

MINERAL OCCURRENCE DATABASE

OCCURENCE NUMBER:	F16-005
OCCURENCE NAME:	French Road Fe, Cu, Pb, Zn Prospect
COMMODITIES:	Cu, Co, Bi, Zn, As, Pb, Sn, Ag
MINERALS:	arsenopyrite, bismuthinite, chalcopyrite, cubanite, galena, magnetite, molybdenite, pyrite, pyrrhotite, sphalerite
STATUS:	Prospect
COUNTY:	Cape Breton

CLAIM INFORMATION (Coordinates in UTM NAD83)					
Claim Map	Tract	Claim	Easting	Northing	Zone
11F/16D	35	H	716533	5087867	20
11F/16D	35	E	716703	5087797	20
11F/16D	39	H	718323	5088997	20
11F/16D	40	D	717963	5089137	20
11F/16D	39	K	717493	5088637	20

HOST ROCK INFORMATION		
Stratigraphic Unit	Age	Host Rock(s)
Canoe Brook Formation	Early Cambrian	Hornfels
Canoe Brook Formation	Early Cambrian	Skarn

LOCATION DIRECTIONS

LOCATION 1: SHAFT (Field Checked)

A shaft is found at the top of a small knoll located in a bulldozed area approximately 1.4 km north of Route 327. A woods road which leads from Route 327 to the shaft and bulldozed area joins Route 327 approximately 900 m west of it's junction with the Seaview Road. There are two junctions on the woods road leading to the prospect. The first is 200 m from Route 327, take the right branch here. A second junction is 700 m from the first, take the left branch here.

The three locations listed below have not been field checked so the directions listed below were taken from assessment reports.

LOCATION 2: MINERALIZED OUTCROP (Mindamar Metals Corp. Ltd., 1955)

LOCATION 3: TRENCH WITH BANDED Cu-Zn MINERALIZATION (Mindamar Metals Corp. Ltd., 1955)

LOCATION 4: TRENCHES AND DRILLING (MacDonald, 1989)

LOCATION 5: TRENCH AND DRILLING (Forgeron, 1981)

A large trench (Location 5) is located on the western bank of a small, north-flowing tributary of Trout Brook, approximately 3.75 km northeast of the shaft (Location 1). The trench can be accessed via a logging road which leads south from the MacKeigan Road, approximately 5 km southeast of the junction of the MacKeigan Road and Route 327.

From the beginning of MacKeigan Road, travel southeast for 5 km to a Y- junction. Take the right branch and travel south for 1.7 km to a second Y-junction. Proceed southwest along the right branch for 1.4 km, to a sharp turn. Proceed east from the turn for 300 m to the end of the road. The trench is located approximately 220 m northeast of the end of this road.

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ALTERATION

Calc-Silicate

chlorite

cordierite

skarn

tourmaline

MODE OF OCCURRENCE

disseminated

massive

SURVEYS

airborne EM

diamond drilling

geological mapping

geophysical survey

horizontal loop EM

induced-polarization

magnetometer

Pit

shaft

soil geochemical

till geochemical

trenching

VLF

GEOLOGICAL DESCRIPTION

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REGIONAL GEOLOGY OF THE MARION BRIDGE AREA

The Cambrian Formations of this region are exposed primarily along the eastern side of the Mira River valley, with more limited exposures both on the northern side of the valley, in the vicinity of Marion Bridge, and along the southwestern end of the valley, in the Grand Mira North-Victoria Bridge area (Barr et al., 1992). Limited outcrop exposure of the Cambrian Formations has made it difficult for mappers to determine both the stratigraphy and structure of these rocks.

The Cambrian rocks are bounded on the east by the Late-Precambrian, volcanogenic, Main-a-Dieu sequence (Barr et al., 1992), to the north and west by Carboniferous aged Horton and Windsor Groups of the Salmon River and Sydney Basins. To the south the Late-Precambrian to Early-Cambrian sedimentary rocks of the Kelvin Glen Group outcrop.

A small, composite pluton of dioritic-granitic composition (Gillis Mountain Pluton) intrudes the Cambrian Formations in an area south of the Campbelldale Road, and east of Grand Mira South. Near the pluton contacts the Cambrian shales are thermally metamorphosed to cherty hornfels. In the Blue Mountain area, thermal metamorphism related to a buried pluton is also assumed to have given rise to an extensive area of hornfels developed in the Cambrian sedimentary rocks north of the Campbelldale Road.

STRUCTURE

Bedding tends to be obscured within outcrops at the Blue Mountain and French Road sites by the contact metamorphic overprint that has affected these rocks. A cleavage, varying from a fracture cleavage to a weak slaty cleavage, is common and is axial planar to the upright folds in this area. MacDonald (1989) indicates that the Middle to Upper Cambrian rocks are folded into a series of large, upright to slightly overturned folds. Shear zones were noted in drill core from both the Blue Mountain and French Road contact aureole. Quartz veins are rare within the Cambrian country rocks but are common within the contact aureole. The veins occur in swarms, dipping from moderate to steep angles.

DESCRIPTION OF THE MINERALIZED ROCKS

Aside from a few occurrences of disseminated pyrite in trace or minor amounts, significant mineralization is confined to the contact aureole in the Blue Mountain-French Road area. The most common mineralization styles observed in outcrop and float are as follows: (1) Oxidized, relatively sulphide-rich dump material (French Road Shaft); (2) Irregular disseminations and concentrations of sulphides in layers and knots of calc-silicate; and (3) Minor amounts of sulphides in quartz-calcite veinlets cutting hornfels and slates.

French Road Area

The shaft at the French Road site (Location 1) was sunk in calc-silicate hornfels. The calc-silicate rocks are found in two forms: (1) a brown, massive, calc-silicate unit composed almost entirely of fine grained, brown garnet; and (2) a black or grey, cherty, slate hornfels unit which contains varying proportions of green, zoned, ovoid, calc-silicate lenses (knotted hornfels). The calc-silicate lenses are assumed to be altered calcareous beds in the hornfelsic siltstone or argillite. The relationship between the two types of calc-silicates is not known, however, it is interesting to note that the massive, garnet-rich unit exposed along the southeastern end of the shaft, appears to crosscut the lineation defined by the elongated axis of the calc-silicate lenses.

Chalcopyrite is the dominant sulphide mineral identified in samples collected near the shaft and in a large calc-silicate lense found 53 m northwest of the shaft. The chalcopyrite occurs as disseminations in the garnet-rich rock, and in the diopside-rich cores of the calc-silicate lenses.

Disseminated arsenopyrite and bismuthinite(?) were noted in a garnet-rich, calc-silicate outcrop found approximately 30 m southeast of the shaft. The lack of chalcopyrite in this outcrop is interesting as it may be indicative of zoning within the deposit.

Several samples were collected in the dozed area surrounding the shaft. Sample F15-06(01) was collected from a garnet-rich, calc-silicate outcrop which is located along the southeastern side of the shaft. Sample F15-06(02) was collected from a 5 m long by 2 m wide calc-silicate

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lense located in an outcrop which is located 53 m bearing 298 degrees T from the shaft collar. Sample F15-06(03) was collected from a garnet rich, calc-silicate outcrop which is located 30 m southeast of the shaft. Sample F15-06(04) was collected from a cherty, calc-silicate outcrop located along strike of the garnet-rich unit, approximately 70 m east of the shaft (20 m east of the dozed area). Sample F15-06(05) is a float sample collected from a rubble pile located along the western side of the shaft.

In diamond-drill core, the bulk of the mineralized intersections are associated with calc-silicate alteration that occurs in zoned isolated knots. An outer, cherty and siliceous zone grades into a epidote-rich zone which, in turn, grades into a diopside-quartz-calcite-sphene zone. The core zone contains disseminations and anhedral concentrations of pyrrhotite and lesser chalcopyrite.

Two elemental associations of economic significance have been recognized in the French Road-Blue Mountain area. An association of Fe-Pb-Zn is characterized by pyrite intergrown with arsenopyrite, pyrrhotite, minor sphalerite and galena and rare chalcopyrite. A second association consists of Fe-Cu-Zn-Mo-Bi and is characterized by pyrite, arsenopyrite, pyrrhotite, chalcopyrite with minor cubanite, magnetite, sphalerite, molybdenite and bismuthinite.

PREVIOUS WORK

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In 1876, float was discovered by Fletcher: "At Angus MacDonalds, on the Caribou Marsh Road, about two miles from Gabarus Bay, copper pyrite is found in blotches in compact felsite; but, as it was not seen in place, it could not be determined whether it came from the Potsdam rocks of the vicinity or from the lower series; hand specimens of these rocks being frequently indistinguishable."

The first recorded work done on the property was in 1876 and consisted of the sinking of a 100 foot deep shaft.

Gouge and MacLeod (1953); Cole and Grant (1953): The Department of Mines was contracted by Dr. T. J. Khattar to drill 3 diamond-drillholes on claim sheet 11F/16D, Tract 34, M, to test the mineralized zone exposed at the shaft. Chalcopyrite mineralization was reported to occur throughout a 35 foot thick slate unit in drillhole 1, and disseminated pyrrhotite was reported to occur throughout a 75 foot thick quartzite unit in drillhole 3.

Sporadic exploration continued since that time until the early 1950's when, in 1956, Mindamar Exploration Limited conducted an airborne geophysical survey and ground electromagnetic follow-up surveys. A 23 hole diamond-drill program was also carried out but only minor mineralization was intersected.

Between 1968-1970, Dome Exploration Limited conducted soil sampling and induced polarization surveys. Three diamond-drillholes followed on targets defined by the surveys but only minor mineralization was intersected.

In 1975, St. Joseph Explorations Limited undertook airborne electromagnetic and magnetic surveys in the French Road area. A grid was cut and geochemical sampling, VLF and horizontal-loop EM surveys and diamond-drilling were conducted. The grid was extended to Blue Mountain in 1976 and similar surveys were carried out. In 1977, further diamond-drilling was conducted with the most significant intersection being 1.48% Cu over 4.8 feet.

French Road Explorations Limited carried out trenching, diamond-drilling, road building and geophysical surveys at the prospect in 1981. The last exploration at the site was by Ayjay Minerals Company in 1982 who carried out prospecting and geological mapping.

Jensen (2003): Burnt Point Resources undertook prospecting and lithochemical sampling over this site in 2003. They confirmed the mineralization at the shaft and sampled a second mineralized outcrop located approximately 65 m northwest of the shaft. A sample collected from this outcrop ran 178 ppb Au, 272 ppm Ag, 7160 ppm Bi and 4070 ppm Co.

O'Sullivan (2006): John O'Sullivan (Rainbow Resources Limited) undertook a prospecting survey in the vicinity of the old shaft, and northeast of the shaft in the Blue Mountain area. They make reference to a re-interpretation of a gravity survey, but they do not provide a reference or documentation of this work.

Jensen, Kapallani and Kalfa (2009): Bluenose Gold Exploration Limited contracted Matrix Geotechnologies Limited to conduct Gradient IP and pole-dipole IP surveys over a cut grid centered on the French Road shaft. Chargeability anomalies associated with lower resistivity between two higher resistivity units are interpreted to be mineralization associated with a normal fault structure. The authors recommend drilling of the geophysical targets.

Jensen (2010): Lyndon Jensen (Bluenose Gold Exploration Limited) conducted prospecting and lithochemical surveys over the Blue Mountain area in 2010. He located and sampled a number of mineralized boulders and mineralized outcrops. Multi-element analyses of the rock samples confirm the presence of the mineralization documented in historic exploration surveys.

MacKinnon (2022): MacKinnon carried out a 3,500 m VLF survey on the claims surrounding the French Road Prospect. Survey readings averaged an 18 m spacing and resulted in four lines across the area of the anomalous 2018-2019 MMI survey cobalt results performed by the same author. One four-line weak anomaly was identified extending from L1 through L4 at the eastern end of the survey in the region of the elevated Co values.

SITE DESCRIPTION

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FRENCH ROAD (Shaft)

A 3 m by 4 m shaft is located on the top of a knoll, in a 100 m by 80 m bulldozed area, approximately 1.4 km north of Route 327. The shaft is filled with water to within 10 m of the collar. A level appears to have been driven in a southerly direction at the 10 m level.

BLUE MOUNTAIN AREA (Trench)

A 130 m long by 20 m wide trench exposing rusty argillites and siltstones is located along the western side of a tributary of Trout Brook that flows along the western flank of Blue Mountain. No record of the trench can be found in the Department of Natural Resources exploration assessment files although it obviously predates, or is of the same vintage, as the 1981 diamond-drilling of Forgeron (1981b). Several of the drill collars from the 1981 drilling remain within the trenched area.

COMMENTS

The reports by Graves (1980, 1981) do not actually record any work on the French Road Prospect, however, a significant base metal and Co, soil and stream sediment geochemical anomaly defined in these reports might be indicative of a significant strike extension of the French Road showing. The anomaly, which is defined along the eastern flank of Gillis Mountain, has never been explained.

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SAMPLE			
SAMPLE ID:	93F16-05(01)		
SAMPLE TYPE:	Grab		
ROCK TYPE:	Calc silicate		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(01): Sample of a brown to grey, garnet-rich, calc-silicate rock collected from an outcrop located along the eastern side of the shaft. It contains <0.5% disseminated chalcopyrite and pyrite.			

SAMPLE TYPE:	Grab		
ROCK TYPE:	Calc silicate		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(02): Composite sample of: (1) A sample of a grey to brown, garnet-rich, calc silicate rock collected from an outcrop located 53 m northwest of the shaft. It contains <1% disseminated chalcopyrite. (2) A sample of a greenish-grey, cherty, calc silicate rock taken from the same outcrop. It contains <1% disseminated clusters of chalcopyrite and arsenopyrite.			

SAMPLE TYPE:	Grab		
ROCK TYPE:	Calc silicate		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(03): A sample of a light brown, garnet rich, calc silicate rock taken from an outcrop located 30 m east of the shaft. It contains <1% disseminated arsenopyrite, and/or cobaltite(?), and/or bismuthinite(?).			

SAMPLE TYPE:	Grab		
ROCK TYPE:	Calc silicate		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(04): This sample of a grey to brown, cherty, calc silicate lense enclosed in a grey argillite or siltstone, was collected from an outcrop located 70 m east of the shaft. The calc silicate core contains 3-5% disseminated clusters composed predominantly of chalcopyrite, with lesser amounts of arsenopyrite, pyrite and bismuthinite(?). The core is surrounded by a cherty, pink alteration rim which contains <1% disseminated, euhedral to subhedral crystals of arsenopyrite, with lesser amounts of disseminated chalcopyrite.			

SAMPLE TYPE:	Grab		
ROCK TYPE:	Calc silicate		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(05): Select sample of high grade, garnet-rich, calc silicate float taken from a rubble pile located along the western side of the shaft. The sample contains 4-5% disseminated aggregates composed primarily of chalcopyrite, with lesser amounts of pyrite and an unidentified grey metallic mineral.			

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SAMPLE TYPE:	Grab		
ROCK TYPE:	skarn		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(06): Sample of a rusty, subrounded boulder of pyritic skarn collected near the drill collars located at the eastern end of the trenched area. The sample is coated in a reddish-black, limonite stain. It contains 20-25%, disseminated to submassive pyrite, with <1% disseminated chalcopyrite.			

SAMPLE TYPE:	Grab		
ROCK TYPE:	Calc silicate		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(07): Sample of a rusty, angular, 0.8m by 0.5 m boulder of calc silicate rock collected along the southwestern end of the trenched area. Traces of malachite stain were noted on the weathered surface. The sample contains <1% disseminated pyrite and chalcopyrite.			

SAMPLE TYPE:	Grab		
ROCK TYPE:	Calc silicate		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(08): Sample of a garnet-rich, calc silicate rock collected from a 0.5 by 0.5 m, angular boulder along the southwestern end of the trenched area. It contains trace amounts of disseminated chalcopyrite.			

SAMPLE TYPE:	Grab		
ROCK TYPE:	porphyry		
NORTHING:	5087867	EASTING:	716533
SAMPLE DESCRIPTION:			
93F16-05(09): This sample of pinkish-grey porphyry was collected from numerous pieces of angular boulders located at the southeastern corner of the trenched area. The porphyry contains <1% disseminated pyrite, with traces of chalcopyrite and arsenopyrite(?).			

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POSSIBLE RESTRICTIONS

UPDATED

Field checked by K. Northcote et al. (1989).

Updated by G. J. DeMont, September 1994; and S. J. Hughes, November 1995; G. A. O'Reilly, June 2002; G. J. DeMont, September 2013

Edited by G. A. O'Reilly, January 1996.