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TECHNICAL REPORT ON THE WHITE PINE COPPER PROPERTY WHITE PINE, MICHIGAN, USA

Prepared for Highland Copper Company Inc.

By

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Effective Date: February 10, 2014

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DATE AND SIGNATURE

The undersigned prepared this Technical Report, titled Technical Report on the White Pine Copper Property, White Pine, Michigan, USA, with an effective date of February 10, 2014, in support of the public disclosure of technical aspects of the property by Highland. The format and content of the report are intended to conform to Form 43 101F1 of National Instrument 43-101 (NI 43-101) of the Canadian Securities Administrators.

Signed,

ROD JOHNSON & ASSOCIATES, INC.

"Rodney C. Johnson"

Rodney C. Johnson, registered member SME (4051050)
President

April 2, 2014

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1.0 SUMMARY

Background

Rod Johnson & Associates, Inc. ("**RJ & A**") was contracted by Highland Copper Company Inc. ("**Highland**") to prepare a technical report for the White Pine Project in the Upper Peninsula, Michigan, USA. Highland intends to acquire the project from its current owner, Copper Range Company ("**CRC**" or "**Copper Range**"), through an asset purchase of certain mineral and surface rights comprising the project.

The White Pine Project consists of approximately 4,500 hectares (11,000 acres) of surface rights and approximately 11,990 hectares (29,615 acres) of mineral rights. These rights are held in the name of Copper Range or its wholly-owned subsidiary, Unlimited Developments Inc. The White Pine Project is located in the western Upper Peninsula of Michigan, approximately 7.5 kilometers (5 miles) south of Lake Superior in Ontonagon County and 25 kilometers (15 miles) southwest from the village of Ontonagon, the county seat.

Environment

Copper Range is subject to a consent decree requiring it to undertake certain environmental response activities including remedial investigation, soil relocation, source control, underground mine closure requirements, capping and re-vegetation, groundwater monitoring and storm water management with permitted effluent discharges, and land use restrictions in the form of recorded declarations of restrictive covenants. Part of the property which is to be incorporated into the White Pine Project includes environmentally impacted areas.

The drilling program proposed for the White Pine Project involves access to and drilling activities on lands upon which the tailings disposal basins of the former White Pine Mine are located. These areas are subject to restrictions to protect the engineered barrier serving as a cap on the tailings disposal basins. These restrictions require that certain precautions be taken during the proposed drilling program.

History and exploration

Mining in Ontonagon County, Michigan, dates back to the 1860s. The former White Pine Mine was in production from 1953 through 1995 with only one two-year interruption in 1984 -1985. By the time it closed, over 2.04 billion kilograms (4.5 billion pounds) of copper had been produced from the mine. Just prior to the mine closure, Copper Range extended exploration infill drilling to the north and northeast of the mine limits and in 1995 its chief geologist (author of this report) calculated a historical estimate.

The geologic model was built by defining the surfaces and thicknesses of individual beds within the ore interval based on the 526 surface diamond drill holes. Isopachs were plotted for each individual bed within the ore interval and interrogated for geologic integrity and honoring of data. Following interrogation, copper and silver grades were composited (accumulated) over individual mining configuration intervals. Isogrades were plotted for bed and mining configuration intervals and interrogated for geologic integrity and honoring of data.

The cut-off copper grade was determined by considering the production costs from the Northeast Mine (a mining area of the White Pine Mine). In June 1995, Northeast Mine production cost of one pound equivalent cathode was $1.28 at an average grade of 19.2 pounds of copper per short ton. This compared favorably with studies indicating a future cost of $1.30 per pound. Hence, at a copper price of $1.30, the break-even grade (and cut-off grade) was approximately 19 pounds of copper per ton. This calculation assumed a mill recovery of 87.5% and a payable copper content in the concentrate of 96.5%.

Individual mining blocks were defined, limited either by the cut-off grade of 19 pounds of copper per short ton (in situ), by adjacent blocks of different mining configuration or by the arbitrary north limit of the North Mine (latitude 50,000 N, White Pine Mine coordinates). The extraction rate used to calculate the historical estimate was 57%. This extraction rate provided a mine-wide estimate of extraction considering first pass, second pass, and ground left in pillars and barriers. The grades for each mining configuration were diluted based on past mining experience.

The official estimate at the time of closure was calculated for a minimum 2.9 meters (9.5 feet) mining height (Table 1.1). "Proven reserves" were defined by CRC as those areas containing drill holes on a spacing of 305 meters (1,000 feet) and meeting or exceeding the cut-off grade. This definition was validated by historical comparison of mill grade versus geology estimated grade. The geology estimated grade had predicted mill grade within 3% in the period January 1, 1990, to January 1, 1993. In 1993, CRC began milling "secondaries" (slag), and difficulties in estimating the grade of the slag and copper recovery from the slag introduced error into the reconciliation of mine grade with mill grade. "Probable reserves" were defined by CRC as those areas which contained drill holes at a spacing between 305 and 914 meters (1,000 and 3,000 feet) and met or exceeded the cut-off grade.

This historical estimate was made prior to the existence of NI 43-101 and does not use the categories set out in the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101. The terms " proven and probable reserves" are historical terms used by CRC, not comparable to the CIM defined Probable Mineral Reserve and Proven Mineral Reserve, and should be compared to a potential mineral deposit requiring further exploration drilling to define an initial resource. A qualified person (QP) has not done sufficient work to classify the historical estimate as a current mineral resource and the historical estimate is not being treated as current mineral resources and should not be relied upon. Nevertheless, RJ & A is of the opinion that the 1994-95 exploration work was well executed and the resulting data is relevant and of sufficient quality for consideration in further exploration of the project. The use in this section of the term historical estimate does not mean to imply that the White Pine Project has reserves as defined in the current CIM Standards. The historical estimate is set out in Table 1.1 below.

Table 1.1
White Pine Mine historical estimate (1995).

This historical estimate was made prior to the existence of NI 43-101 and does not use the categories set out in the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101. The terms " proven and probable reserves" are historical terms used by CRC, not comparable to the CIM defined Probable Mineral Reserve and Proven Mineral Reserve, and should be compared to a potential mineral deposit requiring further exploration drilling to define an initial resource. A qualified person (QP) has not done sufficient work to classify the historical estimate as a current mineral resource and the historical estimate is not being treated as current mineral resources and should not be relied upon. Nevertheless, RJ & A is of the opinion that the 1994-95 exploration work was well executed and the resulting data is relevant and of sufficient quality for consideration in further exploration of the project. The use in this section of the term 'reserves' does not mean to imply that the White Pine Project has reserves as defined in the current CIM Standards.

Area	Class	Owner	Minable Tons	Mining Height (feet)	Dilution (percent)	Mining Grade (pounds/ton)	Contained Copper (pounds)
Central portion of the mine							
FC-17S	**proven**	**CRC**	**6,048,000**	**13.2**	**3.0**	**27.4**	**165,938,000**
Eastern portion of the mine							
MFC-1S	proven	CRC	6,202,000	9.5	3.0	19.3	119,885,000
FC-12S	proven	CRC	3,971,000	10.9	3.0	21.3	84,432,000
FC-13S	proven	CRC	994,000	12.9	3.0	21.0	20,864,000
FC-14S	proven	CRC	1,292,000	10.9	3.0	19.6	25,301,000
FC-15S	proven	CRC	3,741,000	9.5	3.0	21.1	78,924,000
FC-16S	proven	CRC	1,676,000	9.5	3.0	21.1	35,342,000
Subtotal			**17,876,000**			**20.4**	**364,748,000**
Northeast portion of the mine							
FC-8E	probable	CRC	1,925,000	13.9	3.0	19.9	38,388,000
FC-9E	probable	CRC	6,631,000	14.5	3.0	19.8	131,397,000
FC-10E	probable	CRC	214,000	13.6	3.0	19.9	4,261,000
FC-11E	probable	CRC	791,000	14.0	3.0	22.1	17,463,000
USH-2E	probable	CRC	1,412,000	9.5	7.0	18.6	26,208,000
USH-3E	probable	CRC	1,186,000	9.5	7.0	18.7	22,190,000
Subtotal			**12,159,000**			**19.7**	**239,907,000**
Northeast, East and Central Mines							
Total			**36,083,000**			**21.4**	**770,593,000**
North mine							
FC-1N	probable	CRC	11,476,000	17.5	3.0	20.7	237,431,000
FC-2N	probable	CRC	7,970,000	15.2	3.0	21.3	169,691,000
FC-3N	probable	CRC	10,122,000	14.0	3.0	19.6	198,607,000
FC-4N	probable	CRC	13,161,000	15.6	3.0	20.1	264,114,000
PSH-1N	probable	CRC	4,219,000	9.9	3.0	19.9	83,807,000
PSH-2N	probable	CRC	50,000	9.5	3.0	20.9	1,044,000
PSH-3N	probable	CRC	4,286,000	9.5	3.0	19.3	82,558,000
PSH-4N	probable	CRC	28,745,000	10.5	3.0	20.8	597,226,000
USH-1N	probable	CRC	2,566,000	9.5	7.0	19.5	50,097,000
Subtotal			**82,595,000**			**20.4**	**1,684,575,000**
Total: Proven and probable			118,678,000			20.7	2,455,168,000

Geology

The Nonesuch Formation, the mineralization host rock unit, is part of a Keweenawan-aged (~1.1 Ga.) continental rift-fill sequence and is composed of gray to black to reddish-brown, thinly interbedded siltstones, mudstones, and minor sandstones. The base of the Nonesuch Formation interfingers with the top of the Copper Harbor Conglomerate, composed of red (oxidized) lithic sandstone with subordinate amounts of conglomeratic sandstone.

The rocks of the White Pine Mine area show the effects of an early period of deformation (extension) in soft-sediment deformation features, growth faults, and possibly the development of steep normal faults associated with listric faults. A later stage of deformation can be identified by folds and strike-slip and thrust faults.

Mineralization

Copper mineralization in the deposit at the White Pine Project occurs in two modes -- as fine-grained sulfide (chalcocite) and as native copper. Sulfide mineralization is estimated to account for 85 - 90% percent of the copper in the deposit, but both modes of copper are intimately associated throughout.

The White Pine Project chalcocite mineralization is usually attributed to the flow of copper-rich brines through pyrite-bearing shale. The source of the copper in the brines is attributed to the Copper Harbor Conglomerate red beds and the underlying mafic volcanic rocks.

Mineral Resources/Reserves

As of the date of this report, there are no resources or reserves on the White Pine Project that comply with the CIM Standards on Mineral Resource and Reserve Definitions and Guidelines adopted in 2010.

Interpretation and Conclusions

The areas adjacent to the former White Pine Mine contain a substantial amount of copper, as indicated by the historical estimate. The largest portion of the remaining historical estimate lies to the north and northeast of the historical White Pine Mine. The deposit is open to the east.

Recommendations

The Highland exploration strategy is to rapidly validate the results obtained from the 1994-95 drilling program of the "North Mine" deposit by completing an in-fill drilling program that will advance the Project to a resource definition stage as per the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101. An initial exploration program planned in Phase 1, consisting of 8,150 m (26,700 ft) of diamond drilling, will be followed up by a Phase 2 drilling program with up to 39,500 m (130,000 ft) of core. Metallurgical testing of core samples and preliminary engineering work will be included in the latter portion of the proposed Phase 2 exploration program.

2.0 INTRODUCTION AND TERMS OF REFERENCE

At the request of Highland Copper Company Inc. ("**Highland**"), Rod Johnson & Associates, Inc., ("**RJ and A**") was retained to provide an independent technical report on Copper Range Company's ("**CRC**" or "**Copper Range**") White Pine copper project located near White Pine, Michigan. In November 2013, Highland, a Canadian corporation listed on the TSX Venture Exchange, entered into a letter agreement setting out the terms to which Highland may acquire the White Pine copper project from Copper Range, a subsidiary of First Quantum Minerals, Ltd.

The White Pine copper project is located in the Keweenaw Peninsula region of northern Michigan, U.S.A., an area known for its historical native copper deposits. Copper Range acquired the original White Pine Mine in 1929. Mining began in 1952 and ceased in 1995, due largely to depressed copper prices. After closure of the mine, Copper Range sold a portion of its surface rights as well as the mine facilities, including the refinery, power plant, and some of the shallow underground workings to third parties.

Copper Range retained its interest in a large number of mineral rights and surface rights (see Item 4 for more details) which are intended to be sold to Highland under the terms of the above mentioned letter agreement. In this report, the area covered by these mineral and surface rights will be referred to as the "**White Pine Project**". The "**White Pine Mine**" will generally refer to the area covered by the former mine site and underground workings.

This report presents a review of the geology, mineralization, mining methods, historical mine production, and historical exploration work. It also offers a proposal for an exploration program having the objective of allowing Highland to estimate a copper resource for the White Pine Project meeting Canadian Institute of Mining (CIM) standards on mineral resources and reserves in compliance with NI 43-101. The report does not constitute an audit of any previously estimated mineral resources on the White Pine Mine.

The geological setting of the White Pine Mine, mineralization style and occurrences, and exploration history were described in various reports, as well as in other publications listed in Section 21 "References" of this report. The relevant sections of those reports are reproduced or quoted herein where appropriate.

RJ and A has reviewed data provided by Highland and the previous operators of the White Pine Mine. RJ and A has not conducted any exploration work, drilled any exploration holes, or sampled and analyzed any core.

Core from the 1994 – 1995 drilling program of the North Mine at the White Pine Mine was examined on the premises of RJ and A in Negaunee, Michigan, and at the Department of Environmental Quality Core Repository in Harvey, Michigan.

The qualified person responsible for the preparation of this report and the proposed exploration program is Dr. Rodney C. Johnson, registered member SME (4051050) and the chief geologist at the former White Pine Mine from 1994 through 1995.

The review of the White Pine Mine is based on published material researched by RJ and A, as well as data, professional opinions, and unpublished material originally submitted to RJ and A by Copper Range.

Table 2.1
List of Abbreviations

Name	Abbreviation
Acre(s) (imperial)	ac
Canadian Institute of Mining, Metallurgy and Petroleum	CIM
Canadian National Instrument 43-101	NI 43-101
Centimetre(s)	cm
Day	d
Degree(s)	o
Degrees Celsius	oC
Digital elevation model	DEM
Dollar(s), Canadian and US	$, Cdn$ and US$
Endeavour Financial Ltd.	Endeavour
Foot or Feet (imperial units))	ft
Billion years	Ga
Gram(s)	g
Grams per metric tonne	g/t
Greater than	>
Hectare(s)	ha
Internal rate of return	IRR
Kilogram(s)	kg
Kilometre(s)	km
Less than	<
Litre(s)	l
Metre(s)	m
Mile(s)	mi
Million years	Ma
Milligram(s)	mg
Millimetre(s)	mm
North American Datum	NAD
Not available/applicable	n.a.
Ounces	oz
Ounces per year	oz/y
Parts per billion	ppb
Parts per million	ppm
Percent(age)	%
Pound(s)	lb
Qualified Person	QP
Quality Assurance/Quality Control	QA/QC
Second	s
Specific gravity	SG
Système International d'Unités	SI
Ton(s) (imperial)	ton
Tons (imperial) per day	tons/d
Tons(s) (long, imperial)	l.ton
Tonne (metric)	t
Tonnes (metric) per day	t/d
Universal Transverse Mercator	UTM
Year	y

3.0 RELIANCE ON OTHER EXPERTS

RJ and A's conclusions are based on a review and analysis of data provided by Highland, Copper Range, and the prior operators of the White Pine Mine, and its direct field examination and professional experience at the White Pine Mine. RJ and A has no reason to doubt the validity of the information provided by Copper Range.

RJ and A has relied on information provided by experts as is allowed by Item 3 of Form 43-101F1. Specifically, the author has relied on the opinion of Mr. Steven J. Tinti dated January 14, 2014, regarding the mineral rights of Copper Range and on the commitments for issuance of Owners Policies of Title Insurance with effective dates of December 2, 2013, for file numbers OF-8353 and OF-8366. These policies were issued through First American Title Insurance Company by its agent Peninsula Title & Abstract Corp. for the surface estate ownership. RJ and A has not researched property title or mineral rights for the White Pine Project and expresses no opinion as to the ownership status of the property. This disclaimer applies mainly to Item 4 of this report.

In addition, RJ and A's has relied on experts retained by Highland to conduct a due diligence investigation on environmental conditions and liabilities relative to the White Pine Project. Specifically, the author has relied on a report prepared by Weston Solutions of Michigan Inc. dated December 18, 2013. This disclaimer applies mainly to Item 4 of this report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The White Pine Project is located in the Upper Peninsula of the State of Michigan, USA, (Fig. 4.1) approximately 7.5 kilometers (5 miles) south of Lake Superior in Ontonagon County at 46^{o} 45' 42" N latitude and 89^{o} 33' 52' W latitude (UTM coordinates 518,816N, 304,170E). The county seat is Ontonagon, 25 kilometers (15 miles) northeast of the project. Michigan State Highway 64 runs north-south 0.5 kilometers (0.3 miles) west of the project. The elevation at the old mine portal is 265 meters (880 feet). The surrounding area is drained by numerous small streams and slopes gently north toward Lake Superior and is heavily forested.

Figure 4.1
Location of White Pine, Michigan, USA. White Pine is located in the Upper Peninsula of Michigan. The nearest major cities, Houghton and Marquette, are shown for reference.

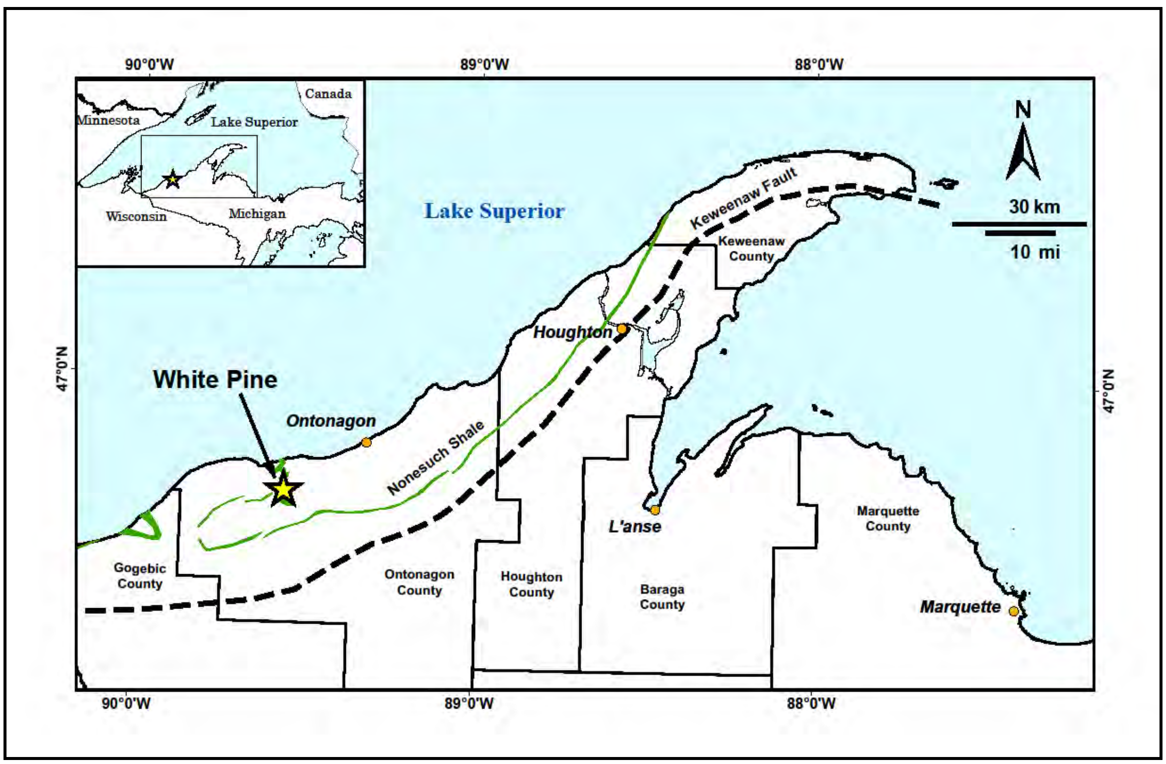
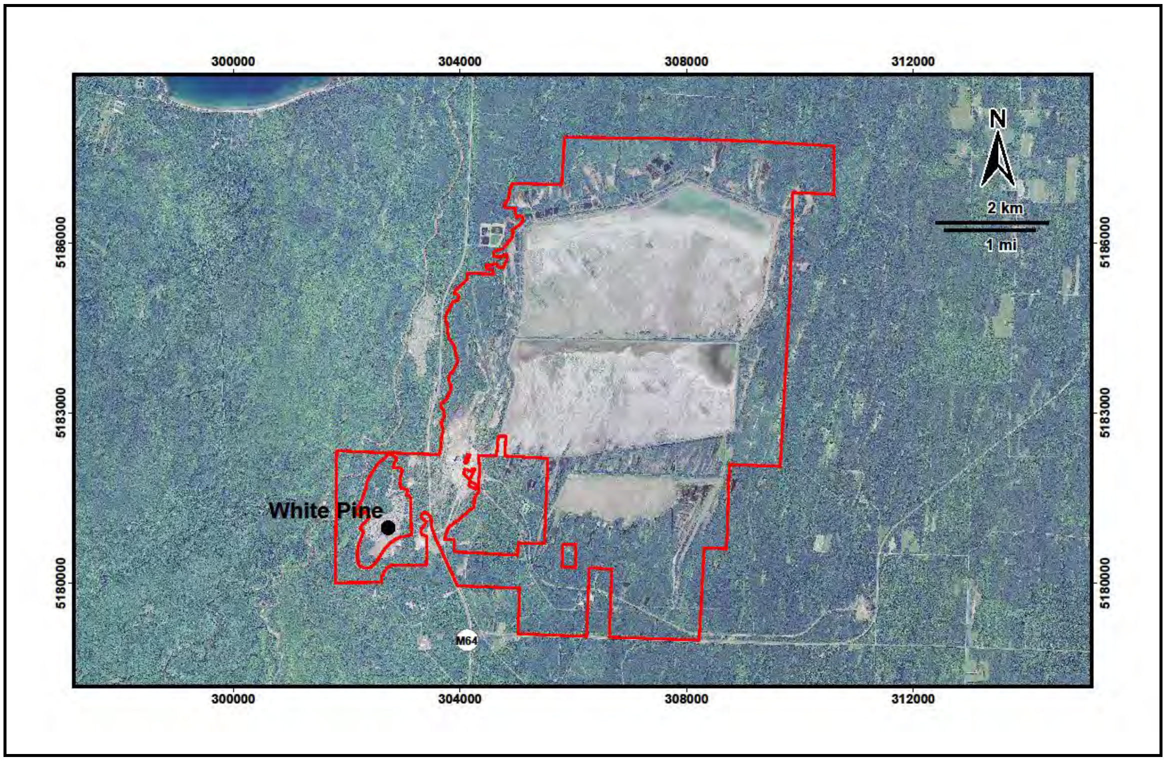


Figure 4.2
White Pine Mine property outline (in red) showing Copper Range surface ownership.



4.2 PROPERTY DESCRIPTION

Surface and mineral rights in Michigan are located and described with reference to a grid established by the federal government as part of the Public Lands Survey System. Townships are squares of 36 square miles comprising 6 x 6 arrays of 36 sections, named according to distance and direction from a principal meridian and baseline. Sections are one-mile square, and can be divided into quarters, labeled NE, NW, SE, and SW. Each quarter can also be split into halves or quarters, which are labeled according to the side or corner of the quarter section they encompass (e.g., NE 1/4 of the NW 1/4).

The township and range grid in the White Pine area was established in 1851. Curvature of the earth and survey errors both result in variations in the sizes of the townships and sections. Section boundaries are usually marked in the field by small survey monuments.

Copper Range and its wholly-owned subsidiary, Unlimited Developments Inc., own approximately 4,500 hectares (11,000 acres) of surface rights (Fig. 4.2) and approximately 11,990 hectares (29,615 acres) of mineral rights.

Surface and mineral rights held by Copper Range are located in portions of Township 51N Range 42W, Township 51N Range 41W, Township 50N Range 42W, and Township 50N

Range 41W. The distribution of surface and mineral rights in the area of the 1995 Copper Range historical estimate are detailed in Table 4.1 and shown on Figure 4.3.

Ownership of mineral resources in Michigan was originally granted to the persons who owned the surface. These property owners had both "surface rights" and "mineral rights". This complete private ownership is known as a "fee simple estate". Mineral rights in Michigan may be severed from the surface estate and held by separate parties. Where severed from the surface rights, the mineral rights become subject to Michigan's *Marketable Record Title Act* of 1945, as amended in 1997. The owner of the severed mineral rights must record a Notice of Claim of Interest or a deed of conveyance of the mineral interests in the county where the mineral rights are located in accordance with the *Marketable Record Title Act* in order to maintain such mineral interests. If the owner of the mineral rights fails to comply with the recording requirements, ownership of the mineral rights is extinguished and automatically vests in the owner of the surface estate. The owner of severed mineral rights has the right of access to and reasonable use of the surface to explore and mine the minerals, subject to certain protections and compensation for the surface owner.

The area where Copper Range holds 100 percent of the mineral rights only with no surface rights covers 7,536 hectares (18,614 acres) and is shown on Figure 4.3. The areas where Copper Range holds a fee simple interest in both the surface estate and 100 percent of mineral rights covers 4,454 hectares (11,001 acres), as shown on Figure 4.4.

Copper Range also holds partial mineral interests in four areas shown on Figure 4.3. In Township 51N Range 42W, Copper Range Co. owns an undivided 75 percent interest in the mineral rights in the S1/2 of Section 36. In Township 51N Range 41W, Copper Range owns undivided 75 percent interests in the SW ¼ of Section 17 and the SE ¼ of Section 18, an undivided 50 percent interest in the W ½ of the W ½ of Section 21, and undivided 87.5 percent interests in the S ½ of the N ½ and the N ½ of the S ½ of Section 31. Michigan law provides that, where multiple parties own the mineral rights in a parcel of property, any owner holding at least 75 percent of the mineral rights may obtain a court decree allowing that owner to explore and develop the minerals under that parcel.

Highland has received a title opinion to confirm the ownership by Copper Range of the mineral rights listed in Table 4.1 and depicted in Figure 4.3. Highland has also obtained title commitments regarding all of the surface rights owned by Copper Range.

The property rights consisting of those held in fee simple (surface and mineral rights held together), and surface only, after transfer to Highland Copper Company through completion of the agreements described above, would continue to be held by Highland Copper Company with no break in tenure, as long as all levied taxes are paid and the ownership kept in good standing. Those rights acquired as severed mineral rights would continue with no interrupted tenure as long as an *Affidavit of Notice to Claim* is filed every 20 years (that time period commencing with the final date of sale of said properties to Highland Copper Company) in the county court house to satisfy the requirements of the *Marketable Record Title Act*.

Table 4.1
Copper Range surface and mineral rights.

Copper Range Company mineral ownership	CRC mineral rights (hectares)	CRC mineral rights (acres)
CRC 100% mineral and surface rights	4,454	11,001
CRC 100% mineral rights only	7,536	18,614
Total area of CRC 100% mineral rights	11,990	29,615
CRC partial ownership 87.5% mineral and surface rights	130	320
CRC partial ownership 75% mineral and surface rights	97	240
CRC partial ownership 75% mineral rights only	162	400
CRC partial ownership 50% mineral and surface rights	65	160

Third party properties are also shown on Figure 4.3 in diagonal green ruling. Those areas overlie mined-out portions of the former White Pine Mine, the mine portal, a refinery and a power plant (Figure 4.4), none of which are being acquired by Highland.

Figure 4.3
Plan map showing distribution of mineral and surface ownership. Note the outline of the North Mine portion of the 1995 historical estimate in red.

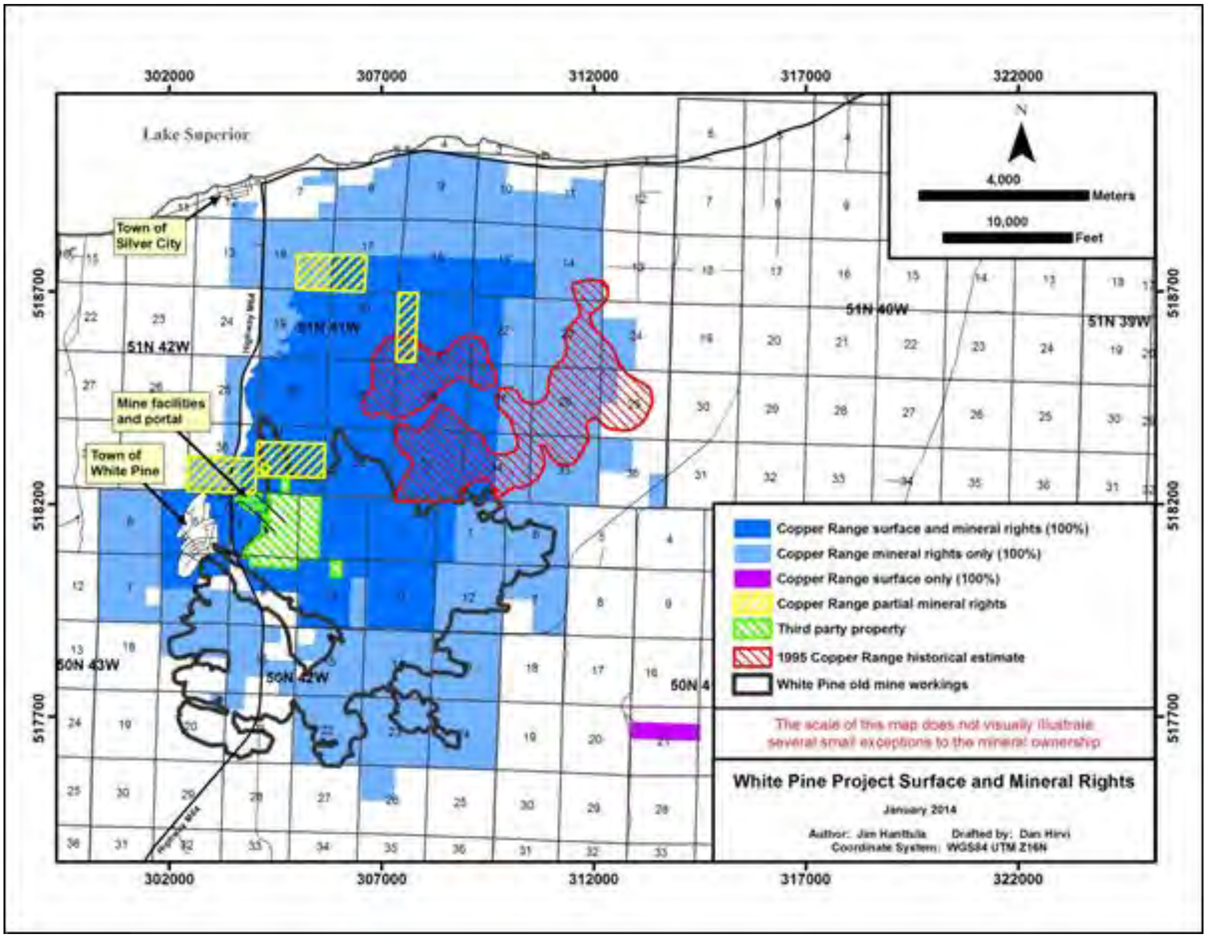
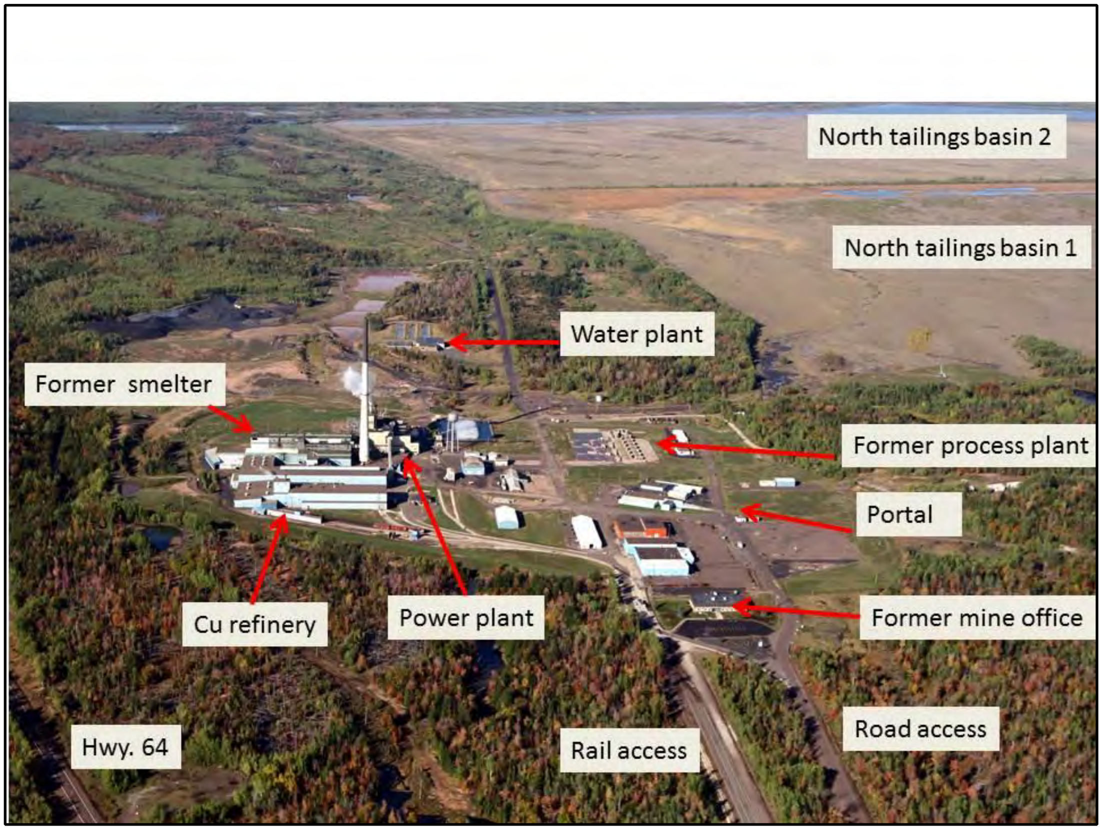


Figure 4.4
Aerial photograph of the former White Pine Mine site.



In addition to the above mentioned rights, Copper Range owns other mineral rights which are outside of the area and are considered less material to the overall project.

4.3 ROYALTIES, PAYMENTS, ENCUMBRANCES, OTHER AGREEMENTS.

On March 5, 2014, Highland entered into a definitive asset purchase agreement (the "APA") pursuant to which Upper Peninsula Copper Holdings Inc., a wholly-owned subsidiary of Highland, will acquire all of the rights, title and interest of Copper Range Company ("CRC") in the White Pine copper project ("White Pine") located in the Upper Peninsula region of Michigan, U.S.A.

Under the APA, Highland agreed to issue to CRC 3,000,000 of its common shares (the "Shares") at the interim closing and to pay an amount equal to US$0.005 (one half of one cent) per pound for the first 1 billion pounds of proven and probable reserves of copper and US$0.0025 (one quarter of one cent) for each additional pound of proven and probable reserves of copper, in cash or in common shares of Highland, at the option of CRC. The Interim closing is anticipated to occur on March 14, 2014, subject to the completion of certain customary conditions, including regulatory approvals and third party consents.

The acquisition will be completed once Highland has (i) compensated CRC for a US$2.85 million financial assurance bond associated with the remediation and closure plan of White Pine in a manner that is acceptable to all parties involved, including the applicable governmental authorities; and (ii) released CRC from its environmental obligations with the Michigan Department of Environmental Quality. At that time, Highland will assume all environmental liabilities related to White Pine and will also be responsible for all on-going environmental obligations. Final closing is anticipated to occur by December 31, 2015.

Until final close, Highland will have access to White Pine to perform exploration and other activities associated with the development of White Pine under an access agreement and CRC will continue to be responsible for environmental obligations and for remediation work up to a maximum of US$2 million.

To the best of our knowledge, none of the property within the White Mine Project area is presently subject to royalties or payment obligations. All surface and mineral interests are owned in fee simple or minerals only unless otherwise indicated in section 4.2. To the best of our knowledge, none of the mineral interests are on publicly-held lands or subject to State of Michigan mineral leases.

The Keweenaw Bay Indian Community and the Bad River Band of Lake Superior Chippewa Indians have been and are opposed to mining in the region. In 1996, The Bad River Band of Lake Superior Indians, in opposition to solution mining at White Pine, stopped a train carrying tankers of sulfuric acid for the solution mining pilot test. More recently, the Keweenaw Bay Indian Community and the Bad River Band of Lake Superior Chippewa Indians have been opposed to mining at Lundin Mining's Eagle Mine and the permitting of the Orvana Minerals Corp., Copperwood project. The concerns of the local Indian tribes should be considered in the development of any new mineral project in the area.

4.4 PERMITS

The Michigan Department of Environmental Quality (**MDEQ**) is responsible for enforcing state laws for protecting natural resources. Michigan's environmental regulations are compiled under the *Natural Resources and Environmental Protection Act*, Act 451 of the Public Acts 1994, as amended ("NREPA").

The drilling, operating, plugging, and site restoration of test wells (drill holes) are regulated under Part 625, Mineral Wells, of NREPA. In addition, test wells must meet the requirements of other Parts of the NREPA to prevent damage to water, air, soil, wetlands, and other environmental values. In most areas of the state, Part 625 requires a permit for a test well that penetrates 50 ft. or more into bedrock or below the deepest fresh water aquifer.

However, test wells in locations where the bedrock is Precambrian in age are exempt from the Part 625 permit requirement, although these wells must meet certain other requirements of Part 625. A test well must be plugged promptly after abandonment, following procedures specified by the MDEQ. Wells must be plugged in a manner that seals off and confines any fluids in the formations penetrated by the well, and prevents any surface water or other materials from entering the well. Removal of overburden and extraction of limited amounts of materials for the purpose of exploration to the extent necessary to determine the location, quantity, or quality of a mineral deposit on land that does not become a part of a mining operation within 2 years must be graded and re-vegetated. Records must be maintained and provided to the MDEQ with regard to drill hole locations and depth, rod size, overburden depth, water source, and proper cuttings management.

Since all drilling will occur in Precambrian bedrock, a permit under Part 625 will not be required. This conclusion has been confirmed by the MDEQ. All other applicable requirements under part 625 will be met as part of the White Pine Project drilling program. Notice will be given to the MDEQ before drilling begins. During the course of the drilling program, an MDEQ representative will visit the site periodically to monitor drilling operations and ensure that best management practices are applied to water and cuttings management. Upon completion of the drilling, each borehole will be filled with cement grout using the tremie method. A report for each borehole will then be submitted to the MDEQ detailing the location, orientation, depth, and overburden thickness, as well as the details of the plugging method, including the amount of cement consumed in plugging.

In addition to the Part 625 requirements, drilling activities which impact "regulated wetlands" and/or "inland lakes or streams" may require a joint permit from the MDEQ under Part 303 (Wetland") and/or Part 301 (Inland Lakes and Streams) of NREPA. These terms are specifically defined in Part 301 and Part 303 and the regulations enacted under those sections. Temporary access roads for the purpose of moving mining equipment are exempt from the wetlands permitting requirement, although any such roads resulting in stream crossings will require permits under Part 301. Any drilling activity within areas meeting the definition of "regulated wetlands" will require a permit under Part 303. A wetlands delineation will be completed. If the wetlands delineation identifies the existence of "regulated wetlands" in the areas which drilling will occur, a permit will be applied for and obtained before drilling commences. The wetlands permit for drill sites will include information on location, depth, any grade modifications, reclamation practices, and a requirement to return the site to original grade.

4.5 ENVIRONMENTAL LIABILITIES

The historical mining, ore processing, smelting, and casting operations at the former White Pine Mine resulted in releases of hazardous substances on and beneath the former White Pine Mine property (the "**Mine Property**"). On September 9, 1997, Copper Range entered into a consent decree with the MDEQ (the "**Consent Decree**") requiring it to address the identified environmental impacts at the Mine Property by undertaking certain environmental response activities including remedial investigation, soil relocation, source control, underground mine closure requirements, capping and re-vegetation, groundwater monitoring, and storm water management with effluent discharges as permitted under a National Pollutant Discharge Elimination System ("**NPDES**") permit, and land use restrictions in the form of recorded declarations of restrictive covenants. Part of the property which is to be incorporated into the White Pine Project includes the environmentally impacted areas of the Mine Property. However, the White Pine Project will not include the property on which the historic smelting and refining processes occurred.

The environmental response activities are being implemented through three interim response activity plans (**IRAPs**) and a remedial action plan (**RAP**) which was approved by the MDEQ on October 13, 2005. Extensive remedial actions have occurred to address identified impacts and recognized environmental conditions. To a large extent, the environmental response activities have been completed. However, on-going responsibilities and liabilities remain.

These on-going responsibilities and obligations are known to include:

- Consent Decree
    - Completion of all required environmental response activities.
    - Quarterly written progress reports.
    - Maintenance of a financial assurance mechanism to cover the anticipated costs of future environmental response activities.
    - Completion and MDEQ approval of an underground mine closure plan.
    - Comprehensive general liability insurance coverage with limits of $15 million.

- IRAPs and RAP
  - Compliance with recorded declarations of restrictive covenants.
  - Quarterly engineered barrier inspection and maintenance.
  - Runoff monitoring from uncapped slag pile areas that do not drain to the NPDES system.
  - Bedell Pond constructed passive wetland maintenance.
  - Portal Creek bioassay to determine if invertebrates have returned.
  - On-site response action repository inspection.
  - Permanent marker maintenance.
  - Execution of a post-closure agreement between Copper Range and the MDEQ.
- NPDES Permit
  - Routine monitoring of effluents from the NPDES System and discharge compliance. The NPDES permit issued to Copper Range will need to be renewed in 2014.
- Underground Mine Closure Plan
  - Maintenance of a "fresh water cap".
  - Removal of all contaminants in the underground mine
  - Flooding of the underground mine.
  - Post-flooding sampling and analysis program.
- Groundwater Monitoring
  - Routine monitoring and data evaluation to assess plume movement and natural attenuation of metals (primarily barium, lithium, manganese, and strontium).
  - Monitoring associated with the on-site response action repository.
  - Monitoring continues until no risk is demonstrated.
- Re-vegetation of the tailings basins
  - Achieve minimum 70% effective vegetation cover and monitor for 5 years after achieving effective cover.
  - Achieve diversity of 5+ species in at least 3 of 5 years after ceasing augmented management.
- Dam Safety (to prevent failure and tailings release)
  - Routine monitoring (operational inspections) and maintenance.
  - Formal inspection of North No. 1 every 5 years (low hazard potential).
  - Formal inspection of North No. 2 every 4 years (significant hazard potential).
  - Maintenance of an up-to-date emergency preparedness response plan.

The White Pine Project's proposed drilling program will necessitate access to and drilling activities on the portion of the Mine Property upon which the historical tailings disposal basins are located. These areas are subject to restrictions deemed necessary for the protection of the engineered barrier serving as a cap on the tailings disposal basins. The restrictions are set forth in the recorded declaration of restrictive covenants. These restrictions will require that certain precautions be taken in conducting the White Pine Project's drilling program, including: preparation of a health and safety plan; MDEQ approval of drilling activities, vegetation removal, and groundwater use; protection of the integrity of the engineered barrier (cap); soil movement restrictions; and compliance with soil and sedimentation control regulations.

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

The White Pine Project lies on the western edge of a coastal plain that gently dips towards Lake Superior, 8 kilometers (5 miles) to the north. The plain is formed upon distinctive, widespread red clay deposited as a glacial lake bed.

Numerous small streams, mostly with intermittent or seasonal flow, cut the plain and flow in a generally south to north direction. The deeply incised nature of the streams, which is typical south of the location of the White Pine Project, gradually disappears as the streams approach Lake Superior.

The elevation of the former main mine site (portal to the decline) is 266 meters (873 feet) above sea level and 83 meters (271 feet) above the mean Lake Superior level of 183 meters (602 feet) above sea level.

The region is within the southern boundary of the boreal forest (taiga) ecosystem which, locally, contains a variation noted as northern forest. This variation is characterized by coniferous forest, consisting mainly of pine, spruce, and larch mixed with areas of northern hardwoods, paper birch, and aspen. Nearly all of the virgin white pine in the area was logged off in the late 19th century and the area is now covered by second and third growth forest. The system is noted for the abundance of water but poor topsoil due to repeated glaciation.

The area of the White Pine Project is easily accessed by all-season paved state highways. Michigan highway M-64 gives direct access to the mine vicinity from the village of Bergland, 19 kilometers (12 miles) to the south, and Silver City, 8 kilometers (5 miles) to the north. It is 29 kilometers (18 miles) via paved highways to the village of Ontonagon, which is the county seat.

The unincorporated town site of White Pine lies immediately across M-64, 0.6 kilometer (1 mile) to the southwest of the mine site and had a population of 474 persons in the 2010 census. The town was built during the construction of the present White Pine Mine in 1952 to service employees of the mine. White Pine underwent an expansion during 1968-1969. The town site provides access to a restaurant and motel complex and a small mall, containing the post office and a bank. Figure 5.1 below shows the transportation network connecting with the property.

The major population centers for the region are Houghton, located about 111 km (69 miles) to the northeast with a population of 7,708 in 2010 and Marquette, located about 201 km (125 miles) to the east with a population of 21,355 (2010).

Commercial air service is available at the Gogebic-Iron County airport in Ironwood, 72 kilometers (45 miles) southwest of White Pine with daily service to and from Minneapolis. Commercial air service is also available at the Houghton County Memorial Airport, 122 kilometers (76 miles) northeast of White Pine, with two daily flights to and from Chicago. A public airport is owned and maintained by Ontonagon County 5 kilometers (3 miles) west of the village of Ontonagon with no scheduled commercial service. The runway is paved and 1068 meters (3503 feet) in length.

The area of the White Mine Project is in a four-season temperate climate that is typical of the Upper Peninsula of Michigan. The overall climate has been described as continental to semi-maritime in nature. Weather systems move from west to east with the prevailing winds being northwestward in the winter and southwestward in the summer. Lake Superior has a modifying effect upon the local weather systems and produces cool summers and cold winters with consistently high humidity. The average annual rainfall in Ontonagon County is 86 cm (33.9 inches) with snowfall of 459 cm (177 inches) at White Pine. There are on average 185 sunny days and 142 days with precipitation. The average July high temperature is 26°C (78.8°F) and the average January low temperature is -16°C (3.7°F). The historic White Pine Mine operated year around during its entire existence with minimal problems.

Copper Range retains a considerable surface ownership to the north, east, and south of the site of the former processing plant. After closure of the White Pine Mine, Copper Range sold a significant portion of its surface rights peripheral to the currently owned surface rights. However, Copper Range's surface rights are believed to be sufficient for future tailings storage and a processing plant. Availability of adequate surface rights for storage of waste rock would be dependent upon the location of new shafts or declines.

A Canadian National Railroad spur line terminates at the mine site and has been in an idle/standby mode since the closure of the refinery. The rail line originates at Morengo Junction, south of Ashland, Wisconsin, and proceeds to Bergland, south of White Pine, prior to turning north for 22.5 kilometers (14 miles) to White Pine. Canadian National still runs two trains per week to Ashland through Marengo Junction.

Coal deliveries to the past operation at White Pine were both by rail, via the above described system, and by large vessels into the small harbor in Ontonagon on Lake Superior and then by truck to the mine site.

There is a natural gas pipeline that services the White Pine area. There is also electrical energy service, including a 40 megawatt gas and coal-fired power plant at the mine site that is owned and operated by White Pine Electric Power, LLC (WPEP), a subsidiary of Traxys North America, LLC. The power plant is not included in the ASA between Highland and CRC.

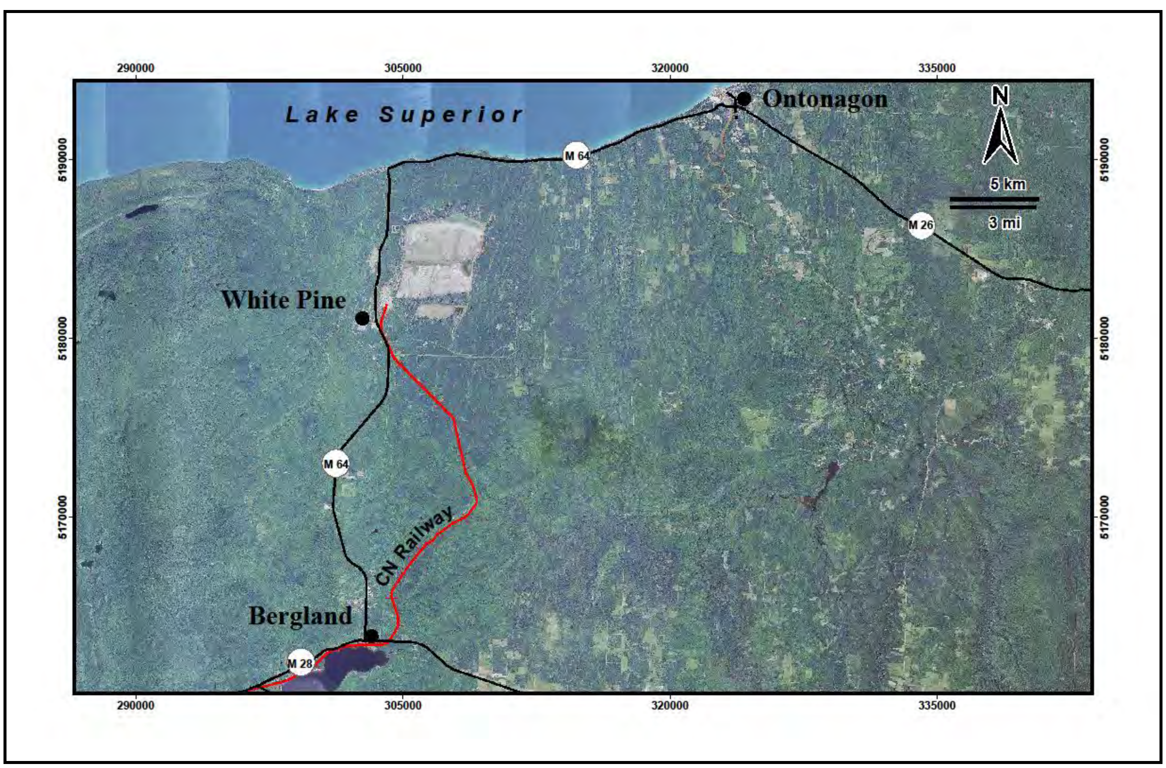
The White Pine copper refinery is a modern facility that was part of a fully integrated copper producing operation that included a smelter. The refinery treated Hudson Bay anodes from Flin Flon, Canada, until it was sold again in 2011. It has a design capacity of 80,000 tons per year and consists of an electrolytic copper refinery using Mt. ISA stainless steel technology, including a modern EMEW electro winning plant commissioned in 2008 with rated capacity of 1,500 tons per year, an AISCO anode preparation machine, and a MESCO cathode stripping and Sumitomo anode scrap washing machines. The refinery is owned by Traxys North America and is not included in the ASA between Highland and CRC.

Ample water is available to the project area via a water line from a pump station on the shore of Lake Superior in Silver City. A 36-inch concrete raw water supply pipe from Silver City was repurposed for potable water distribution to serve Silver City, M-64, and Ontonagon. A 42-inch steel raw water supply pipe provides water from Lake Superior to the White Pine Mine. A water treatment and sewage plant exist near the former mine site and is maintained by the municipality of Ontonagon.

Normal cable service is available to the White Pine area including high-speed internet. Land line phone service is available through numerous carriers but regular cell phone service is not normally available in most of the area around White Pine. Cell phone service can be obtained by installation of local boosters.

In the past operation at White Pine Mine the mining personnel commuted from the surrounding five counties in Michigan and two in neighboring Wisconsin. A sufficient work force still remains within the described area to fill the needs of a new operation at White Pine, with proper training being necessary on newer, state-of-the-art equipment.

Figure 5.1
Transportation access to the historical White Pine Mine showing M-64 and the Canadian National Railway spur.



6.0 HISTORY

Following is a summary of the history of the White Pine Mine, Ontonagon County, Michigan, from the discovery of copper mineralization to mine closure.

1865 - The copper-bearing Nonesuch shale was discovered in an outcrop in the bed of the Little Iron River by Frank Cadotte. The Nonesuch mine was opened 3.2 kilometers (2 miles) west of the former White Pine Mine (closed in 1995) after Mr. Cadott sold his interest for a barrel of pork, a barrel of flour, and some additional supplies. The copper-bearing shale formation was given the name Nonesuch because "no other deposit like it" existed in the Michigan copper district.

1879 - Thomas Hooper, a Cornish mining captain, started the original White Pine Mine on the bank of the Mineral River near the site of the former White Pine Mine (closed in 1995). The property was named for the giant White Pine trees in the area. Mining concentrated on the fine-grained native copper in the sandy portion of the conglomerate underlying the shale. The copper sulfide mineralization was known, but no economic method existed for its recovery. Lack of capital forced the closure of the original project in 1881.

1907 - Under the direction of Tom Wilcox, the Calumet and Hecla Mining Company ("**C&H**") purchased the properties and conducted diamond drilling from the original Nonesuch Mine eastward to the White Pine Mine. Thomas Hooper's original #1 shaft was deepened, and sandstone with greater than 10% native copper was discovered.

1912 - An additional shaft was sunk by C&H but it was discovered that a large fault had displaced the ore horizon to what was considered an unreasonable depth at that time. Two additional shafts were sunk to the east and production increased. In 1915, a railroad spur and 1,000-short ton-per-day capacity ball mill were constructed. Most of the smelting was done in Houghton, to the northeast.

1915 to 1920 - C&H produced 18 million pounds of native copper and 260,000 ounces of silver. In late 1920, the mine was closed because of a recession and depressed copper prices.

1929 - William Schacht, acting as agent for Copper Range, in 1929 attended a sheriff's auction for back taxes in Ontonagon and acquired the White Pine properties for $119,000, outbidding C&H by $388.15. It took another 23 years of research to determine an economic method to recover the copper sulfide that existed in the Nonesuch Shale.

1950 - The outbreak of the Korean War forced the US to consider increasing domestic sources of copper. The federal government requested that Copper Range consider the completion of its plans to exploit the deposit at White Pine. Financing consisted of a loan of $68 million from the federal government under the *Defense Production Act* and $13 million from Copper Range.

1952 - Construction began in March 1952 of the White Pine Mine.

1953 - On March 31, 1953, the first ore was hauled to surface via the portal. The mill was completed in 1954 and the first pour of copper in the smelter was on January 13, 1955.

1964 - Copper Range made the final payment on its government loan.

1965 - On September 18, 1965, the one-billionth pound of copper was poured in the smelter. An expansion project in this year added an additional mine shaft, an additional mill section, and a second furnace in the smelter.

1975 - In August 1975, Amax, Inc. and Copper Range agreed to a merger. The US Justice Department followed the next month with an antitrust suit to block the merger and additionally to require Amax to divest itself of its 20% ownership of Copper Range. The federal district court in New York later ruled in favor of the Justice Department and the merger failed.

1977 - The Louisiana Land & Exploration Company ("**LL&E**") purchased the White Pine Mine in 1977 and Copper Range became a wholly-owned subsidiary of LL&E.

1982 - LL&E closed the White Pine Mine in October 1982 and put the mine up for sale after continuing losses due to low copper prices and escalating production costs.

1984 - In December 1984, Echo Bay Mines, Ltd. ("**Echo Bay**"), a Canadian company, purchased the LL&E interest in the Round Mountain (Nevada) gold mine. The deal required Echo Bay to acquire ownership of the White Pine Mine and all of its legacy environmental concerns. Echo Bay immediately began a plan for permanent closure of the White Pine Mine.

1985 - In November 1985, Echo Bay agreed to sell Copper Range and the White Pine Mine assets to a management group and the employees of the mine. Copper Range was reorganized as a Delaware corporation owned 70% by an employee stock ownership plan and 30% by a management group called Northern Copper Corporation, headed by Russell Wood, a former VP of mining for LL&E.

1987 – In 1987 plans were underway to take Copper Range public through an initial public offering ("**IPO**") to attain a listing and initiate public trading in stock of the company.

An unexpected, large, instantaneous ground failure occurred during the summer of 1987. The failed area occurred in an area of second-pass mining of mineralized Lower Sandstone. The system failed simultaneously and explosively in workings that ranged from 460 to 550 meters (1500 to 1800 feet) in depth. Final subsidence on surface ranged from one third to greater than one meter (one foot to greater than three feet). The ground failure in the southwest part of the mine threatened production and the IPO was postponed indefinitely.

1989 - In February 1989, Metall Mining Corporation ("**Metall**") and Copper Range announced an agreement for Metall to acquire Copper Range. The purchase was completed in May 1989.

1993 – In 1993, Copper Range announced the initiation of studies to determine the viability of solution mining in the White Pine Mine. The MDEQ had issued a permit for this study.

1995 - Inmet Mining Corporation (formerly Metall) announced in July 1995 that Copper Range would suspend all conventional mining and milling operations at the White Pine Mine on September 30. The smelter had been idled in February due to environmental concerns. The solution mining pilot program continued, as did operation of the refinery.

1996 - In May 1996 Copper Range announced approval of the permit for a solution mining operation. Opposition from environmental groups and regional Native American tribes became so intense that the project was put on hold.

1997 - Copper Range announced on May 30, 1997, that it was dropping all plans for solution mining operations within the White Pine Mine and that all operations would cease. Plans for removal of all underground assets were begun. Plans for flooding the mine and negotiations with the State of Michigan for the final environmental agreement were undertaken. Reclamation plans for the tailings disposal sites were begun.

1998 - The refinery at White Pine was sold to HudBay Minerals in January 1998.

2011 - HudBay Minerals ceased operations at the White Pine refinery. The refinery was sold to Traxys North America LLC in the second quarter of 2011.

2013 – First Quantum Minerals, Ltd. took over Inmet Mining Corporation, the parent company of Copper Range, and acquired indirect ownership of what was left of the White Pine mine and the surrounding surface and mineral rights.

6.1 EXPLORATION HISTORY

Although the copper mineralization crops out along the Mineral River at White Pine, there are very few exposures of the Nonesuch Shale in the area. Drilling has been necessary to identify the distribution of copper mineralization. Copper Range conducted a continuous drilling program at the White Pine Mine until the early 1970s. There was a hiatus in drilling until the commencement of a drilling program in 1994 – 1995. The 1994 drilling program was conducted to provide a historical estimate supporting a feasibility study to build a new smelter at the White Pine Mine.

Most of the early drilling was BQ core. The glacial overburden was cased to bedrock. In the pre-1970s drilling, the core from above the ore zone was laid on the ground and logged. The core from the fringe or Top of Mineralization through the Lower Transition was stored in five-foot-long spruce core boxes. The core was transferred to the core lab at the White Pine Mine. The core was logged and the beds in the mine stratigraphy were identified.

The 1994 – 1995 drilling program was conducted using NQ core. The glacial overburden was cased to bedrock. All core was retained and put in five-foot spruce core boxes. The core was transported by the geologists to the core lab at the White Pine Mine. The core was logged in detail and the beds in the mine stratigraphy were identified.

Early diamond drill holes were abandoned without cementing. Later drill holes were cemented through the overburden. The drill holes from the 1994 - 1995 drilling program were cemented from the bottom of the hole to the surface.

Several seismic surveys were conducted at the White Pine Mine. One survey was carried out in 1975. Two surveys were conducted in the fall of 1994 and another in the winter of 1995. The reflection seismic surveys were designed to investigate caved areas of the mine or to identify the location and off-set along thrust and strike slip faults. Locating faults was essential for mine planning.

6.2 HISTORICAL SAMPLE PREPARATION, ANALYSIS AND SECURITY

The author of this report was the chief geologist at the White Pine Mine during the 1994 – 1995 drilling program and was responsible for supervision of all aspects of the program. The core logging, sampling, and analytical practices employed during the 1994 – 1995 drilling program were acceptable practices for the time. Unfortunately, the procedures were not formally documented. The author has no reason to question descriptions and assays presented in this report. The procedures and practices employed during the 1994 – 1995 drilling program are presented below.

The standard practice at the White Pine Mine was to sample all core from the top of the fringe to the bottom of the Lower Transition unit of the Nonesuch Formation. Samples were confined to beds and honored lithologic contacts. In general, the sample length was less than two feet. If the bed was thicker than two feet, the bed was subdivided into multiple samples of each less than two feet.

The pre-1970s drilling sampling methods consisted of sawing the core in half and a half of the core from each bed from the fringe to the bottom of the Lower Transition was sampled and submitted to the White Pine assay lab for analysis of copper and silver. The copper assay was performed at the White Pine assay lab using an acid digestion and AAS (atomic absorption spectroscopy) assay. The native copper that was not digested was dried, weighed, and added to the AA assay to produce the final copper assay. It is not known whether the White Pine Mine assay lab was certified and what standards were used at the time, but the lab was supervised by an accredited chemist and known to produce reliable results.

The 1994 – 1995 drilling program was conducted using NQ-size core. The glacial overburden was cased to bedrock. All core was retained and put in five-foot spruce core boxes. The core was transported by the geologists to the core lab at the White Pine Mine. The core was logged in detail and the beds in the mine stratigraphy were identified according to standard nomenclature.

During the 1994 – 1995 drilling program the NQ-size core was sawed in half and then one half was sawed in half again. Sample intervals were clearly marked on the core with was pencils so that they could be easily identified for eventual re-sampling. The quartered samples were bagged and shipped to Lerch Brothers in Hibbing Minnesota, for crushing. The crushed samples were split and shipped to Chemex Labs in Vancouver, BC, Canada. Chemex Labs were a certified lab and registered assayers under the Canadian Association for Laboratory Accreditation (CAEL). The samples were prepared using Chemex Labs procedure 1388-211 and analyzed using acid digestion and an AAS finish. The undigested native copper and silver were screened, dried, weighed, and analyzed for copper and silver and were added to the final assay (by the method usually called "screen assay"). The Chemex Labs was subsequently acquired in 1999 by the Australian Laboratory Services (ALS), which continues to use the alias ALS Chemex and has no relationship with Highland.

All of the drill core in the ore zone (TOM Line through Lower Transition) not sampled for assay were stored at the White Pine Mine while it was in production. Drill core from the mined out portions of the mine was stored underground and drill core from the unmined areas were stored in a core lab on the surface for restricted access by the mine geologists and technicians.

While most of the core from the pre-1970's drilling was destroyed after the mine ceased operations, much of the drill core from the 1994 – 1995 drilling program was saved in various sites off property after mine closure. Highland recovered core from eight pre-1970's holes in the North Mine deposit from a warehouse on the Michigan Tech University campus in Houghton, Michigan, where entry and access was controlled by a university employee. Highland also recovered 1994 - 1995 drill core from 19 holes in the North Mine deposit area from the State of Michigan repository in Gwinn, Michigan, where entry and access was controlled by a state employee. For the most part, all recovered core was useful not only for logging lithologic contacts but also for sampling for re-assay in order to compare to historical assays.

6.3 HISTORICAL ESTIMATES

Following cessation of conventional mining in 1995, Copper Range's chief geologist (Johnson, R.C., 1995) calculated a historical estimate. This historical estimate was made prior to the institution of NI 43-101 and does not use the categories set out in the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101.

Copper Range failed to file an affidavit of *Notice of Intent to Claim* after the mine closed. Therefore, those mineral rights that were held by the Copper Range Company as "minerals only," not in fee simple, have reverted to the owners of the surface. Hence, some of the Copper Range mineral rights that were part of the North Mine historical estimate have reverted to the surface owner or owners. This change in historic estimate is approximately 10%. However, Copper Range may also have gained mineral rights in the area of the North Mine when other mineral rights holders also failed to file an affidavit of *Notice of Intent to Claim*.

A Qualified Person has not done sufficient work to classify the historical estimate as a current mineral resource and the historical estimate is not being treated as current mineral resources and should not be relied upon.

6.3.1 Key Assumptions, Parameters, and Methods

The historical estimate was prepared using MINCOM software on a Sparc 10 Workstation. The geologic model was built by defining the surfaces and thicknesses of individual beds within the ore interval based on the 526 surface diamond drill holes. Isopachs were plotted for each individual bed within the ore interval and interrogated for geologic integrity and honoring of data. Following interrogation, copper and silver grades were composited (accumulated) over individual mining configuration intervals and interpolated using the inverse distance cubed (ID^3) method. Isogrades were plotted for bed and mining configuration intervals and interrogated for geologic integrity and honoring of data.

The cut-off grade was determined by considering the production costs from the Northeast Mine (a mining area of the White Pine Mine). In June 1995, Northeast Mine production cost of one pound equivalent cathode was $1.28 at an average grade of 19.2 pounds of copper per short ton. This compared favorably with studies indicating a future cost of $1.30 per pound. Hence, at a copper price of $1.30, the break-even grade (and cut-off grade) was approximately 19 pounds of copper per ton. This calculation assumed a mill recovery of 87.5% and a payable copper content in the concentrate of 96.5%.

The historical estimate used a database of 526 surface diamond drill holes. Although Copper Range stored core in well-organized drill core libraries from almost all ore zone intercepts, the core has since been destroyed. However, core from at least thirty-one drill holes with ore zone intercepts from the area of the North Mine have been recovered by Highland.

Individual mining blocks were defined, limited either by the cut-off grade of 19 pounds of copper per short ton (in situ), by adjacent blocks of different mining configuration or by the arbitrary north limit of the North Mine (latitude 50,000 N, White Pine Mine coordinates). The extraction rate used to calculate the minable reserve from the geological reserve was 57%. This extraction rate provided a mine-wide estimate of extraction considering first pass, second pass, and ground left in pillars and barriers. The grades for each mining configuration were diluted based on past mining experience.

The official estimate at the time of closure was calculated for a minimum 2.9 meters (9.5 feet) mining height (Table 6.1 and Figure 6.1). “Proven reserves” were defined by CRC as those areas containing drill holes on a spacing of 305 meters (1,000 feet) and meeting or exceeding the cut-off grade. This definition was validated by historical comparison of mill grade versus geology estimated grade. The geology estimated grade had predicted mill grade within 3% in the period January 1, 1990, to January 1, 1993. In 1993, CRC began milling “secondaries” (slag), and difficulties in estimating the grade of the slag and copper recovery from the slag introduced error into the reconciliation of mine grade with mill grade. “Probable reserves” were defined by CRC as those areas which contained drill holes at a spacing between 305 and 914 meters (1,000 and 3,000 feet) and met or exceeded the cut-off grade.

This historical estimate was made prior to the existence of NI 43-101 and does not use the categories set out in the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101. The terms " proven and probable reserves" are historical terms used by CRC, not comparable to the CIM defined Probable Mineral Reserve and Proven Mineral Reserve, and should be compared to a potential mineral deposit requiring further exploration drilling to define an initial resource. A qualified person (QP) has not done sufficient work to classify the historical estimate as a current mineral resource and the historical estimate is not being treated as current mineral resources and should not be relied upon. Nevertheless, RJ & A is of the opinion that the 1994-95 exploration work was well executed and the resulting data is relevant and of sufficient quality for consideration in further exploration of the project. The use in this section of the term ‘reserves’ does not mean to imply that the White Pine Project has reserves as defined in the current CIM Standards.

6.3.2 Relevance and Reliability of the Historical Estimate

The author of this report was the chief geologist at the White Pine Mine during the 1994 – 1995 drilling program and was responsible for supervision of all aspects of the program. RJ

& A is of the opinion that the 1994-95 exploration work was well executed and the resulting data is relevant and of sufficient quality for consideration in further exploration of the project. It is RJ and A's opinion that the historical estimate was done by experienced geologists in a manner consistent with the accepted Securities and Exchange Commission's standards of the time.

The verification of the historical estimate requires a program that validates the historic data. This program should include resampling of available core (at the same intervals as previously done) and twinning of a few historical drill holes. Infill drilling will be necessary to upgrade the resource classification. Additional drilling will also be required on the parcels where mineral rights that may have been gained by Copper Range when other mineral rights holders failed to file an affidavit of *Notice of Intent to Claim*.

Table 6.1
Historical estimate calculated at the time of mine closure for a minimum 9.5 foot mining height (Johnson, 1995).

This historical estimate was made prior to the existence of NI 43-101 and does not use the categories set out in the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101. The terms " proven and probable reserves" are historical terms used by CRC, not comparable to the CIM defined Probable Mineral Reserve and Proven Mineral Reserve, and should be compared to a potential mineral deposit requiring further exploration drilling to define an initial resource. A qualified person (QP) has not done sufficient work to classify the historical estimate as a current mineral resource and the historical estimate is not being treated as current mineral resources and should not be relied upon. Nevertheless, RJ & A is of the opinion that the 1994-95 exploration work was well executed and the resulting data is relevant and of sufficient quality for consideration in further exploration of the project. The use in this section of the term 'reserves' does not mean to imply that the White Pine Project has reserves as defined in the current CIM Standards.

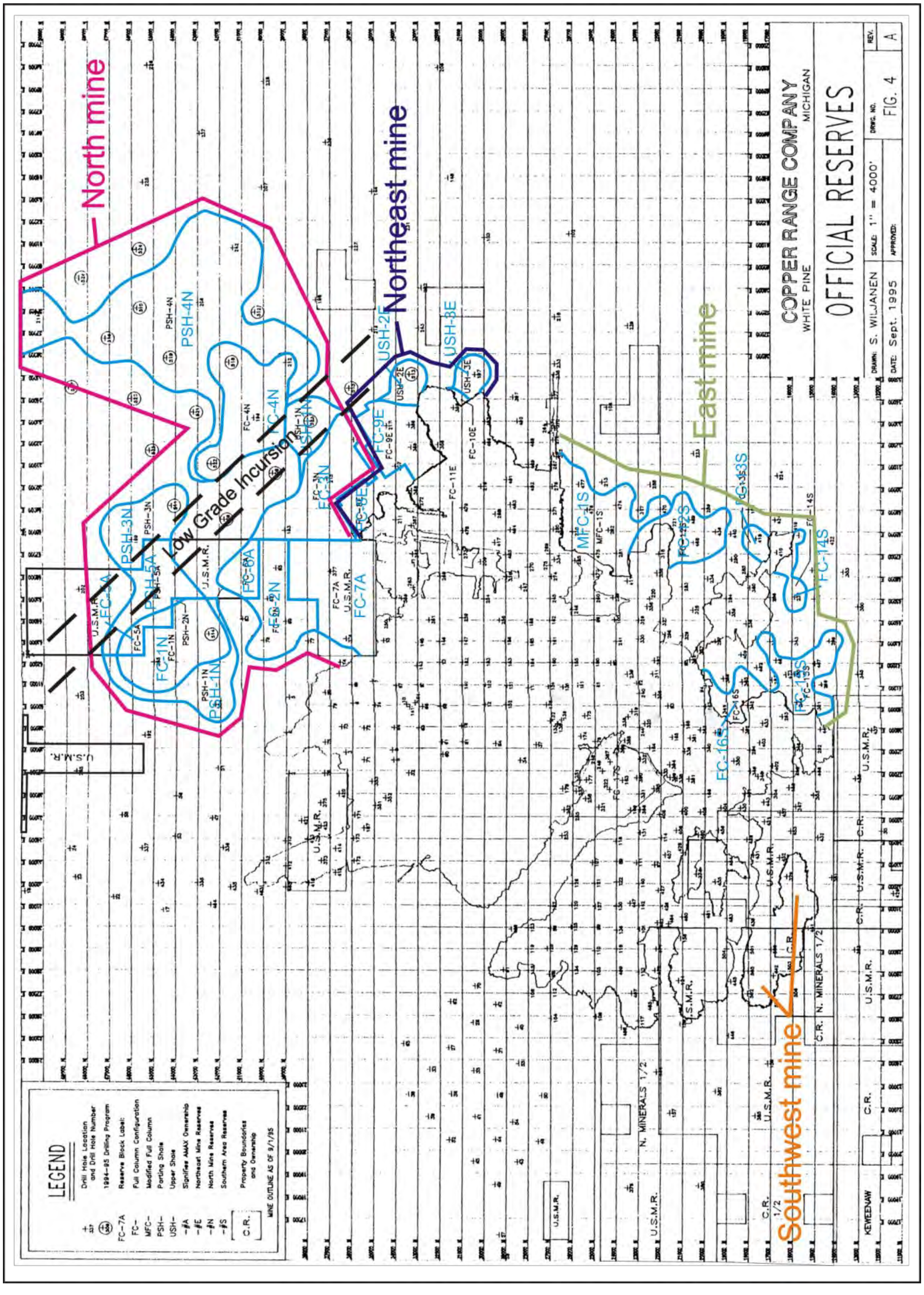
Area	Class	Owner	Minable Tons	Mining Height (feet)	Dilution (percent)	Mining Grade (pounds/ton)	Contained Copper (pounds)
Central portion of the mine							
FC-17S	**proven**	**CRC**	**6,048,000**	**13.2**	**3.0**	**27.4**	**165,938,000**
Eastern portion of the mine							
MFC-1S	proven	CRC	6,202,000	9.5	3.0	19.3	119,885,000
FC-12S	proven	CRC	3,971,000	10.9	3.0	21.3	84,432,000
FC-13S	proven	CRC	994,000	12.9	3.0	21.0	20,864,000
FC-14S	proven	CRC	1,292,000	10.9	3.0	19.6	25,301,000
FC-15S	proven	CRC	3,741,000	9.5	3.0	21.1	78,924,000
FC-16S	proven	CRC	1,676,000	9.5	3.0	21.1	35,342,000
Subtotal			**17,876,000**			**20.4**	**364,748,000**
Northeast portion of the mine							
FC-8E	probable	CRC	1,925,000	13.9	3.0	19.9	38,388,000
FC-9E	probable	CRC	6,631,000	14.5	3.0	19.8	131,397,000
FC-10E	probable	CRC	214,000	13.6	3.0	19.9	4,261,000
FC-11E	probable	CRC	791,000	14.0	3.0	22.1	17,463,000
USH-2E	probable	CRC	1,412,000	9.5	7.0	18.6	26,208,000
USH-3E	probable	CRC	1,186,000	9.5	7.0	18.7	22,190,000
Subtotal			**12,159,000**			**19.7**	**239,907,000**
Northeast, East and Central Mines							
Total			**36,083,000**			**21.4**	**770,593,000**
North mine							
FC-1N	probable	CRC	11,476,000	17.5	3.0	20.7	237,431,000
FC-2N	probable	CRC	7,970,000	15.2	3.0	21.3	169,691,000
FC-3N	probable	CRC	10,122,000	14.0	3.0	19.6	198,607,000
FC-4N	probable	CRC	13,161,000	15.6	3.0	20.1	264,114,000
PSH-1N	probable	CRC	4,219,000	9.9	3.0	19.9	83,807,000
PSH-2N	probable	CRC	50,000	9.5	3.0	20.9	1,044,000
PSH-3N	probable	CRC	4,286,000	9.5	3.0	19.3	82,558,000
PSH-4N	probable	CRC	28,745,000	10.5	3.0	20.8	597,226,000
USH-1N	probable	CRC	2,566,000	9.5	7.0	19.5	50,097,000
Subtotal			**82,595,000**			**20.4**	**1,684,575,000**
Total: Proven and probable			118,678,000			20.7	2,455,168,000

Figure 6.1

Figure showing outlines of 9.5 foot mining height for historical estimate classes.

The cyan line is the limit of the historical estimate. The grid lines are spaced 1,000 feet apart and north is to the left hand side of the figure.

This historical estimate was made prior to the existence of NI 43-101 and does not use the categories set out in the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101. The terms " proven and probable reserves" are historical terms used by CRC, not comparable to the CIM defined Probable Mineral Reserve and Proven Mineral Reserve, and should be compared to a potential mineral deposit requiring further exploration drilling to define an initial resource. A qualified person (QP) has not done sufficient work to classify the historical estimate as a current mineral resource and the historical estimate is not being treated as current mineral resources and should not be relied upon. Nevertheless, RJ & A is of the opinion that the 1994-95 exploration work was well executed and the resulting data is relevant and of sufficient quality for consideration in further exploration of the project. The use in this section of the term 'reserves' does not mean to imply that the White Pine Project has reserves as defined in the current CIM Standards.


North mine
Northeast mine
East mine
Southwest mine
Low Grade Incursion
COPPER RANGE COMPANY
WHITE PINE
MICHIGAN
OFFICIAL RESERVES
DRAWN: S. WILJANEN
SCALE: 1" = 4000'
DATE: Sept. 1995
FIG. 4
LEGEND

6.4 HISTORICAL PRODUCTION

Mining at the historical White Pine Mine was conducted by the room-and-pillar method with wheeled equipment. Over the life of the mine fleets of mining equipment capable of mining minimum heights of 2.3 meters (7.5 feet) and 2.9 and 3.7 meters (9.5 and 12 feet) were used. Several mining configurations were used over the life of the mine with the following the most common: Full Column, Parting Shale, Modified Parting Shale, and Upper Shale. The mining configurations were selected based on strata that formed a stable back and optimized the pounds of copper recovered.

The historical White Pine Mine was in production from 1953 through 1996 with only one two-year interruption in 1984 -1985 (Table 6.2).

Table 6.2
Historical annual production at the White Pine Mine. Mine grade is pounds copper per short ton.

Year	Dry Tons Conveyed	Lbs. Cu in Mine Tonnage	Mine Grade
1953	561,736		
1954	1,142,097		22.54
1955	2,966,059	69,465,102	23.42
1956	3,892,760	94,749,778	24.34
1957	3,892,056	89,634,050	23.03
1958	4,229,611	98,000,087	23.17
1959	3,967,751	88,480,847	22.30
1960	3,868,010	88,345,348	22.84
1961	5,370,575	121,912,052	22.70
1962	5,610,563	132,297,075	23.58
1963	5,435,076	134,572,482	24.76
1964	5,428,071	133,204,862	24.54
1965	6,241,750	147,679,805	23.66
1966	6,862,268	152,242,472	22.19
1967	4,930,644	111,123,564	22.54
1968	7,525,210	168,811,458	22.43
1969	8,199,914	182,682,807	22.28
1970	7,635,192	165,226,989	21.64
1971	6,861,503	137,267,423	20.01
1972	8,188,088	165,793,541	20.25
1973	8,935,480	179,173,854	20.05
1974	8,266,823	166,436,565	20.13
1975	9,003,770	182,887,002	20.31
1976	3,565,558	99,126,972	27.80
1977	3,232,805	96,694,951	29.91
1978	3,135,331	91,739,785	29.26
1979	3,660,940	106,423,526	29.07
1980	3,390,348	89,539,091	26.41
1981	4,171,063	109,365,272	26.22
1982	1,954,855	54,423,163	27.84
1983	0	0	0.00
1984	0	0	0.00
1985	126,580	2,953,272	23.33
1986	3,751,001	101,306,722	27.01
1987	4,772,164	123,919,754	25.97
1988	3,821,332	90,489,539	23.68
1989	4,555,667	102,726,847	22.55
1990	5,088,625	111,991,624	22.01
1991	5,820,644	126,926,874	21.81
1992	5,554,598	130,364,464	23.47
1993	5,019,073	117,405,916	23.39
1994	4,653,262	104,738,020	22.51
1995	2,782,132	59,476,463	21.38
	Through July 1995		
Total	198,070,985	4,529,599,418	22.87
Yearly Average	4,890,642	117,651,933	23.37

7.0 GEOLOGIC SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The White Pine Project is located on the southern edge of the Mid-Continent rift system (Figure 7.1). It is located east of the town of White Pine at the east end of the Iron River syncline (Figure 7.2). The Nonesuch Formation, the host of the mineralization, is part of a Keweenawan-aged (~ 1.1 Ga.) continental rift-fill sequence (Figure 7.3). At the base of these rocks are the Portage Lakes Volcanics, which are composed of olivine tholeiite lava flows. The basalt volcanic rocks are overlain by the Porcupine Volcanics, which are composed of intermediate to felsic volcanic rocks. The Porcupine Volcanics are in turn overlain by the Copper Harbor Conglomerate, an alluvial fan deposit. In the area of the White Pine Project the Copper Harbor Conglomerate is composed of red (oxidized) lithic sandstone with subordinate amounts of conglomeratic sandstone. Overlying the Copper Harbor Conglomerate is the Nonesuch Formation, composed of gray to black to reddish-brown thinly interbedded siltstone, mudstone, and minor shale and sandstone. The base of the Nonesuch Formation interfingers with the top of the Copper Harbor Conglomerate. Overlying the Nonesuch Formation is the Freda Formation, composed of red to reddish-brown fluvial sandstone.

Figure 7.1
Location of the White Pine Mine (W) on the southern edge of the Mid-Continent rift system shown in green.

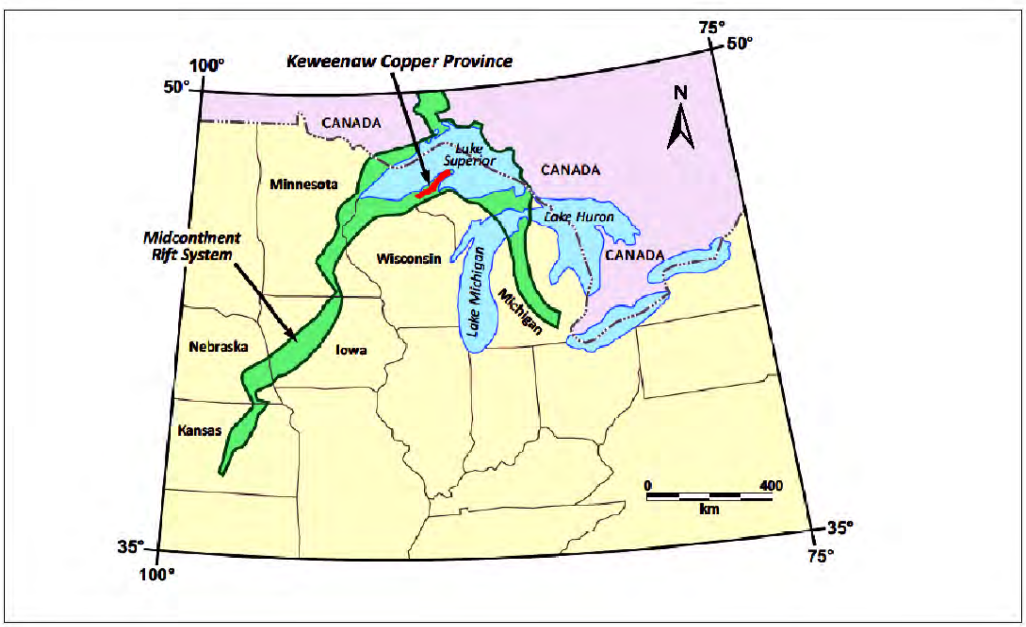


Figure 7.2
Location and geologic sketch map of the White Pine Mine area showing major stratigraphic units and structures.

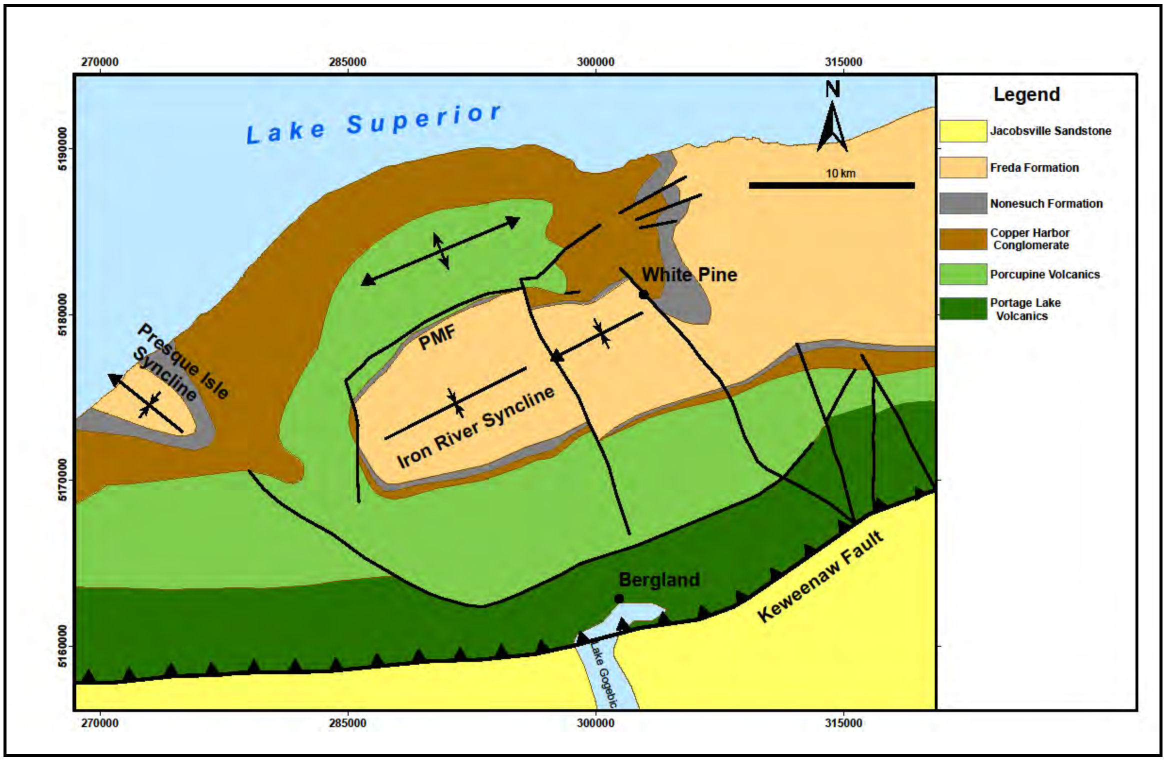
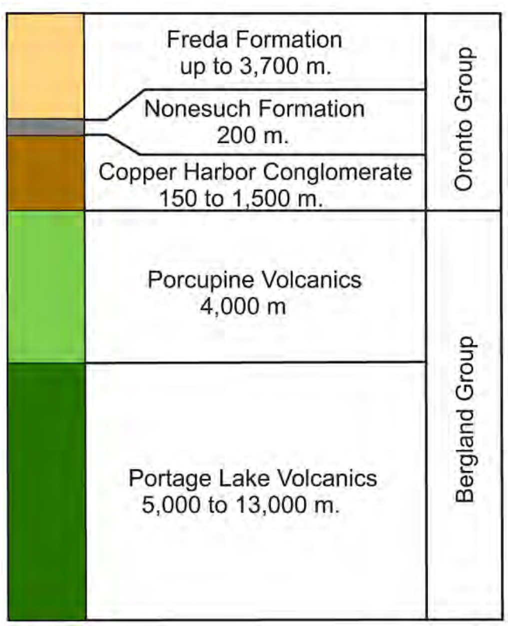


Figure 7.3
Generalized stratigraphic column in the White Pine area. Redrawn from Daniels (1982) and Cannon and Nicholson (1992).



7.2 WHITE PINE MINE STRATIGRAPHY

The copper mineralization in the area of the former White Pine Mine occurs in the bottom 6 meters (20 feet) of the Nonesuch Formation at the contact with the Copper Harbor Conglomerate (Figures 7.3 and 7.4). Beds within the lower 21 meters (70 feet) of the Nonesuch Formation are laterally persistent and can be correlated across the mine. The shale and siltstone in the lower part of the Nonesuch Formation are divided into two "shale" units, the lower Parting Shale and the upper Upper Shale, separated by the Upper Sandstone. Both shale units are present throughout the north part of the mine, but the Parting Shale pinches-out in the Southwest mine. Following are descriptions of the recognized beds that compose the top of the Copper Harbor Conglomerate and the lower portion of the Nonesuch Shale.

Copper Harbor Conglomerate (Lower Sandstone) Brownish pink to medium gray, coarse- to very fine-grained, calcareous lithic sandstone.

The top of the Copper Harbor Conglomerate (CHC) formed the floor for most mining configurations at the historical White Pine Mine. The nomenclature used to distinguish between the CHC and the Lower Transition causes some confusion. The mine nomenclature defines the base of the Lower Transition and hence the base of the Nonesuch Shale at the first shale parting. However, in a regional context the Nonesuch Formation and, hence, the Lower Transition begin at the transition from oxidized to reduced sedimentary rocks. In the mine, particularly south of the White Pine fault, trapped hydrocarbons cause the sandstones to be locally reduced without containing shale partings. Strictly, the reduced sandstones are part of the Nonesuch Formation not the CHC or Lower Sandstone as used in mine parlance. Nonetheless, this terminology was useful for communicating with and guiding miners at the former mine.

Lower Transition [absent – 2.9 m (9.6 ft.), 0.5 m (1.6 ft.) avg.] Interbedded red brown to gray, coarse- to very fine-grained, massive, planar-bedded to micro-trough cross bedded calcareous, hematitic, lithic sandstone and medium gray to gray black siltstone and shale partings.

Domino [absent – 1.1 m (3.6 ft.), 0.3 m (0.6 ft.) avg.] Gray green to black, well-laminated shale at the base grading upward to chloritic/micaceous, crudely-laminated siltstone.

Junior Line [0.03 m (0.1 ft.) avg.] Light gray, fine-grained limestone. Mud cracks are common in the Junior Line. The Junior Line is laterally persistent and can be identified as far away as Houghton. It was a useful marker within the mine and is used as a reference to help miners keep the floor at the correct height.

Red Massive [absent – 1.3 m (4.3 ft.), 0.4 m (1.4 ft.) avg.] Gray brown to gray green, massive, well-indurated siltstone with faint shale partings throughout, hematitic at base becoming increasingly chloritic upward, commonly contains slumped/distorted bedding giving a swirled appearance.

Dark Gray Massive (DGM) [absent – 1.1 m (3.5 ft.), 0.3 m (1.0 ft.) avg.] Dark gray green, massive, well-indurated massive siltstone, with calcareous nodules near the base, grading upward to crudely-laminated, chloritic/micaceous siltstone with faint shale partings.

Top Zone [absent – 2.1 m (6.8 ft.), 0.2 m (0.6 ft.) avg.] Interbedded gray green, very fine-grained chloritic/micaceous sandstone and micaceous siltstone with gray black, truncated and distorted shale laminae containing load casts and flame structures.

Tiger [absent – 1.2 m (4.1 ft.), 0.2 m (0.8 ft.) avg.] Green gray, very fine-grained micaceous sandstone grading upward to red brown, ferruginous sandy siltstone, siltstone and mudstone containing slumped beds, mud chip clasts, and load casts.

Upper Sandstone [absent – 3.8 m (12.5 ft.), 1.1 m (3.7 ft.) avg.] Brown gray, coarse- to very fine-grained, moderate to well sorted, planar and cross-trough bedded, calcareous, lithic sandstone. Interbedded, gray green, sandy siltstone and siltstone beds.

Upper Transition [absent – 1.3 m (4.4 ft.), 0.2 m (0.5 ft.) avg.] Interbedded green gray, medium- to very fine-grained calcareous, chloritic sandstone and gray black siltstone and shale partings.

Thinly [absent – 1.7 m (5.7 ft.), 0.4 m (1.4 ft.) avg.] Gray black, thinly laminated shale and siltstone.

Brown Massive [0.2 – 2.5 m (0.5 - 8.1 ft.), 0.7 m (2.2 ft.) avg.] Gray brown, massive appearing, well indurated, calcareous, chloritic and micaceous, very fine-grained sandstone, siltstone, and shale.

Near the base of the Brown Massive are flattened elliptical to amoeboid calcareous nodules. The casts of these nodules form the “dimpled back” in the mining parlance.

Upper Zone of Values (UZV) [0.3-2 m (0.9 - 6.5 ft.), 0.8 m (2.6 ft.) avg.] Laminated green black shale and dark gray green, calcareous siltstone.

Widely [0.03 – 4.0 m (0.1 - 16.2 ft.), 0.9 m (3.0 ft.) avg.] Interbedded (widely laminated) gray black, chloritic/micaceous sandy siltstone and gray black shale. Very fine-grained pyrite throughout.

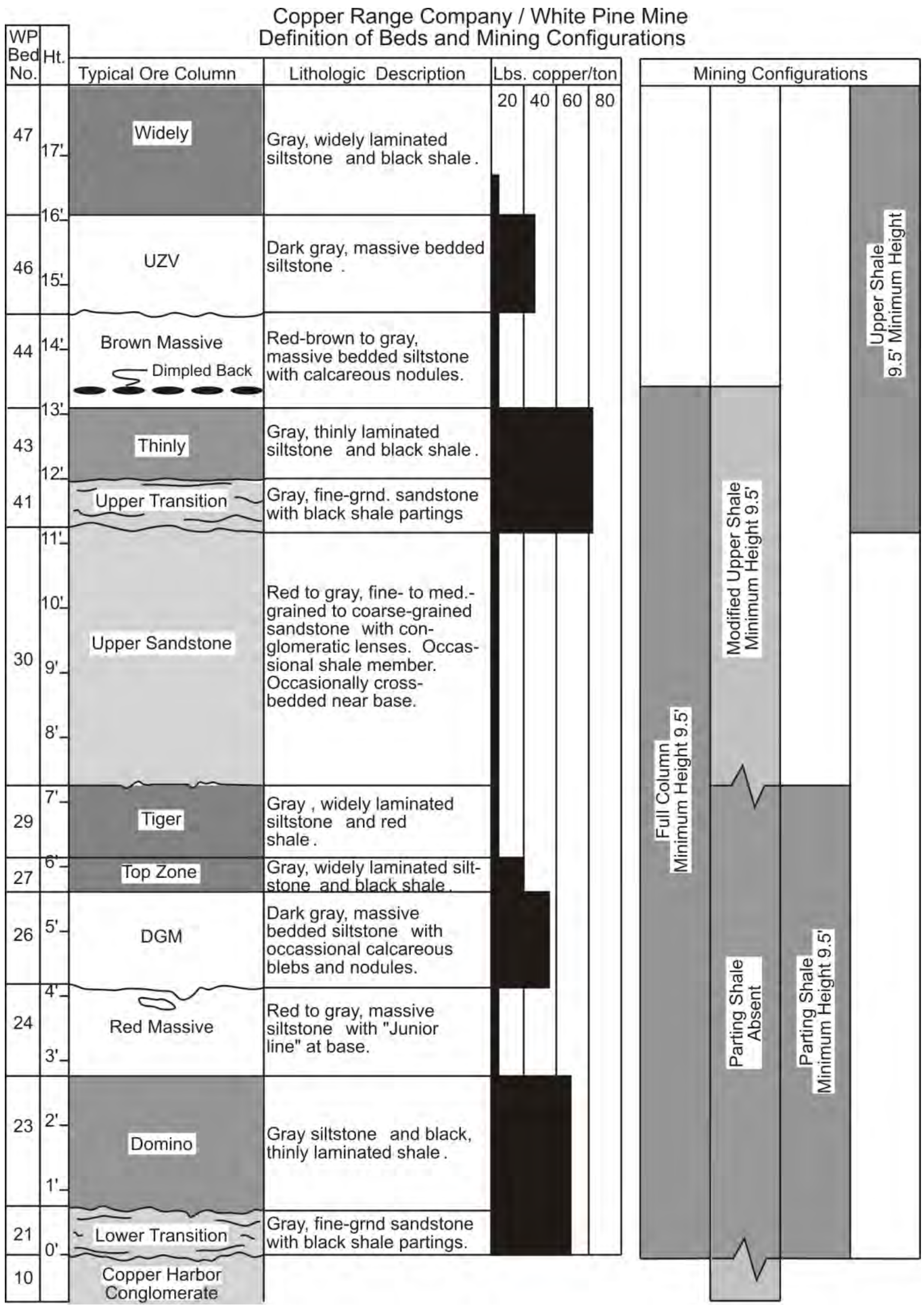
Red and Gray [0.03 – 4.5 m (0.1 - 14.8 ft.), 1.3 m (4.4 ft.) avg.] Interbedded olive gray, planar bedded, chloritic/micaceous, sandy siltstone and siltstone with shale.

Tiebel Sandstone Interbedded medium-gray to gray-green, medium- to very-fine-grained, moderate- to well-sorted calcareous sandstone and chloritic-micaceous siltstone and shale. Massive to horizontally stratified and micro-trough cross-bedded sandstone and siltstone with mudstone drapes, shale partings, rip-up clasts, graded beds, fining-upward sequences, and soft-sediment deformation features.

Stripey Lenticular to planar bedded , medium gray to gray-green, calcareous, very fine-grained sandstone and chloritic/micaceous siltstone and shale with mudstone drapes, partings, and load casts. Fining upward to sandy-siltstone and siltstone-shale couplets (< 1 cm. thick).

Marker Crudely-laminated to well-laminated, light-gray calcareous siltstone and black to dark gray-green, pyritic shale (laminae < 1 mm. thick). Siltstone laminae are commonly truncated or discontinuous with numerous load features, giving the unit a blebby appearance.

Figure 7.4
Nomenclature for mineralized strata and conventional mining configurations at the former White Pine Mine. Modified from Ensign et.al. (1968).



7.3 WHITE PINE PROJECT STRUCTURAL GEOLOGY

The White Pine Mine area is located at the east end of the Iron River syncline between the Keweenaw fault and the eastern extension of the Porcupine Mountain fault (Figure 7.2) -- two major north-verging moderate to steep reverse faults. The major structural features of the area geology are the White Pine fault, thrust faults in the Southwest Mine, strike-slip faults in the North Mine, and a shallow east-southeast plunging anticline immediately north of the White Pine fault.

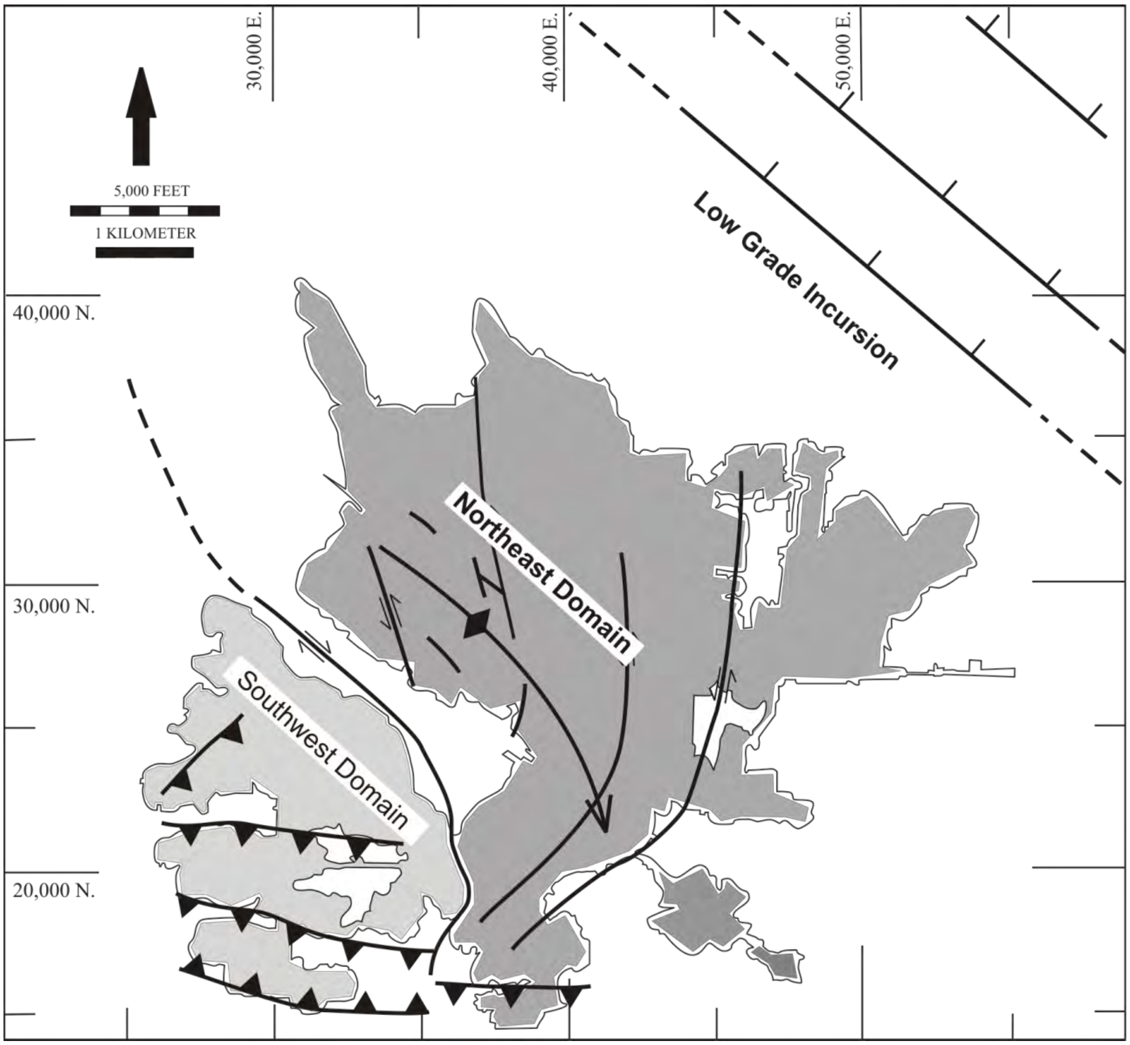
The Middle Proterozoic rocks of the Mid-Continent rift system (including those of the White Pine Mine area) have been subjected to at least two periods of deformation. An early period of extension contemporaneous with Keweenawan-aged rifting and a later period of compression associated with the development of the Keweenaw fault and Lake Superior syncline.

The rocks of the White Pine Mine area show the effects of the earliest period of deformation (extension) in soft-sediment deformation features, growth faults, and possibly the development of steep normal faults associated with listric faults. The later stage of deformation can be identified by folds and strike-slip and thrust faults.

Domains: The White Pine Mine area can be divided into two major structural domains, the Northeast and Southwest (Figure 7.5). The domains are separated by the White Pine fault, the major structural feature of the deposit. The Southwest Domain is distinguished from the Northeast Domain by the presence of north and south-verging thrust faults (Figure 7.5). The Northeast Domain contains few thrust faults but does contain strike-slip faults that can be followed for thousands of feet. Both domains contain abundant strike-slip faults.

Folds: The White Pine Mine area contains a wide range of magnitudes of folds, from major folds associated with right lateral strike-slip faults to drag folds associated with thrust faults. The largest fold in the former mine is an asymmetric, open, shallow east-southeast plunging anticline immediately north of the White Pine fault, heretofore referred to as the White Pine anticline. The White Pine anticline forms the physical centerline of the former mine. The arcuate shape of the White Pine anticline is due to progressive simple shear (Figure 7.6). The fold formed and, as simple shear proceeded, the strike-slip motion along R faults produced the right-lateral deformation (southward bend) of the fold. Associated with the thrust faults in the Southwest Domain are drag faults and en-echelon plunging folds. Folds can also be identified above thrust tips.

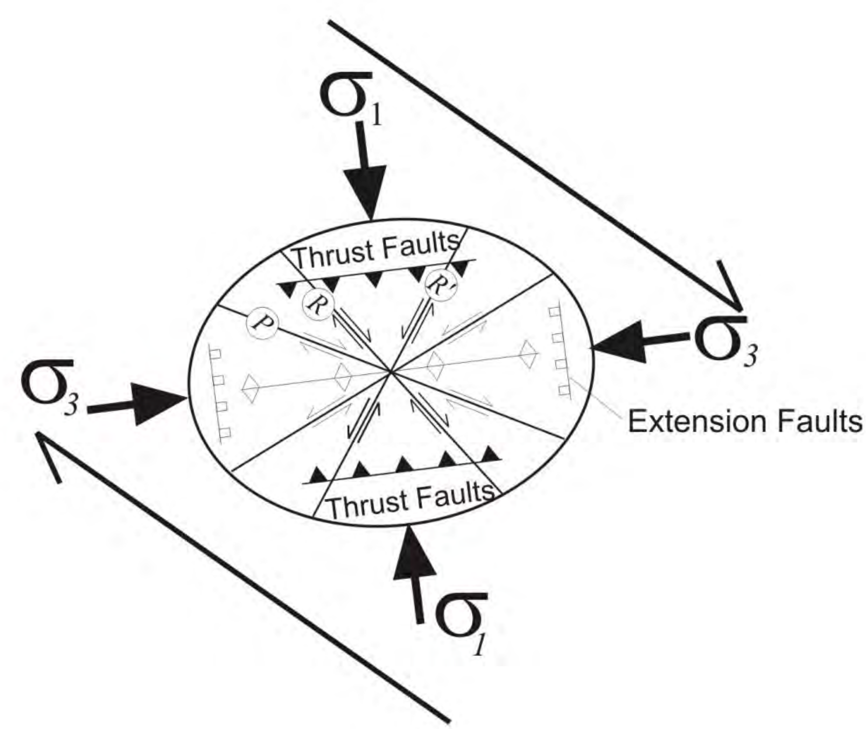
Figure 7.5
Sketch map showing the structural domains and major structures of the White Pine Mine. Also shown are the interpreted growth faults and "low grade incursion".



Wrench Faults: Strike-slip and tension faults are found throughout the White Pine Mine area. The geometric relationship of strike-slip and tension faults is characteristic of wrench/strike-slip fault systems (Figure 7.6). In the Northeast Domain, left-lateral faults (R') develop the largest amount of horizontal displacement, e.g. the Pine Creek fault. The right-lateral (R) strike-slip White Pine fault separates the Northeast and Southwest Domains and forms a restraining bend within the mine. Tension faults are much less common throughout the mine area but host spectacular specimens of carbonate ± galena, sphalerite, nickel arsenides, native copper, and native silver. The Southwest Domain, particularly adjacent to the White Pine fault, is bisected by an anastomosing network of wrench faults.

The shortening direction in wrench-fault systems is defined by the acute bisector of R and R'. In the Northeast Domain the shortening direction changes from a NNW-SSE direction in the northwest to near N-S in the northwest and rotates to a SSW-NNE direction to the south of the Northeast Domain. The dogleg in the White Pine fault forms a restraining bend and results in the formation of thrust faults and folds.

Figure 7.6
Strain ellipse showing the geometric relationship of folds R, R', and thrust faults in the White Pine Mine.



Thrust Faults: Thrust faults are found in the Southwest Domain and to a lesser degree in the Northwest Domain. The thrust faults in the Southwest Domain are both north and south verging and strike from west-northwest to east-west and dip 30°. The strike of thrust faults form at right angles to the direction of shortening.

Growth Faults: Growth faults are interpreted from rapid changes in thickness of beds. The White Pine fault is interpreted as a reactivated growth fault. A "low grade incursion," a northwest-southeast trending zone of low-grade mineralization, was identified in the North Mine (Figure 6.2) during the 1994 - 1995 drilling program. To the northeast of the low grade incursion the Upper Sandstone thickens abruptly.

Joints and Fractures: The majority of joints in the mine are classified as shear joints with fewer extension joints. Shear joints share a similar geometry to those of wrench faults with joints parallel to R' most abundant and those parallel to R second most abundant

(Figure 7.6). Extension joints form normal to the principal-shortening axis. On close examination, the joints within the mine share the same geometric relationship as the wrench faults with the addition of joints developed orthogonal to the shortening direction.

Structural Discussion: All brittle deformation features of the White Pine Mine are compatible with right-lateral simple shear (Figure 7.5) resulting from regional N-S directed shortening and are, therefore, synchronous. The regional N-S directed shortening was deflected about the Porcupine Mountains and resulted in a zone of dextral transpression in the area of the White Pine deposit and sinistral transpression in the area of the Western Syncline.

7.4 MINERALIZATION

Copper mineralization at the White Pine deposit occurs in two modes -- as very fine-grained sulfide (chalcocite) and as native copper. Sulfide mineralization is estimated to account for 85 - 90% percent of the copper in the deposit, but both modes of copper are intimately associated throughout the deposit.

The copper mineralization at White Pine is unusually consistent. All drill holes within the deposit intercepted mineralized strata. Within the deposit, the grades of the mineralization are usually above cut-off grade over normal mining configurations. Most of the beds in the mineralized horizon are continuous over the entire deposit. The beds comprising the Parting Shale pinch out in the southwest part of the historic mine. The variation of the thickness of mineralized beds is also low from drill hole to drill hole.

Sulfide Mineralization: The dominant copper mineral in the White Pine deposit is chalcocite (Cu_2S). It occurs as fine-grained lamellae in laminites and partings in interbedded sandstone and shale, very-fine grained disseminations and discrete clots in siltstone, and in veinlets and veins.

The top of the copper mineralization is identified as the Top of Mineralization (TOM) Line or “fringe,” a narrow transition zone between cupriferous and pyritic zones. The fringe is typically very narrow (a few inches) and is identified by the sequence: chalcocite, digenite, bornite, chalcopyrite, and pyrite. Immediately above the cupriferous zone is a narrow zone containing disseminated greenockite, galena, and wurtzite. The yellow color of greenockite is easily spotted in drill core.

The TOM Line cross-cuts stratigraphy. In the shallow areas of the mine to the west near the portal, the TOM Line is typically 9.5 m (30 feet) above the Lower Sand while to the east the TOM Line descends through the otherwise normally mineralized beds.

Native Copper: Native copper mineralization occurs throughout the deposit. The most significant occurrences are as sheet copper and mineralized sandstone. Sheet copper forms along thrust surfaces in the southwest mine. The sheet copper in thrust surfaces is bedding parallel as well as cross-cutting stratigraphy. Sheets can reach spectacular size. It was observed that some sheets could be traced through entire pillars. Mineralized sandstone occurs in the uppermost part of the Copper Harbor Conglomerate and is invariably associated with trapped hydrocarbons. The greatest amounts of mineralized sandstone were found in areas adjacent to the White Pine fault.

Mixed Sulfide and Native Copper Mineralization: Native copper and chalcocite are found throughout the deposit. Native copper is found in close relationship to copper sulfide in sandy lenses and pods (load casts) in the Lower Transition. Native copper in the Lower Transition is more common in channels incised into the top of the CHC. Both chalcocite and native copper mineralization are ubiquitous features of the mineralization of the Dark Gray Massive bed as well; chalcocite occurs as very-fine grained disseminations; and native copper, as discrete blebs.

Structural Relationship: Structure imposes a significant control on the distribution and grade of mineralization. Higher-grade ore is spatially associated with the White Pine fault and thrust and strike-slip faults in the Southwest mine. Part of the increase in grade is due to the presence of mineralized sandstone and/or sheet copper. In addition, chalcocite mineralization is also enhanced as wider lamellae and cross-cutting veins and veinlets in the laminites.

Formation Water: The formation water encountered in the CHC is an alkaline brine (Table 7.1) with a chloride and TDS content approximately twice that of seawater. These compositions are thought to represent an approximate original composition of the depositional lake water and ore bearing fluid. Further support for alkaline brines existing during Nonesuch times is the abundance of carbonate throughout the CHC and Nonesuch Formation.

Hydrocarbons: The White Pine Mine is famous for its hydrocarbon seeps. In many areas near the White Pine fault, hydrocarbons seep out of the back, drip, and form puddles of “oil” on the floor. The most prolific seeps were noted in the northwest portion of the mine near and beneath the North Number One tailings dam.

7.5 HYDROLOGY

Water flow into the historical White Pine Mine was through the rock formations, drill holes, caved areas of the mine, and along strike-slip faults. During the 1994 – 1995 drilling all the diamond drill holes flowed to surface and the water flowing from the casings was saline. Packer tests conducted on drill hole 508 confirmed that hydrostatic head was greater than the lithostatic head. Packer tests of underground drill holes across the southernmost thrust fault also indicated that hydrostatic head was greater than lithostatic head. Following closure of the mine, fresh water was pumped into the mine to slow down the rate at which saline formation waters (Table 7.1) would fill the mine. The surface of the water level in the mine is maintained lower than the level of water in Lake Superior by pumping.

Table 7.1
Chemical analyses of deep mine water from the historical White Pine Mine. Samples are from seeps (MS) and flow from underground diamond drill holes through the southernmost thrust fault (T4) in the mine (Johnson et.al., 1995).

	MS01[1]	MS02[1]	T4-2-1[2]	T4-2-2[2]	T4-2-3[2]
Field pH	6.6	6.7	NA	NA	NA
Lab pH	6.6	6.5	5.9	5.7	5.9
TDS (mg/l)	195,000	133,000	289,000	296,000	284,000
Density (g/ml)	NA	NA	1.1935	1.1921	1.1931
HCO3 (mg/l)	22	10	12	12	15
CO3 (mg/l)	0	0	0	0	0
Cl (mg/l)	132,000	96,000	170,000	145,000	160,000
SO4 (mg/l)	68	2	470	430	400
Br (mg/l)	1,500	1,080	1,820	1,790	2,120
F (mg/l)	0	0	NA	NA	NA
Ca (mg/l)	44,500	35,300	72,100	61,400	71,300
Mg (mg/l)	1,112	400	935	930	940
Na (mg/l)	12,100	9,700	15,500	18,600	15,800
K (mg/l)	204	<50	125	125	125
$NO_3 + NO_2$ (mg/l)	8.7	0.07 BL	NA	NA	NA
SiO_2 (mg/l)	4	<10	NA	NA	NA
Ag (mg/l)	<0.1	<0.5	NA	NA	NA
Al (mg/l)	0.9	<3	NA	NA	NA
As (mg/l)	0.03	0.02	NA	NA	NA
Ba (mg/l)	14.1	70	NA	NA	NA
Cd (mg/l)	<0.05	<0.3	NA	NA	NA
Cr (mg/l)	<0.1	<0.5	NA	NA	NA
Cu (mg/l)	<0.1	0.5	NA	NA	NA
Fe (mg/l)	0.2	<1	NA	NA	NA
Hg (mg/l)	<0.0002	<0.0002	NA	NA	NA
Mn (mg/l)	25.9	22.5	NA	NA	NA
Pb (mg/l)	<0.2	<1	NA	NA	NA
Se (mg/l)	<0.02	<0.02	NA	NA	NA
Sr (mg/l)	940	770	NA	NA	NA
Zn (mg/l)	<0.1	<0.5	NA	NA	NA

[1] Seeps

[2] Flow from underground diamond drill holes.

8.0 DEPOSIT TYPES

The mineralization of the White Pine Project is classified as a reduced facies stratiform sediment-hosted copper deposit. Another deposit of this type is the Kuperschiefer in Germany.

8.1 WHITE PINE MINE MINERALIZATION MODEL

The White Pine Project chalcocite mineralization is usually attributed to the flow of copper-rich brines through pyrite-bearing shale. The source of the copper in the brines is either attributed to the Copper Harbor Conglomerate red beds and the underlying mafic volcanic rocks or to a distant felsic intrusive body.

Shortly before the time of the mine closing, geologic staff proposed the following model (Johnson et.al., 1995) which satisfies the observations made at the White Pine Mine:

1. Accumulation of reduced laminites adjacent to oxidized permeable strata.
2. Presence of oxidized brines.
3. Source rock for copper (tholeiites and/or derived sediments).
4. Regional burial.
5. Flow out of the basin due to compaction.
6. Elevation of pore fluid pressure due to regional shortening and reduction of permeability.
7. Compression.
8. Fault development.
9. Flow towards faults.
10. Hydrocarbons trapped in anticlines.
11. Precipitation of copper sulfides as fluids react with pyritic strata.
12. Precipitation of native copper as fluids react with trapped hydrocarbons.

Exploration for additional White Pine style mineralization would concentrate on areas that contain accumulations of reduced sedimentary rocks near major structures and are stratigraphically lower than the TOM (Top Of Mineralization) line.

9.0 EXPLORATION

No exploration has been conducted on the White Pine Project since the mine closure.

Copper Range conducted a regional exploration program in the 1960s and 1970s called the "Trace Drilling Program" designed to identify White Pine style and scale mineralization from White Pine northeastward toward Houghton. This program consisted of drilling vertical holes on approximately one mile centers to depths of between 150 and 518 meters (500 and 1,700 feet) along the base of the Nonesuch Shale. No economic mineralization was intercepted during this drilling program and it was believed this indicated no White Pine scale deposits existed northeastward of White Pine. The TOM line was noted to have descended into the Copper Harbor Conglomerate southwest of Houghton (Mauk, 1993).

10.0 DRILLING

No drilling has been conducted at the White Pine Project since the mine closed.

Copper Range conducted a continuous drilling program at the White Pine Mine until the early 1970s. There was a hiatus in drilling until the commencement of a drilling program in 1994 – 1995. The 1994 – 1995 drilling program was conducted to provide a historical estimate supporting a feasibility study to build a new smelter at the White Pine Mine. The historical drilling programs are discussed in Section 6.1 - Exploration History.

11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

No samples were collected or analyzed for inclusion in this report.

12.0 DATA VERIFICATION

The author of this report was the chief geologist at the White Pine Mine during the 1994 – 1995 drilling program and was responsible for supervision of all aspects of the program. No quality control/quality assurance (QA/QC) records have been found for the 1994 – 1995 and earlier drilling programs. However, copies of the detailed core logs, sample intervals, and certificates of analysis from Chemex Labs from the 1994 – 1995 drilling program were reviewed by the author and were found to be in good order and complete. It is reasonable to assume that Chemex Labs used a full internal QA/QC program at the time. Duplicate samples and standards were run by the Copper Range lab, but records of number of samples and the analytical results are not available. No samples were collected for analytical purposes during the course of this investigation. The author has no reason to question descriptions and assays presented and believes they are adequate for the purposes of this report.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

No metallurgical testing has been undertaken by Highland.

All ore processing facilities at White Pine were dismantled. This report relies on descriptions of historical mineral processing by various authors (USEPA, 1992; Ramsey, 1953).

Run-of-mine ore was received into two 1,500 short ton-capacity coarse ore storage bins and withdrawn over double deck scalping screens. Rock greater than 3 inch size was crushed in two seven-foot Symons cone crushers. The screen undersize was sent to fine ore storage, while the intermediate product was conveyed to four 1,000-ton Shorthead crusher feed bins. The Shorthead feed was processed through four parallel screening and crushing lines to make a final nominal crushed product size of minus 5/8 inch. Rock withdrawn from the fine ore storage bins was conveyed to a grinding line consisting of a rod mill in series with a ball mill in closed circuit with cyclone classifiers. The discharge from each ball mill was fed through a primary hydrocyclone, where the overflow (undersize) material (5% greater than 100 mesh) was sent to primary flotation, while the underflow (oversize) material returned to the ball mill for further grinding.

Flotation was accomplished in four stages. Primary rougher flotation was a standard froth flotation system, using mechanical cells. Primary rougher overflow was fed to the regrind mill, while the tails were sent to a desliming cyclone, from which the overflow was discharged as slime tails and the coarse underflow sent to secondary scavenging flotation. Secondary flotation was also standard froth flotation, the overflow fed to the regrind cyclone, while the underflow was discharged as tails. Overflow from the regrind cyclone flowed to the first stage of cleaner flotation, while underflow was fed to a regrind mill for additional size reduction. Reground ore was either discharged to a native copper bleed cyclone or to the secondary flotation circuit. CRC also operated four Deister column flotation cells as recleaners, and tails from column flotation were returned to the regrind system for additional size reduction. Final concentrate from recleaning flotation was sent to thickeners. Final flotation concentrate averaged 30% copper.

Thickening was done in two (one primary, one secondary) settling ponds/thickeners in series, each measuring 100 feet in diameter. Underflow from the thickeners was sent to two rotary drum filters to produce a concentrate filter cake containing 20-22% moisture. The concentrate was then placed on conveyors, fluxed with limestone and sent to a gas-fired kiln drier, reducing moisture to 10-13%. The kiln dryer effluent was fed to a reverberatory furnace, where it melted and separated into slag and matte grading 65% copper, which was charged to a converter furnace, producing a 99% pure blister copper. A fire-refining furnace eliminated the remaining removable impurities, leaving 99.7% pure copper ready for casting. Copper was cast as 600 pound anodes that were sent to an electrolytic refinery, where 90 pound cathodes were produced, ready for shipment to market. Silver was collected in the slime from the electrolytic cells and shipped for additional processing.

14.0 MINERAL RESOURCE ESTIMATES

As of the date of this report, there are no resources or reserves on the White Pine Project that comply with the CIM Standards on Mineral Resource and Reserve Definitions and Guidelines adopted in 2010.

15.0 MINERAL RESERVE ESTIMATES

As of the date of this report, there are no resources or reserves on the White Pine Project that comply with the CIM Standards on Mineral Resource and Reserve Definitions and Guidelines adopted in 2010.

16.0 MINING METHODS

Not applicable.

17.0 RECOVERY METHODS

Not applicable.

18.0 PROJECT INFRASTRUCTURE

Not applicable.

19.0 MARKET STUDIES AND CONTRACTS

Not applicable.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Not applicable.

21.0 CAPITAL AND OPERATING COSTS

Not applicable.

22.0 ECONOMIC ANALYSIS

Not applicable.

23.0 ADJACENT PROPERTIES

There are no mineral properties adjacent to the historical White Pine Mine. The nearest copper deposit is Copperwood in Gogebic County, 30 km (18 miles) to the west of White Pine.

24.0 OTHER RELEVANT DATA AND INFORMATION

24.1 HISTORICAL MINING METHODS

A discussion of historical mining methods is appropriate since the obvious dilution of mining grade caused by the interbedded ore and waste beds in the White Pine deposit could apparently be reduced with different mining methods. A summary of historical mining methods follows.

The initial mining method in 1952 was room-and-pillar using the Parting Shale configuration. This consisted of a column that extended from the base of the ore on top of the Copper Harbor Conglomerate (termed the Lower Sandstone in the mining column) upwards to the base of the Upper Sandstone unit. Mining was carried out with equipment that had been designed for low-head-room coal mining. Drilling of the headings was done with single and double boomed air-driven jumbos, and the rock breaking was carried out using ANFO (ammonia nitrate-fuel oil mixture) as the blasting agent initiated by dynamite and electric blasting caps. Loading of broken rock from the blasted headings was by electrically-driven gathering arm loaders that placed the ore into low-head-room articulated trucks, which discharged their loads onto conveyor belts via a hydraulic ram in the load bed.

Ground support was by placement of roof bolts of 1.2 meters (4 feet) length with an expansion nut on the end and 15 centimeter (6 inch) plates. The bolts were generally placed on 1.2 meter (4 feet) centers and anchored in the Upper Sandstone unit.

As ground support systems were better understood and applied more effectively, the mining height was expanded to include the Full Column configuration where the floor of the column was held on the top of the Lower Sandstone and the back of the column was in an area of high grade shale and siltstone just above the Upper Sandstone. This change in mining column extraction lowered the grade per short ton of ore to the mill but significantly increased the total pounds of copper produced in each heading blast.

During the latter portion of the 1960s, pillar extraction was carried out in what was, at that time, the central portion of the mine to increase the total extraction of the mined-out areas. The surface was allowed to subside over the second pass mining panels.

In the mid-1960s, cycloned, coarser tailings were piped underground and used as support along the main travel way from the portal and around important installations to test for possible future applications. The practice was discontinued.

The first scoop tram, an articulated low-head-room end loader, was developed by Wagner Mining Scoop Company in 1958; and, as they became available, were tested and introduced into the White Pine Mine. The Wagner Teletram, the first large horizontally-discharged truck, followed in the early 1960s. These displaced the slow and outdated gathering arm loaders and greatly increased productivity and reduced costs. Research and development continued on more productive and effective roof bolting and ground support systems.

Various methods of longwall mining were tried, applying newer cutting tools along with hydraulic walking jacks for roof support. The final test was of a "thermal" longwall system that attempted to break the rock by spalling, caused by rapid heating through the use of high-intensity heat lamps. These research systems failed to produce the desired results.

Contemporaneous with the above research efforts was sinking and commissioning the Number 3 shaft a few miles to the southeast of the operating mining fronts. This shaft was situated in an area of lower headroom reserves. The shaft was designed as a hoisting shaft and access point for experimental mining methods and also included an innovative system that was to convey the ore to the mill.

The new development system consisted of a boring machine with a 5.5 meter (18 foot) diameter head that was designed to drive a circular tunnel from the Number 3 shaft due west to connect with the main White Pine mine. The tunnel was driven below the ore horizon in the upper part of the Copper Harbor Conglomerate. Progress proved to be extremely slow, in part due to the highly abrasive nature of the conglomerate and its impact on the cutter head. The main mine was finally connected to the bore tunnel by conventional development mining, advancing towards the tunnel from the west. The use of the boring machine was discontinued.

While the above tunnel was being driven, the Dasheveyor ore conveyance system had been installed on surface for testing. A road bed with a narrow enclosed rail system had been laid on surface from near the mill building to Number 3 shaft. The system consisted of small, covered hopper-like cars that were to run from the Number 3 shaft to the mill, dump their load of ore, and return to the Number 3 shaft for another load, all controlled by electronics. Numerous cars were to be in transit on the same rail at all times, with by-passes built in to allow the empty and loaded cars to pass each other at high speed. The electronics that were to control the entire system automatically was never successfully debugged and use of the system was discontinued.

Testing of a lower-headroom, twin swing-headed boring machine, called a Roadheader, was also tested during the early 1970s. It was hoped that such a machine would be able to advance development headings at a faster rate than conventional drill-and-blast methods. This test failed for two reasons. First, the cutting heads experienced great wear and failure due to the strength and abrasiveness of the sandstones in the ore column. Second, the greater problem, the boring machine could not react quickly enough to change vertical direction to handle the frequent fault crossings.

During a downturn in copper prices near the mid-1970s, the Copper Range Research Department was disbanded and the future mining advances for the White Pine mine were concentrated more toward improved LHD equipment, more mechanized and computerized drilling and bolting equipment, and underground crushers at the feed to each belting system, such as the Stamler feeder-breaker. The Stamler feeder-breaker was a semi-mobile crushing system that greatly enhanced the ability to move a crusher along with each conveyor belt advance and convey crushed rock to the surface.

Advances in roof bolting allowed for the change from point-anchored bolts to fully-grouted resin bolts. The increase in ground support resulting from the use of resin bolting methods allowed for mining in areas such as the higher-grade southwest ore body. This permitted successful development of an area plagued by structural complexities and broken ground.

Other mining methods were tried including two-pass, three-pass, and sorting-by-blasting. Two-pass mining was attempted where the Upper Sandstone was abnormally thick. The Upper Shale was mined first at low head room. Leaving the Upper Sandstone in place, the second pass mined Parting Shale units beneath the Upper Sandstone. The requirement to perfectly center the pillars in the Parting Shale under those left in the Upper Shale proved too unpredictable to be safe. The method was not attempted again.

In the three-pass mining method the Upper Shale was mined; then the Upper Sandstone was mined in a benching pass and stored as waste in mined-out areas; and finally the Parting Shale was mined. The cost of moving the Upper Sandstone to a waste area and losing potential for second-pass mining of the pillars in the waste storage areas was one problem. The larger problems associated with this mining method were reduced pillar stability and safety.

Sorting-by-blasting was attempted in areas where the Upper Sandstone was abnormally thick. The blasting pattern was designed and the blasting sequence timed in such a way as to break and throw the Upper Sandstone well away from the face and down the drift with the ore beds dropping downward. The largest problem turned out to be the throw on the Upper Sandstone blocks, which were consistently damaging air and water lines and other equipment some distance from the blast. Another problem was numerous missed holes in the bottom of the ore pile.

Other innovations that were instituted into the mine system at White Pine in the late 1980s and the early 1990s were hydraulic, computerized drill jumbos, larger LHD units, and non-el (non-electric) blasting systems.

Over the life of the White Pine Mine various mining methods and equipment have been tried. However, room-and-pillar mining has been chosen as the most economic of the methods.

25.0 INTERPRETATION AND CONCLUSIONS

Copper mineralization at the White Pine deposit occurs in two modes -- as very fine-grained sulfide (chalcocite) and as native copper. Sulfide mineralization is estimated to account for 85 - 90% percent of the copper in the deposit, but both modes of copper are intimately associated throughout the deposit.

The copper mineralization at White Pine is unusually consistent. All drill holes within the deposit intercepted mineralized strata. Within the deposit, the grades of the mineralization are usually above cut-off grade over normal mining configurations. Most of the beds in the mineralized horizon are continuous over the entire deposit. The variation of the thickness of mineralized beds is also low from drill hole to drill hole.

The areas adjacent to the former White Pine Mine contain a substantial amount of copper, as indicated by the historical estimate. The largest portion of the remaining historical resource lies to the north and northeast of the historical White Pine Mine. The deposit is open to the east and north.

It is RJ and A's opinion that the historical estimate was done in a manner consistent with the accepted Securities and Exchange Commission's standards of the time.

The incorporation of historical data into a resource estimate requires a program that validates the historical data. This program should include resampling of available core and twinning of historical drill holes. A statistical analysis of the drill hole data should be conducted to determine the necessary drill hole spacing for appropriate classification of the resource using CIM definitions. Infill drilling will also be necessary, as well as additional drilling on the parcels where mineral rights have reverted to be combined with the surface ownership, in this case with Copper Range as surface owner, as a result of the former mineral rights holders' failure to comply with the requirements of the *Michigan Marketable Title Act as amended in 1997*.

The available historic drill core, drill logs, assay reports, mine maps, and seismic surveys provide a significant data base for advancing the White Pine Project. The author is not aware of any significant risks and/or uncertainties that could be reasonably expected in advancing the White Pine Project.

26.0 RECOMMENDATIONS

26.1 EXPLORATION STRATEGY

Highland has provided RJ & A with an exploration strategy and proposed a work program for the White Pine Project covering the initial phases of exploration, as detailed below. The Highland exploration strategy is to rapidly validate the results obtained from the 1994 - 1995 drilling program of the North Mine Deposit by, among several actions, completing an in-fill drilling program that will advance the White Pine Project to a resource definition stage as per the CIM Definition Standards on Mineral Resources and Mineral Reserves and mandated by NI 43-101. An initial exploration program planned in Phase 1, and described below, will be followed up by Phase 2 drilling programs if warranted. The exploration program is conceived to lead into mining studies towards the latter portion of Phase 2, including metallurgical testing of core samples and preliminary engineering work.

26.2 PHASE 1

The validation program for the 1994 - 1995 drill data will consist of several actions, including:

a) A substantial portion of the core survives, both half and quarter NQ core. This core will be photographed, re-logged, sampled, weighed for density measurements, and analyzed following the procedures used for the 1994 - 1995 drilling program.
b) The survey monuments will be located. The collar locations of some of drill holes from the 1994 – 1995 drilling program will be located by identifying the cement used to plug the drill holes. The surveying methodology used to locate the drill holes on surface and the down-hole measurements will be checked against original documents.
c) The ALS-Chemex laboratory will be asked to re-issue the assay certificates corresponding to the samples analyzed in 1995.

It is expected that the validation exercise will confirm that it is reasonable to use the data from the 1994 - 1995 drilling program in the estimation of an NI 43-101 resource.

Additional drilling will be required to confirm an NI 43-101 mineral resource estimate of the North Mine Deposit. A drill spacing of 450 m (1,500 feet) may be adequate to define a mineral resource in the measured and indicated categories.

The first phase will include twinning of historical drill holes and infill drilling of the deposit. This first phase of the program will be comprised of nine drill holes (including two twinned holes) for 8,150 m (26,700 feet.) of HQ core, use one drill rig, and be accomplished in six months. Samples (about 100 kg) will be collected from drill core for metallurgical testing of the mineralized rocks. Wedging of the drill holes will likely be necessary to acquire the size sample required for metallurgical testing.

26.3 PHASE 2

Following the receipt of all geological and analytical data from Phase 1, the successful validation of the 1994 - 1995 drilling data, and subject to the availability of funds, Highland will advance to Phase 2 of the exploration program. This second phase, planned to be completed in six months, will be designed to define an NI 43-101 resource estimate for the North Mine Deposit. This phase will also lead into initial mining studies, including preliminary metallurgical and engineering work related to the deposit. The drilling program would include up to 45 drill holes for 39,500 m (129,000 feet) of HQ core and use four drill rigs. The drilling spacing will likely be around 300-400 meters (1,000-1,300 feet) between drill holes. This phase could be subdivided into two sub-phases, if needed, testing separate parts of the deposit.

26.4 EXPLORATION BUDGET

The exploration budget to carry out the work proposed above is summarized below:

Activity	Phase 1 (6 mos) US$ (thousands)	Phase 2 (6 mos) US$ (thousands)	Total US$ (thousands)
Drilling (+ assaying, etc.)	1,200	5,800	7,000
Metallurgical test work		200	200
Engineering studies		550	550
Administration	150	250	400
Total	1,350	6,800	8,150

26.5 RECOMMENDATIONS

RJ & A considers that the exploration strategy proposed for the White Pine Project is adequate to define the historical estimate of the North Mine deposit and that the proposed exploration budget is sufficient to achieve the stated objectives. Some additional recommendations are mentioned below.

Growth faults in the North Mine deposit may result in smaller depositional basins and closer spacing of drill holes might be needed to account for changes in bed thickness and grade. Hence, closer spacing may ultimately be required for defining an NI 43-101 resource for the North Mine Deposit suitable for development of a mine plan.

Part of the North Mine historical estimate is located under the tailings dams. Drilling through the tailings will be required in order to include mineralization under the tailings dams in estimating an NI 43-101 resource. Since the tailings are still saturated with water, it will be necessary to drill after freeze-up during the winter season of 2014. The roads and pads necessary for the drilling program should be cleared of snow so that the ground can freeze. An adequately frozen pad can provide a stable platform for drilling.

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CERTIFICATE OF AUTHOR
Rodney C. Johnson

I, Rodney C. Johnson do hereby certify that:

1. I am the Principal of Rod Johnson & Associates, Inc., 701 North Teal Lake Avenue, Negaunee, Michigan 49866, USA, tel. (906) 475-7615, e-mail MinerDoc@chartermi.net.

2. I hold the following academic qualifications: Ph.D., Geology, Michigan Technological University, 1993.

3. I am a registered member of the Society for Mining, Metallurgy, and Exploration, Inc. (Member Number 4051050).

4. I have worked as an exploration and mining geologist for 29 years.

5. I have read NI 43-101 and Form 43-101F1 and, by reason of education, experience and professional registration, I fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 29 years with exploration and mining companies where I was responsible for geometallurgical analysis of ore deposits, designing and managing exploration drilling programs, completing geologic models, designing ore characterization programs, and structural analysis of ore deposits.

6. I am responsible for all items of the technical report entitled “Technical Report on the White Pine Copper Property” dated February 10, 2014.

7. This report has been prepared in compliance with the criteria set forth in NI 43-101 and Form 43-101F1.

8. I was the chief geologist at Copper Range Company’s White Pine Mine from 1994 – 1995.

9. I have visited the property February 18th through 20th and July 17th, 2013.

10. I am independent of Highland Copper Company Inc. and Copper Range Company, as defined in Section 1.5 of NI 43-101.

11. As of the date of this certificate, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Date the 2nd day of April, 2014

"Rodney C. Johnson"

Rodney C. Johnson, Ph.D., Registered Member SME