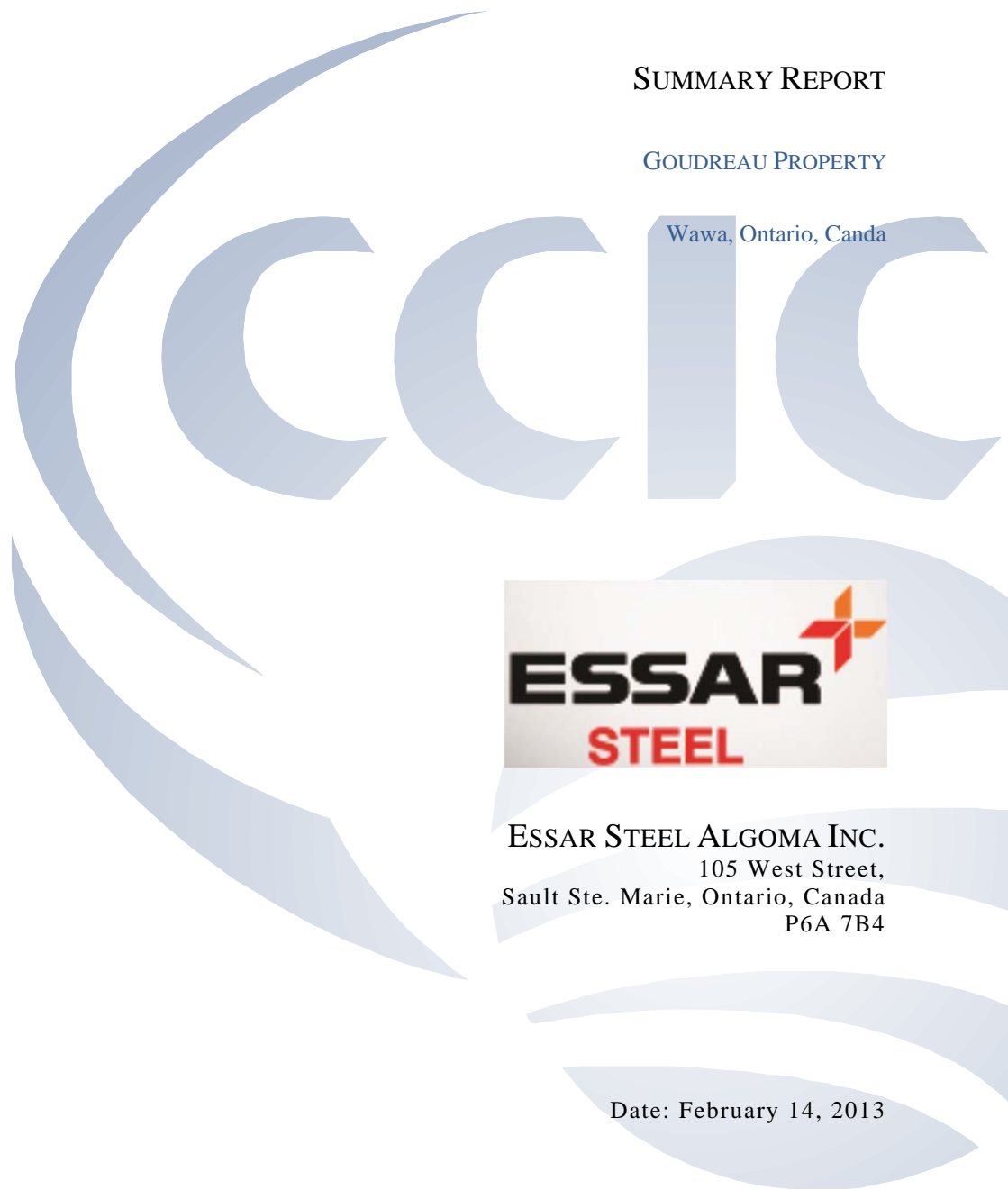


## SUMMARY REPORT

GOUDREAU PROPERTY

Wawa, Ontario, Canada



ESSAR STEEL ALGOMA INC.  
105 West Street,  
Sault Ste. Marie, Ontario, Canada  
P6A 7B4

Date: February 14, 2013

Prepared By:

CARACLE CREEK INTERNATIONAL CONSULTING INC.

Julie Selway, Ph.D., P.Geo.  
Stephen Wetherup, B.Sc., P. Geo.

## 1.0 HIGHLIGHTS

- The Goudreau Property is comprised of 36 freehold patents totaling 588.55 ha.
- It is located 35 km northeast of Wawa, Ontario with road and rail access onto the Property.
- The Property covers approximately 10 km of iron formation horizon and has been mined historically for pyrite.
- The focus of historical exploration and mining activity on the Goudreau Property was only for iron and none of the historical drill core (pre-1962) has been assayed for gold.
- In 1988, four holes were drilled south and southeast of Spring Lake, Aguonie township on Goudreau Property and intersected sericitized felsic volcanic rocks, narrow quartz veins in mafic volcanic rocks and sulphide-carbonate iron formation, but the gold assays are not publicly available. This was the last exploration work on the Goudreau Property.
- The Property lies within the Southern Domain of the Goudreau Deformation Zone which is host to several gold deposits including the Magino (6,250,990 oz Au indicated and 355,190 oz Au inferred) (Huxtable, McCracken and Kanhai, 2012) and Island Gold Mine (171,814 oz Au proven and probable reserves, 153,920 oz Au measured and indicated resources, and 67,238 oz Au inferred resources) (Richmont website: [http://www.richmont-mines.com/op\\_operations\\_islandgold](http://www.richmont-mines.com/op_operations_islandgold)) less than 3 km northeast of the Essar's Goudreau Property.

## 2.0 LOCATION AND TENURE

The Goudreau Property is located next to the historic town of Goudreau, northeastern Ontario, approximately 35 km northeast of Wawa in Aguonie Township. The approximate center of the Property is in UTM coordinates is: 685471 E, 5348851 N, Zone 16, NAD 83 and in geographic coordinates: 84°30'2"W and 48°15'57"N.

The Goudreau Property consists of 36 freehold patents which are merged into 7 Land Registry Property Identification Numbers ("PIN's") with a total area of 588.55 ha (Table 10-1 in Appendix 1, Figure 2-1). Essar has both surface and mining rights on all of the patents, except for PIN31140-0036 which is surface rights only (0.44 ha). All of the PIN's are owned 100% by Essar except for PIN 31140-0056 which is owned 75% by Essar and 25% by Joseph Max Wright. The patents have no expiry date and the only obligation is to pay land tax on them.

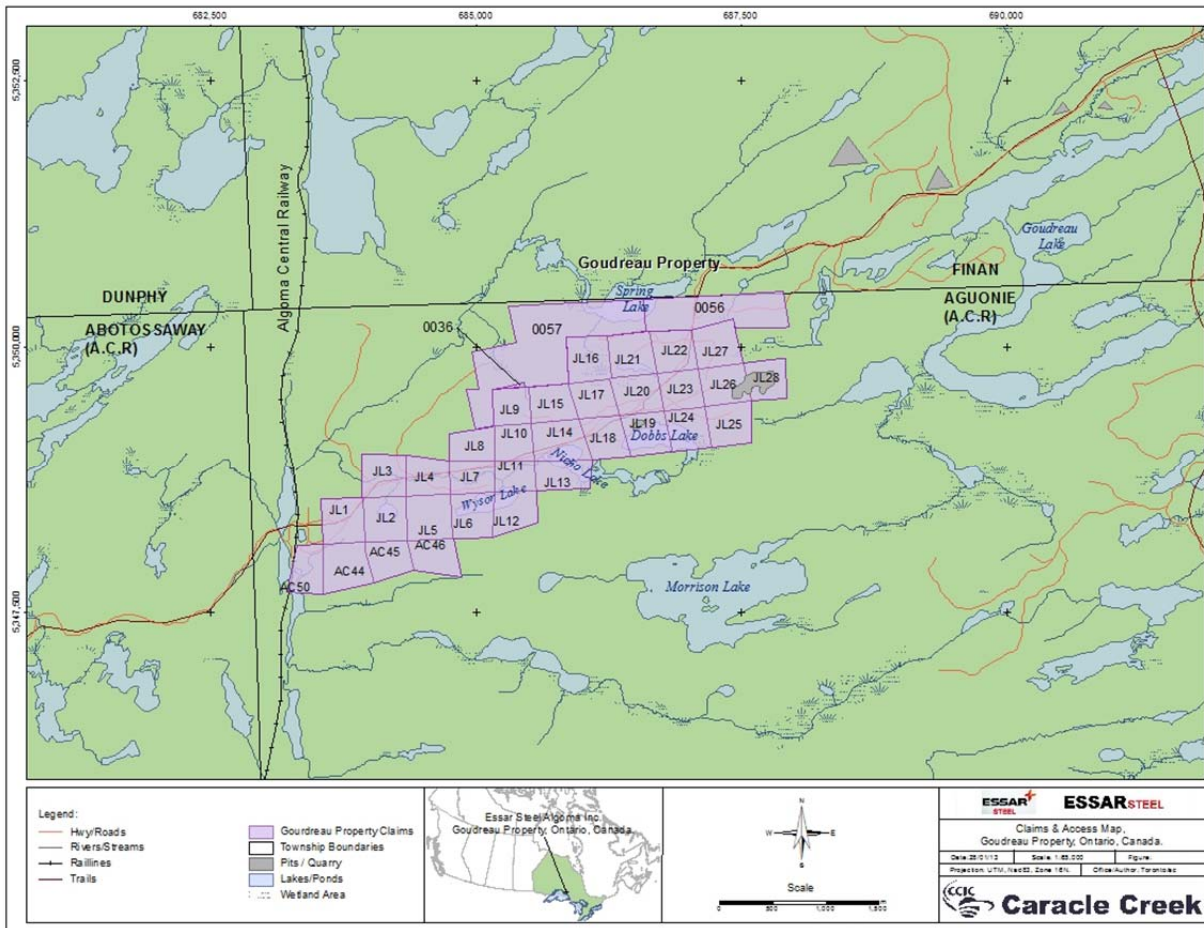


Figure 2-1 Tenure map for Goudreau Property

### 3.0 ACCESS AND INFRASTRUCTURE

The Goudreau Property is located approximately 35 km northeast of Wawa and can be accessed by road. The Algoma Central Railway connects Sault Ste. Marie to Hawk Junction (about 21 km east of Wawa) to Goudreau to Hearst. The railway tracks pass by the western edge of the Goudreau Property. The nearest airport to the Property is at Wawa. There are no powerlines on the Property.

The town of Wawa has restaurants, hotels, hospital, and Ontario Provincial Police Station. The town of Wawa could supply most of the needs of an exploration program at Goudreau. Wawa has an urban

population of 2,634 people in 2011 (Statistics Canada: <http://www.citypopulation.de/php/canada-ua-ontario.php?cityid=394>).

## **4.0 EXPLORATION HISTORY**

Pyrite was first discovered on Goudreau Property in 1907, but no active work was carried out until the First World War when the international sources of iron were cut off (MNDMF assessment file: 42C08SW0283). Nichols Chemical Company, a large company at that time, decided to establish a pyrite mine at Goudreau due to the amount of pyrite available and the close proximity to the Great Lakes. They started operations in 1914 and suspended all operations in 1919 after there was a drop in demand for iron at the end of the war. Nichols Chemical Company mined and shipped 300,000 to 400,000 tons of pyrite ore grading 30% S (Hewitt, 1967). Almost all of their production came from an open pit on the Deposit “C” on Algoma Steel Company’s Property. In the same period, Rand Consolidated Mines Limited mined a few thousand tons with an average grade of about 38% S from Morrison No. 4 deposit (close to Rand No. 1).

From 1959 to 1962, Algoma Ore Properties Division of Algoma Steel Corp. Ltd. mined and shipped to Wawa about 850,000 tons of ore (Hewitt, 1967). This production was obtained by open pit operations at the Morrison No. 4, the Bear, the “C” and “A” deposits. The approximate average grade was 40% Fe and 25-30% S.

In 1983, Canamax and Algoma formed a joint venture to evaluate the mineral potential of Algoma’s 117 patented claims covering the Goudreau Iron Range (Genivar, 2007). Prior to the end of 1988, Canamax drilled four holes to the south and southeast of Spring Lake in Aguonie Township. Weak alteration zones were intersected along this section of the Goudreau Lake Deformation Zone (“GLDZ”). Gold was found in sericitized felsic volcanic rocks, in narrow quartz veins in mafic volcanic rocks, and in sulphide-carbonate iron formation. Gold assays for these drill holes are not publicly available. Drilling indicated that the GLDZ has a width of about 180 m in this area. The claims in this area were allowed to revert back to Algoma. After searching the assessment files, Caracle Creek did not find the drill core logs, assay certificates or any mention of these four holes.

A summary of Algoma Steel’s iron deposits in the Goudreau area as of 1968 is given in Table 4-1. The location of these deposits is given in Figure 5-1. This appears to be the most current information



regarding size of the mineralization and production for the Goudreau Property. A review of the drill hole distribution in Ontario Geological Survey database shows that the drill holes targeted only the iron formation around these deposits.

*Table 4-1 Summary of Algoma Steel's iron deposits in the Goudreau area as of 1968. (Hewitt, 1967 and Shklanka, 1968). All of these iron deposits are on Essar's Goudreau Property except for Morrison No. 3.*

<b>Deposit Name</b>	<b>Historic claim</b>	<b>Category</b>	<b>Size of Mineralization</b>	<b>Historic Production</b>
Morrison No. 4	AC 44, 45, 46, 50	past producer	pyrite sheet 3000 ft long x 40 ft wide at 40.5%Fe, 7.41% SiO <sub>2</sub> , 26.9 %S	unknown tons mined 1918-1919 by open pit and 67,000 tons mined 1958-1959
Goudreau "B"	N/A	occurrence	pyrite zone 900 ft long	none
Goudreau "D"	N/A	prospect	north limb contains 150,000 tons at 24.15%S, 36.38%Fe; south limb contains 150,000 tons at 28.4%S, 41.3%Fe over an average width of 95 ft	none
Goudreau "E"	N/A	prospect	shallow deposit with interbedded pyrite, greenschist, carbonate and silica over a width of 250 ft with minor tonnage	none
Goudreau "F"	N/A	occurrence	narrow pyritic lenses	none
Goudreau "C"	JL 15 and 9	past producer	pyrite lens 200 to 300 ft wide x 50 ft thick x over 600 ft long at average 28.33%S	1914-1918: open pit production of 250,000 tons by Nichols. Pit was 1100 ft x 700 ft x 60 ft deep at west end. 1961: 75,000 tons mined by Algoma Ore Properties
"C" extension	N/A	past producer	about 200,000 tons of pyrite at 38.9%Fe, 23.6%S are blocked out	Mined by Algoma Ore Properties in 1962-1963
Bear claim	JL 28	past producer	pyrite zone 1500 ft long x 100 ft wide at a depth of 120 ft	approximately 350,000 tons of pyrite were mined 1959-1961 by open pit by Algoma Ore Properties
McPhail	West of "A"	prospect	contains a west section with pyrite zone 500 to 600 ft long x 40 ft wide at 40%Fe, 6%SiO <sub>2</sub> , 38%S	none
Goudreau "A"	JL 16 and 21	past producer	a main pyrite zone of 1800 ft long x 20-100 ft thick, dipping 30 to 45° N	250,000 tons mined in 1960-1961 from an open pit by Algoma Ore Properties

Morrison No. 3	AC 38, 39, 40	prospect	lens of pyrite 1250 ft long x up to 115 ft wide with an open pit potential of 130,000 tons at 40% Fe, 6% SiO <sub>2</sub> , 31.7% S	none
----------------	---------------	----------	---	------

## 5.0 GEOLOGY OF GOUDREAU IRON RANGE

The Goudreau Property occurs within the Wawa Subprovince of the Superior Province. The Wawa Subprovince is an aggregation of Archean greenstone belts and granitoid plutons (Williams et al., 1991). The greenstone belts are composed of metamorphosed komatiite, basalt, dacite and rhyolite and associated metasedimentary rocks dispersed in a sea of granitoid rocks. The Wawa Subprovince is composed of two linear greenstone belts: one along its northern border with the Quetico Subprovince and another in the Mishibishu-Michipicoten-Gamitagama area.

The Goudreau Property is located within the Michipicoten greenstone belt. The Michipicoten greenstone belt is approximately 140 km long and reaches a maximum width of about 45 km (Williams et al., 1991). Regional mapping delineated three discrete episodes of volcanism: the Hawk assemblage (the oldest episode), the mafic to felsic volcanism (Wawa assemblage) and the mafic volcanism (Catfish assemblage). The iron formation on the Goudreau Property is located at the boundary between the intermediate to felsic volcanic rocks of the Wawa assemblage (2.75 Ga) to the south and the mafic metavolcanic rocks of the Catfish assemblage (2.70 Ga) to the north (Figure 5-1).

The local geology of the Goudreau Property consists of quartz-pyrite-carbonate iron formation with some pyrrhotite which forms S-shaped open folds with a dominant easterly trend (Shklanka, 1968). The iron formation is up to 69 m thick and is composed of a lower carbonate member, a middle pyrite member, and an upper silica member. The iron formation is underlain by felsic metavolcanic rocks (Wawa assemblage) and overlain by mafic metavolcanic rocks (Catfish assemblage) both of Archean age. The iron formation lies in open folds and forms a series of “S” shaped traces at the surface (Hewitt, 1967). The length of the iron formation on Essar’s Goudreau Property, if the S folds were stretched out form a straight line, is approximately 10 km. It is broken and offset by faults.

The pyrite member averages approximately 15-18 m thick. It is thicker in secondary drag folds and at the noses of anticlines and synclines (Hewitt, 1967). The pyrite member has a well-developed granular texture, but locally is massive and fine-grained and is dominantly composed of pyrite with up to 10% pyrrhotite. Chert and siderite (Fe-carbonate) occur in disseminated form in the massive sulphide zones and as lenses and beds.

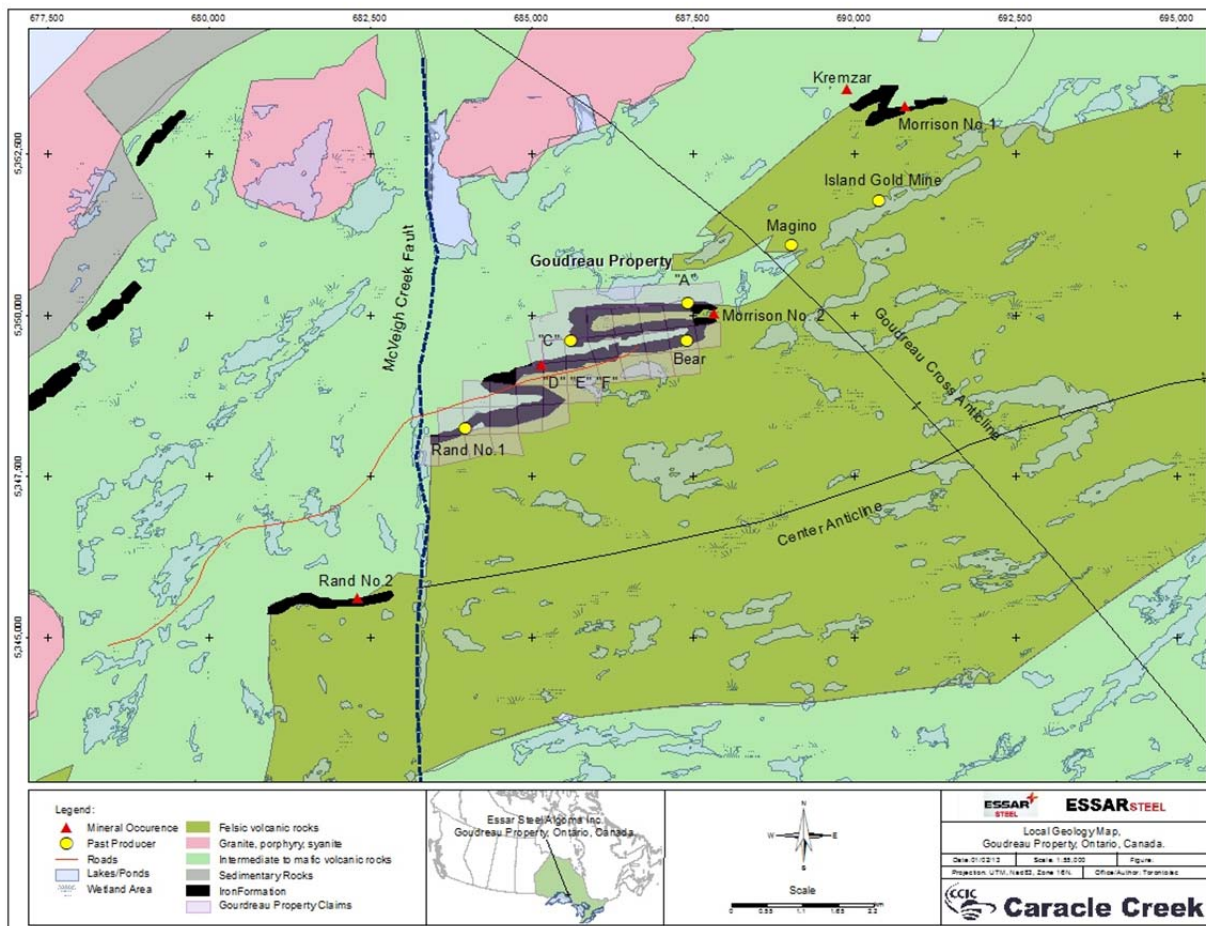


Figure 5-1 Local geology map for Goudreau Iron Range (modified from OGS P0184, 1963).

## **6.0 GEOLOGY OF GOUDREAU LAKE DEFORMATION ZONE – GOLD MINERALIZATION**

During the search for pyrite in the Goudreau area, gold-bearing veins were discovered in several places in the Finan township: veins 6.4 km west of Goudreau (Goudreau Gold Mines), at Webb Lake 6.4 km east of Goudreau (McCarthy Webb Mines), at Cline Lake 8 km west of Lochalsh (Cline Gold Mines) (Bruce, 1940). The majority of the known gold deposits and occurrences are located within the Goudreau Lake Deformation Zone (“GLDZ”) (Figure 6-1) (Heather and Arias, 1992). The GLDZ was defined using the deformation intensity (i.e., strain intensity) of the supracrustal rocks, deformation style and the distribution and density of discrete high-strain zones. The GLDZ is 4.5 km wide by over 30 km long east-northeast- to east-striking arcuate zone which is subparallel to the major lithological and foliation trends. The GLDZ has been subdivided into four structural domains (i.e., western, southern, northern and eastern domains) based on differences in deformation style, lineation patterns and orientation of high-strain zones and fractures. The Southern Domain hosts Essar’s Goudreau iron occurrences and the following gold occurrences: Magino Mine (Argonaut/Prodigy), Lochalsh Zone and Island Zone (Richmont). See below for description of the Magino and Island Gold Mines.

The gold mineralization occurs in all rock types (excluding diabase dykes) in the area associated with high-strain zone hosted quartz-veins (Heather and Arias, 1992). There is a spatial association of gold mineralization with felsic porphyry dykes and stocks, the contacts of the dykes being particularly favourable sites for shearing and gold deposition. Within the GLDZ, the gold mineralization is hosted by a series of parallel shear zones, up to 25 m wide by several hundred metres long with dips ranging from -70° to -90° (Genivar, 2007). Moderate to high strain intensity is observed within the shear zones containing pervasive alteration occurring in the form of iron carbonate, silica and calcite. Within areas of intense sericitization and silification with 2% to 5% pyrite are narrow, sub-parallel quartz veins carrying gold mineralization. Within the GLDZ, the mafic metavolcanic and meta-intrusive rocks are typically intensely altered to an assemblage of biotite, Fe-carbonate, pyrite, pyrrhotite, quartz and minor potassium feldspar (Heather and Arias, 1992). Felsic volcanic and meta-intrusive rocks are typically intensely altered to an assemblage of quartz, sericite, pyrite, Fe-carbonate, albite, hematite, pyrite and/or pyrrhotite.



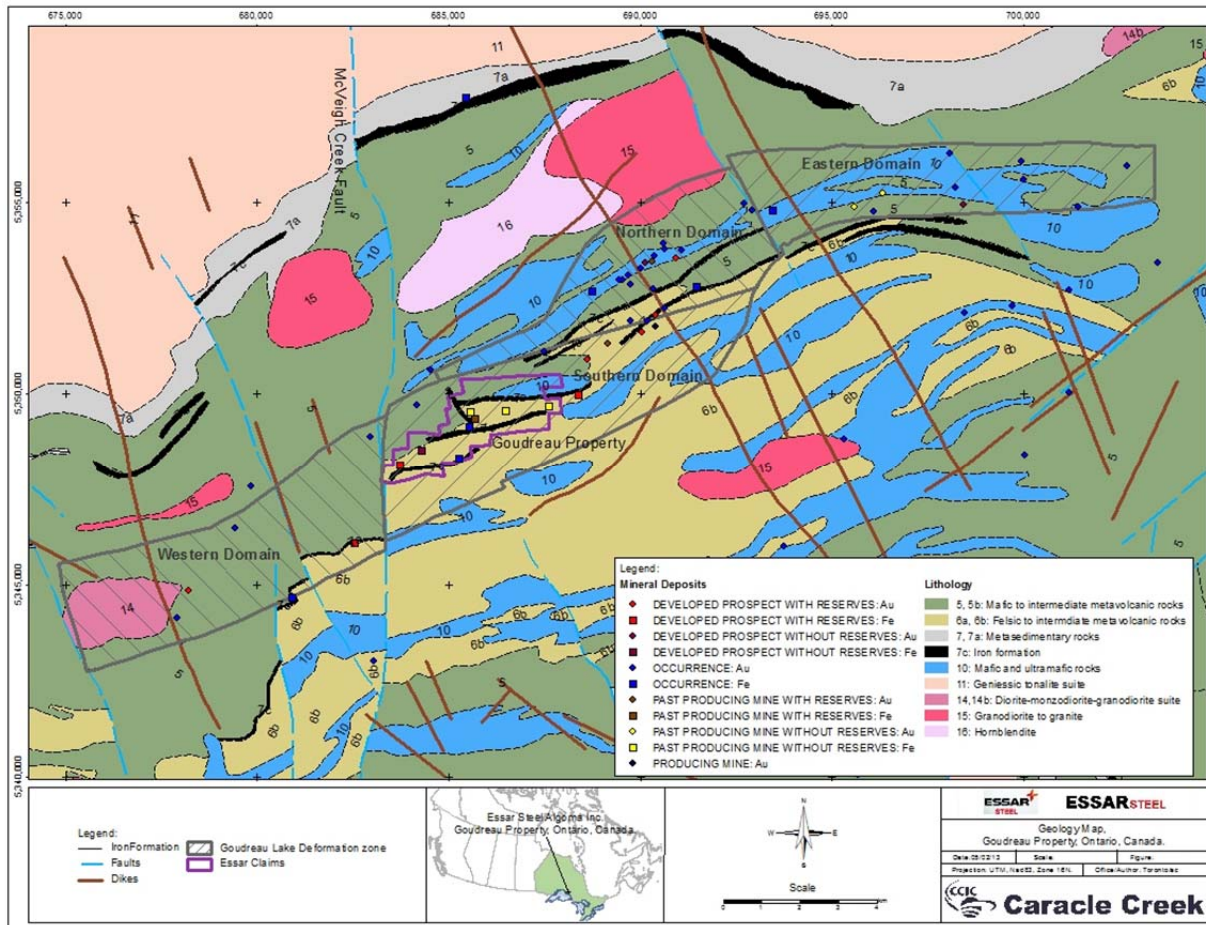


Figure 6-1 Local geology map of the Au and Fe occurrences within the Goudreau Lake Deformation Zone. Occurrences are from Ontario Geological Survey’s Mineral Deposit Inventory database. Outline of GLDZ is from Heather and Arias, 1992.

## 7.0 REHABILITATION OF RAND NO. 1 PIT

Rehabilitation measures on Rand no. 1 Pit were designed by Knight Piésold in consultation with Algoma Ore Division and Dofasco (Knight Piésold internal report) (Figure 5-1). Rehabilitation measures were carried out between August 1995 and October 1997 to mitigate the occurrence of acid mine drainage (“AMD”) from a small, side hill open pit, as associated waste rock dump and a small strippings pile collectively known as Rand No. 1 Pit. The Pit walls and associated waste rock piles contain zones of massive sulphides that have historically produced AMD. The rehabilitation measures involved backfilling the pit and capping the waste rock and pit strippings piles with a dense, saturated fill derived from two by-

products of Dofasco's steel manufacturing process in Hamilton, Ontario. The backfill and waste rock caps were then covered with a protective layer of sand and gravel and vegetated.

## **8.0 ADJACENT PROPERTIES**

### **8.1 Magino mine**

The Magino mine is currently 100% owned by Argonaut Gold (Argonaut Gold website: <http://argonautgold.com/gold-operations/magino/>). The Magino mine Property is a past producing underground gold mine located 40 km northeast of Wawa, Ontario (Figure 5-1). The Magino mine is less than 1 km northeast of the corner of Essar's Goudreau Property and totals 2,204.495 hectares. Magino is being evaluated by Prodigy Gold Incorporated as an open-pit mining opportunity with the potential for deeper, higher grade gold production.

The Magino mine gold mineralization is hosted by the felsic intrusion Webb Lake Stock which intrudes mafic volcanic rocks (Huxtable, McCracken and Kanhai, 2012). The trondhjemite contains 5-10 % veins of carbonate, quartz, tourmaline and pyrite in various orientations. Prodigy is focusing on its evaluation of zones of low-grade, gold-bearing quartz-sericite-pyrite mineralization that includes narrow higher-grade gold-bearing veins. In September 2012, Prodigy released a 43-101 compliant mineral resource estimate for Magino of 223,479,790 tonnes at 0.87 g/t Au and 6,250,990 oz Au indicated and 13,809,410 tons at 0.80 g/t Au and 355,190 oz Au inferred (Huxtable, McCracken and Kanhai, 2012).

### **8.2 Island Gold Mine**

The Island Gold Mine is owned 100% by Richmond Mines and is located 50 km northeast of Wawa (Richmont website: [http://www.richmont-mines.com/op\\_operations\\_islandgold](http://www.richmont-mines.com/op_operations_islandgold)). The Property is 2.6 km northeast of the corner of Essar's Goudreau Property and totals 8,444 hectares (Figure 5-1). In 1989 and 1990, underground infrastructures were built into the Island deposit beneath Goudreau Lake from an adit on the north shore. The project began commercial production on October 1, 2007 and is still operating. As of Dec. 31, 2011, the Island Gold Mine has 959,523 tonnes at 5.57 g/t Au and 171,814 oz Au proven and probable reserves, 679,359 tonnes at 7.05 g/t Au and 153,920 oz Au measured and indicated resources, and 344,382 tonnes at 6.07 g/t Au and 67,238 oz Au inferred resources (Richmont website: [http://www.richmont-mines.com/op\\_operations\\_islandgold](http://www.richmont-mines.com/op_operations_islandgold)). At the Island Gold Zone, five Au zones

referred to as E1, E, D1, D, and C, are defined and characterized by the presence of alteration halos ranging from 0.5 to over 8 m in thickness, comprising intense silica alteration, albite alteration and quartz-carbonate veins (Genivar, 2007).

## 9.0 CONCLUSIONS

Essar's Goudreau Property has been mined from four open pits for pyrite within an iron formation from 1914 to 1919 and 1959 to 1962. During these active mining periods, numerous drill holes were drilled only on the iron formation on the Property. The focus of this exploration and mining activity was only for iron. To the best of Caracle Creek's knowledge, none of the historical drill core (pre-1962) has been assayed for gold. To the best of Caracle Creek's knowledge, the Goudreau Property has not been historically explored or assayed for gold even though historic gold mines occur in Finan Township to the northeast of the Goudreau Property.

Prior to the end of 1988, Canamax drilled four holes to the south and southeast of Spring Lake in Aguonie Township on Goudreau Property. Weak alteration zones were intersected along this section of the Goudreau Lake Deformation Zone ("GLDZ"). These holes intersected sericitized felsic volcanic rocks, narrow quartz veins in mafic volcanic rocks, and sulphide-carbonate iron formation. Gold assays from these drill holes are not publicly available. The claims in this area were allowed to revert back to Algoma and no follow-up exploration was completed on the occurrence.

In 1992, Heather and Arias identified that the gold mineralization in the Goudreau area lies within the Goudreau Lake Deformation Zone. The Southern Domain of the GLDZ hosts Essar's iron occurrences and the following gold occurrences: Magino Mine (Argonaut/Prodigy), Lochalsh Zone and Island Zone (Richmont). Given that the Magino and Island Gold mines are less than 3 km northeast of the Essar's Goudreau Property and the lack of gold exploration on the Goudreau Property in the past, suggests that the Goudreau Property has good exploration potential for gold.

## 10.0 REFERENCES

- GENIVAR, Limited Partnership (2007): Island Gold Project Technical Report, prepared for Richmond Mines Inc., dated May 15, 2007.
- Heather, K.B. and Arias, Z. (1992): Geological and structural setting of gold mineralization in the Goudreau-Lochalsh area, Wawa gold camp; Ontario Geological Survey, Open File Report 5832, 159.
- Hewitt, D.F. (1967): Pyrite Deposits of Ontario, Ontario Department of Mines, Mineral Resources Circular No. 5, 64pp.
- Huxtable, P., McCracken, T. and Kanhai, T. (2012): Technical Report on the Magino Property, Wawa, Ontario, prepared for Prodigy Gold Incorporated, dated Oct. 4, 2012.
- Knight Piésold: Algoma Steel Inc., Algoma Ore Division, Rand No. 1 Pit, Final report on Construction of Rehabilitation Measures (Ref. No. D2171D/1), internal report.
- Shklanka, R. (1968): Iron Deposits of Ontario, Ontario Department of Mines, Mineral Resources Circular No. 11, 489pp.
- Williams, H.R., Stott, G.M., Heather, T.L., Muir, T.L. and Sage, R.P. (1991): Wawa Subprovince, Chapter 12, *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p. 485-542.

## Appendix 1 – Tenure

*Table 10-1 Essar's Tenure for Goudreau Property*

<b>MNDMF number</b>	<b>patent</b>	<b>Land Pin No.</b>	<b>Registry</b>	<b>MPAC Roll Number</b>	<b>Township</b>	<b>Area (ha)</b>	<b>Name</b>
formerly AC86		31140-0056	LT	579913800003601	Aguonie	16.83	Goudreau Pyrite
formerly AC87-88		31140-0056	LT	579913800003600	Aguonie	21.00	Goudreau Pyrite
formerly AC91-94, 102, 150		31140-0057	LT	579913800003500	Aguonie	78.99	Goudreau Pyrite
AC113		31140-0036	LT	579913800000100	Aguonie	0.44	Wedge
JL1		31140-0009	LT	579913800003700	Aguonie	17.07	Goudreau Lake
JL10		31140-0009	LT	579913800003700	Aguonie	12.48	Goudreau Lake
JL11		31140-0009	LT	579913800003700	Aguonie	11.39	Goudreau Lake
JL12		31140-0009	LT	579913800003700	Aguonie	15.03	Goudreau Lake
JL13		31140-0009	LT	579913800003700	Aguonie	14.05	Goudreau Lake
JL14		31140-0009	LT	579913800003700	Aguonie	18.44	Goudreau Lake
JL15		31140-0009	LT	579913800003700	Aguonie	13.59	Goudreau Lake
JL16		31140-0012	LT	579913800000200	Aguonie	15.96	Goudreau Lake
JL17		31140-0009	LT	579913800003700	Aguonie	13.65	Goudreau Lake
JL18		31140-0009	LT	579913800003700	Aguonie	15.43	Goudreau Lake
JL19		31140-0009	LT	579913800003700	Aguonie	15.75	Goudreau Lake
JL2		31140-0009	LT	579913800003700	Aguonie	16.94	Goudreau Lake
JL20		31140-0009	LT	579913800003700	Aguonie	14.69	Goudreau Lake
JL21		31140-0009	LT	579913800003700	Aguonie	17.12	Goudreau Lake
JL22		31140-0009	LT	579913800003700	Aguonie	15.37	Goudreau Lake
JL23		31140-0009	LT	579913800003700	Aguonie	13.25	Goudreau Lake
JL24		31140-0009	LT	579913800003700	Aguonie	14.86	Goudreau Lake
JL25		31140-0009	LT	579913800003700	Aguonie	15.69	Goudreau Lake
JL26		31140-0009	LT	579913800003700	Aguonie	14.94	Goudreau Lake
JL27		31140-0009	LT	579913800003700	Aguonie	17.16	Goudreau Lake
JL28		31140-0009	LT	579913800003700	Aguonie	13.81	Goudreau Lake
JL3		31140-0011	LT	579913800000200	Aguonie	16.19	Goudreau Lake
JL4		31140-0009	LT	579913800003700	Aguonie	14.39	Goudreau Lake
JL5		31140-0009	LT	579913800003700	Aguonie	16.80	Goudreau Lake
JL6		31140-0009	LT	579913800003700	Aguonie	16.59	Goudreau Lake
JL7		31140-0009	LT	579913800003700	Aguonie	12.34	Goudreau Lake
JL8		31140-0009	LT	579913800003700	Aguonie	12.43	Goudreau Lake
JL9		31140-0009	LT	579913800003700	Aguonie	12.29	Goudreau Lake
AC44		31140-0013	LT	579913800004000	Aguonie	18.40	Goudreau Lake
AC46		31140-0013	LT	579913800004000	Aguonie	13.72	Goudreau Lake
AC50		31140-0013	LT	579913800004000	Aguonie	8.64	Goudreau Lake
AC45		31140-0013	LT	579913800004000	Aguonie	12.80	Goudreau Lake
<b>total area</b>						<b>588.55</b>	