SUMMARY REPORT

MAGPIE PROPERTY

Leclaire Township, Ontario, Canada

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

Date: March 13, 2013

Prepared By:

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1.0 HIGHLIGHTS

- Essar's Magpie Property consists of a ~117 ha area covering the Magpie Iron Range and is road accessible from Wawa.
- The Property covers a strike of ~640 m of iron formation with a width between 12 and 18 m and is composed mostly of chert and siderite with small amounts of magnetite.
- It was mined intermittently between 1911 and 1924 and the last exploration in 1951 to 1953 with the drilling of four drill holes.
- Reserves at the Magpie Mine were last estimated in 1917 at 634,900 tons.
- An average of 157 samples from the Magpie Mine returned 36.79% Fe, 5.7% SiO_2, 0.78% S, 0.012% P, and 2 to 3% Mn (Shklanka, 1968).
- The last exploration drilling returned ~4.6 m of 43.37% Fe, 9.66% S and 16.05% Si at ~274 m vertical depth.
- There are several iron ranges within 5 km of the Property boundary that are connected or merge into one another forming an arcuate belt.
- There are also two gold, silver and lead occurrences less 1 km from the Property hosted in veins, and a diamond occurrence 2 km from the Property.
- No modern exploration on the Property.
- No exploration for anything other than iron.

2.0 LOCATION AND TENURE

The Magpie Property is located approximately 25 km north-northeast of Wawa, northeastern Ontario, in Leclaire Township. The approximate center of the Property in UTM coordinates is: 669657m E, 5342542m N, Zone 16, NAD 83 and in geographic coordinates: 84° 42' 58.06" W, 48° 12' 48.27" N.

The Magpie Property consists of nine (9) freehold patents totaling 116.553 ha (Table 2-1, Figure 2-1). Essar holds 100% of both surface and mining rights on the patents. The patents have no expiry date and the only obligation is to pay land tax on them. All patents are subject to reservations in Crown Grant.

Table 2-1 Essar's tenure for the Magpie Property

MNDMF patent number	Land Registry Pin No.	MPAC Roll Number	Township	Ownership	Area (ha)	Name
JL62 (SSM1042)	31138-0011 LT	579913600004800	LECLAIRE	S&MR*	24.864	Magpie
JL63 (SSM1045)	31138-0012 LT	579913600004800	LECLAIRE	S&MR	12.675	Magpie
JL64	31138-0008 LT	579913600004800	LECLAIRE	S&MR	4.524	Magpie
JL65	31138-0010 LT	579913600004800	LECLAIRE	S&MR	12.440	Magpie
JL66	31138-0009 LT	579913600004800	LECLAIRE	S&MR	9.020	Magpie
JL67 (SSM1047)	31138-0014 LT	579913600004800	LECLAIRE	S&MR	20.416	Magpie
JL68 (SSM1228)	31138-0007 LT	579913600004800	LECLAIRE	S&MR	14.322	Magpie
JL69 (SSM1229)	31138-0007 LT	579913600004800	LECLAIRE	S&MR	13.606	Magpie
JL74	31138-0013 LT	579913600004800	LECLAIRE	S&MR	4.686	Magpie
				Total	**116.553**	

*S&MR = surface and mining rights

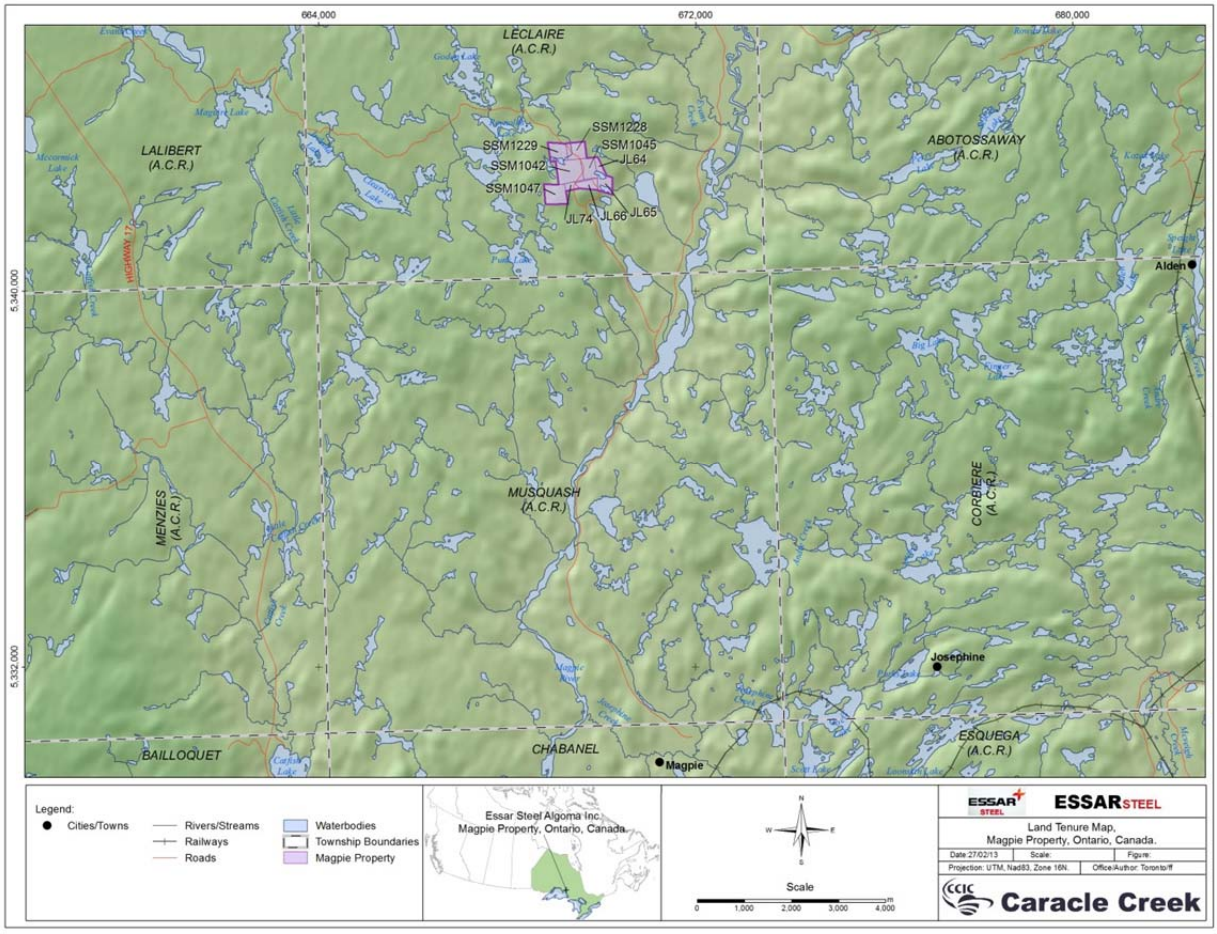

Figure 2-1 Tenure map for the Magpie Property

3.0 ACCESS AND INFRASTRUCTURE

The Magpie Property can be accessed by road following the Trans Canada Hwy. north from Wawa for ~34 km, then following a network of smaller roads to the east for an additional ~12 km (MNDM MDI). The Property can also be accessed from the town Magpie through a network of smaller roads and a trail. The nearest airport is in Wawa and the closest railway track is approximately 10 km south-southeast of 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 Magpie. 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

Exploration on the Property started in the early 1900's by Lake Superior Corp. (Algoma) and it concentrated on iron. The Magpie mine operated intermittently between 1911 and 1921. There is no record on any exploration on the Magpie Property since 1953. Table 4-1 summarizes the exploration history on the Property.

Table 4-1 Summary of exploration on the Magpie Property

Year	Company	Source of data	Type of work	Results
1909-1910	Lake Superior Corp./Algoma	Sage (1993), Iron Ore Committee (1924, p.160)	trenching, stripping, test-pitting, diamond drilling, sinking of a shaft	deposit consists of siderite, some portions altered to magnetite
1911-1913	Lake Superior Corp./Algoma	Sage (1993), Iron Ore Committee (1924, p.160)	erection of a roasting plant	iron content ~35%, low S content, operation of roasting plant
1914	Lake Superior Corp./Algoma	Sage (1993), Iron Ore Committee (1924, p.160)	new roasting plant	mine closed due to low iron prices
1914-1921	Lake Superior Corp./Algoma	Sage (1993), Iron Ore Committee (1924, p.160)	mining	approximately 1.5 million tons of ore were mined
1951	Jalore Mining Company Ltd.	Sage (1993)	detailed geological mapping	no public record of any results
1952-1953	Algoma	Sage (1993)	4 drill holes totaling ~1680 m	best intersection was ~4.6 m of 43.37% Fe, 9.66% S and 16.05% Si at ~274 m vertical depth

5.0 GEOLOGY

The Magpie Property occurs within the Wawa Subprovince of the Superior Providence. 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. It 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 Magpie Property is located within the Michipicoten greenstone belt, which is approximately 140 km long and reaches a maximum width of about 45 km (Williams et al., 1991). Regional mapping delineated

three discreet episodes of volcanism: the Hawk assemblage, the Wawa assemblage and the Catfish assemblage.

The iron formation on the Magpie Property is located within intermediate to felsic volcanic rocks of the Wawa assemblage (2.75 Ga) (Figure 5-1). The rocks overlying the iron formation are composed of chloritic schist that grades into intermediate metavolcanic rocks. A distinct silicified volcanic breccia unit underlies the iron formation.

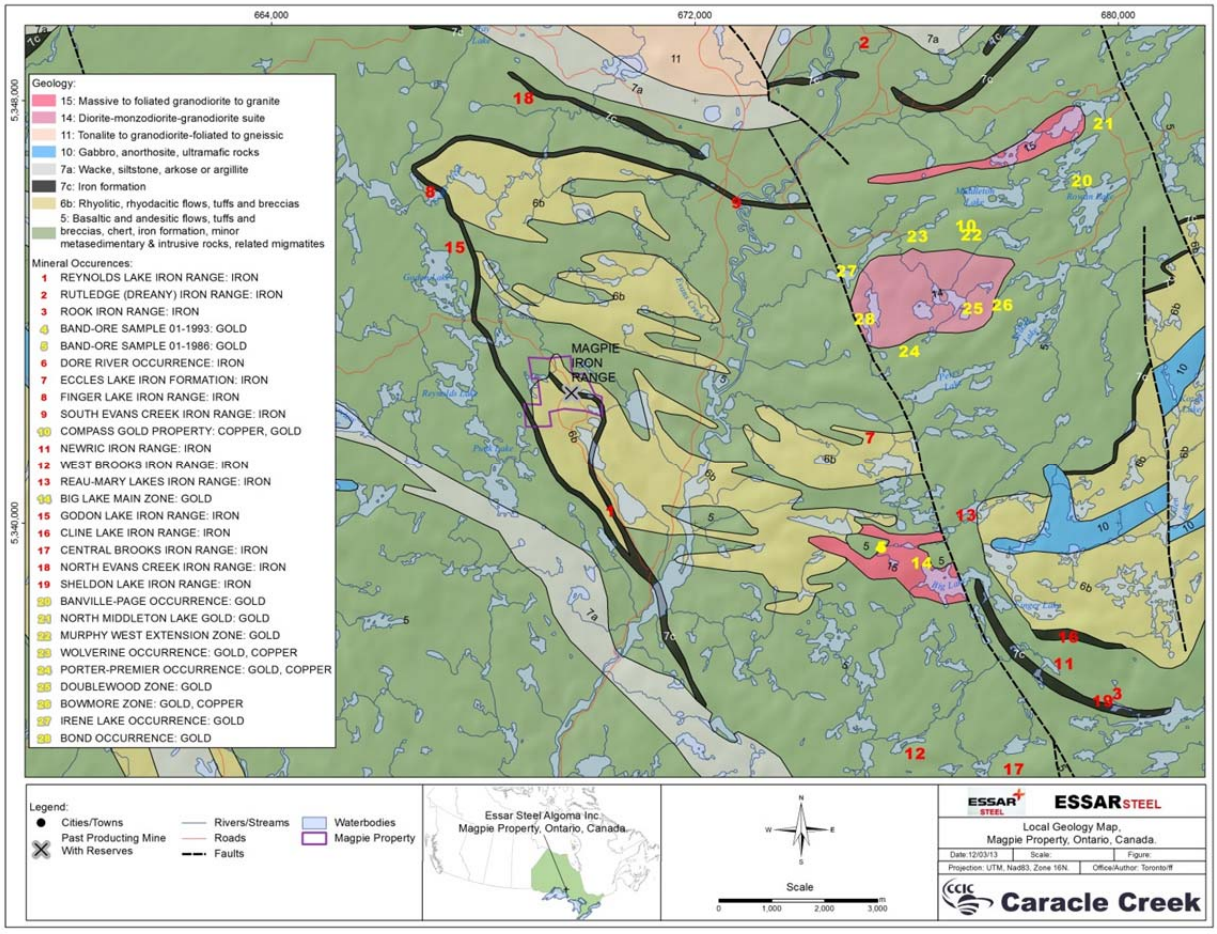

Figure 5-1 Local geology map for the Magpie Property (modified from MRD126)

6.0 MINERALIZATION

The Magpie Property covers approximately 2 km strike length of the Magpie Iron Range that extends from the Iron Knob at the east end, where it bends sharply and becomes the Alice Iron Range (Sage, 1993, MNDM MDI). The northwest end of the iron range extends just west of a diabase dike that cuts the iron formation. Smaller segments of iron formation occur to the northwest. The Magpie and Alice iron ranges may define a minor fold.

The Magpie Iron Range consists of almost entirely carbonate (siderite) facies iron formation, or its metamorphosed equivalent, which is the bottom facies of the typical Michipicoten-type iron formation (Sage, 1993). The upper sulphide, chert, magnetite and graphite facies are missing (MNDM MDI). The

Magpie Iron Range has a strike length of approximately 2,100 feet (~640 m) and a width between 40 (~12 m) and 60 feet (~18 m). The central portion of the Iron Range contains the most amount of siderite and the least amount of magnetite. The presence of magnetite decreases the value of the ore.

The Magpie Mine operated intermittently between 1911 and 1921. The main product was siderite, but the exact amount of siderite produced from the mine is not known. Sage (1993) estimated that the amount of raw siderite probably did not exceed 1.5 million tons. Reserves at the Magpie Mine were last estimated in 1917 at 634,900 tons. The sintered product after roasting graded 50.10% Fe, 9.14% Si and 2.74% Mn (MNDM MDI). An average of 157 samples from the Magpie Mine returned 36.79% Fe, 5.7% SiO_2, 0.78% S, 0.012% P, and 2 to 3% Mn (Shklanka, 1968).

Between 1951 and 1953 one drill hole by Algoma intersected ~4.6 m of 43.37% Fe, 9.66% S and 16.05% Si at ~274 m vertical depth.

7.0 ADJACENT PROPERTIES

The adjacent properties are patents and there is no public information on any exploration on them.

There are several iron ranges within 5 km of the Property boundaries including the Alice and Reynolds Lake iron ranges to the south-southeast, the Godon and Finger Lake iron ranges to the north-northwest, and the South Evans Creek Iron Range to the northeast (MNDM MDI) (Figure 5-1). All of these iron ranges are interpreted to be part of one iron formation forming an arcuate belt or merge into one another (MRD 126). Most of these iron ranges are oxide facies composed of chert and magnetite with minor siderite, pyrite and pyrrhotite, except the Godon Lake that consists of chert and siderite, similar to Magpie (Sage, 1993 and MNDM MDI).

Other occurrences include the discretionary mineral occurrences Bingham-Holliday Showing North (Au, Ag, Pb) (MNDM MDI42C02NE00120) and Bingham-Holliday Showing South (Pb, Ag, Au) (MNDM MDI42C02NE00121) located 0.85 km and 0.63 km east-northeast of the Property. Mineralization is hosted in quartz ± carbonate veins.

The Magpie Diamond Property is located ~2 km southeast of the Property and it is hosted in mafic to intermediate breccias with clasts of carbonate, mafic and gneissic country rocks (MNDM MDI42C02NE00136). Eight microdiamonds were found in a 32.02 kg sample.

8.0 REFERENCES

MNDM MDI: Ministry of Northern Development and Mines Mineral Deposit Inventory.

Ontario Geological Survey (2011): 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release---Data 126-Revision 1.

Ontario Iron Ore Committee (1924): Magpie Mine, Report of the Ontario Iron Ore Committee with Appendix 1923, 306p.

Sage, R.P. (1993): Geology of Abotossaway, Corbiere, Leclaire and Musquash townships and part of Dunphy Township, District of Algoma; Ontario Geological Survey, Open File Report 5587, 308p.

Shklanka, R. (1968): Iron Deposits of Ontario; Ontario Department of Mines, Mineral Resoruces Circular No. 11, 489p.

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.