

# Haig Inlet Iron Project Technical Report

## Belcher Islands, Qikiqtaaluk Region, Nunavut, Canada

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Prepared for:

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### **1.0 SUMMARY**

The purpose of the report was to provide a current resource estimate of the Haig Inlet Iron Ore Project based on the 2011 drill program results. The 25,376 hectare Haig Inlet Project is comprised of two separate claim blocks and one IOL agreement area on Flaherty Island which is part of the Belcher Islands in Hudson Bay, Nunavut.

Canadian Orebodies Inc (Canadian Orebodies) contracted Cyr Drilling International Ltd to complete a 9000-m drill program in 2011. Core logging was subcontracted to Fladgate Exploration Consulting Corporation (Fladgate) while assaying and mineralogy was completed by SGS Canada Inc in Lakefield, Ontario (SGS). Database validation and resource estimation was completed by GH Wahl (P Geo) of GH Wahl & Associates Consulting. The pit shell used to define the Mineral Resources was generated by R Carapetian (P. Eng).

The Haig Inlet drill program was managed in a professional manner by Henry Hutteri (P. Geo) who provided direct oversight for almost the entire drill program and acted as Canadian Orebodies' Qualified Person.

Drilling was comprised of NQ diameter core in 64 drill holes. Drill holes averaged 139-m in depth with a minimum depth of 13-m and maximum depth of 275-m. The drilling was completed by three Boyles 37 fly rigs. A total of 9,119-m were drilled from mid-July to mid-September of 2011.

The Haig Inlet Project covers a large expanse of predominantly flat lying iron formation underlying a majority of the property. The property is divided into two areas: North Haig Inlet, which was subject to the bulk of drilling in 2011 and South Haig Inlet, which was subject to a single drill hole in 2011. North Haig is comprised of a small portion of the IOL Agreement Area at its extreme southern extent as well as 19 staked claims to the north, while South Haig Inlet is entirely comprised of the IOL Agreement Area. A second separate block of 13 claims, which are part of the Haig Inlet Project, is located on the west side of Flaherty Island and was staked by Canadian Orebodies in the fall of 2011. Flaherty Island forms a broad anticline and these two linear north-south oriented blocks of claims cover the interpreted surface expression of the iron formation along the east and west limbs. This western claim block was not explored in 2011 other than a brief reconnaissance at a single outcrop however it has been recommended for future exploration.

The Haig Inlet Project was initially explored by drilling and trenching by the Belcher Mining Corporation Ltd. in the 1950's, which had established the presence of an extensive flat lying Fe mineralization.

The Haig Inlet deposit is a Lake Superior Type iron formation, is Paleoproterozoic (1,880 Ga) and is located at the western edge of the Superior Province. This iron formation is thought to have been deposited under similar conditions and timing as the Sokoman Formation which hosts the Labrador Trough iron deposits. Many of the stratigraphic sub-units of the Sokoman can be correlated to similar units in the Kipalu Formation which hosts the Haig Inlet deposit. Lake Superior Type deposits mineralized predominantly with hematite have been successfully mined and concentrated at mining operations in the Labrador Trough since 1954.

Both the Haig Inlet North and South deposits reflect a fairly consistent true width of 15-m grading ~35% Fe, and a demonstrated horizontal continuity over an area of approximately 16.5 square kilometers in Haig North and 3.5 square kilometers in Haig South. Over this area, the average depth of the top of the iron formation below surface is 80-m however ranges between 13-m near Haig Inlet and becomes progressively deeper towards the north where both the dip and the height of land increases.

All sample preparation including weighing, drying, crushing and grinding was completed by SGS, which is independent from the issuer, an accredited laboratory and ISO certified.

SGS procedures commenced with weighing of samples and measurement of gravimetric moisture followed by drying at 105°-C. This was followed by a coarse crush of up to 3-kg of sample to 75% passing 9 mesh or 2-mm. Samples were the riffle split and 250 grams were pulverized to 200 mesh or 75-micron. A pycnometer was used to generate density values. Loss on Ignition (LOI) was measured at 1000°-C while sulphur as SO3 was measured by Leco. Borate Fusion Whole rock XRF was used to determine the balance of oxide grades.

Standards were inserted at a rate of 1 in 21 samples while duplicate pulps samples sent to ALS Chemex as an independent cross-check were taken every 1 in 30 samples. Standard and duplicate results were analyzed for all major oxides. All standard results were within 1 standard deviation of the mean grade. As well, duplicate pulp results from ALS Chemex using the identical XRF assay method returned a high correlation coefficient above 99% with XRF results from SGS indicating that the assay accuracy and precision were of a high standard.

The geological database was evaluated by GH Wahl and found to be appropriate for Mineral Resource estimation. The estimated Mineral Resources are tabulated in the following Table 1.1. These Mineral Resources were defined within an economic pit shell using reasonable cost, recovery and revenue assumptions. The floor of the pit shell covers an area of approximately 9 square kilometers.

Table 1.1 Estimated In-Pit Haig Inlet Iron Project Mineral Resources							
Area	Mineral Resource Category	Million Tonnes	Fe%				
Haig North	Indicated	230	35.17				
Haig North	Inferred	155	35.55				
Haig South	Inferred	134	35.37				
Haig North	Total Indicated	230	35.17				
Haig North & South	Total Inferred	289	35.47				

GH Wahl recommends that Canadian Orebodies plan for a second phase of work comprised of exploration on the main Haig Inlet claim block and IOL package as well as on the 13 claims recently staked to the west of Haig Inlet. A phased program comprised of 48 drill holes or 7,200-m has been

recommended along with metallurgical testwork contingent upon mineralogical results. The next phase of the recommended exploration program has been budgeted at \$5.2 million.

If these programs are positive, it is recommended that Canadian Orebodies embark on commissioning a preliminary economic assessment and preliminary environmental baseline studies.

### 2.0 INTRODUCTION

GH Wahl of GH Wahl & Associates Consulting is an independent consultant specializing in resource estimation, and iron ore deposits. GH Wahl was retained in 2011 by Canadian Orebodies to assist them in laying out a drill program targeted on favourable results obtained in a 1954 drill program completed by the Belcher Mining Corporation Ltd. and to estimate Mineral Resources.

Canadian Orebodies is a natural resource exploration and development company based in Toronto, Ontario, Canada and is listed on the TSX Venture Exchange (TSX-V:CO) with its mineral properties located in Canada.

The purpose of this Technical Report is to provide Canadian Orebodies with a document appropriate for public disclosure of the results of their 2011 exploration program, a current Mineral Resource estimate and recommendations for further work.

GH Wahl completed a site visit from July 27<sup>th</sup> to Aug 3<sup>rd</sup> of 2011 and from September 13<sup>th</sup> to the 21<sup>st</sup>, 2011. The site visits included a review of drilling, logging, sampling and core handling procedures as well as a review of the geology and mineralization in drill core and outcrops.

### **3.0 RELIANCE ON OTHER EXPERTS**

This report relies upon a literature review of available data. Descriptions of land titles, IOL agreements, and work permits were provided by Canadian Orebodies, the contents of which were not verified by the author unless noted otherwise in the text of this report.

GH Wahl has exercised all reasonable diligence in checking, confirming and verifying the geological data provided by Canadian Orebodies and used for the current resource estimate.

The descriptions of geology, mineralization, and exploration used in this report are all derived from the work of GH Wahl unless stated otherwise. The geological logging and drill sections were generated by Fladgate Exploration Consulting Corp. (Fladgate) personnel. The quality of the assaying completed by SGS as well as the surveying of collars completed by H Hutteri (P.Geo), was verified by GH Wahl. GH Wahl relied on partially complete mineralogical work by SGS and on pit optimization work completed by R. Carapetian (P.Eng).

The present report has been written by GH Wahl for Canadian Orebodies and is based on information available to GH Wahl at the time of preparation of the report and site visits carried out in July and September of 2011.

While the services performed by GH Wahl to create this report were in accordance with good industry standard geoscience practice, the analysis, information, opinions and recommendations provided by GH Wahl in this report are advisory only.

The present report is directed solely to the development and presentation of data and evaluations to permit Canadian Orebodies to reach informed decisions on the project's potential.

This report is intended to be used by Canadian Orebodies as a Technical Report with the Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes contemplated under provincial securities laws, any other use of this report by any third party is at that party's sole risk.

GH Wahl is pleased to acknowledge the helpful cooperation of Henry Hutteri, senior project geologist and Qualified Person overseeing the preparation of the Haig Inlet database, the personnel of Fladgate, Rene Carapetian, Chris Gunning of SGS, Bo Arvidson of Bo Arvidson Consulting and especially Gordon McKinnon, President and CEO of Canadian Orebodies. They were all invaluable in responding professionally and diligently to all questions, and requests. Lastly, appreciation goes to the elders and community members of Sanikiluaq who provided such a warm welcome to the team.

### 4.0 PROPERTY DESCRIPTION AND LOCATION

The Haig Inlet property is comprised of approximately 25,376 hectares and is located on Flaherty Island which is part of the Belcher Islands, in lower Hudson Bay, Nunavut, Canada. A portion of the Haig Inlet Iron Project is located on Inuit Owned Lands and Commissioner's (Municipal) Lands. (See Figure 4.1) The property is located on map sheet NTS34 D-6 with Latitude: 56° 20″ 19 N and Longitude: 79 ° 04″ 04 W. The northwestern border of the property is located 2.5-km to the east of the community of Sanikiluaq.

In late 2011, Canadian Orebodies staked 13 additional claims located 10.4-km to the west of Haig Inlet. This claim group which covers an area of approximately 10,172 hectares was not subject to exploration in 2011.



Figure 4.1 Regional Location Map of the Belcher Islands (From Wickert et al)

The main Haig Inlet property, which is subject to this Mineral Resource estimate, consists of 19 claims comprising 12,519 hectares staked in 2011 as well as a contiguous package of Inuit Owned Land (IOL) Parcel #SQ05-002 located to the south of the 19 staked claims. According to documents

provided by Canadian Orebodies, the IOL Agreement Area Parcel is comprised of 2,685 hectares. Based on the information provided by Canadian Orebodies, together these two Haig Inlet land packages combined comprise 15,204 hectares. A separate and third area is located on the west side of Flaherty Island and is comprised of 13 claims covering an area of 10,172 hectares. (See Figure 4.2).

A list of staked claims for Haig Inlet are included in the following Tables 4.1 and 4.2. These claims have not been legally surveyed. An assessment work report was filed for the 19 Haig Inlet claims in December of 2011. The Haig Inlet West Property was staked in the fall of 2011.

Canadian Orebodies does not hold any surface rights to the property. Surface rights are not held by any other party.

Table 4.1 Haig Inlet Property – 19 Claims							
	Claim No	Claim Name	Record Date	Anniversary Date	Hectares		
1	K14661	CO1	28/01/2011	28/01/2013	583.5		
2	K14662	CO2	28/01/2011	28/01/2013	298.2		
3	K14663	CO3	28/01/2011	28/01/2013	842.2		
4	K14664	CO4	28/01/2011	28/01/2013	837.2		
5	K14665	CO5	28/01/2011	28/01/2013	840.0		
6	K14666	CO6	28/01/2011	28/01/2013	1045.1		
7	K14667	CO7	28/01/2011	28/01/2013	126.9		
8	K14668	CO8	28/01/2011	28/01/2013	622.8		
9	K14669	CO9	28/01/2011	28/01/2013	125.1		
10	K14670	CO10	28/01/2011	28/01/2013	646.8		
11	K14671	CO11	28/01/2011	28/01/2013	1045.1		
12	K14672	CO12	28/01/2011	28/01/2013	1045.1		
13	K14673	CO13	28/01/2011	28/01/2013	1045.1		
14	K14674	CO14	28/01/2011	28/01/2013	209.9		
15	K14675	CO15	28/01/2011	28/01/2013	822.1		
16	K14676	CO16	28/01/2011	28/01/2013	981.4		
17	K14677	CO17	28/01/2011	28/01/2013	941.0		
18	K14678	CO18	28/01/2011	28/01/2013	395.6		
19	K14679	CO19	28/01/2011	28/01/2013	65.7		
	-	-	-	Total	12,519.0		

Table 4.2 Haig Inlet West Property – 13 Claims							
	Claim No	Claim Name	Estimated Record Date	Estimated Hectares			
1	K05276	HW1	24/11/2011	495			
2	K05277	HW2	24/11/2011	585			
3	K05278	HW3	24/11/2011	585			
4	K05279	HW4	24/11/2011	585			
5	K05280	HW5	24/11/2011	720			
6	K05281	HW6	24/11/2011	788			
7	K05282	HW7	24/11/2011	844			
8	K05283	HW8	24/11/2011	968			
9	K05284	HW9	24/11/2011	878			
10	K05285	HW10	24/11/2011	990			
11	K05286	HW11	24/11/2011	900*			
12	K05287	HW12	24/11/2011	866			
13	K05288	HW13	24/11/2011	968			
			Total	10,172*			

(\*yet to be confirmed by INAC)

Lands in the Nunavut Territory are classified as Crown Lands, Inuit Owned Lands (IOL) (surface rights), IOL (surface and subsurface rights) and Commissioners lands. The IOL are managed through the Qikiqtani Inuit Association (QIA).

The Territorial Land Use Regulations (TLUR) regulates surface activities related to mineral exploration and mining. The Canadian Mining Regulations regulate subsurface mineral explorations, exercised through Indian and Northern Affairs Canada (INAC).



Figure 4.2 Property Location Map

There are no known environmental liabilities remaining from previous work on the Belcher Islands. At the end of the 2011 field season, Canadian Orebodies removed approximately 100 empty fuel drums at Iron Cove which were left over from the Belcher Mining Corporation Ltd.'s 1950's era exploration program. In 2011, representatives of Canadian Orebodies were active in undertaking two community meetings and several meetings with the Sanikiluaq municipal council. During these meetings the extent of the exploration program was shared with the community and community members participated in the selection of the exploration camp location. Canadian Orebodies also hired members of the Sanikiluaq community to act as bear gaurds, core splitters, and camp help. Many visits by community members to the exploration camp also facilitated a positive perception of the project.

Canadian Orebodies had obtained the required Land Use Permit issued by the Land Administration division of the Hamlet of Sanikiluaq, Water License 2BE-BEL1114 issued by the Nunavut Water Board and the appropriate approvals from the Nunavut Impact Review Board. For the IOL lands, Canadian Orebodies obtained Land Use Permit Q10L2C020 issued by the Qikiqtani Inuit Association for IOL parcel SQ05-002, Belcher Islands, Nunavut. During the site visit, all required permits were reviewed by the QP and found to be in good standing.

The QP is unaware of any other factors or risks that would affect access to the property or ability of Canadian Orebodies to conduct exploration on the property.

In 2011, Gordon and Don McKinnon obtained the right to earn 100% interest through an Exploration Agreement with the Nunavut Tunngavik Inc. on an exploration area comprised of 2,685 hectares contiguous with and immediately south of the 19 staked claims. The exploration agreement area is in good standing for a period of one year and can be renewed for periods of one year, provided the required work requirements and annual fees are met.

This agreement was amended in 2011, whereby Canadian Orebodies acquired a 10% interest in the Inuit Owned Lands Mineral Exploration Agreement (the "NTI Agreement") with Nunavut Tunngavik Incorporated ("NTI") for the SQ05-002 IOL parcel.

To obtain the 10% interest in the Inuit Owned Lands Mineral Exploration Agreement (NTI Agreement) Canadian Orebodies issued an aggregate of 3,000,000 common shares to Donald McKinnon, Gordon McKinnon, and Randall Salo. The Agreement is a non-arm's length transaction as Gordon McKinnon is President & CEO of Canadian Orebodies and Donald McKinnon is the Chairman and a director of Canadian Orebodies.

Canadian Orebodies is entitled to acquire the remaining 90% interest in the NTI Agreement by:

(i) issuing to the Vendors an aggregate of 4,000,000 common shares on June 15, 2012, to earn an additional 15% interest in the NTI Agreement.

(ii) issuing to the Vendors an aggregate amount of 7,000,000 common shares on June 15, 2013, to earn the remaining 75% interest in the NTI Agreement.

Canadian Orebodies and the Vendors have also entered into a 3% Gross Overriding Royalty ("GOR") agreement, whereby 1/3rd of the GOR may be purchased at any time by Canadian Orebodies for \$3,000,000 in the event that Canadian Orebodies has acquired the 100% interest in the NTI Agreement. If Canadian Orebodies elects not to purchase a 100% interest in the NTI Agreement, the consideration for a purchase of such 1/3rd of the GOR shall be pro-rated to Canadian Orebodies' interest in the NTI Agreement.

The GOR grants an aggregate \$250,000 advance royalty, commencing on the earlier of (i) the date on which a production lease is entered into pursuant to the NTI Agreement, or (ii) on June 15, 2017. If Canadian Orebodies does not hold the 100% interest in the NTI Agreement when the advance royalty becomes payable, the advance royalty shall be pro-rated to Canadian Orebodies' interest in the NTI Agreement.

While the ownership in the NTI agreement is currently split between Don McKinnon 40.5%, Gordon McKinnon 40.5%, Randall Salo 9% and Canadian Orebodies 10%, a joint venture agreement was formed to facilitate management of exploration and development of the project. In this agreement, any additional acquisitions within an area of influence within 10-km of the NTI agreement area (such as the 19 staked claims to the north and 13 claims to the west) are subject to the Joint Venture agreement.

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

The property is accessible from Sanikiluaq by quad bike trail, helicopter or boat. Sanikiluaq has an Inuit population of approximately 1000 people and is serviced by a gravel strip airport with commercial flights to Winnipeg and Montreal. The air strip has a total length of 1,280-m and is close enough to provide access to the Haig Inlet project during any potential mining operation.

A quad bike trail traverses the north-south extent of the property originating from Sanikiluaq 22-km to the north. Supplies can also be transported by boat which is the main mode of transport around the islands. A barge containing three drill rigs and associated equipment for the 2011 drill program was off loaded in Rowatt harbour located to the east-southeast of the property. With bathymetry data, it may be possible to barge equipment to the Haig Inlet shoreline adjacent to the Haig Inlet mineralization.

According to Fisheries and Oceans Canada, tides in the area to the east of Haig Inlet at Tukarak Island can range up to 1.0-m (<u>http://www.waterlevels.gc.ca</u>).

Ships entering the Hudson Strait and Hudson Bay are subject to Canada's Arctic Water Pollution Prevention Act. This act creates a regulatory Time Date Zone that may restrict vessel navigation if there is ice present. These navigation restrictions are found above 60N in the Hudson Strait. Vessels of Type A & B Class are permitted into the zone from June 25 to November 30. Vessels of Type C Class are permitted from July 1 to November 15. Vessels operating in the region outside of these dates are subject to the Arctic Ice Regime System (AIRS). The AIRS is administered by Transport Canada Marine Safety. The AIRS considers vessel condition and crew experience to determine the ability of a vessel to enter the zone. Vessels operating outside the zone data system may still enter using the AIRS and a qualified ice navigator.

For a listing of all associated acts and regulations including the Canada Shipping Act please visit <a href="http://www.tc.gc.ca/acts-regulations/acts/1985cA-12/menu.htm">http://www.tc.gc.ca/acts-regulations/acts/1985cA-12/menu.htm</a>.

The Canadian Ice Service, of the Government of Canada compiles detailed ice reports and forecasts ice conditions using satellite remote sensing and aerial surveillance. For up-to-date ice information see <u>www.ice-glaces.ec.gc.ca.</u>

The Haig Inlet Iron Project is in an area of arctic tundra with elevations ranging up to 300-m above sea level. Much of Haig Inlet, in the north and south areas, range in elevation from 0-86-m. The region is formed by a range of hills projecting through the waters of Hudson Bay. The hills are composed of resistant Proterozoic sedimentary and volcanic rocks elaborately folded into long, curved, hairpin-shaped structures. The overlying gabbros form a rough plateau over much of the islands with cliffs proximal to the shorelines. There are no trees on the islands and vegetation is limited to patches of growth between outcrops and boulders. The surface is dotted with ponds and small lakes. No permafrost was noted in the area.

According to the local Inuit, characteristic wildlife includes caribou, polar bear, wolf, arctic fox, snowshoe hare, raven, osprey, shorebirds, seabirds, waterfowl, seal, walrus and whale. Land uses include hunting, fishing and berry picking. The local Inuit also mine soapstone in the south of the Belcher Islands for carving.

This region is classified as having a high subarctic climate that falls along the latitudinal limits of tree growth. Ground cover of dwarf birch, willow, shrubs, lichen and moss predominates. Poorly drained sites usually support sedge, cottongrass and sphagnum moss.

The Belcher Islands have a mean annual temperature of approximately -5.5°C with a summer mean of 5.5°C and a winter mean of -18.5°C. The mean annual precipitation is approximately 500-mm.

Generally, winter is harsh and often leads to poor flying conditions. As a result, exploration programs are carried out in the summer field season. However, the weather is not expected to have a significant impact on mining, based on similar mining operations in northern Québec.

Power could be obtained either through diesel generators or from Hydro Québec's La Grande Power Project if the project becomes sufficiently large to carry the associated capital costs. Québec`s La Grande Hydro project provides 735-kV of power approximately 87-km from the coast of James Bay. The power development is located 280-km to the south-southeast of the Haig Inlet Project. If viable, power lines would need to traverse a minimum of approximately 100-km of sea floor and another 180-km overland.

Water sources are abundant in all areas of the property. Potential port sites are either 7-9-km to the east or northeast of the centre of the Haig Inlet deposit and as close as 6.5-km to the eastern extent of the deposit. There is sufficient surface area available for both mine infrastructure and tailings to the north of the deposit. Kasegalik Lake, the largest fresh water body of water on the Belcher Islands, is completely contained within Flaherty Island and extends 60-km southward and then curves westward around a fold nose to extend another 40-km northward. The northeastern-most extent of the lake is situated to the west of the Haig Inlet project. Because of its size and extent, any proposed development would need to consider minimizing the environmental impact on Kasegalik Lake.

Other than Sanikiluaq, several Inuit communities such as Kuujjuarapik, Umiujaq, Inukjuak, Puvirnituq and Akulivik located on the west coast of Québec provide a potential source of Inuit labour. Experienced mining personnel could be sourced from mining centres such as the Rouyn and Val D'Or regions in northern Québec as well as the Cochrane, Timmins and Kirkland Lake mining regions of northern Ontario.

### 6.0 HISTORY

The project was previously owned by Belcher Mining Corporation Ltd., which staked the Haig Inlet project in the 1950's. Exploration work included some minor trenching and drilling of 1186-m in 11 drill holes over an area of 1.5 square kilometers in 1954 (Gavreau, 1954). No production occurred from the property. Although a previous historical resource estimate of 907 million tonnes grading 27% Fe total is included in government records (Mining Management and Infrastructure Directorate, 1982), these are considered speculative and do not meet any standard of reportable resources or reserves. Although drill logs and assays still are available, insufficient information exists as to the location of these drill holes or how the previous resource estimates were generated. As well, the estimate does not conform to CIM resource classifications and is therefore not NI 43-101 compliant and cannot be considered as a current resource estimate. This historic resource estimate is provided only as historical information.

### 7.0 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 Regional Geology

The Belcher Islands form the western part of a Paleoproterozoic succession of sedimentary and volcanic rocks that rim the Ungava craton and include the Labrador Trough to the east and the Cape Smith Fold Belt to the north (Dimroth et al., 1970; Fryer, 1972). To the south, the succession is truncated by the Grenville Front. Broad correlations between the Belcher Fold Belt and the Labrador Trough were observed by Wahl (1953). These correlations also extend to the Cape Smith Belt suggesting a continuous rift system encircling much of the Superior Province. See Figure 7.1.

The Belcher Islands form the southern extension of the Superior geosyncline. This sequence of continental margin rocks comprises Middle Paleoproterozoic alternating shallow and deep water marine sediments that were interrupted by two sequences of tholeiitic continental basalt flows. The stratigraphy was subsequently deformed during the Trans-Hudsonian orogeny into a series of NE-SW trending doubly plunging anticlines and synclines. The Belcher Islands were originally mapped by Jackson in 1958-59 at a scale of 1:127,000. A more detailed field mapping program at a scale of 1:50,000 was completed by Ricketts et al. in 1982. See Figure 7.2, which is an adaptation of Jackson's map.

Bergeron 1957 suggests that the Belcher Island stratigraphy correlates with Paleo-Proterozoic fold belts outside the Hudson Bay region including Cape Smith, the Labrador Trough and the Mistassini

area. As a result, Dimroth et al (1970) suggest that these fold belts are part of the Circum-Ungava Geosyncline.



Figure 7.1 Regional Geology Map of Superior Province



Figure 7.2 Regional Geology Map of Belcher Islands

### 7.2 Local Geology

The geology of the Belcher Islands was first mapped in detail by Jackson (1960). Dimroth et al. (1970) assigned formation names to stratigraphic units defined by Jackson. K-Ar age dating of volcanic rocks by Jackson confirmed the Aphebian age of the Belcher Group, and an age of about 1.76-Ga (Rb-Sr) was obtained by Fryer (1972).

The metamorphic grade of the rock units on the Belcher Islands range between prenite-pumpellite and lower greenschist.

Hofmann and Jackson (1969) identified three major sedimentary and volcanic events that took place before the Hudsonian Orogeny, and a fourth event marked by gabbroic intrusions associated with the Grenvillian Orogeny (Ricketts et al, 1981). Mapping by Ricketts (1979) provided further details on the stratigraphy. The area of Haig Inlet and Tukarak Island to the east was remapped using ASTER satellite data by Wickert (2007).

The Belcher Islands consist of a thick (7000-9000-m) and remarkably consistent succession of distinctive rock units that record an evolution of basin development. The following is a summary of the stratigraphic column, depositional phases and tectonic events by Ricketts and Donaldson (1981). Their work suggests several depositional phases interrupted by tectonic events, summarized in Figure 7.3 and in the following descriptions.

		SHORELINE	WAVE BAS	SLOPE	UEEF 8ASI	DEPOSITIONAL PHASES	TECTONIC ELEMENTS
LOAF			+	/		PROGRADING	v
OMAROLLUK				$\sum$		SUBMARINE FAN- DISTAL MOLASSE	EXOGEOSYNCLINAL STAGE
FLAHERTY					4	SUBMARINE VOLCANISM	IV VOLCANIC RIDGE (ARC) STAGE
KIPALU MUKPOLLO ROWATT		E				PROGRADING BUILDUP RESTRICTED BASIN	111
LADDIE COSTELLO MAVOR				$\mathcal{P}$	MEGACYCLE II	TRANSGRESSIVE	SECOND MIOGEOCLINAL
TUKARAK MCLEARY		{	1		MEGACYCLE II (Beachrock Cycles)	CARBONATE PLATFORM	STAGE
FAIRWEATHER	000	R			MEGACYCLE I (Caliche Cycles)		
ESKIMO						FLOOD BASALT PHASE	II REACTIVATED RIFT STAGE
KASEGALIK	177	K	1			TRANSGRESSIVE CARBONATE PLATFORM	I INITIAL MIOGEOCLINAL STAGE

Figure 7.3 Stratigraphic Column of the Belcher Islands

#### 7.2.1 Kasegalik Formation – Phase 1 Transgressive Platform Phase

This unit represents the lowest stratigraphic unit on the Belcher Islands and is part of the first transgressive platform phase. Ricketts and Donaldson (1981) subdivided this formation into five zones: (a) a lowermost zone consisting of grey dolostone and 20% red mudstone; (b) 60 percent red mudstone; (c) stromatolitic dolostones; (d) cherty stramatolitic dolostone; (e) argillaceous and tuffaceous dolostones near the Eskimo Formation contact. The lithologies suggest a shallow marine platform with water depths gradually increasing from supratidal conditions at the base to shallow subtidal conditions near the top.

#### 7.2.2 Eskimo Formation – Phase 2 Plateau Type Volcanism

This unit is comprised of basalt flows that can reach thickness of 900m and is associated with a phase of plateau-type volcanism. Many of the exposed flows are columnar jointed and reach thicknesses of 20m. The tholeiitic basalts are fine grained and can exhibit both porphyritic and variolitic flow textures.

These flood basalts are interpreted to be associated with the reactivation of an east-west trending rift structure that extends through the Belcher Islands onto the western shore of Quebec.

Minor interflow sediments include interbeds of green and red argillites, cherts, and lapilli tuff.

Metamorphism reaches a grade of prehnite-pumpellyite to sub-greenschist faces.

#### 7.2.3 Fairweather, McLeary, Tukarak, Mavor, Costello and Laddie Formations – Phase 3 Platform Phase

The second platform phase consists of a succession of almost 2000m of carbonates and siliciclastics that have been subdivided into six formations.

#### 7.2.3.1 Fairweather Formation

This formation consists of an upper member of interbedded pisolitic dolostones, sandstones, red mudstones, and a lower member of silt and grit beds. The Eskimo-Fairweather contact is sharp and marked by lenticular beds of banded ironstone. The upper 15-20m of this member, comprised of tabular bedded quartz arenites, mark a brief interval of shallow marine conditions.

#### 7.2.3.2 McLeary Formation

This unit marks the evolution from clastic dominated sediments to a predominance of algal reefs. The unit is interpreted to mark a transition from supratidal to shallow subtidal environment. The contact with the underlying Fairweather Formation is conformable.

#### 7.2.3.3 Tukarak Formation

This unit marks a brief return to shallow water conditions marked by thin bedded, brick red mudstones and dolostones. A few thin stromatolites occur at the top of the formation.

#### 7.2.3.4 Mavor Formation

The formation is marked by laterally extensive stromatolitic dolostones and thin shale lutites. No evidence of shallow water deposition exists suggesting that the 100m stromatolitic build-ups likely occurred within a deeper water off-shore environment.

#### 7.2.3.5 Costello Formation

This unit is predominantly comprised of rhythmically bedded dololutites and calcarenites with shale partings. The contact with the Mavor formation is conformable. This unit is interpreted to be characteristic of carbonate platform foreslopes.

#### 7.2.3.6 Laddie Formation

This formation is comprised of red and intercalated red-green argillites and shales. The contact with the underlying Costello formation is gradational.

The following three formations, Rowatt, Mukpollo and Kipalu Formations are part of a restricted basin phase of deposition.

#### 7.2.4 Rowatt Formation

The Rowatt Formation is broken into two members comprised of a lower unit of predominantly sandstone-shale cycles up to 150cm thick that exhibit herringbone crossbeds, reactivation surfaces, and large scale ripple marks, and an upper member of buff dolostones. It is interpreted that these are part of a carbonate buildup that was bordered on the seaward margin by an intertidal apron.

#### 7.2.5 Mukpollo Formation

The Mukpollo Formation is comprised predominantly of quartz arenites and has conformable contacts with both the overlying Kipalu and underlying Rowatt Formations. This unit is interpreted as being deposited under shall-water to intertidal conditions, possibly on sand flats, sand bars or shallow subtidal shoals.

#### 7.2.6 Kipalu Formation

The Kipalu Iron Formation hosts the Haig Inlet Iron mineralization and is overlain by a sequence of flood basalts. The iron formation is comprised of granular cherts and banded red cherts suggesting an alternating sequence of near shore environment with deposition above and below the wave base and a deeper and quieter marine environment.

The Kipalu Formation is thought to be contemporaneous with other shallow marine segments of the Circum-Superior belt, which include the Sokoman Iron Formation in the eastern Labrador Trough that hosts extensive iron deposits.

Although the Kipalu Formation is folded along broad north-northeast fold axis, in the area of the Haig Inlet deposits the Iron Formation is predominantly flat lying. It is only at the north western margin of the property that an increasing dip towards the east is evident.

The Kipalu Formation which hosts the Haig Inlet mineralization is comprised of three major units: laminated ferruginous red cherts, hematite dominant iron formation and granulite-bearing jasper. The entire unit ranges from 45 to 125-m in thickness.

#### 7.2.7 Flaherty Formation

The Flaherty Formation underlies about 60 percent of the exposed Belcher Islands and forms many narrow arcuate peninsulas and prominent ridges. K-Ar dating indicates an older 1620-1693 Ma age group that has been correlated with the metamorphism associated with the Hudsonian Orogeny,

and a 830-1054 age group tentatively correlated with a mild thermal or tectonic event associated with the Grenville Orogeny. Rb-Sr determinations from the Flaherty and Omarolluk formations gave ages of 1717 and 1752Ma.

The Flaherty volcanics rest disconformably over top of the Kipalu formation. They consist of a sequence of pillowed flows with lessor volcaniclastics. The thickness of this unit varies from 1950m in the western Belcher Islands to 290m on the eastern portion of Tukarak Island. Columnar basalts are fairly common as are pillow lavas. It is interpreted that the Flaherty volcanism followed a period of regional uplift. On the basis of regional thinning trends, the eruption centre likely occurred to the west of the Belcher Islands. Volcanism was comprised to two types: a thick sequence of lava flows and pillows and explosive activity that gave rise to pyroclastics and water lain tuffs.

#### 7.2.8 Omarolluk Formation

This unit is comprised of regularly bedded argillites, shales and graded wackes. The contact with the Flaherty Formation is a sharp disconformity. The contact with the overlying Loaf Formation is gradational within arkosic wackes. Omarolluk is interpreted to reflect turbidite and shallow-water fluviatile facies and is up to 2100m thick.

#### 7.2.9 Loaf Formation

The Loaf formation is comprised of tabular and lenticular beds of crossbedded arkose that are interbedded with minor red and grey siltstone and mudstone. It is possible that the Omarolluk and Loaf formations are considered lateral equivalents.

### 7.3 Property Geology

The property geology is largely derived from observations by Hutteri (2011) and the author.

The main target of Canadian Orebodies drill program was the higher Fe grades within the Kipalu Iron Formation, which in the area of drilling forms a relatively flat lying deposit forming a broad shallow syncline with a north south fold axis plunging very gently towards the north.

The Kipalu Iron Formation is underlain by the Mukpollo quartzite, which was only intersected in a few of the deeper drill holes. The Mukpollo quartzite is a hard, thickly bedded white to slightly pinkish fined to coarse grained quartzite.

The top of the Kipalu Iron Formation is comprised of a black pyritic carbonaceous argillite unit 10-50cm thick underlain by a green to grey brown argillite. The black carbonaceous argillite can contain 1-2 % pyrite and trace pyrrhotite. The argillite is interbedded with an underlying granular chert which carries intermittent intervals of disseminated coarse magnetite grains and jasper granules. These two units range in thickness from 1-3-m. The granular chert unit is well exposed in the west cliff face of Iron Cove located to the east of Haig Inlet.

These units are underlain by a brown to red weakly laminated Red Chert ranging from roughly 3 to 16m in thickness.

Below this unit, a high grade hematite dominant interval that reflects this study's estimated Mineral Resources grades between 27 and 45% Fe, and averages 35% Fe over an average 15-m thickness. The

thickness of this zone ranges from 4-m at the extreme northwest of Haig North to 22-m, however 75% of the intercepts range from 14 to 18-m in true thickness. The high grade Hematite Iron Formation unit is comprised primarily as very fine disseminated hematite with relatively minor magnetite. The unit is typically dark reddish to locally having a metallic red sheen, red brown streak on porcelain, very fine grained, thinly banded to more massive. The unit is generally quite hard with fine silica and occasionally 10-cm thick grey cherty beds with diffuse contacts. Near the upper contact, the zone is typically more massive and typically contains the highest grades in the interval, often ranging between 37 and 45% Fe. This unit grades downwards into a semi-massive banded hematite unit with decreasing hematite content and then into the lower grade Red Chert unit below.

The ferruginous Red Chert unit below the high grade Hematite Iron Formation unit ranges in grade from 19-34% Fe and averages 26.4% Fe. The thickness of the Red Chert unit ranges from 20 to 36-m and averages 29-m. This Red Chert unit was not included in the resource estimate due to the hematite grain size being too fine to liberate. The Red Chert is weakly laminated and predominantly weakly to non-magnetic. Disseminated and thinly banded intervals of hematite occur locally however hematite content decreases with increasing depth. This unit is underlain by reddish jasper rich coarse grained granular chert beds that are interbedded with red and green argillite. Magnetism corresponds to presence of disseminated coarse magnetite grains and varies from weak to moderately magnetic over relatively narrow (<2-m) intervals.

The Kipalu Formation capped by a black carbonaceous to graphitic and variably pyritic argillite is commonly intruded by gabbroic sills in the upper contact area. These sills can be up to several tens of meters in thickness. The gabbro, which is medium to coarse grained, massive dark greyish green, moderately hard, equigranular to locally porphyritic, weak to non-magnetic and feldspar-rich form the bulk of outcrop exposures in the Haig Inlet area.

The gabbros are overlain by the Flaherty Basalts which occur as outcrop exposures mainly in the north and northeast portion of the drilled area. They are green to grey, fine to very fine grained, with poor to moderately preserved pillow selvages and occasional amygdules.

### 8.0 DEPOSIT TYPE

Lake Superior type iron formations have been the principal sources of iron ore throughout the world. These types of iron formations form in shelf and platformal basins along the margins of Early to Middle Proterezoic cratons. They are comprised of shelf-type sedimentary rocks including dolomite, quartzite, arkose, black shale, conglomerate, tuff and other volcanic rocks in the form of linear basins along craton margins (Gross, 1996). The distribution of Lake Superior iron formations around the margins of the Superior-Ungava craton of the Canadian Shield is highlighted in Figure 7.1.

Superior-type iron formations are typically regional scale stratigraphic units that are relatively easy to define by mapping or with the aid or aeromagnetic and gravity surveys. Detailed stratigraphic information is an essential part of the data base required to define grade, physical and chemical quality, structural complexities that can facilitate the enrichment of the iron formation and the distribution of different iron-formation lithofacies.

Superior type oxide facies iron formations, deposited in highly oxidizing environments, typically have a low content of deleterious elements such as sodium, potassium, sulphur, and arsenic, which can all have a negative effect on final product quality.

Granular, medium to coarse grained textures with well-defined grain boundaries enable easier liberation and separation of Fe oxide mineral grains in the concentration and beneficiation of crude ore. In terms of benefication, coarse grained oretypes are preferred over fine grained hematite dominant or mixed facies.

Superior-type iron formations typically exhibit low iron grades but can be elevated to "ore-grades" through a variety of enrichment processes such as leaching of silica and carbonates by meteoric or syn-orogenic heated fluids and recrystallization of magnetite ores by metamorphism. In many iron deposits surrounding the Ungava craton, the Hudsonian orogeny provided iron enrichment fluids. It is quite possible that on Haig North and South the overlying carbonaceous shale and overlying gabbros created an impermeable cap to fluids potentially associated with an interpreted ENE trending fault extending through Haig Inlet. This potential is supported by the decrease in high grade and thickness towards the north and south extents of Haig Inlet. As well, the highest Fe grades are concentrated at the top of the high grade Hematite Iron Formation and decrease downhole in virtually all of the drill holes.

The geological concepts applied in the current investigation of the Belcher Islands include the typical extensive regional scale associated with Superior type iron formations, the relatively low deleterious grade ores associated with these types of deposits, stratigraphic understanding of the basin development, potential for Fe enrichment processes under impermeable caps, potential for enriched Fe grades associated with elevated metamorphism, fault structures and fold closures, potential of folding to increase thicknesses of iron formation, and potential for granular facies magnetite iron formation that may facilitate easier benefication characteristics.

Lastly, exploration was focused on targets that reflect the extensive continuity in grade and thickness of iron formations, which are in close proximity to tidewater, maintain elevated iron grades and reflect reasonable strip ratios.

### 9.0 EXPLORATION

Exploration was comprised of diamond drilling which is described in Item 10.

### **10.0 EXPLORATION DRILLING**

Exploration drilling completed by Canadian Orebodies commenced in the summer of 2011 and was based on drilling at roughly 500-m centres, which were later filled in with staggered holes that

decreased hole spacing to roughly 250-300-m on the southern portion of north Haig Inlet. The goal of the drill program was to define a mineral resource with an Inferred or greater level of confidence.

Drillholes were centred on east-west lines A, B, C, D, E and F spaced 500-m apart as part of an initial phase of drilling. (See Figure 10.2) The first three southern section lines were later infilled with a second phase of staggered holes on lines AB and AC with hole collars located roughly in the centre point between 500-m spaced drill holes. In several areas this protocol had to be adjusted to avoid bodies of water and streams to accommodate drill permit requirements.

Drilling was comprised of NQ diameter core in 64 drill holes. Drill holes averaged 139-m in depth with a minimum depth of 28.1-m in a failed drill hole and a maximum depth of 275-m. The drilling completed by three Boyles 37 fly rigs was contracted to Cyr Drilling International Ltd based in Winnipeg, Manitoba. Approximately 9,119-m of core were drilled from July to mid-September of 2011. All drill holes were oriented with vertical dip to intersect a largely flat lying deposit. Due to drilling conditions, holes CO11-52 at 71-m and CO11-27 at 28.1-m were abandoned, well short of the iron formation target.

All of the holes were targeted on the spit of land north of Haig Inlet with the exception of hole CO11-53, which was targeted in the centre of the spit of land south of Haig Inlet.

The drill program was successful in outlining an enriched higher grade hematite interval within the iron formation, establishing continuity of grade and thickness of this high grade unit across a sufficiently large area to estimate Mineral Resources.

Core sampling via saws or splitters were completed by local Inuit labourers and supervised by Canadian Orebodies or Fladgate personnel. Core recovery was generally excellent with very little losses. Core recoveries averaged 97.5% and the samples are considered representative with no evident biases.

Samples were generally two metres in length over the Hematite Iron Formation and Red Cherts and for several metres into the weakly mineralized overlying red/green argillites and granular cherts underlying the lower red argillites.

Intervals for density measurements were flagged at a rate of 3 widely spaced intervals per drill hole throughout the mineralized zones.

Core was photographed, logged and sample intervals were marked on core and identified with sample tags.

Core logging was aimed at collecting lithological, sulphide, core recovery, RQD, structures and veining data. Core logging was largely completed by geologists contracted from Fladgate.

The drilling was focused on the north side of Haig Inlet with 63 drill holes. A single hole was, however, also drilled to the south of Haig Inlet. The majority of drilling was targeted on north of Haig Inlet covering a 3 by 3-km area. Another area of drilling extended further northwest towards Sanikiluaq with one to two holes per 500-m spaced sections along the west facing slopes overlooking the East Arm of Kasegalik Lake. Samples were collected for Fe assays as well as for deleterious grades and density measurements. A total of 1564 core samples were collected for assay.

A second set of 15 samples were collected for mineralogical work from a fence of three broadly spaced drill holes that extend diagonally across the mineralization from southeast to northwest. (CO-11-1, CO-11-14, and CO-11-40). Complete results from this work are pending.

Hole collars were surveyed using the Thales ProMark4 which provides sub meter accuracy with corrections provided by WAAS satellites. Downhole surveys were completed for the first twenty holes, half way down the hole and at its base. Because deviation in these relatively short holes was less than a degree, deviation was not deemed material in terms of the wide drill hole spacing and lateral continuity of mineralization. As a result, the downhole surveys were discontinued for the balance of the drill program.

See Table 10.1 for a list of drill holes, locations, hole depths, azimuths and dips. A complete list of sample interval grades, lengths and depths are included in Appendix A. In this Table high grade Hematite Iron Formation zone interval lengths represent true widths except for the holes located to the extreme northwest where the dip of the iron formation becomes increasingly steeper.

See Figure 10.1 for a drill plan of the 2011 program.

Table 10.1 List of Drill Hole Locations								
Hole Id	Northing	Easting	Elevation	Depth	Dip	Azimuth	Year	Location
CO11-1	6245585.72	619745.4	50.95	123	-90	360	2011	N Haig
CO11-10	6246047.3	617890.6	62.45	116	-90	360	2011	N Haig
CO11-11	6246624.7	620176.9	47.71	68	-90	360	2011	N Haig
CO11-12	6246533.78	619796.7	65.34	119	-90	360	2011	N Haig
CO11-13	6246459.95	619309.6	64.89	110.4	-90	360	2011	N Haig
CO11-14	6246529.86	618663.9	61.54	136	-90	360	2011	N Haig
CO11-15	6246436.55	618272.5	60.99 E1.0E	131	-90	360	2011	N Haig
CO11-10	6246522.76	620800 8	51.95 47.75	110	-90	300	2011	N Haig
CO11-17	6240974.20	620206.0	47.75	132	-90	360	2011	N Haig
CO11-19	6247003.45	619746.3	72.87	133.5	-90	360	2011	N Haig
CO11-2	6245487.1	619247.8	58.82	101	-90	360	2011	N Haig
CO11-20	6246991.65	619207.5	69.59	143	-90	360	2011	N Haig
CO11-21	6247013.8	618765.4	63.94	146	-90	360	2011	N Haig
CO11-22	6247050.04	618187.4	51.57	128	-90	360	2011	N Haig
CO11-23	6247519.04	621120.5	41.77	167	-90	360	2011	N Haig
CO11-24	6247474.47	620256.7	75.12	137	-90	360	2011	N Haig
CO11-25	6247370.24	619562.3	62.25	146	-90	360	2011	N Haig
CO11-26	6247505.72	618754.1	72.32	134	-90	360	2011	N Haig
CO11-27	6247542.71	618082.9	70.78	28.1	-90	360	2011	N Haig
CO11-28	6246744.01	620496.9	67.93	144	-90	360	2011	N Haig
CO11-29	624/2/0.18	620750.4	59.34	190	-90	360	2011	N Haig
CO11-3	6245582.16	618/84.3	60.95	125	-90	360	2011	N Haig
CO11-30	6248449.24	618196 7	71 39	200	-90	360	2011	N Haig
CO11-32	6249492 32	617505.9	79.63	140	-90	360	2011	N Haig
CO11-33	6249526.43	617410.4	72.85	120	-90	360	2011	N Haig
CO11-34	6250467.02	617434.5	86.63	175	-90	360	2011	N Haig
CO11-35	6250496.96	617308.8	85.4	158	-90	360	2011	N Haig
CO11-36	6250013.13	617290.7	84.59	161	-90	360	2011	N Haig
CO11-37	6249006.05	617560.8	69.29	131	-90	360	2011	N Haig
CO11-38	6251426.26	617327.6	64.14	152	-90	360	2011	N Haig
CO11-39	6251495.63	617741.4	81.98	275	-90	360	2011	N Haig
CO11-4	6245516.67	618272.8	58.22	134	-90	360	2011	N Haig
CO11-40	6247997.06	617801.3	75.36	125	-90	360	2011	N Haig
CO11-41	6248006.25	618292.5	64.92	167	-90	360	2011	N Haig
CO11-42	6245759.67	619475.8	66.22	120	-90	360	2011	N Haig
CO11-43	6245754.25	619004.6	70.28	135	-90	360	2011	N Haig
CO11-44	6245745.29	618026.7	54.37 61.85	110	-90	300	2011	N Haig
CO11-45	6246235.63	619/90.9	72 32	118 5	-90	360	2011	N Haig
CO11-47	6246180.45	618992 7	67.27	126	-90	360	2011	N Haig
CO11-48	6246231.83	618519.4	63.85	126	-90	360	2011	N Haig
CO11-49	6246229.1	618021	59.44	120	-90	360	2011	N Haig
CO11-5	6245518.14	617763.7	77.33	135.4	-90	360	2011	N Haig
CO11-50	6247593.55	620607.6	73.7	172.5	-90	360	2011	N Haig
CO11-51	6248437.76	618590.8	71.14	188	-90	360	2011	N Haig
CO11-52	6248487.09	621402.6	52.67	248	-90	360	2011	N Haig
CO11-53	6243765.19	618683.4	63.68	176	-90	360	2011	S Haig
CO11-54	6247966.11	621293.8	33.42	200	-90	360	2011	N Haig
CO11-55	6248005.57	620762.9	78.65	260	-90	360	2011	N Haig
CO11-56	6247989.9	620249.6	79.75	179	-90	360	2011	N Haig
CO11-57	6248010.32	619750.1	/3.22	176	-90	360	2011	N Haig
CO11-58	624/820.11	619283.2	65.83	164	-90	360	2011	N Haig
CO11-59	6247748.2	610703.4	65.94	167	-90	360	2011	N Haig
CO11-59A	62/16/01 10	610740	61 OF	101	-90	360	2011	N Haig
CO11-60	6247461 7	617732 1	68 27	90	-90	360	2011	N Haig
CO11-61	6247259 46	619067 6	66 92	146	-90	360	2011	N Haig
CO11-62	6247527.8	618307.7	65.89	165	-90	360	2011	N Haig
CO11-63	6246812.38	620000.3	69.56	120	-90	360	2011	N Haig
CO11-7	6245997.05	619244	66.35	137	-90	360	2011	N Haig
CO11-8	6245995.65	618756.1	64.93	116	-90	360	2011	N Haig
CO11-9	6245966.19	618258.4	54.98	134	-90	360	2011	N Haig



Figure 10.1 Drill Plan for 2011 Program

See Figure 10.2 for a representative drill section through the 2011 program. Note the vertical scale has been exaggerated at a 1:5 scale. Lateral spacing between drill holes on this section is approximately 500m.



Figure 10.2 Representative Drill Section for 2011 Program

The exploration drill program was successful in outlining a continuous high grade hematite interval, averaging 15-m in thickness. This unit was sufficiently well defined to allow for the estimation of Indicated and Inferred Mineral Resources.

### **11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY**

Sample preparation in the field was comprised of either cutting the core in half with a saw or splitting it with a hydraulic splitter. The hanging and footwall intervals were stored at site while the remaining split half core of the ore zones was shipped to Timmins for storage at a Canadian Orebodies warehouse. Samples for assay were sealed in labelled bags with sample tags and plastic locking seals and then stored in sealed and labelled 10 gallon pails. These were then shipped via helicopter to Sanikiluaq airport and directly loaded onto a Beechcraft King Air operated by Wabusk Air for shipment to Cochrane, Ontario where they were transported to SGS in Lakefield, Ontario. Sample shipment lists were compiled in order to track assays through the sample preparation and assaying process. Access to sample shipments was restricted to Canadian Orebodies personnel on site, while access during shipping to the laboratories was restricted to shipping company personnel.

Certified iron standards reflecting the Haig Inlet grades were purchased for insertion into the sample stream. These were inserted at a rate of approximately 1 per 21 samples. A separate suite of duplicate pulps were submitted at a rate of 1 in 30 samples for testing at ALS Chemex in Vancouver. SGS also inserted their own internal standards and ran their own duplicate tests on the sample stream.

Results of the inserted standards were plotted and checked for assay drift and erroneous assays. All results were within an acceptable 1 standard deviation of the certified mean grade.

All sample preparation including weighing, drying, crushing and grinding was completed by SGS, which is independent from the issuer. SGS is accredited by the Standards Council of Canada under Accredited Laboratory No. 184 and according to documentation provided by SGS conforms with requirements of "Guidelines for the Accreditation of Mineral Analysis Testing Laboratories" CAN-P-1579 and "General Requirements for the Competence of Testing and Calibration" CAN-P-4E (ISO/IEC 17025:2005).

SGS procedures commenced with weighing of samples and measurement of gravimetric moisture followed by drying at 105°-C. This was followed by a coarse crush of up to 3-kg of sample to 75% passing 9 mesh or 2-mm. Samples were then riffle split and 250 grams were pulverized to 200 mesh or 75-micron. A pycnometer was used to generate density values. Loss on Ignition (LOI) was measured at 1000°-C while sulphur as SO3 was measured by Leco. Borate Fusion Whole rock XRF was used to determine the balance of oxide grades. The following Table 11.1 indicates the detection limits for the various assay methods.

Table 11.1 Detection Limits via Borate Fusion Whole Rock XRF Reporting Limits (XRF76C)							
Element	Limit (%)	Element	Limit (%)	Element	Limit (%)		
SiO2	0.01	Na2O	0.01	CaO	0.01		
Al2O3	0.01	TiO2	0.01	MgO	0.01		
Fe2O3	0.01	Cr2O3	0.01	K2O	0.01		
P2O5	0.01	V2O5	0.01	MnO	0.01		

In the author's opinion the sample preparation, security and analytical procedures and results were appropriate and reflected industry standards for iron ore projects.

### **12.0 DATA VERIFICATION**

Data verification was completed by the independent QP, GH Wahl. Verification included crosschecking 5% of the collar locations in the field and with the electronic database to see that the locations and elevations were correctly recorded. Core sampling intervals were checked during site visits as well as sample handling procedures. Approximately 5% of the assay certificate results were cross-checked against the electronic database. Inserted standard and duplicate results were graphed and checked for anomalous results. Core recovery measurements were checked against logging. Core logging was checked for consistency against drill core intervals during the site visit. Specific gravity and assay results were checked for outliers. Sample intervals were cross-checked for sample overlaps or sample mix-ups with QAQC samples in the electronic database. QAQC standard results were checked for anomalous results.

Standards for insertion were certified by the Max-Planck Institute in Dusseldorf, Germany. The standard assays were certified by using 10 laboratories in Germany of which each completed 6 separate assays. The final certified grade was averaged from the average of six samples from each laboratory.

Standards were inserted at a rate of 1 in 21 samples while duplicate pulps samples sent to ALS Chemex as an independent cross-check were taken every 1 in 30 samples. Standard and duplicate results were analyzed for all major oxides. All standard results were within 1 standard deviation of the mean grade. As well, duplicate pulp results from ALS Chemex using the identical XRF assay method returned a high correlation coefficient above 99% with XRF results from SGS. An example of the Fe2O3 regression between ALS Chemex and SGS is included in Figure 12.1.

Both laboratories, SGS (Lakefield) and ALS Chemex (Vancouver), are appropriately accredited for the XRF assay methodology.



Figure 12.1 Regression Plot of Fe2O3 between ALS Chemex and SGS

In the author's opinion the various verification analyses and checks indicate that the dataset is of appropriate quality for the estimation of Mineral Resources.

### **13.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

A first batch of three widely spaced mineralogical samples were selected from North Haig drill holes with two samples representing the lower Red Chert unit that average 20 to 29% Fe and a third sample representing the upper Red Chert unit. The two Red Chert samples #14127 and #41749 graded 22.73 and 24.9% Fe while the upper Red Chert sample #14002 graded 28.2% Fe. The goal was to assess the mineralogical characteristics of these fine grained Red Chert units and to provide some preliminary insights into their potential for processing.

Mineralogical samples were analyzed at SGS (Lakefield) with a focus on evaluating the potential of various oretypes for processing. Two samples taken from fine grained Red Chert external to the resource zone tabulated in this report and a third sample above the upper contact of the Hematite Iron Formation within the upper Red Chert were selected to assess characteristics of lower Fe grade material. Additional sample results of the high grade Hematite Iron Formation, which are the subject of this resource estimate, are pending.

Testwork was comprised of Qualitative X-Ray Diffraction and Quantitative Evaluation of Materials by Scanning Electron Microscopy. Qualitative X-Ray Diffraction analysis was completed by SGS using a BRUKER AXS D8 Advance Diffractometer, which identifies and provides the relative proportions of minerals in each sample.

The results tabulated in Tables 13.1 and 13.2 indicate that hematite (with and without siderite) are the dominant iron oxide minerals in the two lower Red Chert samples (#14127 and #41748), while in the upper Red Chert sample (#14002), hematite is the predominant Fe mineral. Quartz occurs most frequently in all three samples.

Table 13.1 Summary of Qualitative X-ray Diffraction Results							
Crystalline Mineral A	ssemblage (relative p	roportions based or	n peak height)				
Sample ID	Major	Moderate	Minor	Trace			
14002 As Received	quartz	hematite, siderite, magnetite	stilpnomelane, chlorite	*kaolinite, *ilmenite, *potassium-feldspar			
14127 As Received	quartz	hematite, siderite	stilpnomelane, chlorite, kaolinite, pyroxene, calcite	*garnet			
41748 As Received	quartz	hematite	siderite, stipnomelane, calcite, chlorite, kaolinite, pyroxene	*garnet			

\* tentative identification due to low concentrations, diffraction line overlap or poor crystallinity

Table 13.2	Table 13.2 Composition of Minerals Encountered							
Minorel	Composition							
wineral	Composition							
Chlorite	$(Fe,(Mg,Mn)_5,AI)(Si_3AI)O_{10}(OH)_8$							
Garnet	(Ca,Mg,Mn <sup>2+</sup> ) <sub>3</sub> (V,AI, Fe <sup>3+</sup> ) <sub>2</sub> (SiO <sub>4</sub> ) <sub>3</sub>							
Hematite	Fe <sub>2</sub> O <sub>3</sub>							
Ilmenite	FeTiO <sub>3</sub>							
Kaolinite	$AI_2Si_2O_5(OH)_4$							
Magnetite	Fe <sub>3</sub> O <sub>4</sub>							
Potassium Feldspar	KAISi <sub>3</sub> O <sub>8</sub>							
Pyroxene	(Ca,Na)(Mg,Fe,Al,Ti)(Si,Al) <sub>2</sub> O <sub>6</sub>							
Quartz	SiO <sub>2</sub>							
Siderite	FeCO <sub>3</sub>							
Stilpnomelane	KFe2 <sup>+</sup> 4.3Mg1.4Fe3 <sup>+</sup> 2.3Si10Al2O24(OH)32(H2O)							

Scanning Electron Microscopy (SEM) on the same three samples was completed by SGS (Lakefield). The following Figures 13.1A and 13.1B of sample #41748 indicate that the hematite grain size in the Red Chert unit, which grades 20-28% Fe, is extremely fine at 1-2 micron. (Note that the brightest mineral within the particle is hematite and that Figure 13.1B (Image B) is a higher magnification image of the noted area on Figure 13.1A (Image A). As well, the fine hematite grains are intergrown with silicates. Similar results are evident with the second Red Chert sample #14127. Due to the small grain size and intergrowths with silicates, this material type would not be amenable to producing a saleable concentrate product. Sample #14002 immediately above the main Hematite Iron Formation zone demonstrates far better characteristics. (See Figure 13.2)



Figure 13.1A SEM-BSE Image (A&B) of Sample



Figure 13.1B SEM-BSE Image (A&B) of Sample #41748

The following Figure 13.2, depicting an SEM image of sample #14002, shows significantly more coarse-grained hematite crystals interlocked with silicates and carbonates than the lower Red Chert samples.



Figure 13.2 Scanning Electron Microscope Backscatter Electron Image (SEM-BSE) of Sample #14002 (+212 μm size Fractions)

SEM work on sample #14002 collected just above the upper contact of the Hematite Iron Formation zone but within the upper Red Chert unit indicates far better hematite grain size characteristics, which should be amenable to modern processing methods.

High Definition Mineralogical Analysis using QEMSCAN (Quantitative Evaluation of Materials by Scanning Electron Microscopy) was also completed by SGS on the three samples.

Elemental deportment by Fe% mass for sample #14002 located in the upper Red Chert immediately above the high grade hematite zone at various grind sizes in Figure 13.3 indicates that a bulk of the total Fe is associated with Fe oxides at all grind sizes.



Figure 13.3 Elemental Deportment for Sample #14002

The following Figure 13.4 indicates that the sample #14002 exhibits far better liberation characteristics than the two Red Chert samples where the fe-oxides are largely locked due to the large proportion of fe-oxide grains that are intergrown with silicates. Sample #14002 is encouraging as it more closely reflects the grade and character of the main Hematite Iron Formation.



#### Figure 13.4 Fe Oxide Liberation

As a result of the above mineralogical testwork, the lower Red Chert geological unit (which graded 20-28% Fe and lies immediately below the Hematite Iron Formation) was excluded from the resource estimate. Sample #14002, with a head grade of 28.2% Fe collected from the upper Red Chert immediately above the main Hematite Iron Formation unit, returned encouraging results in terms of its potential to be upgraded and to produce a saleable product grade.

It is assumed that the grain size and Fe-oxide liberation characteristics will further improve with the higher grades associated with the main Hematite Iron Formation.

The average Mn content of the Hematite Iron Formation zone at 0.89% still remains an issue that needs to be resolved with further mineralogical work. Assessment of its distribution, grain size and potential liberation characteristics is the subject of ongoing mineralogical work.

### **14.0 MINERAL RESOURCE ESTIMATES**

The Mineral Resources for the Canadian Orebodies Haig Inlet iron deposit, located on Flaherty Island in Hudson Bay have been estimated by GH Wahl (P Geo).

The Mineral Resources are reported in accordance with Canadian Securities Administrators ("CSA") NI 43-101 and have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserves. The Mineral Resources are reported only from within the main Hematite Iron Formation unit and within a pit shell which reflects reasonable prospects for economic extraction.

The Mineral Resource estimate is based on a 3D geological model constructed using assay and core logging data from 9,119-m of drilling in 64 drill holes. Block grades were estimated using ordinary kriging methods and cross checked using inverse distance interpolation methods and sectional comparisons of composite grades versus interpolated block grades.

The resource estimate has been completed by GH Wahl (P Geo), who has reviewed the pertinent geological information in sufficient detail to support the data incorporated in the resource estimate. GH Wahl is an independent Qualified Person as defined under NI 43-101 and is responsible for the Mineral Resource estimate. The effective date of the Haig Inlet Mineral Resource estimate is February 5th, 2012.

### 14.1 Solid Modeling

Methodology used to build solids was comprised of wireframing the high grade hematite dominant iron formation. This unit corresponds with a roughly 29% Fe grade while mineralization below 29% Fe was associated with a geological unit classified as Red Chert and was not included in the current resource estimate. The interval of Red Chert grading in the 20-29% Fe range was excluded as preliminary mineralogy results indicated that a large portion of the hematite occurs as 1-2 micron crystals intergrown with silicates and would fail in achieving a saleable concentrate grade. A single sample at 28% Fe taken in the Red Chert unit immediately above the Hematite Iron Formation interval indicated significant coarsening of hematite grain sizes.

Solids were clipped to topography where the iron formation was exposed at surface.

Solid boundaries were extended to the shore of the peninsula, up to 1-km beyond the last drill holes in the north or where the zone narrowed to 4m in thickness at the extreme northwest extent.

The solid for the Haig North iron formation was comprised of 222,197,317 cubic metres or 779,001,574 tonnes, while the solid for the Haig South iron formation was comprised of 51,436,433 cubic metres or 180,381,810 tonnes.

The Haig north solid measures approximately 4.5-km north-south and ranges from 2.5-km wide at the south end of the peninsula to 5.5-km wide at the northern extent. The solid ranges in true thickness from a minimum of 4-m at the extreme north east to a maximum of 22-m. The average true thickness is 15.16-m. The following Figure 14.1 indicates that for 40 of the 57 holes (~70%) which penetrate the Hematite Iron Formation zone, the true thickness ranges between 14 and 18-m.

No overburden was modelled for the deposit as most holes were collared in bedrock. The presence of glacial till would likely exist on the lower western slopes extending to the Kasegalik Lake in the west and towards Kihl Bay in the east.



Figure 14.1 Zone Thickness

The following Figure 14.2 indicates the relatively narrow range of average Fe grades for the averaged mineralized drill hole intercepts. Generally, average intercept grades in each drill hole range between 31.66 and 36.19% Fe. Figure 14.2 indicates a roughly normal distribution within a very tight grade range suggesting a very high degree of grade continuity over the 16.5 square kilometre area drilled at North Haig.



Figure 14.2 Frequency Distribution of Average Fe Intercept

The Haig South solid measures approximately 2-km north-south and 2.5-km east-west, covering a surface area of 3.5 square kilometres that underlies the entire tip of the Haig South peninsula. The

solid is penetrated by a single drill hole, CO11-53, located in the centre of the peninsula. True thickness is estimated at a drilled width of 14-m.

Figure 14.3 provides an oblique northwest view of a north-south cut section through both the South Haig area to the left and the North Haig area to the right. Based on the depth of the single hole in the centre of Haig South and the presence of exposed iron formation around the cliff faces of the entire peninsula a spoon shaped zone was interpreted. For North Haig, the section shows a generally flat lying deposit with a slight dip increasing in depth towards the north.



Figure 14.3 Oblique View of the Haig South and North Zones

A complete list of drill hole iron formation intervals, grades, depths and thicknesses is included in Appendix A.

### 14.2 Topographic Surface

Contour lines were re-generated from government topographic map CanTopo in a geotiff format. Original CanTopo maps were at a scale of 1:50,000. Raster images were reset as dxf wireframes. This dataset was then blended with the ProCon GPS survey of drill collars which was calibrated to WAAS satellite to provide sub-metre horizontal accuracy. As the WAAS satellite corrections are not yet calibrated for the Belcher Island area, the elevations were factored against sea level measurements.

### 14.3 Compositing

The composite file was based on 2m composites and included intervals at a minimum width of 1.5-m. This composite interval reflects the predominant sample length in the raw database (see Figure 14.4). There was no material difference in mean grades by varying the % composite length included.



Figure 14.4 Histogram of Sample Lengths

### **14.4 Basic Statistics**

The 2-m composite file used to generate basic univariate and bivariate statistics indicate 425 composites intersected the mineralized iron formation solid (see Table 14.1). Statistics indicate low levels of deleterious phosphorus and sulphur grades. Mean manganese grades at 0.88% are relatively high in comparison to many other iron deposits with the exception of Cleveland Cliffs Natural Resources operating Scully Mine in Wabush and Alderon Iron Ore Company's Rose Central deposit which carry Mn grades in excess of 1%.

Fe grades occur within a fairly tight range between 27.14 and 45.53% with a mean of 33.94% Fe. Frequency plots indicate a normal distribution for Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, and Mn. Coefficient of variation is extremely low with the exception of S whose mean grade is proximal to the assay detection limit.

Bivariate statistics indicate a strong negative correlation between Fe and SiO2 as well as MgO and Al2O3.

Table 14.1 Basic Composite Statistics										
Variable	Fe %	Al2O3 %	SiO2 %	MgO %	Mn %	Р%	S %			
Number of samples	435	435	435	435	435	435	420			
Minimum value	27.14	0.53	24.3	0.63	0.19	0.02	0.01			
Maximum value	45.53	4.05	51.3	4.11	2.67	0.06	0.19			
Mean	33.94	1.72	40.65	2.14	0.88	0.03	0.02			
Median	33.78	1.64	41.30	2.17	0.82	0.03	0.01			
Geometric Mean	33.78	1.61	40.42	2.03	0.82	0.03	0.01			
Variance	10.87	0.39	17.82	0.42	0.12	0.00	0.00			
Standard Deviation	3.30	0.62	4.22	0.65	0.34	0.00	0.02			
Coefficient of variation	0.10	0.36	0.10	0.30	0.39	0.10	1.01			
Skewness	0 494	0 791	-0 808	0.083	1 425	4 118	5 002			
Kurtosis	3 178	3 816	3 963	2 830	6 687	30 997	35 336			
	5.170	5.010	5.505	2.030	0.007	50.557	55.550			
Natural Log Mean	3.519846	0.478311	3.699278	0.708875	-0.19565	-3.49109	-4.20816			
Log Variance	0.0092	0.134468	0.012197	0.113911	0.146949	0.007872	0.307928			
10.0 Percentile	29.80	1.02	35.00	1.29	0.55	0.03	0.01			
20.0 Percentile	30.85	1.18	37.40	1.61	0.66	0.03	0.01			
30.0 Percentile	31.89	1.34	39.10	1.76	0.72	0.03	0.01			
40.0 Percentile	32.87	1.51	40.20	1.99	0.77	0.03	0.01			
50.0 Percentile (median)	33.78	1.64	41.30	2.17	0.82	0.03	0.01			
60.0 Percentile	34.69	1.80	42.20	2.34	0.88	0.03	0.02			
70.0 Percentile	35.60	1.96	43.20	2.47	0.95	0.03	0.02			
80.0 Percentile	36.51	2.21	44.00	2.67	1.06	0.03	0.02			
90.0 Percentile	38.05	2.56	45.30	2.95	1.36	0.03	0.03			
Trimoon	22.75	1.65	<i>4</i> 1 1E	2.15	0.92	0.02	0.01			
Piweight	33.75	1.05	41.15	2.15	0.85	0.03	0.01			
	2 225 001	1.00	41.17	2.14	0.81	Not Calcul	0.01			
	2.555691	0.405	2.55	0.450001	0.1475		0.005157			
Sichol t	24.02207	1 725264	10 6619	2 150/18/	0.1001	0 020599	0.0172/2			
	55.95402	1.725204	40.0040	2.130464	0.004033	0.050566	0.017542			
Correlation Coefficient Table										
	Fe %	Al2O3 %	SiO2 %	MgO %	Mn %	P %	<u> </u>			
Fe %	1	-0 6395	-0 7966	-0 6569	0 0703	0.0124	-0 0257			
Al2O3 %	-0 6395	1	0 2896	0 8594	0 2114	0 2231	-0 0547			
SiO2 %	-0 7966	0.2896	1	0.2937	-0.4918	-0.1278	-0.0272			
MgO %	-0 6569	0 8594	0 2937	1	0.0827	0 1184	-0.0602			
Mn %	0.0703	0 2114	-0 4918	0 0827	1	0 1171	0 0944			
P %	0.0124	0.2231	-0.1278	0.1184	0.1171	1	-0.0764			
S %	-0.0257	-0.0547	-0.0272	-0.0602	0.0944	-0.0764	1			

Block model origin and extents are included in Figure 14.2. The block model was designed to include both the North and South Haig areas and be sufficiently large to accommodate pit slopes.

Table 14.2 Block Model Origin and Extents									
Туре	Northing	Easting	Elevation						
Minimum Coordinates	6242400	616000	-250						
Maximum Coordinates	6253050	623050	150						
User Block Size	75	75	2						
Min. Block Size	75	75	2						
Rotation	0	0	0						

### 14.5 Geostatistics – Variography

Variography was only conducted on Fe grades. Downhole variograms indicated a nugget at 0.54 gamma. Database variograms oriented to reflect the relatively flat geometry of the stratigraphy indicated an upper range of 1500-m. Lateral ranges for the search ellipse were derived from a single structure normal variogram.



Figure 14.5 Lateral Modelled Variogram

### **14.6 Density Determination**

A total of 179 samples from the iron formation were analyzed using a pycnometer. A single outlier sample was excluded from the regression formula. See Figure 14.6 for a scatter plot of the results. Density/Fe grade regression indicated a correlation coefficient of 96%. Regression formula was as follows:



Figure 14.6 Scatter Plot of SG versus Fe Grades

### 14.7 Grade Interpolation

Grade interpolation was based on 2m composite samples, using a maximum lateral search ellipse of 1500m. The z axis of the ellipse was constrained to  $1/20^{th}$  of the lateral extent. Interpolations were restricted to the North and South Haig solids. Interpolation was based on selecting a minimum of 3 composites and maximum of 15. A maximum of 3 composites per drill hole were allowed. Ordinary kriging was used to interpolate all grade attributes. Density was calculated based on the density-Fe regression formula. Waste rock was assigned an assumed density of 2.65 g/cc. Haig North was assigned an attribute zone code of "100" while Haig South was assigned a zone code of "200". The material type attribute was assigned "10" for the ore zone, "20" for waste and "30" for air.

### 14.8 Resource Classification

All Haig Inlet estimated resources were classified as either Inferred or Indicated Mineral Resources in accordance with CIM classification definitions. For Haig North, the area south of 6246800N was classified as Indicated based on a nominal 250-m drillhole spacing, a high degree of continuity of both thickness and grade and whether the blocks were constrained above a pit shell defining potentially economic ore. The balance of the in-pit resource at Haig North, which was drilled at 500-m spacing and where the variance in thickness increased, was classified as an Inferred Mineral Resource.

For Haig South, an Inferred Mineral Resource classification was assigned based on Jackson's mapping of the Kipalu Iron Formation around the entire exposed faces of the South Haig point. This mapping suggested continuity of the mineralized horizon throughout the entire South Haig land mass as well as drill results within the centre of the land mass. Assignment of Inferred for Haig South was also based on whether it was contained within the resource pit shell.

An effort was made to assess the underground potential of ore grade blocks beyond the open pit on both North and South Haig Inlet areas, however Fe grade cut-offs associated with room and pillar

mining methods were deemed too high for this material to be classified as potentially economic. It is recommended that that this opinion be revisited in any future Preliminary Economic Assessment.

CIM Definition Standards define an Inferred Mineral Resource as follows:

"An 'Inferred Mineral Resource" is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes."

CIM Definition Standards define an Indicated Mineral Resource as follows:

"An 'Indicated Mineral Resource" is that part of a Mineral Resource for which quantity and grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed."

### 14.9 Mineral Resource Statement

The Mineral Resources are reported in accordance with Canadian Securities Administrators ("CSA") NI 43-101 and have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserves.

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other factors that could affect the resource estimate. All of these factors will need to be reassessed at each level of study as the project advances.

The reader is cautioned that the total Fe grade does not necessarily represent the amount of Fe that is recoverable or saleable. Mineralogical work and process test work is required to determine if reasonable and economic weight recoveries, concentrate grades, deleterious grades and Fe recoveries can be achieved. Current process-focused mineralogical testwork on the main Hematite Iron Formation unit should be completed in the next phase of work. Subsequent process testwork will be contingent upon the results of the process-oriented mineralogical work.

The Mineral Resource estimate is based on a 3D geological model constructed using assay and core logging data from 9,119-m of drilling in 64 drill holes. Block grades were estimated using ordinary kriging methods and cross checked using inverse distance interpolation methods and swath plots comparing composite grades to interpolated grades.

The resource estimate has been completed by GH Wahl P. Geo, Principal of GH Wahl & Associates Consulting, who has reviewed the pertinent geological information in sufficient detail to support the data incorporated in the resource estimate. Mr Wahl is an Independent Qualified Person as defined

under NI 43-101 and is responsible for the Mineral Resource estimate. The effective date of the Haig Inlet Mineral Resource estimate is February 5<sup>th</sup>, 2012.

A total of 230 million tonnes of Indicated Mineral Resources at a grade of 35.17 % Fe and a further 289 million tonnes of Inferred Mineral Resources at a grade of 35.47 % Fe were estimated for the Haig Inlet Project.

Table 14.3 Estimated Mineral Resources									
Area	Mineral Resource Category	Million Tonnes	Fe%						
Haig North	Indicated	230	35.17						
Haig North	Inferred	155	35.55						
Haig South	Inferred	134	35.37						
Haig N	Total Indicated	230	35.17						
Haig N&S	Total Inferred	289	35.47						

Table 14.4 indicates the average in-pit oxides and deleterious grades. The Mn is considered high compared to other iron ore projects, however P, alkalies and S are all very low.

Table 14.4 Average Deleterious Block Grades for In-Pit Material										
Grades	Fe %	SiO2 %	Al2O3 %	CaO %	MgO %	Mn %	Р%	Na2O %	K2O %	S %
	35.33	39.96	1.64	0.87	2.08	0.89	0.03	0.08	0.3	0.02

Table 14.5 provides a comparison of mean deposit grades using various estimation methods for blocks and composites within the final resource pit shell.

Table 14.5 Comparison of In-Pit Average Grades Using Various Estimation Methods								
Fe % Ordinary Kriging	Fe % Inverse Distance	Fe % Nearest Neighbour	Fe % Mean Composite					
35.3	35.0	35.2	34.0					

#### 14.10 Pit Optimization

The Pit Optimization process was carried out using Whittle software for the Inferred and Indicated Mineral Resources in the block model.

Preliminary optimization parameters were selected on a conceptual basis. These are presented in Table 14.10.

Table 14.6: Preliminary Pit Optimization Parameters								
ltem	Description							
Slope Angle	50 Degrees							
Ave. Mining Cost	\$2.75/t							
Mining Dilution & Recovery	Assumed already included in the model due to block size							
Processing Cost	\$10.00/t ore							
General & Admin.	\$1.00/t ore							
Process Recovery	60%							
Metal Price	\$140/dmt unit							

The 50° slope angle was selected due to the relatively shallow pit, an assumption that the rock is competent, and no permanent ramping system on the final pit walls. It is also envisaged that the pit expansion will be planned towards the north and south side of the pit and backfilled by the excavated waste. Since pit walls will have a short exposure period, a steeper slope design might be possible for any potential future Haig open pit.

The average mining cost of \$2.75/t was selected based on the cost of the backfill, longer haul distances for ore and the initial waste dump, higher cost of employment due to the fly-in, fly-out nature of the project, dewatering cost, and the use of water resistant explosives during the mining operation.

It is likely that a lower mining cost could result by utilizing an ore and waste crusher/conveying/stacking system. At this stage, however, these assumptions were not considered due to the uncertainties on the source and cost of the power supply to the region.

It was assumed that because of the size of the blocks (75-m by 75-m) no additional mining dilution will be added to carry out the optimization. The mining recovery was also assumed to be 100%.

An approximate processing recovery of 60% and operating cost of \$10/t of ore (crushing, milling, processing, pelletizing) was assumed for the purpose of this optimization exercise. A General and Administration cost of \$1.0/t of ore was also added to the parameters.

A long term metal price of \$140/dmtu iron was also selected.

A physical constraint was simulated in the model in order to limit the pit boundary to a distance of about 50-m from the surrounding bodies of water.

	Table 14.7: Preliminary Pit Optimization Summary									
Pit Shell	Revenue	Operating Cashflow	Abov	e CoG	Waste	Total Rock	Strip. Ratio			
No.	Factor		Min	ieral						
		\$M	Mt	Fe%	Mt	Mt				
1	0.6	1,552	104	36.3	72	177	0.7			
2	0.65	2,050	149	36.2	155	304	1			
3	0.7	2,804	226	36.1	341	567	1.5			
4	0.75	3,652	331	35.7	627	959	1.9			
5	0.8	4,108	400	35.5	840	1,240	2.1			
6	0.85	4,311	440	35.4	991	1,431	2.3			
7	0.9	4,446	477	35.3	1,146	1,623	2.4			
8	0.95	4,532	519	35.3	1,338	1,856	2.6			
9	1	4,574	593	35.2	1,745	2,338	2.9			
10	1.05	4,550	629	35.1	1,949	2,577	3.1			
11	1.1	4,518	645	35.1	2,050	2,695	3.2			
12	1.15	4,491	654	35.1	2,105	2,758	3.2			
13	1.2	4,451	662	35.1	2,163	2,825	3.3			
14	1.25	4,395	671	35	2,228	2,899	3.3			
15	1.3	4,287	685	35	2,341	3,026	3.4			
16	1.35	4,253	689	35	2,373	3,062	3.5			
17	1.4	4,176	696	35	2,440	3,136	3.5			

The pit optimization was carried out using a revenue factor range of 0.6 to 1.4 in 0.05 intervals. The generated nested pit shells as a result of the optimization are presented in Table 14.7.

As a result, the generated pit shell at revenue factor of 0.95 was selected for resource estimation. Shell 8 was selected instead of Shell 9 (at RF=1) since the incremental cashflow per tonne of mined rock between the two shells is less than \$0.09/t (482Mt rock must be mined for a \$42M operating cashflow gain) and the incremental mineralized rock is excavated at a very high stripping ratio of 5.4. The plan view of the selected pit shell contours are presented in Figure 14.7.

There is a potential in the future to generate larger shells containing higher resource tonnage when the confidence of the model is increased from Inferred to Indicated and Measured Mineral Resources, and some detailed work has been completed on process recovery and the mining and processing costs.

Portions of the in-pit resources lie at or below the water level of the adjacent Kasegalik Lake and Hudson Bay. Although no cross cutting faults structures were noted across the Haig Inlet mineral resources, hydrogeological drilling will be required to assess any potential water inflow from these sources.



Figure 14.7 Mineral Resource Pit Optimization

### **15.0 ADJACENT PROPERTIES**

During 1955 to 1959, the Belcher Mining Corporation Ltd. carried out exploration on the predominantly magnetic iron formation located on Innetalling Island, located approximately 50 kilometres southeast of Haig Inlet. A total of 51 holes were drilled and metallurgical testwork was completed. GSC Open File Report 716 indicates that 1 billion tons of magnetite ore grading 27% Fe had been identified. The reader is cautioned that this tonnage and grade does not comply with CIM Definition Standards of Mineral Resources and Reserves and should not be relied upon. The author was not able to verify the estimate, the estimate is not current and the estimate is only provided as historical information of a nearby property.

### **16.0 OTHER RELEVANT INFORMATION**

#### Similarity of the Kipalu Iron Formation with the Sokoman Iron Formation

The Kipalu Iron Formation subunits have distinct similarities to the subunits of the Sokoman Formation of the Labrador Trough. Wahl (1953) and Bergeron (1957) first observed general similarities between these two belts as well as the Cape Smith belt located at the northern extent of the province of Quebec. This correlation is material as many iron deposits hosted within the Sokoman Formation have been successfully mined and processed since 1954.

Additional similarities observed in drill core and outcrop from both areas include the black carbonaceous shale capping both the Kipalu and Sokoman iron formations. In the Sokoman formation, this pyritic rich shale has been named the Menihek formation. Beneath the Menihek is the Lean Chert (LC) unit which is quite similar to the lean Red Chert unit just above the Haig Inlet Hematite Zone. The iron rich Haig Inlet Hematite unit is equivalent in terms of composition to a combination of a narrow and intermittent Jasper Metallic Banded Iron Formation (JUIF) and a more predominant Upper Red Chert (LRC) is quite similar in terms of thickness and grade to the Haig Inlet Red Chert. The underlying Wishart quartzite's of the Sokoman is also very similar to the underlying Mukpollo Formation quartzites encountered in the deepest drill holes at Haig Inlet.

#### Proposed 2012 Exploration Program

Exploration in the 1950's by the Belcher Mining Corporation Ltd included a number of regional magnetic surveys which had identified a continuous magnetic anomaly along the western shore of Flaherty Island. In 2011, Canadian Orebodies staked 13 claims, which lie approximately 10-km to the west of Haig Inlet Project to cover this geophysical target. The moderate magnetic anomaly contained within this claim group extends approximately 29.4-km in a north-south direction and is coincident with a single exposure

of the Kipalu Iron Formation mapped by Jackson in 1959. The interpreted surface expression of the Kipalu Formation on the west side of Flaherty Island is highlighted in the following Figure 16.1

Only a small portion of the Kipalu Iron Formation, approximately 25-m in stratigraphic width in a single outcrop, is exposed along this trend. The exposed Fe-rich argillite from this outcrop dips steeply at 72 degrees to towards the west. The limited exposure of iron formation is weakly to moderately magnetic and predominantly hematitic.

A second potential target for further exploration is the northward extension of the Kipalu Iron Formation from the northern most 2011 drill holes approximately 17-km north towards Sanikiluaq. See the east side of Flaherty Island in Figure 16.2. Only two areas of iron formation outcrop have been examined along this trend. One occurs near the extreme north end of the property and another near the northwestern most 2011 drill holes. Exposures in both areas are comprised of Fe-rich argillite and dip at varying degrees towards the east.

It is recommended that Canadian Orebodies initiate exploration of the stratigraphy on western Flaherty Island in 2012 with a magnetic survey followed by 8 widely-spaced drill holes where the magnetic signature is strongest. Another 8 drill holes are recommended for the stratigraphy north of Haig Inlet.



Figure 16.1 Potential Exploration Target Areas for 2012 (Adaptation of Jackson, 1960)

Another area to the northeast of Haig Inlet and north of Kihl Bay is comprised of relatively closely spaced anticlines and synclines plunging north. The anticlines may elevate the Kipalu Iron Formation stratigraphy proximal to surface allowing for the potential for another large in-pit tonnage. These folds are well defined by the Aster satellite imagery work completed by Wickert (2007). Although the iron formation is not exposed in these areas it may present an opportunity for another open-pitable near-surface large tonnage target. An initial four drill holes are proposed for this area.



Figure 16.2 Potential Exploration Targets for 2012 (Adaptation of Jackson, 1960)

For South Haig Inlet, it is recommended that another four holes be drilled surrounding the current drill hole CO-11-53 to confirm grades and the interpreted thicknesses extrapolated from the Kipalu Iron Formation around the base of the South Haig peninsula. Another four widely spaced drill holes are recommended immediately south of this area. See Figure 16.2.

A total of 7,200-m is proposed for 2012 divided into two phases. The 28 drill hole program (4,200-m) above reflects the first phase of drilling. If any of these areas prove promising, it is recommended that

the second phase (3,000-m) be used for infill and step out drilling of sufficient quality to define Inferred Mineral Resources.

### **17.0 INTERPRETATION AND CONCLUSIONS**

### **17.1 Conclusions**

The drilling, sampling, assaying, and verification testwork indicate that the Haig Inlet exploration database forms a sound basis for resource estimation.

The Kipalu Formation which hosts the Haig Inlet Mineral Resources exhibits many similarities to the Sokoman Iron Formation that hosts many existing iron ore producers. The area is prospective in terms of potential for both magnetite (Innetalling) and hematite (Haig Inlet) dominant oretypes.

Mapping by Jackson (1960) of the Geological Survey of Canada indicates that the Kipalu Iron Formation extends over much of the Belcher islands providing multiple drill targets.

The solid modelling based on drill hole results and mapping of iron formation exposures along the cliff faces of North and South Haig Inlet indicate a high grade hematite interval that averages 15-m in thickness and is continuous over the 20 square kilometre extent drilled to date.

The top of the in-pit Inferred and Indicated Mineral Resources averages 60-m below surface and ranges from 13 to 100-m below surface. The pit floor of the mineral resources covers an area of roughly 9 square kilometers.

The Haig Inlet project resource estimate amounts to 230MT of Indicated Mineral Resources at a grade of 35.17% Fe and 289MT of Inferred Mineral Resources at a grade of 35.47% Fe.

The project benefits from the upside potential to significantly expand Mineral Resources with further drill programs on multiple targets.

Engineering studies will need to address metallurgy, hydrogeology, power sources, shipping logistics as well as elevated Mn content in feed grades.

### **18.0 RECOMMENDATIONS**

In the opinion of GH Wahl, the results of the Haig Inlet project merit additional exploration and testwork to build on the Mineral Resources defined in 2011 and to advance the project towards a Preliminary Economic Assessment.

The cost of the first phase of the program is estimated at CDN \$5.2 million.

It is recommended that if the mineralogical examination of samples of the high grade iron formation are positive that Canadian Orebodies undertake a bench scale metallurgical program to ascertain recoverable Fe%, potential flow sheet and potential end product grades of an iron pellet feed. If results are positive, the project should advance towards a preliminary economic assessment.

Exploration drilling is recommended in several areas surrounding Haig Inlet.

The Kipalu Iron Formation located on Canadian Orebodies western 13 claims warrants an initial phase of drilling comprised of 8 widely spaced drill holes. Before this drilling commences, it is recommended that this area be the subject of a detailed ground based magnetic survey to assist in the location of drill holes. Line spacing should be at no more than 200-m across the entire strike length.

Aster satellite data (Wickert, 2007) and Jackson's (1960) map suggest north trending folds which may have uplifted the iron formation near surface in an area to the northeast of Kihl Bay. Four widely-spaced drill holes to test for near surface occurrence of enriched hematite iron formation within the crests of anticlines are recommended.

Four drill holes are recommended for around the current drill hole on South Haig to provide additional grade data. As well, another four holes are recommended immediately to the south of the South Haig resource pit limit.

Another 8 drill holes are recommended for the 17-km extent between Sanikiluaq and the northern-most drilling on Haig North.

A second phase of drilling of step out and infill drilling to be completed in the second half of 2012 would be contingent upon the results of the first phase of widely spaced exploration drill holes.

Proposed Budget for this work is as follows:

#### Phase 1 Drilling 7,200m

Phase 1A @ \$290/m x 28 holes x 150m/each (4,200m)	\$1,218,000
Phase 1B contingent on Phase 1 results @ \$290/m x 20 holes x 150m/each (3000m)	\$870,000
Camp Operation, Camp Equipment, Camp Mob/Demob	\$420,000
Sealift Mob/Demob of Drills, Equipment, Fuel, Flights	\$900,000
Fuel	\$185 <i>,</i> 000
Geology, Surveying, Core Logging and Resource Modeling	\$365,000
Assaying	\$175,000
Subtotal	<u>\$4,144,000</u>
Contingency (25%)	\$1,033,000

Total \$5,177,000

#### Phase 2 Metallurgical Testwork

# Phase 2A Mineralogical Testwork on all New Exploration Target Areas including SEM, Qemscan 28 samples.

Phase 2B Metallurgical Testwork contingent upon Phase 1 Mineralogical Results – focus would be on benefication of Fe and reduction of Mn content as well as comminution testwork.

Comminution Testwork \$150k

Benefication Testwork \$150k

#### Phase 3 PEA and Environmental Baseline Study

Contingent upon results of 2012 exploration and metallurgical programs.

This phase may include additional drilling to meet a 1.5 billion tonne resource target.

Preliminary Economic Assessment \$200k

Preliminary Environmental Baseline Study (Port and Minesite) \$250k

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### **CERTIFICATE OF QUALIFIED PERSON**

To accompany the report entitled: Haig Inlet Iron Project Technical Report, Belcher Islands, Qikiqtaaluk Region, Nunavut, Canada dated February 5th, 2012.

I, George H Wahl, P. Geo, residing at 67 Menno Street, Waterloo, Ontario do hereby certify that:

- 1. I am Principal Geologist of G H Wahl & Associates Consulting with an office at 67 Menno Street, Waterloo, Ontario, Canada;
- 2. I am a graduate of the University of Western Ontario with a BSc in Geology in 1985 and a MA in Resource Management at the University of Waterloo. I have practiced as a geoscientist in both exploration and resource estimation for the past 20 years. I have worked with many junior, intermediate and senior mining companies and engineering firms on a variety of preliminary economic assessments, pre-feasibility and feasibility studies. I have operated a consulting business for the past 13 years and have completed studies or consulted on iron projects in Peru, Brazil, Sweden, Finland and in Canada, in the Labrador Trough, Baffin Island, and the Radisson region of northern Quebec;
- I am a Professional Geoscientist registered with the Association of Professional Geoscientists of the province of Ontario (APGO#0448) the Northwest Territories and Nunavut Association of Professional Engineers, Geoscientists and Geophysicists (NAPEGG#L1513) and for the purposes of National Instrument 43-101 and a "Qualified Person";
- I completed two site visits from July 27<sup>th</sup> to Aug 3<sup>rd</sup> of 2011 and from September 13<sup>th</sup> to the 21<sup>st</sup>, 2011. The site visits included a review of drilling, logging, sampling and core handling procedures as well as a review of the geology and mineralization in drill core and in outcrops and provision of a set of general exploration strategies specific to iron deposits;
- 5. I am responsible for all items within this report unless noted otherwise in the text;
- 6. I am independent of the issuer as defined by Section 1.4 of National Instrument 43-101;
- 7. I have had no prior involvement with the Haig Inlet property;
- 8. I have read National Instrument 43-101 and confirm that the Technical Report complies with its disclosure requirements; and
- 9. As of the effective date of the Technical Report, 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 the Technical Report not misleading.

Waterloo, Ontario, Canada February 5<sup>th</sup>, 2012

6 Wahl



George H Wahl, P.Geo

### **APPENDIX A**

HID	Collar Dip	From (m)	To (m)	Width (m)	Fe %	SiO2 %	AI2O3 %	MgO %	Mn %	Р%	S %
CO11-1	-90	43.5	67.5	20	33.93	41.61	1.74	2.16	0.73	0.03	0.02
CO11-2	-90	49.7	73.7	14	35.59	40.39	1.47	1.93	0.65	0.03	0.01
CO11-3	-90	72.9	96.9	12	31.95	44.32	1.87	2.34	0.65	0.03	0.01
CO11-4	-90	59.1	83.1	18	31.66	43.23	2.14	2.31	0.80	0.03	0.01
CO11-5	-90	54.25	78.25	16	31.66	43.48	2.33	2.50	0.81	0.03	0.02
CO11-6	-90	46.8	70.8	20	34.13	40.96	1.56	2.05	0.85	0.03	0.02
CO11-7	-90	67.75	91.75	18	34.60	41.11	1.53	1.95	0.76	0.03	0.01
CO11-8	-90	67.75	91.75	18	34.19	40.63	1.80	2.08	0.91	0.03	0.01
CO11-9	-90	56.9	80.9	18	33.28	41.56	1.74	2.21	0.81	0.03	0.02
CO11-10	-90	41.45	65.45	16	33.75	41.80	1.74	2.21	0.77	0.03	0.02
CO11-11	-90	13.1	37.1	20	33.55	40.68	1.68	2.08	0.88	0.03	0.02
CO11-12	-90	53	//	14	35.69	39.40	1.39	1.68	0.32	0.03	0.01
CO11-13	-90	58.85	82.85	16	34.50	40.86	1.56	2.07	0.91	0.03	0.02
CO11-14	-90	/3.3	97.3	18	34.02	41.40	1.65	2.04	0.87	0.03	0.02
CO11-15	-90	65.7	89.7	16	34.39	41.08	1.50	2.01	0.79	0.03	0.04
CO11-16	-90	43.9	67.9	10 65	34.95	40.31	1.58	2.03	0.65	0.03	0.02
CO11-17	-90	52 OF	77.05	19.05	35.01	39.31	1.05	2.23	0.89	0.03	0.01
CO11-18	-90	53.95 72.15	07 15	10	22 20	40.19	2.02	2.02	0.90	0.03	0.02
CO11-19	-90	75.15	102.8	12	25.29	20.25	2.02	2.50	0.94	0.03	0.02
CO11-20	-90	76.0	102.8	12	35.03	39.33	1.49	2.01	1 12	0.03	0.02
CO11-21	-90	65 15	89.15	10	35 52	38.40	1.05	1 97	0.55	0.03	0.02
CO11-23	-90	107.9	131 9	18	33.52	40 71	1.55	1.97	0.55	0.03	0.02
CO11-24	-90	68.8	92.8	15.2	32.50	42.00	1.64	2.03	0.98	0.03	0.07
CO11-25	-90	83.25	107.25	13:2	34.71	41.14	1.59	1.97	0.93	0.03	0.01
CO11-26	-90	101.8	125.8	12	35.44	39.95	1.39	1.67	1.00	0.03	
CO11-28	-90	67.8	91.8	16	34.82	39.26	1.60	2.17	1.07	0.03	0.01
CO11-29	-90	118.95	142.95	18	33.19	39.58	1.70	2.44	1.01	0.03	0.02
CO11-30	-90	57	81	12	32.30	41.77	2.18	2.45	1.02	0.03	0.04
CO11-31	-90	132.55	156.55	10	33.59	40.30	1.83	2.15	1.06	0.03	0.01
CO11-32	-90	82.6	106.6	4	32.35	40.70	2.04	2.15	1.21	0.03	0.04
CO11-33	-90	58.3	82.3	4	32.67	40.35	2.02	2.09	1.30	0.03	0.02
CO11-37	-90	60.5	84.5	6	32.34	39.67	2.39	2.28	1.50	0.03	0.04
CO11-40	-90	71.4	95.4	14	33.56	40.59	1.99	2.30	1.01	0.03	0.01
CO11-41	-90	104.2	128.2	14	33.24	40.60	1.96	2.35	1.03	0.03	0.01
CO11-42	-90	58.05	82.05	18	34.67	40.98	1.46	1.93	0.79	0.03	0.01
CO11-43	-90	71.7	95.7	14	35.97	40.30	1.32	1.78	0.67	0.03	0.01
CO11-44	-90	57.25	81.25	18	33.88	40.89	1.79	2.23	0.72	0.03	0.04
CO11-45	-90	60.8	84.8	17.1	34.46	40.19	1.93	2.37	0.72	0.03	0.03
CO11-46	-90	66.25	90.25	20	33.94	41.18	1.83	2.33	0.86	0.03	0.01
CO11-47	-90	68.1	92.1	14	35.83	39.71	1.44	1.94	0.82	0.03	0.02
CO11-48	-90	72.1	96.1	18	33.06	42.44	1.81	2.17	0.76	0.03	0.02
CO11-49	-90	51.4	75.4	18	32.91	41.51	1.77	2.22	0.86	0.03	0.01
CO11-50	-90	123.35	147.35	18	32.78	39.91	1.62	2.25	0.92	0.03	0.01
CO11-51	-90	133.7	157.7	10	33.53	40.02	1.77	2.19	0.96	0.03	0.02
CO11-52	-90	195.95	219.95	14	32.28	42.33	2.08	2.26	1.02	0.03	0.01
CO11-53	-90	118.9	142.9	14	33.96	42.50	1.65	2.26	0.72	0.03	0.02
CO11-54	-90	135.8	159.8	16	33.30	39.96	1.85	2.17	0.97	0.03	0.01
CO11-55	-90	193.8	217.8	16	34.94	38.68	1.63	2.10	1.00	0.03	0.03
CO11-56	-90	115	139	14	33.71	39.46	1.65	2.07	1.06	0.03	0.01
CO11-5/	-90	121.55	145.55	13	34.61	37.98	1.53	2.12	1.06	0.03	0.02
CO11 50A	-90	100.9	124.9	12.25	26 10	40.43 20.95	1.05	2.01	1.09	0.03	0.01
CO11 60	-90	108.8	132.8 60 75	12	22 20	39.85	1.54	1.84	1.03	0.03	0.01
CO11-60	-90	44.75 91 E	08.75 109 E	10	22 17	41.30 //2.25	2.09	2.41	1.00	0.03	0.01
CO11-62	-30 _00_	100.2	174.2	15 9	22.42	40.22	1.05	2.00	1 10	0.03	0.03
CO11-63	-90	5/	78	15.0	33.03	35 21	1.52	2.30	0.93	0.03	0.05
			,0	10.1	0	55.51	1.2/	2.00	5.55	5.05	5.01