Amended)
NGO	non-governmental organization
NHPA	National Historic Preservation Act
NI 43-101	National Instrument 43-101
NPV	Net Present Value
NRHP	National Register of Historic Places
PLS	Pregnant Leach Solution
PMF	probable maximum flood
POC	point-of-compliance
POO	Plan of Operations
ppb	parts per billion
ppm	parts per million
PRT	Pressurized Rinse Test
psi	pounds per square inch
PV	pore volume
QA/QC	Quality Assurance/Quality Control
QEMSCAN	Quantitative Evaluation of Minerals by SCANning electron
QP	Qualified Person
RC	reverse circulation drilling
RO	reverse osmosis
RQD	Rock Quality Description
SCIDD	San Carlos Irrigation Drainage District
SEC	U.S. Securities & Exchange Commission

2.2 Abbreviations – *Cont'd*

Abbreviation	Unit or Term
sec	Second
SG	specific gravity
SHPO	State Historic Preservation Officer
SLT	Series Leach Test
SRK	SRK Consulting (U.S.), Inc.
st	short ton (2,000 pounds)
st/d	short tons per day
st/h	short tons per hour
st/y	short tons per year
SX/EW	Solvent Extraction (SX) / Electrowinning (EW)
t	tonne (metric ton) (2,204.6 pounds)
TCLP	Toxicity Characteristic Leaching Procedure
TCu	Total copper
TSF	tailings storage facility
TSP	total suspended particulates
UF	ultrafiltration
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service
V	volts
VFD	variable frequency drive
W	watt
XRD	x-ray diffraction
yd^2	square yard
yd^3	cubic yard
yr	year

SECTION 3

RELIANCE ON OTHER EXPERTS

SECTION 3: RELIANCE ON OTHER EXPERTS

Table of Contents

Page

3.1 Reliance on Other Experts

This section is not applicable to this report.

SECTION 4

PROPERTY DESCRIPTION AND LOCATION

SECTION 4: PROPERTY DESCRIPTION AND LOCATION

Table of Contents

List of Tables

4.1 Property Area

The FCP is located in the Town of Florence, Pinal County, Arizona. The property, which includes surface and subsurface rights, is approximately 1,305 acres. The land holdings include two land parcels: 1,145 acres held in fee simple ownership, and Arizona State Mineral Lease 11-26500 totaling 160 acres of Arizona State Trust Lands.

4.2 Property Location

The property is located 2.5 miles northwest of the business center of the Town of Florence. The site address is 1575 West Hunt Highway, Florence, Arizona 85132. The latitude and longitude of the planned ISCR area are 33° 02’ 49” North and 111° 25’ 48” West.

4.3 Mineral Tenure Rights

Florence Copper LLC (Florence Copper), an indirect wholly owned subsidiary of Taseko owns 1,145 acres of fee-simple title spanning portions of sections 26, 27, 28, 33, 34, and 35 of Township 4 South, Range 9 East.

Florence Copper also holds the surface and mineral rights on 160 acres of Arizona State Trust Lands (N½S½ of section 28) held under Arizona State Land Department Mineral Lease 11-26500 (Lease).

The Lease has a term from December 13, 2013 through to December 12, 2033 with Florence Copper having the preferred right to renew thereafter. The Lease requires the leaseholder to pay an annual rent to the State of Arizona and includes a royalty payable on production from the Lease lands as outlined in Section 4.4. The Lease grants Florence Copper the rights to mine copper, gold, silver, and other valuable minerals within the spatial and time limits of the Lease.

The resource area spans 260 acres within the S½ of section 28 and the N½N½ of section 33 and includes both fee-simple and lands covered by the Lease. Florence Copper holds the mineral rights within the resource area and there is no limit on the depth of the mineral rights or, subject to the time limits and preferred right of renewal of the Lease from time to time, the time by which those minerals must be extracted.

4.4 Royalties and Copper Streams

(a) State of Arizona

The land included within the Lease is subject to a mineral royalty payable to the State of Arizona. It consists of a percentage of the gross value of the minerals produced, which percentage cannot be less than 2% nor more than 8%. The royalty percentage between these limits is calculated according to a monthly "Copper Index Price" on a sliding scale which is established annually based on monthly copper prices for the trailing 60-month period and the predicted future cost of production from the lands covered by the Lease.

(b) Conoco Inc.

A 3% "Net Returns" royalty applicable to the entire property is payable to Continental Oil Company Inc. (Conoco). This royalty is subordinate to royalties paid to third parties, but even where such royalties exist, the royalty created will not be less than 2% of "Net Returns." "Net Returns" is defined as the "Gross Value" received by the grantor less all expenses incurred by the grantor with respect to such minerals after they leave the property.

(c) BHP Copper Inc.

A 2.5% "Net Profits Interest" royalty applicable to the entire property excluding the land included within the Lease, is payable to BHP Copper Inc. (BHP). "Net Profits" is defined as net proceeds and revenues received from the sale of product plus insurance proceeds, government grants and tax refunds, less all exploration, development and operating costs.

(d) Mitsui & Co (U.S.A.) Inc.

Under a copper purchase agreement dated December 19, 2022, Florence Copper is obligated to deliver to Mitsui & Co (U.S.A.) Inc. (Mitsui) 2.67% of the copper metal produced at Florence in exchange for deposits totalling $50 million to fund project construction and ongoing payment of a delivery price equal to 25% of the market price of copper delivered under the contract.

4.5 Property Tenure Rights

Florence Copper owns the private property encompassing the FCP. The private property falls within the boundaries of the Town of Florence. Florence Copper also leases, 160 acres of Arizona State Land, which contains approximately 40% of the in-situ copper pounds within the reserve. The Arizona State Land is not subject to the jurisdiction of the Town of Florence. Florence Copper holds the surface rights within both the fee-simple and Lease lands.

Historically, the Town of Florence has supported mining operations or investigations on the Florence Copper private land. However, in 2003 the then-owner of the property agreed to allow the Town of Florence to annex the property and zone the land for a mix of residential, commercial and industrial uses. In doing so, the owner preserved a mining overlay on the property that would not be subject to the Town of Florence’s new zoning and allow all future owners to continue mining operations on the site.

Florence Copper pays annual property taxes on the private land parcels and pays annual lease payments to the Arizona State Land Department.

4.6 Environmental Liabilities

(a) Introduction

The FCP property has some limited environmental liabilities relating to historical mining and exploration activities conducted by Conoco in the 1970s and by Magma Copper Company (Magma) and BHP in the 1990s, as well as Florence Copper's PTF operations. These liabilities occur on the private lands held by Florence Copper as well as State Trust Land administered by the Arizona State Land Department (ASLD). Florence Copper has retained three closure bonds: $650k for the Temporary APP, $4.5M for the PTF UIC permit, and $4.7M for the Site Wide APP permit. These surety bonds also cover the surface reclamation bond requirements under the Lease. Once a commercial UIC permit is received, performance surety bonding will be updated.

(b) Well and Core Hole Abandonment

As further described in Section 10, there have been many core holes and wells drilled on the FCP property as a result of previous agricultural, exploration and pilot scale mining activities. The APP and UIC permits require the abandonment of wells and core holes within 500 feet of active ISCR prior to the initiation of injection. Wells and core holes located more than 500 feet beyond the ultimate well field footprint are not required to be abandoned under the APP and UIC permits. The existing core holes and wells that fall within the commercial well field, but do not form part of it, will be progressively plugged and abandoned sufficiently in advance of well field development to maintain compliance with permit requirements. Additionally, all core holes or wells within a 150-foot radius of a pond or impoundment will require abandonment. As the commercial ISCR wells are depleted during operations they will be progressively rinsed and abandoned so that at closure only the final set of active wells remain to be abandoned.

The majority of the historic core holes were completed without surface monuments or casing. Over the years, the physical locations of many of these drilling locations have become obscured, especially those located in active agricultural fields. The United States Environmental Protection Agency (USEPA) has approved a core hole abandonment plan that addresses the uncertainty associated with abandonment of the historic drill sites and grants conditional closure for those sites that cannot be located using the prescribed survey and geophysical locating methodologies.

The costs for completing the well and core hole abandonments are included in the reclamation plan and secured with closure surety bonds.

4.6 Environmental Liabilities – *Cont'd*

(c) Historical Mining Activities

In the 1970s, Conoco conducted limited underground operations on the FCP property. The intent of these operations was to generate representative quantities of sulfide and oxide material for small-scale testing at a pilot plant located near the current Florence Copper site administration building.

As part of the limited mining operation, Conoco completed two vertical shafts on the property. The shafts included a 72-inch diameter production shaft and a 42-inch ventilation and emergency access shaft. Underground mining reportedly occurred from December 1974 to December 1975 and included the removal of approximately 32,000 tons of oxide material, 17,000 tons of sulfide material, and 1,500 tons of waste rock.

Following the cessation of underground mining operations, the mining equipment and infrastructure was dismantled and removed. Access to the shafts is appropriately controlled by fencing and steel-plated covers, but the shafts themselves have not been permanently abandoned. The closure plans and cost for the underground mine workings and shafts will be included in the commercial UIC permit.

4.6 Environmental Liabilities – *Cont'd*

(d) Pilot Mineralized Material Processing Activities

Conoco operated a pilot-scale processing plant on the property for approximately one year beginning in 1975 using sulfide and oxide material mined from the underground operations. The pilot plant was used to test and optimize various concentrating and leaching processes using combinations of small-scale unit operations including crushing, grinding, flotation, vat leaching, agitation leaching, and solvent extraction / electrowinning (SX/EW).

When processing the oxide material, Conoco operated a 100-ton per day vat leaching circuit. The circuit consisted of ten above-ground concrete leaching vats with acid-resistant coatings. Oxide material was loaded into the vats via overhead conveyor and processed using a variety of leaching sequences. Pregnant leach solutions (PLS) were transferred via above ground pipes to the PLS holding tank, and subsequently processed in the SX/EW plant located in the process building. Spent oxide material was triple rinsed with fresh water after processing and impounded on site. Conoco also tested an agitation leach process for the oxide material. The circuit consisted of four agitated tanks and was capable of processing at a rate of 6 tons per day. Spent oxide material was rinsed with fresh water after processing and impounded on site.

Sulfide material was tested in a 50-ton per day conventional flotation circuit. Following batch flotation, tailings from the concentrating process was thickened and impounded on site. The oxide and sulfide tailings are still located on the property in a small impoundment.

(e) Chemical and Sanitary Pond

The Conoco facility utilized a small pond for the disposal of treated sanitary waste and untreated process wastes pumped from the reagent mixing area in the process building. Sanitary waste was treated in a prefabricated aerobic digester before being pumped to the sanitary pond.

(f) Pilot Plant Decommissioning

Subsequent to Magma's acquisition of the project, MP Environmental was retained to decommission the pilot plant. All process fluids, reagents, and process residues were removed from the facility and all tanks and process units were thoroughly cleaned. The equipment was eventually removed from the site for re-use at other Magma facilities, sold, or disposed of at regulated landfills.

4.6 Environmental Liabilities – *Cont'd*

(g) Agricultural Impacts

The Florence Copper property contains several large-diameter water production wells with electrically powered vertical shaft pumps. The wells were generally constructed to support agricultural and livestock activities, housing, and facility operations on the property. Several of these wells are no longer in service. As previously described, wells within 500 feet of active ISCR will require proper abandonment in accordance with ADWR regulations. Wells located more than 500 feet beyond the ultimate well field footprint are not required to be abandoned under the APP and UIC permits. As these wells are not considered to be part of the FCP, the cost of abandonment has not been addressed in the reclamation plan or associated financial assurance instrument.

(h) Magma-BHP Test Facilities

The Magma-BHP test facilities consist of a small well field of injection, recovery, and observation wells, an evaporation pond, and a small process tank area adjacent to the evaporation pond. These facilities were used in BHP's hydraulic control test conducted in 1997 and 1998. The test ran for 90 days to demonstrate hydraulic control to the environmental agencies and was followed by a rinsing period of several years. The Arizona Department of Environmental Quality (ADEQ) and USEPA allowed cessation of hydraulic control based on water quality samples following rinsing. While the submersible pumps have been removed from each well, along with the piping that connects the wells to the tank farm, the test facilities have not been fully closed and exist today in essentially the same condition as when BHP terminated the hydraulic control test. The closure and removal of these facilities is covered under financial assurance mechanisms with ADEQ and the USEPA.

4.6 Environmental Liabilities – *Cont'd*

(i) Florence Copper Production Test Facility

The Florence Copper PTF facilities include an ISCR well field with four injection wells, nine recovery wells, seven observation wells, four multilevel sampling wells, an SX/EW processing plant, a water impoundment, run-off pond, and associated infrastructure. The purpose of the PTF was to validate the method of hydraulic control and protection of underground sources of drinking water (USDW), and to demonstrate the feasibility of recovery of soluble copper from the Poston Butte ore body using the ISCR method. Operation of the PTF under commercial leaching conditions was completed between December 2018 to June 2020. This was followed by a 4-month leaching ramp-down period with continued operation of the PTF's SX/EW plant. By the end of October 2020, the SX/EW plant was shutdown and the PTF subsequently transitioned to demonstration of the rinsing phase which is currently still in progress. Applications for significant amendment of APP No. P-101704, and for a UIC permit were submitted on June 12, 2019 and October 4, 2019, respectively, to incorporate the PTF into the planned commercial ISCR facility and to authorize commercial ISCR operations. The closure and removal of these facilities is covered under financial assurance mechanisms with ADEQ and the USEPA.

4.7 Permits Required

(a) Introduction

There are several environmental permits required for the FCP. Florence Copper has obtained all of the permits required for the PTF. On December 8, 2020, the Company received the commercial APP from the ADEQ and issuance of the commercial UIC permit from the USEPA is pending at this time. The list of current permits is provided in Table 4-1. The following sections provide a description of each permit, including the legal authorization, the jurisdictional agency, the purpose of the permit, the term of the permit, a brief history of the permit related to the site, and the current status of the permit.

4.7 Permits Required – *Cont'd*

(a) Introduction – *Cont'd*

Table 4-1: List of Current Permits – Florence Copper In-Situ Recovery Project

Permit Name	Jurisdiction	Permit Status	Issue Date	Expiration Date	Reporting
Aquifer Exemption No. AZ396000001	USEPA	Current	5/1/1997	N/A	N/A
Underground Injection Control Permit R9UIC-AZ3-FY11-1	USEPA	Current	12/20/2016	2 Year Operations 5 Year Post Closure	Quarterly[1]
Aquifer Protection Permit No. 101704	ADEQ	Current	12/8/2020	Operational Lifetime	Annual and Quarterly[1]
Air Quality Permit No. B31372.000	PCAQCD	Current	12/16/2021	12/15/2026	Semi-annually and Annually
Mining Storm Water Permit 2019 Permit No. AZMSG2019-002	ADEQ	Current	5/15/2019	12/31/2024	Semi-Annually
Mineral Extraction and Metallurgical Processing Groundwater Withdrawal Permit No. 59-562120	ADWR	Current	5/8/2017	5/8/2037	Annually
AZ State Mineral Lease 11-26500	ASLD	Current	12/13/2013	12/12/2033	Monthly; Annually
Septic System Permit	ADEQ	Current	10/12/2020	N/A	N/A
Burial Agreement Case No. 2012-012	AZ State Museum	Current	6/21/2012	N/A	N/A
Memorandum of Agreement (MOA) on Historical Preservation for PTF	USEPA	Current	10/16/2015	30 Day Notice	Annually
EPA Hazardous Waste ID No. AZD983481599	USEPA	Current	4/4/2012	No Expiration	Annually
Encroachment Permit	BIA/SCIP	Current	7/2/2021	7/2/2026	N/A
Right of Way Access Permits for North Side Canal Crossings (3)	BIA/SCIP	Current	7/8/2021	No Expiration	N/A

[1] Information is compiled in daily and monthly reporting format and assembled in quarterly reports

4.7 Permits Required – *Cont'd*

(b) Aquifer Protection Permit (APP)

Authorization, Agency, Purpose and Term

The legal authorization for the APP is Arizona Revised Statutes (A.R.S.) § 49-241. The ADEQ is the authorized agency for issuing APPs. The purpose of the APP program is the protection of groundwater quality. An Individual APP is valid for the life of the project and has provisions for temporary cessation and resumption of operations. A Temporary Individual APP is designed for pilot-scale testing programs and is valid for 12 months with the potential for one 12-month extension, if needed.

History

A test well field, a small leachate processing facility, and a double-lined evaporation pond were constructed as authorized by Sitewide APP No. P-101704 in 1997. The pilot test facility operated from October 31, 1997 to February 9,1998. The test area was rinsed until September 1, 2004. Cessation of hydraulic control for testing was approved by both agencies and the well field has since remained inactive. Subsequently, no Sitewide permit-related activities have taken place.

ADEQ Temporary APP No. P-106360 authorized operation of the PTF and set forth monitoring requirements to be applied at the PTF, which lies within the area covered by the Sitewide APP. The facility received authorization to proceed with pre-operational activities on July 13, 2017, and the PTF well field was completed and began operations on December 15, 2018. Operation of the PTF under commercial leaching conditions continued to June 2020 which was followed by a 4-month leaching ramp-down period with continued operation of the PTF's SX/EW plant. By the end of October 2020, the SX/EW plant was shutdown and the PTF subsequently transitioned to demonstration of the rinsing phase which is currently still in progress.

Status

Temporary APP No. P-106360 authorized Florence Copper to operate the PTF and was valid until December 14, 2020. A significant amendment to Sitewide APP No. P-101704 was submitted in June of 2019. Florence Copper received the commercial APP from ADEQ on December 8, 2020 which authorizes rinsing of the PTF and commercial operations for the life of the facility. Discharge facilities and other pertinent requirements from the Temporary APP have been incorporated into the permit for commercial operations, along with pertinent information obtained from operating the PTF.

4.7 Permits Required – *Cont'd*

(c) Underground Injection and Control Permit (UIC) and Aquifer Exemption

Authorization, Agency, Purpose and Term

The legal authorization for the UIC program is the Federal Safe Drinking Water Act, 42 U.S. Code § 300f et seq., 40 CFR Parts 144 and 146. The USEPA is the authorized agency for issuing UIC permits and Aquifer Exemptions in Arizona. One of the purposes of the UIC program is to allow the extraction of mineral resources using in-situ methods while protecting underground sources of drinking water. A UIC Permit is valid for the life of the project.

History

USEPA issued an Aquifer Exemption and UIC Permit (UIC No. AZ396000001) to BHP on May 1, 1997. The permit and aquifer exemption were transferred to Florence Copper Inc. in 2001. On August 5, 2010, USEPA notified Curis Resources (Arizona) Inc. that it was initiating a "revocation and reissuance" of the UIC permit due to the substantial lapse in time since the permit was issued in 1997. USEPA issued UIC Permit No. R9UIC-AZ3-FY11-1 to Florence Copper Inc. on December 20, 2016, which incorporated the aquifer exemption issued in 1997 and would allow operation of the PTF only. The facility received authorization to proceed with pre-operational activities on July 13, 2017.

Status

The PTF well field began operations on December 15, 2018. The rinsing phase of the PTF, which is currently still in progress, began at the end of October 2020. The UIC permit application for commercial facility operations was submitted to the USEPA in August 2019. Issuance of the commercial UIC permit from the USEPA is pending at this time.

4.7 Permits Required – *Cont'd*

(d) Air Quality Permit

Authorization, Agency, Purpose and Term

The legal authorization for the Air Quality Permit is 40 CFR Parts 60 and 61, and A.R.S. § 49-471 et seq. The Pinal County Air Quality Control District is the authorized agency for issuing air quality permits in Pinal County, Arizona. The purpose of the Air Quality Permit is to regulate the emission of pollutants to ensure no harm to public health or cause significant deterioration to the environment.

History

The original air quality permit was issued on December 16, 1996 to BHP. The permit was transferred to different owners of the project through the years, and when it was reissued to Florence Copper in 2016, it covered both the PTF and commercial operations.

Status

Florence Copper submitted a timely permit renewal application in 2021, and the Pinal County Air Quality Control District renewed the permit in 2022. The permit has a term of five years.

4.7 Permits Required – *Cont'd*

(e) Mining Stormwater Permit

Authorization, Agency, Purpose and Term

The permit provides authorization to discharge under the Arizona Pollutant Discharge Elimination System (AZPDES) program, in compliance with the provisions of the Arizona Revised Statutes, Title 49, Chapter 2, Article 3.1, the Arizona Administrative Code (A.A.C.), Title 18, Chapter 9, Articles 9 and Chapter 11, Article 1, and the Clean Water Act as amended (33 U.S.C. 1251 et seq.). The general permit specifically authorizes discharges associated with category iii, Mineral Industry sites, pursuant to 40 CFR 122.26(b)(14) in Arizona. The Mining Stormwater Permit is valid for 5 years.

History

Magma received a Multi Sector General Permit (MSGP) (AZR00A224) on December 31, 1992. BHP received a MSGP (AZR05A795) on January 26, 1999. Florence Copper submitted their Notice of Intent (NOI) for coverage under the MSGP on March 16, 2011. ADEQ issued an Authorization to Discharge No. AZMSG 2010-61741 on May 31, 2011.

Status

Mining Stormwater Permit AZMSG2019-002 was issued to Florence Copper by ADEQ on May 15, 2019, and became effective on January 1, 2020. This permit expires on December 31, 2024, and provides the authorization to discharge during PTF and commercial operations.

4.7 Permits Required – *Cont’d*

(f) Groundwater Withdrawal Permit

Authorization, Agency, Purpose and Term

The legal authorization for the Groundwater Withdrawal Permit is A.R.S. §45-514. The Arizona Department of Water Resources (ADWR) is the authorized agency for issuing Groundwater Withdrawal permits in Arizona. The purpose of the Groundwater Withdrawal program is to quantify and limit the extraction of groundwater within an Active Management Area (AMA). The FCP is located within the Pinal AMA. Florence Copper’s Groundwater Withdrawal Permit No. 59-562120 is valid until 2037.

History

Permit No. 59-562120 was originally issued by ADWR on June 26, 1997 to BHP and the permit was subsequently renewed and transferred to subsequent owners and most recently was issued to U1 Resources on May 31, 2010. The current permit was transferred to Florence Copper on May 8, 2017 and has an expiration date of May 8, 2037.

Status

Permit No. 59-562120 is current and in good standing. The permit allows up to 1,778.10 acre-feet per annum for use in mineral extraction and processing, and covers both PTF and commercial operations.

4.7 Permits Required – *Cont'd*

(g) Arizona State Mineral Lease

Authorization, Agency, Purpose and Term

The legal authorization for the Arizona State Mineral Lease is A.R.S. § 37-281 et seq. The Arizona State Land Department (ASLD) is the authorized agency for regulating mineral leases on state trust land. The purpose of the Arizona State Land Mineral Management program is to regulate mining/mineral activities on state trust land. The program requires a non-refundable filing fee per application and rental fees are required in all agreements. Royalties are paid on all recovered mineral products and appraisal or administrative fees may also be required. A reclamation bond is required and the actual bond amount is based upon the type of operation and the degree of disturbance. The Arizona State Mineral Lease (Lease) has a 20-year term and requires a reclamation bond, pollution liability insurance and submittal of monthly production and annual status reports.

History

BHP's Lease was entered into on December 14, 1993 with the State of Arizona, State Land Department and was assigned to Florence Copper Inc. on December 5, 2001. The Lease was assigned to U1 Resources Inc. on February 24, 2010 and a change of the lessee's name to Curis Resources (Arizona) Inc. was acknowledged on July 27, 2010. The Mineral Lease was renewed with the name change to Florence Copper on December 13, 2013.

Status

The Arizona State Mineral Lease permit was renewed in December 2013 with a 20-year term that expires on December 12, 2033. Florence Copper has the preferred right to renew on or before the expiration date. The Lease requires the submittal of an updated Mine Operating Plan and Approved Reclamation Plan prior to commencement of commercial operations. Florence Copper submitted these updated plans in October of 2021, and issuance of the updated Lease to cover commercial operations is pending at this time.

Pollution liability insurance has been in place since January 2014. The surety bonds for the UIC and APP permits cover the surface reclamation bond requirements under the Lease. There are several Mined Land Reclamation Statutes governing duplication of efforts between regulatory agencies. Specifically, A.R.S §§ 27-902, 27-903 and 27-932 provide for interagency agreements, coordination of activities, as well as memoranda of understanding to avoid "redundant, inconsistent, or contradictory reclamation, inspection, administration, enforcement and financial assurance requirements."

4.7 Permits Required – *Cont'd*

(h) Septic System Permit

Authorization, Agency, Purpose and Term

The legal authorization for the Septic System Permit is Arizona Administrative Code (A.A.C.) R18-9-A316. The ADEQ is the authorized agency for issuing Septic System Permits under its APP program. The purpose of the Septic System Permit is to regulate the construction of on-site wastewater treatment facilities and authorize discharges to the treatment system. New property owners must submit a notice of permit transfer to ADEQ. The Septic System Permit is valid for the duration of the current property owner's ownership.

History

Florence Copper filed for a Septic System Permit upon change of ownership of the property. The inspection occurred March 9, 2010 and was approved by ADEQ.

Status

In October 2020, Florence Copper submitted the results of an inspection of its septic system to ADEQ and changed the ownership of the system to Florence Copper. The permit is considered in effect as of October 2020 by ADEQ, has no expiration date, and will cover commercial operations.

4.7 Permits Required – *Cont’d*

(i) Burial Agreement (Case No. 2012-012)

Authorization, Agency, Purpose and Term

The legal authorization for the Burial Agreement (Case No. 2012-012) is A.R.S. § 41-865 and A.R.S. § 41-844. The Arizona State Museum is the authorized agency for regulating the Burial Agreement. The purpose of the Burial Agreement is to provide the provisions and procedures in case of the discovery, treatment and disposition of remains of portions of the Escalante Ruin Group, a substantial group of Hohokam sites in the vicinity of Coolidge, Arizona, as a consequence of mining development.

History

The Burial Agreement between Florence Copper and the Gila River Indian Community, the Ak-Chin Indian Community, the Salt River Pima-Maricopa Indian Community, the Tohono O’odham Nation, the Hopi Tribe and the Arizona State Museum was drafted in April 2012.

Status

The Burial Agreement (Case No. 2012-012) was signed June 2012. The agreement became part of the Historic Property Treatment Plan (HPTP) and Memorandum of Agreement (MOA) for the PTF. A new Burial Agreement will be obtained as part of the Programmatic Agreement for commercial operations.

4.7 Permits Required – *Cont'd*

(j) Memorandum of Agreement

Authorization, Agency, Purpose and Term

Projects that are determined to be a federal undertaking are subject to review under Section 106 of the National Historic Preservation Act, as amended and recodified, 54 U.S.C. §300101 et seq. (NHPA) and the statute's implementing regulations for Protection of Historic Properties.

Originally codified as "Section 106," and still referenced as such, this statute requires federal agencies to take into account the effects of their activities and programs on cultural resources listed in or determined eligible for the National Register of Historic Places (NRHP) (referred to collectively as "historic properties"). Regulations for Protection of Historic Properties (36 CFR Part 800) define a process for federal agencies to consult with the State Historic Preservation Officer (SHPO), Native American Tribes, other interested parties and agencies, and when they elect to participate, the Advisory Council on Historic Preservation (ACHP), to ensure that historic properties are considered as federal undertakings are planned, permitted, and implemented.

History

Because Florence Copper applied for and obtained a UIC Class III Area Permit for the PTF, and because the project would impact documented historic properties, the Section 106 process was completed. A Memorandum of Agreement (MOA) was developed with stipulations under which the undertaking would proceed. Among those stipulations is the requirement that a Historic Properties Treatment Plan (HPTP) be developed and implemented to minimize or otherwise mitigate the "adverse effects" on the historic properties. Signatories to the MOA were the USEPA, Arizona State Historic Preservation Officer, USEPA's Advisory Council on Historic Preservation, Arizona State Land Department, and Florence Copper.

Status

The MOA for Phase 1 is dated October 16, 2015, and is in place for PTF activities. The Section 106 process is currently underway for Phase 2 commercial facility operations that would be covered under the pending UIC permit. A Programmatic Agreement with similar provisions and signatories will be executed prior to commencement of commercial operations.

4.7 Permits Required – *Cont'd*

(k) USEPA Hazardous Waste

Authorization, Agency, Purpose and Term

The legal authorization for the USEPA Hazardous Waste ID No. AZD983481599 is 40 CFR Part 260. The USEPA is the authorized agency for regulating Hazardous Waste ID No. AZD983481599. The purpose of the USEPA Hazardous Waste program is for regulating commercial businesses as well as federal, state, and local government facilities that generate, transport, treat, store, or dispose of hazardous waste. USEPA Hazardous Waste ID No. AZD983481599 does not expire.

History

Florence Copper filed an updated Notification of Regulated Waste Activity form on February 7, 2002 for continuous coverage under the subsequent notification of USEPA ID No. AZD983481599. A subsequent notification was submitted by Florence Copper Inc. for a change of facility ownership on April 4, 2012.

Status

Florence Copper is qualified as a very small quantity generator or small quantity generator; as such, hazardous wastes will be minimized and are expected to be less than 2,200 pounds (45 kilograms) per month. The USEPA Hazardous Waste ID No. AZD983481599 is in place for current and future activities at the site.

SECTION 5

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

SECTION 5: ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Table of Contents

Page

List of Figures

5.1 Topography, Elevation and Vegetation

The topography of the FCP consists of an alluvial surface that gently slopes southward. Site elevation is 1,500 feet above mean sea level (amsl). Most desert plants are widely spaced, and their leaves are small or absent. Typical Sonoran Desert vegetation consists of short trees and shrubs. While cacti, yucca, and agave are common in areas around Florence, vegetation in the project area is sparse and mainly consists of creosote bushes and scattered mesquite trees.

5.2 Climate and Length of Operating Season

The climate in the region is typical of a semi-arid desert region with low precipitation, high summer temperatures, and low humidity. Rainfall is seasonal with peaks in winter and summer. Summer precipitation often occurs as heavy thunderstorms, locally referred to as monsoons. The annual precipitation at Florence (data collected at Casa Grande National Monument by National Weather Service) from 1909 through 2022 ranged from a minimum of 0.87 inches in 2021 to a maximum of 19.2 inches in 1941. The average annual precipitation is 7.4 inches, compared with an annual evaporation rate of 91.3 inches (data collected at San Carlos Reservoir by Western Regional Climate Center). Temperatures during the summer regularly exceed 100 degrees Fahrenheit (°F). During the winter, temperatures typically range between 50.8°F to 79.0°F. The climatic regime is supportive of year-round mining operations.

5.3 Physiography

The FCP is located in south-central Arizona, in the Sonoran Desert of the Basin and Range Lowlands physiographic province. The region is characterized by generally northwest-trending mountain ranges separated by relatively flat valleys filled with sediments shed from the adjacent mountains. Elevations range from 1,000 to 3,000 feet amsl. Tertiary age volcanic activity in the region is responsible for occasional peaks in the intermountain valleys, such as Poston Butte north of the project area.

The principal surface water feature in the area is the Gila River, with a drainage area of approximately 58,000 square miles. The river is located about one-half mile south of the FCP deposit. The river is dry much of the year and flows northeast to southwest in response to regional precipitation events. Coolidge Dam, which is approximately 55 miles northeast of Florence, regulates 75% of the upstream watershed runoff. All upstream flow is diverted into the Florence-Casa Grande canal south of the project area, and the Northside canal which transects the project area.

5.4 Access to Property

The FCP is approximately equidistant (~ 65 miles) from Tucson and Phoenix, which are connected by Interstate 10 (I-10). The site entrance is 14 miles by paved highway from Interstate 10 or US Route 60 and can be accessed from the center of the Town of Florence via 4 miles of paved highway (AZ Route 79 and Hunt Highway). Figure 5-1 shows the roads available to travel to the FCP site.

5.4 Access to Property – *Cont'd*

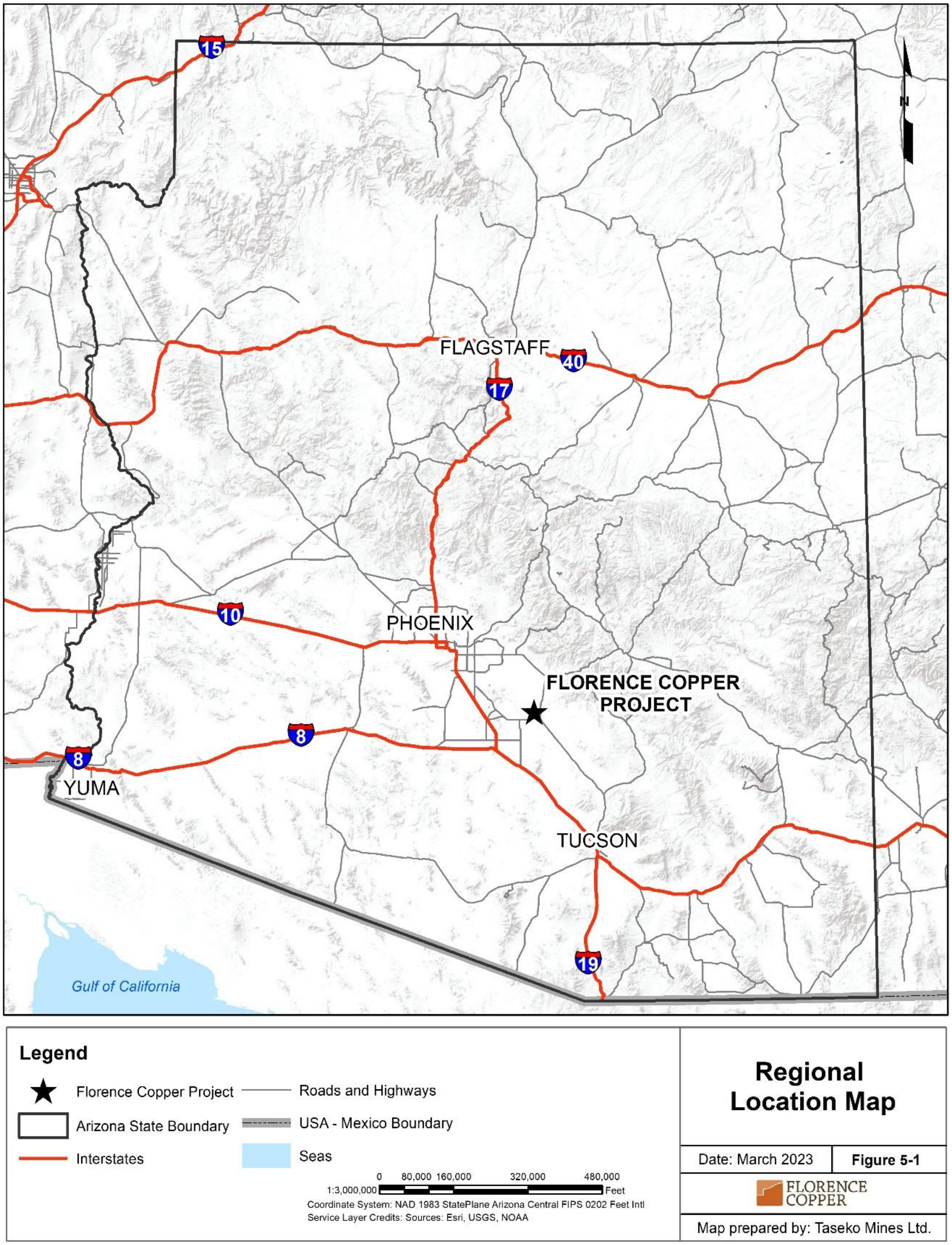


Figure 5-1: Regional Location Map

5.5 Surface Rights

The FCP consists of a total of 1,305 acres of land on two contiguous parcels. The majority of the FCP land, 1,145 acres, consists of patented land which is held in fee simple, granting Florence Copper surface rights on this parcel. The second parcel of FCP land, 160 acres, is on Arizona State Trust Lands; the surface rights are held by Florence Copper under the Lease.

5.6 Local Resources and Infrastructure

(a) Introduction

Local infrastructure and vendor resources to support exploration, development, and mining are excellent. Exploration and mining service companies for the metals/non-metals, coal, oil, and gas industries are located in the major metropolitan areas of Phoenix and Tucson, and at many other major cities in the US Southwest. Locally available resources and infrastructure include power, water, communications, sewage and waste disposal, security, and rail transportation as well as a skilled and unskilled work force.

(b) On-Site Transportation

On site, the buildings, facilities, and well field are, or will be accessible via all-weather graded roads and local farm roads. The main access road on to the site and high traffic areas around the commercial plant site will be either paved or chip-sealed prior to the commencement of operations to minimize dust. The North Side Canal (which is an unlined open channel at present) crosses through the well field with three existing bridge crossings on the Florence Copper property which provide access across the canal. Right-of-way permits for the existing canal crossings are in place with the Bureau of Indian Affairs / San Carlos Irrigation Project (BIA/SCIP). BIA/SCIP also issued an encroachment permit for HDPE pipe crossing the canal for well field rinsing. These permits will be updated to support improvements during initial construction of the project. However, as the southern portion of the well field is developed, equipment, vehicles and distribution pipelines will be required to cross the North Side Canal at which point the crossings will require further upgrades. Improvement options are currently being evaluated and could include piping the canal through the well field to improve access within the project area and to help conserve water or upgrading the existing crossings.

(c) Buildings and Ancillary Facilities

The FCP site is equipped with an administrative office building, parking lot, fenced laydown yard, maintenance warehouse, storage warehouse, core-storage area, potable water system and water tank.

PTF facilities include an ISCR well field, an SX/EW processing plant equipped with an office and lab complex, a water impoundment, run-off pond and associated infrastructure. Additional ancillary facilities are associated with the BHP pilot ISCR field test including tank farm, 5-acre double-lined polyethylene water impoundment, dual 4-inch pipeline, and a well field. The water impoundment and tank farm are enclosed by a security fence and access to the area is gravelled and controlled by security gates.

5.6 Local Resources and Infrastructure – *Cont'd*

(d) Communications and Security

Landline telephone, cellular telephone, and internet services are available at the project site.

Florence Copper has retained a contract security company to provide security for the FCP site. The contract security firm patrols the project area, buildings, and well field to ensure that the site facilities stay secure. During full-scale commercial operations, the facilities area will have access controlled via security fence. A gatehouse and weigh scale will be provided at the primary entry that will be staffed 24/7.

(e) Railroad

Materials will be transported to and from site by truck; however, the Copper Basin Railroad is located just north of Hunt Highway near the FCP. The Copper Basin Railroad is a federally regulated short line rail carrier with interconnections to the Union Pacific Railroad and San Manuel Arizona Railroad. There is an existing rail loading siding less than a mile east of the property that could be considered for shipping and receiving products and goods.

(f) Power Supply

Power is currently provided directly to the project site by Arizona Public Service (APS). APS will also provide power for commercial operations, as further described in Section 18.3.

(g) Natural Gas

Natural gas will not be required for the project; however, natural gas is available in the Project area from Southwest Gas Company through an existing distribution line that runs from a termination point located a short distance to the east of the property to the El Paso Natural Gas high pressure transmission line located to the north and west of the FCP.

5.6 Local Resources and Infrastructure – *Cont'd*

(h) Water Supply

The groundwater rights secured for Florence Copper are more than sufficient to supply the life of operation water needs. The project scope includes engineering and construction of a reverse osmosis system to meet the process water requirements of the commercial facilities from excess well field solutions.

The FCP is located within the Pinal Active Management Area (AMA), which is managed by the ADWR. Within the AMA, a landowner must have a groundwater right or permit from ADWR to pump groundwater unless the landowner is withdrawing groundwater from an "exempt" well – defined as a well with a maximum pump capacity of 35 gallons per minute (gpm). There are no exempt wells on Florence Copper's property. Non-exempt wells are those wells that have a pump capacity of greater than 35 gpm. Such wells can be used for municipal, irrigation and industrial purposes. Florence Copper has received approval from the ADWR to construct and operate dozens of industrial wells under its Mineral Extraction and Metallurgical Processing Permit (MEMP). This permit allows Florence Copper to withdraw up to 1,778 acre-feet per year (AFY) though 2037 for mining-related activities. These wells are subject to regulation by ADWR, ADEQ and EPA. In addition, Florence Copper may withdraw up to 800 AFY from wells on its land located within the boundaries of San Carlos Irrigation Drainage District (SCIDD) for mining activities, however, this will reduce the available volume of groundwater under the MEMP by a like amount.

Florence Copper also has grandfathered irrigation rights (IGFR) in the amount of 3,227.41 AFY. Groundwater withdrawn pursuant to IGFR's may not be used for any purpose other than irrigated agriculture. These water rights are appurtenant to the land and may not be severed from it. There are approximately one dozen registered irrigation wells on Florence Copper's property. Finally, Florence Copper has Type II groundwater rights in the amount of 3.4 AFY and 17 AFY, respectively, for a total of 20.4 AFY. These rights have been subsumed under Florence Copper's MEMP except for water that is provided for on-site drinking water.

Florence Copper operates a well with a pump capacity of 150 gpm that serves its administrative offices. A water treatment system for this well produces potable water for domestic use at the site.

5.6 Local Resources and Infrastructure – *Cont'd*

(i) Waste Disposal

Florence Copper's ISCR activities for commercial operations will not produce any mineralized waste rock or tailings to be impounded as a result of these planned future operating activities. Mineralized drill cuttings will likely be removed from the site to nearby heap leach operations and the remaining alluvial unit drill cuttings will be utilized for road base and other construction activities around site.

During the initial years of commercial operations, prior to rinsing commencing, a small neutralization plant will treat excess hydraulic control flows and process solution. The treated water will be evaporated from lined process solution impoundments.

Once rinsing is initiated, a water treatment plant containing an ultrafiltration and reverse osmosis circuit will commence operations. The water treatment plant will process the excess solution inventory produced in the ISCR process, to generate the quality and quantity of water required to support the rinsing operations. Excess solution inventory not needed for rinsing along with waste streams generated from water treatment plant will be sent to the process water impoundments for subsequent evaporation and long-term solids storage.

The current site refuse consists of primarily office trash, which is removed to the Adamsville County landfill located seven miles from the site. Through the projected life of operation construction and office trash will continue to be collected and transported to an offsite landfill. Contract drilling companies and other contractors will be responsible for their own trash removal.

Other materials such as used motor oil, tires, batteries, fluorescent lights, and oily rags will be collected separately from other wastes and sent to recycling facilities or permitted waste disposal facilities as appropriate.

(j) Manpower

Southern Arizona is an area with a long history of mining-related construction, copper exploration, mining, heap leaching, in-situ leaching, and metallurgical processing with long-established vendor-support services. Labor for these activities is available in nearby towns such as Florence, Coolidge, Queen Creek, Casa Grande, Apache Junction, Mesa, and the greater metropolitan areas of Phoenix and Tucson, Arizona. All these nearby towns can easily accommodate the necessary labor force for site activities.

SECTION 6

HISTORY

SECTION 6: HISTORY

Table of Contents

Page

6.1 Introduction

There is a long history of metal exploration, mine development, milling, smelting, and leaching (heap, dump, in-situ) in southern Arizona. In-situ leaching of copper has been performed at a number of operations in the state and most notably was intermittently utilized at BHP Miami from 1947 to 2016.

The earliest known exploration activities in the FCP area date back to the early 1960s. The history of the FCP property is described in the following sections.

6.2 Ownership

The Florence Copper property has had four previous owners whose primary business is exploration and mining development including Conoco, Magma, BHP, and Curis. Resources (Arizona) Inc. (Curis).

The property was owned by a number of parties whose primary business was not exploration and mining development in the years between the ownership of BHP and Curis.

Conoco acquired land holdings covering the FCP site in 1969. These holdings were subsequently acquired by Magma in 1992 and became part of BHP when Broken Hill Proprietary Company Limited of Australia acquired Magma in January of 1996.

BHP conveyed the land constituting the Florence Copper site to Florence Copper Inc. in May 2000. BHP's Florence Copper Inc. was then sold to Merrill Mining LLC of Atlanta, Georgia, effective in December 2001. In the years between 2002 and 2009 the ownership of the private property passed through a number of companies including Roadrunner Resorts LLC, WHM Merrill Ranch Investments LLC, the Peoples Bank, and Merrill Ranch Properties. Ownership of Arizona State Mineral Lease 11-26500 remained with Florence Copper Inc. which was acquired by Felix Hunt Highway LLC in 2008.

Curis purchased the surface rights and all of the mineral rights on the approximately 1,182 acres of private land component of the FCP site in December 2009. In February 2010, Curis obtained assignment of Arizona State Mineral Lease 11-26500 completing the land holdings that form the FCP site.

Curis Resources (Arizona) Inc. changed its corporate name to Florence Copper Inc., a Nevada Corporation, on July 22, 2013. Curis was acquired by Taseko Mines in November 2014. Hereafter in this report, Curis will commonly be referred to as Florence Copper unless otherwise specified for clarification purposes (e.g., published reports).

In 2021, Florence Copper completed a land exchange with a neighboring property owner in which a new 45-acre parcel was secured in exchange for an 82-acre parcel of Florence Copper land bringing the current Florence Copper private land holdings to 1,145 acres.

Florence Copper Inc. was converted into an LLC on November 28, 2022. Florence Copper Inc. and Florence Copper LLC (Florence Copper) are the same legal entity, and these names are used interchangeably throughout this report.

6.3 Past Exploration and Development

The earliest known exploration activity in the Florence Copper area was conducted by ASARCO. In the early 1960s, ASARCO acquired a land package around Poston Butte to the northeast of the Florence Copper deposit. ASARCO drilled three exploration holes to the west of Poston Butte which did not intersect significant mineralization and the majority of the land leases and permits held by ASARCO were subsequently dropped.

In 1969, regional reconnaissance by Conoco led their geologists to evaluate the Florence Copper area for potential copper mineralization. After signing land options (ASARCO retained a small lease to the west of the deposit), Conoco started drilling on the property in March 1970. The first drill hole, located on the southwest flank of Poston Butte, encountered oxide/silicate copper and supergene enriched copper mineralization. Conoco continued their drilling program and ultimately determined that there was sufficient mineralization in the area to warrant a systematic multi-hole exploration program and engineering studies to assess the economic feasibility of the property.

At the time Conoco envisioned a large open-pit copper mine with waste rock and tailings facilities north of Hunt Highway. Conoco’s work to define the mineral system and project included extensive exploration and definition drilling as well as development of a pilot mine, the construction and operation of a pilot processing plant, preliminary design of commercial processing facilities, and various other studies required for the evaluation of project feasibility.

Between 1969 and 1975, Conoco geologists delineated an extensive, porphyry copper system south-southwest of Poston Butte. The delineation was based on 605,857 feet of exploration and development drilling in 659 holes. The drilling program included 396 rotary-core and 263 rotary-only drill holes. Approximately one-half of the holes were drilled into the main portion of the mineral deposit, with the remainder drilled into peripheral areas primarily for site condemnation.

In 1974, Conoco sunk two shafts and began mining approximately 50,000 tons of mineralized material from a single-level, underground mine at the 800 Level (i.e., 800 ft amsl) designed to collect metallurgical samples and test geological parameters. The mine included 1 mile of drifts and two vertical shafts for ventilation and hoisting material to the surface. Metallurgical testing of the recovered material was performed using a pilot processing plant built on the property. After the completion of the underground work, Conoco removed the shaft infrastructure and secured the openings with steel plates. The former pilot mine is currently flooded up to 280 feet below ground surface (1,196 ft amsl).

6.3 Past Exploration and Development – *Cont'd*

Development drilling ceased in 1975 and the project became dormant. Over their tenure, Conoco invested $27 million in project studies, drilling, engineering designs, and construction of the pilot processing plant as well as the pilot underground mine.

The property remained idle from 1975 until July 1992 when Magma acquired the property from Conoco. Magma initiated a Pre-Feasibility Study in January 1993 to verify the previous work and to determine the most effective technology for extracting copper from the deposit. As part of this study an additional 37 holes were drilled. Of this additional drilling: 23 holes were drilled to verify the accuracy or consistency of the Conoco data, 12 holes were drilled to assess material properties (pumping tests), and two large-diameter (6-inch) holes were drilled to obtain bulk samples for metallurgical testing.

The Pre-Feasibility Study focused on identifying the most appropriate mining method for developing the oxide portion of the deposit. The methods evaluated were (1) open pit mining followed by heap leaching and SX/EW and (2) ISCR followed by SX/EW.

The Pre-Feasibility Study was completed in January 1995 with the addition of 30 new core holes and 12 pump and observation wells. The results from copper resource modeling, metallurgical testing, material property testing, and financial analysis supported the conclusion that the application of in-situ recovery and SX/EW to produce cathode copper was the preferred method to develop the Florence deposit. The lithological, mineralogical, and structural features were all found to be favorable for solution mining because of the low acid-consuming potential of the host rock, the presence of acid-soluble chrysocolla located along fractures and in argillized feldspars, as well as the intense fracturing of the rock in saturated conditions that allows solution migration and recovery through use of differential pumping rates. The study recommended proceeding with a Feasibility Study that would provide resource and reserve estimates, permitting, detailed in-situ mine design, and facility engineering capable of advancing the project to the construction stage. Magma began work on the Feasibility Study for the project shortly thereafter.

In January 1996, Broken Hill Proprietary Company Limited of Australia acquired Magma and created BHP. Work on the Feasibility Study continued through the acquisition. As of May 31, 1997, the study had completed drilling 112 new boreholes including 45 core holes for resource estimation and metallurgical testing purposes and 67 holes drilled into the deposit and surrounding area to serve as groundwater pumping, observation, and monitoring wells. These wells were drilled to provide hydrologic data for the Aquifer Protection Permit (APP) application and to characterize the aquifer in the numerical groundwater flow model.

6.3 Past Exploration and Development – *Cont'd*

In 1998, BHP conducted a 90-day field optimization ISCR test to gather copper recovery and other technical data to inform a final Feasibility Study. The outcome of the field test confirmed that production wells could be efficiently installed into the mineralized zone, hydraulic control of the injected process solutions could be documented and maintained, and that the ISCR method was the preferred method. After the completion of the BHP field test, the project was idled due to a period of low metal prices. However, the work conducted on behalf of BHP, and previously Magma, demonstrated the fractured nature of the ore body which is at a scale that causes it to behave hydraulically as an equivalent porous media.

In 2010 Florence Copper completed the acquisition of the current FCP land holdings. A drilling program consisting of six PQ-diameter diamond drill holes was conducted in two representative areas of the deposit in 2011. This drilling was used to confirm previous historical drilling results and provide representative samples for metallurgical test work. All but one of the holes drilled during this program had an additional HQ-diameter core drilled as a wedge from the original hole.

6.4 Historical Production

There has been no historical commercial-scale production of copper from the FCP site. Prior copper production during Conoco tenure (vat leaching) and BHP tenure (ISCR) was for metallurgical recovery testing purposes only.

SECTION 7

GEOLOGICAL SETTING AND MINERALIZATION

SECTION 7: GEOLOGICAL SETTING AND MINERALIZATION

Table of Contents

Page

List of Tables

List of Figures

7.1 Geological Setting and Mineralization

The regional, local, and property geology, structure, mineralization, and mineralization are described in this section.

7.2 Regional Geology

The Mazatzal Orogeny, a compressional deformation event that occurred about 1.7 billion years ago in central to southeast Arizona, accreted three tectonic assemblages to the North American craton forming the early Precambrian crust. One of the tectonic assemblages was the Pinal Schist, which forms the basement rock in the region surrounding the Project area.

The Pinal Schist was intruded at the 1.4 billion years ago by the regional Oracle Granite batholith, which is locally represented by quartz monzonite porphyry. The subsequent Grand Canyon Disturbance resulted in uplifting and tilting of the crust, accompanied by wide-spread intrusion of diabase sills and dikes in the Oracle Granite and Pinal Schist. As a result of regional stresses that occurred through the late Precambrian and early Paleozoic time, east-northeast trending structural lineaments formed in the western continental crust including through the FCP area. A long period of fluvial to shallow marine sedimentation is indicated by the regional stratigraphy during the Paleozoic through Early Cretaceous.

Significant orogenic activity did not re-occur in Arizona until the latter part of the Cretaceous Period. The Laramide Orogeny occurred during Late Cretaceous through Early Tertiary time and involved regional scale thrust faulting and folding in southern Arizona. Reactivation of normal faults produced large northeast-trending vertical block uplifts associated with the emplacement of scattered plutons in western and southern Arizona. Intrusions, principally of granodiorite porphyry and quartz monzonite porphyry, occurred in southern Arizona; the hydrothermal mineralization associated with some of these intrusions (e.g., Ray, San Manuel, Sacaton, and Globe-Miami) resulted in the formation of porphyry copper deposits. The Florence copper deposit was formed in this fashion when the Precambrian Oracle Granite was intruded and mineralized by the emplacement of Tertiary granodiorite porphyry. Following the formation of the Florence deposit, un-mineralized dikes consisting of latite, dacite, andesite, quartz latite, and basalt intruded the Oracle Granite and granodiorite.

Continued Laramide activity produced faulting and uplift, resulting in the erosion of Paleozoic and Mesozoic sedimentary sequences and exposure of the Precambrian and Tertiary intrusive bodies, resulting in the current peneplain landscape of basement rocks. Oxidation and further erosion occurred on these surfaces, followed by the accumulation of coarse clastic sediments derived from the surrounding bedrock terrain. This depositional sequence ultimately produced a landscape of low relative relief with exposure of some Precambrian and Tertiary outcrops. Most copper mineralization in the area occurs within the quartz monzonite porphyry and granodiorite porphyry.

7.2 Regional Geology – *Cont'd*

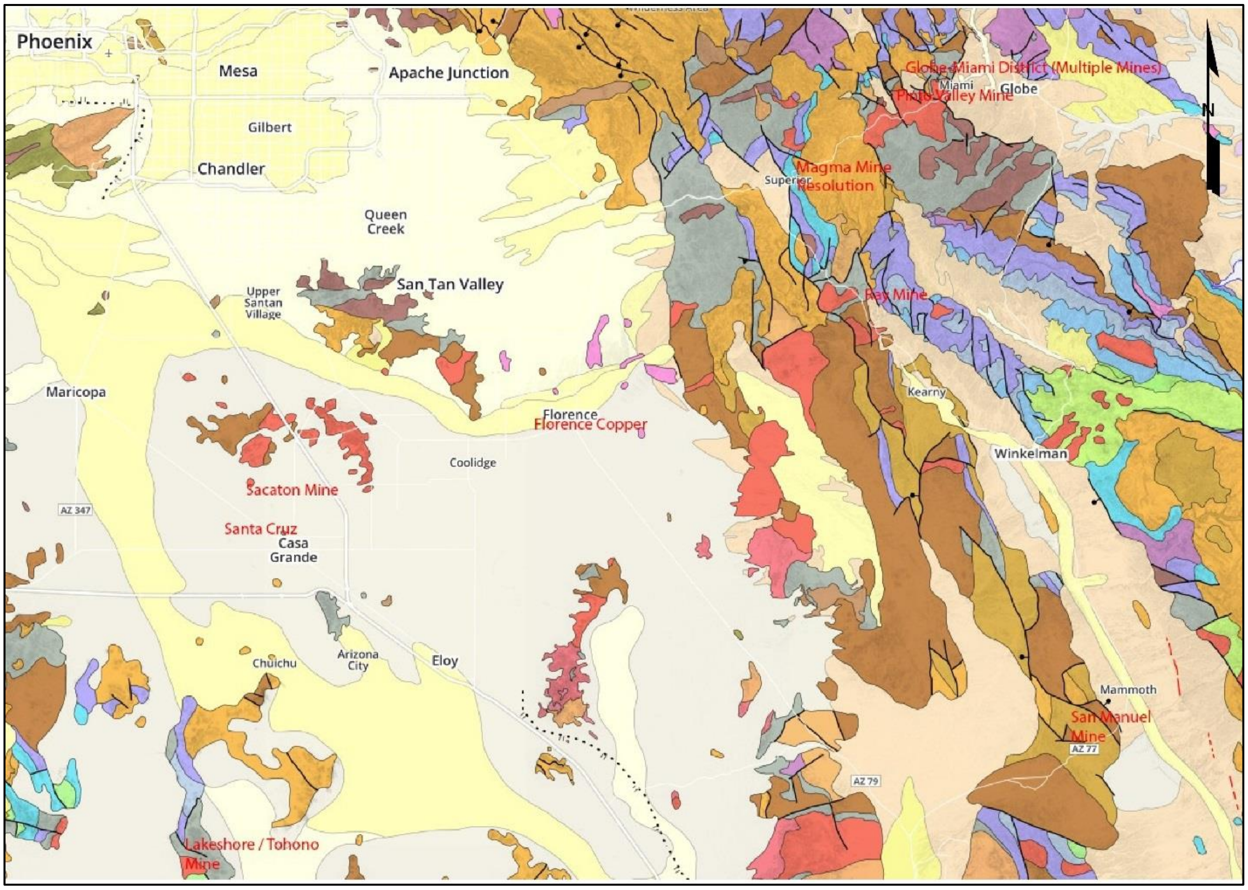
As the uplifted surface began to erode, a basin-fill sedimentary sequence was deposited over the Precambrian units during the Oligocene through Early Miocene time. These deposits are composed of deeply weathered bedrock or grus-type deposits, as well as coarse, angular breccias or gravels. Sediments became finer grained as the topography matured. The basal breccia/conglomerate is commonly overlain by finer-grained silts and sands, and locally interbedded with lava flows or volcanic ash. Alluvial, fluvial, and lacustrine (both lakebed and playa) sediments accumulated during this time in southeast Arizona.

The last major orogenic event to affect the area was the Basin and Range Orogeny, an extensional event occurring from the early Miocene to the Pleistocene time. Basin and Range faulting and tilting in the FCP area resulted in north-northwest trending horst and graben structures bounded by normal faults with large displacements to the west. The Florence deposit occurs in a horst block that is bounded on the east and west by grabens. The Party Line fault, a major normal fault on the east side of the deposit, strikes north 35 degrees west and dips 45 to 55 degrees southwest. This fault has a vertical displacement of over 1,000 feet and near-parallel normal faults that strike north to northwest lie west of the Party Line fault.

The Sidewinder fault occurs near the west side of the Project area and has an estimated displacement in excess of 1,200 feet. This fault represents a continuation of a complex of north-south trending normal faults to the east. The north-south fault system has downthrown the south end of the horst approximately 1,500 feet. Additional parallel, north- to northwest-trending normal faults east of the Sidewinder fault produce a graben east of the FCP area. The graben strikes north to northwest and extends for about 5 miles or more.

Post-Basin and Range basin-fill sediments were deposited over the bedrock surface. The sediments consist of unconsolidated to moderately well consolidated interbedded clay, silt, sand, and gravel in variable proportions and thicknesses. Basalt flows are interbedded on the west and northwest portions of the deposit area. The total thickness of basin-fill materials near the FCP area ranges from 300 to over 900 feet and exceeds 2,000 feet at a distance of 1.5 miles southwest of the deposit area. A regional geology map is provided in Figure 7-1.

7.2 Regional Geology – *Cont'd*



Active and inactive porphyry copper mines and development projects (red) superimposed on The Geologic Map of Arizona, Arizona Geological Survey, 2000 available online.

Figure 7-1: Regional Geology Map

7.3 Local Geology

(a) Introduction

The Florence porphyry copper deposit formed when dike swarms of Laramide-age granodiorite porphyry intruded Precambrian quartz monzonite near Poston Butte (see plan map in Figure 7-2 and profiles in Figure 7-3 and Figure 7-4). The dike swarms were fed by a larger intrusive mass at depth. The granodiorite masses intruded in pulses and were separated by Conoco into three categories (Types I, II, and III) based on differences in mineral composition and texture. Type I was the most voluminous. Hydrothermal solutions associated with the intrusive dikes altered the host rock and deposited copper and iron sulfide minerals in disseminations and thin veinlets. Hydrothermal alteration and copper mineralization were most intense along the edges and flanks of the dike swarms and intrusive mass.

The region was later faulted and much of the Florence deposit was isolated as a horst block. This horst block, as well as the downthrown fault blocks to the west, was exposed to weathering and erosion. The center of the deposit was eventually eroded to a gently undulating topographic surface while a deep basin formed to the west.

The weathering of the deposit resulted in copper sulfide minerals being oxidized and converted to chrysocolla, tenorite, chalcocite, and minor native copper and cuprite. A majority of the copper oxide mineralization is located along fracture surfaces, but chrysocolla and copper-bearing clay minerals also replace feldspar minerals internal in the granodiorite porphyry and quartz monzonite. A barren or very low-grade zone, dominated by iron and manganese oxides/silicates and clay minerals, caps some portions of the top of bedrock. The mineralization is typical of most Arizona porphyry copper deposits. The thickness of the oxide zone ranges from 100 to 1,000 feet, with an average thickness of 400 feet.

7.3 Local Geology – *Cont'd*

(a) Introduction – *Cont'd*

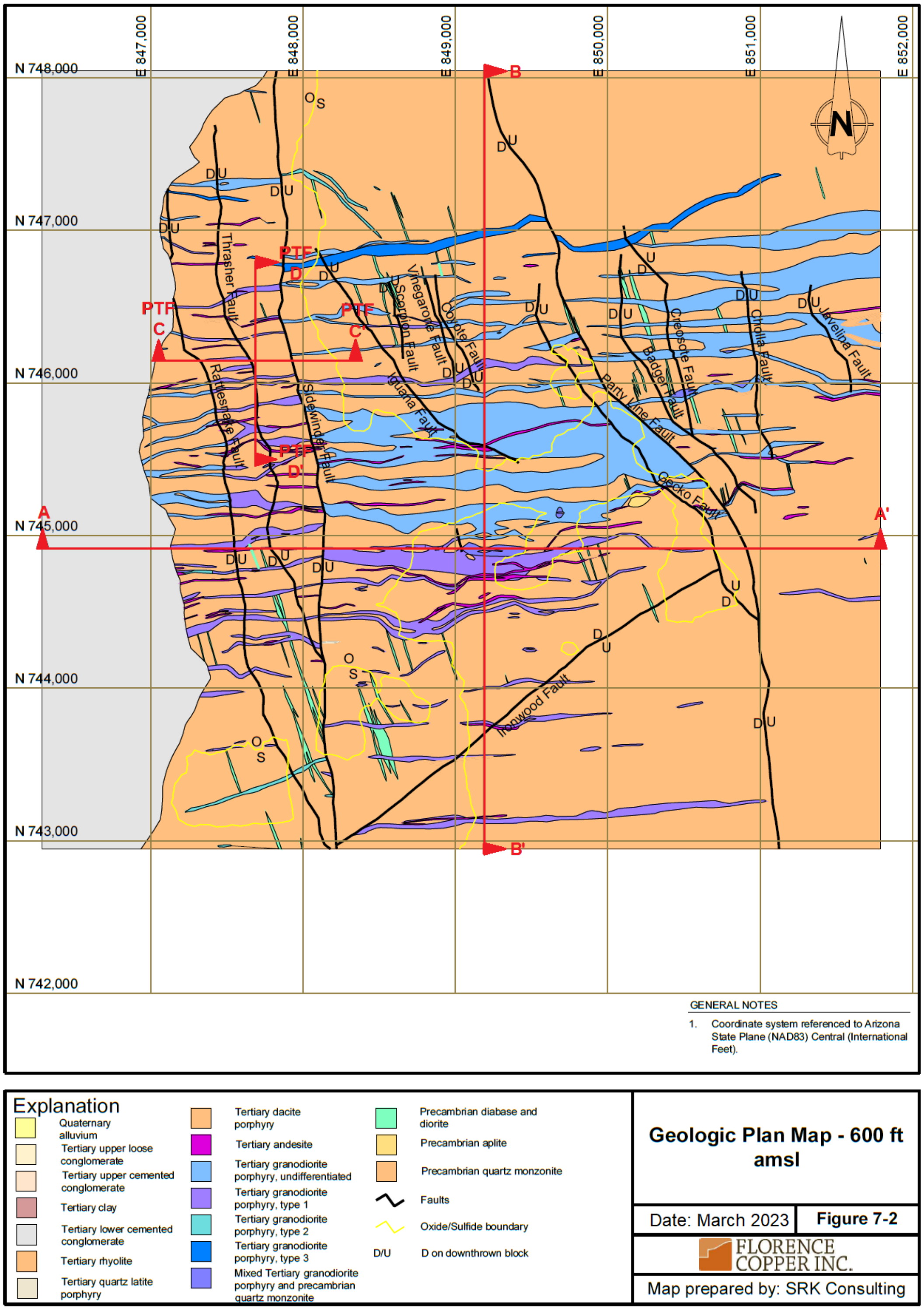


Figure 7-2: Geology Plan Map at 600 feet Above Mean Sea Level

7.3 Local Geology – *Cont'd*

(a) Introduction – *Cont'd*

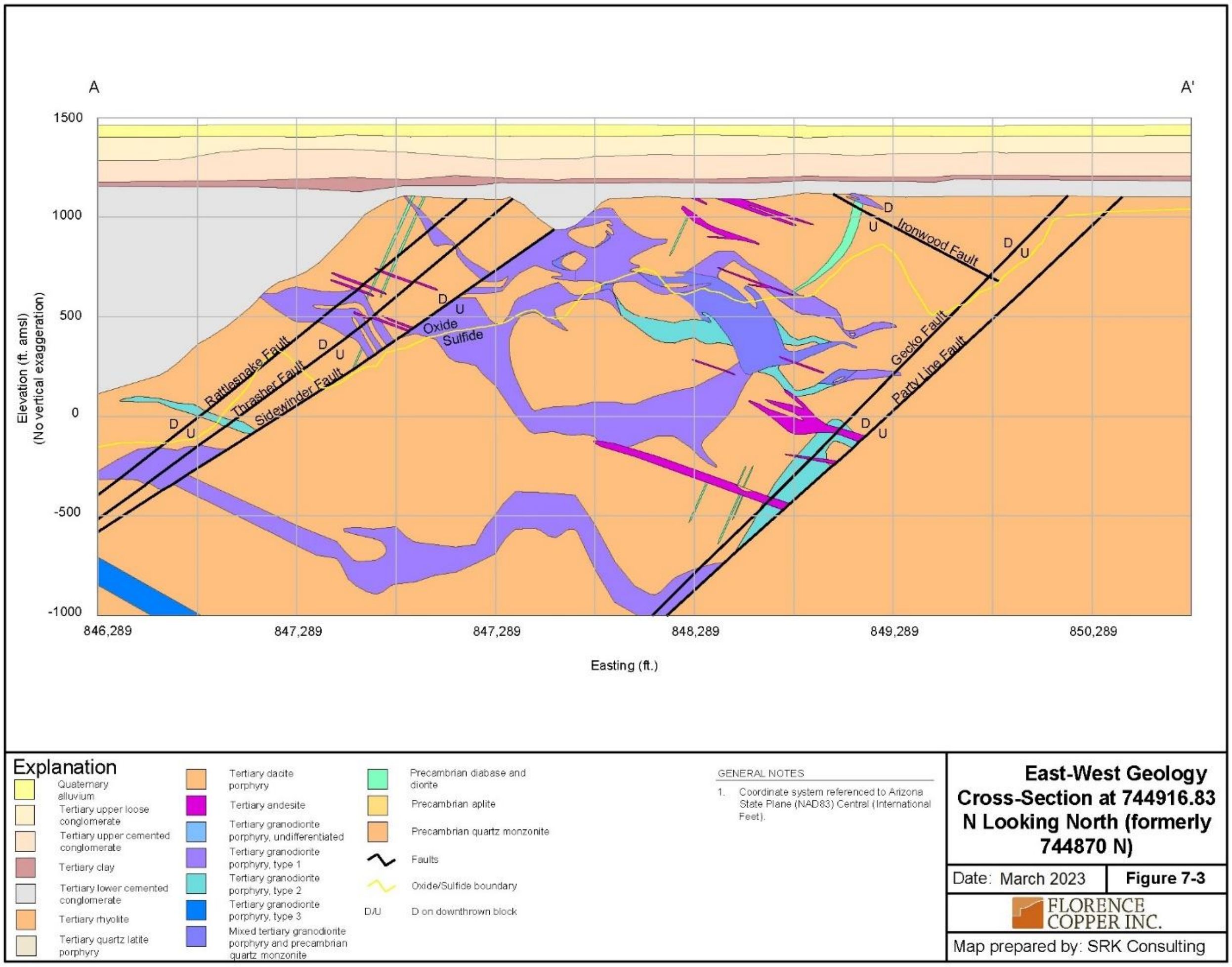


Figure 7-3: East-West Cross Section at 744916.83N Looking North (formerly 744870N)

7.3 Local Geology – *Cont'd*

(a) Introduction – *Cont'd*

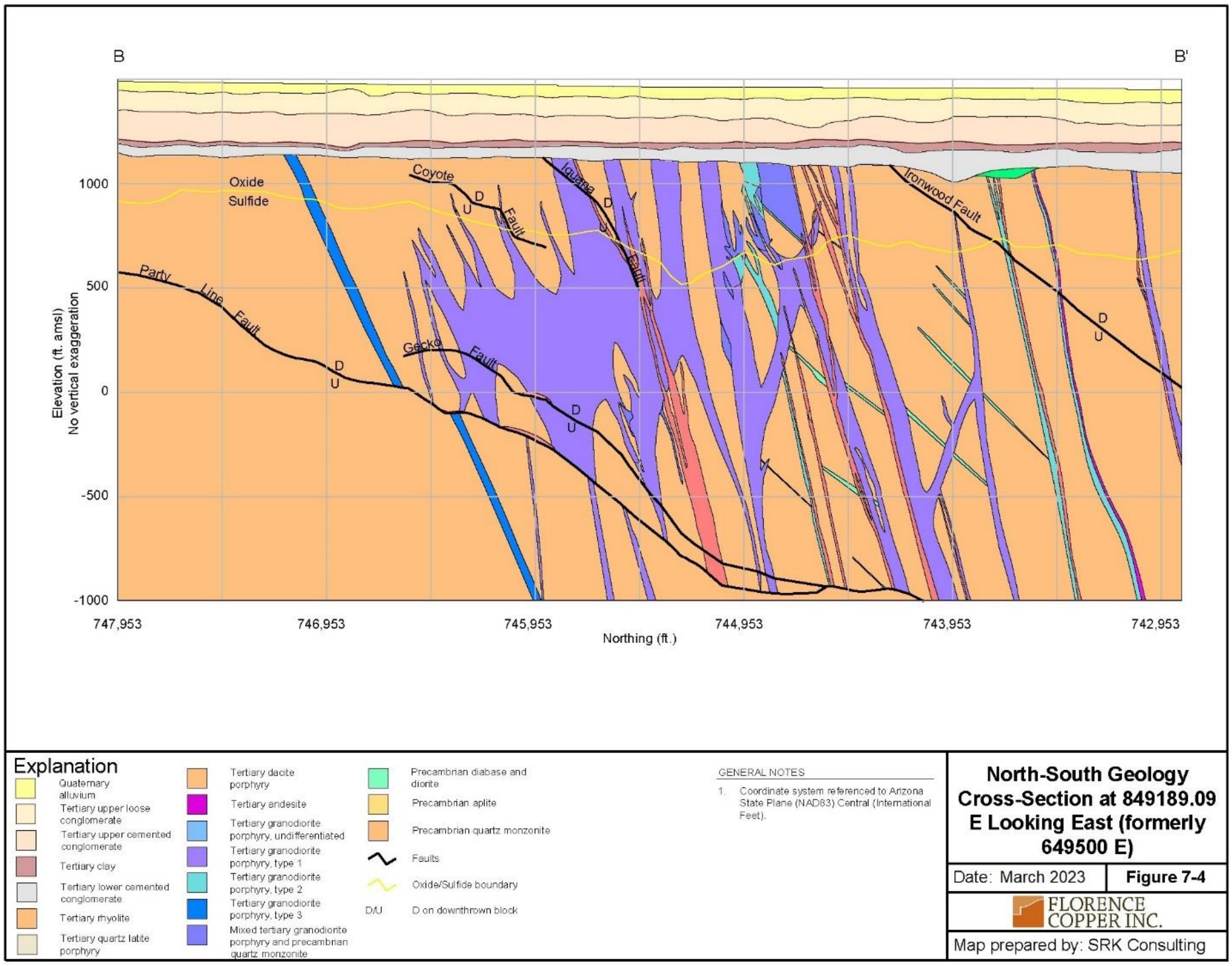


Figure 7-4: North-South Cross Section at -849189.09E Looking East (formerly 649500E)

7.3 Local Geology – *Cont'd*

(b) Structure

The oldest structural trend affecting the Florence deposit is the set of north 70 degrees east-striking discontinuities noted from mapping in the underground pilot mine. At Florence, both the Type I and Type III granodiorite intrusions are elongated in an east-northeast direction as seen in plan view in Figure 7-2. Northwest-trending en echelon Precambrian diabase dikes suggest a conjugate structural direction.

The most evident structures in the Florence area are related to post-Laramide Basin and Range faulting. These post-mineralization faults are the Party Line and Sidewinder faults and associated sub-parallel faults (Figure 7-2 through Figure 7-4). The Party Line fault is a fault zone 50 to 100 feet wide striking north 34 degrees west, dipping 45 to 50 degrees west with a vertical displacement of 800 to 1,000 feet. The Party Line fault bounds the eastern portion of the deposit and has a strike length in excess of 3,600 feet. The Party Line fault is the main control of economically mineable copper oxide mineralization on the east side of the deposit; the footwall east of the fault is not economically mineable. Associated with the Party Line fault is a series of normal faults striking north to north-northwest that have displaced the deposit down to the west over 1,200 feet (Figure 7-2).

The Sidewinder fault, which also can be traced sub-surface for thousands of feet, occurs near the western edge of the deposit. Displacement in the central deposit area reaches a maximum of 1,200 feet, displacement increases south of the deposit to a maximum of 1,500 feet. The offset along the associated fault zone is approximately 250 feet; the hanging wall has been intensely fractured. The Sidewinder fault formed a structural zone of weakness that facilitated the development of a north-northwest trending paleo-valley within the deposit that is as much as 200 feet deep and has been traced over a strike length of 2,500 feet. Several other north-northwest trending faults have been postulated between the Party Line and Sidewinder faults. At least two fault structures have been identified in the hanging wall of the Sidewinder fault, informally named the Thrasher and Rattlesnake faults. The faults are predominantly identified by the presence of milled, rotated breccia fragments; clay gouge is noted on many fault surfaces but is of much less abundant than is volume of the brecciated rock.

Statistical analysis of drill core indicates an average of 11 to 15 open fractures per foot in the fractured oxide zone underlying the unconsolidated material. The sulfide zone underlies the oxide zone and is significantly less permeable, with an average of 6 to 10 closed fractures per foot.

7.3 Local Geology – *Cont'd*

(c) Hydrogeology

An extensive summary of the hydrogeology of the regional and local surface water and groundwater systems was conducted by hydrogeology consultants to FCP and prior owners to support operational and permitting activities. The major surface water feature in the area is the Gila River, located about 1/2 mile south of the project. Because of upstream diversions, the Gila River is generally dry, with the exception of flow caused by brief and intense seasonal rainfall. Two watershed drainages (East Drainage and West Drainage) transect the property and administration areas. These two arroyos discharge only ephemeral flow to the Gila River. Consequently, infiltration of river water into the upper basin-fill sediments is limited to periods of ephemeral flow.

The regional groundwater gradient is from the recharge zone along the Gila River flowing north-northwest to the Salt River Basin. Historically, regional groundwater withdrawals have been primarily related to agricultural uses and utilize the basin-fill formations. While land subsidence and associated land fissuring related to groundwater withdrawal has been measured in nearby farming communities, investigations performed from the 1970s to 1990s indicated negligible subsidence in the Florence area. No documented land fissures have been identified in the Florence area or project site.

The saturated formations in the project area are considered to be continuous and include bedrock and sedimentary formations. Locally, the saturated formations have been divided into water bearing hydrogeological units that correlate with the geologic units identified in the project area. Hydraulic properties, pump tests, and water quality data confirm that there is delayed vertical communication between the water bearing units.

The approximately 400 feet of alluvial and unconsolidated basin-fill conglomerate material overlying the deposit has been locally and informally divided into five geological units that are shown in Figures 7-3 and 7-4 including:

- Quaternary alluvium – unconsolidated gravel, sand, and silt;
- Upper Loose Conglomerate – unconsolidated matrix-supported conglomerate;
- Upper Cemented Conglomerate – unconsolidated but slightly indurated based on driller's log notes and decreased drill speed rates, matrix mildly cemented with calcite;
- Clay – fine silt to clay particles, low hydraulic conductivity; and
- Lower Cemented Conglomerate – semi-consolidated matrix-supported conglomerate, more indurated than upper cemented conglomerate, calcareous matrix.

7.3 Local Geology – *Cont'd*

(c) Hydrogeology – *Cont'd*

The conglomerate units are Tertiary in age, similar to thick basin-fill formations described across southern Arizona. The conglomerate units were delineated by the site geologists primarily on the degree of induration with increasing depth as noted in driller's logs and the changes in drilling rates observed from geolographs.

The Quaternary alluvium is a generally unsaturated unit 40- to 60-ft thick; brief seasonal stormwater flow may be noted in the alluvial sediments in local washes and arroyos. The Upper Loose Conglomerate layer is the principal source of groundwater in the area, primarily for irrigation purposes, and extends 60 to 80 feet below surface. The Upper Cemented Conglomerate is approximately 80 feet thick and is noted between 180 to 260 feet below surface. The Clay layer is approximately 20 to 40 feet thick and is consistently noted between 260 and 300 feet below surface; the bottom surface of the Clay layer is 50 to 125 feet above the top of bedrock over most of the deposit area. The Lower Cemented Conglomerate varies in thickness from 70 to 400 feet and consists of weakly to moderately cemented conglomerate.

There is generally a one-to-one correspondence between the identified geological units and the hydrogeological units modelled for the FCP, with the exception of the two Upper Conglomerate units, which were combined into a single hydrogeological unit owing to their similar hydrologic properties. Table 7-1 shows the correlation of the five lithological units to the four hydrogeological units.

Table 7-1: Geologic and Hydrogeological Unit Correlation

Geological Unit	Hydrogeological Unit	Description
Quaternary alluvium	Alluvium	Recent, coarse-grained, highly permeable, unconsolidated sediments
Upper Loose Conglomerate	Upper Basin-Fill Unit	Laterally uniform, coarse-grained, permeable, unconsolidated, sediment, and matrix-supported conglomerate. The conglomerate matrix is more indurated with calcareous matrix cement at depth.
Upper Cemented Conglomerate		
Clay	Middle Fine-Grained Unit	Laterally extensive, fine-grained, calcareous silt/clay unit with very low permeability
Lower Cemented Conglomerate	Lower Basin-Fill Unit	Laterally extensive, coarse- to fine-grained, unconsolidated conglomerate with increasing induration and decreasing permeability with depth.

7.4 Mineralization and Alteration

(a) Mineralized Zones

The mineralized zones consist of an iron-enriched leached cap, an oxide zone, and an underlying sulfide zone. In most instances, the transition from the copper silicates and oxides to the sulfide zone is quite abrupt. A majority of the copper oxide mineralization is located along fracture surfaces, but chrysocolla and copper-bearing clay minerals also replace feldspar minerals in the granodiorite porphyry and quartz monzonite. A barren or very low-grade zone, dominated by iron oxide and clay minerals, caps some portions of the top of bedrock especially in the western area. The mineralization on the eastern periphery of the deposit is typical of most Arizona porphyry copper deposits. The thickness of the oxide zone ranges from 40 feet to 1,000 feet and has an average thickness of 400 feet. The top of the oxide zone begins at or near the bedrock surface that underlies 400-425 feet of alluvial and basin-fill material. The lateral extent of mineralization in plan is approximately 3,500 feet across in an east-west direction and from 1,500 feet to over 3,000 feet across in a north-south direction.

7.4 Mineralization and Alteration – *Cont'd*

(b) Type, Character and Distribution of Mineralization

The main type of mineralization is oxide with underlying sulfide that are often separated by a thin transition zone of partially oxidized supergene sulfides. The underlying hypogene sulfide zone, because of its depth, low permeability, and relatively non-soluble mineralogy, is not favorable to develop by ISCR methods.

Mineralization in the oxide zone consists of chrysocolla, "copper wad," tenorite, cuprite, native copper, and trace azurite, and brochantite (see Figure 7-5). Oxide copper occurs as chrysocolla in veins and fracture fillings, while the remainder occurs as copper-bearing clays in fracture fillings and former plagioclase sites. The fracture-controlled mineralogy within the Florence deposit indicates that copper is not adsorbed onto the clay surfaces, but rather the copper resides in the octahedral site of the clays. The "copper wad" appears to be an amorphous mix of manganese, iron, and copper oxides that occurs as dendrites, spots, and irregular coatings on fracture surfaces. Cuprite occurs locally smeared out along goethite/hematite-coated fracture surfaces; the chalcotrichite variety of cuprite is also present on fractures or vugs, sometimes intergrown with native copper crystals.

The main hypogene sulfide minerals are chalcopyrite, pyrite, and molybdenite with minor chalcocite and covellite. Supergene chalcocite coats pyrite and chalcopyrite and dusts fracture surfaces. The supergene chalcocite blanket is very thin and irregular (zero to 50 feet) and is often partially oxidized. In most instances, the transition from the copper silicates and oxides to the sulfide zone is quite abrupt.

In general, the grade of oxide mineralization is very similar to that of the primary sulfide mineralization. The overall grade of the oxide and sulfide mineralization is approximately 0.36% TCu and 0.27% TCu, respectively.

7.4 Mineralization and Alteration – *Cont'd*

(b) Type, Character and Distribution of Mineralization – *Cont'd*

Figure 7-5: Florence Copper Drill Core showing granodiorite with bluish-green chrysocolla replacing clay-altered feldspars and in vein formation

7.4 Mineralization and Alteration – *Cont'd*

(c) Alteration

Hydrothermal alteration accompanied the intrusion and cooling of the Tertiary granodiorite porphyry stocks and dikes into the Precambrian quartz monzonite. Alteration in the granodiorite porphyry is primarily veinlet-controlled, whereas alteration in the quartz monzonite encompasses all three styles; pervasive, selectively pervasive, and veinlet-controlled. Potassic alteration (quartz-orthoclase-biotite-sericite) is the dominant alteration assemblage. Salmon-colored, secondary orthoclase replaces primary orthoclase phenocrysts, rims quartz ± biotite veins, and occurs as pervasive orthoclase flooding. Shreddy, secondary brown biotite replaces plagioclase and matrix feldspars, and occurs in biotite-sulfide veinlets.

A sericitic (quartz-sericite-pyrite) alteration zone surrounds the potassic zone and is especially evident in the deep portions of the sulfide mineralization. Fine-grained sericite selectively replaces plagioclase, orthoclase, and biotite, and forms thin alteration selvages along quartz ±sulfide veins. Propylitic (calcite-chlorite-epidote) alteration is visible in mafic dike rocks and is reported in exploration holes fringing the deposit.

The most noticeable feature in the oxide mineralized material zone is a late-stage argillic alteration assemblage consisting of montmorillonite - kaolinite ± illite ± halloysite. The conversion of sericite to clay minerals in plagioclase phenocrysts and along fracture surfaces is selectively pervasive. X-ray diffraction analyses indicated the clay is primarily a mixture of calcium-montmorillonite and kaolinite. These clay-altered plagioclase sites were favorable loci for remobilized copper generated from natural in-situ leaching.

7.5 PTF Geology, Mineralization, and Alteration

The PTF is in the northwest portion of the Florence deposit, in the hanging wall of the Sidewinder fault as shown in the plan view in Figure 7-2. The area is typical of the local deposit geology (including alteration and mineralization types) as confirmed by five Conoco and Magma HQ-diameter core holes, two sets of PQ and HQ-diameter core hole pairs drilled by FCP in 2011, and 24 rotary/reverse circulation boreholes drilled by FCP in 2017 and 2018. East-West and North-South profiles through the mid point of the PTF are shown in Figure 7-6 and Figure 7-7, respectively. Dikes of Tertiary granodiorite intrude the Precambrian quartz monzonite, with thin, scattered dikes of Precambrian diabase and post-mineralization Tertiary andesite. Because the PTF area is on the periphery of the deposit, the proportion of intrusive Tertiary granodiorite porphyry relative to the host rock (approximately 10%), is substantially lower than is found in the central portion.

The north-south striking 45 degree west-dipping Sidewinder fault is the dominant structure in the PTF area. The fault is a regional scale feature characterized by crushed, broken, and oxidized rock that forms an approximately 50- to 150-foot thick zone. The 2018 PTF well field boreholes drilled to a targeted depth of 1,225 feet below ground surface.

7.5 PTF Geology, Mineralization, and Alteration – *Cont'd*

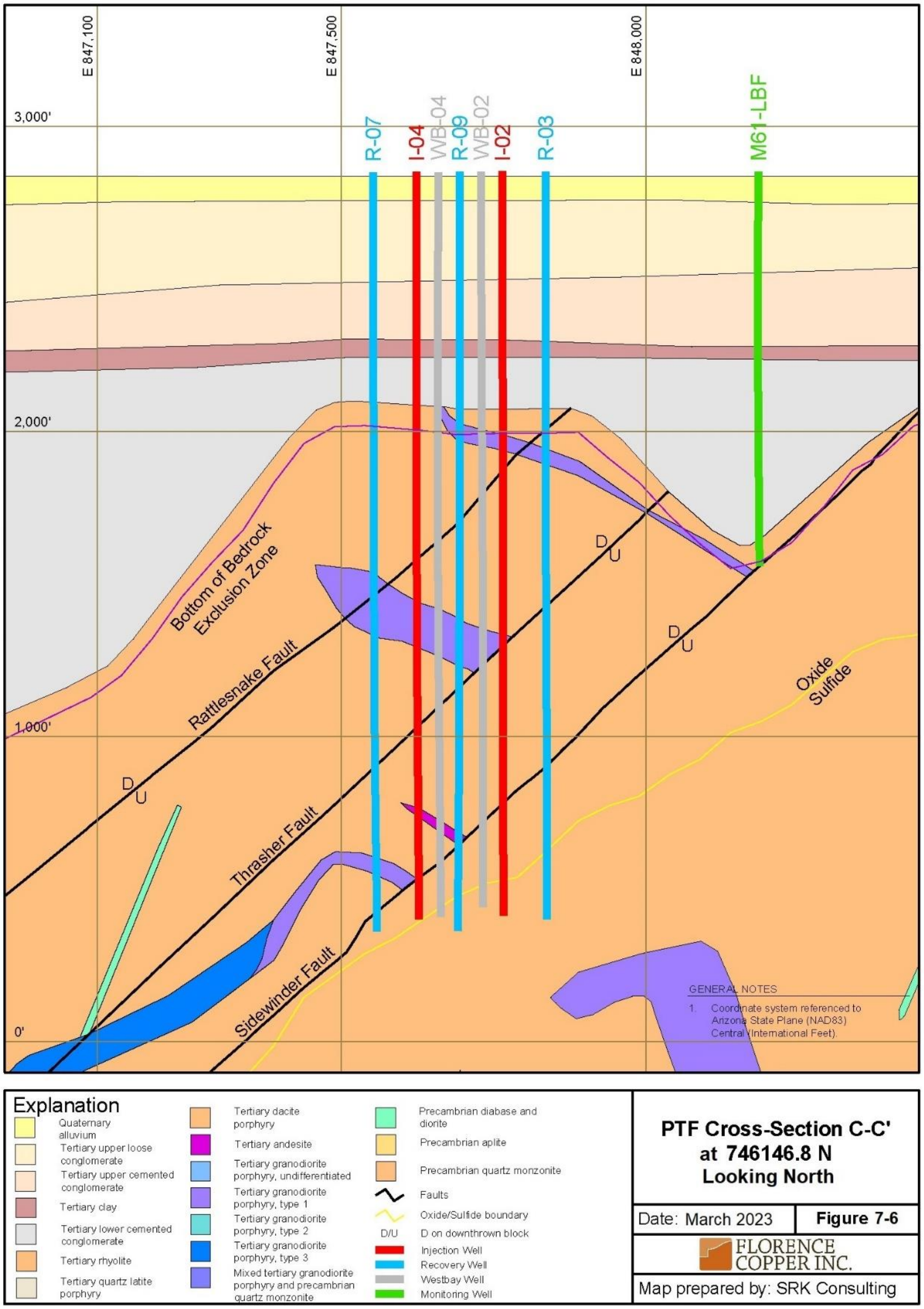


Figure 7-6: PTF Cross Section C-C' at 746146.8N Looking North

7.5 PTF Geology, Mineralization, and Alteration – *Cont'd*

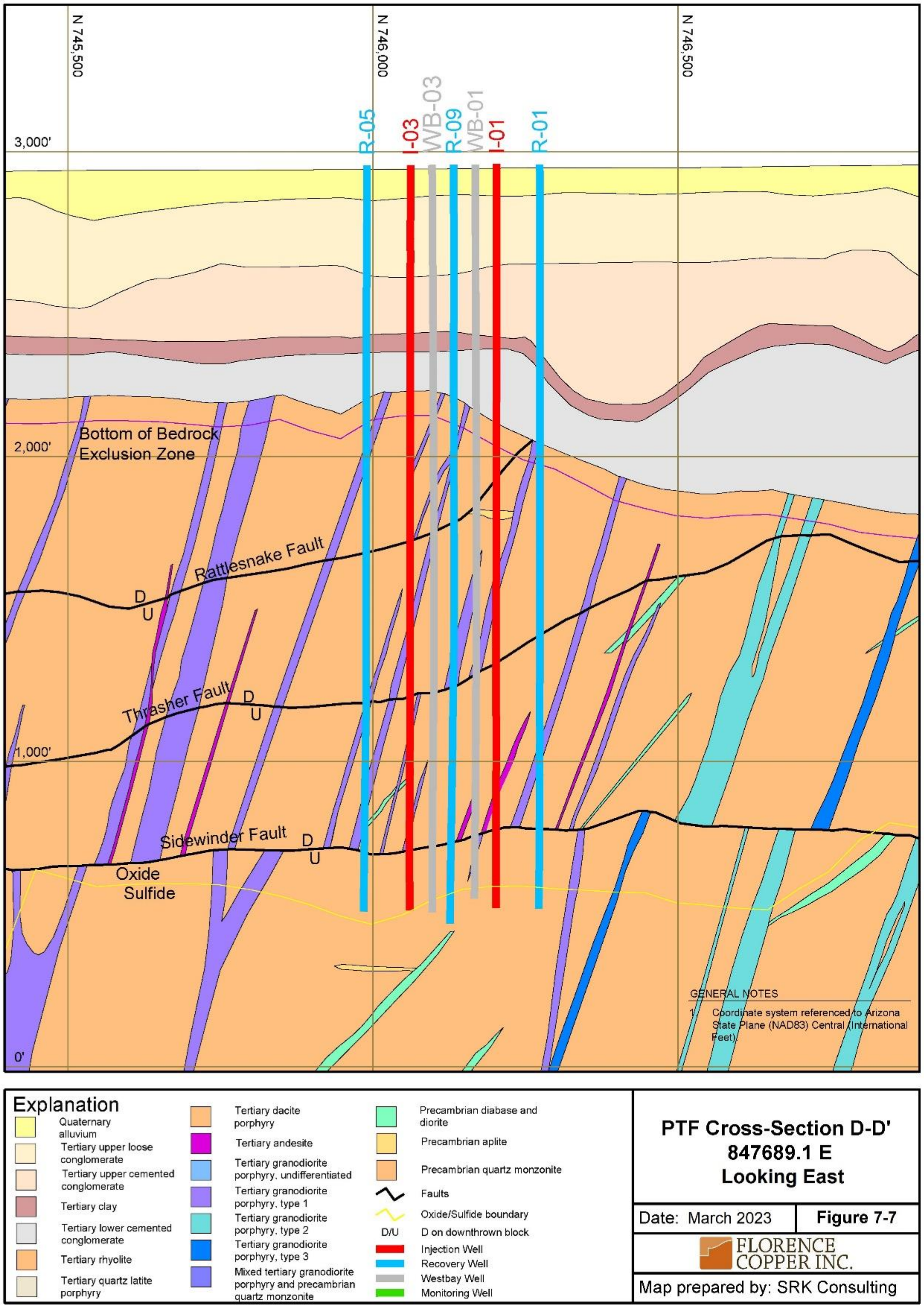


Figure 7-7: PTF Cross Section D-D' at 847689.E Looking East

SECTION 8

DEPOSIT TYPES

SECTION 8: DEPOSIT TYPES

Table of Contents

Page

8.1 Deposit Types

The mineral deposit type at the FCP site is a Laramide-age porphyry copper deposit consisting of a large core of copper sulfide mineralization underlying a zone of copper oxide mineralization. The central portion of the deposit is overlain by approximately 400 feet of flat-lying conglomerate and alluvial material that contains a fine-grained silt and clay interbed (see Figure 7-3). The oxide and sulfide zones are separated from one another by a transition zone of mixed oxide-supergene sulfide ranging from 0 to 55 feet in thickness. The depth and grade of the sulfide zone renders it currently uneconomic to mine by conventional mining methods. The impermeability of the rocks and insoluble mineralization of the sulfide zone renders it uneconomic for ISCR methods.

Approximately 71% of the oxide mineralization is hosted by a Precambrian quartz monzonite and 26% by Tertiary granodiorite porphyry. The remaining igneous rocks associated with the deposit are Precambrian diabase and Tertiary andesite, latite, dacite, basalt, and aplite. The deposit occurs in a structural horst block, which is bounded on the east and west by grabens and is controlled by normal faults trending north to northwest.

The deposit is typical of the southwestern U.S. porphyry copper deposit type. The United States Geological Survey classification of the porphyry copper mineralization at the Florence deposit is model 21a (porphyry Cu-Mo). This model type is described as stockwork veinlets of quartz, chalcopyrite, and molybdenite in or near a porphyritic intrusion with rock types of porphyritic tonalite to monzogranite stocks and breccia pipes intrusive into batholithic, volcanic or sedimentary rocks. The typical mineralogy consists of chalcopyrite, pyrite, and molybdenite, with peripheral vein or replacement deposits with chalcopyrite, sphalerite, galena, and gold, with outermost zone of veins of Cu-Ag-Sb-sulfides, barite, and gold. Typical alteration consists of quartz, K-feldspar, biotite, chlorite, and anhydrite (potassic alteration) grading outward to propylitic alteration. Late white mica and clay (phyllic) alteration may form capping or outer zones or may affect the entire deposit.

SECTION 9

EXPLORATION

SECTION 9: EXPLORATION

Table of Contents

Page

9.1 Exploration

The previous owners of Florence Copper performed substantial exploration work including drilling (exploration, assessment, condemnation, geotechnical, and environmental), underground mine development, geophysical surveys, and mineralogy studies. Curis (now Florence Copper) conducted a rotary-core drilling program in 2011 to confirm resources and to acquire metallurgical test samples. Florence Copper most recently completed a rotary drilling and well installation program in 2018 to develop the PTF well field. The data generated by the previous and current operators for exploration, site characterization, resource estimation, and environmental permitting has been reviewed by the Florence Copper technical staff and consultants.

A summary of the historical exploration activities and drilling campaigns is provided in Sections 6 and 10, respectively. Conoco, Magma, BHP, and Florence Copper conducted multiple geological, geochemical, hydrogeological, and geophysical investigations and surveys to characterize the deposit. The historic data are available including drill core and reverse circulation/rotary chips, drill logs, sample rejects/pulps, assay sheets, cross sections, core photographs, downhole survey discs and plotted deviation maps, downhole digital survey data, an underground geology map, aerial photographs and remote sensing images, hydrological pump test data, metallurgical reports, project correspondence, and other data. Geologic logs record the type of drilling (diamond drill, reverse circulation, rotary), collar surveys and/or drill collar coordinates, rock types, mineralization, alteration, and structure. Data related to the 2011 and 2018 FCP drilling programs are archived in hard copy and digital format. More recent work relevant to a potential ISCR operation is summarized below.

9.2 Surveys and Investigations

Seventy-five thousand drill-core intervals and reverse circulation chip samples have been assayed for total copper (TCu) on the FCP project to date. Twenty-eight thousand of these assays are in the oxide zone.

Detailed mineralogy and petrography reports are available on numerous drill core samples. Structural logs recording the fracturing, faulting, and jointing information have also been prepared. The fracture-controlled mineralogy of the site has been investigated in detail using X-ray diffraction, scanning electron microscope, and fracture mineralogy logging of 15 core holes.

Fracture mineralogy studies were undertaken because, for ISCR, it is critical to identify the mineralized material and gangue minerals present on the fracture surfaces in order to model and predict the chemical reactions that will occur as the process solutions travel through the fractures in the rock mass. More than 13,000 fractures were examined in the study. The study found that oxide iron minerals (limonite, goethite, and/or hematite) occur in over 90 percent of the fractures while copper silicate and oxide minerals (chrysocolla and/or tenorite) occur in approximately 30% of the fractures.

Mineralogy also indicated that the system contains copper-bearing clays, dominantly smectite and calcium and/or magnesium montmorillonite.

In addition to the fracture mineralogy studies, other specialized investigations undertaken at the FCP site consist of regional geophysical surveys; borehole geophysical and geotechnical logging to aid in mapping the subsurface geology; and downhole mapping with an acoustic borehole televiewer (BHTV). Borehole geophysics (sonic, gamma-neutron, electrical conductivity) were conducted on all BHP drill holes and a selection of Magma drill holes. Acoustic BHTV logs were conducted on selected BHP drill holes, primarily on the west side of the deposit. The acoustic BHTV was used to identify actual orientations of subsurface fractures and faults by surveying the undisturbed borehole wall.

Geophysical log data collected in diamond drill holes were correlated to geological data in the same holes. The information and conclusions from this analysis were then applied to the rotary drilled BHP injection and recovery wells to gather as much geological information as possible from this drilling. The gamma and neutron logs were found to provide the most valuable downhole information at the FCP site.

Geotechnical logging was used to collect data on the fracture intensity through the FCP deposit. The geotechnical works included marking detailed core footages; measuring core recovery and core losses and calculating Rock Quality Designations based on that information; and characterizing rock fracturing and mechanical integrity.

9.3 Interpretation

The QP, Florence Copper technical staff and consultants have relied on personal inspection of the core, reports, and site records as well as interpretations made by previous operators and various consulting companies related to:

- Regional and local geology, hydrogeology, and structure;
- Deposit-scale geology, hydrogeology, structure, and mineralogy;
- Distribution of mineralization;
- Water level and water quality conditions; and
- Numerical groundwater flow modeling and hydrochemical modeling prepared to support environmental permit applications.

The QP is of the opinion that the mineral exploration on the property was conducted in a professional manner and that the interpretations derived from this work are suitable to support the conclusions reached in this report. Furthermore, the site characterization test work and modeling (geological, groundwater, metallurgical, geochemical) was performed to industry standard methods and are suitable for resource estimation and production planning purposes, as well as for submission in support of environmental permit applications to the regulatory agencies.

SECTION 10

DRILLING

SECTION 10: DRILLING

Table of Contents

Page

List of Tables

List of Figures

10.1 Drilling

Drilling has been conducted at FCP by five companies from 1963 to 2018 using core drilling, reverse circulation rotary drilling, and conventional rotary drilling methods. The historical drilling results and data entry have been verified by each company in succession.

Conoco developed a detailed geologic core logging protocol for the site in the early to mid-1970s. With slight modifications, Magma, BHP, and Florence Copper geologists continued to use this method to maintain consistency with the geologic data produced by Conoco.

10.2 Type and Extent of Drilling

(a) Introduction

A total of 856 boreholes, as tabulated in Table 10-1, have been drilled at and near the FCP by five mining company owners. There was a net increase of 39 holes relative to Taseko's 2017 technical report including reassignment of selected historical holes, the addition of 5 omitted holes drilled by Curis, addition of 36 new holes in the PTF by Florence Copper, and removal of two historical Conoco shafts attributed as drilling footage. Downhole drilling surveys were completed by all owners at approximately 100-foot increments. Post-2017 drilling was surveyed at 10- or 20-foot increments using modern digital downhole surveying technology. Data entry was completed by both in-house staff and consultants. Each subsequent owner has cross-checked and corrected the data entry of the preceding company as needed.

A perspective view of the drill collars within the project land boundary is shown in Figure 10-1.

Table 10-1: Drilling Footage by Company

Company	# of Holes	Footage
Florence Copper (2017-2018)	36	39,231
Curis Resources (2011)	11	7,315
BHP Copper Company (1997)	21	16,638
Magma Copper Company (1994-1996)	158	142,250
Conoco (1970-1977)	623	624,327
Other	7	4,152
Total	856	833,913

10.2 Type and Extent of Drilling – *Cont'd*

(a) Introduction – *Cont'd*

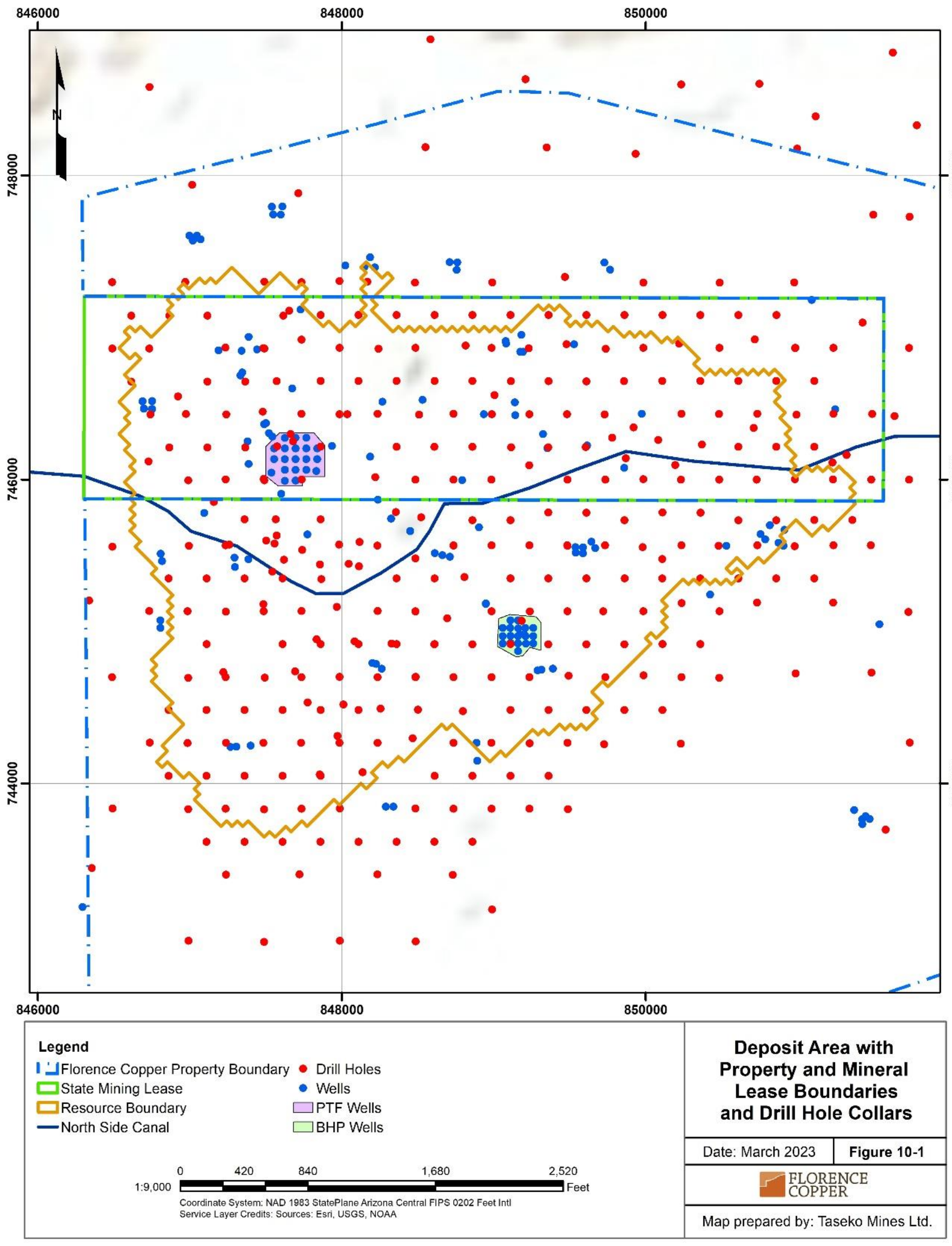


Figure 10-1: Deposit Area with Property and Mineral Lease Boundaries and Drill Hole Collars

10.2 Type and Extent of Drilling – *Cont'd*

(b) Conoco (1970-1977)

Between 1970 and 1977 Conoco drilled 623 holes within the main deposit and peripheral areas. The holes were primarily drilled by a combination of rotary and diamond drill methods.

Rotary drilling was primarily used to pre-collar the hole through the basin-fill formations in advance of core drilling. It was also used for assessment and condemnation drilling on the state and federal land controlled by Conoco at the time. The vast majority of the Conoco diamond drill core was NX-diameter (2.2 in), although poor ground conditions necessitated a reduction to BX-diameter (1.6 in) core in some cases.

The Conoco exploration drilling program was initiated on a triangular grid pattern beginning with 1,000-foot spacing which was subsequently reduced to 500-foot spacing. Development drilling was performed on in-fill drill hole density of 250 feet.

(c) Magma Copper Company (1994-1996)

Magma drilled 30 core holes in 1994 including 23 NX-diameter core holes for confirmation drilling, five HX-diameter (3 in) core holes for exploration, and two 6-inch core holes for obtaining bulk metallurgical samples.

Magma completed a resource definition drilling program from 1995 to 1996. Of the 40 core holes drilled during this period, two holes were 6-inch core, eight holes were HX-diameter core, one hole was a combination of 6-inch and HX core, and the remaining 29 holes were NX-diameter core.

In general, Magma's core holes were rotary drilled to approximately 50 to 100 feet above bedrock, cased to the bottom of the rotary portion, and cored using a split tube in order to maintain core integrity for rock quality designation (RQD) measurements. On the western side of the deposit, coring was sometimes started several hundred feet above the top of bedrock providing good evidence of the nature of the conglomerate-bedrock contact.

During Magma's tenure, drilling for groundwater and geotechnical characterization was completed to support environmental permitting and engineering activities. Thirty-two point-of-compliance (POC) groundwater monitoring wells were drilled by conventional mud rotary methods. Forty-nine aquifer test wells (pump and observation wells) were drilled by conventional mud rotary or reverse circulation methods. Geology was recorded for sample intervals from these holes, but the samples were not assayed. Seven holes were drilled for geotechnical characterization.

10.2 Type and Extent of Drilling – *Cont'd*

(d) BHP Copper (1997)

Twenty-one holes were drilled by BHP for the pilot field test including injection, recovery, chemical monitoring, and groundwater monitoring wells. The drilling included two combination rotary/HX-diameter core holes, one rotary 6-inch/HX-diameter core hole, one rotary/NX-diameter core hole, 14 rotary/reverse circulation holes, and three rotary-only holes. Rotary drilling was completed through the top 40 feet of bedrock in the combination core or reverse circulation holes. The core and reverse circulation portions of the holes were assayed for %TCu and %ASCu.

(e) Curis Resources (2011)

Curis Resources completed a metallurgical drilling program in two representative areas of the deposit in 2011 that confirmed previous historic drilling results for these areas and provided representative samples for the metallurgical test work that is described in Section 13 of this report. Six diamond drill hole locations (11 holes total) were drilled south of the BHP field test area and in the northwest portion of the deposit. The drill holes included five PQ-diameter (3.35 in inner diameter) core holes and six HQ-diameter (2.5 in) core holes. Five of the HQ holes were drilled as wedges from the PQ holes below surface within the bedrock. The PQ holes provided whole core metallurgical samples with assays provided by the wedged HQ hole. An additional HQ hole was drilled in the former BHP field test area.

(f) Florence Copper Project (2017-2018)

Between January 2017 and April 2018, Florence Copper completed the drilling and installation of 36 wells within and near the permitted PTF well field. These wells were drilled using mud rotary reverse circulation and include: four injection wells, nine recovery wells, seven observation wells, four specialized multi-level sampling wells (Westbay wells), nine ancillary monitoring wells, and three PTF point-of-compliance (POC) wells. Two of the POC wells were replacements for two failing 1996 POC wells and the third well was newly completed northwest of the PTF well field area.

As further described in Section 13, the PTF wells were installed as part of a hydraulic control demonstration; as such, no geological data was collected from these wells that is material to the resource and reserve estimates.

10.2 Type and Extent of Drilling – *Cont'd*

(g) Drilling Summary

A summary of the current drill hole data is presented in Table 10-2. The relevant results of this drilling are presented in Sections 7 and 14 of this report.

Table 10-2: Drilling and Assays in the Florence Database

	Total Database	**Within Model Limits**
Total Drill Holes	856	555
Drill holes with TCu assays	614	396
Total Drilling Footage (ft)	833,913	633,834
Total Assayed Footage (ft)	412,576.5	336,321
No. of Sample Intervals	88,824	73,766
No. of Intervals with TCu assays	75,547	62,824
No. of Basin-fill Intervals	12,851	10,004
No. of Basin-fill Intervals with TCu assays	4,645	2,879
No. of Oxide/Transition Zone Intervals	33,150	26,751
No. of Oxide/Transition Zone intervals with TCu assays	29,482	23,839
No. of Sulfide Zone Intervals	40,944	36,274
No. of Sulfide Zone intervals with TCu assays	40,325	36,009

Holes lacking TCu assays consist primarily of monitor, aquifer test, POC, and water supply wells, metallurgical, and geotechnical drill holes.
The model limits are for the 2023 rotated model prepared by SRK.

The exploration and geotechnical holes drilled by Magma and BHP, the replaced 1996 POC wells, and the 2011 Curis Resources metallurgical holes were abandoned in compliance with, and according to the requirements of the Arizona Department of Water Resources (ADWR) Well Abandonment Procedure Arizona Revised Statues (A.R.S.) § R12-15-816.

The QP is of the opinion that the historical drilling is sufficiently well documented that it forms a reliable drill hole database sufficient for resource estimation. The type of drilling, extent, and drill spacing density (approximately 250 feet) are adequate to represent the geology and mineralization and to calculate mineral resources and reserves.

SECTION 11

SAMPLE PREPARATION, ANALYSIS AND SECURITY

SECION 11: SAMPLE PREPARATION, ANALYSIS AND SECURITY

Table of Contents

Page

11.1 Sample Preparation, Analysis and Security

The sections below primarily describe sample preparation, analyses, and security related to drilling samples. The analysis of water quality samples for environmental monitoring and operational solution analyses are also discussed.

11.2 Sample Preparation Methods

The historical and current sample preparation methods are discussed below.

(a) Historical Samples – Conoco, Magma, BHP

Sampling protocols were developed by previous owners to ensure consistency and remove or eliminate bias. Conventional rotary and/or reverse circulation drill cuttings were generally collected every 10 feet by Conoco, Magma, and BHP. A representative fraction of each sample was placed in a sieve, and observations were made on the chips before and after rinsing. A representative sample for each interval was placed in a waxed, cylindrical cardboard container (Conoco) or plastic chip tray (BHP) for future reference. Samples drilled by reverse circulation methods were sent for assays. Rotary cuttings were assayed by Conoco, but the data collected were used only for geological control by BHP and the subsequent owners. Total copper (TCu) analyses from conventional rotary drilling are considered unreliable, and the assay results from previous operators on conventional rotary drill samples have not been used for this report.

Core samples provide the most detailed information. BHP sample-handling protocols used during core handling are summarized here but were built on similar protocols used by Conoco and Magma. The core was first wiped free of drilling mud and then photographed to preserve a record of the intact core. The core sample was next split according to the intervals listed on the sample sheets prepared by a geologist. The sample bags and hand-labeled tags were marked by hole number plus the 5- or 10-foot sample interval.

The following method was used to saw and sample the core:

- The core within each row of core box was divided visually into left and right halves running the length of the box.
- A dividing line was used as a guide to saw the core into halves. In the first row, the left half was put into an olefin sample bag for assaying and the right half was returned to the box. In the next row, the right half was selected for assaying and the left was returned to the box. The use of alternating left and right halves for the assay sample was intended to reduce one aspect of sampling error.
- Intensely broken material was taken from the core box row using a narrow, flat-edged scoop that was half the width of the core box row.
- Every 200 feet, both halves of the sample interval were collected for assaying. The duplicate samples were labeled “A” and “B” and were weighed prior to shipment. The difference in weight between samples “A” and “B” was typically no greater than 200 grams.

11.2 Sample Preparation Methods – *Cont'd*

(a) Historical Samples – Conoco, Magma BHP – *Cont'd*

- At every 15 samples, a control sample was inserted into the set of samples shipped to Skyline Laboratories. The control samples were already prepared as pulp samples and weighed prior to shipment.

The coarse rejects were stored in 55-gallon drums adjacent to the core storage building, and the core boxes and sealed cardboard cartons with sample pulps were stored on shelves in the core storage building. The core storage building was locked and regularly inspected. The core for the drilling continues to be stored in good condition; the historical coarse rejects are no longer in usable condition.

Magma and BHP retained a groundwater consulting firm to develop and perform the initial groundwater sampling program to establish the baseline water quality for the upper basin fill, lower basin fill, oxide bedrock, and sulfide bedrock aquifers and to continue sampling thereafter for compliance monitoring and reporting purposes. Groundwater sampling was performed by qualified sampling technicians who delivered the samples to water quality laboratories approved by the Arizona Department of Health Services for environmental analyses. The use of an external third-party groundwater consulting firm to perform compliance water quality sampling continued under the supervision of Curis Resources.

11.2 Sample Preparation Methods – *Cont'd*

(b) Curis Resources Samples (2011)

Sample preparation protocols for the 2011 metallurgical and confirmation drilling program were similar to those used by previous operators but differed in that the core was treated differently depending on the core diameter and purpose. PQ core was collected for metallurgical tests and was not assayed; the companion HQ core was collected for analyses. The core was logged, photographed, and sampled by SRK geologists and technicians.

PQ-diameter core was taken in the 5-foot split tube core barrels from the drill rig to a nearby logging table where it was wiped free of drill mud and photographed. Owing to thick mud coating, it was later necessary to wrap the core in a flexible, fine-mesh non-metallic screen to allow more rigorous cleaning to free the entire core cylinder of mud residue. The handling procedures minimized mechanical breakage of the core thereby preserving samples with representative fracture densities for metallurgical testing. After geological and geotechnical logging, the PQ core was secured (still in the wrapped mesh) and placed within 4-inch drainage pipe that had been cut longitudinally. The pipe was secured with end caps, taped shut, and labeled with the footage intervals. The sample tubes were then stored in a secure, locked warehouse prior to shipping to metallurgical test facilities in Tucson, Arizona.

HQ core was boxed at the drill rig and taken to a secure, locked logging facility where the core was cleaned and photographed. After geological and geotechnical logging was completed, the geologist marked out the 5-foot sample intervals with aluminum sample tags and created a sample cut sheet for the sampling technician. The interval lengths were adjusted to match rock contacts as appropriate. Sampling was performed by the SRK technician in a locked warehouse building adjacent to the logging facility. Intact pieces of core were sawn along a center dividing line and one half of the core material was placed in the sample bag. Intensely broken material was sampled with the same flat-edged scoop technique used to sample broken core by Magma and BHP. As a security measure, the sample bags were marked with a sequential identification number, and sample tags with the same numbers were placed into the bags. Quality Assurance/Quality Control (QA/QC) samples including pulp standards and field blanks were inserted every 20^{th} sample into the sample stream as described in Section 11.3. Following logging and sampling, the core was moved to final storage in a locked warehouse building adjacent to the Administration Building on site.

11.2 Sample Preparation Methods – *Cont'd*

(c) Florence Copper Project PTF Drilling and Operations Samples (2017-2021)

During the drilling of the PTF injection, recovery, and observation wells in 2017 to 2018, Haley & Aldrich personnel sampled the mud rotary / reverse circulation drill cuttings at 5-ft intervals. A representative fraction was placed in a sieve, and observations were made on the chips for the geological log before and after rinsing. A representative sample of each interval was placed in a plastic chip tray for future reference and are stored in the Administration Building and adjacent Warehouse. Chip samples were not collected for assay purposes.

Haley & Aldrich personnel performed groundwater quality sampling immediately following the drilling program to provide a pre-leaching baseline for the concentrations of common constituents and the major and trace cations and metalloids. On behalf of Florence Copper, Haley & Aldrich performs quarterly and annual groundwater quality sampling of the 32 POC wells for submittal to ADEQ as part of the compliance monitoring and reporting program. Samples are collected by water quality technicians using industry best practices for well purging, sample collection, and sample preservation methods.

Since 2018, Florence Copper sampling technicians have performed operational water quality sampling of the PTF wells to track the daily solution results during the ISCR leaching and rinsing cycles. The samples are taken to Florene Copper's in-house laboratory for X-ray fluorescence (XRF) analysis. Approximately one dozen duplicate samples are sent weekly for analysis at Minerals Technology, Inc. of Tucson. Additionally, splits are sent monthly to other local environmental laboratories Pace Analytical and Turner Laboratories.

(d) Florence Copper Project Check Assay Program (2020)

Florence Copper commissioned a check assay program in mid-2020 consisting of 100 samples taken from the remaining splits of historical drill core. These samples were collected by SRK Consulting personnel from the core storage facility on site. Sample intervals were selected to match the historical assay data with identical sampling intervals to enable direct comparison between the historical and modern data sets. The remaining half of the selected intervals was completely sampled, and empty boxes were returned to their place in storage.

The core was placed into polyethylene sample bags and sealed with tape. The outside of the bags were labeled with the hole numbers and depth intervals. No standards, duplicates, or blanks were included in the sample stream. The samples were delivered to Skyline Laboratories by SRK Consulting.

11.3 Sample Assaying Procedures

This section presents the sample analysis procedures for rock, water quality, and solution samples taken at the FCP since the 1970s by various companies. All external laboratories who have analyzed drill hole and groundwater quality samples are independent of Florence Copper and predecessor companies Conoco and Curis Resources. The external laboratories commissioned to analyze drill hole samples acquired during Magma Copper and BHP Copper tenure were also independent of these predecessor companies. The analyses were done in accordance with the industry best practices and laboratory certification processes in effect at the time of the analyses.

The San Manuel Metallurgical Lab provided some support initially to Magma Copper to analyze core and chip samples in the mid-1990s and later to Magma/BHP for metallurgical column testing and leachate analyses; this laboratory was not independent of either Magma Copper or BHP Copper.

Florence Copper performs in-house process solution analyses to track the daily status of ISCR leaching and rinsing. Duplicate samples are sent to three external laboratories on a weekly and twice-weekly basis; the three external laboratories are independent of Florence Copper.

(a) Conoco

Conoco logged the geology in the exploration drill holes (1,000-feet and 500-feet drill spacing) in 2.5-foot intervals and collected assay samples at 5-foot intervals. The later in-fill development drill holes (250-foot spacing) were logged in 5-foot intervals and assayed in 10-foot intervals. The core from the 500-foot spaced holes was photographed and sample pulps were prepared on-site. The 5- and 10-foot sample pulps were sent to external assay laboratories for TCu content in percentages listed to two decimal places and with a method detection limit of 0.01% TCu. The primary external laboratory used was American Analytical and Research Laboratories of Tucson, Arizona. Conoco also used other external laboratories including Southwestern Assayers & Chemists, Jacobs Assay, and Hawley & Hawley Assayers & Chemists all of Tucson, Arizona.

The remaining material in the pulp sample was composited into 50-foot samples and assayed for %TCu, %ASCu, molybdenum (ppm), silver (ppm), and sometimes gold (ppm) on early samples. Check assaying for %TCu was done by another external assay laboratory. Reject samples of two size fractions were retained on the property for future reference and for metallurgical bench testing. Conoco pulps and rejects are stored in a dry condition in the core storage building on site.

11.3 Sample Assaying Procedures – *Cont'd*

(a) Conoco – *Cont'd*

When development drilling began, core samples were completely crushed for analysis on 10-foot intervals and were not retained for reference. Every tenth core interval was sampled twice with the second sample assayed by another laboratory to compare accuracy between the two laboratories. Conoco analyzed the core drilled in 1975 in its on-site laboratory at the pilot plant facility.

Physical records documenting the sample preparation and analytical protocols used by Conoco or its contract laboratories are not available. The assays by the primary contract laboratory, American Analytical and Research Laboratories, were performed under the supervision of Mr. Pete Soto Flores who was an Arizona-registered assayer (#6852) from 1968 through 1990. Signed (sealed) and dated laboratory receipts were continuously filed on site in the geology log files. Although a record of the assaying procedures is not available, the QP assumes the analytical methods used for the %TCu and %ASCu assays were by well-known, standard methods.

(b) Magma and BHP

Magma/BHP utilized both its in-house laboratory at the nearby Magma/BHP San Manuel Operations and external contracted laboratories to perform analyses of core and RC samples. Magma/BHP also used the San Manuel Metallurgical Lab for support and analysis during column and bench-scale testing. The San Manuel Metallurgical Laboratory and sample preparation facilities were designed to provide daily support to the mine, SX/EW plant, concentrator, smelter, electro-refinery, and rod plant operations including underground and open pit blasthole samples, process solution samples (raffinate, pregnant leach solution), and quality control analysis of copper and molybdenum sulfide concentrates, copper anodes, copper cathodes, and rod.

The primary external laboratory used by Magma and BHP was Skyline Assayers & Laboratories (Skyline) in Tucson, Arizona. Other external laboratories used included Bondar-Clegg & Company of Vancouver, British Columbia; Chemex Labs of Sparks, Nevada; and Rocky Mountain Geochemical Corporation of Salt Lake City, Utah.

The analyses were performed under the supervision of professional metallurgists and laboratory managers. The San Manuel Metallurgical Laboratory used standard, industry accepted methods for the preparation of sample rejects and pulps and the analysis of %TCu content by atomic absorption methods. The analyses are typically in percentages to two decimal places for both TCu and ASCu content.

11.3 Sample Assaying Procedures – *Cont'd*

(b) Magma and BHP – *Cont'd*

Many variations exist on the method used to analyze acid soluble copper content at the copper operations in Arizona. The methods vary slightly from operation to operation even under the same company ownership; the key is to maintain internal consistency at each operation for relative comparison of the extent of oxidation in each material type within the same deposit. The various ASCu determination methods provide a relative indication of the percentage of copper that is released with short-duration exposure to dilute sulfuric acid under specified time, temperature, and acid-concentration conditions; the time (5 minutes to 2 hours), temperature, and concentrations vary by operation. When external laboratories are used, the operation typically provides a copy of its method to the external laboratory to ensure consistency of the method used.

The TCu analysis method used by Skyline is a standard industry method identical to that used by the San Manuel Metallurgical Laboratory. The "San Manuel Method" for the analysis of %ASCu content was consistently used by Magma, BHP, and the external laboratories contracted by Magma/BHP in the Florence drill and metallurgical test samples. The Total Copper Method and "San Manuel Method" for ASCu analyses are shown below.

- Total Copper Analysis in Rock Samples – Skyline Assayer & Laboratories
  - Accurately weigh 0.4000 to 0.4300 grams of the sample into a 200 milliliter (mL) flask. Weigh samples in batches of 20 samples plus 2 checks (duplicates) and 2 standards per rack. At end of job, weigh the tenth sample out of each rack plus 4 standards.
  - Add 10.0 mL hydrogen chloride (HCl), 3.0 mL nitric acid (HNO3) and 1.5 mL perchloric acid (HClO4) to each flask. Place on a medium hot plate (about 250 °C).
  - Digest until the only remaining acid present is HClO4. (Note: The volume of the liquid in the flask should be less than 1 ml.)
  - Remove from the hot plate and cool almost to room temperature. Add about 25 mL deionized (DI) water and 10.0 mL HCl. Boil gently for about 10 to 20 minutes.
  - Cool the flask and contents to room temperature, dilute to the mark (200 mL) with DI water, stopper and shake well to mix.
  - Read the solutions for Copper by Atomic Absorption using standards made up in 5% Hydrochloric acid.
  - Read the solutions for Molybdenum, Lead, Zinc and/or Iron on the ICP using standards made up in 5% hydrochloric acid.

11.3 Sample Assaying Procedures – *Cont'd*

(b) Magma and BHP – *Cont'd*

- Acid Soluble Copper Assay Method – San Manuel Metallurgical Laboratory
  - Weigh 0.500 grams of pulverized sample into a 50-mL Erlenmeyer flask.
  - Add 10 mL of 15% (V/V) sulfuric acid.
  - Place in a water bath held at 73 degrees Celsius for 5 minutes.
  - Remove the flask from the water bath and immediately filter through a 15-cm VWR No. 413 filter paper into a 100-ml volumetric flask. Wash 3 to 4 times with demineralized water.
  - Cool, dilute the contents of the flask to 100 mL. Stopper the flask and shake well to mix the contents. Place in the Instrument Room and allow the flasks to equilibrate to room temperature.
  - Read by Atomic Absorption using 10.0 micrograms/mL and 30.0 micrograms/mL copper calibration standards in 1.5% sulfuric acid.
  - Calculate the percent acid soluble copper by the formula:
    % ASCu = 0.02 * Cu (micrograms/mL).

The analyses by Skyline of drilling samples, metallurgical test materials, and process solutions were performed under the supervision of Arizona-registered assayers Bill Lehmbeck (#9425) and Jim Martin (#11122).

Analysis of groundwater quality from monitor wells and surface water samples collected by Magma/BHP or its environmental consultants was performed by external laboratories including BC Analytical of Glendale, California; NEL Laboratories of Phoenix, Arizona and its successor company Del Mar Analytical of Phoenix, Arizona.

Analysis of metallurgical column test samples (column test heads/tails, feed solution, and effluent/pregnant leach solution) was performed primarily by external laboratories. The records associated with the analyses performed by external laboratories are filed in drill log files, attachments to various reports prepared by Magma or BHP. The amount of documentation varies by laboratory but generally provides the standard metallurgical test methods/protocols, information on sample preparation (weights, size fractions), sample analysis method, method detection limits, analysis units, internal laboratory QA/QC methods, laboratory qualifier comments, and chain-of-custody records.

11.3 Sample Assaying Procedures – *Cont'd*

(c) Curis Resources (2011)

Curis used Skyline for the confirmation assay analyses performed in 2011 and for the check-assay program previously performed by SRK in 2010. Skyline has provided analytical services to the copper mining industry for 70 years and was used to ensure consistency with prior analytical methods. Skyline has been accredited by the American Association for Laboratory Accreditation in accordance with the recognized International Standard ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories since December 2009. Skyline used their standard method for the analysis of TCu (and molybdenum, lead, zinc, and iron as applicable) in percent concentration to two decimal places for all analyses performed for Florence. Skyline used the "San Manuel Method" in percent concentrations to two decimal places for all ASCu analyses performed for Florence Copper.

(d) Florence Copper Project Check Assay Program (2020)

Analyses for the 2020 check assay program were performed by Skyline Laboratories using these two methods: Total Copper analysis in Rock Samples, and a slightly modified version of the historical "San Manuel Method" for Acid-Soluble Copper (both detailed in Section 11.3 (b) above). Modifications made to the San Manuel Method are:

- The concentration of sulfuric acid was reduced from 15% to 5%;
- Samples were centrifuged rather than filtered in step 2c; and
- Samples were shaken on a shaker table instead of being placed in a water bath.

Skyline made these changes to the ASCu method to be consistent with their accreditation and laboratory safety best practice protocols.

11.4 Quality Assurance and Quality Control Procedures

(a) Magma and BHP

Magma engaged sampling specialist Dr. Francis Pitard of Broomfield, Colorado to observe procedures and train staff in proper sampling techniques. The training covered sampling techniques for base metal deposits, identifying large- and small-scale variability in sampling procedures, identifying all of the possible sampling errors, and identifying the overall effect on resource estimation.

Magma created TCu control pulp standards at several grade ranges for the Florence deposit to identify and minimize analytical bias and errors. They performed a detailed evaluation of five assay laboratories and selected Skyline to analyze all samples collected during the Magma feasibility program. BHP subsequently followed the same analysis procedures using the site-specific standards prepared by Magma personnel.

Randomly selected control samples were added to each batch of drill core or RC chip samples that was shipped to Skyline. Every 15th assay sample was an assay control pulp sample that was used to check for analytical bias or variance. The assays from the pulp control samples were required to be within two standard deviations of the overall mean or the entire batch was re-assayed. No field or pulp blanks were created or used by Magma or BHP.

The groundwater quality sampling programs performed by Magma and BHP’s third-party groundwater consulting firm were completed using formal QA/QC procedures consistent with industry best practices for environmental sampling. This included the use of trip blanks and duplicate samples sent to the dominant external environmental laboratory and to a different external laboratory. The third-party consultant reviewed the results from the trip blanks and duplicate sample and asked for repeat analyses if the results did not meet their acceptance criteria. These protocols were continued under Curis Resources’ supervision.

11.4 Quality Assurance and Quality Control Procedures – *Cont'd*

(b) Curis Resources (2011)

In 2011, SRK Consulting reconstituted sufficient materials from Magma/BHP pulp control standards securely stored on site to prepare 10 pulp samples for each of seven grade ranges. These pulp standards, along with field blanks (concrete samples), were used as QA/QC samples during the metallurgical and confirmation drilling program. The pulp materials were re-blended from bulk materials available on-site and were then repackaged into new pulp envelopes that were given distinctive labels. Control standards and field blanks were inserted into the sample stream on every 20th sample. A review of the 18 analyses for standards used during the program indicated that all but two of the results within one standard deviation of the mean value. All 21 results for the field blanks showed nil results for copper.

(c) Florence Copper Project Check Assay Program (2020)

For this short-duration program, SRK Consulting relied on a review of the internal laboratory QA/QC checks and acceptance records in Skyline's final laboratory report. SRK did not include reconstituted control pulps or blank field samples in the sample stream. Skyline's internal QA/QC checks met their acceptance criteria for their analytical instruments.

(d) Florence Copper Project Operations Samples (2018 – Present)

Florence Copper personnel have been performing in-house XRF analyses of well field solutions to track the results during the leaching and rinsing phase of the ISCR field test. The Florence Copper technician uses the manufacture's procedure to calibrate the XRF instrument using a solid-based standard. There is an adjustment needed, however, to calibrate the instrument for solution media. To verify the adjustment coefficient, Florence Copper sends duplicate solution samples on a weekly basis to Minerals Technology, Inc. in Tucson, Arizona. These samples are analyzed for copper, iron, pH, and free acid. Florence Copper's metallurgist then compares the in-house and external laboratory results to assess whether or not the coefficient (calibration adjustment) requires modification to match the results provided by the external lab. On a weekly basis, duplicate samples are also collected from every recovery well and sent to either Pace Analytical or Turner Laboratories who analyze the samples for a more extensive suite of common ions and major and trace metals and metalloids.

11.5 Factors Impacting Accuracy of Results

Total copper analyses of core or chip materials are quantitative analyses performed using standardized methods that can be duplicated from laboratory to laboratory. Acid-soluble analytical results are an empirical measurement of soluble copper using various analytical methods performed under timed leaching conditions with variations in heat, time, and acid concentration. There are a number of methods to analyze the acid-soluble component of the total copper content of a rock sample. Varying results can be generated owing to slight differences in the analytical method. ASCu results are therefore viewed to be a relative measure of the minimum component of total copper that is acid-soluble under certain laboratory conditions and which do not necessarily reflect the actual amount of copper that is recoverable under leaching conditions. The important factor is to maintain consistency where possible in methods used on a particular site.

In the opinion of the QP, the historical and current sample preparation procedures, analyses performed, and the sample security in place for rock, groundwater quality, and process solution samples followed industry standard procedures, and are sufficient to support the project resource estimate and the well field mine plan and reserve estimates.

SECTION 12

DATA VERIFICATION

SECTION 12: DATA VERIFICATION

Table of Contents

Page

List of Figures

12.1 Data Verification

Data verification has been performed for the FCP data as described below. SRK Consulting (SRK) was contracted to verify that the historical and recent drill core and pulps stored at the FCP site are generally dry and free of animal or moisture damage and are suitable for verification sampling. The technical professionals employed by SRK to conduct this work have personal familiarity with the data entry and database verification programs; sampling, data entry, and quality assurance/quality control protocols; as well as the reanalysis programs undertaken by both Magma and BHP.

The QP has been responsible for the supervision of SRK's data verification activities. SRK has reviewed and verified historic information and data generated by all prior owners and the 2011 through 2018 Florence Copper drilling programs. The validation process involved the following:

- Updating the drill hole database with the post-2010 drill data and importing into HxGN MinePlan 3D (formerly MineSight) mining and exploration software.
- Verifying assay results in the database against the original laboratory assay certificates.
- Verifying data using the automatic check functions of the HxGN MinePlan 3D software.
- Reviewing the results of the QA/QC samples collected by prior owners and by SRK in September 2020. Laboratory analytical re-runs were done when external standards fell outside of acceptable limits. QA/QC methodology and results are summarized in Section 11.3.
- Evaluating and comparing all the assay methods implemented and the corresponding assay results generated throughout the history of the project.
- Performing data corrections, updates and validation on a regular basis.

12.2 Project QA/QC Protocols

Quality Assurance and Quality Control (QA/QC) protocols for sampling and data entry procedures have been applied to the FCP as summarized in Section 11 and described below. The historical Magma and BHP protocols primarily utilized deposit-specific pulp standards of known concentrations and the re-assay of a certain percentage of the pulps by a second laboratory. These protocols also used field duplicate samples to assess the homogeneity of each half of the cored interval. Solution standards and solution blanks were incorporated into the analysis program during the BHP field test. Florence Copper uses copper solution standards at various concentrations for in-house daily solution analyses by X-ray fluorescence (XRF) method for the samples collected from PTF. Duplicate solution splits are sent twice weekly to Minerals Technology laboratory in Tucson, Arizona for analysis of copper, iron, pH, and free acid and weekly to two other external laboratories in the Phoenix, Arizona area for analysis of a larger suite of common ions, major and trace metals and metalloids. The in-house analytical equipment is calibrated routinely per schedule recommended by the manufacturer. The coefficient (calibration) is adjusted after a comparison of the in-house XRF analyses against the check analyses sent to the external laboratories. Data entry verification has been performed by manual checks, double data entry and comparison, and through use of verification formulas, routines in Excel and proprietary modeling software.

12.3 Check Assay Sample Preparation and Results

(a) Historical Check Assay Program

QA/QC procedures used by Conoco included inserting check samples to a secondary laboratory on 10% of its assayed samples. Conoco used four independent laboratories for total copper (TCu) and acid soluble copper (ASCu) analyses. These independent laboratories were used prior to the period where Conoco operated their own sample preparation and assay laboratory on site, and to provide outside check assays while the site laboratory operated.

QA/QC protocols used by Magma/BHP included inserting pulp assay standards into core or reverse circulation chip samples shipped to Skyline Assayers & Laboratory (Skyline). The pulp standard materials were prepared from blended and pulverized drill core with previously known TCu assays representing seven TCu grade populations within the deposit (i.e., 0.17, 0.28, 0.34, 0.42, 0.46, 0.65, and 0.91 %TCu). To calculate a global mean plus/minus one standard deviation for the bulk pulp materials, 10 to 12 pulp samples at each grade range were then sent for analysis to five external laboratories. The global mean was then established as the "true" assay concentration for these materials, which were subsequently used as control samples. Randomly selected pulp standards were inserted at a rate of one control for every 15 samples.

The results were cross-checked by the site geologists with laboratory reanalysis requested if the control pulp was not within the established range. The pulp envelopes were weighed prior to shipment to Skyline and after analysis to verify that the laboratory removed material for analysis.

Magma re-assayed Conoco sample pulps and completed a program to replace Conoco's 50-foot composited ASCu assays with individual 5-foot and 10-foot composite assays. BHP re-assayed pulps from 28 Conoco holes within the proposed first production area. The TCu re-assays performed by Skyline during this program showed high statistical correlation to the Conoco assay results. The ASCu assays were not well correlated between the BHP and Conoco data sets due to the different assay composite intervals used.

12.3 Check Assay Sample Preparation and Results – *Cont'd*

(b) Curis Resources Check Assay Program (2011)

A verification sampling program was conducted by SRK for Florence Copper on the remaining splits from 32 core samples to confirm the historic copper analysis results. Continuous 5-foot and 10-foot samples representative of the major rock types, oxidation zones, and copper grades were selected from five drill holes within the main deposit area. A comparison of the results of the TCu assays on the original core interval and residual materials for the same sample interval indicate the average difference between the assays was statistically insignificant at less than 0.01% for TCu and 0.05% for ASCu assays. The program also established a good correlation between the original and re-assay data on the historic TCu assay pulp standards.

During the 2011 Curis drilling program, SRK reconstituted and re-blended the historic TCu standard materials to prepare new standard samples at the seven grade ranges. One randomly chosen pulp standard and one field blank (broken, drilled out concrete core) was inserted for every 20 samples sent to Skyline. The laboratory analyses were reviewed and passed QA/QC protocol if the assays for the pulp standard fell within two standard deviations of the established standard mean value and the standard blank returned a null copper value. Skyline provided assay results in electronic format so manual re-entry of the data by Florence Copper or SRK was not required. Data entry of geology and geotechnical data was performed by SRK technicians who performed manual comparisons against hard copy logs and digital data entry reviews to ensure correct data entry.

12.3 Check Assay Sample Preparation and Results – *Cont'd*

(c) Florence Copper Project Check Assay Program (2020)

A second verification sampling program was conducted by SRK for Florence Copper in September 2020 on remaining splits from 100 core samples to confirm the historical TCu and ASCu analysis results. Continuous 5-foot and 10-foot samples representative of the major rock types, oxidation zones, and copper grades were selected from 62 drill holes within the main deposit area—nine from the Magma era and 53 from Conoco. TCu and ASCu analyses were available on 100% and 99%, respectively, of the historical samples, though most of the Conoco-era ASCu assays were done as 50-foot composites so were of limited usefulness. The samples were sent to Skyline and were analyzed by their packages SEA and Cu-H_2SO_4, respectively for TCu and ASCu. The ASCu method deviated from the "San Manuel method" used for the older samples in that some equipment procedures were changed to reflect current best practices with respect to laboratory safety, and the pulverized materials were placed in contact with 10 milliliters of a more dilute concentration of sulfuric acid than used previously (5% not 15%).

The TCu and ASCu historical and 2020 data for the FCP were compared using three statistical tools. Ninety-nine TCu sample results were used in the TCu comparison. Fourteen results were used for ASCu after the historical data in 50-foot composites were deemed not applicable.

Based on the scatter graphs analyses (Figure 12-1 and Figure 12-2) and Student's T-test, no evidence was found to suggest that the TCu and ASCu results from the historical data and the 2020 data are statistically different.

To assess sampling variability, a model was used to estimate the distribution of sampling and analytical errors. This model used the 93 field duplicate pairs (of the original 99 pairs) that fell within the 95th percentile for TCu determinations. At the 95th percentile, the relative errors fall between 25 and 30% of the copper grade. When composited to 25-foot lengths, the relative sampling and analytical errors are estimated to fall between 10% to 15% for copper grades of 0.2% and above. This is within normal levels of splitting and sampling errors and indicates reasonable control on the historical sampling process.

12.3 Check Assay Sample Preparation and Results – *Cont'd*

(c) Florence Copper Project Check Assay Program (2020) – *Cont'd*

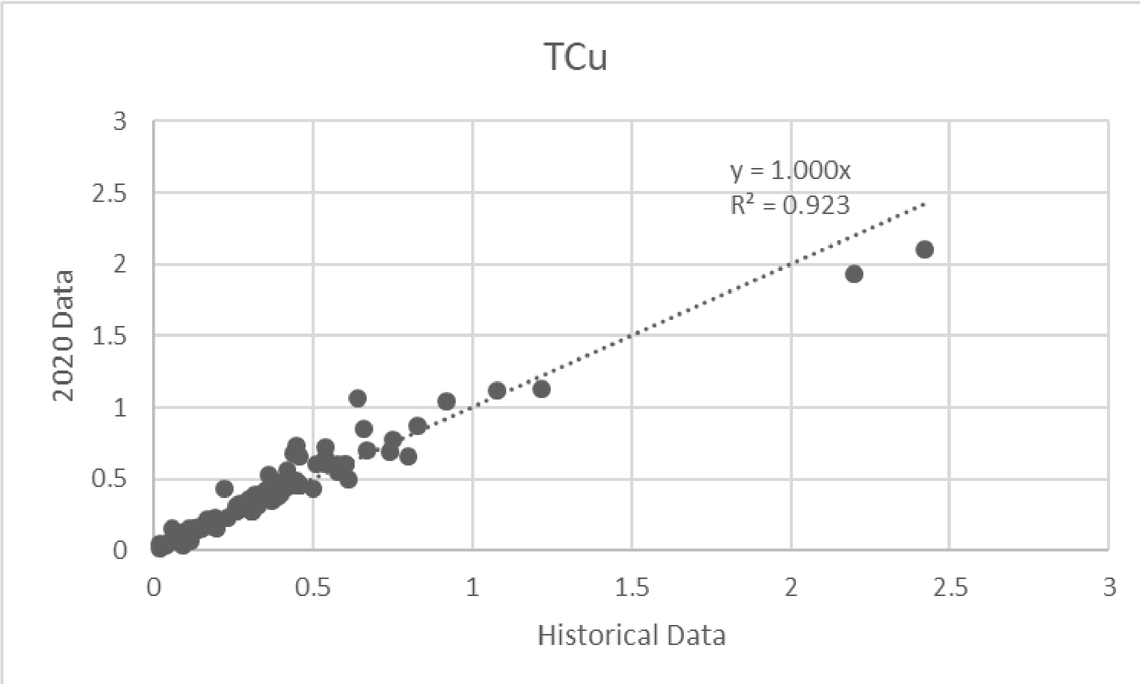


Figure 12-1: Comparison of Conoco/Magma and 2020 FCP TCu check assays

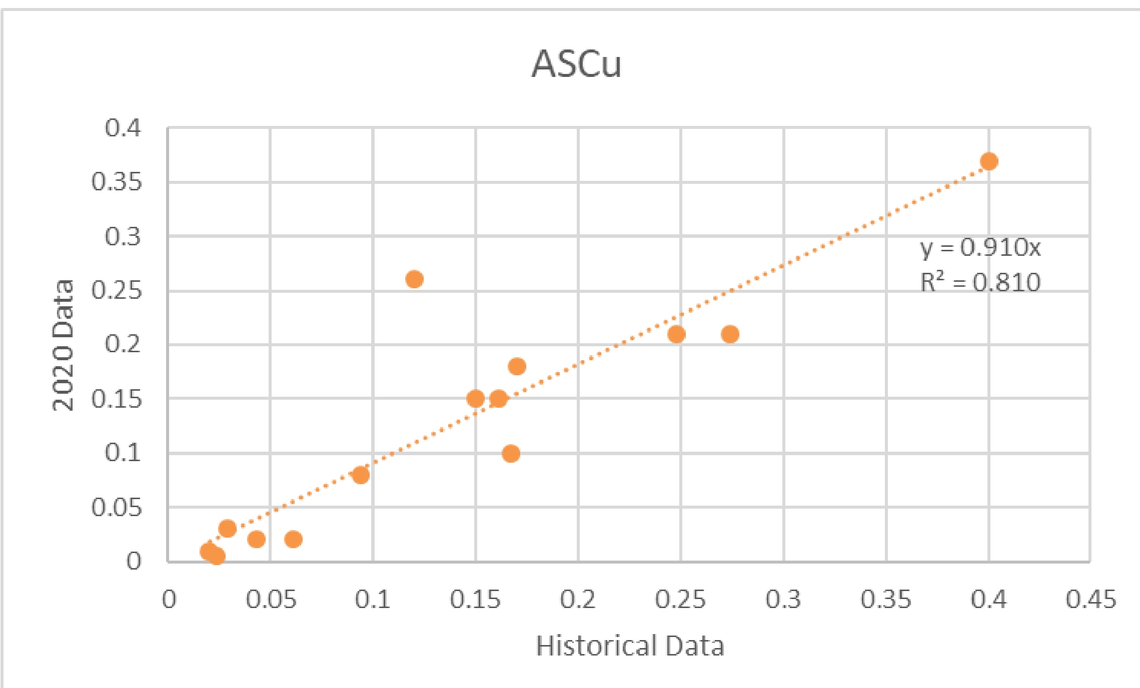


Figure 12-2: Comparison of Conoco/Magma and 2020 FCP ASCu check assays

12.4 Verification of Metallurgical Data

Data used in the preparation of the metallurgical prediction, recovery method and process operating cost was from a series of test programs conducted at the SGS Tucson (formerly METCON) integrated test facility under the supervision of Florence Copper technical staff. The results of the metallurgical test work have been reviewed by Florence Copper technical staff and the project metallurgical consultant.

SGS is an internationally recognized lab that uses industry standard equipment and methods which are suitably validated. Florence technical staff and the project metallurgical consultant visited the lab regularly through the performance of the testing and reviewed interim results, lab procedures and QA/QC during these visits. Florence Copper's Technical Services Manager was present at the SGS facility during the recent test work and witnessed over 98% of the tests. Florence Copper's Technical Services Manager has reviewed and verified the previous hydrometallurgical data from Conoco and Magma/BHP prefeasibility reports.

12.5 Other Data Verification

Verification of ISCR well field, process design and cost estimates are discussed in the relevant sections of this Report.

12.6 Conclusion

The QP has reviewed the data verification procedures and results and is of the opinion that the FCP data is verifiable and supports the mineral resource and mineral reserve estimates presented in this report.

SECTION 13

MINERAL PROCESSING AND METALLURGICAL TESTING

SECTION 13: MINERAL PROCESSING AND METALLURGICAL TESTING

Table of Contents

Page

List of Tables

List of Figures

13.1 Introduction

The FCP has a long history of metallurgical testing which establishes the amenability of the site oxide copper mineralization to leaching. Recent laboratory metallurgical testing has focused on leaching whole core samples to predict ISCR performance. Florence Copper has also operated a demonstration scale ISCR facility referred to as the PTF where leaching under commercial operating conditions was completed between December 2018 to June 2020. This was followed by a 4-month leaching ramp-down period with continued operation of the PTF's SX/EW processing plant. By the end of October 2020, the process plant was shutdown and the PTF subsequently transitioned to demonstration of the rinsing phase which is still in progress. The following sections describe the historical and current metallurgical testing, including PTF operations, and the updated metallurgical performance estimate that they inform.

13.2 Metallurgical Testing History

Metallurgical testing on the Florence Copper deposit started in the early 1970s when Conoco established, through laboratory column testing, that approximately 70% of the copper in the oxide portion of the deposit could be extracted with dilute sulfuric acid. Tests were conducted for durations up to two hundred days and indicated that copper extraction was still ongoing when the tests were terminated. Conoco also constructed and operated an on-site pilot plant. Material for the plant was sourced from a single level test underground mine in the area of the reserve defined in this report. The test mine produced 50,000 tons of mineralized material to feed the pilot plant operation. The pilot plant program on oxide material was executed in 1975 and included operation of separate runs of both vat and agitated leaching integrated with solvent extraction and electrowinning of copper cathode. Each test was conducted over a nominal 7-day test cycle, 5 days of which were leaching and 2 days of washing. Leaching was considered complete when the total copper extraction approximated the acid soluble component of the head samples, equating to an average total copper extraction of 72% at an average acid consumption of 7 lb/lb of copper. The PLS produced was successfully processed via solvent extraction and electrowinning producing a good quality cathode. The program achieved higher copper extractions than were achieved in the laboratory and confirmed the amenability of employing leaching to effectively extract, recover, and produce good quality copper cathode from the oxide ore of the deposit.

Subsequent laboratory column testing was conducted by Magma and BHP in the 1990s covering a range of leach conditions and durations on a variety of samples. The shortcomings of column testing techniques for predicting performance of ISCR were recognized at the time and several methods were tested to adapt the column technique for this application. The test program ultimately resulted in the leaching of core pieces in saturated columns packed with silica sand to minimize void space. Three saturated column tests were conducted at the end of the program, but these tests did not leach the samples to completion as the tests were terminated early while significant copper recovery was still ongoing.

13.3 ISCR Metallurgical Testing

In 2011, Florence Copper embarked on a metallurgical program designed to test previous owners' predictions of ISCR performance and continue to develop improved test methods for ISCR. The essential elements of a test program for ISCR are to use whole core samples, minimize the effects of handing on the core, and establish test conditions in the laboratory which correspond to field conditions as closely as possible. This work also recognized that the multi-year long-term commercial ISCR leach cycles are not practical for laboratory testing. Laboratory test conditions were set to allow lab tests to be completed in a reasonable time period and a scale up methodology was developed to relate laboratory results to expected field results.

The Florence Copper ISCR leaching and rinsing laboratory program evolved from box tests to individual pressurized tests and ultimately to series pressurized tests. The test work was conducted at SGS Mineral Services in Tucson, Arizona. Supporting analytical work was performed at SGS Mineral Services in Vancouver, British Columbia, and Lakefield, Ontario. Mineralogical work was performed at Colorado School of Mines and Montana Technological University.

The PQ and HQ core samples used in the testing were sourced from five 2011 diamond drill holes. Drill holes CMP11-01, CMP11-02 and CMH11-03B are located in the southern portion of the deposit near the original BHP test well field while holes CMP11-05 and CMP11-06 are located in the northern portion of the deposit adjacent to the location of the PTF well field. Selected drill core subsamples were submitted for mineralogical examination to the Colorado School of Mines QEMSCAN laboratory. The mineralogical analysis indicated that copper in the samples consisted predominantly of non-sulfide minerals including chrysocolla, Cu-bearing biotite, Cu-bearing iron oxides, and Cu-bearing chlorite consistent with the geological interpretation of the Oxide Unit.

In each of the test series described in the following sections, the drill core samples were selected based on physical observations to represent the range of key geological parameters found within the overall deposit including rock type, clay content, copper mineralogy, and fracture intensity. The nature of the test work contained built-in variability testing as whole core point samples were tested for areas through the deposit.

At the time of testing, priority was given to building a dataset to establish the leach curve characteristics rather than establishing the maximum leachable copper from each sample.

13.3 ISCR Metallurgical Testing – *Cont'd*

Once a test was assessed as being complete the testing was discontinued and an established METSIM modelling technique was used to generate a leach kinetic curve model for the test. The modelling technique makes use of standard rate equations to account for the fast and slow leaching copper components of the ore which allows a kinetic curve to be generated for each test dataset, modelling the total copper extraction from the sample as a function of time.

The data validation methodology used to determine that the test data was mature involved generating extraction models using data from the first 80%, the first 90% and 100% of the leach test duration. If the three models agree within an established criteria the test data was considered mature and acceptable for use in making metallurgical projections (Iasillo and Carneiro, 2001). Only test data that was qualified by the validation step was used to inform metallurgical projections.

At the conclusion of the test leach cycle, water rinsing commenced to remove and account for residual dissolved copper and to characterize the water volume required to restore solution pH and chemistry. Metallurgical balances were completed at the conclusion of each test by accounting for the weight and assay of the leached residue and volumes and assays of all the solutions.

The following sections present the measured copper extractions achieved during the test leaching along with the copper extraction models generated from the test data.

13.4 Box Leach Test Program

(a) Introduction

Box leach tests were performed from 2011 through 2013 over multiple phases of test work. The primary objective of this test series was to evaluate in-situ metallurgical performance using horizontal rectangular leach boxes to improve the simulation of in-situ leaching conditions versus the column leaching work performed previously.

The box test program passed leach solution in locked cycle transversely through four pieces of whole drill core in series to simulate leaching of undisturbed ore. The leaching was conducted at near atmospheric pressure in closed circuit with solvent extraction performed on the pregnant leach solution (PLS) when the dissolved copper exceeded 1.8 g/L. The leach box design included measures to ensure that leach solutions did not bypass the core pieces and used silica sand to fill the spaces between the core intervals to minimize the apparatus pore space. Core handling procedures were designed to minimize disturbance of the natural fractures in the core. Figure 13-1 shows the leach box test apparatus setup.

Figure 13-1: Leach Box Setup with Core Sample (Left) and Loaded with Silica Sand (Right)

Over the box leach test series, a total of 24 boxes were assembled and tested. Details of the drill core characteristics of samples used for each box are summarized in Table 13-1.

13.4 Box Leach Test Program – *Cont'd*

(a) Introduction – *Cont'd*

Table 13-1: Box Tests Sample Origin and Classification

Box Test#	Hole Number	Sample Depth Range, ft	Clay %	Met Zone	Fracture per ft	Rock Type
1	CMP11-01	495-514	1 to 2	Cu-Ox/Si(1)	>15	Yqm(4)
2	CMP11-01	550-565	5 to 10	Mix ox(2)	6-10	Yqm
3	CMP11-01	650-660	1 to 2	Mix ox	11-15	Yqm/ Tgdp
4	CMP11-01	734-767	1 to 2	Fe ox(3)	11-15	Yqm/Tgdp
5	CMP11-02	470-491	2 to 5	Cu-Ox/Si	6-10	Yqm
6	CMP11-02	531-546	2 to 5	Mix ox	11-15	Ta(5)/Yqm
7	CMP11-02	590-605	1 to 2	Mix ox	0-5	Tgdp(6)
8	CMP11-02	711-726	<1	Cu-Ox/Si	Breccia(7)	Yqm
9	CMH11-03B	458-485	10 to 20	Mix ox	Breccia	Ta/Yqm
10	CMH11-03B	564-584	1 to 2	Mix ox	11-15	Yqm
11	CMH11-03B	635-669	2 to 5	Mix ox	11-15	Yqm
12	CMH11-03B	740-760	1 to 2	Fe ox	6-10	Yqm/Tgdp
13	CMP11-05	485-522	5 to 10	Mix ox	>15	Yqm
14	CMP11-05	700-720	1 to 2	Mix ox	6-10	Yqm
15	CMP11-05	920-940	5 to 10	Mix ox	11-15	Yqm
16	CMP11-05	1134-1144	5 to 10	Mix ox	Breccia	Yqm
17	CMP11-06	530-540	2 to 5	Mix ox	Breccia	Yqm
18	CMP11-06	735-749	2 to 5	Fe ox	11-15	Tgdp
19	CMP11-06	880-895	1 to 2	Mix ox	>15	Yqm
20	CMP11-06	1090-1105	5 to 10	Fe ox	>15	Yqm
21	CMP11-01	565-670	1 to 2	Mix ox	6-10	Yqm
22	CMP11-02	470-550	1 to 2	Cu-Ox/Si	6-10	Yqm
23	CMH11-03B	669-779	<1	Mix ox	>15	Yqm
24	CMP11-05	522-710	2 to 5	Fe ox	6-10	Yqm

Remarks:
(1) Cu-Ox/Si = Mix of Copper Oxides and Silicates
(2) Mix ox = Mix of Copper and Iron Oxides
(3) Fe ox = Iron oxides
(4) Yqm = Precambrian Quartz Monzonite AKA Quartz Monzonite Porphyry
(5) Ta = Tertiary Andesite
(6) Tgdp = Tertiary Granodiorite Porphyry
(7) Breccia or fault gouge – shattered sample

13.4 Box Leach Test Program – *Cont'd*

(b) Results

Box Tests – Phase 1

The first phase of this test series included a total of 16 box leach tests, primarily intended to evaluate the leach box test apparatus and its effect on copper extraction rates at variable acid strengths. As no mature raffinate solution was available at the time, initial leach solutions were formulated using water that was acidified with sulfuric acid.

Samples for boxes 1 through 16 were sourced from drill holes CMP11-01, CMP11-02, CMH11-03B and CMP11-05. Four boxes were assembled from each hole with each box containing four pieces of drill core from adjacent 5-foot core intervals. One box was loaded using material from the top of the oxide zone, two from the middle and one from the bottom zone near the underlying sulfide zone. This resulted in four boxes for each of the four drill holes with material representing the mineralogy expected across the vertical profile of the oxide zone.

Three of the four boxes from each drill hole were leached in lock cycle using solution acid strengths of 5 g/L, 10 g/L and 20 g/L. The fourth box from each drill hole was first subjected to inert tracer testing with NaCl prior to leaching with 10 g/L solution to estimate hydrological parameters for the core samples. The tracer tests were repeated at the conclusion of the leaching cycle to identify any changes in flow characteristics due to leaching or precipitation.

The duration of the leaching tests ranged from 134 to 228 days. Leaching tests were nominally terminated at 152 days unless the PLS grade was still above a threshold value of 0.5 g/L copper or if the difference between the PLS and raffinate solution grades warranted extension of the leach duration.

At the conclusion of the tests, the measured copper extractions over the 16 boxes averaged 61% with an average acid consumption rate of 15 lb/lb copper.

Data from the tests was analyzed and the decision was made to use a raffinate acidity of 10 g/L as the basis for future test work as higher acidities resulted in higher acid consumption without a significant increase in recovery. As a result of this decision and the data validation procedure described previously, the tests using a 10 g/L solution acid strength series were used as part of the project metallurgical projection dataset while tests in the 5 g/L and 20 g/L acid were not used in subsequent metallurgical projections.

13.4 Box Leach Test Program – *Cont'd*

(b) Results – *Cont'd*

Box Tests – Phase 1 – *Cont'd*

Although the data sets at different raffinate acidities were not used in projections they provide valuable qualitatively information on characterizing the relationship between raffinate acid strength and initial leach kinetics.

The measured copper extraction for the 8 boxes that operated at 10 g/L acid strength averaged 70% copper extraction with an average acid consumption of 12 lb/lb copper.

Figure 13-2 depicts the 10 g/L raffinate test data from this series of tests and the leach model generated from the data.

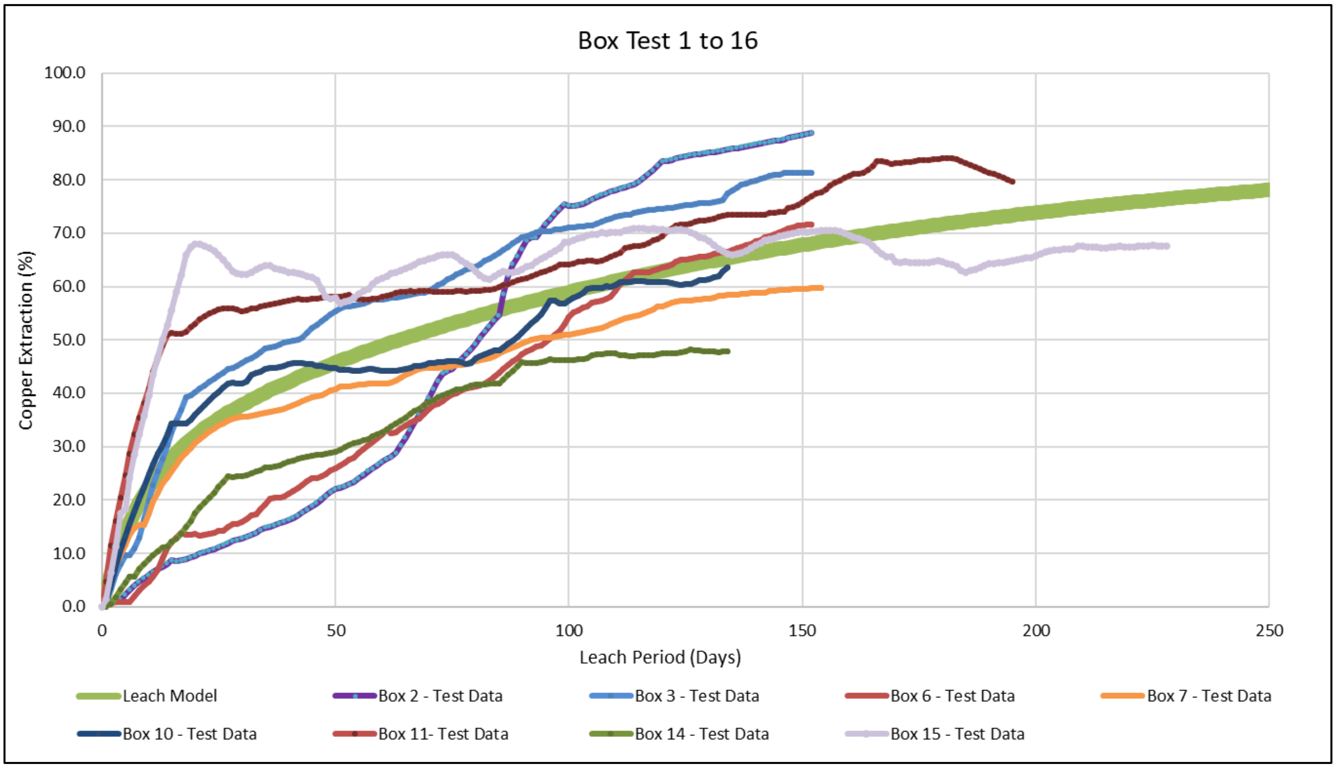


Figure 13-2: Box Tests Phase 1 – 10 g/L Raffinate Test Data & Modelled Average Leach Curve

An inspection of the leached material showed granular to moderate sized particles with no signs of preferential solution pathways. There were also no measurable changes in pre and post leaching tracer test results.

No discrete sample head-grade versus recovery relationship was established from the results, indicating the leaching kinetics and total copper extracted were primarily governed by the mineralogical and hydrogeological properties of the sample.

13.4 Box Leach Test Program – *Cont'd*

(b) Results – *Cont'd*

Box Tests – Phase 2

The second phase of box testing consisted of four boxes (Boxes 17-20) run on core samples from drill hole CMP11-06 which was located near the PTF. The purpose of this test phase was to assess acid consumption using a more mature raffinate solution. As raffinate solutions mature they accumulate dissolved mineral constituents from the ore which, over time, reduce raffinate reactions with the gangue rock and reduce acid consumption during leaching. Performing the leach testing using more mature raffinate solution more closely simulates the leaching chemistry and acid consumption which will be experienced in the commercial operation.

This series of tests was started using raffinate generated in the first phase of testing which was a partially mature solution. The tests operated in a lock cycle leaching configuration for 157 days using an applied acid solution strength of 10 g/L.

The average copper extraction during the test period was 62% at an average acid consumption rate of 10 lb/lb copper. This test series demonstrated the expected reduction in acid consumption as the result of starting the tests with partially mature raffinate solution; however, the dataset did not meet the validation standard required to use it for metallurgical predictions.

13.4 Box Leach Test Program – *Cont'd*

(b) Results – *Cont'd*

Box Test – Phase 3

A third phase of box leach testing was undertaken to evaluate scale-up effects by leaching four boxes in series to test the effects of longer ore contact times. Each box contained core from CMP11-01, CMP11-02, CMH11-03B and CMP11-05.

The average copper extraction during the test period was 76% at an average acid consumption rate of 9 lb/lb copper. The test demonstrated improved leach kinetics in the series configuration and the test results met the project data validation criteria. The copper extraction for the test and the associated leach model are both shown in Figure 13-3.

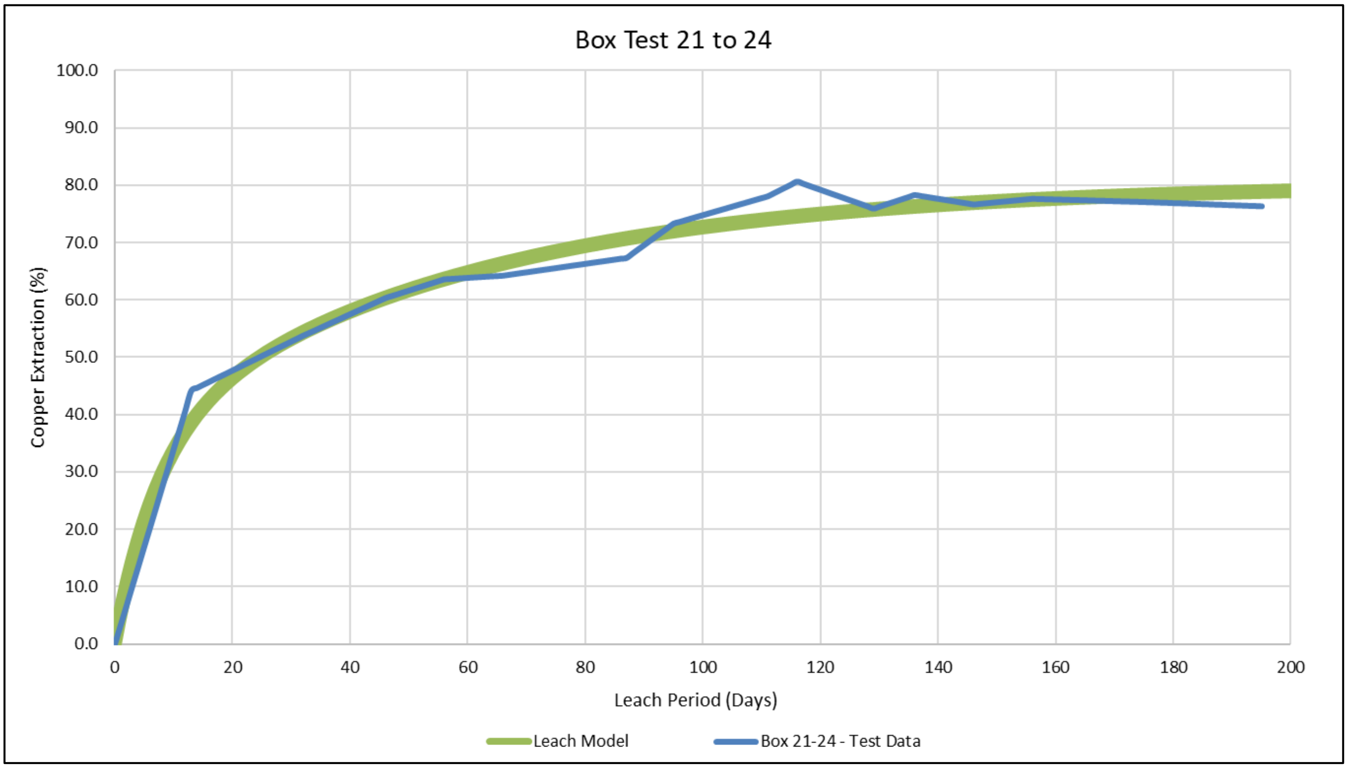


Figure 13-3: Box Tests Phase 3 – Series Box Test Data & Modelled Leach Curve

13.5 PRT Leach and Rinse Program

(a) Introduction

In 2013, a Pressurized Rinse Test (PRT) apparatus was developed to determine the effect that the hydrostatic pressure in the ore body would have on rinsing performance and a suite of development rinsing tests were conducted on leach residues from the box leach test program. Over the course of this initial work, the PRT apparatus design and test methodologies advanced enough to facilitate execution of combined leaching and rinsing tests to more closely match in-situ porosity and pressures as well as increase the solution to ore contact length.

The PRT apparatus consists of a stainless-steel column in which leach solutions can be passed longitudinally through a 2-foot-long interval of whole core at a pressure of 120 psi gauge

A total of 11 combined leach and rinse PRT tests were performed in 2013 and 2014. Details of the drill core characteristics of samples used for the 11 PRT leach and rinse tests are shown in Table 13-2.

Table 13-2: PRT Leach and Rinse Sample Origin and Classification

PRT Test#	Hole Number	Sample Depth, ft	Clay %	Met Zone	Fracture per ft	Rock Type
1	CMP11-06	669-674	10 to 20	Fe ox(1)	Breccia(2)	Yqm(3)
2	CMP11-06	777-782	5 to 10	Mix ox(4)	11-15	Yqm
3	CMP11-06	865-870	10 to 20	Mix ox	6-10	Yqm
4	CMP11-05	685-690	<1	Mix ox	6-10	Yqm
5	CMP11-05	465-470	5 to 10	Mix ox	>15	Yqm/Tgdp
6	CMP11-06	766-771	1 to 2	Mix ox	>15	Yqm
7	CMP11-06	545-550	1 to 2	Mix ox	11-15	Yqm
8	CMP11-06	585-590	1 to 2	Mix ox	11-15	Yqm
9	CMP11-06	615-620	10 to 20	Mix ox	Breccia	Yqm
10	CMP11-05	665-670	<1	Mix ox	>15	Yqm/Tgdp
11	CMP11-06	751-755	<1	Mix ox	6-10	Tgdp(5)

Remarks:
(1) Fe ox = Iron oxides
(2) Breccia or fault gouge – shattered sample
(3) Yqm = Precambrian Quartz Monzonite AKA Quartz Monzonite Porphyry
(4) Mix ox = Mix of Copper and Iron Oxides
(5) Tgdp = Tertiary Granodiorite Porphyry

13.5 PRT Leach and Rinse Program – *Cont'd*

(b) Results

The PRT leach testing was conducted in closed circuit with solvent extraction performed on the PLS when the dissolved copper exceeded 1.8 g/L, while the rinse testing was conducted in open circuit using water sourced from the project site.

The initial four PRT leach and rinse tests were conducted to assess the effects of formation pressure conditions on leaching and to gather additional rinsing data. The subsequent tests evaluated raffinate acidities of 7.5g/L and 10g/L in conjunction with testing strategies to optimize attenuation of trace elements in the final stage of rinsing.

The initial rinsing tests were performed using only water and this progressed to a staged rinsing process as testing progressed. The staged rinsing of later tests consisted of an initial rinse with site water, followed by rinsing with sodium bicarbonate in site water and then site water with periodic additions of ferric iron.

Test results using the different raffinate acidities indicated similar copper extractions could be achieved with lower acidities, and tests using 7.5 g/L raffinate consumed approximately 20% less acid and required approximately 20% lower rinsing volumes than tests using 10 g/L. Although favourable results were produced from the 7.5g/L tests, the lower raffinate acidity was not incorporated into the subsequent scale-up test work as these tests did not meet the validation standard required to be used for metallurgical predictions.

The average copper extraction for the validated dataset which exclusively consisted of 10g/L raffinate acidity tests was found to be 61% with an average acid consumption of 10 lb/lb copper and required an average 9 pore volumes to complete rinsing.

Figure 13-4 shows the validated test data for 10 g/L raffinate acidity alongside the leach model.

13.5 PRT Leach and Rinse Program – *Cont'd*

(b) Results – *Cont'd*

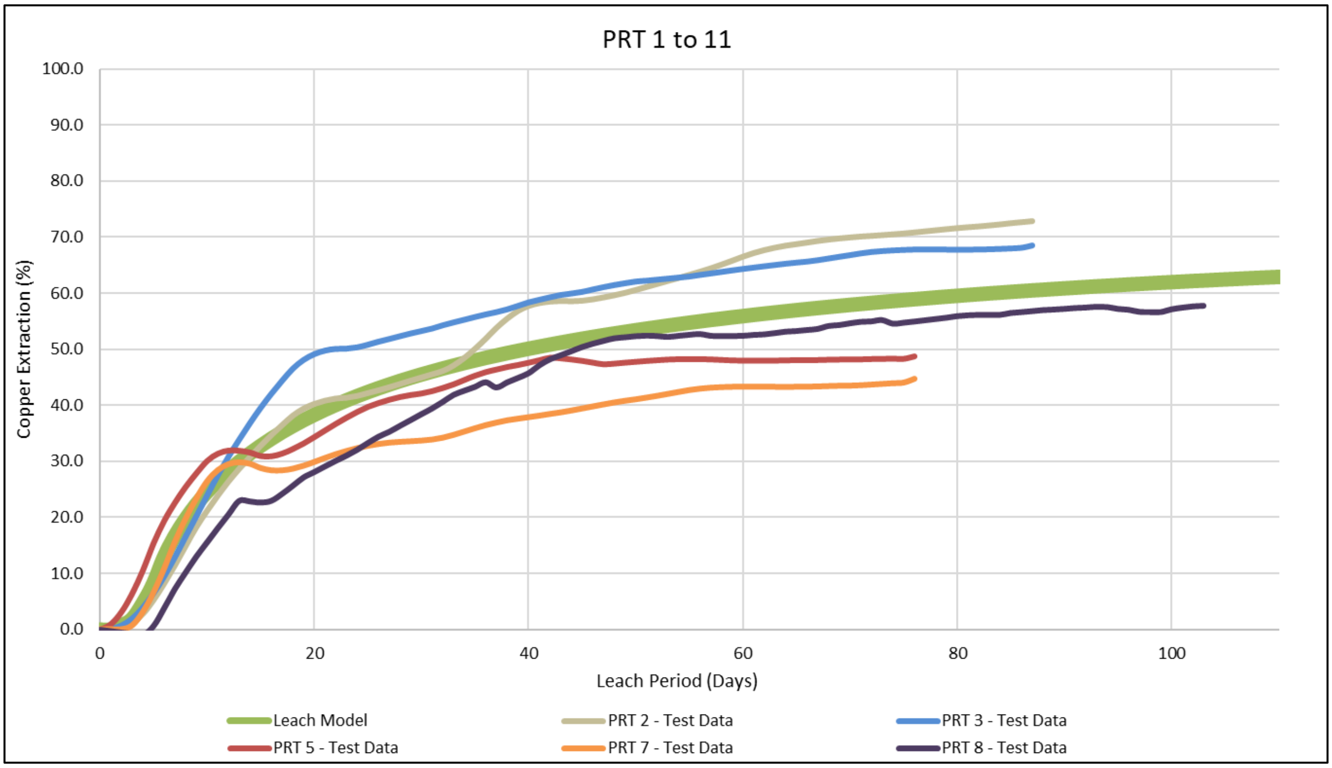


Figure 13-4: PRT Mature Test Data & Modelled Average Leach Curve

13.6 Series Leach Testing

(a) Introduction

In early 2015, a Series Leach Test (SLT) was undertaken to provide leach scale-up data to test the modeled parameters from earlier testing and to inform the planned PTF operation. The key parameters being investigated in the test were acid consumption, PLS grade, copper recovery, and leach kinetics.

The SLT apparatus consisted of seven individual PRT test apparatus connected in series. A photo of the apparatus is shown in Figure 13-5

Figure 13-5: Series Leach Test Apparatus

The SLT passed solutions through approximately 15 feet of whole core with a solution transit time of about 13 days. This represents approximately the mid-point of scale-up between a single PRT with a solution transit time of less than two days and the full scale well field with an estimated 30-day transit time.

Solution samples from the test were collected daily from the third and last PRT vessel, while the remaining vessels were sampled on a daily rotating basis to allow a more detailed monitoring of the test progress. Additional weekly composite samples of the third and last PRT vessel were constructed from the daily samples and assayed for multi-element ICP scans. Each daily solution sample collected was analyzed for pH, free acid, oxidation reduction potential, copper, and iron.

13.6 Series Leach Testing – *Cont'd*

(a) Introduction – *Cont'd*

The two areas of the resource drilled in 2011 were represented in the SLT, although the samples tested were weighted more heavily towards samples from CMP11-05 and CMP11-06 to provide data to inform PTF operations. Details of the drill core characteristics of samples used for the SLT are shown in Table 13-3.

Table 13-3: SLT Sample Origin and Classification

Cell	Hole Number	Sample Depth, ft	Clay	Met Zone	Fracture per	Rock
1	CMP11-05	645-647	1 to 2	Mix ox(1)	>15	Yqm(4)
2	CMP11-05	648-650	1 to 2	Mix ox	>15	Yqm
3	CMP11-06	595-597	2 to 5	Mix ox	11-15	Yqm
4	CMP11-06	598-600	2 to 5	Mix ox	11-15	Yqm
5	CMP11-06	758-760	1 to 2	Mix ox	>15	Yqm
6	CMP11-02	651.5-653.5	2 to 5	Mix ox	Breccia(3)	Yqm
7	CMP11-02	662-664	1 to 2	Cu ox(2)	Breccia	Yqm

Remarks: (1) Mix ox = Mix of Copper and Iron Oxides
(2) Cu ox = Copper Oxides
(3) Breccia or fault gouge – shattered sample
(4) Yqm = Precambrian Quartz Monzonite AKA Quartz Monzonite Porphyry

The SLT used raffinate at an acid strength of 10 g/L and was conducted in locked cycle with PLS processed by solvent extraction before recirculation. The base solution was sourced from previous tests to simulate as closely as possible the steady state leach chemistry.

Raffinate was injected into the test for 211 days at which time the test solution inventory had been consumed by the sampling program and leaching was terminated. Copper was still being recovered and the PLS grade was 0.5 g/L copper when the leaching portion of the test ended. The PLS grade peaked at 3.7 g/L copper and averaged 1.5 g/L over the duration of the leach.

The copper extraction and acid consumption curves for the leach period are shown in Figure 13-6.

13.6 Series Leach Testing – *Cont'd*

(b) Results – *Cont'd*

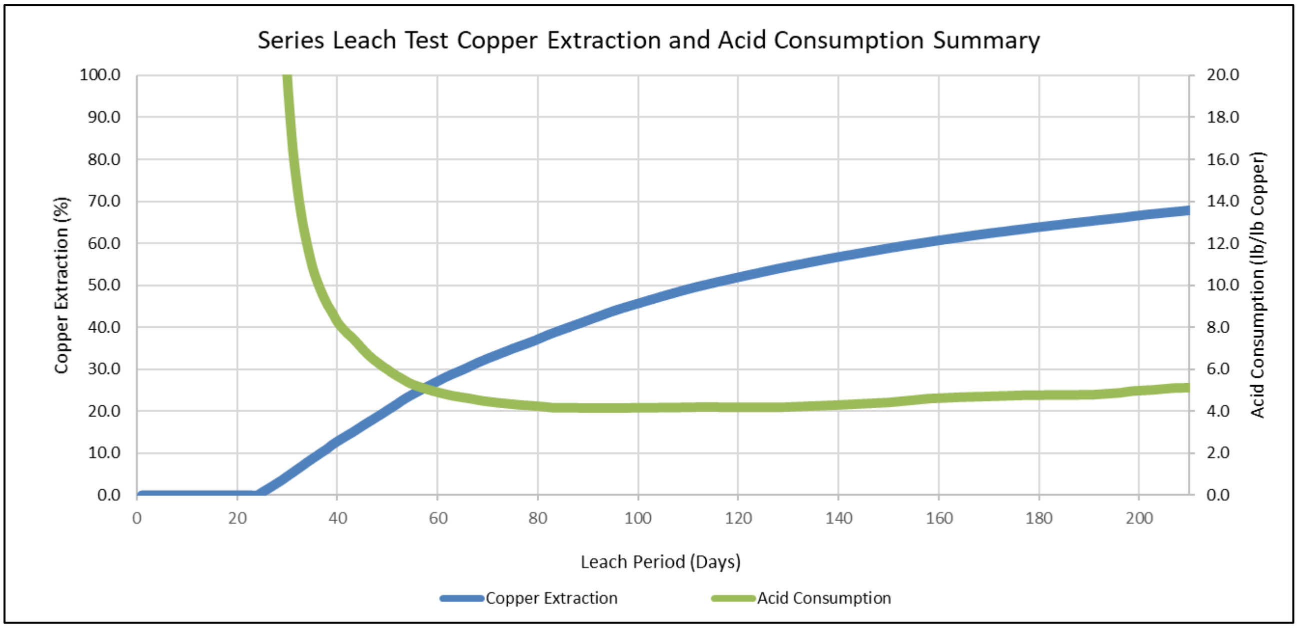


Figure 13-6: SLT Extraction and Acid Consumption Summary

The SLT test extracted 70% of the contained copper at an acid consumption of 5 lb/lb copper over the 211-day leach cycle. The validation method was applied to the test data and confirmed the data was sufficiently mature for use in metallurgical projections. Over the test duration no evidence or negative impact of precipitation was observed as indicated by vessel differential pressure increases or copper losses. The multi-element ICP scan data indicated no deleterious elements were present in the PLS.

The SLT design provided data that allowed metallurgical balances to be completed for the combined first three cells, the combined final four cells, and the overall set of seven cells.

Assay analysis of the leach residue found that the remaining oxide and silicate copper was randomly distributed in the individual core samples. In aggregate for both the first three and the last four cells, 20 percent of copper remaining in the residues occurred as easily acid soluble species.

This indicates that, as the leach was scaled-up, the leachable copper species continue to be recovered based on solution access to the mineral. There was also no evidence of copper precipitation in the leach residues.

13.6 Series Leach Testing – *Cont'd*

(b) Results – *Cont'd*

The rinse phase of the test began after leaching was stopped. The leach solutions displaced for the first 36 days of the rinse were included in the metallurgical and acid balance until the solution grade fell below 0.2 g/L copper.

Rinsing for the SLT was conducted in open circuit at one half of the raffinate feed flow rate. The rinsing was conducted using the three-stage approach developed in the PRT program. Sulfate was used as the indicator species for rinsing performance and the target sulfate level of less than 750 ppm was achieved after a total of 268 days. The total volume of rinse solution required to meet this target was 9 pore volumes. The overall rinsing performance for sulfate and pH are shown graphically in Figure 13-7.

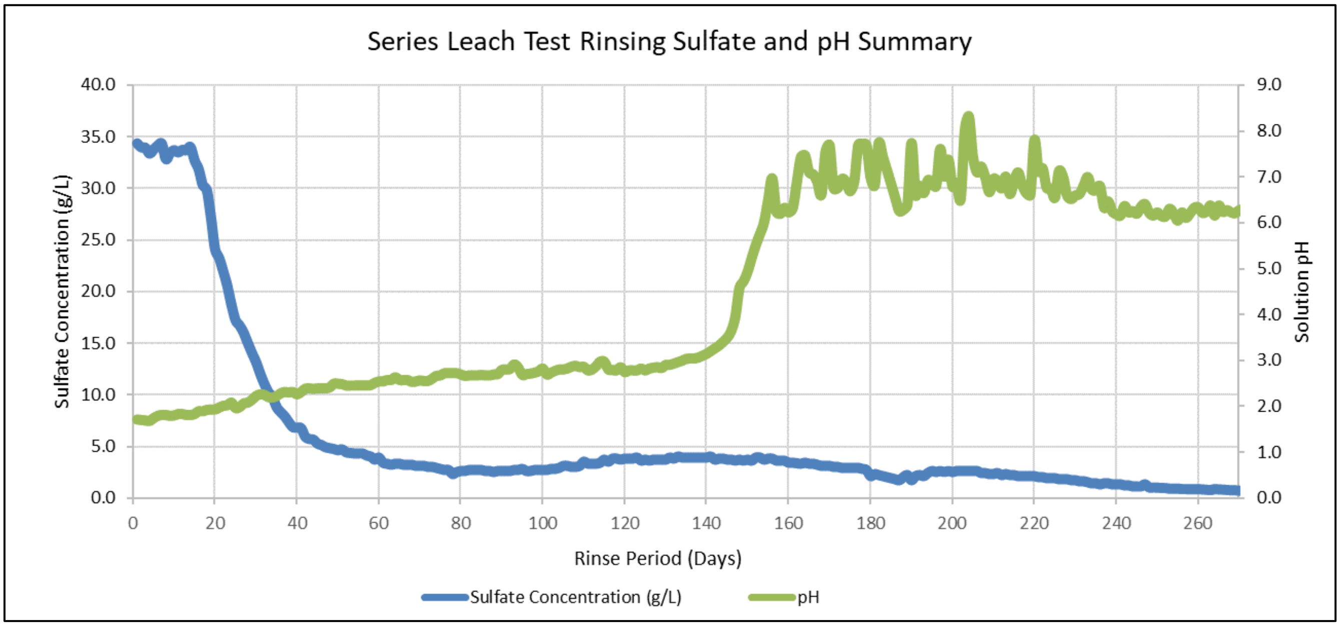


Figure 13-7: SLT Rinsing pH and Sulfate Concentration Summary

13.7 Metallurgical Testing Conclusions

(a) Box Leach Test Program

- Development of the box leach test apparatus enabled improved in-situ metallurgical performance evaluations versus the column leaching work performed previously.
- A total of 8 boxes from the phase-1 testing and 4 boxes from the phase-3 testing met the project validation criteria to inform metallurgical projections. These validated tests all operated with 10 g/L acid strength, averaged 72% measured copper extraction, and had an average acid consumption of 11 lb/lb copper over the test duration.
- No deleterious elements were detected in the PLS produced during any of the tests and acid consumption was found to be reduced as more mature solutions were generated in the testing. Testing the impact of scaling up the leaching, by operating four boxes in series, resulted in improved leach kinetics versus individual box tests achieving a copper extraction of 76% at an average acid consumption rate of 9 lb/lb copper during the test period.
- Overall, no discrete sample head-grade versus recovery relationship was established from the results, indicating the leaching kinetics and total copper extracted were primarily governed by the mineralogical and hydrogeological properties of the sample.

(b) PRT Leach and Rinse Program

- Development of the PRT apparatus further improved representation of the in-situ copper recovery process by more closely simulating ISCR conditions including typical in-situ ore body hydrostatic pressures.
- During this test series a 3-stage rinsing protocol was developed which consisted of an initial rinse with site water, followed by rinsing with sodium bicarbonate in site water and then site water with periodic additions of ferric iron.
- A total of 5 PRT’s met the project validation criteria to inform metallurgical projections. These validated tests all operated with 10g/L acid strength, averaged 61% measured copper extraction, had an average acid consumption of 10 lb/lb copper, and required an average 9 pore volumes to bring sulfate levels down below the targeted levels of 750 ppm.
- This work also identified a potential opportunity to reduce acid consumption and required rinse volumes without impacting copper extractions through use of 7.5g/L raffinate acidities.

13.7 Metallurgical Testing Conclusions – *Cont'd*

(c) Series Leach Test Program

- The SLT program was undertaken to provide leach scale-up data to test the modeled parameters from earlier testing and to inform the planned PTF operation.
- The test work resulted in a total copper extraction of 70% copper at an acid consumption of 5 lb/lb copper at the end of a 211-day leach cycle. Assay analysis of the leached residue found that leaching progressed consistently through the entire series of samples as the testing was scaled up to longer contact times.
- Consistent with previous test work, PLS generated from the test was found to contain no deleterious elements to the process.
- SLT leach kinetic curve modelling indicated that leach kinetics improved as the test was scaled-up and a more efficient use of acid was realized at reduced acid application rates.
- The rinsing portion of the test required 9 pore volumes to bring solution sulfate levels down below the targeted 750 ppm.
- The SLT test was successful in providing an indication of ISCR scale-up and was used to inform PTF planning and operations.

13.8 Production Test Facility

(a) Introduction

The purpose of the PTF was to demonstrate hydraulic control and confirm the oxide ore zone behaves hydrologically as an equivalent porous media thereby ensuring protection of underground sources of drinking water. Secondly the PTF provided an opportunity to test operational controls and strategies to inform future commercial scale operations. Maximizing copper production from the PTF was not an objective and the facility was not permitted to complete a full leaching cycle.

The PTF well field is located on the northern portion of the deposit specifically selected in a challenging hydrogeological position to demonstrate hydraulic control. The well field is situated at the edge of a graben with major faults running though the surrounding area. The location was also selected to represent the ore planned to be leached at the start of commercial production. The metallurgical testing described in the previous section includes samples from drill holes CMP11-05 and CM11-06 which are within the PTF well field area.

The well field was designed using the same well spacing and construction methods as those planned for the commercial-scale ISCR facility. Hydraulic performance data generated during PTF testing and operations have provided important information supporting the design and operations planning for the commercial-scale well field.

The PTF facilities include an ISCR well field, a SX/EW processing plant, an acidic reverse-osmosis water treatment plant, a water impoundment, run-off pond, and associated infrastructure. The PTF well field is comprised of four injection wells, nine recovery wells, seven observation wells, and four multilevel sampling wells. An aerial view of the PTF well field is presented in Figure 13-8.

13.8 Production Test Facility – *Cont'd*

(a) Introduction – *Cont'd*

Figure 13-8: Aerial View of PTF Well Field

As pre-operational requirements, pump testing of the well field and a tracer test using fluorescent dye was used to demonstrate that a flow field could be established and controlled between the injection and recovery wells. The testing was successful in demonstrating the formation behaved hydrologically as an equivalent porous media through establishing a sufficient connection between the PTF wells to generate a cone of depression that would allow hydraulic control of the formation to be maintained. The test results were submitted to regulators and approvals were granted to commence operation of the PTF.

13.8 Production Test Facility – *Cont'd*

(a) Introduction – *Cont'd*

Leaching operation of the PTF began in December 2018 and continued under commercial operating conditions until June 2020, after which fresh acid addition was stopped and the leaching phase was ramped down and concluded with the shutdown of the process plant by the end of October 2020. The PTF well field was then subsequently transitioned into a rinsing phase which is in progress.

A schematic of the PTF well field layout is presented in Figure 13-9.

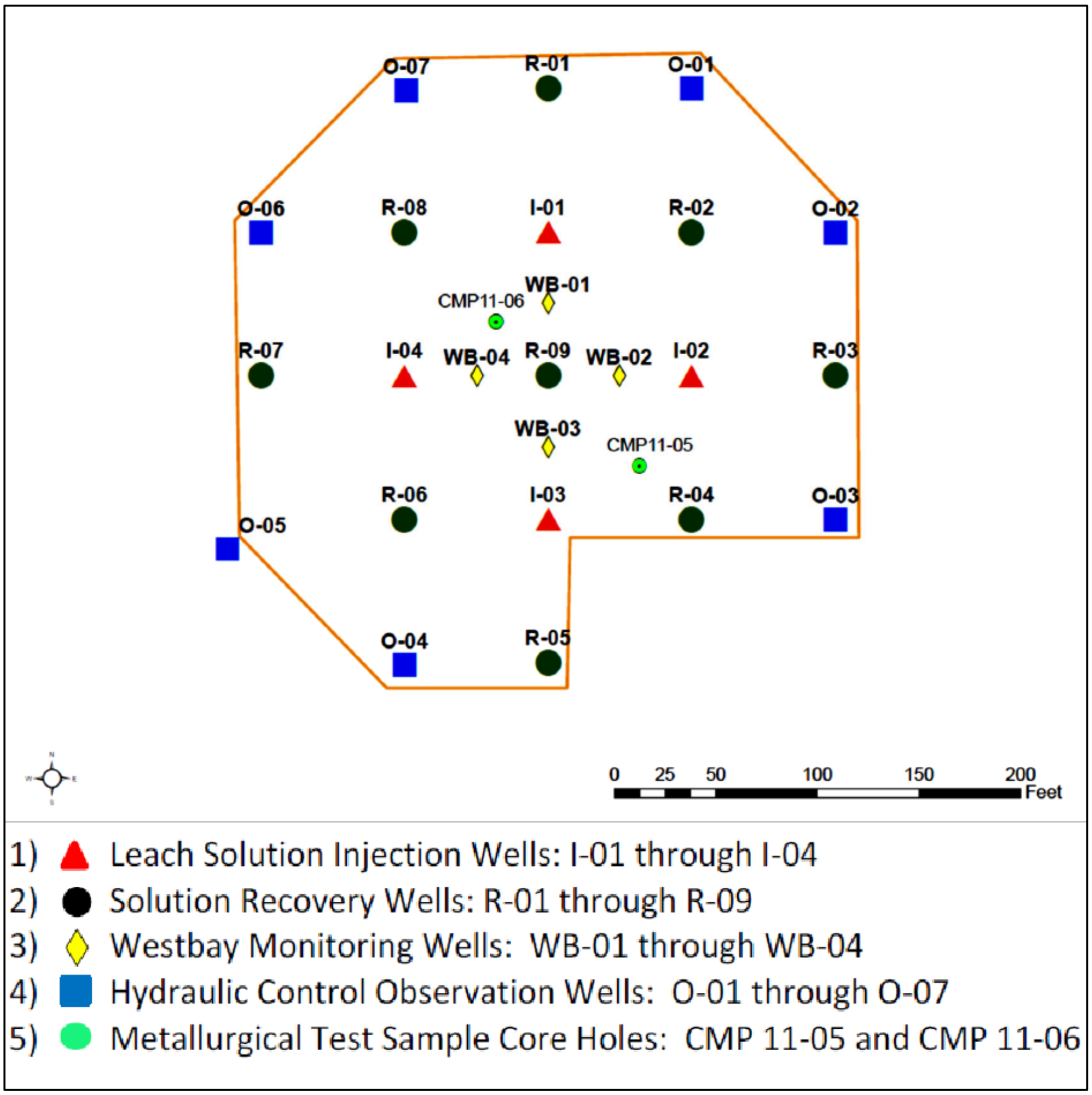


Figure 13-9: PTF ISCR Well Field Well Orientation

13.8 Production Test Facility – *Cont'd*

(a) Introduction – *Cont'd*

The well field schematic illustrates that well R-09 is the only recovery well located away from the perimeter of the field and at the center of four injection wells. The other eight recovery wells (R-01 to R-08) serve a dual function as both recovery wells and perimeter wells. As a result, these wells experience higher groundwater dilution than well R-09 and the typical conditions in a larger commercial well field. The commercial well field will use dedicated perimeter wells for hydraulic control and the majority of recovery wells will be interior and away from the perimeter of the well field. For these reasons, R-09 is considered the most representative of a typical commercial recovery well.

The ore block associated with R-09, centered on the recovery well and bound by the four injection wells (I-01 through I-04), is split into three zones in the vertical direction based on the screened areas of the injection and recovery wells. The R-09 block encompassing zones 1 through 3 is estimated to be about twice the average thickness of the overall deposit and contains 505,000 tons of ore at an overall grade of 0.52% equating to approximately 5.2 million pounds of contained copper. Table 13-4 summarizes the tons of ore and associated grades by zones for the R-09 block.

Table 13-4: R-09 Ore Block Head Grade by Zone Summary

Zone #	Zone Location	Elevation (ft bgs)	Ore Mass (Tons)	Total Copper Head (% TCu)	Acid Soluble Copper Head (% ASCu)	Contained Copper (lbs)
1	Top	520-650	96,000	0.33	0.16	631,000
2	Middle	650-890	179,000	0.49	0.31	1,770,000
3	Bottom	890-1200	230,000	0.61	0.41	2,810,000
1-3	**Total**	**520-1200**	**505,000**	**0.52**	**0.33**	**5,210,000**

Note: Totals may not add due to rounding

13.8 Production Test Facility – *Cont'd*

(b) Leaching Results

PTF ISCR operations initiated on December 5th, 2018 with the injection and recovery of water to establish a hydraulic control gradient and a flow field within the well field. Upon establishing and confirming sustained well field hydraulic control, injection of weak acidic solution into the well field commenced on December 15th, 2018.

A systematic and cautious operating strategy was employed during well field start-up and acidification. Operations prioritized hydraulic control conditions over ISCR metallurgical performance. Operational changes were made and monitored on a methodical basis, waiting to see the response from the system before another change was made. Changes to the injected solution resulted in a response time of weeks before the change became apparent in the recovery well solutions. This careful and methodical approach taken during the PTF operations allowed an extensive dataset to be collected but extended the time required to complete acidification of the leach area. The knowledge gained from this methodical approach has allowed development of a start-up operational strategy to expedite acidification of the commercial leach area.

The PTF operation successfully demonstrated sustained well field hydraulic control over the duration of ISCR operations.

Sweep Efficiency

Sweep efficiency is defined as the fraction of the pore space swept or contacted by the injected solution as it flows from injection to recovery well. Sweep efficiency increases over time as leaching progresses and more ore is contacted by process solutions. The ultimate sweep efficiency achieved over the duration of leaching indicates the proportion of the ore from which copper will be recovered.

To assess the extent of raffinate solution contact within the R-09 ore block, regular geophysical monitoring was employed to collect data on changes in electrical resistivity, or its inverse conductivity, in the subsurface over the duration of the leaching phase of the PTF demonstration. The leach solutions have a significantly higher conductivity than background solutions allowing the area being leached to be assessed over time. The geophysical monitoring sensor network allowed the upper 90% of the R-09 ore zone to be monitored.

For the purpose of estimating sweep efficiency, a measurable and consistent change from background conditions at a given point is considered indicative of relative sweep and the magnitude of that change may be attributable to leaching kinetics.

13.8 Production Test Facility – *Cont'd*

(b) Leaching Results – *Cont'd*

Sweep Efficiency – *Cont'd*

Using this approach, geophysical criteria were developed to determine which areas of the well field had been contacted by leach solutions and to monitor the progression of the leaching process.

The geophysical monitoring for R-09 found that all of the monitored ore zone was contacted by leach solutions in the first 5 weeks of leaching. Since the sensor network could not track leaching in the bottom 10% of the ore zone, the PTF was only able to demonstrate that sweep efficiency in the wellfield will be at least 90%. This result confirms the sweep model used for the project is suitable, and likely conservative, with a projected long term sweep efficiency of 90%.

Geophysical monitoring data collected following the first month of PTF operation indicated gradual progressive increases in conductivity changes month to month. Areas in the formation where injection flows were focused, specifically the middle portion of the ore body, measured the largest conductivity changes.

13.8 Production Test Facility – *Cont'd*

(b) Leaching Results – *Cont'd*

PLS Grade

After commencing PTF operations it took approximately 3.5-months for free acid to breakthrough the well field and be detected in PLS solution and another 2.5-months to adequately acidify the well field to establish effective leaching in R-09 as indicated by the PLS solution copper grade and pH. Prior to acid breakthrough all of the acid introduced to the well field was consumed, suggesting the system was initially acid starved and that it would be beneficial to apply higher raffinate flows and/or raffinate acidities during the initial months of the leach cycle.

Following acidification of the R-09 ore block, the PLS grades increased to a maximum 2.3 g/L copper and averaged a nominal 1.6 g/L copper over the duration of the leaching phase.

To test operational strategies to control solution distribution within the leach area, a reverse flow strategy was tested in the lower area (Zone 3) of R-09. The reverse flow configuration injected raffinate solution through the R-09 center well and temporarily repurposed the injection wells as recovery wells to maintain hydraulic control. The test was initially conducted for 12 days and, upon reverting back to normal flow configuration, a significant spike in PLS grade was realized, climbing from 0.5 g/L to 1.7 g/L copper. This strategy was tested several more times over the leaching phase producing similar increases in the PLS grade.

During the leaching phase, evidence of gypsum formation was detected in areas where the formation had not been fully acidified to the target leaching pH. Gypsum formation can impact both well screen and recovery well pump performance. The formation of gypsum fouling was effectively managed in the PTF through occasional mechanical swabbing and back flushing the recovery wells with raffinate solution. These strategies to manage gypsum fouling will be incorporated into the commercial operating plan.

Changing the pump set depth in the recovery wells in conjugation with use of inflatable packers to target specific zones in the formation was also tested to evaluate its effectiveness to influence leaching conditions and PLS grade. This strategy was employed several times over the duration of the leaching phase and in each instance resulted in increases to PLS copper grade in the order of 20% or more indicating its effectiveness at targeting flows to specific areas within ore block. Applying these movements over the course of the leach cycle is expected to minimize changes in PLS grades and improve the extent of solution contact within the formation.

13.8 Production Test Facility – *Cont'd*

(b) Leaching Results – *Cont'd*

Acid Consumption

As expected and consistent with typical leaching performance and the laboratory test work, the initial acid consumption per unit of copper extracted in the initial months of the operation was relatively high while the well field was being acidified and copper leaching was being initiated. As the leach cycle progressed and copper recovery increased the acid consumption rates significantly reduced.

Acid consumption after acid breakthrough to the end of the leaching phase under commercial raffinate acidity conditions averaged 8.1 lb/lb copper. Acid consumption continued to decrease as operations progressed with the acid consumption falling to 5.1 lb/lb copper over the final year (June 2019 to June 2020) and down to 4.6 lb/lb copper over the final 6 months (January 2020 to June 2020) of leaching under commercial conditions. Since a full leach cycle was not completed, overall acid consumption cannot be directly taken from the PTF results as consumption rates would be expected to continue to fall as leaching progressed.

At the end of the commercial leaching test, fresh acid addition stopped and leaching ramped down with a natural gradual decrease in raffinate acidity over a 4-month period which was followed by the subsequent shutdown of the SX/EW plant. Raffinate acid strengths gradually decreased from 10 g/L down to 1.5 g/L over this period. This ramp down period facilitated further data collection to understand effects low-acidity raffinate conditions have on leaching performance. With inclusion of the ramp down period, the acid consumption following acid breakthrough to the end of October 2020 was reduced to 3.8 lb/lb Cu.

During the leaching phase, various raffinate acid strengths between 10 g/L to 15 g/L were evaluated to expand understanding of the effect on leaching kinetics which informed the updated project leach model. Additional data collected from the 4-month leaching ramp down period provided data to calibrate the project leach model under low acidity conditions. The data indicated a potential opportunity to increase copper recovery by extending the economic life of a well through low-acidity leaching in the commercial operation.

13.8 Production Test Facility – *Cont'd*

(b) Leaching Results – *Cont'd*

Recovery

The design and purpose of the PTF well field dictated that the primary function of R-09 was to establish a cone of depression and maintain an inward hydraulic gradient towards the center of the well field; however, R-09 also served as the primary copper production well for the PTF. As a result of this dual duty, the PLS produced from R-09 was subject to more dilution than will be experienced in a commercial well field operation.

The SX/EW process plant operations commenced in mid-March 2019, following a 4 month initial leaching period, and was shutdown in October 2020, 4 months after fresh acid addition to raffinate was stopped. For its entire operational run, the plant operated at a high average availability of 99.9% and produced a total of 1.1 million pounds of high-grade copper cathode product from the ISCR leach solutions. Of this, 62% is attributable to R-09, for an estimated recovery of 13% of the contained copper within the R-09 ore block. The PTF leaching was terminated early in the leach cycle and was never intended to operate long enough to achieve commercial recovery.

The solution chemistry produced from the PTF ISCR operations did not present any chemistry challenges to the process plant, allowing the plant to operate efficiently and reliably over the duration of plant operations.

PLS feed flow to the plant averaged 150 gpm containing PLS grade of 1.2 g/L copper. The average plant PLS grade was lower than the grade produced in R-09 due to dilutive edge effects from the perimeter recovery wells in the test field. The SX plant maintained high extraction rates averaging 93% over the operating period. Good quality electrolyte free of any deleterious elements was also maintained and minimal crud was generated over the duration of the operation.

The high-quality electrolyte produced in the plant facilitated the electrowinning circuit to operate at high current efficiencies averaging 97% with an applied current density averaging 21 Amps/ft^2.

13.8 Production Test Facility – *Cont'd*

(c) Rinsing Results

To demonstrate restoration of the aquifer water quality to prescribed levels following leaching, the PTF well field transitioned to a rinsing configuration after the shutdown of the SX/EW plant. To minimize freshwater use and reduce required water impoundment storage capacity, an acidic reverse-osmosis water treatment plant was brought online at the end of January 2021 to test the technology and support PTF rinsing.

Since commencement of PTF rinsing, sulfate concentrations from recovered solutions in R-09 have depleted by more than 60% from an initial concentration of 8,200 ppm to below 3,000 ppm.

Unlike the lab test work where rinsing was completed at the end of leaching, PTF rinsing commenced during the strongest portion of the leach cycle which impacts the reactivity of the ore and resultant solution chemistry produced when contacted with rinse solution. Due to other constraining factors, the initial 9 months of the PTF rinsing operation were completed at lower than ideal flows with partial recirculation of recovered rinse solutions. As a result, PTF rinsing isn't explicitly analogous to the lab test work or to rinsing in commercial operations.

Overall, the sulfate concentrations in recovered solutions from the PTF well field continue to steadily decline as the rinsing phase advances. The acidic reverse-osmosis water treatment plant used to support PTF rinsing has been demonstrated to reliably treat recovered rinse solutions to produce water of a suitable quality to effectively rinse the leached PTF well field. Based on this result a comparable water treatment plant will be used in the commercial operation to support commercial well field rinsing.

As PTF rinsing continues, data collected testing different flow rates and flow configurations including the reverse flow configuration will be used to inform the commercial projects operational strategies and refining the project rinsing model.

13.8 Production Test Facility – *Cont'd*

(d) Conclusions

- The PTF was successful in demonstrating that hydraulic control of process solutions in the ISCR well field could be established and maintained to ensure protection of underground sources of drinking water. It has also further confirmed that the oxide ore zone behaves hydraulically as an equivalent porous media.

- While maximizing copper production from the PTF was not an objective of the testing, PTF operations did provide valuable data to test operational controls and strategies to inform future commercial scale operations. Employment of strategies such as reverse flow, use of inflatable packers to target areas of the formation, and varying acid application rates through increased raffinate injection flows and or acid strengths all proved to be beneficial tools to use in the commercial leaching operation.

- During the leaching phase, the PTF well field operated at a high level of availability, with relatively few problems. Minor issues associated with the recovery well pumps and motor selection were rectified early in the operation resulting in the high availability realized over operation.

- Geophysical monitoring confirmed that the modelled sweep efficiencies can be achieved within the central block of the PTF and that the sweep model used is appropriate.

- Commercial PLS grades were achieved from the center well.

- In the commercial facility the initial acidification of the well field will be improved through use of reverse flow at start-up combined with an earlier ramp up of acid application rates.

- Adjusting pump depths and packer positions over the course of the leach cycle are effective strategies to target leaching in zones to maximize sweep efficiency and manage changes in PLS grade. Staggering these movements more efficiently as well as adjusting pumping rates will be easier to do in the larger commercial ISCR operation.

- The SX/EW achieved a high availability of 99.9%, producing 1.1 million pounds of high-grade copper cathode product. The solution chemistry introduced from the PTF ISCR operations did not present any chemistry challenges to the process plant, allowing the plant to operate efficiently and reliably with high extraction rates, low crud generation and high electrowinning current efficiencies.

13.8 Production Test Facility – *Cont'd*

(d) Conclusions – *Cont'd*

- The PTF leaching phase generated valuable field data, including acid consumption and leach kinetics, which has been used to bridge the scale up between laboratory data and the commercial operation. The PTF operating data combined with the laboratory test data has allowed development of more sophisticated leach models for the project.

- Following a leaching phase, the PTF transitioned into a rinsing phase which is currently in progress. Sulfate concentrations in solutions recovered from R-09 are being used to track rinsing progress which continue to steadily decline as rinsing progresses.

- Acidic reverse-osmosis water treatment has been tested and demonstrated to be able reliably produce rinsing quality water from process streams.

- Operating strategies for rinsing, such as employing reverse flow configuration, are being tested and the data being collected will be used to inform the commercial operational strategies and development of an updated rinsing model.

13.9 Metallurgical Performance Estimation

Previous copper leaching performance estimates were made based on modelling of the laboratory leaching results combined with modelled sweep efficiency and expected copper losses to excess solutions. There was no field leaching data available for Florence at the time to model or calibrate the performance estimates.

The construction and operation of the PTF has not only demonstrated that ISCR can be safely conducted at Florence but has also generated leaching data which allows the creation and validation of a more sophisticated leaching model based on the observed performance of the well field. The updated leach model also considers the key operating control parameters which have proven effective during PTF operations, and the model allows these parameters to be adjusted to develop the commercial production plans.

(a) Leach Modelling

The leach model developed for the 2023 production plan uses a kinetic leach curve to model copper release from the ore combined with a multiple flow path methodology to simulate the flow between injection and recovery wells. The kinetic leach curve model is derived from analysis of the laboratory test work and accounts for the proportion of fast and slow leaching copper in the ore block being modelled. The multiple flow path method uses the sweep efficiency curve in the determination of the flow distribution between injection and recovery wells. The model allows acid application rates to be changed through raffinate flow rate and raffinate acid strength adjustments as operating controls for leaching. The model has been validated using the PTF operating data and has been able to closely predict the observed PTF performance.

The leach model predicts copper extraction, PLS grade, and acid consumption over time for an ore block based on its grade (total copper and acid soluble copper) and the acid application rate (flow and raffinate acidity) selected. This modelling allows the effects of different operating conditions to be modelled and assessed for different ore blocks. The extraction achieved on an ore block is based on an economic cut-off rather than a metallurgical limit. The economic cut-off is determined based on the value of the incremental copper recovered in a block versus the associated operating cost for the well and processing the solutions to produce saleable cathode copper.

The modelled PLS grade versus copper extraction curve for an average grade ore block at 0.36% total copper and 0.24% acid soluble copper at nominal operating conditions of 10 g/L acid strength and raffinate feed flow rates of 0.1 gpm/ft is presented in Figure 13-10.

13.9 Metallurgical Performance Estimation – *Cont'd*

(a) Leach Modelling – *Cont'd*

To illustrate the effect that varying operating conditions have on both PLS grade and copper extraction kinetics, additional curves at varying conditions have been overlayed to the base case nominal conditions.

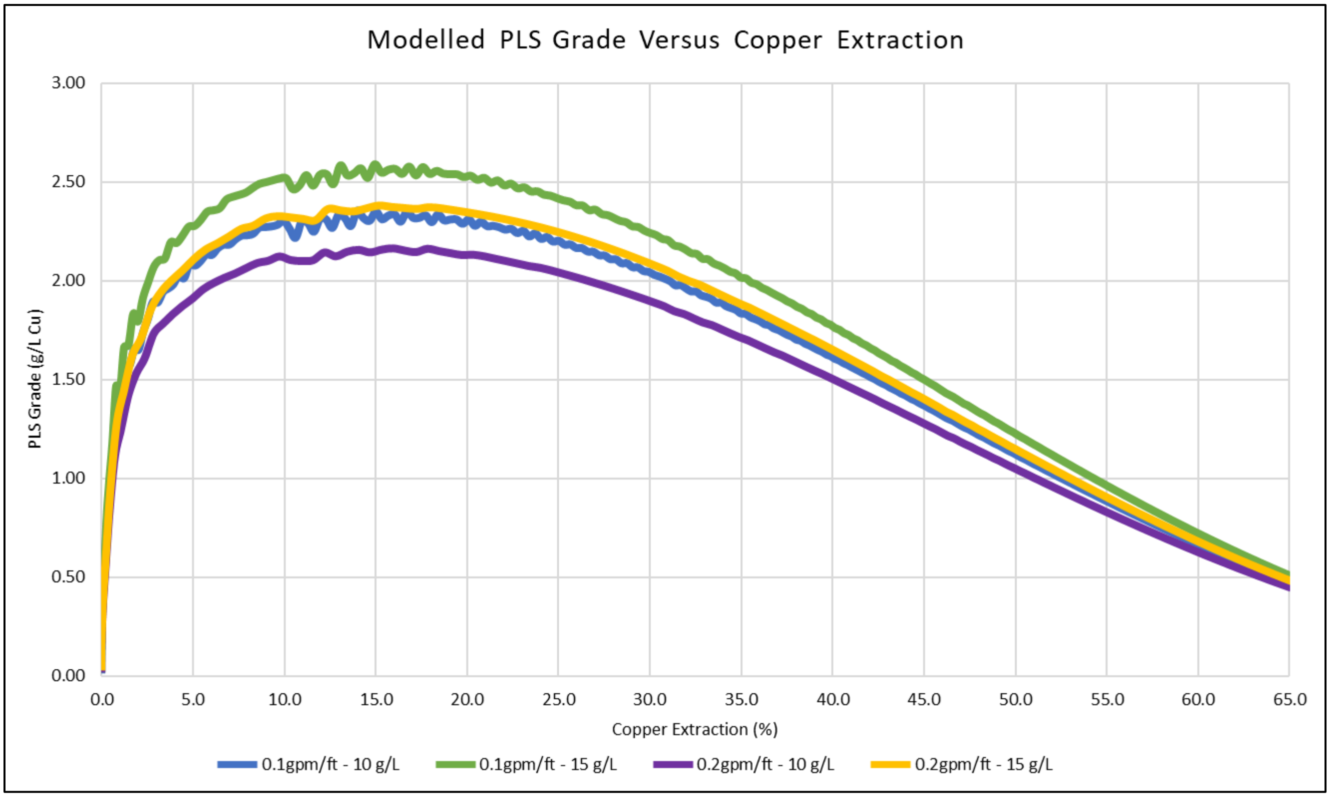


Figure 13-10: Model Copper PLS Grade with Varied Operating Conditions

Figure 13-10 illustrates that increasing the raffinate acidity at a constant raffinate application rate increases the PLS grade over the leach cycle. The figure also illustrates that increasing the raffinate application rate at a constant raffinate acidity results in a predicted lower PLS grade. These model results correspond to the effects observed during the PTF operation.

13.9 Metallurgical Performance Estimation – *Cont'd*

(a) Leach Modelling – *Cont'd*

The effect on PLS grade illustrated with varying acid application rates also has an impact on the kinetic rate of leaching. Higher raffinate acidities and higher raffinate flow rates both increase the rate of copper recovery from the ore and allow wells to complete the leach cycle faster. It is important to note that increased raffinate acidity also increases acid consumption and raises production costs changing the economic cut off for the block.

Given operating conditions influence the overall leach kinetics, the leach cycle for each portion of the well field is determined in the extraction plan where operating conditions are set to meet the commercial project production goals within the project operational constraints.

(b) Overall Recovery Projection

The projected overall copper extraction for the commercial well field is calculated using the recovery model and a well field progression with operating conditions set in the project extraction plan. The acid consumption is calculated based on the operating conditions employed in the plan to achieve the development and production sequence in the plan. The recovery to cathode copper accounts for the modelled copper extraction in the well field and surface losses of leached copper through solution bleed to maintain site water balance.

The updated projections for total copper extraction for the entire commercial well field is conservatively predicted to be 66.5% at an acid consumption estimate of 6.0 lb/lb copper based on the extraction plan described in Section 16. Accounting for solution losses to maintain water balance, a total recovery to cathode is projected to be 65.8%. The PLS grade feeding the commercial SX/EW plant is predicted to contain an average 1.7 g/L of copper.

13.10 Metallurgical Conclusions

- The long history of metallurgical testing for the project in conjugation with PTF operations has demonstrated the site oxide copper mineralization is amenable to leaching via ISCR.
- Over various test phases, improvements have been made to lab scale testing apparatus and methodologies evolving from column tests to box tests to PRT's, culminating in the SLT to better simulate scale up of ISCR and produce mature raffinate solutions resembling those predicted for the full scale operation. Testing using these mature solutions have facilitated development of leaching kinetic models and acid consumption estimates that better represent commercial ISCR operation.
- A rinse flow sheet was developed from laboratory test work and includes multi-stage rinsing with water and sodium bicarbonate solutions to restore the aquifer water quality after copper recovery is concluded.
- PTF demonstration leaching operated for 22 months, including a 4-month ramp down. The PTF well field subsequently transitioned to a rinsing phase which is in progress.
- The PTF has been successful in demonstrating hydraulic control could be achieved and maintained in the Florence Copper well field over the entire leaching phase and rinsing phase to date, validating the oxide ore zone behaves hydrologically as an equivalent porous media thereby ensuring protection of underground sources of drinking water.
- While the PTF was not designed nor permitted to run a full leach cycle to determine ultimate ore block recoveries, the opportunity was taken to evaluate previous laboratory test work results, test operational controls and strategies, and collect scale up process data which has facilitated the development of more sophisticated leaching models calibrated to the observed performance of the PTF well field.
- Employment of operating strategies such as reverse flow, use of inflatable packers to target specific areas of the formation, and varying acid application rates through increased raffinate injection flows and or acid strengths all proved to be beneficial controls for the operation and will be employed in commercial operations.
- Over the duration of the PTF's leaching phase solution chemistry introduced from the ISCR operation did not present any chemistry challenges to the SX/EW process plant, allowing the plant to operate efficiently and reliably producing 1.1 million pounds of high-grade copper free of delirious impurities.

13.10 Metallurgical Conclusions – *Cont'd*

- The refined leach models predict copper extraction, PLS grade and acid consumption over time for an ore block based on its grade (total copper and acid soluble copper) and the acid application rate (flow and raffinate acidity) selected. The production performance from each ore block will be dynamic and a function of the commercial extraction plan. The total recovery to copper cathode is conservatively projected to be 65.8% at an average PLS grade of 1.7 g/L copper for the project.

SECTION 14

MINERAL RESOURCE ESTIMATE

SECTION 14: MINERAL RESOURCE ESTIMATE

Table of Contents

Page

List of Tables

List of Figures

14.1 Introduction

The most recent statement of the Florence mineral resource was published in 2017 and documented in the technical report "NI 43-101 Technical Report, Florence Copper Project, Florence, Pinal County, Arizona" effective January 16, 2017, issued on February 28, 2017, amended and restated on December 4, 2017 and filed on www.sedar.com. However, the most recent update to the Florence mineral resource estimate was completed in 2010 and documented in the technical report "NI 43-101 Technical Report for the Florence Project, Pinal County, Arizona, USA" prepared by SRK Consulting. The report is dated September 30, 2010, as filed on www.sedar.com. The last exploration work on the Florence resource was documented in the technical report titled "NI 43-101 Technical Report Pre-Feasibility Study, Florence, Pinal County, Arizona" by M3 Engineering & Technology Corporation, dated March 28, 2013, filed on www.sedar.com.

The 2023 mineral resource estimate update is based on the same geological framework that was developed in the 2010 resource update, with additional copper assay data from four drill holes. Exploratory data analysis was performed to extend the analysis completed in the 2010 update. The 2023 study confirmed earlier findings that copper mineral zones form the major control on the distribution of total and acid soluble copper. Although recent studies have found no major changes in the geological understanding and data set, the update included changes to the block model structure, geological coding, and grade estimation strategy. In addition, a change in the estimate of intact rock density resulted from a review of previously collected data and new test samples acquired from historical drill core.

Changes incorporated in the 2023 update are designed to simplify model structure and streamline analysis and forecasting by mine operations. Project coordinates were updated to the 1983 North American Datum (NAD83 in feet) and the block model was rotated to align model orientation with the production well plan.

The approach for converting the geological framework into a block model was modified from previous models to obtain a simpler model structure that is consistent with analysis of changes in copper grade and mineralogy across mineral zone contacts. The oxide zone includes two major styles of copper-iron mineralization that were explicitly modeled as estimation domains for controlling copper grade estimates. Geostatistical characteristics of copper mineralization were updated and included consideration of these estimation domains and major faults as geostatistical domain boundaries. Mineral Resources are declared with updated assumptions on the mineable geometry and revised economic and metallurgical assumptions.

14.2 Drill Hole Database

The drill hole database used for the 2023 resource estimate is slightly larger than the previous 2010 estimate, adding 47 drill holes within the resource area, four of which have copper assays. Most holes were drilled for hydraulic control or metallurgical testing and were not assayed. A total of 555 drill holes are now present within the rotated model area, 396 of which are assayed for %TCu. The model area includes 633,834 feet of total drilling and 336,321 feet that were sampled and assayed for total copper as shown in Table 10-2 and Table 14-1. Most holes without copper assays are rotary holes that were drilled for groundwater monitoring and aquifer testing or as historical condemnation and assessment holes. These boreholes were logged for lithology but not copper mineralogy.

The majority of the TCu assays (55%) are from the sulfide zone reflecting the thickness of this zone and the focus of the initial exploration efforts. Thirty-nine percent of the TCu assays are within the oxide and transition zones and a minor amount (5%) of assayed footage is in the basin-fill formations. Relative to the total number of assayed intervals, 51% have been assayed for acid soluble copper (ASCu), most of which are in the oxidized mineralization. Within the oxide and transition zones, 85% of the TCu assays have corresponding ASCu analyses, while only 30% of the sulfide footage include ASCu assays. Due to the importance of ASCu grade for metallurgical forecasting, missing values were derived from the TCu values using the factors described in Section 14.5.

Table 14-1: Summary of Assayed Intervals in Model Area

Category	Number of TCu Assays	Footage Assayed for TCu	Number of ASCu Assays	Footage Assayed for ASCu
Basin-Fill MINZ 0	2,905	20,427	388	3,277
Oxide MINZN 1, 2, 3	22,782	128,652	18,826	108,299
Transition MINZN 4	1,057	5,839	980	5,394
Sulfide MINZN 5	36,009	180,724	10,529	53,947
Uncategorized MINZN -1, -2	71	679	38	352
Total	**62,824**	**336,321**	**30,761**	**171,269**

14.3 Deposit Modelling

Based on previous geological and statistical studies, the major controls on the distribution of copper grade and leachable mineralogy are the extent of supergene weathering below the top of bedrock and relative proportions of copper and iron oxide mineral zones that reflect the character of the precursor sulfide mineralogy. Copper-iron mineralogy of individual 5- to 10-foot drill intervals is characterized by a mineral type code that defines samples as: Copper Oxide, Iron Rich Oxide (leached cap), Transition (partially oxidized supergene-enriched sulfides) or Sulfide (chalcopyrite-pyrite). The supergene weathering profile indicated by the spatial distribution of the mineral types was somewhat simplified as three sub-parallel Ore Zone surfaces defined as:

- Oxide – Top of continuous copper-iron oxide mineralization that is typically coincident with the top of bedrock
- Transition – Top of partially oxidized chalcocite-chalcopyrite
- Sulfide – Top of continuous chalcopyrite, lacking supergene oxidation or enrichment

The Oxide Ore Zone largely consists of Copper Oxide and Iron Rich Oxide mineral types. Approximately 3 percent of the Oxide Ore Zone drill intervals consist of small discontinuous intervals of Transition and Sulfide intervals. Rare and discontinuous intervals of Oxide and Transition mineral types also occur just below the top of the Sulfide Ore Zone, comprising less than 1 percent of the total ore zone.

The Transition, where present, consists of a thin (generally less than 50 feet) zone of partially oxidized sulfides and interlayered zones of oxide and sulfide mineralization. Chalcocite partially replacing chalcopyrite and forming surfaces on pyrite is common. Elsewhere, copper-iron oxide mineralization shows an abrupt (less than 10 feet) transition with underlying chalcopyrite-pyrite mineralization.

Copper grade in the Oxide Ore Zone is strongly controlled by the presence of chrysocolla and associated copper oxide minerals. While Copper and Iron Oxide zones are locally intermingled, higher-grade Copper Oxide samples are generally grouped in the central and upper portions of the Oxide Ore Zone, while Iron Rich mineralization occurs along the periphery and in a central core zone at depth. The overall geometry of the deposit is a high-grade core that transitions at depth into an inverted cup-shaped zone of higher grades. This vertical and horizontal zonation within the Oxide Ore Zone was controlled by an Oxide Estimation Zone that corresponds to the Copper and Iron Rich Oxide mineral types.

14.3 Deposit Modelling – *Cont'd*

The overall geometry of the Oxide Ore Zone consists of near horizontal thin zones (<150 feet) in the eastern and southern boundaries of the deposit. The Oxide Ore Zone rapidly thickens along the hanging wall of the west-dipping Party Line and NNW-dipping Ironwood Faults while maintaining a sub-horizontal to slight westward plunge. The bedrock rock and top of sulfide surfaces are both off-set across the west-dipping Sidewinder fault. In order to correctly account for the changing geometry of the mineral deposit, the deposit was subdivided into four fault blocks:

- West Block – Hanging wall of the Sidewinder fault
- Central Block – Footwall of the Sidewinder and hanging wall of the Party Line and Ironwood faults
- East Block – Footwall of the Party Line fault
- South Block – Footwall of the Ironwood fault and hanging wall of the Party Line fault

Wireframe solids were generated from previously-constructed gridded wireframe of the Ore Zone and fault surfaces. Fault block codes were assigned to the 3D block model on a whole block basis. Sub-horizontal surfaces that include surface and bedrock topography and the three Ore Zones were coded as block partials to improve local accuracy in reporting resource tonnages. The major geological zones are shown in Figure 14-1.

14.3 Deposit Modelling – *Cont'd*

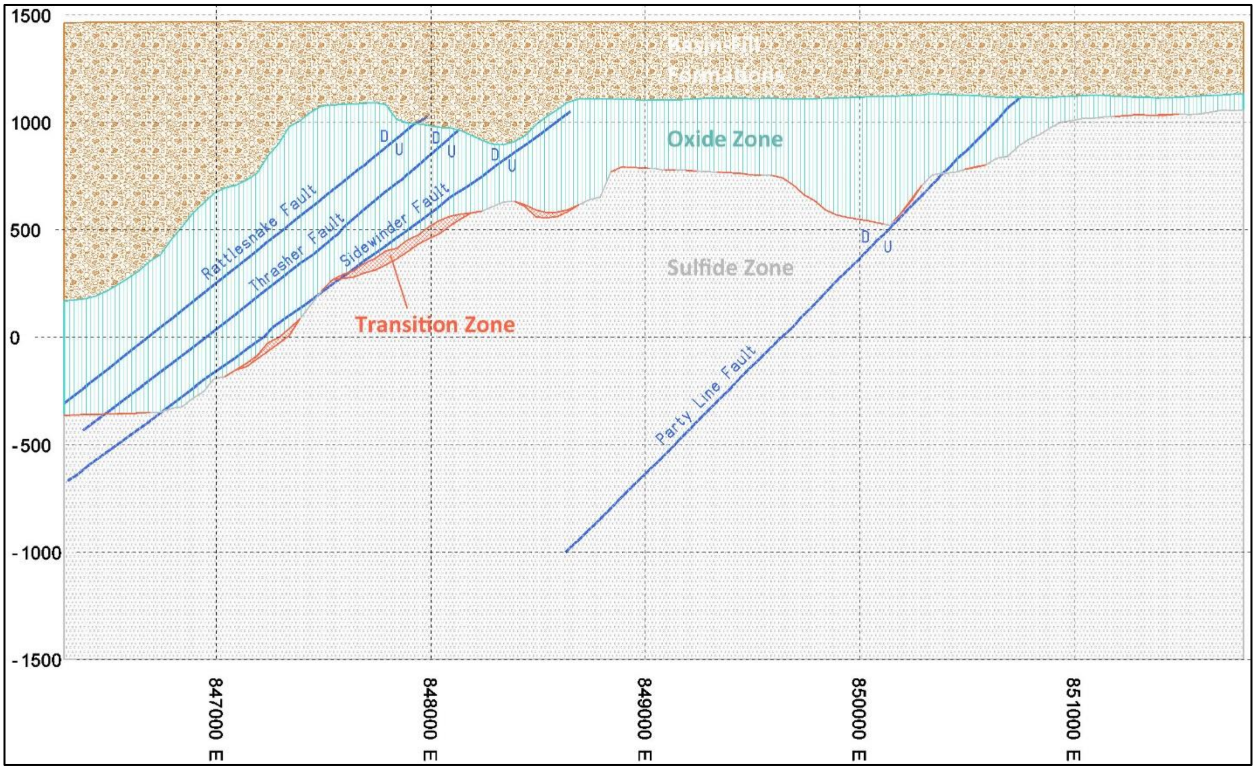


Figure 14-1: EW Section 745746.82N Looking North Showing Subsurface Boundaries Relevant to Resource Estimation and Drill Holes

Oxide Estimation Domains were constructed by ordinary kriging the indicator for Copper Oxide mineralization. The indicator value of one (1) was assigned to assay intervals composed of Copper Oxide and Transition mineral types within the Oxide Ore Zone. Iron Rich Oxide and Sulfide mineral types within the Oxide Ore Zone were assigned an indicator value of zero (0). Geostatistical analysis and indicator kriging runs were limited by fault block to account for the differences in proportion of Copper Oxide mineralization and ore body geometry.

14.3 Deposit Modelling – *Cont'd*

The method used for determination of Oxide Estimation Domains was to krige the indicator variable within each fault block, limited to Oxide Ore Zone. The Copper Oxide domain was assigned to blocks with a kriged indicator greater than or equal to 0.5. The Iron Rich Oxide domain was assigned to the remaining blocks. The kriging parameters were adjusted to achieve a proportion of indicator kriging (IK) Copper Oxide tonnage to be within ±3% of the tonnage indicated by the declustered 50-foot composite. The objective was successfully achieved in the West, Central and East fault blocks, as shown in Table 14-2. Copper Oxide mineralization in the South Block accounts for only 10% of the tonnage and occurs in a few isolated drill holes surrounded by Iron Rich Oxide mineralization. The IK results in this fault block were ignored and the block as assumed to consist only of Iron Rich Oxide.

The IK results were converted to Estimation Domain codes at the 0.5 IK threshold. The border zone was smoothed and isolated small excursions of one domain into the other were cleaned. The block codes were then back-tagged to the composite file to ensure proper allocation of the composite data during interpolation.

Table 14-2: Comparison of the Ratio of Oxide Estimation Domain Tonnage with Declustered Composites

Fault Block	FLTBK No.	Mst above IK Cut-off		Ratio Cu Ox/Total		
		IK >0.0	IK >0.5	Blocks	Comps	Pct Diff
West	1	360.96	225.58	0.625	0.613	2.0%
Central	2	244.70	178.61	0.730	0.707	3.3%
East	3	40.34	18.39	0.456	0.455	0.1%
South	4	64.04	3.62	0.057	0.118	-52.2%
Total		**710.04**	**426.20**	**0.600**	**0.599**	**0.3%**

14.4 Drill Hole Composites

Composites were created on down-hole 25-foot intervals, honoring the Ore Zone geology codes. Total copper, acid-soluble copper, and adjusted acid-soluble copper were mathematically composited as a length-weighted average. Composite codes were assigned according to the length-weighted majority code. Composites below 7 feet in length were merged with the preceding composites.

14.5 Statistical Analysis

Statistical distribution of total copper in the Florence database was reviewed, verifying the results of previous studies on major geological features that control total copper grade. Codes from geological logging were used to classify the mineral zone (MINZN), rock type (ROCK), and alteration mineralogy intensity. Codes tagged to the drill hole assay intervals from wireframe solids were used for ore zone (OREZN), oxide estimation domain (EDOXD), and fault block (FLTBK).

Classification and tree analysis during BHP’s tenure found that mineral zone, and the intensity of orthoclase (potassic) alteration provide important control on copper grade. In addition, previous studies have indicated that quartz monzonite tends to host higher grade mineralization than granodiorite porphyry. SRK (2010) confirmed that mineral zone provides important control on the distribution of total and acid-soluble copper values, but study documentation recommended that combinations of geological units (e.g., rock type and alteration) should be further reviewed.

Mean and standard deviation of the domains limited by ore zone (OREZN) and mineral types (MINZN) are listed in Table 14-3. The Oxide Ore Zone is dominated by the Copper Oxide and Iron Rich Oxide mineral types (MINZN 1, 2 and 3), with about 3% of the intervals consisting of Sulfide and Transition types. Within the Oxide Ore Zone, elevated copper grades are largely confined to MINZN 1 and 2, which are grouped as the Oxide Mineral Zone for estimation purposes. The Iron Rich Oxide mineral type is consistently low grade, comprising approximately a third of the Oxide Ore Zone.

Sulfides comprise 98% of the Sulfide Ore Zone, with rare and small intervals of oxidized mineralization near the Oxide-Sulfide contact. The Transition Ore Zone is a small and spatially discontinuous domain, with 80% of the intervals consisting of Transition and Sulfide (MINZN 4 and 5). These sulfide-bearing samples are characterized by elevated TCu grade relative to the Oxide and Sulfide Ore Zones, due to the presence of chalcocite enrichment.

14.5 Statistical Analysis – *Cont'd*

Table 14-3: Statistical Summary of Assay Intervals in Ore and Mineral Zone categories

Population		TCu			ASCu		
OREZN	**MINZN**	**Length**	**Mean**	**Std Dev**	**Length**	**Mean**	**Std Dev**
Oxide	1: Cu Oxide	8,347	0.56	0.45	8,152	0.41	0.34
	2: Cu-Fe Oxide	73,967	0.39	0.29	71,185	0.27	0.23
	3: Fe Oxide	39,607	0.08	0.08	24,144	0.04	0.05
	4: Transition	2,098	0.40	0.38	2,023	0.21	0.21
	5: Sulfide	1,818	0.22	0.22	1,228	0.05	0.05
	Total	**125,837**	**0.30**	**0.30**	**106,732**	**0.23**	**0.24**
Transition	1: Cu Oxide	65	0.40	0.12	65	0.28	0.17
	2: Cu-Fe Oxide	617	0.46	0.37	587	0.29	0.19
	3: Fe Oxide	95	0.12	0.11	65	0.05	0.04
	4: Transition	2,292	0.56	0.54	2,212	0.19	0.15
	5: Sulfide	980	0.40	0.37	830	0.07	0.09
	Total	**4,049**	**0.49**	**0.48**	**3,759**	**0.18**	**0.16**
Sulfide	1: Cu Oxide	121	0.45	0.31	116	0.29	0.25
	2: Cu-Fe Oxide	1,061	0.30	0.21	1,006	0.19	0.16
	3: Fe Oxide	1,274	0.09	0.14	779	0.04	0.06
	4: Transition	1,420	0.34	0.30	1,135	0.11	0.10
	5: Sulfide	176,532	0.26	0.23	51,649	0.02	0.03
	Total	**180,406**	**0.26**	**0.23**	**54,684**	**0.02**	**0.05**
Total	1: Cu Oxide	8,553	0.55	0.45	8,353	0.41	0.34
	2: Cu-Fe Oxide	75,902	0.38	0.29	72,940	0.27	0.23
	3: Fe Oxide	41,533	0.08	0.08	25,259	0.04	0.05
	4: Transition	5,809	0.45	0.44	5,369	0.18	0.17
	5: Sulfide	179,665	0.26	0.23	53,707	0.02	0.04
	Total	**311,462**	**0.28**	**0.27**	**165,628**	**0.16**	**0.22**

As previously discussed, three fault surfaces were used to construct four fault blocks within the extent of the block model. Statistical summary of copper in assay intervals are presented in Table 14-4 for the fault blocks, categorized by mineral zones. Cumulative frequency curves of TCu for the Oxide Ore Zone assay intervals are presented in Figure 14-2.

14.5 Statistical Analysis – *Cont'd*

Cumulative frequency curves for the West and Central fault blocks (FLTBK 1 and 2, respectively) are reasonably similar to each other and approximate a bimodal distribution that is best displayed by the Central FLTBK 2. These correspond to the high grade population of the Copper Oxide mineral type (MINZN 1+2) and the low-grade population of Iron Rich Oxide (MINZN 3). The cumulative frequency curves for Fault blocks 3 and 4 plot as single log-normal distributions. Copper grades in the East block (FLTBK 3) are similar as those of West and Central, although at a significantly lower ratio of Copper Oxide to Iron Rich Oxide mineral types (Table 14-5). Mineralization in the South fault block (FLTBK 4) is of particularly low grade, as it largely consists of the Iron Rich Oxide mineral type.

The Transition Mineral Zone is the highest grade population of all four fault blocks, but occur as a small proportion of each fault block. The underlying Sulfide Mineral Zone mirrors the copper grade distribution of the Copper Oxide zone, averaging 0.28% Cu in the West and Central Blocks, with lower grades in the peripheral West and South Blocks.

Table 14-4: Statistical summary of assay intervals, categorized by fault block (FLTBK) and mineral zone (MINZN)

Population		TCu			ASCu		
FLTBK	**MINZN**	**Length**	**Mean**	**Std. Dev.**	**Length**	**Mean**	**Std. Dev.**
1 West	1+2: Cu Oxide	18,258	0.40	0.31	17,552	0.28	0.22
	3: Fe Oxide	10,016	0.08	0.09	5,679	0.05	0.07
	4: Transition	696	0.37	0.27	666	0.19	0.13
	5: Sulfide	8,353	0.28	0.20	2,520	0.04	0.05
	Total	**37,323**	**0.29**	**0.28**	**26,417**	**0.20**	**0.22**
2 Central	1+2: Cu Oxide	26,818	0.41	0.32	25,882	0.30	0.26
	3: Fe Oxide	10,171	0.09	0.08	7,119	0.05	0.05
	4: Transition	2,461	0.48	0.49	2,257	0.18	0.18
	5: Sulfide	87,428	0.28	0.23	28,235	0.02	0.04
	Total	**126,876**	**0.30**	**0.26**	**63,494**	**0.14**	**0.22**
3 East	1+2: Cu Oxide	2,336	0.37	0.33	2,172	0.25	0.28
	3: Fe Oxide	1,834	0.09	0.07	850	0.03	0.04
	4: Transition	246	0.56	0.54	236	0.14	0.26
	5: Sulfide	19,957	0.19	0.24	3,504	0.02	0.03
	Total	**24,373**	**0.20**	**0.26**	**6,762**	**0.10**	**0.20**
4 South	1+2: Cu Oxide	400	0.11	0.14	262	0.05	0.08
	3: Fe Oxide	3,238	0.04	0.03	1,184	0.01	0.01
	4: Transition	46	0.15	0.12	39	0.07	0.09
	5: Sulfide	623	0.06	0.05	82	0.02	0.04
	Total	**4,308**	**0.05**	**0.06**	**1,568**	**0.02**	**0.04**

14.5 Statistical Analysis – *Cont'd*

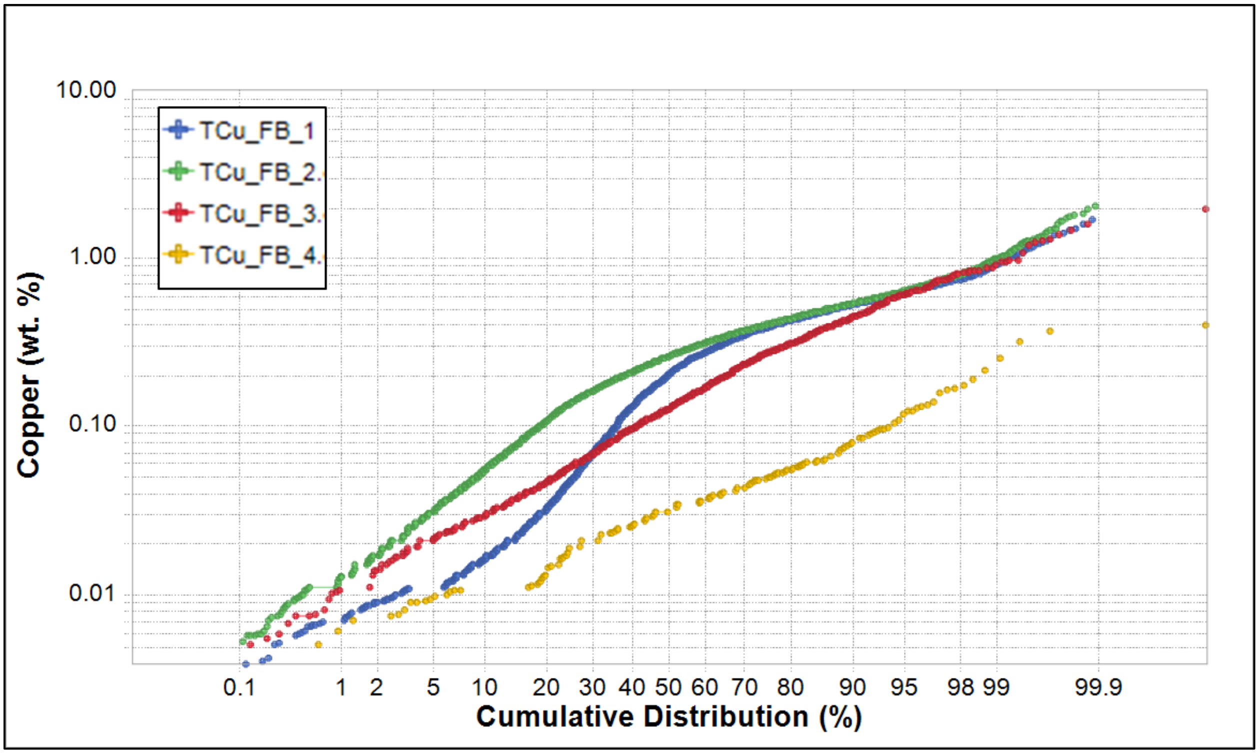


Figure 14-2: Cumulative distribution curves of total copper grades in assay intervals in the Oxide Ore Zone categorized by Fault Block

The acid-soluble analysis is an important indicator of the abundance of leachable copper minerals in the mineral deposit. In order to obtain the best estimate of soluble copper in the resource model, the TCu values were factored to replace missing ASCu values. A review of ASCu/TCu ratios in the Oxide and Transition Mineral Zones indicates that the average ratio varies by mineral zone due to the relative proportions of highly soluble minerals, such as chrysocolla and low-solubility minerals, such as chalcocite. Copper mineralogy in the Sulfide zone is dominated by chalcopyrite, which is essentially insoluble in sulfuric acid.

Population means were calculated for samples with both TCu and ASCu limited by mineral type and Ore Zone, presented in Table 14-5. The average ASCu/TCu ratios determined from the respective mean values were used to calculate the replacement for missing ASCu from assay interval TCu values. The original plus replaced acid-soluble copper assays are stored in a separate variable, labeled SCuFX.

14.5 Statistical Analysis – *Cont'd*

Table 14-5: Mean ASCu/TCu ratio of assay intervals with TCu and ASCu values

Ore Zone	MINZN	Count	Length	TCu	ASCu	ASCu/TCu
Oxide	1: Cu Oxide	1,489	8,152	0.56	0.41	0.727
	2: Cu Oxide	12,149	71,161	0.39	0.27	0.699
	3: Fe Oxide	4,319	24,144	0.10	0.04	0.412
	4: Transition	390	2,023	0.41	0.21	0.503
	5: Sulfide	237	1,228	0.26	0.05	0.199
Sulfide	1: Cu Oxide	36	181	0.44	0.29	0.652
	2: Cu Oxide	274	1,593	0.37	0.22	0.601
	3: Fe Oxide	168	844	0.12	0.04	0.347
	4: Transition	585	3,346	0.50	0.16	0.328
	5: Sulfide	10,243	52,474	0.31	0.02	0.058

Statistical distribution of 25-foot composites for the Oxide Estimation Domains (EDOXD), categorized by fault block, are presented in Table 14-6 and Figures 14-3 and 14-4. As previously discussed, the Copper Oxide Estimation Domain code (EDOXD 2) is assigned to drill hole intervals from a spatial domain that is predominantly composed of logged intervals of Copper Oxide Mineral Zone (MINZN 1+2). Similarly, the Iron Rich Oxide Estimation Domain (EDOXD 3) is the spatial domain dominated by intervals logged as the Iron Rich Oxide Mineral Zone (MINZN 3).

A statistical summary of composites within the Copper and Iron Rich Oxide Estimation Domains is presented for the four fault blocks in Table 14-6. Because the two Estimation Domains includes a combination of Copper and Iron Rich Mineral Zone samples, the mean copper values should be somewhat different than the average of the corresponding Mineral Zone (Table 14-5). The magnitude of the difference would depend on the amount of dilution produced by creation of the estimation domains. Average grade of populations defined by fault block and the Copper Oxide Estimation Domains are typically about 0.01% Cu lower than the respective Copper Oxide Mineral Zone population, showing only minor amount of dilution by Iron Rich Oxide drill hole intervals.

Only minor amounts of dilution by Copper Rich Oxide assay intervals occurs in the Iron Rich Oxide Estimation Domain (Table 14-6), resulting in approximately the same average copper values as the Mineral Zone samples (Table 14-5). A relatively significant increase in average grade of the Iron Rich Oxide Estimation Domain is seen only in the East Block, where the logged Iron Rich Oxide samples average 0.09% Cu, while samples assigned from the Iron Rich Oxide Estimation Domains average 0.12% Cu.

14.5 Statistical Analysis – *Cont'd*

Based on the global statistics, construction of Oxide Estimation Domains resulted in only a minimal amount of dilution from the assay interval Mineral Zones. On a global basis, the Estimation Domains preserve the bimodal nature of copper mineralization found in the detailed Mineral Zone logging data. However, the local occurrence of clustered low- or high-grade samples could locally bias the copper estimate of the Copper or Iron Rich Oxide Domains, respectively.

A review of Iron Rich Oxide samples in the Copper Oxide Estimation Domains found little evidence for potential estimation issues, largely due to the wide range of TCu grades for Copper Oxide Mineral Zone composites (Figure 14-3). The cumulative frequency curves for the West, Central and East Blocks cover the same range of copper values as the combined Oxide Zone curves (Figure 14-2). The significant difference between the curves is the reduction in the amount of composites below 0.1% TCu, which includes a mixture of Copper and Iron Rich Mineral Zones.

A comparison of cumulative frequency curves of total copper in the Iron Rich Oxide Estimation Domain are presented in Figure 14-4. The cumulative curve of Copper Oxide (MINZN 1+2) is compared with that of Iron Rich Oxide (MINZN 3) for the West, Central and East plus South Blocks. The Copper Oxide Mineral Zone composites that were included in the Iron Rich Oxide Estimation Domain may present a risk for local bias in the copper grade estimate due to the higher grades. In order to reduce the potential impact of the isolated clusters of samples, a capping strategy was employed to restrict the influence of the high-grade Copper Oxide composites. In each fault block, the upper limit of TCu in the Iron Rich Oxide composites was used as a threshold value for restricting their use in block estimation. Grades above 0.4% TCu in the West and Central fault blocks and above 0.3% TCu for East and South blocks belong to Copper Oxide mineral types (1 and 2) and are above the corresponding High Iron MINZN population (Figure 14-4). A restricted search radius was used for these samples to constrain their use within ~125 feet of their location.

14.5 Statistical Analysis – *Cont'd*

Table 14-6: Statistical summary of 25-foot composites, tabulated by fault block and Oxide Estimation Domain

Domains		Samples		Total Copper		SCuFx	
FLTBK	EDOXD	Count	Length	Mean	Std Dev	Mean	Std Dev
1: West	2: Cu Ox	4,701	113,397	0.385	0.234	0.264	0.192
	3: Fe Ox	2,172	50,640	0.087	0.101	0.036	0.054
2: Central	2: Cu Ox	5,754	139,020	0.396	0.252	0.278	0.204
	3: Fe Ox	1,656	40,737	0.089	0.101	0.039	0.069
3: East	2: Cu Ox	441	10,542	0.340	0.262	0.208	0.214
	3: Fe Ox	339	8,166	0.124	0.199	0.061	0.163
4: South	2: Cu Ox	18	450	0.174	0.137	0.099	0.098
	3: Fe Ox	657	16,359	0.043	0.042	0.018	0.026
Total	**2: Cu Ox**	**10,914**	**263,409**	**0.389**	**0.245**	**0.269**	**0.200**
	3: Fe Ox	**4,824**	**115,903**	**0.084**	**0.107**	**0.036**	**0.071**

Note: SCuFx includes estimated values for missing ASCu data.

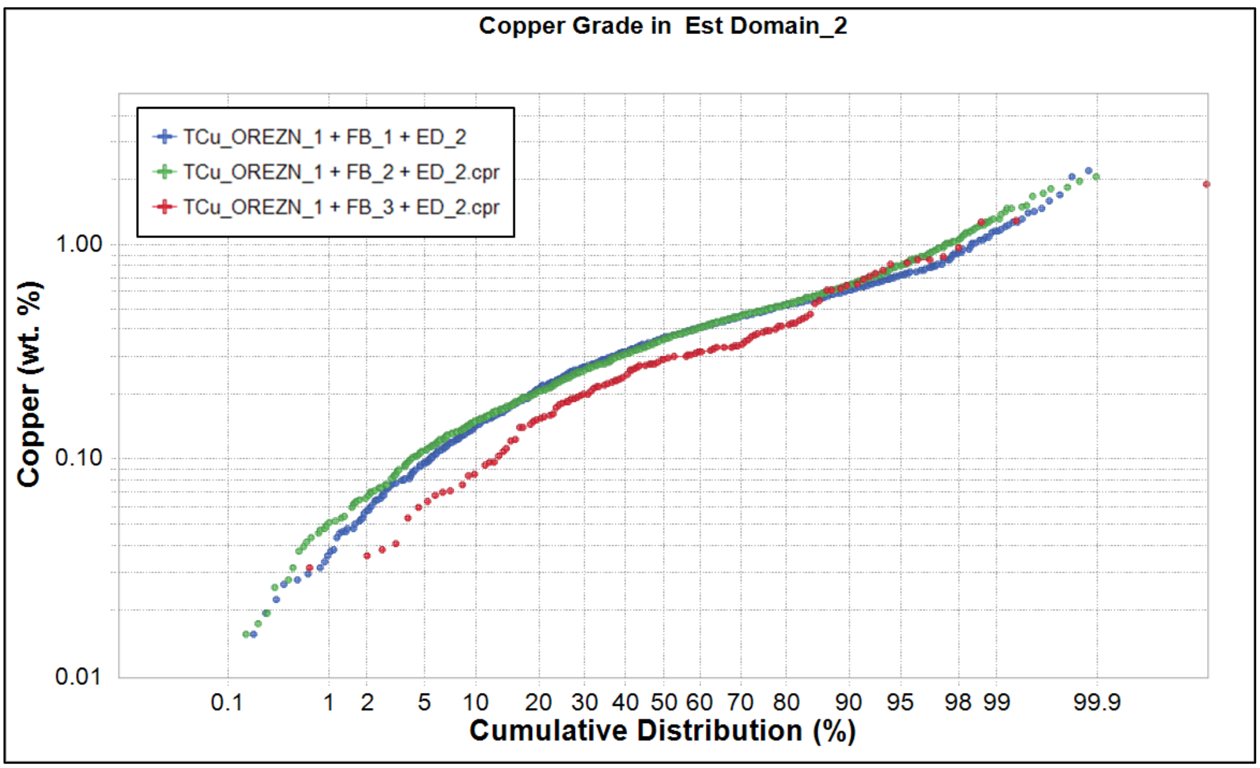


Figure 14-3: Cumulative distribution curves of total copper grades in 25-foot composites within the Copper Oxide Estimation Domain categorized by fault block

14.5 Statistical Analysis – *Cont'd*

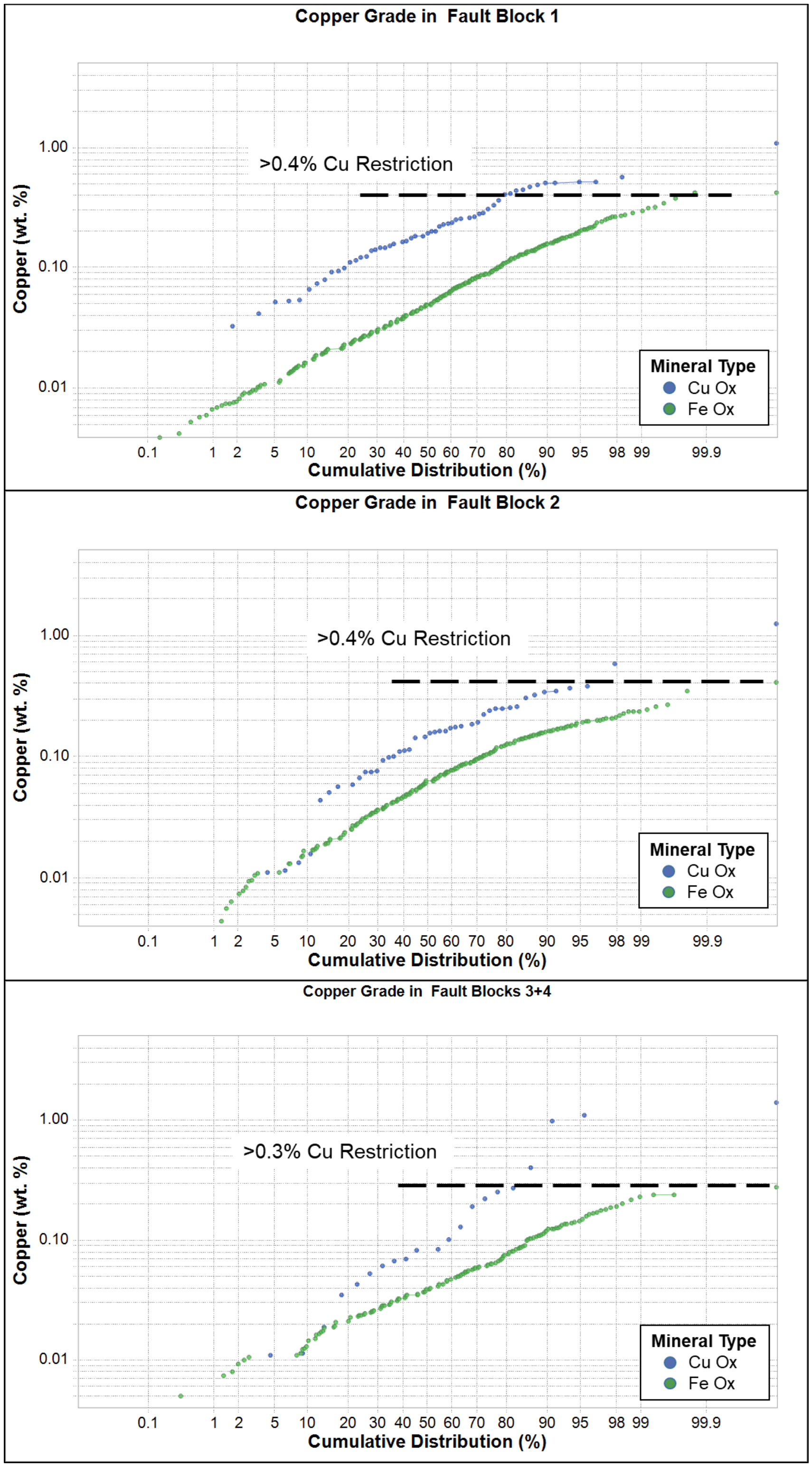


Figure 14-4: Cumulative distribution curves of total copper in 25-foot composites, within the Iron Rich Oxide Estimation Domain categorized by fault block and oxide mineral type

14.5 Statistical Analysis – *Cont'd*

A brief review on the distribution of assay interval copper grades in the Oxide Ore Zone was made to determine if significant control on grade is present in populations defined by a combination of mineral and rock types or separately by mineral type and alteration intensity.

Statistical summary of total and acid-soluble copper of the major rock types, categorized by mineral type, are presented in Table 14-7. Rock units that comprise less than 1 percent of the assayed samples are not tabulated. The quartz monzonite (ROCK 21) and granodiorite porphyry (ROCK 31) both host similar amounts of copper grade, although the quartz monzonite contains moderately higher grade in the oxide zone, which may be material to grade estimation. However, a comparison of the cumulative frequency curves for the two host rocks indicates only minor differences whilst controlling for oxide mineral type (Figure 14-5). The differences for a given mineral type appear to be in the relative proportion of assay intervals below ~0.15% Cu, with very similar curves in the higher grade portion of the curves. These differences appear to be minor and may be a result of variable amount of copper in the residual iron oxides, rather than material control of higher grade mineralization. The difference due to host lithology is significantly lower than the differences between the Cu Oxide and Fe Oxide within a single host rock.

14.5 Statistical Analysis – *Cont'd*

Table 14-7: Statistical summary of copper in assay intervals, categorized by mineral zone and lithology

					TCu		SCuFx	
MinZn	**Rock**	**Symbol**	**Count**	**Feet**	**Mean**	**Std Dev**	**Mean**	**Std Dev**
Cu Oxide (1 + 2)	21	Yqm	10,245	59,374	0.41	0.25	0.29	0.21
	25	apl	42	217	0.27	0.21	0.20	0.18
	29	qm + gdp	483	3,159	0.47	0.28	0.35	0.23
	31	Tgdp	3,213	18,500	0.31	0.28	0.21	0.19
	40	Ydb	209	1,182	0.90	0.86	0.59	0.68
	50	Yd	70	350	0.79	0.52	0.50	0.38
	60	Ta	205	1,133	0.77	0.83	0.56	0.68
Fe Oxide (3)	21	Yqm	5,605	30,390	0.07	0.08	0.03	0.04
	25	apl	39	195	0.04	0.04	0.03	0.04
	29	qm + gdp	29	146	0.12	0.10	0.08	0.10
	31	Tgdp	1,561	8,157	0.12	0.07	0.05	0.05
	40	Ydb	164	915	0.10	0.06	0.03	0.02
	50	Yd	11	55	0.06	0.04	0.04	0.03
	60	Ta	179	1,003	0.07	0.10	0.04	0.07
Sulfide (4 + 5)	21	Yqm	26,039	130,807	0.28	0.25	0.02	0.05
	25	apl	299	1,488	0.16	0.33	0.01	0.02
	29	qm + gdp	1,068	5,449	0.35	0.21	0.04	0.06
	31	Tgdp	7,995	40,483	0.23	0.19	0.02	0.04
	40	Ydb	442	2,244	0.24	0.21	0.02	0.04
	50	Yd	244	1,217	0.34	0.35	0.02	0.02
	60	Ta	532	2,660	0.09	0.18	0.01	0.04

Note: SCuFx includes estimated values for missing ASCu data

14.5 Statistical Analysis – *Cont'd*

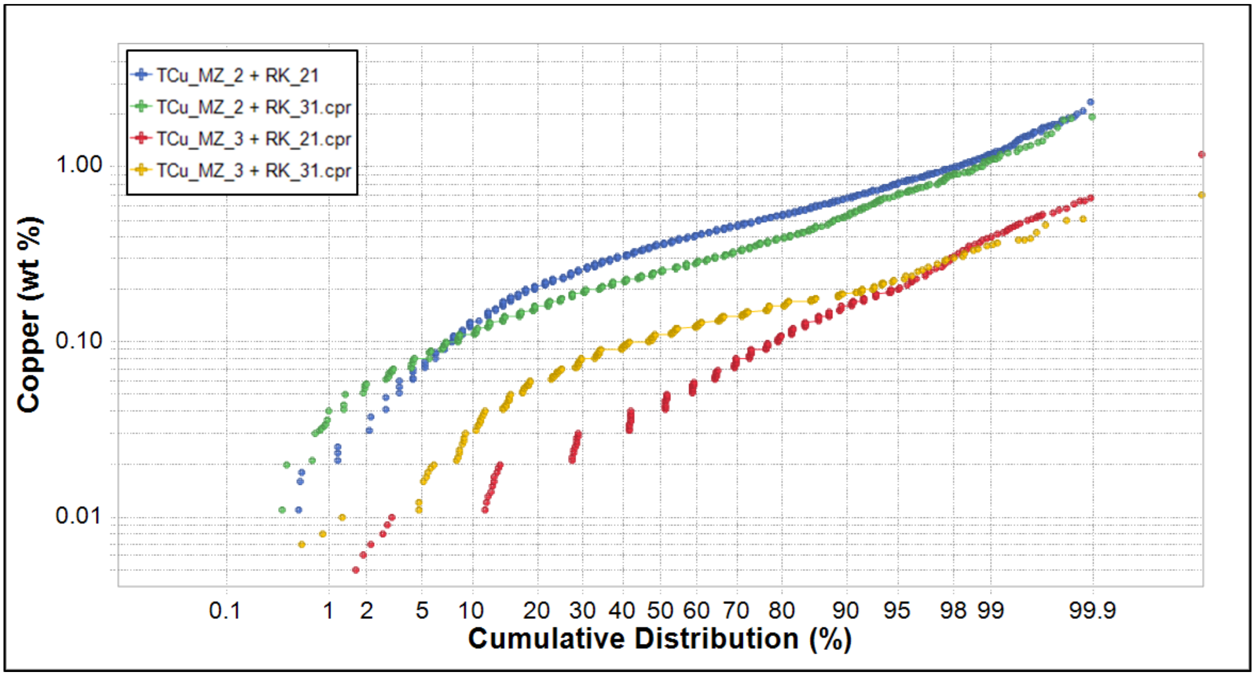


Figure 14-5: Cumulative distribution curves of copper categorized by rock types Yqm (21) and Tgdp (31) and mineral types Copper Oxide (2) and Iron Rich Oxide (3)

The distribution of total copper content categorized by alteration intensity and mineral zone is presented in Table 14-8. The intensity of Orthoclase (Potassic), Sericite, and Clay alteration were semi-quantitatively logged so that the number scale of 1 to 7 correspond to increasing mineral content from <1% to >50%, respectively. Average TCu grade was determined for each category of alteration intensity separately for orthoclase, sericite and clay, within Cu Oxide, Fe Oxide and Sulfide mineral zones.

Within the Cu and Fe Oxide mineral zones, copper grade is largely independent of orthoclase and sericite mineral content, but average grade increases with increasing Clay content. In the Cu Oxide mineral type, grade increases from ~0.4% Cu to ~0.5% Cu as Clay mineral abundance increases above 5%. In a similar manner, copper grade in the Iron Rick Oxide mineral type increases from 0.08% Cu to ~0.25% Cu as Clay content increases above 10%. However, these higher grades comprise only affects about 6% of the Copper Oxide and 1% of the Iron Rich Oxide, which is not at the scale of samples for effective estimation control.

14.5 Statistical Analysis – *Cont'd*

Orthoclase alteration in the Sulfide Ore Zone may be an effective control, as suggested by prior statistical review and classification during BHP tenure. Samples with more than ~1% orthoclase alteration minerals average more than 0.3% TCu, while samples from 0 to 1% orthoclase average below 0.2% TCu (Table 14-8). This divides the Sulfide samples into two potential domains that contain about 25% of the data in the higher grade domain and 75% of the data in lower grade domain. However, the spatial distribution of the two Orthoclase categories do not obviously cluster to form spatial domains. While this may be of interest for future studies, this was not further pursued in this update due to the lack of materiality of chalcopyrite mineralization to the in-situ leach process

Table 14-8: Summary of average copper grades, categorized by mineral zone and lithology

	Alteration		**Orthoclase**		**Sericite**		**Clay**	
MINZN	**Code**	**Vol %**	**No.**	**Avg. TCu**	**No.**	**Avg. TCu**	**No.**	**Avg. TCu**
Cu Oxide	0	0	7,655	0.41	2,304	0.43	1,642	0.34
	1	<1%	4,218	0.39	3,349	0.39	5,402	0.39
	2	1-2%	2,012	0.42	8,085	0.39	4,584	0.41
	3	>2-5%	473	0.36	683	0.42	2075	0.42
	4	>5-10%	151	0.36	133	0.53	467	0.49
	5	>10-20%	48	0.34	17	0.36	236	0.52
	6	>20-50%	9	0.32	1	0.59	155	0.48
	7	>50%	6	0.41	0		11	0.46
Fe Oxide	0	0	6,071	0.07	1,363	0.08	1,220	0.07
	1	<1%	1,206	0.10	1,327	0.09	2,026	0.08
	2	1-2%	322	0.11	4083	0.08	2481	0.08
	3	>2-5%	76	0.11	884	0.07	1685	0.08
	4	>5-10%	23	0.13	37	0.09	174	0.11
	5	>10-20%	3	0.14	7	0.20	74	0.16
	6	>20-50%	0		0		34	0.27
	7	>50%	0		0		7	0.23
Sulfide	0	0	9,620	0.19	1,057	0.27	13,837	0.27
	1	<1%	17,687	0.27	5,511	0.26	16,002	0.26
	2	1-2%	8,954	0.33	27,060	0.28	5,470	0.27
	3	>2-5%	531	0.38	3180	0.20	1403	0.27
	4	>5-10%	32	0.41	27	0.26	66	0.39
	5	>10-20%	13	0.34	7	0.27	38	0.43
	6	>20-50%	4	0.38	0		22	0.42
	7	>50%	1	1.22	0		4	0.28

14.5 Statistical Analysis – *Cont'd*

The drill hole assay database is nearly identical to the assay data used for the SRK (2010) resource model update, with the addition of four drill holes that were logged and assayed since the previous update. The geological framework for copper estimation is largely unchanged from framework described in the previous studies. Mineral associations that are the result of near-surface oxidation profile of a pyrite-chalcopyrite porphyry copper form the major control on copper grade and mineralogy. The 2023 update further controls sample selection on the basis of the interpreted top of oxide and top of sulfide surfaces to limit the spatial influence of sulfide samples below the limit of oxidation. Within the Oxide Zone, the distribution of a high-grade Cu Oxide mineral zone and a low-grade Fe Oxide mineral zone is confirmed as the major control on copper grades.

The incorporation of fault blocks better controls the geostatistical analysis on spatial covariance (variogram analysis). The statistical distribution of copper grades within the three large fault blocks (West, Central, East) are nearly identical to each, although variability in the ratio of Copper Oxide to Iron Rich Oxide mineral zones are observed. The fourth fault block (South) has significantly lower grade.

Minor changes are in effect in the pre-estimation processing of acid-soluble copper analyses that improves on the discretization and accuracy of filling missing acid-soluble copper assays. These primarily affect the lower grade intervals in the Fe Oxide mineral zone.

Minor and sporadic control on copper grade was observed from lithology and alteration that are considered to be ineffective or immaterial as controls for copper grade estimation.

14.6 Block Model Description

Several modifications were made to the structure of the Florence block model as part of the 2023 update. Previous models extended from 646,500E to 652,000E and from 742,900N to 748,000N in Arizona Central State Plane coordinates (NAD27 in feet). The project area was converted to the Arizona Central State planes and the 1983 North American Datum (NAD83 in feet). In addition, the block model was rotated 45° counter-clockwise around the model origin at 847,983.63E, 741,172.69N to align the block cell boundaries with the planned grid for injection and production wells. The project and model limits are presented in Table 14-9.

Table 14-9: Location and extent of the Florence block model (NAD83)

	Project Extent (feet)		**Model Extent (feet)**			
	Min	**Max**	**Min**	**Max**	**Cell Size**	**No. Cells**
Easting	843811.69	852862.69	0	6900	50	138
Northing	741172.69	750223.63	0	5900	50	118
Elevation	-1500	2000	-1500	2000	50	70

The location of the block model is shown on Figure 14-6. The elevations range from 1,500 feet below sea level to 2,000 feet above sea level. Each block is 50 feet on a side (50-foot x 50-foot x 50-foot cube), but selected topographic and geological volumes were calculated on a partial block basis.

Plan maps of block grades are shown on Figure 14-7 (700 feet above mean sea level [amsl]) and Figure 14-8 (1,000 feet amsl). Cross sections of block grades are shown on Figure 14-9 (east-west) and Figure 14-10 (north-south). Note that the cross-sections cut diagonally across the block model that may create an irregular pattern in the block attributes.

14.6 Block Model Description – *Cont'd*

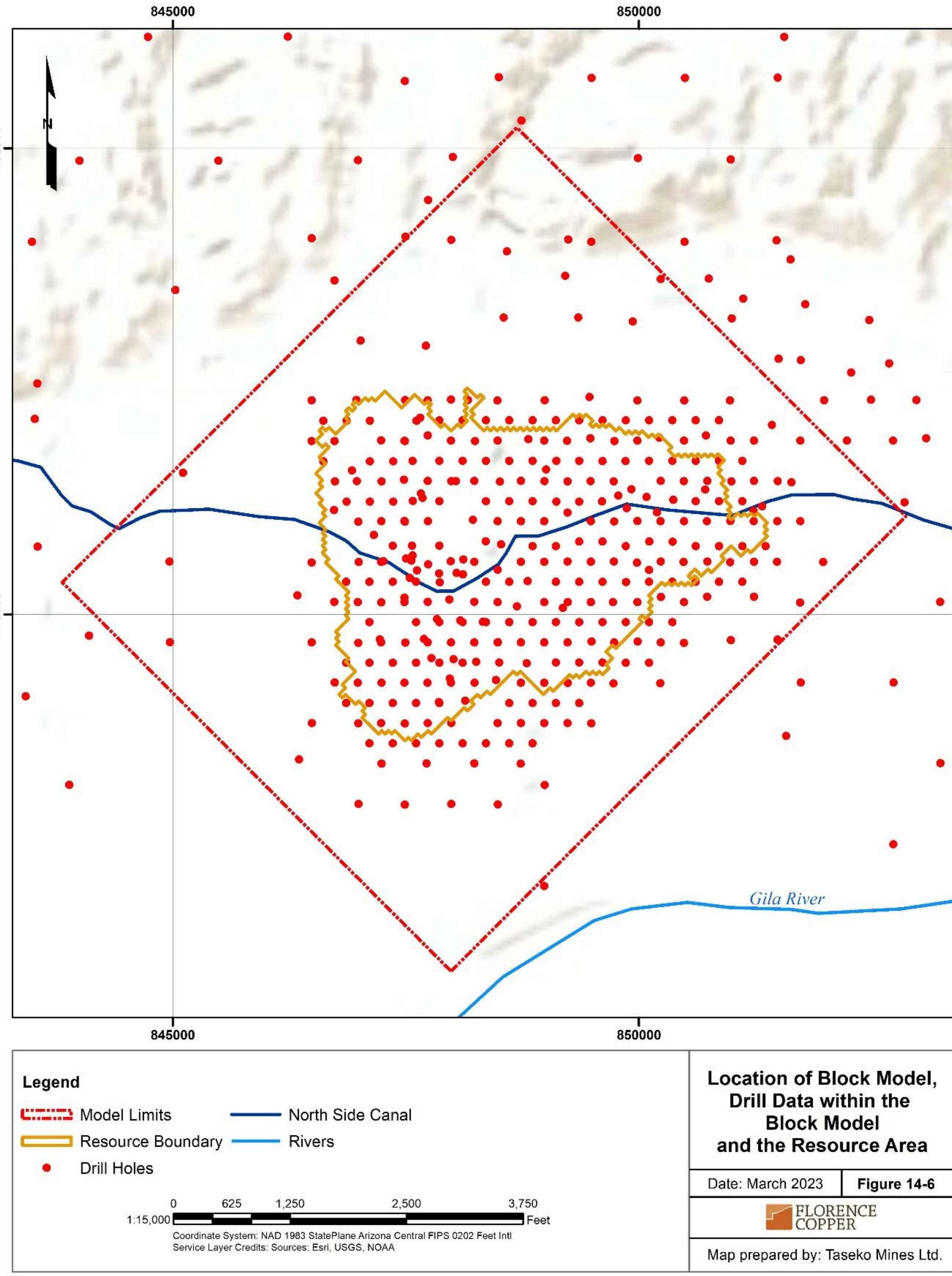
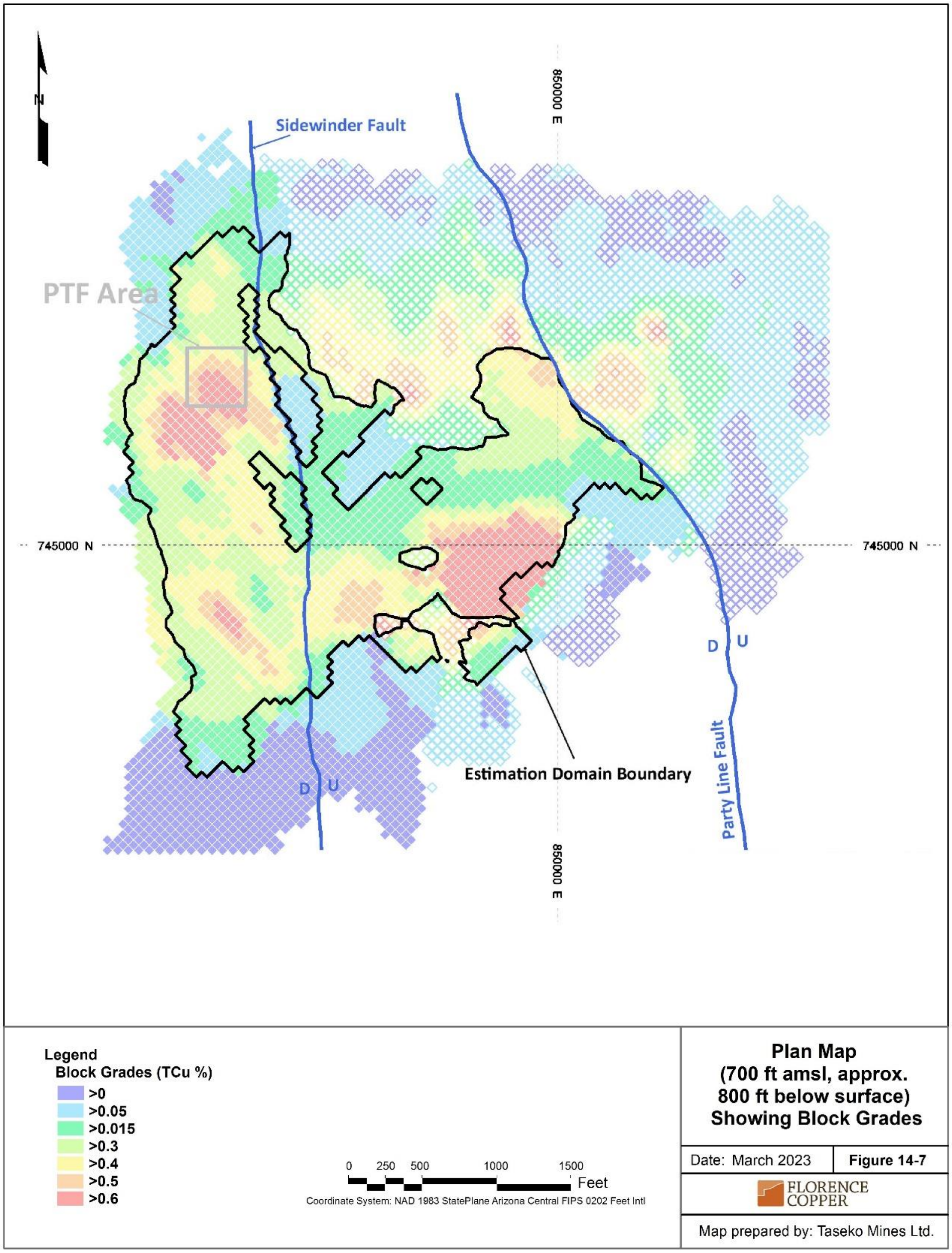


Figure 14-6: Location of Block Model (Red), Drill Data within the Block Model (Red) and the Resource Area (Orange)

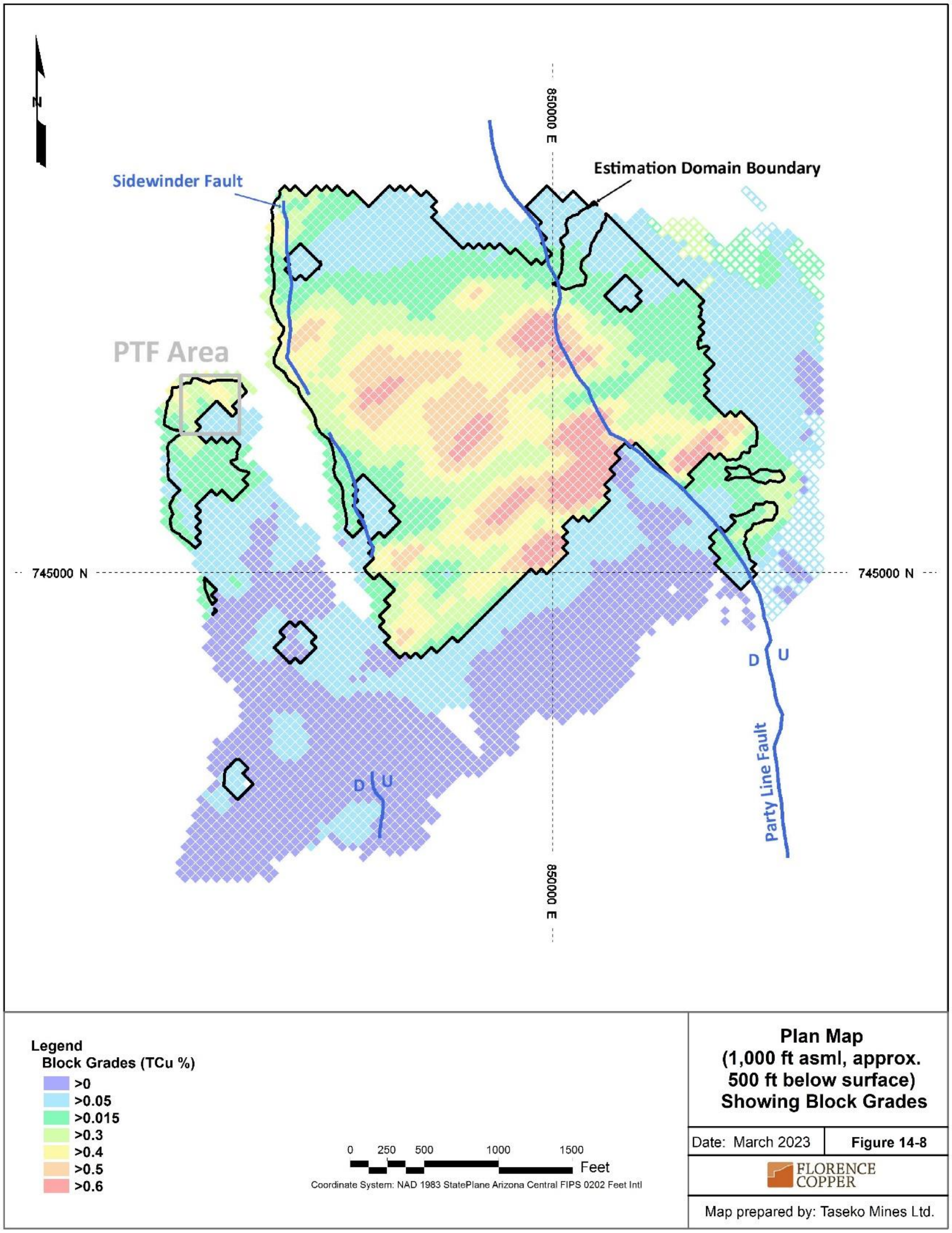
14.6 Block Model Description – *Cont'd*



Oxide blocks shown as solid blocks; Sulfide blocks shown as hollow blocks

Figure 14-7: Plan Map (700 ft amsl, approx. 800 ft below surface) Showing Block Grades

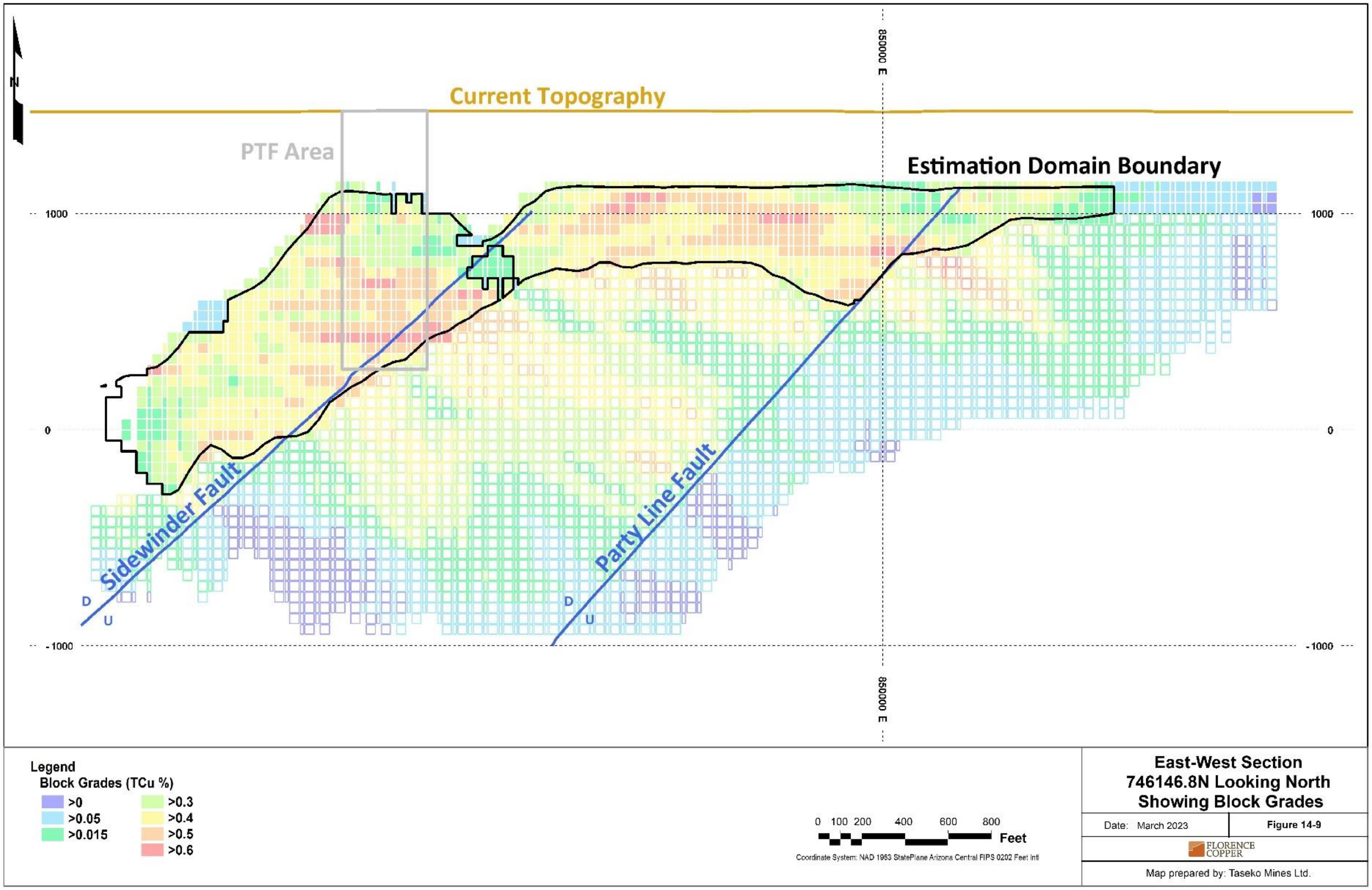
14.6 Block Model Description – *Cont'd*



Oxide blocks shown as solid blocks; Sulfide blocks shown as hollow blocks

Figure 14-8: Plan Map (1,000 ft asml, approx. 500 ft below surface) Showing Block Grades

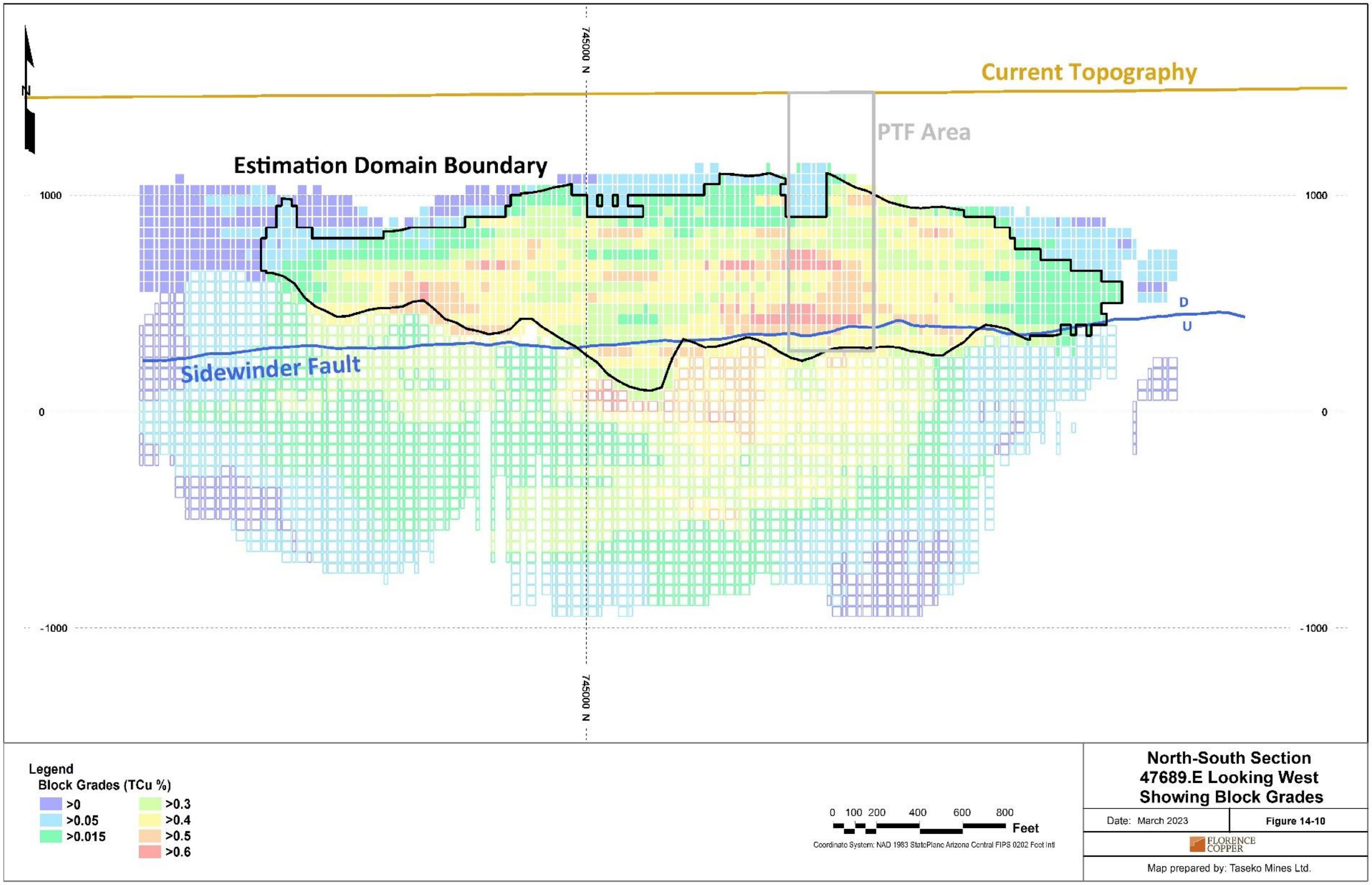
14.6 Block Model Description – *Cont'd*



Oxide blocks shown as solid blocks; Sulfide blocks shown as hollow blocks

Figure 14-9: East-West Section 746146.8N Looking North Showing Block Grades

14.6 Block Model Description – *Cont'd*



Oxide blocks shown as solid blocks; Sulfide blocks shown as hollow blocks

Figure 14-10: North-South Section 847689.E Looking West Showing Block Grades

14.7 Grade Estimation Methods

Total and acid-soluble copper grades were estimated with 25-foot composites using the ordinary kriging method. A total of seven estimation domains were developed from the exploratory data and variogram analysis that are defined on the basis of fault block, Oxide Ore Zone and Oxide Estimation Domain:

- West Block, Oxide Ore Zone, Copper Oxide Estimation Domain
- West Block, Oxide Ore Zone, Iron Rich Oxide Estimation Domain
- Central, East, South blocks, Oxide Ore Zone, Copper Oxide Estimation Domain
- Central block, Oxide Ore Zone, Iron Rich Oxide Estimation Domain
- East and South blocks, Oxide Ore Zone, Iron Rich Oxide Estimation Domain
- All blocks, Transition Ore Zone
- All blocks, Sulfide Ore Zone

Semi-variograms were originally developed from %TCu in all seven estimation domains and for %ASCu in the five Oxide Zone domains. However, review of the initial estimation trials suggested that better ASCu estimates were obtained by kriging both copper values in the same run under the TCu variogram. Experimental variograms were constructed with semi-automated tools provided by MineSight, while the variogram models were fitted manually. Results of the variogram analysis are provided in Table 14-10.

Table 14-10: Variogram Parameters

Variogram ID	Variogram Parameters													
	Var. Type	Var. Model	C_0	A1	A2	A3	First Structure				Second Structure			
							C_1	Y'	X'	Z'	C_2	Y'	X'	Z'
TCu FB1ED2	Tr	SPH	0.350	-30	-5	170	0.382	409	170	76	0.268	769	302	445
TCu FB1ED3	Tr	LIN	0.200	-144	-8	178	0.800	2371	1268	368				
TCu FB2ED2	Tr	SPH	0.361	-115	-8	155	0.219	270	218	117	0.420	1046	429	359
TCu FB2ED3	Tr	SPH	0.150	-67	0	-143	0.850	872	530	544				
TCu FB3ED3	Cg	SPH	0.241	165	-3	0	0.759	907	573	185				
TCu OZ2	Tr	SPH	0.100	-128	-10	175	0.900	800	926	187				
TCu OZ3	Tr	SPH	0.250	-100	56	-97	0.348	380	223	271	0.402	942	798	748

Table Notes:
All distances are given in feet and angles given in degrees.
Variogram ID includes fault block and oxide mineral type, see Table 14-11 for details
Variogram types: Tr = Traditional semivariogram; Cg = Correlogram
Variogram Model: SPH = Spherical variogram model; LIN = Linear
C0 is the nugget effect; C1 and C2 are the variogram sills for the nested structures
Y', X', Z' are distances for each structure to the respective sills
Rotation angles A1: clockwise around Z looking down; A2: rotation of new north, positive direction is up; and A3: clockwise around Y' looking toward new south.

14.7 Grade Estimation Methods – *Cont'd*

Contact analysis was performed to determine the degree of sample sharing at the domain boundaries. The copper grade profile was found to be discontinuous across the Ore Zone boundaries, indicating that block estimation search should be limited to composite within the same domain as the block. The boundary between the Copper Oxide and Iron Rich Oxide Estimation Domains is marked by a small discontinuity and a trend in copper grades, particularly in the Iron Rich Oxide Estimation Domain. Experimentation with the degree of sharing samples across the boundary found that best results were obtained when the search criteria for Iron Rich Oxide blocks considered the boundary as hard (no sharing), while the search neighborhood for Copper Oxide blocks included Iron Rich Oxide samples with a variogram function less than 0.8.

The estimation process in most domains required two passes for complete coverage. The first pass was developed to estimate areas with widely-spaced drilling grid or isolated segments of estimation domain. The second pass was developed to estimate the well-drilled volume, and overwrite results of the first pass.

Results of the estimation process were compared on the basis of individual estimation domains to a theoretical block distribution for the domain. The theoretical distribution was estimated from the composite data that was declustered with the nearest neighbor method. Change of support calculations were made to convert the declustered composite histogram to the theoretical block histogram. The affine method for change of support was used for most domains, while the indirect lognormal correction was used for a couple of domains with elevated coefficient of variation of ~1.0.

The final set of estimation parameters used for the kriging runs is presented in Table 14-11. Selection of the parameters were based on comparing the grade-tonnage curve for TCu in each domain with the theoretical block distribution. The objective of the estimation process was to closely match (<5%) the tonnage and grade of cumulative material above cut-off grades between 0.05 to 0.2% TCu. Where the kriged results exceeded the criteria threshold, the estimation parameters were varied to adjust the kriged grade-tonnage curve.

Final results of the Oxide Ore Zone TCu grade-tonnage curve are provided in Figure 14-11, compared with the theoretical curve. The kriged estimate is 1.6% higher tons at 0.1% lower grade compared to the theoretical curve at a cut-off grade of 0.05% TCu. At a 0.15% TCu cut-off grade, the estimate is 3% lower in tons and 3% higher in grade. These differences are well within the accepted limits.

14.7 Grade Estimation Method – *Cont'd*

Table 14-11: Estimation Parameters

Estimation Domain	Selection Criteria								Search Ellipse & Limits									Sample Selection			HG Limit		Model Grade		COS
	Block Selection			Comp Selection				Code	Angles			Distance			Max. Distances					Max					Blk
	FB	ED		FB	OZ	MZ	ED	Shring	A1	A2	A3	Y'	X'	Z'	PAR4	PAR7	PAR8	Min.	Max.	per DH	Grade	Dist	TCu	SCuFX	Var.
TCu FB1ED2 Pass 1	1	2	--	1	1		2	H	10	5	-155	650	350	200	650	350	300	3	12	2			TCUOX	SCUOX	0.490
TCu FB1ED2 Pass 2	1	2	--	--	1		3	0.8	-30	-5	170	550	250	200	550	350	250	4	15	3			TCUOX	SCUOX	0.490
TCu FB1ED3 Pass 1	1	3	--	--	1		3	H	0	0	0	500	500	120	500	300	150	4	10	2	0.40	125	TCUOX	SCUOX	0.765
TCu FB1ED3 Pass 2	1	3	--	--	1		3	H	-144	-8	178	400	250	150	500	300	200	4	10	3	0.40	125	TCUOX	SCUOX	0.765
TCu FB2ED2 Pass 1	2, 3, 4	2	--	--	1		2, 3	S	-115	-8	155	600	450	200	650	300	270	3	12	2			TCUOX	SCUOX	0.541
TCu FB2ED2 Pass 2	2, 3, 4	2	--	--	1		2, 3	0.8	-115	-8	155	500	350	150	500	300	200	4	15	3			TCUOX	SCUOX	0.541
TCu FB2ED3 Pass 1	2	3	--	--	1		3	H	0	0	0	450	450	125	450	200	150	3	8	2	0.40	120	TCUOX	SCUOX	0.785
TCu FB2ED3 Pass 2	2	3	--	--	1		3	H	-67	0	-143	350	250	250	350	300	200	4	10	3	0.40	120	TCUOX	SCUOX	0.785
TCu FB3ED3	3,4	3	--	3,4	1		3	H	165	-3	0	550	350	125	550	325	200	4	10	2	0.30	125	TCUOX	SCUOX	0.658
TCu OZ2 Pass 1	All	--	--	--		4	--	H	-128	-10	175	600	600	300	600	350	350	3	10	2			TCUTR	SCUTR	0.785
TCu OZ2 Pass 2	1	--	--	--		4	--	H	10	5	-155	700	450	400	700	500	300	2	10	2			TCUTR	SCUTR	0.785
TCu OZ2 Pass 3	All	--	--	--		4	--	H	-128	-10	175	450	450	125	450	300	200	4	10	2			TCUTR	SCUTR	0.785
TCu OZ3 Pass 1	Match			Match	3	--	--	H	0	0	0	500	500	250	500	300	200	4	15	3			TCUSL		0.667
TCu OZ3 Pass 2	Match			Match	3	--	--	H	-100	56	-97	380	223	271	380	300	200	4	15	3			TCUSL		0.667
TCu Near Neighbor	Match			Match				H	0	0	0	500	500	250	500	300	150	2	5	1			ALL		ALL

All distances are given in feet and angles given in degrees.
OK runs based on 25-foot composites, Nearest Neighbor run based on 50-foot composites
Distances are measured between block and drill hole composite center points.
Block and Composite selection are the range of codes allowed in the estimation run
FB: Fault block code, ED: Oxide estimation domain, OZ: Ore zone code, MZ: Mineral Zone code
Match: All units are used with matching between composite and block
Boundary sharing is degree of sharing samples for block estimation across code boundaries. H: hard boundary (no sharing), S: Soft boundary (complete sharing), number is the maximum variogram value for sharing
Primary search is defined by the limiting prism distances and the maximum distance from the block center (PAR4).
PAR4 is the maximum distance to accept samples within the search ellipse
PAR7 is the maximum distance from the closest composite to allow block estimation
PAR8 is the maximum distance from the closest composite to allow block estimation when the minimum number of composites have been selected.
The search ellipse is defined by rotation angles for the principal directions and ellipse radii
8 x 8 x 2 block discretization
COS block variance is the theoretical ratio of block to composite variances, based on change of support to 50x50x50 ft block size
High-Grade Limit is the maximum distance allowed for inclusion for composites above the indicated total copper cut-off

14.7 Grade Estimation Method – *Cont'd*

Post-processing steps to clean and adjust model variables include:

- Adjustment of ASCu grade where ASCu > TCu (25 blocks were adjusted in the Copper Oxide Estimation Domain, 5 blocks in Iron Rich Oxide, and 22 blocks in the Transition Ore Zone)
- Estimated grades were cleaned from the blocks outside the respective Ore Zone (e.g., TCu for the Oxide Zone was removed from blocks outside the Oxide Zone)
- Blocks were assigned according to majority ore zone and the corresponding TCu and ASCu estimates copied to the whole block TCu and ASCu fields

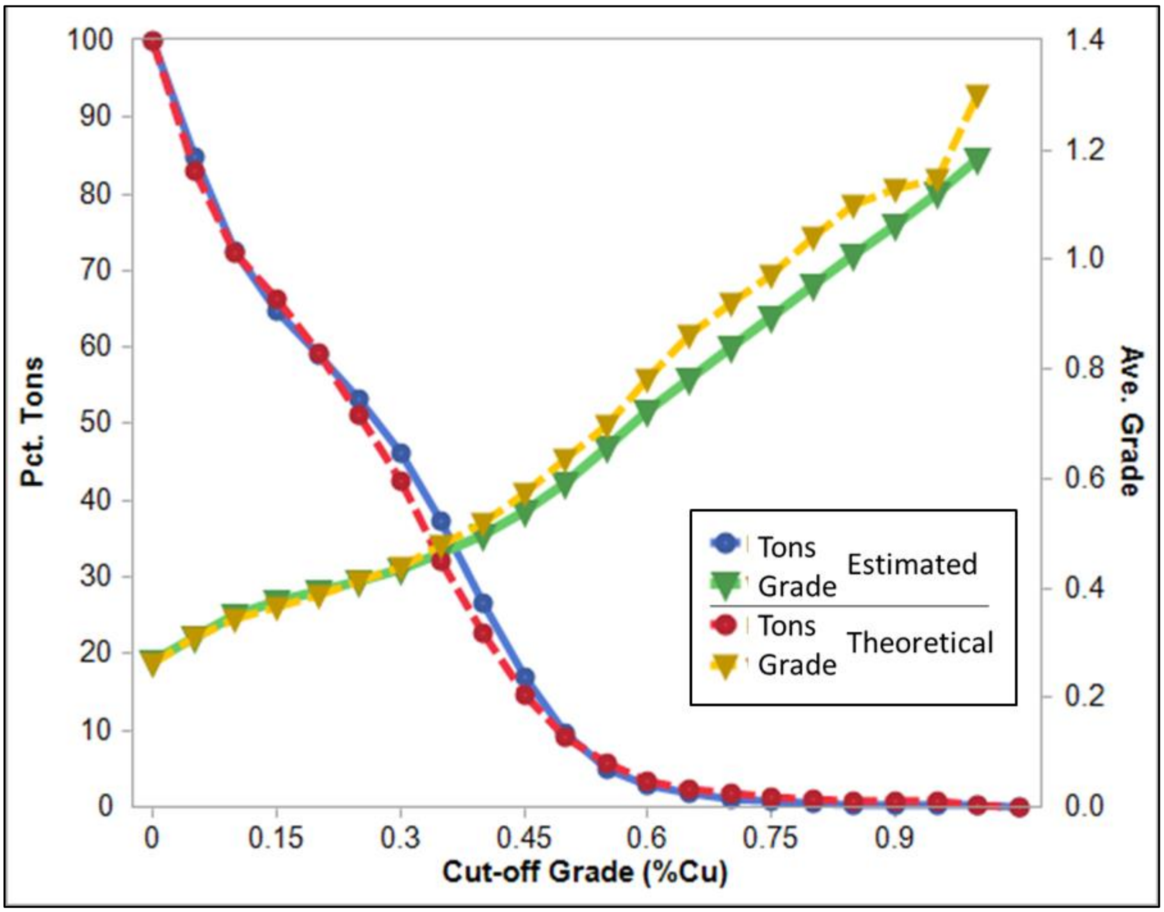


Figure 14-11: Final grade-tonnage curve of kriged copper grades in the Oxide Ore Zone compared to the theoretical grade-tonnage curve.

14.8 Model Validation

The block model was validated by visual inspection of the model, comparing block grades to drill hole grades in cross section and plan view. The block model fits the expected pattern of grade distribution, with good spatial coherence between the composite data and block estimates.

Swath plots were constructed along the block model X, Y, and Z directions comparing local averages of the nearest neighbor declustered composites with the block grades. The plots confirm a strong trend of total copper grade in the Iron Rich Oxide domains, due to higher average grade in the Central Block Fe Oxide relative to the West Block. The kriged blocks closely tracked the data trends. Total copper in the Copper Oxide domains shows more robust deposit-wide stationarity, but exhibited relatively large local variability. Kriged estimates closely reproduce the variability seen in the declustered composites, but with lower amplitude of the peaks.

The bi-variate relationship between estimated TCu and ASCu in the Oxide Zone was compared with the declustered composite data. The slope of the linear regression line and the correlation coefficient were reproduced for both the Copper Oxide and Copper Rich Oxide Mineral Zones.

The model results were compared with results from the 2010 update. A direct comparison of the two models is difficult owing to a significant difference in the method of constructing Copper and Iron-Rich Oxide domains. However, when block average TCu values from the two models were compared, differences less than 1% were obtained from the two models within the 2017 reserve volume.

14.9 Bulk Density

Prior to 2023, a tonnage factor of 12.5 ft^3/short ton (ft^3/st), equivalent to a bulk density of 2.56 metric tonnes per cubic meter (mt/m^3), was assumed for all of the historical resource estimations, including the 2010 estimate. A program was undertaken in 2020 to review historical density data and to obtain additional specific gravity tests of the oxide zone from historical drill core. A total of 102 samples were collected from dominant rock types and copper oxidation zones to complement data from six samples tested in 1998.

Samples were collected from split drill core stored at the Florence facilities with the objective to obtain representative samples suitable for determination of bulk density according to the ASTM C 127-01 method. This method was discontinued due to sample disaggregation and replaced by determination of grain density of the sample at -10 mesh crush size. The 1998 program determined rock porosity on six 6-inch diameter core samples by first measuring the bulk density of the wax-coated samples in air and submerged in water, followed by measuring the grain density of the pulverized samples.

The average grain density for the 108 samples was found to be 2.56 mt/m^3, with a standard deviation of 0.10 mt/m^3. The data show no significant difference between the 2020 and 1998 programs. Statistically significant differences in average grain density were likewise not found between groups of major rock and oxide mineral types.

The average tonnage factor of 12.5 ft^3/st found from grain density measurements requires adjustment for rock porosity of the in-situ formations. An estimate of aquifer porosity was determined from hydrogeological testing and modeling performed at site to support the numerical groundwater flow model and the application to Arizona Department of Environmental Quality for a temporary individual aquifer protection permit (Haley & Aldrich, 2012) that provides an internally consistent set of assumptions for the geological and hydrogeological models. The hydrogeological model assumes variable porosity within the Oxide Mineral Zone, defined as 8 volume percent in the upper part of the oxide zone, including the BEZN, and 5 volume percent in the lower part, including the Transition Zone.

A surface was interpolated that occurs midway between the bottom of the Bedrock Exclusion Zone and the top of sulfide. This surface was used to code the block model as porosity zone 1 above the surface and 2 below the surface. A tonnage factor of 13.5 ft^3/st (density 2.37 mt/m^3), corresponding to a porosity of 8 v% was assigned to blocks in the upper oxide zone. A tonnage factor of 13.13 ft^3/st (density 2.44 mt/m^3) was assigned to block in the lower oxide zone in order to account for lower porosity of 5 v%.

14.10 Resource Classification

Resource classifications used in this study conform to the 2014 CIM Definition Standards presented below:

*A **Mineral Resource** is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.*

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

*A **Measured Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.*

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

*An **Indicated Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.*

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

14.10 Resource Classification – *Cont'd*

An ***Inferred Mineral Resource*** *is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.*

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Oxide mineralization within the resource area is largely drilled on a triangular 250-foot grid that extends through the Oxide Zone of the deposit. Higher grade copper zones in Oxide and Sulfide ore zones form spatial zones that are approximately 300-500 feet wide. In the Oxide Zone, it is rare to see individual holes with long intervals of Iron Rich Oxide mineralization within a neighborhood of Copper Oxide and vice versa. This strongly suggests that mineral types and copper grades are demonstrated as continuous within the nominal 250-foot triangular grid in the center of the deposit.

Drilling density gradually decreases with depth, as holes are generally terminated as they encounter mineralization that is of low economic interest. Early drilling tends to be deeper in higher grade hypogene mineralization while more recent holes tend to be terminated at the top of the sulfide zone. The base drilling grid at depth approximate either a ~500-foot triangular grid or ~600-foot square grid, which is considered to develop the resource at an Inferred level of confidence.

Oxide and Sulfide resources are classified as Indicated resources where the estimate is supported by incomplete 250-foot drill grids, either at depth or along the margin of the well-drilled resource. The Transition zone is classified as Indicated, even where oxide and sulfide mineralization would otherwise be classified as Measured. This is due to the lack of continuity and highly variable thickness of the geological zone and the sporadic distribution of samples that reduce the confidence on the estimate.

The nominal drill grid over the mineral deposit was flagged in the blocks from the number of samples and their average distance in the local neighborhood, as defined in Table 14-12. The grid flag values 1 2, and 3 correspond to nominal drill grids of 250, incomplete 250, and 500 feet, respectively.

14.10 Resource Classification – *Cont'd*

A search neighborhood of 500x500x50 feet was employed, limited by a maximum of 8 and minimum of 2 samples, with a maximum of 1 sample per drill hole. The number of samples, average and closest distance of the samples, and number of quadrants with data was stored in the block. The metrics were evaluated to define criteria for identification of a nominal 250-foot grid. Additional criteria on distance to nearest sample and number of quadrants with sample were defined to limit the extrapolation of the flag beyond the spatial limit of drilling. Two passes are required to flag the Indicated drill grids, one for total of 8 samples and a second for search neighborhoods with nominal 250 foot grid spacing, and between 5 to 7 samples. The nominal drill grid for Inferred classification is indicated by 3 to 5 samples in the search neighborhood with an average distance greater than ~310 feet.

Table 14-12: Criteria for setting the nominal grid spacing

Metric	BM Field	Grid Flag = 1 Criteria		Grid Flag = 2 Criteria				Grid Flag = 3 Criteria	
				Pass 1		Pass 2			
		Min	Max	Min	Max	Min	Max	Min	Max
Distance to nearest sample (ft)	DISTA	0	250						
Average sample distance (ft)	DGAVD	0	280	281	500	0	280	281	500
No. quadrants	DGNRD	3	4	3	4	3	4	3	4
No. samples	DGNS	8	8	8	8	5	7	3	7
Grid flag	GRID1			≠ 1	≠ 1	≠ 1	≠ 2	≠ 1	≠ 2

The distribution of the block flags broadly match the resource classification boundaries, but the field included numerous small excursions of one category in another, and extremely irregular boundaries. The block codes were converted to mid-bench polylines (used the MineSight grade shell and slice routines) and modified by hand to obtain smoothed boundaries that avoid small-scale excursions. The polylines form nested boundaries and were used to code resource classification back to the block model, stored in the CLASS field (1 = Measured, 2 = Indicated, 3 = Inferred).

14.11 Mineral Resources

The ISCR method does not require the ore to be physically relocated and, consequently, the typical methods used to determine resources for hard rock operations do not apply directly to the project. The Mineral Resource Estimate was determined on the basis of total value of recoverable copper contained within vertical block stacks, net of production costs. This accounts for the limited ability to selectively extract copper from individual blocks within the block model and establishes a value-based perimeter boundary where the Mineral Resource has reasonable prospects for eventual economic extraction.

The Mineral Resource Estimate utilizes a metal price of $3.50 per pound of copper weighted against costs described in Table 15-1. Copper extracted from the well field is estimated using the leach model described in Section 13 of this report. Only the copper contained within the Oxide and Transition zones described in Section 14.3 is included as copper contained in the underlying sulphide zone is not expected to be recoverable using the extraction methods proposed in this report. To be included in the Mineral Resource Estimate, a block stack is required to be contiguous with the overall well field and have a minimum extraction thickness of 50 feet within the Oxide and Transition zones.

No cutoff grade has been applied to the Mineral Resource to reflect the nature of the ISCR extraction method proposed. This ensures that costs as well as copper revenues for all estimated blocks in each block stack are considered when evaluating the Mineral Resource Estimate.

Florence Copper has been operating a PTF well field inside the resource area since December 2018. The Mineral Resource has been depleted to reflect this activity as well as the BHP pilot leach tests and material extracted by Conoco from underground workings. The effective date of the resource estimate is December 31st, 2022.

The resource is shown in Table 14-13.

14.11 Mineral Resources – *Cont'd*

Table 14-13: Florence Project Oxide Mineral Resources (Effective December 31, 2022)

Class	Tons (000,000's)	%TCu Grade	Contained Cu (000,000's lbs)
Measured	292	0.34	1,997
Indicated	71	0.39	552
M+I	**363**	**0.35**	**2,549**
Inferred	42	0.32	266

1. Mineral Resources follow CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).
2. Mineral Resources are reported inclusive of Mineral Reserves.
3. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
4. Mineral Resources are confined to the Oxide and Transition zones inside a "reasonable prospects of eventual economic extraction" boundary assuming ISCR extraction methods using the following assumptions: $3.50 Cu price, $31,600/acre for core hole abandonment, $240,400/acre for cultural mitigations in identified Cultural Sites, $149,600 + $263/foot well drilling costs, $160/ton acid cost, $45.30/ton acid applied for well field operating costs, 1.2% surface losses, $0.10/lb Cu for electrowinning cost, $0.12/lb Cu G&A cost, $0.69/ton reclamation cost, $0.02/lb Cu shipping cost, 7% NSR royalties on ALSD land, 3% NSR royalties on freehold land, and 2.5% royalties on net profit.
5. Mineral Resources are reported without a cut-off grade to reflect the nature of the ISCR extraction method proposed.
6. Tonnage factors of 13.5 ft^3/ton and 13.13 ft^3/ton have been applied corresponding to 8% porosity in the upper oxide zone and 5% porosity in the lower oxide and transition zones.
7. Numbers may not add due to rounding.

It is the opinion of the QP that the classification of Mineral Resources as presented in Table 14-13 meet the definitions of Measured, Indicated and Inferred Mineral Resources as stated by the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014) that are incorporated by reference into NI 43-101.

The QP is of the opinion that the majority of the Inferred Resources could be upgraded to Indicated Mineral Resources with continued exploration due to the consistent continuous nature of the mineralization within the currently identified resource.

14.12 Factors That Could Affect the Mineral Resource Estimate

Areas of uncertainty that may materially impact the mineral resource estimate include:

- Copper price assumptions;
- Assumptions that all required permits will be forthcoming;
- Well field construction, operating and rinsing cost assumptions;
- Metal recovery assumptions; and
- Processing and Electrowinning cost assumptions.

The Mineral Resource lies within Florence Copper's tenure and generally overlaps the Aquifer Exemption area although does extend beyond it. The reported resource includes the bedrock exclusion zone (BEZN). The BEZN is the top 40 feet of the Oxide zone which is excluded by permit.

There are no other known environmental, legal, title, taxation, socio-economic, marketing, or political factors that could materially affect the resource estimate other than normal risks faced by mining projects in the State of Arizona.

There is a degree of uncertainty in the estimation of mineral reserves and mineral resources and corresponding grades being mined or assigned to future production. The estimation of mineralization is a subjective process and the accuracy of estimates is a function of the accuracy, quantity, and quality of available data, the accuracy of statistical computations, as well as the assumptions used and judgments made in interpreting engineering and geological information. There is significant uncertainty in any mineral resource or mineral reserve estimate, and the actual deposits encountered and the economic viability of mining a deposit may differ significantly from these estimates until mineral reserves or mineral resources are actually mined and processed, the quantity of mineral resources and mineral reserves and their respective grades must be considered as estimates only. In addition, the quantity of mineral reserves and mineral resources may vary depending on, among other things, metal prices.

Any material changes in quantity of mineral reserves, mineral resources, grade, or density may affect the economic viability of a property. In addition, there can be no assurance that recoveries in small scale laboratory tests will be duplicated in larger scale tests under on-site conditions or during production. Similarly, there can be no assurance that recoveries from the PTF can be fully replicated in all areas of the Mineral Resource. Fluctuation in metal or commodity prices, results of additional drilling, metallurgical testing, receipt of new information, and production and the evaluation of mine plans subsequent to the date of any estimate may require revision of such mineral resources may be materially affected by mining, infrastructure, or other relevant factors.

SECTION 15

MINERAL RESERVE ESTIMATE

SECTION 15: MINERAL RESERVE ESTIMATE

Table of Contents

Page

List of Tables

List of Figures

15.1 Reserve Assumptions and Methodology

(a) Reserve Limits

The ISCR extraction method to be employed at Florence Copper does not utilize traditional mining techniques of removing ore from its original location for beneficiation purposes; as a result, typical methods used to determine reserves for hard rock operations do not apply. The reserve limits for Florence Copper are determined on the basis of net value associated with individual extraction units that make up the well field and the continuity of those units.

An extraction unit consists of a single 100-foot square five-spot well arrangement centered on an injection well and extending through the entire thickness of the reserve. The reserve is bound vertically to the Oxide and Transition zones, excluding the bedrock exclusion zone (BEZN). The BEZN is the top 40 feet of the Oxide zone which is excluded from leaching by permit. The lateral limits of the reserve are determined by evaluating the undiscounted net value (revenue minus costs) for each incremental extraction unit at the perimeter of the reserve area.

Revenue for each extraction unit is calculated from the recoverable copper contained in measured and indicated resources between the bottom of the 40-foot BEZN and the top of the Sulphide Zone at a conservative copper price of $3.05 per pound. Copper recovery is estimated using the leach model discussed in Section 13 of this report with surface losses applied to estimate copper cathode production.

Costs for each extraction unit include well field construction costs, operating costs, closure and reclamation costs, and off-property costs. Operating costs are based on acid consumption and acid application estimates from the leach model assuming a raffinate acid strength of 10 g/L.

Inputs used for economic evaluation are presented in Table 15-1.

15.1 Reserve Assumptions and Methodology – *Cont'd*

(a) Reserve Limits – *Cont'd*

Table 15-1: Economic Analysis Parameters

Description	Value
Copper Price	$3.05 / lb
Well Field Construction Costs:	
Recovery & Injection Well Fixed Cost	$149,600 / well
Recovery & Injection Well Variable Cost	$263 / ft
Core hole abandonment[1]	$31,600 / acre
Cultural mitigation[2]	$240,400 / acre
Operating Costs	
Acid consumption	$160 / ton acid consumed
Well Field Operations	$20.60 / ton acid applied
Overpumping & Neutralization	$3.10 / ton acid applied
SX Cost	$21.60 / ton acid applied
EW Cost	$0.10 / lb
G&A Cost	$0.12 / lb
Closure & Reclamation Cost	$0.69 / ton
Surface Losses	1.2 %
Off-Property Costs	
Royalties – State Land	7% Gross Revenue
Royalties – FC Owned Land	3% Gross Revenue
Royalties – BHP	2.5% Profit
Cathode Shipping	$0.02 / lb

[1] The core hole abandonment costs are factored across the entire well field
[2] Cultural mitigations costs are applied to identified Cultural Sites only

Following the evaluation of reserve limits, the following modifying factors were applied:

- Extraction units must have a minimum reserve thickness of 50ft (from the bottom of the BEZN to the Top of Sulphide Zone);
- Extraction units must be contiguous to be included in the Reserve;
- Single extraction unit step-outs were removed to ensure no unit has three edges that are external to the well field;
- Surface infrastructure was reviewed to ensure no conflicts preventing well field construction;
- Extraction units of negative net value internal to the reserve were retained and treated as dilutive to ensure continuity of the well field; and
- The lower portion of some extraction units were manually removed from the reserve to reduce the dilutive effect of inferred mineral resources.

15.1 Reserve Assumptions and Methodology – *Cont'd*

(a) Reserve Limits – *Cont'd*

The resultant reserve area is shown in Figure 15-1. Cross sections of the reserve are shown in Figures 15-2 and 15-3.

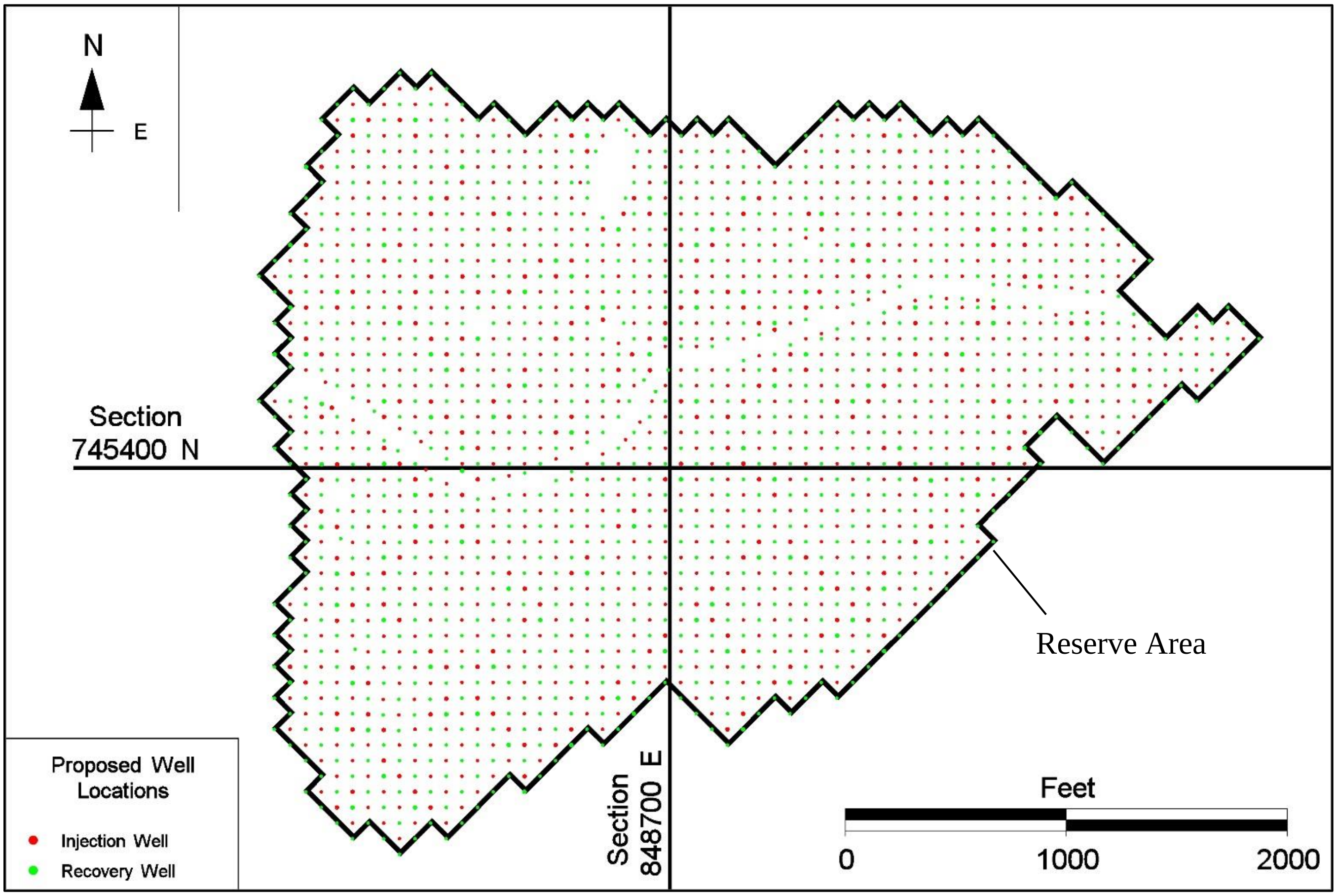


Figure 15-1: Mineral Reserve Area Showing Injection and Recovery Wells

15.1 Reserve Assumptions and Methodology – *Cont'd*

(a) Reserve Limits – *Cont'd*

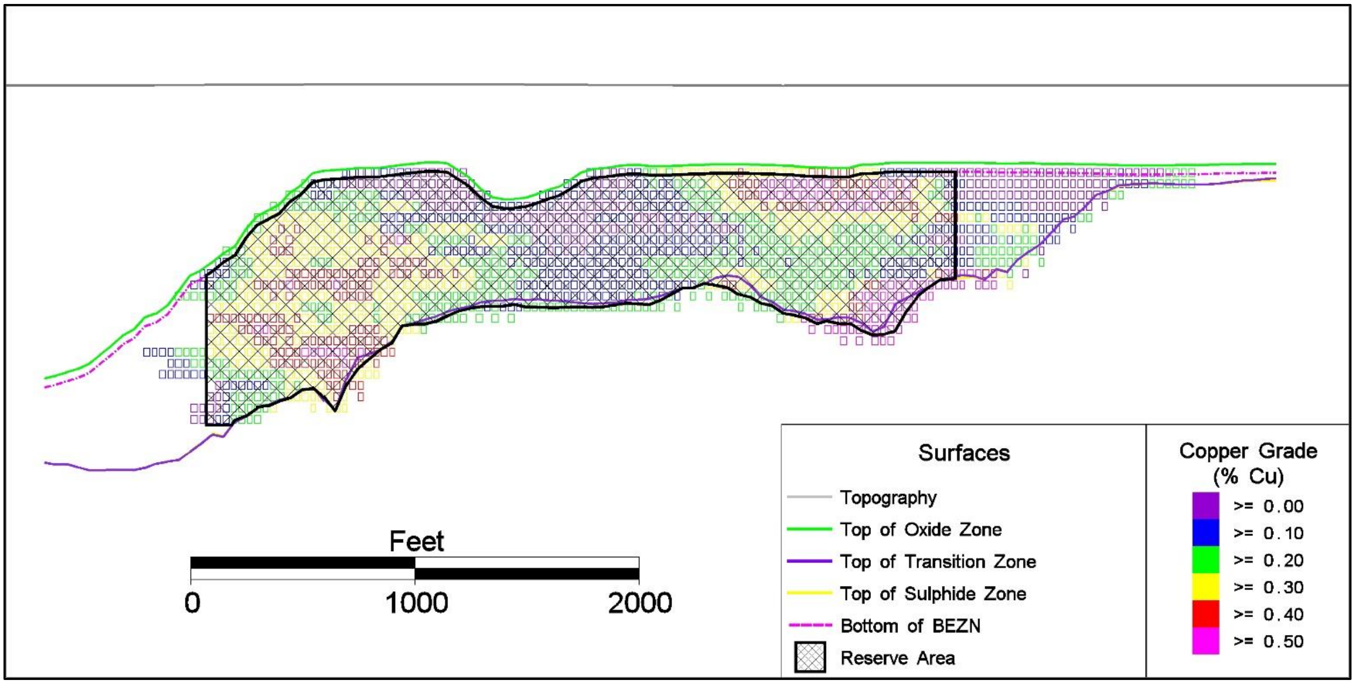


Figure 15-2: Section 745,400 N, Looking North Showing Copper Grade

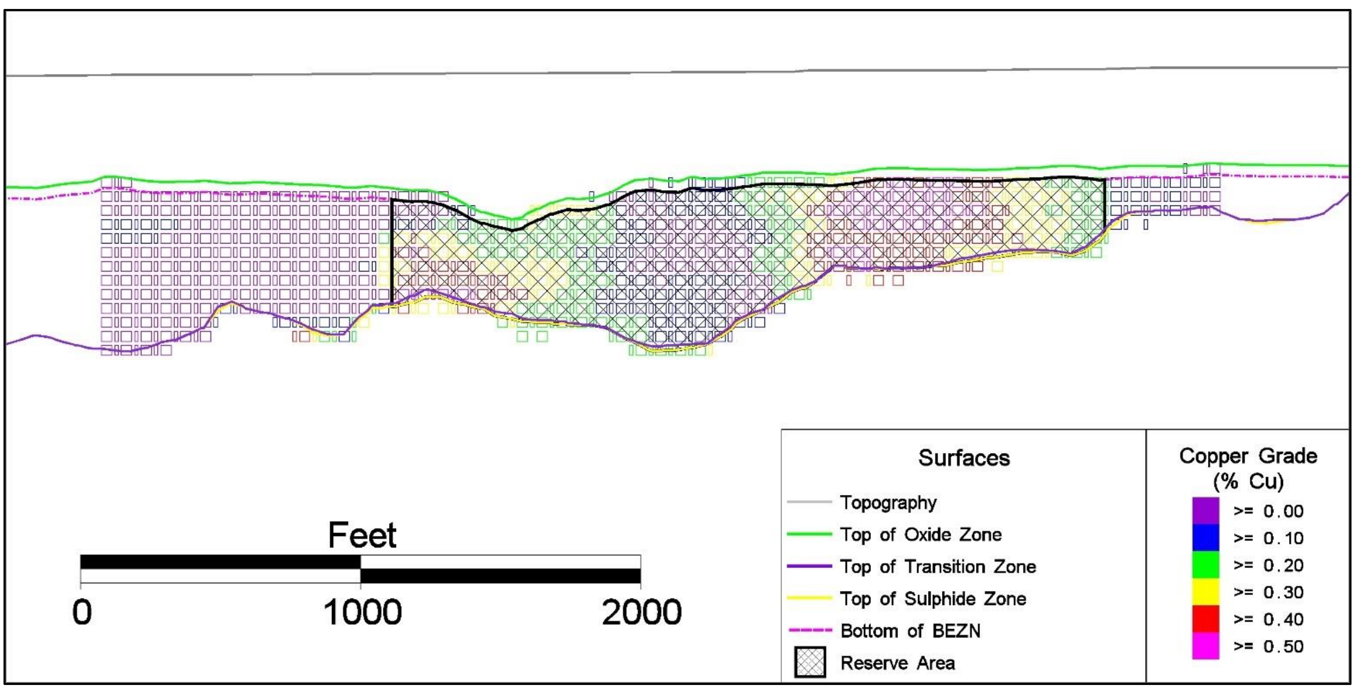


Figure 15-3: Section 848,700 E, Looking West Showing Copper Grade

15.1 Reserve Assumptions and Methodology – *Cont'd*

(b) Planned Dilution and Cut Off Grade

In order to reflect the nature of the ISCR extraction method and to maintain well field continuity for hydraulic control and rinsing, the reserve is reported on a fully diluted basis with no cut-off grade applied. This ensures that the cost and copper revenue contributions of the entire reserve area are considered. While the well design for the project offers some flexibility to preferentially target large zones within each extraction unit using pump and packer placement, it is not possible to isolate individual 50-foot resource blocks. Thus, operating costs for ISCR are dictated by the total rock mass within each extraction unit. Similarly, as solutions migrate throughout each extraction unit, copper will be extracted from all areas of that unit with low-grade blocks having a dilutive effect on the overall reserve. Any inferred resources contained within the reserve area are considered unmineralized and treated as planned dilution within the reserve.

The ISCR extraction method is described fully in Section 16 of this report.

(c) Bedrock Exclusion Zone

The bedrock exclusion zone is a requirement of Florence Copper's APP and UIC permits. It includes the top 40 feet of bedrock and prohibits injection of process solutions into this zone. Production wells will be cased and cemented from the ground surface to the bottom of the BEZN with process solutions injected to, and recovered from, the oxide zone below the BEZN.

Within the BEZN, limited copper extraction is expected due to the anticipated flow regime. For this reason, the BEZN is not included in the reserve estimation. The BEZN is shown relative to the other geological units in Figures 15-2 and 15-3.

15.2 Mineral Reserves

(a) Reserve Definitions

Reserve classifications used in this study conform to the 2014 CIM Definition Standards presented below:

***Modifying Factors** are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.*

*A **Mineral Reserve** is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.*

The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study.

Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.

*A **Probable Mineral Reserve** is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.*

*A **Proven Mineral Reserve** is the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.*

In order to meet the requirements of NI 43-101 with respect to determining the economically mineable part of the resource, the reserve was established through the process described in section 15.1. This reserve formed the basis for the well field design, scheduling factors and the development of a cash flow model. This technical report includes adequate information on mining, processing, metallurgical, economic, and other relevant modifying factors that demonstrate, at the time of reporting, that economic extraction is justified.

15.2 Mineral Reserves– *Cont'd*

(b) Reserve Estimate

The reserve estimate is presented in Table 15-2. Proven and Probable Reserves are derived from Measured and Indicated Resources respectively that are contained within the Oxide and Transition zones below the 40' BEZN and inside the reserve area described previously. Reserves are reported on an in-situ basis and are presented on a fully diluted basis to reflect the nature of the ISCR extraction method proposed.

Reserves are contained within the mineral resources presented in Section 14 and have been depleted to reflect extraction from the PTF, the BHP pilot leach tests and material extracted by Conoco from underground workings. The effective date of the reserve estimate is December 31st, 2022.

Table 15-2: Proven and Probable Reserve Estimate (Effective December 31, 2022)

Category	Tons (000,000's)	%TCu Grade	Contained Cu (000,000's lbs)
Proven	258	0.35	1,812
Probable	63	0.40	503
Total	**320**	**0.36**	**2,316**

1. Mineral Reserves follow CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).
2. Mineral Reserves are contained within Florence Copper's Mineral Resources.
3. Mineral Reserves are assumed to be extracted using ISCR extraction methods using the following assumptions: $3.05 Cu price, $31,600/acre for core hole abandonment, $240,400/acre for cultural mitigations in identified Cultural Sites, $149,600 + $263/foot well drilling costs, $160/ton acid cost, $45.30/ton acid applied for well field operating costs, 1.2% surface losses, $0.10/lb Cu for electrowinning cost, $0.12/lb Cu G&A cost, $0.69/ton reclamation cost, $0.02/lb Cu shipping cost, 7% NSR royalties on ALSD land, 3% NSR royalties on freehold land, and 2.5% royalties on net profit.
4. Mineral Reserves are reported without a cut-off grade and on a fully diluted basis to reflect the nature of the ISCR extraction method proposed.
5. Tonnage factors of 13.5 ft^3/ton and 13.13 ft^3/ton have been applied corresponding to 8% porosity in the upper oxide zone and 5% porosity in the lower oxide and transition zones.
6. Numbers may not add due to rounding.

It is the opinion of the QP that the classification of Mineral Reserves as presented in Table 15-2 meets the definitions of Proven and Probable Mineral Reserves as stated by the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014) that are incorporated by reference into NI 43-101.

15.3 Factors That Could Affect the Mineral Reserve Estimate

As with any mining operation there are a number of factors that may have a material and adverse impact on the operating performance, operating costs, and revenue estimated as the basis for resources and reserves in this report. The mineral reserve estimate is based on geological inputs and density assumptions used in the mineral resource estimate and economic parameters, hydrogeological parameters and metallurgical recovery estimates discussed throughout this report. Changes in these assumptions may impact the mineral reserve estimate.

Relative to the estimates presented in this report, increases in operating costs and/or reductions in estimated revenue, whether due to metallurgical recovery, commodity prices, or exchange rates, will negatively impact economic valuation of the project. However, the conservative copper price assumptions relative to consensus pricing used to confine the reserve will accommodate some variability in these factors without affecting the reserve estimate.

The project will require licenses and permits from various governmental authorities. There can be no assurances that Florence Copper will be able to obtain all necessary licenses and permits that may be required to carry out all of the proposed development and operations.

SECTION 16

MINING METHODS

SECTION 16: MINING METHODS

Table of Contents

Page

List of Tables

List of Figures

16.1 Introduction to In-Situ Copper Recovery

The extraction method proposed for the Florence Copper Project is in-situ copper recovery (ISCR). ISCR extracts copper by injecting a weak sulfuric acid solution called raffinate through targeted portions of the mineral deposit using an array of injection wells. The raffinate passes through natural fractures and voids in the deposit and dissolves the copper mineralization. The copper laden solution, known as pregnant leach solution (PLS), is collected in recovery wells where it is pumped to the surface for processing. Copper is extracted from the PLS using solvent extraction and electrowinning techniques (SX/EW) producing a saleable copper cathode product and raffinate for recirculating into the well field. Following the copper extraction sequence, the depleted reserve areas are rinsed to remove the remaining process solutions and restore ground water quality to prescribed standards. The ISCR stages are scheduled progressively allowing the first areas extracted to be rinsed and closed while other areas of the well field are under development.

In-situ recovery methods have been used successfully in the mineral extraction industry for over 50 years as an alternative to open pit or underground mining methods for mineral deposits with amenable geological and hydrological properties. In-situ recovery does not require physically handling the mineralized material, overburden, or non-mineralized rock and, consequently, this method does not require many of the activities typically associated with mining and beneficiation such as blasting, loading, hauling, crushing, conveying, grinding, flotation and smelting. The long-term environmental benefits of the in-situ method are that no open excavation, waste rock piles, heap leach piles, or tailings storage areas are generated, resulting in a much smaller footprint that does not significantly alter the site topography.

The equipment used for in-situ recovery includes wells, pumps and pipelines which inject, recover and convey process solutions. The PTF well field operated by Florence Copper is shown in Figure 16-1. Descriptions of the well field hydrological conditions, design, operations and rinsing are provided in the following sections.

Trade-off studies were conducted by Conoco, Magma and BHP that evaluated development of the FCP via underground and open pit mining. In 1994, Magma determined that the best method of development for the FCP would be the ISCR method and this has been subsequently confirmed by BHP and Florence Copper personnel. The deposit is well suited for ISCR due to the type of copper mineralization, composition of the host rock, fractured nature of the mineralized body, and saturated conditions. The ISCR method is the most environmentally sound, economical, and practical method for developing the Florence Copper deposit.

16.1 Introduction to In-Situ Copper Recovery – *Cont'd*

Figure 16-1: Aerial Photo of Florence Copper PTF Well Field

16.2 Hydrological Setting

(a) Introduction

Hydrological characterization of the Florence Copper site has been performed by previous owners of the project starting in 1971. Initially, an underground mine was contemplated, however, after completing detailed hydrological studies and advancing an underground pilot mine to collect a bulk sample, it was determined that intense fracturing and groundwater saturation of the deposit created difficult mining conditions that rendered the development of an underground or open pit mine unfeasible. These findings led the owners to consider ISCR starting in the 1980s as the very conditions that made underground or open pit mining challenging created favorable conditions for ISCR methods.

Subsequent studies, culminating in the operation of the PTF by Florence Copper, have demonstrated:

- The oxide ore zone behaves hydrologically as an equivalent porous media allowing hydraulic control of injected solutions to be maintained;
- The mineralized body has sufficient hydraulic conductivity to support well to well fluid flow;
- Injected solutions can be recovered in a reliable manner;
- Sweep efficiency of at least 90% can be achieved; and
- Solution flow can be targeted to specific zones within the formation using packers and pump placement within the wells.

Summaries of the hydrological studies undertaken by the previous owners of the project and their conclusions are provided in the following sections.

16.2 Hydrological Setting – *Cont'd*

(b) Conoco

The hydrologic properties of the Florence Copper deposit have been vital to planning for the site since development was first conceptualized by Conoco in the late 1960's. Conoco began hydrologic characterization of the site in 1971 to determine the dewatering requirements for a planned underground mine. Hydrologic testing conducted included several large scale pumping tests, one of which included pumping at an aggregate rate of in excess of 7,500 gallons per minute (gpm) for a period of more than six months while monitoring the hydraulic response of water levels in the Bedrock Oxide Unit.

After completing detailed hydrologic studies and advancing an underground pilot mine to collect a bulk sample, Conoco determined that intense fracturing and groundwater saturation of the deposit created difficult mining conditions that rendered the development of an underground or open pit mine unfeasible. These findings led Conoco to first consider ISCR in 1980 as the very conditions that made underground or open pit mining challenging at the Florence Copper site created favorable conditions for ISCR methods.

Although the hydrologic studies conducted by Conoco were not conducted for the purpose of demonstrating ISCR feasibility, this work yielded several important conclusions that address the hydrologic conditions required for successful ISCR. Key Conoco findings included hydraulic characterization of each of the water bearing units at the FCP site, and the hydraulic relationships between each of those units.

16.2 Hydrological Setting – *Cont'd*

(c) Magma

After purchasing the Florence Copper property, Magma initiated a study that included a re-evaluation of the potential for copper production by open pit mining or ISCR methods. The study included a review of hydrologic characteristics of the FCP mineralized body and concluded that ISCR is the most effective means of producing copper at the Florence Copper site.

After completion of the study, Magma initiated an intensive hydrologic characterization program that included a series of 49 pumping tests conducted at 17 well locations distributed across the Florence Copper site. The tests included 17 pumping wells and 46 monitoring wells screened within the various water bearing units. Eight wells were completed within the upper basin-fill unit (UBFU), 17 within the lower basin-fill unit (LBFU), 38 wells within the Bedrock Oxide Unit including the hanging wall and footwall zones of the major faults, and 3 wells within the Sulfide Unit. Each of the pumping tests was conducted at pumping rates of at least 0.25 gpm per lineal foot of well screen. The results of the pumping tests allowed the hydrologic parameter values describing each of the water bearing units to be derived. Key conclusions of the pumping tests included:

- Demonstration that sufficient groundwater can be pumped from the Bedrock Oxide Unit to sustain extraction rates of at least 0.1 gpm per lineal foot of well screen on a continual basis;
- Demonstration that the LBFU and Bedrock Oxide Unit are in hydraulic communication; and
- Demonstration that the Sulfide Unit is in limited hydraulic communication with the Bedrock Oxide Unit.

16.2 Hydrological Setting – *Cont'd*

(d) BHP

After BHP acquired Magma and the Florence Copper site, they initiated a commercial scale field pilot test (Pilot Test) by installing an ISCR well field consisting of a total of 20 wells.

The Pilot Test well field consisted of four injection wells and five recovery wells. The injection wells were installed at a spacing of approximately 70 feet with one recovery well located in the center of the pattern approximately 50 feet from each injection well. The other four recovery wells were located outside the injection wells to maintain hydraulic control. The injection and recovery wells had an average screen length of approximately 400 feet. The Pilot Test design employed a nominal injection rate of 40 gpm per well or approximately 0.1 gpm per lineal foot of screen. The design aggregate injection rate was 160 gpm and the aggregate recovery rate was 190 gpm.

Typical injection and recovery rates during the Pilot Test ranged from 0.09 to 0.14 gpm per lineal foot of screen and reached as high as 0.44 gpm per lineal foot of screen. During the test, solution injection and recovery rates were actively managed to ensure that recovery rates exceeded injection rates to maintain hydraulic control.

The BHP Pilot Test successfully demonstrated that:

- The mineralized body has sufficient hydraulic conductivity to support well to well fluid flow;
- injection and recovery rates of 0.1 gpm per foot of screen can be sustainably maintained for ISCR operations;
- Injected solutions can be recovered in a reliable manner;
- Hydraulic control of injected solutions can be maintained; and
- Effective rinsing of the well field can be accomplished.

16.2 Hydrological Setting – *Cont'd*

(e) Florence Copper

Florence Copper has utilized the extensive hydrologic data set and long-term quarterly groundwater monitoring results to develop a sub-regional groundwater flow model representing the Florence Copper site and an area of approximately 125 square miles around the site. The groundwater flow model was prepared to support applications to amend the operational permits initially issued to BHP by the ADEQ and USEPA. The groundwater flow model confirmed that sufficient groundwater resources are available to support planned ISCR operations for the proposed duration of the project.

Additional hydrologic studies completed during the operation of the PTF were:

- Optimization of well design and performance;
- Examination of the hydraulic relationship between the Bedrock Oxide Unit and the Conoco underground workings;
- Optimization of hydraulic control pumping rates; and
- Refinement of sweep efficiency modeling.

16.2 Hydrological Setting – *Cont'd*

(f) Hydrostratigraphic Units

The saturated geologic formations underlying the Florence Copper site have been divided into three distinct water bearing hydrostratigraphic units referred to as the Upper Basin Fill Unit (UBFU), Lower Basin Fill Unit (LBFU), and the Bedrock Oxide Unit. The Bedrock Oxide Unit is the hydrological designation of the copper oxide zone that contains the Mineral Resources and Mineral Reserves that are the subject of this report. The UBFU and LBFU are separated, in the project area, by an aquitard material referred to as the Middle Fine Grained Unit (MFGU). The Bedrock Oxide Unit is underlain by the Sulfide Unit, which is effectively impermeable. Each of these units generally corresponds to regionally extensive hydrostratigraphic units described by the Arizona Department of Water Resources.

The hydrostratigraphic units with typical thicknesses are illustrated in Figure 16-2.

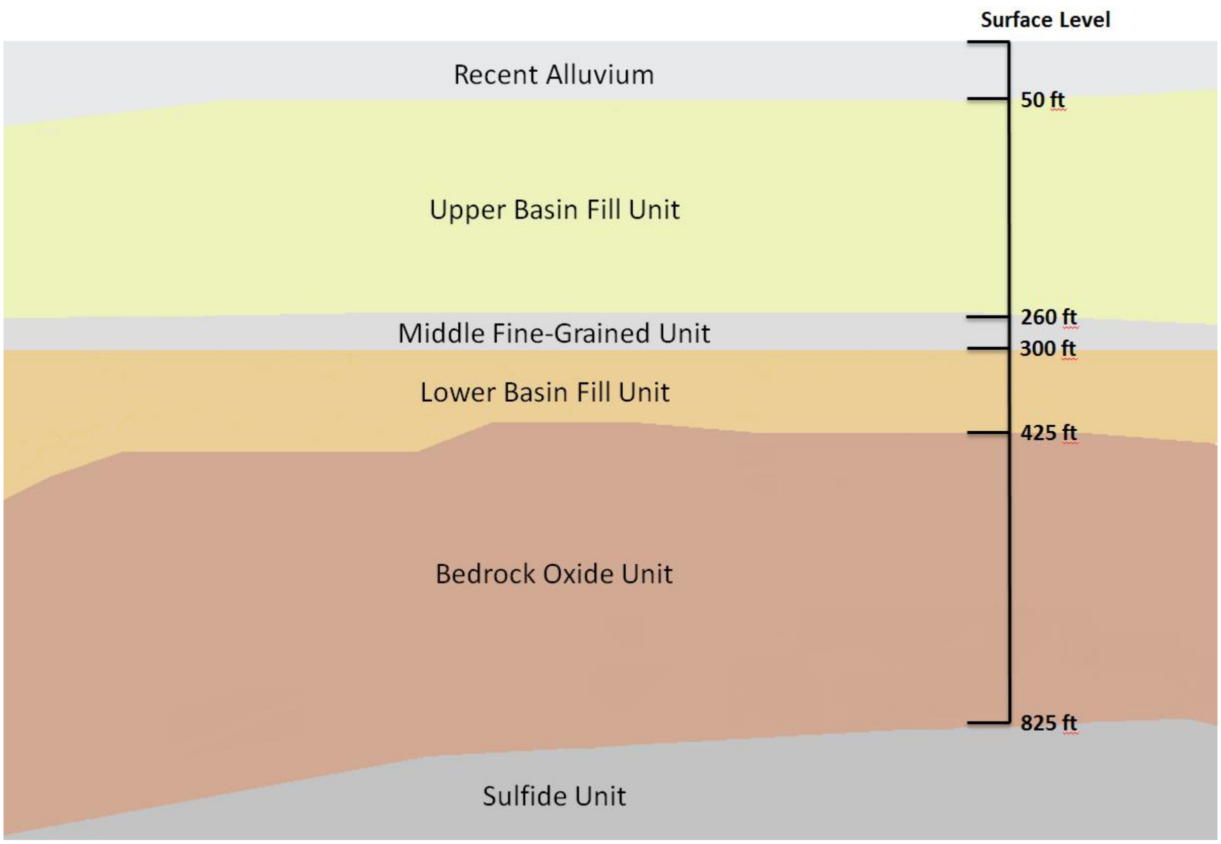


Figure 16-2: Water Bearing Units

16.2 Hydrological Setting – *Cont'd*

(f) Hydrostratigraphic Units – *Cont'd*

Recent Alluvium

The UBFU is locally overlain by recent alluvial floodplain sediments emplaced by the Gila River and tributary washes in the vicinity of the FCP site. The recent alluvium is unsaturated and consists of unconsolidated silt, sand, gravel, and boulders that locally overlie the basin fill deposits of the UBFU. The width of recent alluvium emplacement is approximately one mile on either side of the Gila River. The thickness of the recent alluvium at the FCP site ranges from zero near the bedrock outcrops to approximately 60 feet at the Gila River.

Upper Basin Fill Unit

The UBFU consists primarily of unconsolidated to slightly consolidated sands and gravel, with lenses of finer-grained material. The upper portions of the unit are generally fine-grained and calcareous, consisting of a gradational succession of poorly graded, silt and sand with minor gravel. The UBFU ranges between 200 and 240 feet in thickness within the footprint of the proposed ISCR area. The UBFU is the shallowest water bearing unit and is unconfined within the proposed ISCR area. The UBFU is locally isolated from the deeper water bearing units by the MFGU and is not in direct hydraulic communication with the deeper water bearing units in the project area.

Middle Basin Fill Unit

The MFGU underlies the UBFU and hydraulically isolates the deeper water bearing units from the UBFU in the project area. The MFGU composition ranges from calcareous clay to silty sand, and includes reworked broken clay clasts, carbonaceous film, and thin interbeds of fine sand. The MFGU is an important component of the hydrologic framework within which the planned ISCR operation will be developed, and the unit is generally 20 to 40 feet thick in the ISCR area. The MFGU is a low hydraulic conductivity layer that maintains confined groundwater conditions within the LBFU which overlies and directly recharges groundwater to the Bedrock Oxide Unit.

16.2 Hydrological Setting – *Cont'd*

(f) Hydrostratigraphic Units – *Cont'd*

Lower Basin Fill Unit

The LBFU underlies the MFGU at the proposed ISCR site and comprises the lower portion of the sedimentary fill overlying Precambrian bedrock. The MFGU-LBFU contact at the planned ISCR site ranges in depth from 260 to 300 feet below ground surface. The LBFU consists of coarse gravel, fanglomerate, conglomerate, and breccia. It is distinguished by a greater degree of consolidation than is exhibited by the UBFU. The conglomerate portion of the LBFU may correlate with the Gila and Whitetail Conglomerates described in the region. Substantial bedrock structural relief has resulted in significant variation in LBFU thickness, which ranges in an east-west direction from approximately 70 feet to more than 400 feet.

The LBFU overlies the Bedrock Oxide Unit and would provide water recharge to replace groundwater extracted from the mineralized material body.

Bedrock Oxide Unit

Bedrock underlying the LBFU in the proposed ISCR area consists primarily of Precambrian quartz monzonite and Tertiary granodiorite porphyry. The bedrock is divided into an upper Bedrock Oxide Unit and a lower Sulfide Unit based on the copper mineral assemblage. The Bedrock Oxide Unit for the FCP is estimated to range in thickness from approximately 200 feet to over 1000 feet with an average thickness of approximately 400 feet.

The top of the Bedrock Oxide Unit consists of a weathered rubbly mixture of fracture filling and angular bedrock fragments and has been demonstrated to be a zone of enhanced hydraulic conductivity. Below this weathered zone, the oxide unit consists of extensively fractured quartz monzonite, granodiorite, and associated dikes. Movement of groundwater through the Bedrock Oxide Unit is controlled by secondary permeability features such as faults, fractures, and associated brecciation. Statistical analysis of drill core indicates an average of 10 to 15 open fractures per foot in the Bedrock Oxide Unit.

Aquifer tests conducted in the Bedrock Oxide Unit have demonstrated that the extensive fracturing observed in the unit is interconnected to the point that the fractured rock behaves as a porous media under pumping conditions. Pumping and injection tests have been successful in establishing, maintaining, and controlling consistent fluid flow through the Bedrock Oxide Unit. The natural permeability of the Bedrock Oxide Unit is sufficient for ISCR operations without any modification or enhancement.

16.2 Hydrological Setting – *Cont'd*

(f) Hydrostratigraphic Units – *Cont'd*

Sulphide Unit

The Bedrock Oxide Unit is underlain locally by the Sulfide Unit which is a zone of sulfide mineralization that occurs in the same quartz monzonite and granodiorite rocks that compose the Bedrock Oxide Unit. The Sulfide Unit is significantly less permeable than the over lying Bedrock Oxide Unit.

Hydraulic Conductivity

The range of hydraulic conductivities measured in each of the water bearing and non-water bearing units are shown on Figure 16-3. The relationships shown on that figure include:

- Hydraulic conductivity values measured within the Bedrock Oxide Unit are similar, in part, to those measured in the overlying water bearing alluvial basin fill deposits and are greater than those measured in the Sulfide Unit.
- Hydraulic conductivities measured in the MFGU are significantly lower than those measured in any other units which illustrates why the MFGU inhibits groundwater flow between the UBFU and the LBFU.

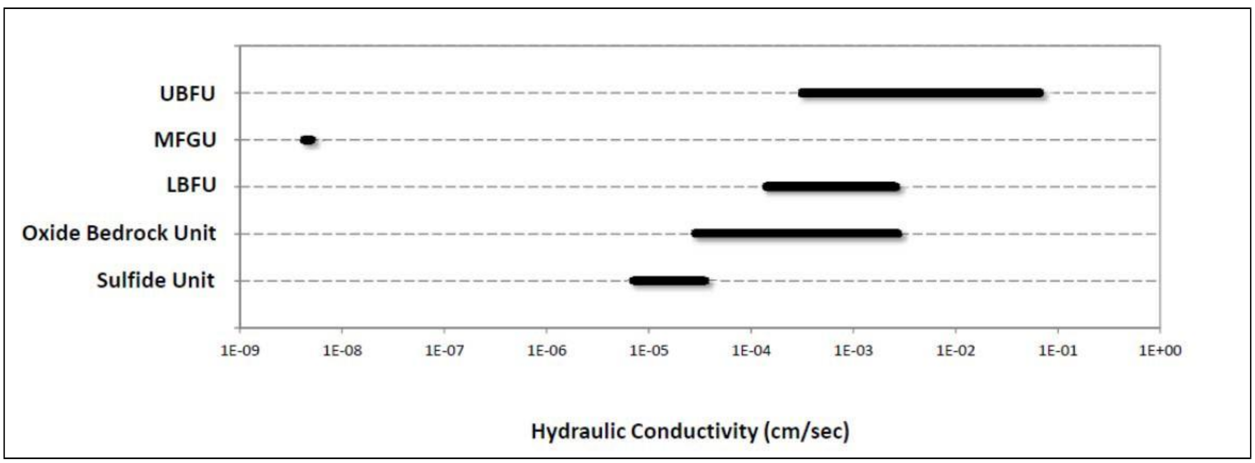


Figure 16-3: Hydraulic Conductivity

16.3 ISCR Extraction Method

(a) Hydraulic Control

ISCR requires the process solutions in the well field to be injected, passed through the targeted portion of the ore deposit and effectively recovered to maximize extracted copper and meet environmental objectives. Process solutions are controlled in the well field by hydraulic control, where an inward hydraulic gradient is established around the well field so that water from the surrounding area flows towards the area being leached and process solutions are retained in the well field.

The inward hydraulic gradient will be created and maintained within the active ISCR area by constantly withdrawing more fluid than is injected. The pumping rate is anticipated to be 106% of the total injection rate to maintain hydraulic control. The sub-regional groundwater flow model developed by Florence Copper has demonstrated that sufficient groundwater resources exist within the Bedrock Oxide Unit and the overlying LBFU to comfortably support the net groundwater extraction rate for the duration of the proposed ISCR operations.

To monitor the status of the hydraulic gradient, observation wells at the edge of the well field will be installed. Florence Copper will continuously monitor hydraulic heads at, and gradients between well triplets surrounding the active well field consisting of point-of-compliance wells, observation wells and perimeter or recovery wells. The Florence Copper project design allows the pumping and injections rates to be varied as required to adjust the hydraulic gradients and ensure hydraulic control is maintained. The Pilot Test operated by BHP and the PTF operated by Florence Copper, both demonstrated that hydraulic control can be established and maintained within the ore zone.

16.3 ISCR Extraction Method – *Cont'd*

(b) Well Field Design

The planned ISCR facility consists of an array of injection and recovery wells that will be used to inject raffinate and recover the copper laden PLS. Surrounding these wells will be perimeter wells used to extract the hydraulic control solution required to maintain hydraulic control, followed by observation wells to monitor the hydraulic gradient.

Injection and recovery wells are arranged in a five-spot pattern with one injection well at the center and four recovery wells at the corners of each square cell. Each five-spot pattern forms a single extraction unit within the greater well field. Spacing between wells of the same type is 100 feet and injection to recovery well spacing is approximately 70 feet. A single five-spot well arrangement is illustrated in Figure 16-4.

Perimeter and observation wells are positioned in the first rows surrounding the active well field, in positions normally corresponding to future injection and recovery well locations. This allows the wells to be repurposed as the well field is expanded. A total of 2,142 wells are required over the life of the extraction plan although not all of these wells will be active at the same time.

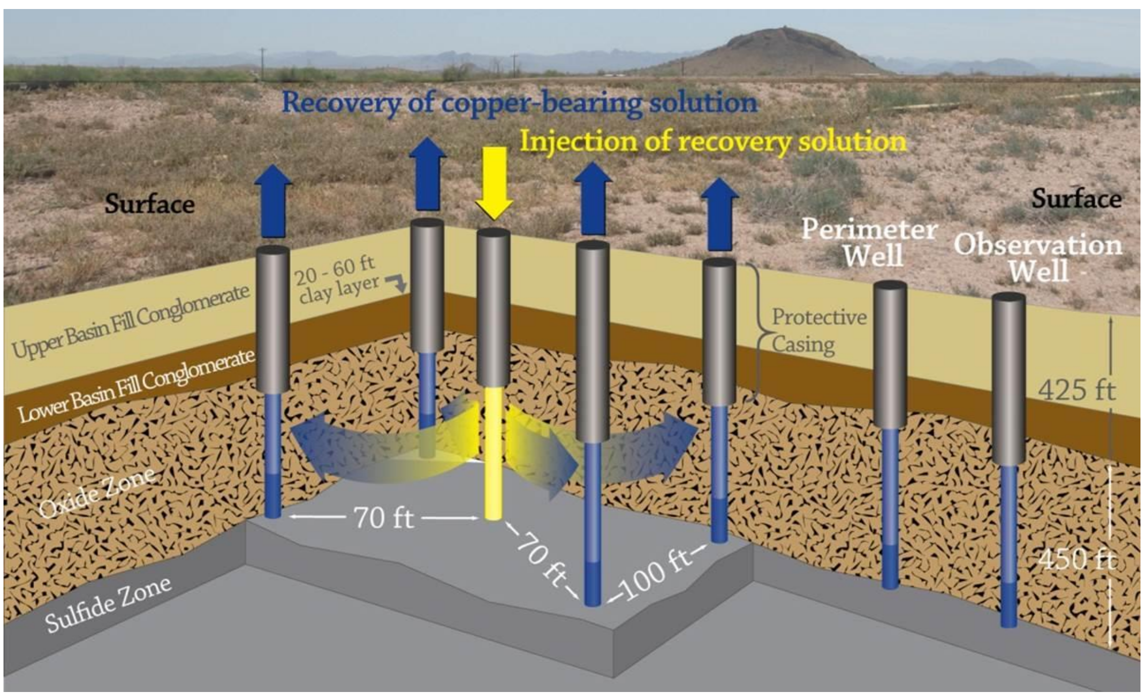


Figure 16-4: Single Five-Spot Extraction Unit with Perimeter and Observation Wells

16.3 ISCR Extraction Method – *Cont'd*

(b) Well Field Design – *Cont'd*

Well Design

Injection, recovery, perimeter and observation wells will be of a single design, with minor variations in instrumentation, screened interval and casing diameter based on the localized properties of the orebody and the well type.

The design incorporates a casing string that extends from the ground surface to the bottom of the BEZN (40 feet below the top of the Bedrock Oxide Unit). The casing will be cemented for its entire length and must pass a mechanical integrity test as defined by the USEPA prior to being placed into service. This robust casing design will isolate the UBFU, MFGU and LBFU from the process solutions passing to and from the Bedrock Oxide Unit. Below the casing string, the wells may have a continuous screened interval, or multiple intervals to allow selected zones within the Bedrock Oxide Units to be isolated using packers inside the well. A schematic well diagram is included as Figure 16-5.

Wells will be constructed in a manner that allows them to change service as the well field develops. This will allow wells initially constructed as perimeter and observation wells to be converted to injection and recovery wells as the well field expands over time. It will also provide the capability of converting between injection and recovery wells in order to operate in a reverse flow configuration.

Wells will be instrumented to monitor flows, pressures and phreatic surface. Annular conductivity devices (ACDs) will be installed in all wells at the top of the aquifer exemption zone (the lower of MFGU or 200 feet above the oxide zone) and at the top of the oxide zone in 10% of wells. The data collected will be used to monitor the performance and the mechanical integrity of the wells. Controls will be installed on each of the wells allowing the flow rates to be adjusted based on operational needs.

16.3 ISCR Extraction Method – *Cont'd*

(b) Well Field Design – *Cont'd*

Well Design – *Cont'd*

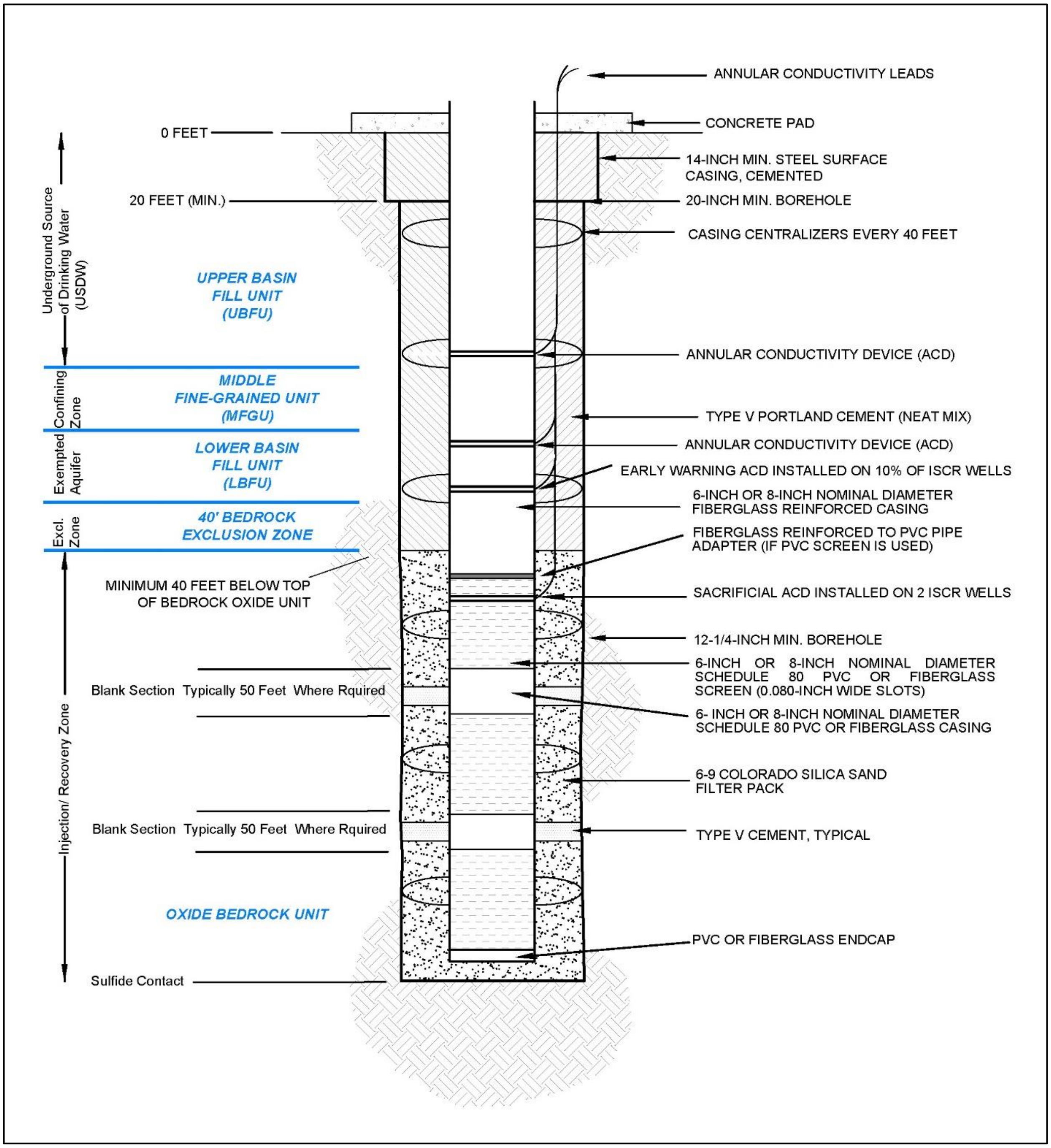


Figure 16-5: Nominal Well Design

16.3 ISCR Extraction Method – *Cont'd*

(c) Operating Controls

Individual extraction units in the well field will be leached to an economic PLS cut-off grade after which they will transition to rinsing. The following operational controls and tactics were developed based on experience gained from the PTF and will be used to manage the copper extraction rate from the well field. These controls provide flexibility during the leaching phase to manage the extraction sequence and total copper extracted from the reserve.

Injection and Recovery Flow Rates

Flow rates for individual wells will be dictated by the thickness of the ore zone being subjected to leaching with maximum flow rates of 0.2 gpm per linear foot of well screen. Injection and recovery rates are adjusted in order to manage the maximum allowable flow, maximum allowable injection pressure, total volume of over-pumping required to maintain hydraulic control, copper grade of the PLS being extracted andtotal copper extraction from the well field. Flow rates may also be reduced in areas of the well field to slow copper depletion from selected areas to maintain logical extraction and rinsing sequences.

Raffinate Strength

Acid concentration in the raffinate (or raffinate strength) can be adjusted to control the copper extraction rate and copper grade of the PLS. Acid strength in the extraction plan varies between 10 and 15 grams per liter with stronger raffinate typically applied early in the leach sequence to promote a shorter ramp up period for copper extraction in new wells and higher copper grades in PLS. As areas of the well field become depleted, the acid strength will generally be reduced to limit acid consumption. Operationally, acid strength may be reduced below 10 grams per liter if warranted by operational requirements.

16.3 ISCR Extraction Method – *Cont'd*

(c) Operating Controls – *Cont'd*

Packer Placement

Except for very thin areas of the ore zone, injection and recovery wells will be constructed with several screened intervals separated by blank casing allowing the installation of packers to isolate one or more of the screened intervals. This provides some degree of selectivity by targeting injection or recovery of process solutions to levels within the ore zone. This will allow targeting of specific grade zones, and rotation of active leach zones to manage PLS grade and maximize overall recovery. The use of packers will also allow the operation to direct process solution flows through deeper zones in the well column where hydraulic conductivity is expected to be lower compared to the top of the ore zone. The number of screened intervals and location of blanks for potential packer installation will be determined based on grade distribution, hydrological parameters, and thickness of the ore zone.

Reverse Flow

As areas of the well field are commissioned, internal production wells will be cycled through operation in both standard and in reverse flow configurations. In the reverse flow configuration injection and recovery wells have their duties reversed and the leach solutions transit the ore system in the opposite direction. The outer row of wells at the edge of the active leaching area will always operate as recovery wells and will not change duty when the internal wells are reversed. The use of reverse flow will accelerate the initial acidification of the well field.

Reverse flow is also potentially employed at later stages of extraction as areas of the well field near depletion. Reversing flow at this stage of extraction will expose the ore around the recovery wells to fresh raffinate and may help ensure maximum recovery is achieved. Florence Copper will continue to test reverse flow strategies during the operational phase of the project.

16.3 ISCR Extraction Method – *Cont'd*

(c) Operating Controls – *Cont'd*

Well Cut Off Grade

Extraction units in the well field will be cut off based on the differential between the copper grade of the injected raffinate and the recovered PLS. As the copper grade in raffinate varies throughout the extraction plan, the differential cut off grade is used to evaluate the copper contribution from individual extraction units. An extraction unit remains economic so long as the value of the differential copper recovered exceeds the costs associated with well field and processing costs. Processing costs for low grade solutions can be managed by solution stacking where low grade PLS bypasses the SX/EW plant and is re-acidified and returned to the well field to increase in grade prior to processing. When an extraction unit falls below the cut off, it is considered depleted, and rinsing begins. The economic copper cut off grade based on the economic parameters outlined in Section 21 is 0.3 g/L. However, some extraction units will be cut off prior to reaching the economic cut off value as necessitated by other scheduling factors, and it is expected that extraction units will be cut off between 0.3 and 0.4 g/L over the life of the project.

16.3 ISCR Extraction Method – *Cont'd*

(d) Rinsing

Following copper extraction, the well field will be rinsed to recover the process solutions from the ore zone and return the aquifer to prescribed water quality standards. Rinsing occurs progressively as areas of the well field are cut off until rinsing of the whole well field is complete. Once the rinsing cycle in a particular area is complete the area can be decommissioned.

The rinsing process occurs in three stages to achieve the desired aquifer water quality for well field closure. In the first stage, the addition of acid to the injected fluid is discontinued to begin the ramp-down of the mineral dissolution process, reducing both the free acid and sulfate load in the formation, while facilitating the continued removal of dissolved constituents. In the second stage, fresh or treated water injection begins after the concentration of dissolved constituents has been reduced. In the third stage, sodium bicarbonate and ferric iron are added to the water injection to restore buffering capacity in the formation and reduce the solubility of the remaining mineral constituents.

The rinsing plan includes treatment and recycling of the rinse solutions to minimize the amount of fresh water consumed during the rinse. Solutions are circulated in the depleted ore zone using the same injection and recovery wells used for copper extraction.

The volume of rinse solution required to achieve the water quality objectives was determined by a combination of geochemical modeling and metallurgical test work described in Section 13 of this report. See Section 20.2 (f) for additional details on the geochemistry model.

16.3 ISCR Extraction Method – *Cont'd*

(e) Construction Factors

The well field development will occur continuously from the initial drilling conducted during construction of the site facilities until Year 18 when the final wells are brought into service. This on-going development will require periodic cultural mitigation efforts and abandonment of non-ISCR related core holes and wells.

Cultural Resource Mitigation

There are 46 Cultural Sites identified on the Florence Copper property. The project facilities and infrastructure have been designed to avoid impacting cultural resource sites wherever possible; however, there are sites within the well field that will require mitigation prior to initiating ISCR activities in those areas. Core hole and well abandonment sites surrounding the well field will also require mitigation if they fall within a cultural site.

Mitigation by archaeological data recovery has been proposed by Florence Copper prior to any development work in sites which cannot be avoided. This involves the collection of surface materials, followed by mechanical testing to identify buried features, and then proceeds to full-scale data recovery (feature excavation) where warranted. Abbreviated conventional archaeological work would be employed at the core hole and well abandonment sites where limited disturbance would occur. Archaeological monitoring will also be used for all ground disturbing activities (irrespective of proximity to Cultural Sites) as required by permit.

Approximately one third of the area of Cultural Sites located in the well field are located in former agricultural fields which have been largely disturbed by farming activity. Feature excavation in these areas is expected to be less intensive due to disturbances cause by farming.

16.3 ISCR Extraction Method – *Cont'd*

(e) Construction Factors – *Cont'd*

Core Hole and Well Abandonments

Prior to initiating copper extraction from the well field, core holes from the exploration of the deposit and non-ISCR wells located within 500 feet of the well field and within 150 feet of a process pond must be abandoned. This is a precautionary measure to prevent the migration of process solutions above the ore zone using a core hole or well as a conduit. Generally, core hole and well locations are known from historic records or from more recent surveys. The abandonment procedure will meet permit requirements but generally consists of locating the core hole or well, cleaning the hole, removing or perforating any surface casing, and filling the hole with cement from the oxide zone to surface.

Abandonments will be completed progressively, one year in advance of a corresponding well field expansion. A total of 264 core holes and 121 wells require abandonment throughout the well field over the life of the project in addition to those required for facility construction.

16.4 Extraction Sequence

(a) Summary

The extraction sequence spans 22 years, extracting a nominal 86 million pounds of copper per year with ramp up and wind down periods at the beginning and end of the production sequence. Rinsing starts when leaching on the first recovery units has been completed and continues through Year 25, 3 years after the completion of copper extraction. A summary of the extraction plan is provided in Table 16-1.

The extraction plan is designed to feed the SX/EW plant at a nominal rate of 11,230 gpm with enough copper in solution to produce 85 million pounds of copper cathode after accounting for surface losses. The reserves discussed in Section 15 of this report were divided into 75 scheduling blocks based on geometric and grade considerations. These blocks were then scheduled using the following considerations:

- Well field expansion generally follows a value-based sequence based on the valuation discussed in Section 15 of this report.
- The well field flows are sequenced to allow development of new well field areas and complete leaching of established well field areas while maintaining the PLS grade feeding solvent extraction.
- The well field is scheduled as a single, contiguous well field and in consideration of a logical rinsing sequence.
- Any required permit amendments will be forthcoming in the timelines required by the extraction plan.
- Metallurgical recoveries and acid consumption are predicted by the leach model discussed in Section 13 of this report.

The extraction sequence initially expands south from the PTF area. Starting in Year 4, the well field is then expanded to the northeast and northwest, extending to the ultimate boundary in the northwestern quadrant of the reserve by Year 7. Over the following years, the well field continues to grow into the northeastern quadrant of the reserve and southward, filling out to the western edge of the reserve. By Year 10, the well field development has covered the entire northwestern half of the reserve and has started to expand into the southeastern quadrant. The remaining reserve is developed by extending the well field to the northeast, then the southwest and finally the extreme east with construction complete by Year 18.

Rinsing of the ore body begins at the northwestern corner of the well field and advances in a southeast direction until complete.

16.4 Extraction Sequence – *Cont'd*

(a) Summary – *Cont'd*

Table 16-1: Extraction Plan Summary

Year	SX/EW Feed (gpm)	PLS Grade (g/L)	Cu Extracted* (thousand lbs)
1	4,170	2.1	35,200
2	8,490	2.2	74,000
3	11,230	2.0	86,600
4	11,230	1.9	86,000
5	11,230	1.9	85,200
6	11,230	1.9	85,000
7	11,230	2.0	87,400
8	11,230	1.9	86,200
9	11,230	1.9	85,400
10	11,230	1.9	86,200
11	11,230	1.9	85,300
12	11,230	1.9	85,900
13	11,230	1.9	85,100
14	11,230	1.9	86,000
15	11,230	1.9	86,000
16	11,230	1.6	72,500
17	11,230	1.6	71,100
18	11,230	1.2	55,300
19	11,230	1.2	51,000
20	11,230	0.8	37,000
21	11,100	0.4	18,800
22	6,120	0.4	8,600
23	--	--	--
24	--	--	--
25	--	--	--

* Includes copper removed from the in-situ reserve without the application of surface losses.
Note: Year 1 production represents a partial year of operation.

SECTION 17

RECOVERY METHOD

SECTION 17: RECOVERY METHOD

Table of Contents

Page

List of Tables

List of Figures

17.1 Recovery Method

The ISCR process is based on the injection of a lixiviant raffinate solution into the orebody via the injection wells. The raffinate solution is composed of approximately 99.5 percent water mixed with 0.5 percent sulfuric acid. The raffinate solution dissolves the copper-bearing minerals as it passes through the orebody, enriching the copper concentration of the solution. The enriched copper solution known as pregnant leach solution (PLS) is recovered through a network of recovery wells, and subsequently pumped to a PLS pond which feeds the process plant which selectively extracts the copper. Following copper extraction, the now copper depleted solution referred to as raffinate is directed to the raffinate pond for subsequent re-acidification and re-injection back into the ISCR well field.

Florence Copper will utilize conventional solvent extraction (SX) and electrowinning (EW) technology to extract copper from the PLS in the SX plant and produce a final copper cathode product in the EW plant.

During the initial years of ISCR operation, and prior to the commencement of rinsing, excess solution inventory primarily generated from hydraulic control flows will be directed to a small lime neutralization plant to adjust pH and subsequently sent to a process water impoundment for evaporation. The recovery method prior to rinsing is depicted in Figure 17-1 below.

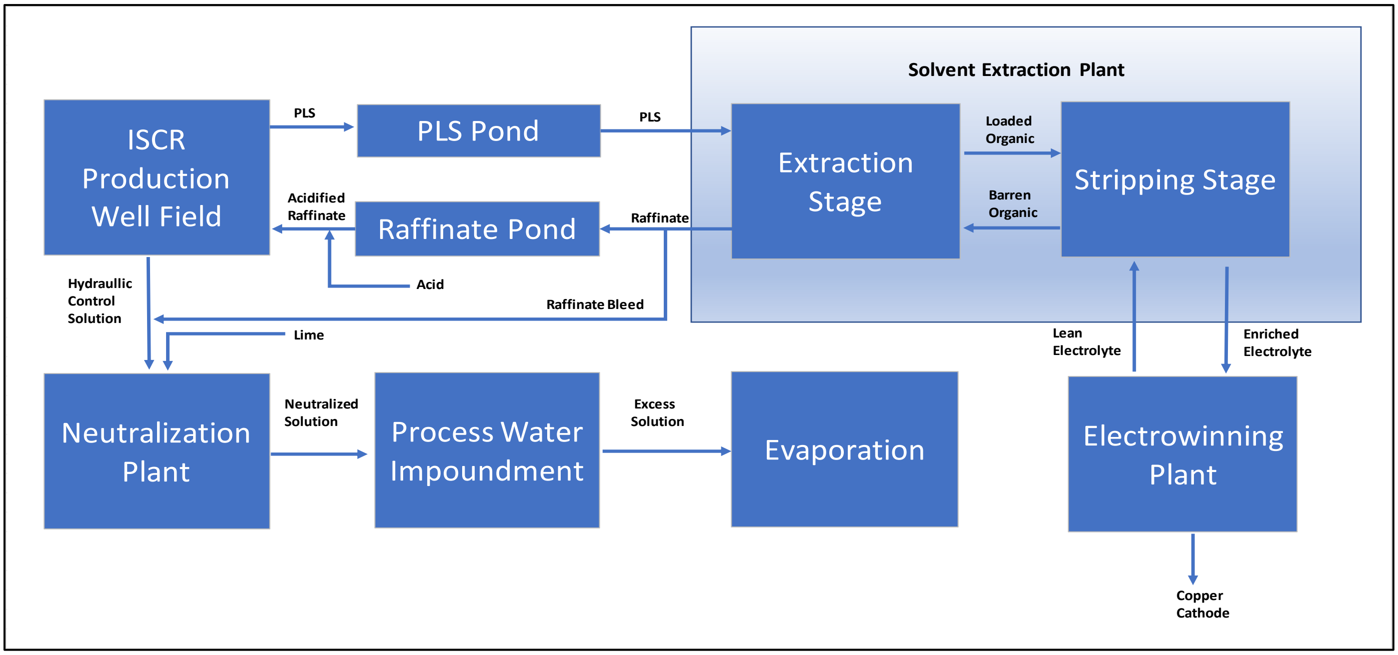


Figure 17-1: Process Block Flow Diagram Prior to Rinsing

17.1 Recovery Method – *Cont'd*

At the conclusion of copper recovery in each ISCR ore block, rinsing of that area will commence to restore the aquifer water quality of the ore block back to prescribed levels. A water treatment plant will be brought online part way through the project life to minimize use of fresh water during rinsing operations. The water treatment plant will process the excess solution produced in the ISCR process to generate the quality and quantity of water required to support the rinsing operations. Excess solution inventory not needed for rinsing along with waste streams generated from water treatment plant will be sent to the process water impoundment for subsequent evaporation and long-term solids storage.

Figure 17-2 below illustrates the overall process flow configuration with inclusion of the water treatment plant during well field rinsing operations.

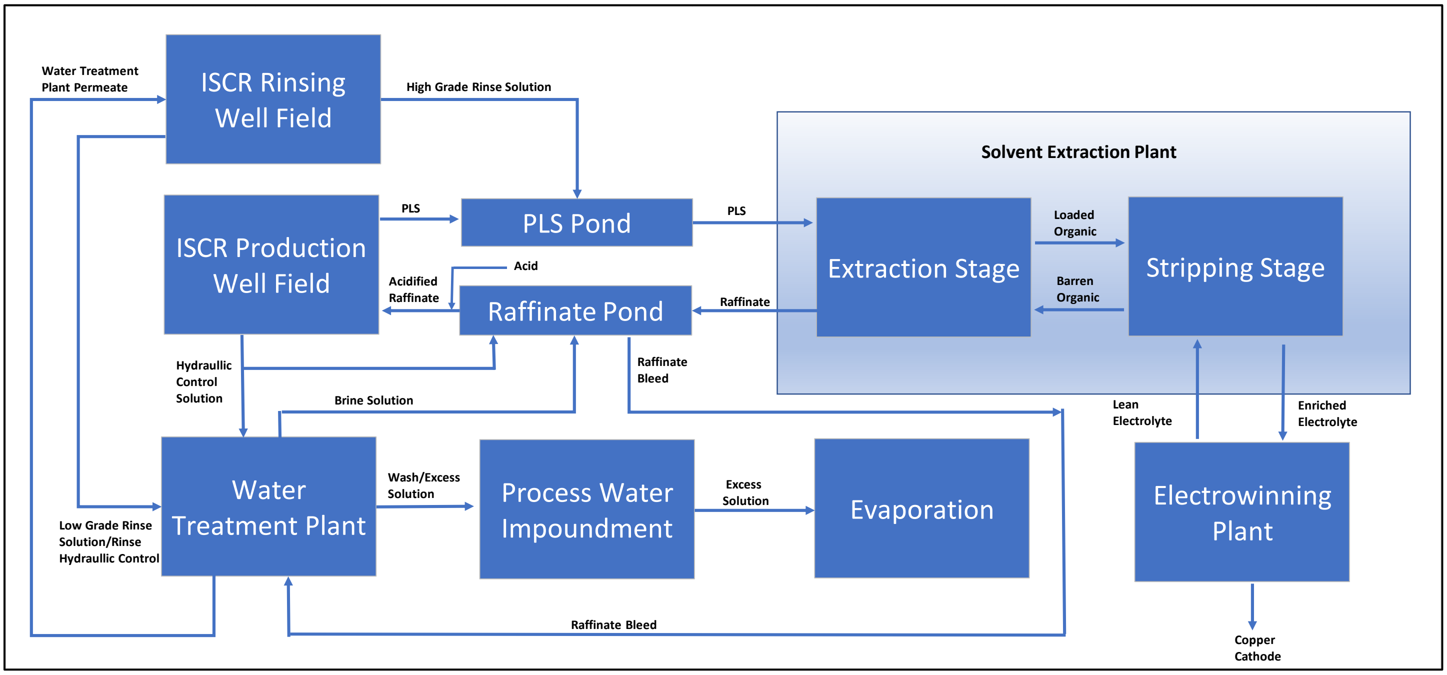


Figure 17-2: Process Block Flow Diagram During Rinsing

The plant site will be located on Florence Copper private land adjacent to the main entrance to the property and to the east of the existing PTF facilities and the well field. The plant site layout is illustrated in Figure 17-3 below, while an overview of the of the project site layout including PTF facilities is provided in Section 18 (Figure 18-1) of this report.

The design and function of the process facilities are discussed in the following sections.

17.1 Recovery Method – *Cont'd*

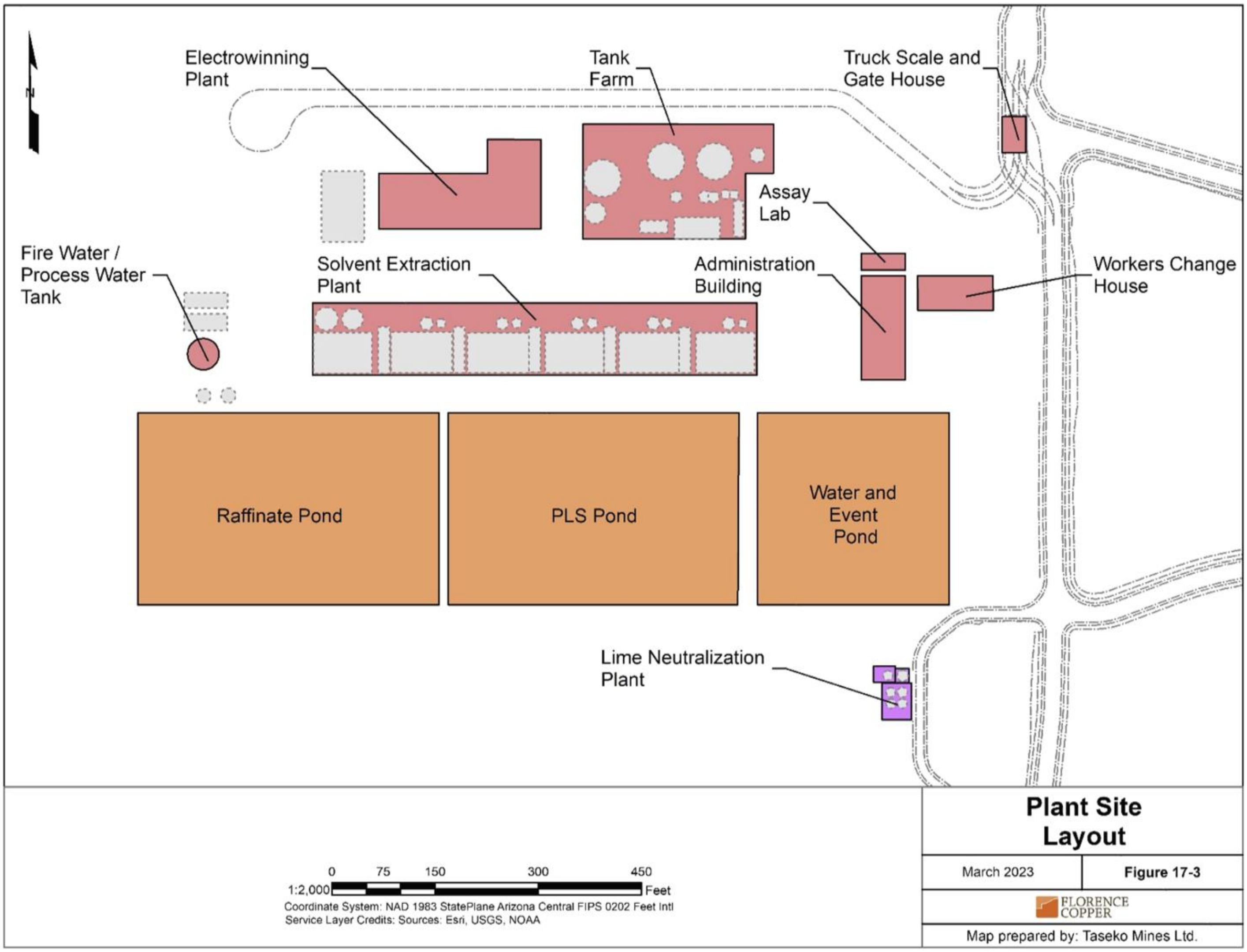


Figure 17-3: Plant Site Layout

17.2 In-Situ Copper Recovery Well Field

As described in Section 16, the ISCR well field involves the recovery of copper from the subsurface ore by injecting raffinate and recovering PLS in a series of wells.

Raffinate solutions will be pumped to the injection wells from the raffinate pond via a network of high-density polyethylene piping. PLS will be extracted from the recovery wells by variable speed electric submersible well pumps. PLS will be collected in a piping network and delivered to the PLS Pond. From there, PLS will be pumped to the SX plant to extract the copper which will subsequently be recovered to cathode copper sheets. Injection and recovery flow rates will be balanced to maintain the hydraulic gradients in the well field and produce a nominal flow of 11,230 gpm of PLS to the SX Plant.

Hydraulic control pumping will be conducted in a series of perimeter wells, located around the active ISCR area, using variable speed electric submersible pumps. Hydraulic control flow rates will be set to ensure that hydraulic control of the process solutions is maintained. The hydraulic control solution is collected in a dedicated piping network which can be directed to water treatment or the raffinate pond as required.

After copper recovery in an area is completed the area will be rinsed to restore the aquifer to prescribed water quality standards. The rinsing process uses the same injection and recovery wells as used for copper recovery. A water treatment plant is utilized during rinsing to minimize the freshwater requirements for the process.

All wellheads and process solution pipelines will include secondary containment systems and will be equipped with instrumentation and controls required to maintain the desired operating conditions. The corridors between wells will alternate between pipeline routes and road access for sampling and maintenance.

17.3 Process Ponds

The PLS and raffinate ponds are located adjacent and to the south of the SX Plant. The ponds are designed with 36 hours of retention time to provide operational flexibility for both the SX Plant and the well field. The process ponds will be constructed with a double high-density polyethylene liner system in accordance with Arizona's Best Available Demonstrated Control Technology (BADCT) standards. The raffinate pond is equipped with a pumping system to deliver raffinate to the well field and the PLS Pond is equipped with a pumping system to feed PLS to the SX plant. The raffinate pond will also be equipped with a raffinate organic skimmer system to recover any residual organic contained within the raffinate solution prior to subsequent solution recycle and re-injection into the well field.

A storm water and event pond will be constructed to the east of the PLS pond to collect all surface run off from the plant site. A pumping system will be installed in the pond to transport any collected solutions to water treatment.

17.4 Solvent Extraction Plant

The SX plant will be located adjacent to the main entrance to the property and east of the well field and the existing PTF SX/EW facility. The plant is designed to selectively transfer the copper from PLS solution into an organic solution containing a copper-specific extractant. The copper-laden organic solution subsequently feeds an organic stripping stage where copper is transferred from the loaded organic to an electrolyte solution which subsequently feeds electrowinning.

The plant is designed for a nominal PLS flow rate of 11,230 gpm with a PLS grade of 2 grams per liter (g/L) and consists of four mixer-settlers, two after-settlers and associated facilities. All mixer settlers are equipped with a pumping and mixing system designed for thorough contact of solution phases.

PLS feed to plant will be split to feed two parallel extraction mixer-settlers where it will be mixed with an immiscible organic solution fed in a counterflow series configuration. The organic phase is composed of an aromatic oxime dissolved in a diluent which allows a highly selective mass transfer of copper from the PLS to the organic phase to take place when the phases are mixed. Following mixing, the solutions are directed to the settler allowing the organic and aqueous solution phases to separate. The resultant aqueous solution will feed an after-settler to recover any entrained organic while the aqueous solution will be directed to the raffinate pond and subsequently recycled back to the well field following re-acidification.

Loaded organic from the extraction stage is advanced to the stripping stage where lean electrolyte is mixed with the organic solution in two final mixer settlers in a counterflow series configuration. The loaded organic solution is stripped of its copper by the strongly acidic lean electrolyte solution and subsequently separated in the settler. The stripped organic solution is re-circulated back to the extraction stage to collect more copper, while the enriched electrolyte solution is routed through an after settler and multi-media electrolyte filters in the tank farm. The filtered rich electrolyte solution is the feed for the Electrowinning plant.

A simplified process flow diagram illustrating the flow configuration for the planned SX/EW facility is shown in Figure 17-4.

17.4 Solvent Extraction Plant – *Cont'd*

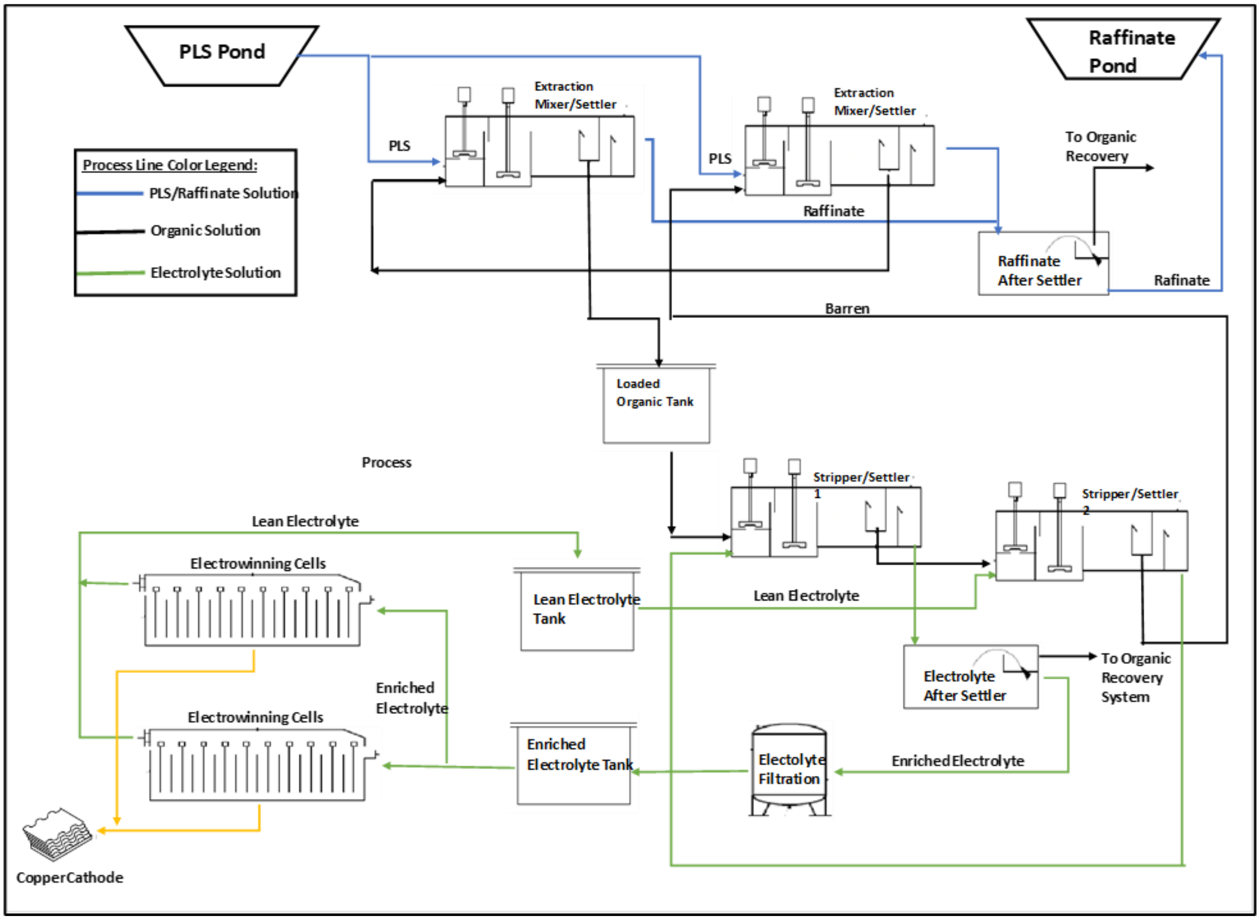


Figure 17-4: SX/EW Facility Process Flow Diagram

The design criteria for the SX plant is summarized in Table 17-1.

Table 17-1: Solvent Extraction Design Criteria

Parameter	Units	
Plant Utilization x Availability	%	98
SX Trains	Number	1
PLS Flow Rate (Nominal)	gpm	11,230
Extracted PLS Copper Concentration	g/L	1.8
Organic Flow	gpm	6,690
Extractant	Type	M5774 or equal
SX Copper Extraction (combined)	%	90
Stripping Flowrate (aqueous)	gpm	6,310

17.5 Tank Farm

The Tank farm is located north of the SX Plant and consists of process tankage as well as ancillary processes to support the SX Plant and EW Plant.

The ancillary process equipment located in the tank farm consists of reagent tanks, electrolyte recirculation pumping system, electrolyte filters, electrolyte heat exchanger and organic recovery systems. The electrolyte filters prevent any solids or organic solution for SX from entering the EW Plant. The organic recovery system processes any emulsion which accumulates at organic/aqueous interface in the SX settlers to recover the valuable organics.

17.6 Electrowinning Plant

The EW Plant is located west of the tank farm and north of the SX Plant. The plant consists of a total of 70 EW cells constructed of polymer concrete. Each cell will contain 84 stainless steel cathodes and 85 lead alloy anodes. The filtered and heated electrolyte from the tank farm is pumped through the cells in parallel. Two rectifiers produce direct electrical current which is passed through the cells in series. The current flows from the rectifiers through the electrolyte solution in each cell causing the copper from the electrolyte to plate onto the stainless steel cathode blanks.

The electrochemical reaction in the cells evolves oxygen from the electrolyte, potentially creating a fine aerosol acid mist. To minimize acid mist emissions, the EW cells are covered and connected through a ventilation system to a scrubber. A surfactant may also be added to the electrolyte to minimize the amount of mist produced. Additional reagents are also added to the electrolyte to passivate the anode plates and as a surface modifier for the cathode.

Copper is plated onto the cathode blanks over a cycle of approximately one week. When the cathodes are ready for harvest, they are removed from the EW cells and carried by crane to an automatic stripping machine. The stripping machine washes and mechanically removes the copper sheets from each side of the cathode blank. The cathode blanks are then returned to service and the copper sheets are weighed, sampled and bundled for sale.

A simplified design criteria for the EW plant is presented in Table 17-2.

Table 17-2: Electrowinning Design Criteria

Parameter	**Units**	
Nominal Copper Production	Mlb/yr	85
EW Cells	Number	70
Cathode Quality		LME Grade A
Cell Construction	Type	Polymer Concrete
Current Density (nominal/design)	A/ft^2	28/33
Cathodes	Type	316L SS Blanks
Cathodes per cell	Number	84
Anodes	Type	Pb Alloy
Anodes per cell	Number	85
Rectifiers	Number	2
Rectifier Voltage (nominal)	V	150
Total Rectifier Amps (nominal)	A	58,840
Cell Feed Copper Concentration	g/L	40
Cell Feed Sulfuric Acid	g/L	175
Cell Feed Flowrate (nominal)	gpm/cell	127

17.7 Water Treatment Plant

Excess water resulting from the ISCR process will be managed in the early years through solution neutralization and evaporation, and later through use of a water treatment plant once ISCR block rinsing is underway. The ISCR process produces excess water from hydraulic control pumping and rinsing water used in the closure of completed ISCR blocks.

The water requirements for the process plant, estimated to be a nominal 63 gpm, will be produced by treating low grade process solution through reverse-osmosis to minimize site water usage.

Prior to the start of rinsing, Florence Copper will operate a small neutralization circuit equipped with a lime slaking and dosing system to treat any excess process solutions prior to storage and evaporation in the process water impoundments. After rinsing commences, a water treatment plant will be brought online to treat the excess water produced in the ISCR process to generate water to support ISCR block rinsing activities thereby minimizing freshwater use.

The water treatment plant will consist of an acidic ultrafiltration (UF) circuit and acidic reverse osmosis (RO) circuit. The plant will generate 3 process streams identified as permeate, brine and wash solution. The permeate produced will be at a quality suitable for well field rinsing. The brine will contain the bulk of dissolved constituents such as copper, iron, and sulfate which will be retained and recycled back to the process. The process pH will be set to maintain solubility of the constituents in the brine, and the permeate will be adjusted to a circumneutral pH prior to subsequent use in rinsing.

Foulants that accumulate on both UF and RO membranes will be managed through automated membrane cleaning cycles producing a wash solution which will be the only waste stream from the plant. The wash solution generated from the water treatment plant along with any excess water not required for ISCR block rinsing will be directed to the process water impoundment where the excess solution inventory will be evaporated via mechanical evaporators.

17.8 Energy Requirements

The estimated power consumption for the project is based on connected equipment loads and annual usage factors from the production plan. Annual energy consumption varies based on the state of development of the well field, water management requirements, solution transport requirements, and production volumes. A breakdown of the typical project power consumption at full production by project area is presented in Table 17-3 below.

Table 17-3: Full Production Energy Consumption by Project Area

Area	Average Consumption (MWh per year)	% of Total
Well Field	12,000	12%
Neutralization	1,200	1.2%
SX Plant	10,000	10%
EW Plant	69,000	67%
Reagents, Tank Farm, Ancillaries	3,600	3.5%
Water Management	7,500	7.3%
Total	**103,000**	**100%**

Note: Totals may not add due to rounding

At full production, the typical power consumption for the project is estimated to be approximately 103 GWh per year.

SECTION 18

PROJECT INFRASTRUCTURE

SECTION 18: PROJECT INFRASTRUCTURE

Table of Contents

Page

Table of Figures

18.1 Project Infrastructure Overview

The Florence Copper site is in a well serviced area within the town limits of Florence, Arizona. The planned facilities and infrastructure to support the project include the following:

- Site Access Roads
- Power
- Water Supply Systems
- Process Water Impoundments
- Ancillary Facilities
- Sanitary and Waste Disposal

The proposed project site layout is shown in Figure 18-1 below:

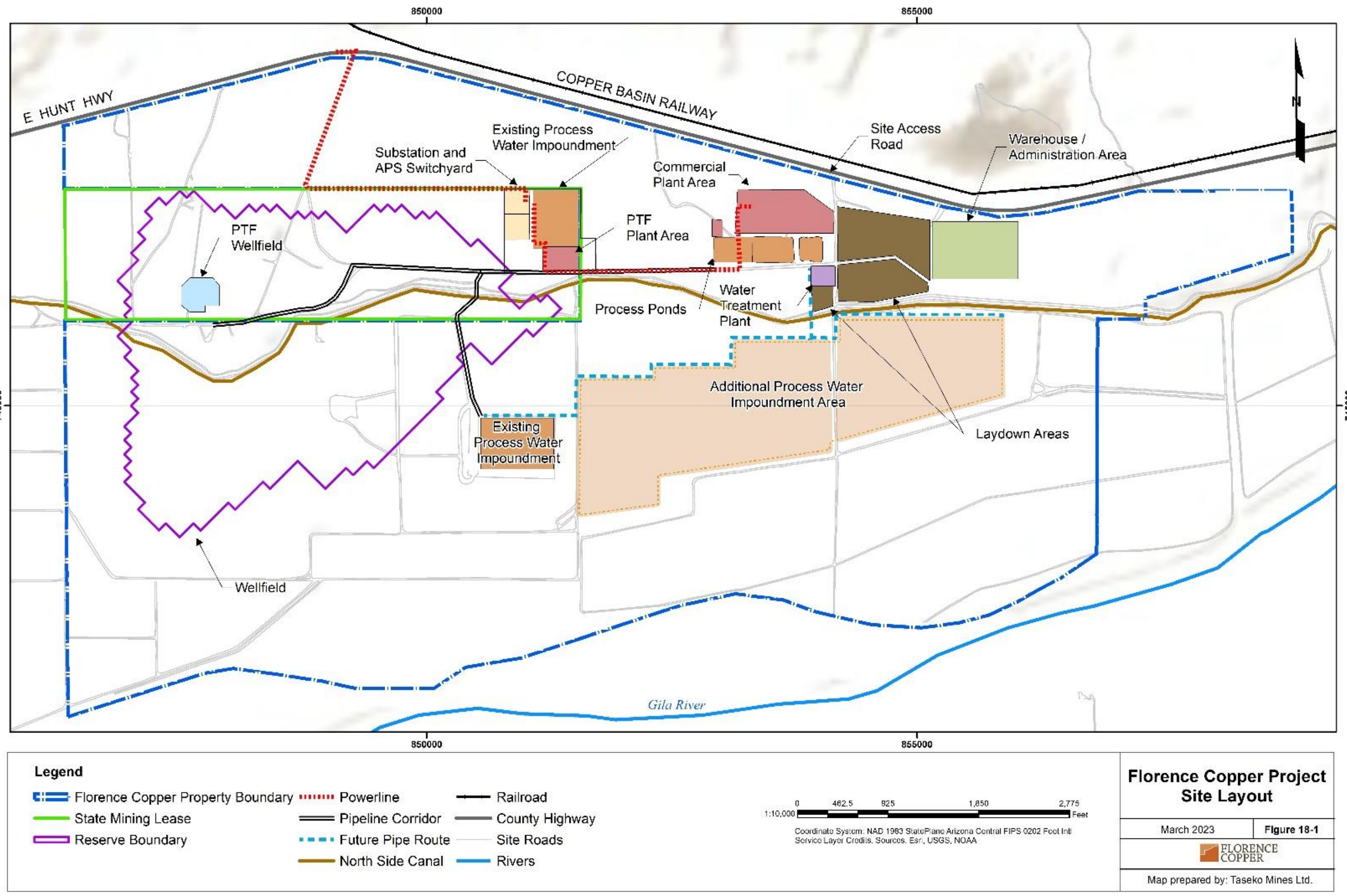


Figure 18-1: Florence Copper Project Site Layout

18.2 Site Access Roads

The Florence Copper site can be accessed via Hunt Highway, two miles west of U.S. Highway-79, north of Florence, Arizona. Hunt Highway runs along the entire northern border of the Florence Copper property. Access to the main site entrance can be gained via a 0.2 mile stretch of gravel road along North Coors Road which intersects Hunt Highway.

High traffic roads around site will be paved or chip sealed to improve dust control. A chip seal pad encircling the plant area will be constructed to facilitate collection of surface run-off from the plant site to the collection pond south of the plant area.

On-site buildings, facilities and well field will be accessible via a network of existing local farm roads and all-weather graded roads, some of which will be developed during project construction.

18.3 Power

Power for Florence Copper will be provided by Arizona Public Service Electric (APS), which operates an existing 69 kilovolt (kV) transmission line currently energized at 12.47kV to support PTF operations. The project scope includes APS modifying the existing power transmission system to increase the transmission voltage to 69kV and commissioning their 69kV site switchyard to service the commercial facilities.

The project also includes construction of a new site primary substation to convert the incoming 69kV power supply to 12.47kV for site distribution via overhead transmission lines.

APS currently provides their customers an option to receive a portion of their power from renewable energy sources. The amount of this power currently available for the project is still to be determined; however, Florence plans to investigate sourcing a portion of the site power requirements from renewable sources.

Emergency power will be provided by a 2.5 MVA standby generator located by the main substation.

18.4 Water Supply System

The site requirements for process and fire water will be supplied from reverse osmosis processing of hydraulic control and low-grade leach solutions. Water wells onsite will provide a backup source of process and fire water if required. The projects scope includes installation of the required water tankage, pumps, and piping distribution systems.

Domestic water will be sourced from existing water supply wells and treated through a water treatment plant to produce water for domestic uses such as safety showers, lavatory, and toilet facilities.

18.5 Process Water Impoundments

There are two existing process water impoundments on the property from BHP's pilot ISCR test and Florence Copper's PTF operations. The project has provisions for construction of up to five additional lined process water impoundments over the life of the project. The impoundments will be located to the south of the SX/EW plant site and will include mechanical evaporators to manage the site water balance.

18.6 Ancillary Facilities

The Florence Copper project scope includes all the ancillary facilities required to operate and maintain the process facilities. The ancillary facilities on the site will include:

- Security, safety and first aid facilities,
- Truck scale,
- Worker change house, wash-up facilities and lunchroom,
- Administration and production offices,
- Assay laboratory facilities,
- Warehouse and storage areas,
- Fuel storage and dispensing station,
- Maintenance and workshop areas,
- Fire protection systems.

The existing site administration building will be used as the administration office building and two other existing buildings have been renovated for use as the warehouse and maintenance facilities. A new office complex and a new change house will be constructed for operations and maintenance personnel.

18.7 Sanitary and Waste Disposal

The site has two existing septic systems servicing the Administration building and PTF facilities which will be retained during commercial production. An additional septic system will be installed to service the new washroom facilities within the workers change house and the new office complex. Site refuse which will primarily consist of office trash, will be collected, and transported to the Adamsville County landfill located seven miles from site.

Other materials such as used motor oils, tires, batteries, fluorescent lights, and oily rags will be collected separately from other wastes and sent to recycling facilities or permitted waste disposal facilities as appropriate.

18.8 Other Locally Available Infrastructure

Materials will be transported to and from site by truck; however, the Copper Basin Railroad is located just north of Hunt Highway near the Florence Copper site. The Copper Basin Railroad is a federally regulated short line rail carrier with interconnections to the Union Pacific Railroad and San Manuel Arizona Railroad. There is an existing rail loading siding less than a mile east of the property that could be considered for shipping and receiving products and goods.

No natural gas will be required to support the commercial operation; however, natural gas is available from Southwest Gas from their Poston Butte Loop, approximately one mile to the east of the site.

SECTION 19

MARKET STUDIES AND CONTRACTS

SECTION 19: MARKET STUDIES AND CONTRACTS

Table of Contents

Page

19.1 Market Studies and Contracts

Copper is a key commodity used extensively for all urban and industrial development and is integral to the low carbon economy. Lower copper pricing from 2015 to 2020 resulted in a lack of investment in copper development projects. With development timelines stretched due to geopolitical issues, permitting delays and recent global supply chain disruptions, there are few new major mines expected to begin production in the near to medium-term. This lack of new copper production, combined with global copper demand growth, could result in a significant supply/demand deficit over the next three to five years and pricing well above the current long-term consensus price.

The FCP will produce copper cathode which is predicted to meet LME Grade “A” specifications and which is a high volume, in demand, commodity. Florence Copper has committed 19% of its copper production at market terms for the life of project to RK Mine Finance Trust I. The remaining 81% is committed initially to Mitsui & Co. (U.S.A.) Inc (Mitsui) under an offtake agreement at market terms. If Mitsui elects not to become a 10% partner in Florence Copper in the future, the offtake commitment to Mitsui reduces to 30% of cathode produced until the Copper Stream deposit is reduced to nil as further described in Section 4.4. Upon Mitsui becoming a 10% partner in Florence Copper, the initial offtake agreement for 81% of the cathode production is replaced with a marketing agency agreement.

For evaluating the project, Taseko has relied on an analyst consensus long-term copper price of $3.75 per pound.

There are currently no contracts for operating supplies, reagents, transportation, or other items related to future commercial operations of the project.

Standard procurement contracts will be required for construction, materials delivery, and some site services.

The QP has reviewed these costs and commodity prices and they support the assumptions in the technical report.

SECTION 20

ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

SECTION 20: ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Table of Contents

List of Tables

List of Figures

20.1 Introduction

The FCP will utilize commercial-scale ISCR to extract copper by passing a weak sulfuric acid solution through the oxide zone of the deposit using an array of injection and recovery wells. In-situ recovery, which has been used successfully in the mineral extraction industry for over 50 years, does not involve many of the activities typically associated with conventional open pit mining as there is no physical handling or relocation of the mineralized ore or non-mineralized waste rock material required. The FCP will not require blasting, loading, hauling, dumping, crushing, or conveying of material, resulting in significantly less environmental impacts.

During operations, the FCP will consume less energy, emit less carbon and consume less water per pound of copper produced and generate significantly less dust compared to a conventional open pit mine. The unique geological and hydrological properties present within the oxide zone of the deposit allow for hydraulic control of process solutions to be maintained, ensuring protection of underground sources of drinking water beyond the ISCR well field.

Water quality within the ISCR well field will be progressively restored to prescribed water quality standards as areas within the well field complete the copper extraction cycle. Reclamation and remediation activities are expected to be completed following the final ISCR wells completing their economic life.

The long term environmental benefits of the ISCR method include that it does not generate waste rock piles, heap leach piles, or tailings storage areas, resulting in a much smaller footprint that does not significantly alter the site topography. The well sites are unobtrusive and easily removed such that in closure the land can be returned to its original status for future use. As a result the FCP offers a very environmentally responsible and therefore desirable source of copper production..

20.2 Environmental Studies

(a) Introduction

The FCP site has been the subject of numerous environmental studies dating as far back as the 1970's. These studies have been incorporated into the operations and closure plans for the project and included in the capital and operating costs as appropriate. A summary of the results of the environmental studies conducted on the project site is included in the following sections.

(b) Jurisdictional Water Review

In 2011 Westland Resources, Inc. (Westland) reviewed the project site for potential jurisdictional waters as defined by Section 404 of the Clean Water Act. At the time, Westland concluded that potential jurisdictional waters exist at one small, unnamed wash on the east side of the project site. The definition of jurisdictional waters has recently been amended by the U.S. Department of Interior and the Army Corps of Engineers. Pending the outcome of litigation concerning the scope of the "Navigable Waters Protection Rule" the applicability of the Rule could change concerning ephemeral washes such as the one located on Florence Copper's property. Regardless of the outcome, the project is designed to minimize or avoid disturbance of any potential jurisdictional waters.

20.2 Environmental Studies – *Cont'd*

(c) Archaeological Investigations

The Florence Copper site has a long history of archaeological investigations dating back to the 1970's. These investigations have evaluated and identified the eligibility for National Register of Historic Places listing of properties within the FCP property boundary and mineral lease areas. Florence Copper's property and mineral lease areas contain 46 properties in total: 35 eligible archaeological sites, 10 archaeological sites of undetermined eligibility, and a single in-use eligible structure (the North Side Canal). There are also 12 archaeological sites that have been determined not eligible for National Register listing, and seven archaeological sites where data potential has been exhausted.

The FCP is subject to Section 106 of the National Historic Preservation Act and Several Arizona State statutes. A Memorandum of Agreement (MOA) was developed for the PTF with stipulations under which the federal undertaking would proceed. Among those stipulations is the requirement that a Historic Properties Treatment Plan be developed and implemented to minimize or otherwise mitigate the "adverse effects" on the historic properties. Signatories to the MOA were the USEPA, Arizona State Historic Preservation Officer, Advisory Council on Historic Preservation, Arizona Land Department, and Florence Copper.

The MOA for the PTF is dated October 16, 2015, and is in place for PTF activities. The Section 106 process is currently underway for commercial facility operations that would be covered under the pending UIC permit. A Programmatic Agreement with similar provisions and signatories to the MOA will be executed prior to commencement of commercial operations.

20.2 Environmental Studies – *Cont'd*

(d) Biological Evaluation

A biological evaluation (BE) of the 620 acres of the Florence Copper site was undertaken by Westland in 2011 and was updated in 2019 and 2021. The BE was prepared to describe the physical and biological features of the project site and to identify the potential for occurrence within the project site of Special-status Species: species designated by the U.S. Fish & Wildlife Service (USFWS) as endangered or threatened under the Endangered Species Act (ESA), or are proposed or candidate for ESA listing. The presence of proposed or designated critical habitat in the project site for federally listed species and species proposed for listing by the USFWS has also been evaluated.

The BE documents Westland's conclusion that no species with ESA protection or any critical habitat will be affected by the Project. The Sonoran desert tortoise may occur in the project site, but, if present, will likely only occur transiently. However, as a candidate for listing, the Sonoran desert tortoise currently has no protections under the ESA. Regardless, Florence Copper has implemented measures for the protection of the species.

20.2 Environmental Studies – *Cont'd*

(e) Groundwater Quality Sampling and Analyses

An extensive groundwater characterization program was conducted as part of the APP and UIC permit processes undertaken in the 1990s required by regulations of the ADEQ and the USEPA. Data from the program were used to develop groundwater flow and transport models as well as to establish the required baselines which serve as the statistical foundation for permit Alert Levels (ALs) and Aquifer Quality Limits (AQLs) at the Point of Compliance (POC) wells. The APP and UIC permits were issued in 1997 and a compliance monitoring program involving 31 POC wells was initiated in accordance with requirements specified in the permits. Reports of sampling and analytical results are submitted quarterly to ADEQ and USEPA. Compliance sampling in these wells is ongoing and sampling to date has met the water quality compliance standards.

Quarterly groundwater monitoring has been conducted at the FCP site since 1997 in accordance with the terms of the Sitewide APP and the UIC permits. The groundwater quality data derived from this monitoring program have been submitted to ADEQ and USEPA on a quarterly basis.

For the most recent APP permit amendment application, Florence Copper conducted more extensive analysis of ground water quality within the ISCR area that included evaluation of broader list of analytes at the PTF injection, recovery, observation, and Westbay wells. The purpose of this analysis was to characterize groundwater quality in the Bedrock Oxide Unit at the PTF well field prior to the commencement of ISCR operations.

Additional water quality monitoring was conducted from 1997 through to 2007 in the BHP field test area. The monitoring included groundwater sampling before, during and after the test. Additional details are included in subsection (h) below.

20.2 Environmental Studies – *Cont'd*

(f) Groundwater Geochemical Modeling

Schlumberger Water Services prepared a geochemical model for Florence Copper in 2012 to address closure requirements in the APP and UIC application processes. The geochemical model combined the results of laboratory column tests, the BHP field test, and mineralogical evaluations to model the planned ISCR process. The model provides a predictive tool to determine solution chemistry during operation and rinsing as well as post closure for the ISCR area. The results of the modelling indicate that rinsing with natural formation water will achieve post-closure water chemistry objectives.

HydroGeoLogica updated the geochemical model in 2019. In some cases, the results for the predicted solutions are identical to previous predictions. In other cases, predictions have been updated to account for recent testing results and/or mine plan changes and represent an update of previous estimates. The chemistry predictions provided a reasonable estimate of forecast constituent concentrations that may be expected in the PLS and raffinate, and compare favorably with PTF solutions generated to date.

(g) Groundwater Hydrologic Modeling

Several sub-regional groundwater flow models have been developed and refined for the project since 1996. Brown & Caldwell created a model in 2012, which included a domain covering an area of approximately 125 square miles with the ISCR well field area located at the center. The model is based on 14 years (1996-2010) of on-site groundwater elevation data and Arizona Department of Water Resources recharge, pumping, and water level elevation datasets for the broader model domain. The model was calibrated using publicly available groundwater data for the period of 1984 to 2010.

Haley & Aldrich updated the model in 2019 for submittal with permit application materials. The model was extended to run from 1984 through 2018, additional regional pumping well and water level data up to 2018 were incorporated, and the extended model was calibrated against additional observed water level data through adjusting the general head boundary conditions between 2011 and 2018 to reflect variation of water exchange across the model domain. The model was updated in 2021 to add the pumping of two replacement irrigation wells.

The groundwater flow model allows predictive simulations for the long-term pumping required for the planned ISCR inclusive of formation rinsing and post-closure water quality predictions. The model also demonstrates that sufficient groundwater resources are available to support the proposed commercial development of the Florence Copper project with minor residual groundwater level impacts.

20.2 Environmental Studies – *Cont'd*

(h) Hydraulic Control and Rinsing Test

The BHP field test included pre-operational compliance testing to demonstrate hydraulic control as required by the APP. The hydraulic control demonstration was conducted from November 1997 through February 1998. The test demonstrated that four pairs of pumping and observation wells were adequate to create a continuous inward hydraulic gradient in the aquifer to the satisfaction of the company and the ADEQ.

The BHP field test proceeded through a brief leaching phase followed by rinsing to meet the closure obligations in the APP. The rinsing conducted on the test well field demonstrated that, through a combination of injection and passive inflow of fresh formation water, the sulfate and other constituent concentrations were returned to levels established in the APP for closure.

(i) Production Test Facility (PTF) Hydraulic Performance and Compliance Summary

Florence Copper constructed and operated a pilot scale ISCR facility referred to as the Production Test Facility (PTF) at the Florence Copper site. The PTF facilities include an ISCR well field with four injection wells, nine recovery wells, seven observation wells, four multilevel sampling wells, a solvent extraction and electrowinning (SX/EW) processing plant, a water impoundment, run-off pond, and associated infrastructure. Operation of the PTF under commercial leaching conditions began on December 15th, 2018 and continued until June 26th, 2020. This was followed by a 4-month leaching ramp-down period. By the end of October 2020, the SX/EW plant was shutdown and the PTF subsequently transitioned to demonstration of the rinsing phase which is currently still in progress.

The purpose of the PTF was to demonstrate hydraulic control and confirm the oxide ore zone behaves hydrologically as an equivalent porous media. Also, the PTF provided an opportunity to test operational controls and strategies to inform future commercial-scale operations.

The PTF well field was designed using the same well spacing, depth, well design, hydraulic control methods, and monitoring practices as those planned for the commercial ISCR facility. Operational and environmental monitoring conducted by Florence Copper during PTF operations confirm successful well field hydraulic performance; and confirm that copper can be produced from the oxide zone of the Poston Butte ore body using ISCR methods in compliance with environmental regulations.

Florence Copper conducted extensive environmental monitoring throughout PTF operations to demonstrate compliance with requirements set forth in the Temporary APP and UIC permit. Compliance monitoring data collected by Florence Copper demonstrate that ISCR operations can be conducted within the oxide zone of the Poston Butte ore body in compliance with Temporary APP and UIC permit requirements, and in compliance with established groundwater quality standards. The compliance monitoring data collected at the PTF well field show that that hydraulic control can be established and consistently maintained, and the method used to establish and maintain hydraulic control is effective and protects USDW beyond the active ISCR area (Haley and Aldrich, 2020).

Based on the favorable hydraulic performance of the PTF well field, and the successful injection, control, and recovery of injected solutions, Florence Copper has proposed to implement similar methods of injection, recovery, hydraulic control, and compliance monitoring at the planned commercial ISCR facility to be constructed at the FCP site.

20.3 Waste Disposal

The ISCR process will produce substantially lower volumes of mineral wastes than traditional mining methods. ISCR process waste will be limited to solids derived from water treatment and waste from the SX/EW plant.

During the initial years of commercial operations, prior to rinsing commencing, a small neutralization plant will treat excess hydraulic control flows and process solution. The treated water will be evaporated from lined process water impoundments.

Once rinsing is initiated, a water treatment plant containing an ultrafiltration and reverse osmosis circuit will commence operations. The water treatment plant will process the excess solution inventory produced in the ISCR process, to generate the quality and quantity of water required to support the rinsing operations. Excess solution inventory not needed for rinsing along with waste streams generated from water treatment plant will be sent to the process water impoundments for subsequent evaporation and long-term solids storage.

Any solids remaining on site at the end of the mine life will be sealed in their storage pond and the area reclaimed; the cost of which has been included in the project plan. A Toxicity Characteristic Leaching Procedure (TCLP) will be conducted on substances as needed to assess the concentrations of hazardous materials prior to disposal.

20.4 Water Balance

The Florence Copper project will be managed at a neutral water balance and have minimal impact on groundwater resources. The project is supplied water from the ISCR well field and groundwater sources and will treat water for return to the process to the maximum extent possible. Any process solutions which are not recycled or reused on the site will be evaporated or alternatively used in some beneficial manner.

20.5 Permitting Requirements

There are several environmental permits required for the FCP. Florence Copper obtained all the permits required for operation of the PTF and has received the commercial APP from ADEQ. Issuance of the commercial UIC permit by the USEPA is pending. A comprehensive list of the required permits and a description of the status of those permits is provided in Section 4.7 of this report.

20.6 Sustainable Community Development

(a) Approach, Mission and Vision

Florence Copper will follow best practices currently used in the extractive sector to support social, community and sustainable development, including:

- Foster mutually beneficial relationships and alliances among communities, companies and governments.
- Build capacity within governments, companies and communities to address sustainable development issues at the local level.
- Contribute the value-adding potential of mine development and operation in support of sustainable social and economic development.

20.6 Sustainable Community Development – *Cont'd*

(b) Principles

Florence Copper will adhere to the following principles.

Health and Safety

Provide and maintain safe and healthy working conditions and establish operating practices which safeguard employees and physical assets.

- Meet or exceed all industry standards and legislative requirements
- Develop and enforce safe work rules and procedures
- Provide employees with the information and training necessary for them to perform their work safely and efficiently
- Acquire and maintain materials, equipment and facilities so as to promote good health and safety
- Encourage employees at all levels to take a leadership role in accident prevention and report and/or correct unsafe situations

Stakeholder Engagement

Engage with governments, communities, Indigenous peoples, organizations, groups and individuals on the basis of respect, fairness, transparency, and with meaningful consultation and participation.

Community Development

Establish mutually beneficial relationships which help contribute to the advancement and achievement of local community goals and priorities.

20.6 Sustainable Community Development – *Cont'd*

(b) Principles – *Cont'd*

Environment and Society

Florence Copper is committed to continual improvement in the protection of human health and stewardship of the natural environment. We will:

- Prevent pollution
- Comply with relevant environmental legislation, regulations, and corporate requirements
- Integrate environmental policies, programs, and practices into all activities of our operations
- Ensure that all employees understand their environmental responsibilities and encourage dialogue on environmental issues
- Develop, maintain, and test emergency preparedness plans to endure protection of the environment, workers, and the public
- Work with Government and the public to develop effective and efficient measures to improve protection of the environment, based on sound science.

Resource Use

Use land, water and energy resources responsibly; strive to maintain the integrity and diversity of ecological systems; and apply integrated approaches to land use. The ISCR method will provide Florence Copper a unique opportunity to achieve significant reductions in energy consumption, water use and greenhouse gas emissions while minimizing disturbance of the land.

Human Rights

Respect human rights and local cultures, customs and values in all of our dealings.

Labor Relations

Provide fair treatment, non-discrimination and equal opportunity for employees and comply with labor and employment laws in the jurisdictions in which we work.

20.6 Sustainable Community Development – *Cont'd*

(c) Community Outreach Program/Activities

Since 2009 Florence Copper has engaged in a community outreach program and related activities. Public consultation, education, and ongoing dialogue within various stakeholder communities are ongoing. Figure 20-1 illustrates the project stakeholders.

Stakeholders of Florence Copper include residents and seasonal residents of Florence and nearby communities; local businesses business organizations and civic group; Indigenous groups; and Municipalities, County and State agencies and elected leaders at various levels of government.

Figure 20-1: Stakeholder Diagram

20.6 Sustainable Community Development – *Cont'd*

(c) Community Outreach Program/Activities – *Cont'd*

Objectives

General objectives of the FCP community outreach program include the following:

- Disseminate factual information and enhance the community's awareness and understanding about the project.
- Build local, regional, and state-wide understanding and support for Florence Copper.
- Provide ongoing opportunities for two-way dialogue with project stakeholders through a wide range of communication programs and channels.
- Ensure local stakeholders have access to up-to-date and accurate information on Florence Copper.

Public Information Program Elements

Below is a list of community public information program elements employed and completed since the inception of initial work at the FCP. These initiatives are designed to generate community involvement and understanding surrounding the proposed project.

- Site Tours and Presentation: Staff have continued to host regular site tours of the FCP property for all interested stakeholder groups and individuals. Due to the pandemic tours were temporarily suspended, but have since been reinstated. Since 2010 to present more than 2100 local and regional residents, community leaders, and business owners have toured the site -- over 300 tours. Each year dozens of off-site presentations are given on the project.
- Industry Organizations: Participation in industry organizations at the regional and state level.
- Local Advertising and Social Media: Consistent communication in the region via traditional and social media channels.
- Communications, Collateral & Media: Regular communication to stakeholders and stakeholder organizations. Communications via electronic newsletter, email updates, and the Florence Copper website.

20.6 Sustainable Community Development – *Cont'd*

(d) Local Hire and Procurement

The following principles guide the hiring and procurement practices at Florence Copper:

- Florence Copper believes its success as a company is tied to the success of the local communities in which it invests and operates. For this reason, local people receive priority consideration for employment, based on qualifications and merit.
- Local qualified contractors, equipment suppliers and service providers will be given first consideration for opportunities. We expect our suppliers to share our commitment to investing in local community success through their respective purchasing, hiring, contracting and logistical support practices.

Consideration for awarding new employment and contract opportunities will always be based on qualifications and merit. Among qualified candidates and companies, preference will be given to those in closest proximity to Florence Copper's operations.

20.6 Sustainable Community Development – *Cont'd*

(e) Economic Summary

The establishment of Florence Copper is expected to result in a number of economic benefits for Florence, Pinal County, and Arizona. In addition to the aforementioned merits, the project will:

- increase the percentage of private sector employment in Florence.
- Increase employment opportunities for skilled workers in Florence and Pinal County.
- Add economic diversity to the region and the "Copper Corridor" in Arizona.
- Increase the number of high wage jobs in Florence and the region.
- Attract younger workers to live in Florence and Pinal County.
- Demonstrate good environmental operating practices, social responsibility and economic viability.

The economic impacts of the Florence Copper project on the State and County are shown in Table 20-1.

Table 20-1: Economic Impact of Florence Copper Project By Phase

Impact Category	Construction Phase	Production Phase	Reclamation/ Closure Phase	Total
Gross State Product*				
Arizona	180	3,110	60	3,350
Pinal County	70	2,020	35	2,120
Total Employment (Jobs)				
Arizona	930	860	130	800
Pinal County	230	530	110	480
Personal Income*				
Arizona	93	1,800	89	1,980
Pinal County	45	870	43	960
State Revenue*				
From Activity in Arizona	14	150	36	200
From Activity in Pinal Co.	13	140	33	190
* Values in ($000,000's) Source: REMI Model of Arizona and Pinal Co. economies (2013)				

20.7 Mine Closure Requirements and Costs

(a) Closure Costs and Requirements

The FCP property has some limited environmental liabilities relating to historical mining and exploration activities conducted by Conoco in the 1970s and by Magma and BHP in the 1990s, as well as Florence Copper's PTF operations. These liabilities occur on the private lands held by Florence Copper as well as State Trust Land administered by the ASLD. Florence Copper has retained three closure bonds: $650k for the Temporary APP, $4.5M for the PTF UIC permit, and $4.7M for the Site Wide APP permit. These surety bonds also cover the surface reclamation bond requirements under the ASLD Mineral Lease. Once a commercial UIC permit is received, performance surety bonding will be updated.

The Florence Copper operating plan includes ongoing progressive reclamation throughout operations. As ISCR well field areas complete the copper extraction cycle, the areas will be rinsed to restore the aquifer to water quality standards and the wells will be closed and abandoned. Reclamation and remediation activities are expected to be completed within 4 years of the final ISCR wells completing their economic life. The costs associated with these closure activities are included in the project operating costs.

(b) Post Closure Requirements

The Florence Copper project will also have post-closure costs associated with monitoring POC wells for a period of 30 years after closure of the site. After the monitoring period has been completed the POC wells will be closed and abandoned.

SECTION 21

CAPITAL AND OPERATING COSTS

SECTION 21: CAPITAL AND OPERATING COSTS

Table of Contents

Page

List of Tables

21.1 Capital Cost

(a) Introduction

The initial capital cost estimate includes all remaining procurement and construction activities required to bring the FCP into operation. The project costs do not include the sunk costs incurred on the project to date which include the procurement of the majority of the process equipment required for the SX/EW Plant. The remaining project costs are based primarily on Q3 2022 vendor and contractor quotations for the work in United States dollars. The accuracy level for the capital costs is estimated at ±10%.

A summary of the capital cost estimate is presented in Table 21-1. Details of the direct and indirect costs are presented in the following sections.

Table 21-1: Summary of Capital Costs

	Capital Cost (000,000's)
Direct Costs	
Initial ISCR Well Field	$53
SX/EW Plant	$67
Site Infrastructure	$33
Subtotal Direct Costs	**$153**
Indirect Costs	
Construction Indirects	$32
Owner's Costs	$21
Contingency	$26
Subtotal Indirect Costs	**$80**
Total	**$232**

Note: Totals may not add due to rounding.

The sustaining capital cost estimate for the Florence Copper project includes the progressive expansion of the well field as well as the water treatment and water management facilities required to support production through the project life. The total sustaining capital requirements for the project are estimated to be $925 million and will occur over the life of the project. Details of the sustaining capital expenditures are presented in subsection (g) below.

21.1 Capital Cost – *Cont'd*

(b) Initial ISCR Well Field

The capital cost estimate for the initial ISCR well field is based on contractor and supplier costs for drilling, well testing, and construction of the well field infrastructure. Well field infrastructure includes pipeline corridors, secondary solution containment, well pumps, surface piping, down-hole piping, electrical distribution, instrumentation, and controls.

The well field capital costs are detailed in Table 21-2.

Table 21-2: Initial Well Field Capital

	Capital Cost (000,000's)
Well Drilling	$40
Well Infrastructure	$13
Total	**$53**

Note: Totals may not add due to rounding.

(c) SX/EW Plant

The capital cost estimate for the SX/EW plant includes all the equipment, structures and systems required to process nominally 11,230 gpm of PLS and produce 85 million pounds per year of cathode copper. The facilities included are the solvent extraction circuit, process tank farm, electrowinning facility, and reagent area. The direct capital costs for the area are detailed in Table 21-3.

Table 21-3: SX/EW Direct Capital

	Direct Cost (000,000's)
Solvent Extraction	$34
Tank Farm	$12
Electrowinning	$17
Reagent Storage & Mixing	$5
Total	**$67**

Note: Totals may not add due to rounding.

21.1 Capital Cost – *Cont'd*

(d) Site Infrastructure

The capital cost estimate for site infrastructure consists of the systems and ancillary facilities required to support the site ISCR well field and SX/EW. The site infrastructure includes site preparation, site roads, surface water control, fire systems, process water distribution, potable water distribution, water neutralization, main substation, site power distribution, site communications, and process control network. Ancillary facilities include the costs to construct a shop facility, process and maintenance office building, central control room, change house, guard house, truck scale and site security fences. Administration offices and warehousing facilities are already in place at site.

The direct capital costs for this area are detailed in Table 21-4.

Table 21-4: Site Infrastructure Direct Capital

Activity	Direct Cost (000,000's)
Plant Site and Roads	$7
Fire, Water, and Neutralization Systems	$8
Electrical Supply & Distribution	$4
Ancillary Facilities & Systems	$13
Total	**$33**

Note: Totals may not add due to rounding.

21.1 Capital Cost – *Cont'd*

(e) Indirect Costs

The initial capital cost estimate includes the indirect costs associated with construction, owner's project management and overhead, as well as project contingency. These indirect costs apply to the project as a whole and are not directly tied to a specific project area.

Construction indirects include the costs of contract engineering, procurement, and construction management support, contractor mobilization, temporary construction facilities, vendor technical personnel, and contract commissioning services.

The Owner's Costs for the project include the Owner's project team to manage the construction from the time the project is authorized to proceed through to production. The Owner's team will oversee all engineering, development, construction, and quality assurance activities as well as leading commissioning activities. The costs associated with operations personnel ramp-up for the start of operations are also included in the Owner's Cost estimate.

The Owner's Cost estimate includes:

- Owner's project management personnel;
- Field office costs and supplies;
- First fills;
- Legal expenses related to construction activities;
- QA/QC testing and monitoring;
- Transportation and accommodations costs;
- Construction Insurance;
- Taxes, fees and licenses;
- Owner's mobile equipment;
- Commissioning and capital spares.

A contingency was included in the pre-production capital cost estimate to cover unforeseeable costs within the scope of the estimate. The contingency level selected reflects the development level of the project engineering and cost estimate, and was selected to provide a high level of confidence that the project would be delivered on budget.

21.1 Capital Cost – *Cont'd*

(f) Basis of Estimate

The capital cost estimate is based on the construction of a greenfield facility using all new equipment and materials. Project direct costs were estimated based on the following information:

- Detailed engineering drawings including site general arrangement drawings, equipment and instrumentation lists, process flow diagrams, piping and instrumentation diagrams, electrical single line diagrams, electrical riser and wiring diagrams, and engineering documents received from equipment vendors.
- Vendor quotations for supply of remaining equipment and materials.
- Contractor quotations for supply of all discipline construction labor and support services.
- Contractor quotations for well field drilling and support services.
- Topographic information based on site surveys.
- Freight costs for remaining materials and equipment to site based on recent project experience.

Construction activities are scheduled for 10-hour work days on dayshift.

21.1 Capital Cost – *Cont'd*

(g) Sustaining Capital

Sustaining capital has been estimated for the FCP from the commencement of operations through to the end of the project life. The largest component of sustaining capital is the ISCR well field, a portion of which will be developed in each operating year from year 1 to year 17. The sustaining capital for the operating ISCR well field development was based on a contract drill fleet and the required well field equipment and infrastructure. Drilling costs are estimated based on drilling requirements dictated by the extraction plan and unit costs based on the formation and well depths encountered in each year. Surplus equipment from completed leaching blocks is reconditioned and reused for development of new blocks when possible. The remaining sustaining capital items consist of additions to the process facilities and water management systems. The primary addition to the site process facilities is the construction of a water treatment plant to recycle solutions for rinsing well blocks, and the water management facilities consist of construction of additional solution ponds, canal crossings, and installation of mechanical evaporators as required through the project life. The construction costs associated with these facilities are based on contracted engineering and construction services.

The project sustaining capital is presented by component in Table 21-5 and the timing of sustaining capital is presented in Table 21-6.

Table 21-5: Sustaining Capital

Activity	Total (000,000's)
Well Field Development	$867
Process Facilities	$28
Water Management Systems	$30
Total	**$925**

Note: Totals may not add due to rounding.

21.1 Capital Cost – *Cont'd*

(g) Sustaining Capital – *Cont'd*

Table 21-6: Sustaining Capital by Year

	Sustaining Capital (000,000's)
Year 1	$54
Year 2	$62
Year 3	$58
Year 4	$63
Year 5	$47
Year 6	$67
Year 7	$55
Year 8	$71
Year 9	$42
Year 10	$81
Year 11	$57
Year 12	$67
Year 13	$68
Year 14	$33
Year 15	$53
Year 16	$23
Year 17	$25
Total	**$925**

Note: Totals may not add due to rounding.

21.1 Capital Cost – *Cont'd*

(h) Capital Cost Exclusions

The follow items are excluded from the capital cost estimates:

- Escalation;
- Working capital;
- Reclamation bonding;
- Allowances for scope changes;
- Sunk costs;
- Project financing costs including the Mitsui Copper Stream
- Schedule delays, such as associated with:
  - Permit timing,
  - Schedule acceleration or recovery,
  - Labor disputes,
  - Undefined ground conditions,
  - Unavailability or inexperienced craft labor,
  - Other external influences.
- Closure costs.

21.2 Operating Costs

All the process facilities and infrastructure will be operated and maintained by the Owner. All operating costs are presented in Q3 2022 United States dollars. Average operating unit costs for the life of the project are summarized in Table 21-7.

Table 21-7: Average Operating Unit Costs

	$/lb Copper
ISCR Well Field	$ 0.47
SX/EW	$ 0.19
Water Treatment	$ 0.10
General and Administrative	$ 0.27
Reclamation	$ 0.06
Off Property	$ 0.02
Total	**$ 1.11**

Note: Totals may not add due to rounding.

Operating costs for the ISCR well field, SX/EW, and water treatment plant include the costs for operating and maintenance labor, maintenance parts, operating supplies, reagents, power, and services required for long term continuous operations. Costs for ongoing development of the ISCR well field infrastructure including pumps, piping, electrical distribution, instrumentation, and cultural resource mitigation activities are included in sustaining capital costs. Water treatment initially consists of a lime neutralization circuit for excess water, and a water treatment plant consisting of particulate filtration, nanofiltration, and reverse osmosis is later constructed to recycle water and reduce water requirements for rinsing of ISCR blocks.

General and administrative (G&A) costs for the FCP include the labor cost as well as expenses and services associated with the following:

- Site technical services;
- Materials management;
- Human resources;
- Safety and security;
- Accounting;
- Environmental monitoring;
- Assay laboratory;
- Insurance;
- Taxes, fees and licenses;
- Janitorial services;
- Legal services;

21.2 Operating Costs – *Cont'd*

- Communications;
- Office and administrative costs.

Reclamation costs include the costs of rinsing, core hole abandonment, and well abandonment as the ISCR well field is developed and closed. The site reclamation bonding requirements will be met with a surety bond, and the interest costs associated with the surety bond are included in the reclamation costs.

The off property cost consists of the cost of shipping cathode copper to market.

The average operating costs by commodity are summarized in Table 21-8.

Table 21-8: Average Operating Costs by Commodity

	$/lb Copper
Internal Labor	$ 0.24
Power	$ 0.10
Reagents	$ 0.49
Parts & Supplies	$ 0.06
Fees, Licenses, Incidental Taxes	$ 0.09
Insurance	$ 0.02
Consultants & Services	$ 0.10
Office & Overhead	$ 0.01
Total	**$ 1.11**

Note: Totals may not add due to rounding.

Internal labor costs were based on the organizational structure outlined in Section 21.3 and salaries based on local market conditions. All salaries include appropriate allowances for payroll burdens and overtime.

Power consumption for operations was estimated based on connected equipment loads combined with estimated load and usage factors from engineering estimates and experience at similar operations.

Reagent consumption rates for calculation of operating costs were based on metallurgical parameters, experience from the PTF operations, and industry standard practice as appropriate. A sulphuric acid price of $130/ton was used based on current market trends. Budget quotations were received for other reagents supplied to the project site.

Parts and supplies costs include wear and replacement parts as well as supplies, outside services, tools, equipment, and fuel required by the operations and maintenance crews.

21.3 Personnel

(a) Operations and Maintenance Personnel

The overall operation and maintenance of both the well field and SX/EW plant will be managed by an Operations Manager who reports to the site General Manager. Three superintendents and an administrative assistant will report to the Operations Manager. The operation of the ISCR well field and ponds will be directed by one superintendent and the SX/EW plant and associated infrastructure will be directed by a second superintendent. The maintenance of all site facilities will be directed by the third superintendent.

The overall operating areas will typically have 92 employees at full production. A summary of the typical operating area employee numbers by function is included in Table 21-9.

Table 21-9: Summary of Typical Operating and Maintenance Personnel

	# Personnel
Operations Manager	1
Superintendents	3
Administrative Assistant	1
Operations Supervisors	7
Maintenance Supervisors	3
Maintenance Planner	3
Operators	26
Maintenance	48
Total	**92**

The manpower structure is based on a combination of dayshift work and rotating 12-hour shifts to provide 24 hour per day coverage to meet operational and maintenance needs.

21.3 Personnel – *Cont'd*

(b) General and Administration Labor

The G&A employee rosters were set based on the organization chart developed for the project and include technical services; purchasing and warehouse; environmental monitoring; loss control and safety; human resources and administrative personnel. The administrative personnel include accounting and information technology personnel.

The G&A estimate includes a total of 65 site employees at full production. G&A employee numbers are reduced at the end of the project life when the well field development is complete and the engineering and other support requirements are consequently diminished. A summary of the typical G&A employee numbers by function is included in Table 21-10.

Table 21-10: Summary of Typical G&A Personnel

	# Personnel
Technical Services	25
Purchasing & Warehouse	8
Environmental Monitoring	8
Safety & Loss Control	11
Human Resources	2
Administration	11
Total	**65**

SECTION 22

ECONOMIC ANALYSIS

SECTION 22: ECONOMIC ANALYSIS

Table of Contents

Page

List of Tables

List of Figures

22.1 Assumptions

A list of the main assumptions and inputs to the economic analysis of the FCP are listed below:

- Capital costs and the basis of estimate are provided in Section 21 of this report;
- Operating costs and the basis of estimate are provided in Section 21 of this report;
- The basis for the annual production schedule is provided in Section 16 of this report;
- Reclamation bonding as per Section 20 of this report with security provided by a surety bond with nominal cash collateral;
- Long term copper price of $3.75 per pound as described in Section 19 of this report;
- All revenue and costs are in United States dollars;
- Net Present Values (NPV) are presented at an 8% discount rate;

The economic analysis does not include any proceeds or costs of any project financings, including the Mitsui Copper Stream.

22.2 Cash Flow

The project cashflow prior to taxes is presented in Tables 22-1 and 22-2. All values presented in these tables are in millions of United States dollars.

Table 22-1: Cashflow (Years -1 through 13)

year	-1	1	2	3	4	5	6	7	8	9	10	11	12	13
Copper Produced Pounds		35	73	86	85	84	84	87	85	84	85	84	85	84
Total Gross Revenue		120	264	318	320	317	316	324	320	317	319	317	318	316
Total Production Cost*		58	81	89	91	98	100	99	100	99	95	99	100	108
Total Capital	178	104	60	58	63	49	66	55	70	44	80	57	66	68
Project Cashflow	**-174**	**-42**	**123**	**171**	**166**	**170**	**151**	**170**	**150**	**174**	**145**	**161**	**152**	**139**

Table 22-2: Cashflow (Years 14 through 26 and Total)

year	14	15	16	17	18	19	20	21	22	23	24	25	26	Total
Copper Produced Pounds	85	85	72	70	55	50	37	19	9	0	0	0	0	1,524
Total Gross Revenue	318	319	273	264	210	190	141	75	35	3	0	0	0	5,714
Total Production Cost*	106	111	102	100	86	74	67	43	36	24	22	18	14	2,020
Total Capital	36	51	25	25	2	0	0	0	0	0	0	0	0	1,157
Project Cashflow	**176**	**156**	**145**	**139**	**121**	**116**	**74**	**32**	**-1**	**-21**	**-22**	**-18**	**-14**	**2,536**

NPV @ 8%	**1,090**

*Includes Royalties

22.3 Economic Indicators

The following pre-tax economic indicators are derived from the life of mine cashflow:

- Net Present Value = $1,090 million
- Internal Rate of Return on Investment = 49%
- Payback Period = 2.6 years

22.4 Income Taxes and Royalties

(a) Royalties

There are three entities that are entitled to royalties from Florence Copper production, which are the State of Arizona, Conoco, and BHP. The details of the areas of applicability and the terms of the royalties are discussed in Section 4.4. The average unit cost of each royalty over the life of the FCP is shown in Table 22-3.

Table 22-3: Average Royalty Unit Cost

Royalty	$/lb Copper
State of Arizona	$ 0.09
Conoco	$ 0.10
BHP	$ 0.02
Total Royalties	**$ 0.21**

The FCP total production cost from the base case cash flow inclusive of all operating costs and royalties is $1.32 per pound of copper produced.

22.4 Income Taxes and Royalties – *Cont'd*

(b) Taxes

Profits at Florence Copper will be subject to income taxation at the state and federal levels of government. At long-term metal prices, total estimated income taxes payable on Florence Copper profits in real terms are $408 million over the life of the operation.

In addition to the income taxes, Florence Copper will be subject to a number of non-income based taxes which have been included as part of the site operating costs. These taxes consist primarily of property taxes, transaction privilege tax, and severance tax. These taxes amount to $0.09 per pound of copper produced or $138 million over the life of the operation.

The statutory US federal income tax rate, at the time of writing, is 21%. The maximum Arizona state income tax rate is 4.9%. As state taxes are deductible for federal purposes, the combined statutory income tax rate for the FCP will be approximately 25% of taxable income based on current tax rates.

Taxable losses generated in a given year may be carried forward for 20 years and applied against taxable income from the project in those years. Florence Copper has significant tax losses from the advancement of the project since Taseko's acquisition in 2014. The Internal Revenue Code (IRC) also provides certain deductions to incentivize investment by mining companies, including depletion and development expenditures. The benefits of depletion, tax losses, and other deductions under the IRC is a reduction in the average effective income tax rate for the FCP.

The project's estimated tax payments include only tax liabilities directly payable by the project and do not include the other indirect taxes that would be created by the project (i.e. taxes payable by subcontractors and individuals directly or indirectly employed by Florence Copper), which would also be contributors to state and federal levels of government.

The following after-tax economic indicators are derived from the life of mine cashflow based on current federal and state tax laws:

- Net Present Value = $930 million
- Internal Rate of Return on Investment = 47%
- Payback Period = 2.6 years

22.5 Sensitivity Analysis

Figure 22-1 shows the sensitivity of the life of project cash flow to primary inputs, demonstrating that the reserve is economically robust. Florence Copper's project cash flow is most sensitive to copper prices and least sensitive to initial project capital.

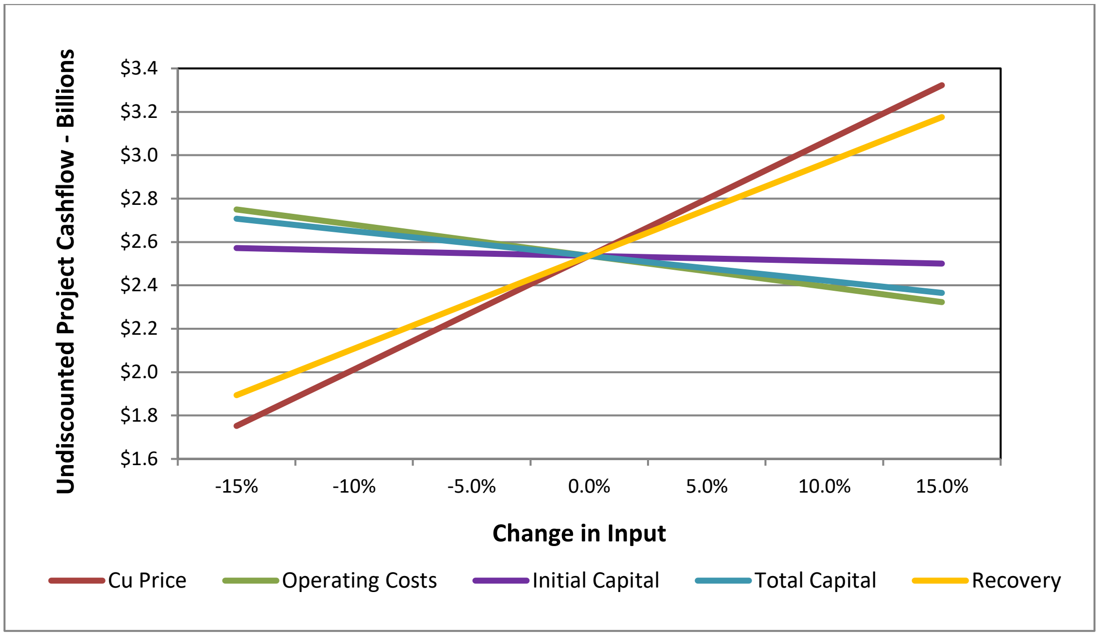


Figure 22-1: Life of Mine Project Cashflow Sensitivity

The sensitivity of the base case project economics to primary inputs on a series of metrics is presented in Figures 22-2 through 22-4.

22.5 Sensitivity Analysis – *Cont'd*

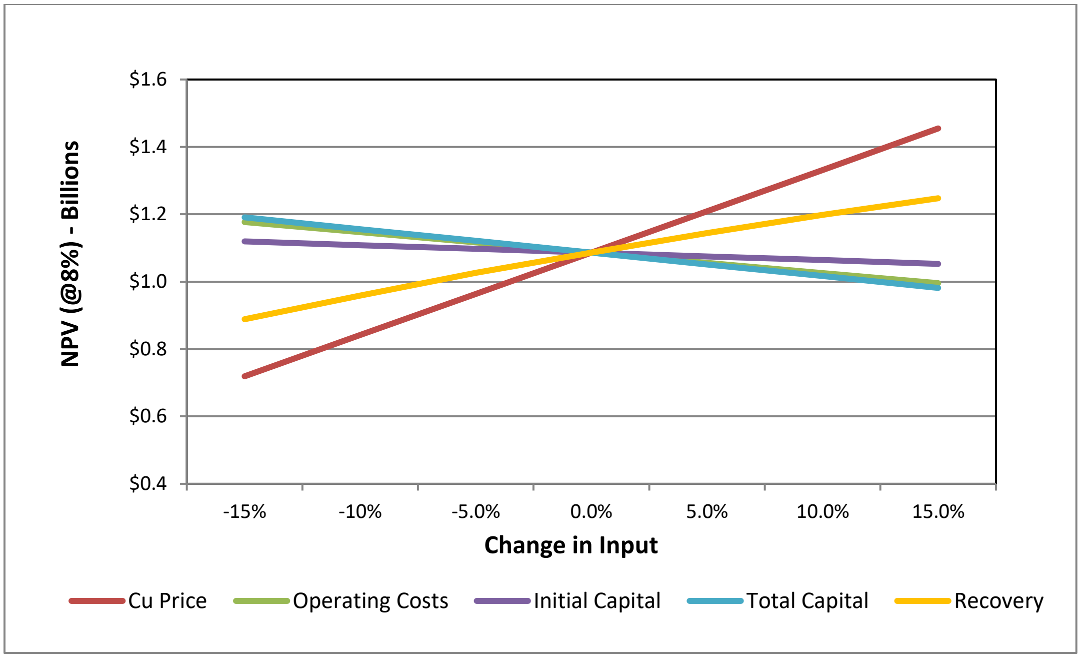


Figure 22-2: Pre-Tax NPV Sensitivity

The project NPV is most sensitive to copper price and least sensitive to initial pre-production capital cost. The production flexibility inherent in ISCR allows the project to be less sensitive to recovery than typical mining operations.

22.5 Sensitivity Analysis – *Cont'd*

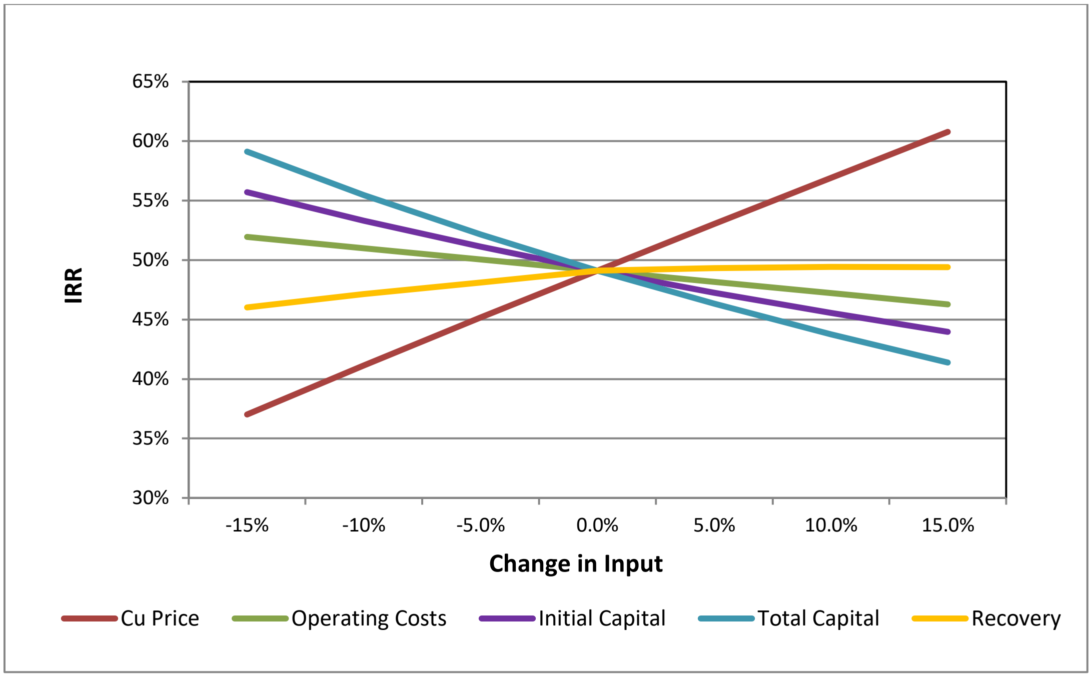


Figure 22-3: Pre-Tax IRR Sensitivity

Internal Rate of Return (IRR) is most sensitive to copper price and least sensitive to recovery over the range of variations analyzed.

22.5 Sensitivity Analysis – *Cont'd*

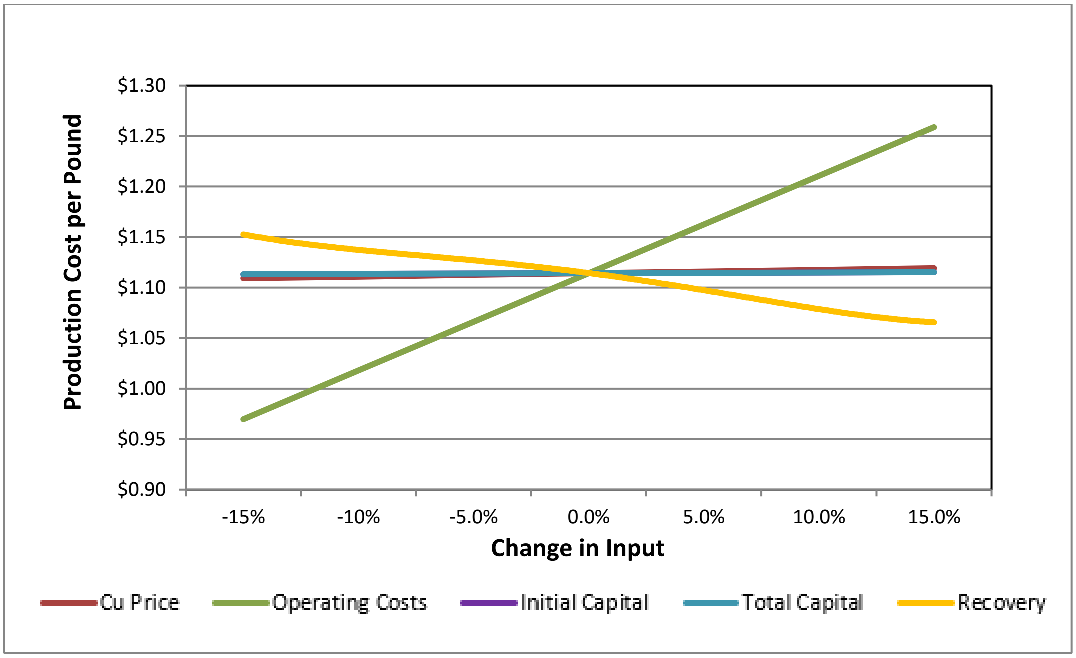


Figure 22-4: LOM Production Cost Sensitivity

The life of mine (LOM) average production cost remains robust across the range of changes to all of the sensitivity parameters. The average production cost per pound is most sensitive to operating costs followed by copper recovery. The average production cost is not sensitive to the other parameters analysed.

SECTION 23

ADJACENT PROPERTIES

SECTION 23: ADJACENT PROPERTIES

Table of Contents

Page

23.1 Adjacent Properties

There are no adjacent properties as defined by NI 43-101.

SECTION 24

OTHER RELEVANT DATA AND INFORMATION

SECTION 24: OTHER RELEVANT DATA AND INFORMATION

Table of Contents

Page

24.1 Other Relevant Data and Information

In the opinion of the QP there is no additional information beyond that included in this report necessary in order to make the technical report understandable and not misleading.

SECTION 25

INTERPRETATION AND CONCLUSIONS

SECTION 25: INTERPRETATION AND CONCLUSIONS

Table of Contents

Page

25.1 Tenure and Environmental Liabilities

Florence Copper's tenure position is secure with the majority of the property consisting of private land held fee simple and the remainder covered by a long-term mineral lease. The mineral reserves and mineral resources described in this report are entirely contained within the Florence Copper tenure. Florence Copper holds the mineral rights within the resource area and there is no limit on the depth of the mineral rights or, subject to the time limits and preferred right of renewal of the Lease from time to time, the time by which those minerals must be extracted. The property has three royalty agreements in place.

The FCP has some limited environmental liabilities related to the historic mining and exploration activities conducted on site and Florence Copper's PTF operations as detailed in Section 4.6 of this report. The closure plan for these facilities has been approved and appropriate security has been posted with state and federal regulators.

25.2 Exploration and Geology

Evaluation of the exploration programs and results available to the effective date of this report indicate that:

- The geology is sufficiently well understood to support the mineral resource and mineral reserve estimations presented in this report.
- Adequate core drilling has identified a continuous body of porphyry copper mineralization within an area measuring approximately 1 mile E-W by 1 mile N-S and to a depth below surface of over one-half mile.
- The lower limit of the In-situ Mineral Resource is well-defined, except for deep-seated mineralization near the western boundary where it remains open to the west.
- The database contains all relevant drilling data collected on the project to date and has been structured for resource estimation.
- QA/QC with respect to the results received for exploration programs to date is suitable for resource estimation and protocols have been sufficiently documented.
- As of December 31, 2022, the Florence Copper deposit is estimated to contain a measured and indicated resource of 363 million tons grading 0.35% copper with no cut-off grade applied. An additional 42 million tons grading 0.32% copper is classified as inferred.
- As of December 31, 2022, the Florence Copper deposit is estimated to contain a proven and probable reserve of 320 million tons grading 0.36% copper with no cut-off grade applied. This reserve is contained within the resource stated above.

25.3 Mining

The evaluations of the mining options available to effectively recover copper from this deposit indicate that:

- The Florence Copper deposit contains adequate copper mineral reserves to develop an ISCR operation and supply a SX/EW process plant with economic grade PLS for a period of at least 22 years.
- The detailed well field design for ISCR is consistent with the known hydrogeological parameters for the mineralized area.
- The extraction plan includes staged well field development to produce sufficient PLS to continuously feed the process plant.
- Employment of strategies such as reverse flow, use of inflatable packers to target areas of the formation, and varying acid application rates through increased raffinate injection flows and/or raffinate acidity will provide operational flexibility.
- The ability to establish and maintain hydraulic control of process solutions has been sufficiently demonstrated.
- The extraction plan includes an appropriate estimate for hydraulic control pumping.
- Mining losses and average mining dilution are appropriately considered for an ISCR operation.
- The ISCR well field design and extraction plan are to a sufficient level to support a reserve statement.
- A sweep efficiency of 90% can be achieved within the mineral reserve area.
- The extraction plan uses only Measured and Indicated blocks within the resource estimate.

25.4 Metallurgy and Processing

The evaluation of the leaching metallurgy and processing options available to effectively recover copper from this deposit indicate that:

- A process that utilizes commercially available mineral processing unit operations consisting of solvent extraction and electrowinning can be used to produce a commercially salable copper cathode product at the Florence Copper site.
- Sufficient metallurgical test work has been completed to a level suitable to support a reserve statement.
- Recovery of copper to final copper cathode product is conservatively projected to be 65.8%.
- The composition of the cathode copper produced is expected to be LME Grade "A".
- A processing facility can be successfully constructed and operated at the planned nominal throughput of 11,230 gpm of PLS producing 85 million pounds of copper cathode per year at full capacity. The design of the process plant has been completed to a sufficient level to support a reserve statement.

25.5 Infrastructure

The Florence Copper site is located in a developed area and all of the required infrastructure to support construction and operations on the site are readily available. The design and cost estimation is to a suitable level to support a reserve statement and there are no known conditions that would preclude the establishment of the infrastructure as designed.

25.6 Environment

An extensive environmental baseline has been compiled for the FCP. No issues have been identified to date that could materially impact Florence Copper's ability to extract the mineral reserves.

25.7 Capital and Operating Costs

The estimation of capital and operating costs are based on a sufficient level of study to support a reserve statement and are current to Q3 2022.

25.8 Economics

The economics of processing the stated reserves by ISCR and SX/EW are robust and demonstrate that, as of the effective date of this report, extraction can reasonably be justified.

25.9 Risks and Opportunities

The following project risks and opportunities have been identified:

(a) Risks

- The ISCR proposed for the FCP has no means of altering the permeability of the orebody. If local in-situ hydrological and fracture conditions within the well field are significantly lower than predicted, copper recovery or leach kinetics could be adversely affected for that area. This risk has been minimized through extensive geological and hydrological examinations see Sections 6, 7, and 16.
- Although extensive metallurgical testing has been completed on a representative selection of ore types, should the actual ore leached in a portion of the well field be materially different than the samples tested the recovery, grade, and operating cost may differ for that area. This risk has been minimized through extensive geological and metallurgical examinations see Sections 6, 7 and 13.
- A material change in the costs or availability of process reagents or lixiviants could materially change the project operating costs.
- The project will require licenses and permits from various governmental authorities. There can be no assurances that Florence Copper will be able to obtain all necessary licenses and permits that may be required to carry out all proposed development and operations.
- Typical risks for metal mines also include adverse geological or ground conditions, adverse weather conditions, potential labour problems, and availability and cost of equipment procurement and repairs. These risks are considered very low for the FCP.

25.9 Risks and Opportunities – *Cont'd*

(b) Opportunities

- Optimization of the well spacing within different portions of the well field can be assessed during commercial operations. Increased well spacing would mean fewer wells would be required consequently lowering the sustaining capital cost for the project. Increased well spacing may provide an opportunity to improve the project economics.
- Improvements in the techniques or technology used to drill and install wells could reduce the cost of well installation over the life of the project. Well installation costs amount to approximately 75% of the projected capital costs for the project.
- Further optimization of the project water treatment process could significantly reduce long term water treatment costs through decreased production of solids, reduced lime neutralization costs and reduced fresh water usage for rinsing.
- Permitting a beneficial use of excess water could offset groundwater pumping in other areas and have societal benefits such as crop irrigation or aquifer recharge versus evaporation.
- Acidic reverse osmosis or ion exchange technology could be implemented to reduce solution copper losses and increase cathode copper recovery.
- Additional reserves could be defined through additional drilling to upgrade Inferred Resources and unclassified mineralization to a higher confidence level.
- A large porphyry system has been identified at the FCP, but the full extent of this system has not been delineated along the western boundary where the deep-seated mineralization remains open to the west. Additional drilling could be undertaken to determine if there is additional economic mineralization within FC's tenure.

SECTION 26

RECOMMENDATIONS

SECTION 26: RECOMMENDATIONS

Table of Contents

Page

26.1 Recommendations

As the commercial permitting processes and detailed project engineering required to advance the project to commercial operations are both underway the QPs are not making any further recommendations.

SECTION 27

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I, Richard Tremblay, P.Eng., MBA, of Vancouver, British Columbia, hereby certify that:

a) I am an employee of Taseko Mines Limited, with a business office at 12th Floor, 1040 West Georgia Street, Vancouver, British Columbia. In my position as Sr. Vice President, Operations, on behalf of Taseko Mines Limited, I co-authored this technical report on the mineral reserves at the Florence Copper Project.

b) This certificate applies to the technical report titled "NI 43-101 Technical Report Florence Copper Project, Florence, Pinal County, Arizona", dated March 30, 2023 which has an effective date of March 15, 2023 (the "Technical Report").

c) I am a graduate of Queen's University in Kingston, Ontario (Bachelor of Science in Chemical Engineering). I have practiced my profession for 34 years since graduation in 1989, in various roles, including Mine site General Manager, Department Head as well as Project and Process Engineering roles. I am a member in good standing of Engineers and Geoscientists British Columbia, license number 21744. As a result of my experience and qualifications, I am a qualified person as defined in National Instrument 43 – 101 *Standards of Disclosure for Mineral Projects* ("NI 43 – 101").

d) My most recent personal inspection of the Florence Copper property was from March 20 to 24, 2023.

e) I am responsible for the compilation of Sections 1 through 5, 19, 20 and 23 through 27 of the Technical Report.

f) I am not independent of Taseko Mines Limited.

g) I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.

h) I have had prior involvement with the property that is the subject of the Technical Report. I have overseen site operation and permitting activities at an Executive level for Taseko since 2019.

i) I, as of the effective date of the Technical Report and to the best of my knowledge and information, believe the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed at Vancouver, British Columbia on the 30th day of March, 2023.

"Signed and Sealed"

Richard Tremblay, P.Eng., MBA
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I, Richard Weymark, P.Eng., MBA, of Vancouver, British Columbia, hereby certify that:

a) I am an employee of Taseko Mines Limited with a business office at 12th Floor, 1040 West Georgia Street, Vancouver, British Columbia. In my position as Vice President, Engineering, on behalf of Taseko Mines Limited, I co-authored this technical report on the mineral reserves at the Florence Copper Project.

b) This certificate applies to the technical report titled "NI 43-101 Technical Report Florence Copper Project, Florence, Pinal County, Arizona", dated March 30, 2023 which has an effective date of March 15, 2023 (the "Technical Report").

c) I am a graduate of the University of British Columbia in Vancouver, B.C. (B.A.Sc. in Mining Engineering). I have practiced my profession for 15 years since graduation in 2008, in various roles, including supervisory positions, overseeing mine design and planning, resource and reserve estimation, open pit operations, business improvement, tailings dam construction, cost estimation, environmental assessment and project evaluation. I am a member in good standing of Engineers and Geoscientists British Columbia, license number 46355. As a result of my experience and qualifications, I am a qualified person as defined in National Instrument 43 – 101 *Standards of Disclosure for Mineral Projects* ("NI 43 – 101").

d) My most recent personal inspection of the Florence Copper property was from March 10th to 13th, 2020.

e) I am responsible for the compilation of Sections 6 through 12, 14 and 15 of the Technical Report.

f) I am not independent of Taseko Mines Limited.

g) I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.

h) I have had prior involvement with the property that is the subject of the Technical Report. I have been employed by Taseko Mines Limited since July 2018 and have provided executive oversight of various technical aspects of PTF operations and commercial permitting since that time.

i) I, as of the effective date of the Technical Report and to the best of my knowledge and information, believe the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed at Vancouver, British Columbia on the 30th day of March, 2023.

"Signed and Sealed"

Richard Weymark, P.Eng., MBA
EGBC Permit to Practice: 1000785

Robert J. Rotzinger, P.Eng.
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I, Robert J. Rotzinger, P.Eng., of Vancouver, British Columbia, hereby certify that:

a) I am an employee of Taseko Mines Limited, with a business office at 12th Floor, 1040 West Georgia Street, Vancouver, British Columbia. In my position as Vice President, Capital Projects, on behalf of Taseko Mines Limited, I co-authored this technical report on the mineral reserves at the Florence Copper Project.

b) This certificate applies to the technical report titled "NI 43-101 Technical Report Florence Copper Project, Florence, Pinal County, Arizona", dated March 30, 2023 which has an effective date of March 15, 2023 (the "Technical Report").

c) I am a graduate of the University of British Columbia in Vancouver, British Columbia (B.A.Sc. in Mechanical Engineering). I have practiced my profession for 31 years since graduation in 1992. I am a member in good standing of Engineers and Geoscientists British Columbia, license number 23449. As a result of my experience and qualifications, I am a qualified person as defined in National Instrument 43 – 101 *Standards of Disclosure for Mineral Projects* ("NI 43 – 101").

d) My most recent personal inspection of the Florence Copper property was from February 15 to 17, 2023.

e) I am responsible for the compilation of Sections 13, 16 through 18, 21 and 22 of the Technical Report.

f) I am not independent of Taseko Mines Limited.

g) I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.

h) I have had prior involvement with the property that is the subject of the Technical Report. I have provided oversight for the metallurgical testing and analysis conducted on the project since 2014, was responsible for construction and commissioning of the PTF, and provide executive oversight for the commercial facility engineering and procurement activities.

i) I, as of the effective date of the Technical Report and to the best of my knowledge and information, believe the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed at Vancouver, British Columbia on the 30th day of March, 2023.

"Signed and Sealed"

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