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OCEANIC IRON ORE CORP.

NI 43-101 TECHNICAL REPORT ON A PREFEASIBILITY STUDY COMPLETED ON THE HOPES ADVANCE BAY IRON DEPOSITS UNGAVA BAY REGION, QUEBEC, CANADA NTS 24M/08, 24N05

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1.0 SUMMARY

1.1 INTRODUCTION

The Hopes Advance deposits are included in the group of iron deposits held by Oceanic Iron Ore Corp. (Oceanic), known as the Ungava Property, located in the Ungava Bay region of northern Québec. This area represents significant iron resource potential and was extensively explored during the late 1950s through the mid-1960s. The Hopes Advance iron deposits are located north of the Ford River at Hopes Advance Bay. These deposits were well advanced towards production with extensive exploration drilling, metallurgical testwork, process development, and preliminary feasibility studies already having been completed. Interest in these deposits decreased after the middle 1960s due to the market prices for iron ore and a prolonged period of depressed iron ore prices during the subsequent 40 years.

The term “Hopes Advance project” refers to the mining and mineral processing of the 10 deposits in the immediate Hopes Advance Bay area. These deposits include: Bay Zone B, Bay Zone C, Bay Zone D, Bay Zone E, Bay Zone F (collectively the “Bay Zone”), Castle Mountain, Iron Valley, West Zone 2, West Zone 4, and West Zone McDonald (collectively the “West Zone”).

The Prefeasibility Study referred to in this NI 43-101 Technical Report is focused on the development of the Hopes Advance project.

1.1.1 Previous Technical Reports

A mineral resource estimate and preliminary economic assessment (PEA) were completed on the Hopes Advance project the results of which were disclosed in a Technical Report titled “Mineral Resource Estimate and Results of the Preliminary Economic Assessment, Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada”, dated 4 November, 2011 (Micon, 2011).

Subsequently, an updated resource estimate was described in the Technical Report titled “Mineral Resource Estimate Update, Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada”, with an effective date of 2 April, 2012 (Canova, 2012).

These reports can be accessed from SEDAR’s electronic database http://www.sedar.com/.

1.2 GEOLOGY

The Hopes Advance iron deposits are a typical stratigraphic iron deposit similar to other Labrador Trough iron deposits. The iron mineralization deposit type is a Lake Superior Type iron formation and is located at the northern end of the Paleo-Proterozoic Labrador Trough. The iron formation has been extensively metamorphosed, faulted and folded. Farther south, the Labrador Trough hosts the iron ore deposits of Schefferville and Wabush Lake.

The Sokoman Iron Formation is the stratigraphic/geological control of the iron mineralization in the region. Strong folding has resulted in structural influence on the iron formation. The iron formation in the Ungava Bay area appears to be more or less continuous along its considerable strike length of over 300 km. The iron formation is folded into a south-southeast plunging syncline with the closure of the fold located to the north of Payne Bay. The limbs of this regional syncline are folded in a series of parasitic synclines and anticlines.

1.3 METALLURGICAL TESTWORK

Two metallurgical testwork programs were designed to assess the metallurgical characteristics of the mineral resources at Hopes Advance.

The first program, carried out by SGS Mineral Services (SGS), provided weight recovery and concentrate quality data on composites from drill holes that were used to further define the mineral resource. Approximately 611 composite samples were prepared from the Hopes Advance project area.

The second phase of testwork comprised a pilot plant program which was completed at SGS. The purpose of this work was to characterize the mineralization and to develop a flowsheet that would maximize weight recovery and produce an iron ore concentrate assaying greater than 66.6% Fe and less than 4.5% SiO_2.

Additional testwork was also conducted at the facilities of FLSmidth, Derrick Equipment Company (Derrick) and OSD Pipelines (OSD).

1.4 MINERAL RESOURCE ESTIMATE

This Prefeasibility Study uses the mineral resource block model first described by Eddy Canova and was presented in a Technical Report dated 2 April, 2012 (Canova, 2012). The mineral reserve reported in the Prefeasibility Study used updated pit optimization parameters and a minor change in the weight recovery factors from those employed in the April, 2012 mineral resource update (Canova, 2012). For this reason, and to limit confusion, Micon has re-reported the in-pit mineral resources using the updated parameters. The updated in-pit mineral resource estimate for the Hopes Advance project is presented in Table 1.1.

The mineral resource estimate is effective as of September 19, 2012 and is reported from a block model current as of April 2, 2012. These were prepared under the direction of Eddy Canova, P.Geo., OGQ, internal Qualified Person for Oceanic. B. Terrence Hennessey, P.Geo., has reviewed this work and is the QP for the mineral resource estimate of this Prefeasibility Study.

The updated in-pit mineral resource estimate is compared with the estimate dated April, 2012 in Table 1.2.

Table 1.1
Updated In-pit Mineral Resource Estimate for the Hopes Advance Project as at September, 2012
(Cut-off Grade 25% Total Fe)

Zone	Classification	Fe (%)	WRCP (%)	Resource Tonnes (t 000)	Concentrate Tonnes (t 000)
Bay Zone B	Measured	-	-	-	-
Bay Zone B	Indicated	-	-	-	-
Bay Zone B	Inferred	34.0	39.9	22,367	8,915
Bay Zone C	Measured	31.1	36.2	28,295	10,228
Bay Zone C	Indicated	30.7	35.6	58,100	20,695
Bay Zone C	M+I	30.8	35.8	86,395	30,924
Bay Zone C	Inferred	30.5	35.4	9,558	3,386
Bay Zone D	Measured	31.4	36.6	37,953	13,876
Bay Zone D	Indicated	31.4	36.6	16,738	6,123
Bay Zone D	M+I	31.4	36.6	54,692	19,999
Bay Zone D	Inferred	31.2	36.3	3,464	1,256
Bay Zone E	Measured	32.4	37.8	88,407	33,436
Bay Zone E	Indicated	32.5	38.0	23,202	8,824
Bay Zone E	M+I	32.4	37.9	111,609	42,259
Bay Zone E	Inferred	31.0	36.1	3,963	1,430
Bay Zone F	Measured	32.7	38.3	115,150	44,056
Bay Zone F	Indicated	32.4	37.8	129,771	49,041
Bay Zone F	M+I	32.5	38.0	244,921	93,097
Bay Zone F	Inferred	33.5	39.3	9,424	3,701
Castle Mountain	Measured	31.8	37.0	354,138	131,031
Castle Mountain	Indicated	31.3	36.3	194,977	70,679
Castle Mountain	M+I	31.6	36.7	549,115	201,710
Castle Mountain	Inferred	31.9	37.0	8,850	3,276
Iron Valley	Measured	33.2	38.8	73,408	28,475
Iron Valley	Indicated	32.8	38.2	140,703	53,791
Iron Valley	M+I	32.9	38.4	214,110	82,265
Iron Valley	Inferred	33.0	38.6	41,703	16,077
West Zone 2	Measured	-	-	-	-
West Zone 2	Indicated	-	-	-	-
West Zone 2	Inferred	32.2	36.3	114,169	41,455
West Zone 4	Measured	32.8	37.1	57,211	21,237
West Zone 4	Indicated	32.4	36.6	27,731	10,155
West Zone 4	M+I	32.7	37.0	84,942	31,392
West Zone 4	Inferred	33.0	37.5	1,099	412
West McDonald	Measured	32.9	33.7	19,679	6,632
West McDonald	Indicated	32.8	33.6	22,575	7,594
West McDonald	M+I	32.8	33.7	42,253	14,226
West McDonald	Inferred	33.0	33.8	7,589	2,567
All Zones	**Measured**	**32.2**	**37.3**	**774,241**	**288,971**
All Zones	**Indicated**	**32.0**	**37.0**	**613,796**	**226,901**
All Zones	**M+I**	**32.1**	**37.2**	**1,388,037**	**515,872**
All Zones	**Inferred**	**32.5**	**37.1**	**222,188**	**82,475**

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.

(2) The mineral resources were estimated using a block model with parent blocks of 50 m by 50 m by 15 m sub-blocked to a minimum size of 25 m by 25 m by 1m and using ID^3 methods for grade estimation. A total of 10 individual mineralized domains were identified and each estimated into a separate block model. Given the continuity of the iron assay values, no top cuts were applied. All resources are reported using an iron cut-off grade of 25% within Whittle optimization pit shells and a mining recovery of 100%.

(3) The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

(4) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council November 27, 2010.

Table 1.2
Hopes Advance Project Comparison of In-pit Mineral Resources
(Cut-off Grade 25% Total Fe)

	April, 2012			September, 2012		
Classification	**Tonnes (t 000)**	**Fe (%)**	**Concentrate Tonnes (t 000)**	**Tonnes (t 000)**	**Fe (%)**	**Concentrate Tonnes (t 000)**
Measured	720,765	32.4	279,806	774,241	32.2	288,971
Indicated	547,518	32.3	211,516	613,796	32.0	226,901
M+I	**1,268,283**	**32.3**	**491,322**	**1,388,037**	**32.1**	**515,872**
Inferred	193,403	32.9	75,112	222,188	32.5	82,475

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.
(2) The mineral resources were estimated using a block model with parent blocks of 50 m by 50 m by 15 m sub-blocked to a minimum size of 25 m by 25 m by 1m and using ID^3 methods for grade estimation. A total of 10 individual mineralized domains were identified and each estimated into a separate block model. Given the continuity of the iron assay values, no top cuts were applied. All resources are reported using an iron cut-off grade of 25% within Whittle optimization pit shells and a mining recovery of 100%.
(3) The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.
(4) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council November 27, 2010.

1.5 MINERAL RESERVE ESTIMATE

Mineral reserves for the Hopes Advance project have been estimated and are summarized in Table 1.3. Mineral reserves have not been estimated for the Bay Zone B or West Zone 2 pits as these deposits only contain inferred resources.

There is opportunity to upgrade some minor amounts of the inferred resource mineralization to ore classification with additional infill drilling.

Table 1.3
Mineral Reserve Estimate for the Hopes Advance Project

	Units	Castle Mountain	Iron Valley	Bay Zone C	Bay Zone D	Bay Zone E	Bay Zone F	West Zone McDonald	West Zone 4	Total
Proven	t 000	353,270	70,866	27,474	37,324	86,113	114,245	18,231	55,753	763,276
Fe Grade	%	31.9	33.4	31.2	31.5	32.5	32.8	33.2	32.8	32.3
Weight Recovery	%	37.0	39.1	36.2	36.6	38.0	38.3	34.1	37.1	37.4
Concentrate	t 000	130,731	27,714	9,957	13,679	32,697	43,746	6,220	20,684	285,428
Probable	t 000	195,100	133,595	55,337	16,250	22,052	125,505	21,548	26,603	595,990
Fe Grade	%	31.3	33.1	30.8	31.6	32.8	32.5	33.0	32.5	32.1
Weight Recovery	%	36.3	38.6	35.7	36.8	38.3	37.9	34.0	36.7	37.1
Concentrate	t 000	70,784	51,588	19,766	5,974	8,457	47,604	7,316	9,758	221,246
Proven & Probable	t 000	548,370	204,461	82,811	53,574	108,165	239,750	39,779	82,356	1,359,266
Fe Grade	%	31.7	33.2	30.9	31.5	32.6	32.6	33.1	32.7	32.2
Weight Recovery	%	36.7	38.8	35.9	36.7	38.0	38.1	34.0	37.0	37.3
Concentrate	t 000	201,515	79,302	29,723	19,653	41,153	91,350	13,536	30,442	506,675

1.6 MINING METHODS

A conventional open pit mining operation is proposed for the Hopes Advance project. Mining will be undertaken by Oceanic using its own equipment and workforce and will provide the open pit equipment, operator training, supervision, pit technical support services, mine consumables, and the pit operations and maintenance facilities. Specialized contractors will be used for the initial site clearing and initial haul road construction in preparation for the mining equipment fleet, and will source explosives, blasting agents, fuel and other consumables from established suppliers.

Mineral resources for the Hopes Advance project are contained in 10 deposits. Two of the deposits, Bay Zone B and West Zone 2, contain only inferred material and are not included in the Prefeasibility Study. The locations of the 10 deposits, concentrator, port facility and tailings impoundment are shown in Figure 1.1. The eight deposits used in the Prefeasibility Study have been subdivided into a total of 13 phases for mine scheduling.

Figure 1.1
Project Site Layout

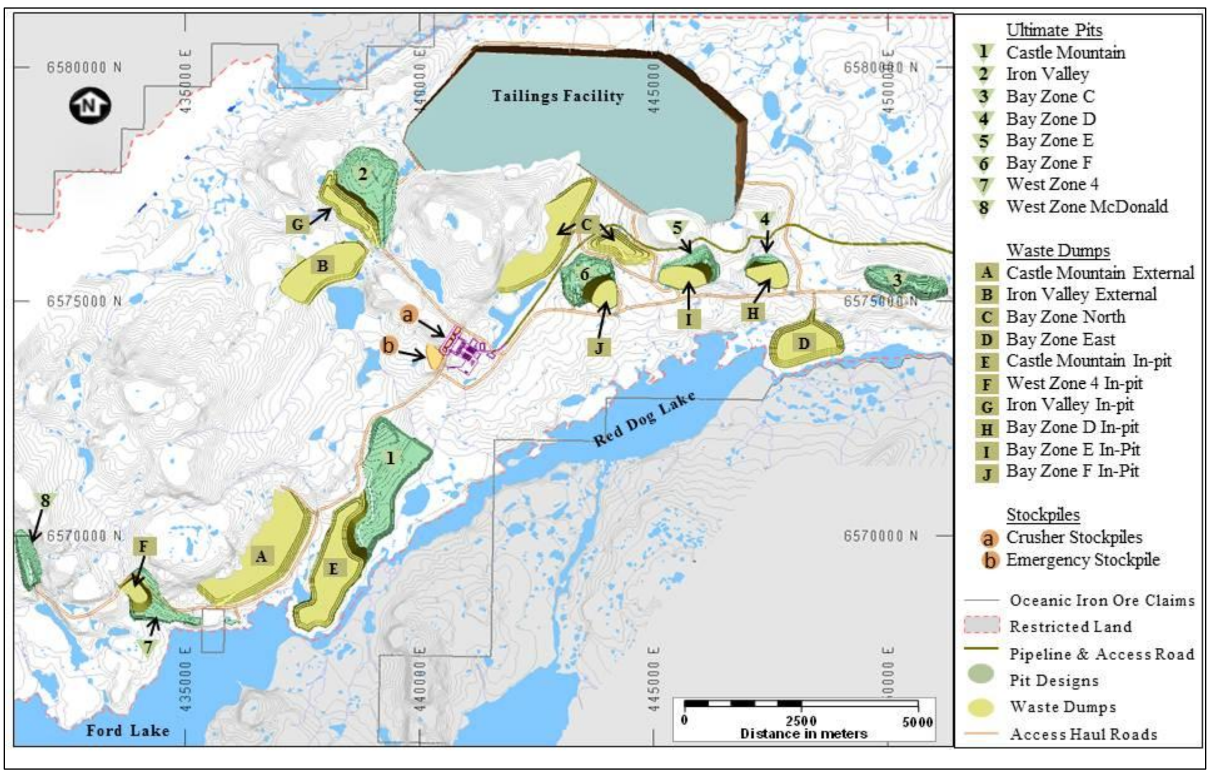


Figure 1.1 also shows the locations of the maintenance shop and the processing plant. The men's and women's dry, lunchroom, first aid station, and supervisor's offices will be located in a building adjoined to the maintenance shop. The mine superintendent office and the technical services offices will be located at the processing plant.

1.7 RECOVERY METHODS

Processing of the Hopes Advance iron mineralization is based on production of an iron concentrate in a facility located northwest of Red Dog Lake approximately 26 km inland, transportation of the concentrate by slurry pipeline to the port near Ungava Bay, and filtration and drying of the concentrate for shipping in a plant at the port facility.

As determined by pilot plant testwork results, the developed flowsheet is robust and produces a clean iron concentrate.

The mill feed is ground to less than 300 µ and then fed to the gravity concentration circuit. The gravity concentration circuit spiral separators will have a weight recovery of 31.6% or 84% of total concentrate produced. The gravity concentration circuit tails is then fed to the Cobber Magnetic Separator circuit. The product from the Cobber circuit (which represents only 13.0% of mill feed) is ground to less than 38 µ. The material is then fed to the Low Intensity Magnetic Circuit (LIMS) to recover the liberated magnetite. The LIMS circuit recovers a further 6.0% by weight or 16% of total concentrate produced. Thus, the total weight recovery to the final concentrate is 37.6% of mill feed.

The first phase production rate is based on the production of 10 Mt/y of concentrate. An expansion to 20 Mt/y of concentrate will take place in Year 11.

1.8 PROJECT INFRASTRUCTURE

The Hopes Advance project will require the following key surface infrastructure components and site services to support construction, commissioning and production for the planned operations:

- Power.
- Port.
- Concentrate pipeline.
- Main access road and site roads.
- Maintenance facilities.
- Camp accommodations.
- Administrative offices.
- Airstrip.
- Warehouses and storage.
- Emergency vehicle building and first aid.
- Site communications.
- Assay laboratory.

1.8.1 Port Site

Oceanic retained AMEC Environment & Infrastructure (AMEC) to identify a location for a port facility at Hopes Advance Bay for the shipment of 10 Mt/y or 20 Mt/y iron concentrate products to steel mills in Europe and Asia.

Breakwater Point was selected as the preferred location for the construction of the proposed port facility and its onshore infrastructure. Based on available information, it is assumed to be sheltered from ocean conditions as well as providing a short causeway length to connect onshore structures with its marine facilities. The distance from Red Dog Lake to Breakwater Point is only 21.8 km, providing the shortest route to deep sea port.

The proposed marine facility consists of a wharf, tug boat wharf and causeway.

Year-round shipping to European and Asian markets using Cape-size vessels is feasible since custom-built ice-class vessels have the ability to manoeuvre through the ice conditions that have historically been present in the bay. The preliminary wharf design takes account of wave and tide assumptions.

1.9 MARKET STUDIES

Approximately 98% of mined iron ore is used in steel making. The production of steel, worldwide, is closely linked to gross domestic product (GDP) and, therefore, reflects global and regional economic conditions.

Production output has increased significantly over the past decade, primarily in response to demand from China's rapidly expanding economy, and production in China, itself, has grown by nearly 1 Mt/y since 2000.

In its short range outlook published in April, 2012, the World Steel Association projected increased steel demand for 2013 at 1,486 Mt, compared with the 1,422 Mt anticipated for 2012. Over the short term, steel demand is affected by the uncertain impact of the financial crisis in Europe on developing country economies and slower than recent growth in China albeit still anticipated to be approximately 7-9% per annum.

Iron ore prices softened from the third quarter of 2011 reflecting uncertainty in financial markets, slower growth in China and increased iron ore supply. Over the medium to long term, prices are expected to be supported by continued growth in demand from developing economies, China in particular. It is considered that iron ore production costs in China will continue to increase as the quality of available resources decreases and that this will also provide support to international prices. The base case average price selected for this Prefeasibility Study is $100/t with sensitivity analysis of 30% below and above the base case.

1.10 ENVIRONMENTAL STUDIES

The Hopes Advance project is located in the arctic tundra domain which is associated with cold temperatures and sparse vegetation. Lakes and watercourses are found throughout the region. Migratory birds, terrestrial mammals (e.g., caribou and polar bear), marine mammals (e.g., beluga whales) and fish (e.g., arctic char) hold both an ecological significance and social importance to the Inuit population. Some of these species have also been designated as special status species by provincial law (Act respecting threatened or vulnerable species – ATVS) and/or federal law (Species at Risk Act – SARA). The region lies within the zone of continuous permafrost.

Oceanic initiated environmental and social studies for the Hopes Advance project in 2011. Government reports, databases and publications were reviewed in order to prepare the basis for the environmental and social impact assessment (ESIA). Field surveys were conducted for fish, hydrology, hydrogeology, mine waste and ore geochemistry, and water and sediment quality. Additional surveys will be conducted in the coming months.

The project description was submitted to the federal and the provincial/Nunavik agencies to initiate the permitting process. The project description was accepted under the Canadian Environmental Assessment Act, 2012 and the Kativik Environmental Advisory Committee (KEAC) issued the guidelines for the preparation of the ESIA. Guidelines from the Canadian Environmental Assessment Agency are anticipated to be received during November, 2012.

1.11 CAPITAL AND OPERATING COSTS

1.11.1 Capital Costs

The total estimated cost of capital is $5,229 million comprising $2,854 million for initial project development pre-production, $1,608 million for expansion project development to be incurred during Years 9-10, and sustaining capital of $767 million to be incurred over the life of the operations, as summarized in Table 1.4.

Table 1.4
Summary of Capital Cost Estimates
(Thousand $)

Item	Initial 2014 to 2016	Expansion 2026/2026	Sustaining	LOM Total
Mine Equipment	92,658	61,231	577,956	731,845
Mine Development	66,203	2,918	-	69,121
Crusher	29,674	30,355	-	60,029
Concentrator	481,514	492,643	-	974,157
Pipeline	56,740	83,787	-	140,527
Port Filtering and Drying	325,654	267,401	-	593,055
Port and Marine Infrastructure	288,000	84,000	-	372,000
Power	377,892	26,775	-	404,667
Site Infrastructure	81,591	25,675	-	107,266

Item	Initial 2014 to 2016	Expansion 2026/2026	Sustaining	LOM Total
Site Roads	33,583	-	-	33,583
Camp and Offices	29,575	7,175	-	36,750
Airstrip Upgrade	11,824	-	-	11,824
Fresh Water Supply	10,469	3,621	-	14,090
Sewage	4,554	1,574	-	6,128
Tailings and Hazardous Waste Disposal	23,577	30,122	149,219	202,918
Communications	2,305	-	-	2,305
Mobile Equipment	9,983	-	-	9,983
Indirect Costs	499,962	249,378	-	749,340
Contingency and Closure Bond	427,899	241,135	40,000	709,034
Total	**2,853,657**	**1,607,790**	**767,175**	**5,228,622**

Figure numbers may not add due to rounding.

1.11.2 Operating Costs

Estimated average cash operating costs for the life-of-mine of the project are summarized in Table 1.5.

Table 1.5
Summary of LOM Operating Costs

Category	LOM Total $ million	$/t milled	$/t conc.
Mining	3,732	2.75	7.37
Processing	9,128	6.72	18.02
Port	801	0.59	1.58
Site Services	1,149	0.85	2.27
G&A	481	0.35	0.95
TOTAL	**15,293**	**11.25**	**30.18**

Figure numbers may not add due to rounding.

1.12 ECONOMIC ANALYSIS

Micon has prepared its assessment of the project on the basis of a discounted cash flow model, from which net present value (NPV), internal rate of return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

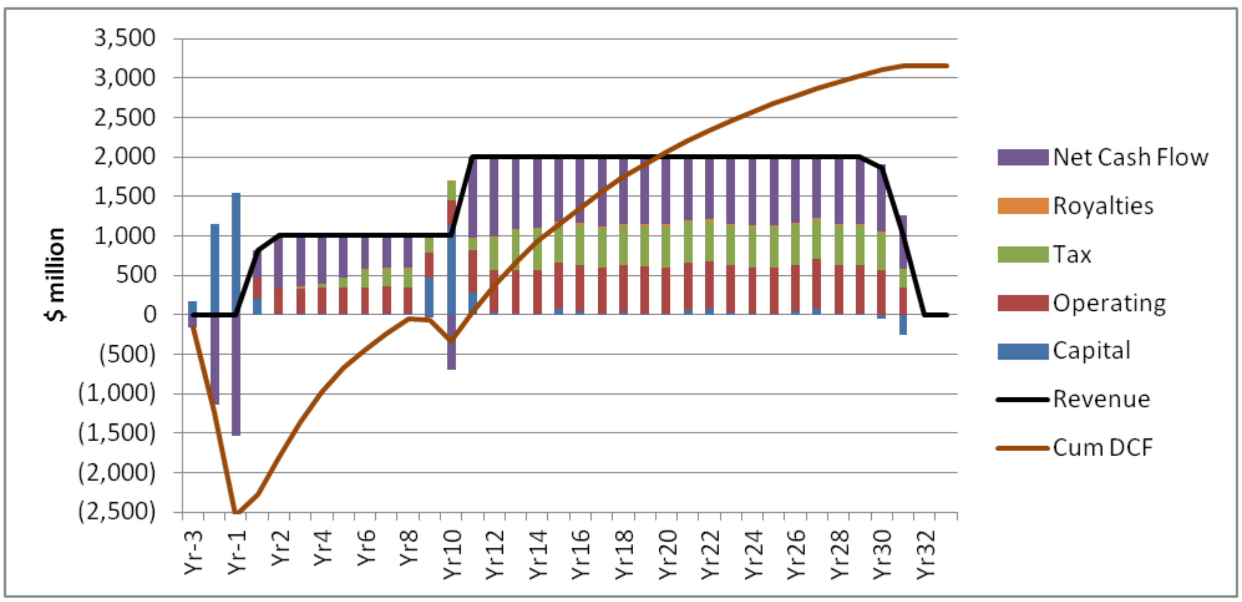
The base case considered in the Prefeasibility Study comprises an initial phase of iron concentrate production at the rate of 10 Mt/y using self-generated power. Hydroelectric power replaces self-generated power in Year 9 (2025). Further investment in Years 9 and 10 permits an expansion to 20 Mt/y of concentrate production from Year 11 (2027).

Table 1.6 summarizes the life-of-mine cash flows for the project, and the chart at Figure 1.1 shows the annual cash flows during this period.

Table 1.6
Base Case – LOM Cash Flow (Unlevered)

	LOM Total ($ million)	$/t Milled	$/t Concentrate
Gross Sales	50,668	37.28	100.00
less Royalties	510	0.37	1.01
Net Sales	50,158	36.90	98.99
Operating Costs	15,293	11.25	30.18
Operating Margin	34,865	25.65	68.81
Capital expenditure	5,229	3.85	10.32
Pre-tax Cash flow	29,637	21.80	58.49
Tax payable	11,254	8.28	22.21
Net Cash flow after tax	18,382	13.52	36.28

Figure 1.2
Life of Mine Annual Cash Flows



1.12.1 Unlevered Base Case Evaluation

The base case cash flow demonstrates that, with a product price of $100/t, the project is able to provide a very robust operating margin of 69%. With an initial capital construction cost of $2,854 million and working capital requirements of almost $176 million in Year 1, the unlevered base case shows a maximum funding requirement of $3,029 million prior to receipt of first revenue.

The unlevered base case cash flow evaluates to a net present value at a discount rate of 8%/y (NPV_8) of $5.6 billion before tax and $3.2 billion after tax. Comparative results at other discount rates are shown in Table 1.7. Internal rates of return (IRR) before and after tax are

20.5% and 16.8%, respectively. The undiscounted cash flow after tax shows a payback period of 5.0 years. Discounted at 8%/y, the payback period on initial capital is 8.1 years.

Table 1.7
Unlevered Base Case – Results of Evaluation

Discount Rate	NPV ($ million) before tax	NPV ($ million) after tax
8%	**5,632**	**3,152**
10%	3,764	1,960
12%	2,474	1,135
Internal Rate of Return (%)	20.5	16.8

1.12.2 Levered Base Case Evaluation

The levered case assumes 60% of the initial construction capital is debt financed on the terms described in Section 22.2.5. The amount of debt finance assumed is $1,712 million. The balance of the initial capital construction cost of $1,141 million, pre-production finance costs of $134 million and working capital requirements of almost $176 million in Year 1 bring the maximum *equity* funding requirement to $1,451 million in the levered base case.

For the levered case, cash flow to equity evaluates to NPV_8 of $5.6 billion before tax and $3.2 billion after tax. Comparative results at other discount rates are shown in Table 1.8. Levered internal rates of return (IRR) before and after tax are 23.2% and 19.2%, respectively.

Table 1.8
Levered Case – Results of Evaluation

Discount Rate	NPV ($ million) before tax	NPV ($ million) after tax
8%	**5,565**	**3,210**
10%	3,784	2,089
12%	2,567	1,323
Internal Rate of Return (%)	23.2	19.2

1.13 INTERPRETATION AND CONCLUSIONS

This Prefeasibility Study is based on the proposed mining and processing of the Hopes Advance project's measured and indicated mineral resources previously defined by Oceanic in an updated mineral resource estimate reported in April, 2012.

Mineral resources for the Hopes Advance deposit comprise measured and indicated resources of 1,388.0 Mt grading 32.1% Fe, and an inferred resource of 222.2 Mt grading 32.5% Fe.

The results of the updated mineral resource estimates show that the work undertaken by Oceanic has expanded the previously reported estimate for each deposit. Oceanic has identified a number of instances where mineralization continues along the trend of the trough or down dip that was not considered economic in the historic resource estimates.

A Prefeasibility Study mine plan has been developed using the combined measured and indicated resources; no inferred resources have been used. The mining schedule reflects mining of the measured and indicated resource base with negligible dilution or mining recovery losses. The proven and probable reserves derived from the mining plan and economic evaluation contained in this Prefeasibility Study comprise 1,359 Mt averaging 32.2% Fe (producing 506.7 Mt of concentrate).

The Prefeasibility Study is based on the following:

- Each of the Hopes Advance project deposits will be developed using standard open pit mining methods.
- Nominal production rate of 10 Mt/y concentrate for the initial development, which will be expanded to 20 Mt/y in Year 11.
- The life of the operating mine is approximately 31 years.
- Conventional mineral processing technology will be used to produce a single iron ore concentrate product containing iron.
- The Hopes Advance deposits are suited for size reduction using a SAG mill. The medium hardness for coarse rocks combined with the low work index for fine material make it possible to have the one size reduction step in the concentrator.
- The Castle Mountain pilot plant flow sheet can be used to process mill feed during the life of mine with minimal adjustments.
- The tested deposits are very amenable to gravity separation techniques. The average weight recovery using gravity separation is 31.6 percent. The weight recovery was increased by 6.0 percent using magnetic separation.
- Estimated life-of-mine iron weight recovery is 37.6%.
- Production of a concentrate grading greater than 66.6% Fe and less than 4.5% SiO_2.
- All tailings will be stored at the TMF located immediately east of the Iron Valley pit and north of Bay Zones E and F pits.
- Access to site will be via road to an all-season port. Personnel will access the site via a dedicated airstrip capable of handling jet aircraft.

- Construction of a marine facility in Hopes Advance Bay is viable. The preliminary wharf design takes account of wave and tide assumptions.

- Breakwater Point has been identified as the preferred location in terms of iron concentrate shipping logistics and marine facility construction cost.

- Year-round shipping to European and Asian markets using Cape-size vessels is feasible since custom-built ice-class vessels have the ability to manoeuvre through the ice conditions that have historically been present in the bay.

- The estimated incremental shipping cost from Hopes Advance Bay to Rotterdam is $5/t in comparison to shipping from Sept-Iles Bay. The optimum shipping cost is obtained by direct shipment using ice-class vessels from Hopes Advance Bay to Rotterdam.

- The optimum shipping cost from Hopes Advance Bay to China is obtained by direct shipping during summer and through transshipment during winter season. The estimated weighted incremental shipping cost from Hopes Advance Bay to China ranges between $6 to $8/t in comparison to shipping cost from Sept-Iles Bay.

- Electrical power will be provided initially by nine generators (seven operating and two standby) using No. 6 oil located at the port and by hydroelectric grid power commencing in Year 9.

Sensitivity analyses indicate that the project economics is most sensitive to revenue factors and is less sensitive to capital and operating costs.

Based on its economic evaluation of the base case and sensitivity studies, Micon concludes that this Prefeasibility Study demonstrates the viability of the project as proposed, and that further development is warranted

1.14 RECOMMENDATIONS

It is recommended that Oceanic continues to develop the project beyond Prefeasibility Study. During the Feasibility Study, the following areas of work should be considered:

1. Grinding: To improve the accuracy of the SAG Mill sizing in the feasibility phase, grindability test work is recommended to evaluate the variability of the feed material. Existing drill core samples should be used for this purpose.

2. Concentrate slurry transport: As the mine plan is developed, further review the expected variability and the impact on the pipeline system sizing and turndown requirements including the following:

a) Obtain representative samples for concentrate pipeline to progress the slurry testing and design criteria for the concentrate pipeline and subsequently, the return water pipeline.

b) Progress the selected pipeline route to investigate potential impediments by studying geotechnical, environmental, hydrological, permitting and land acquisition constraints that may be present along the proposed right-of way and may impact the project schedule.

c) Further study and optimize the selection for the communication system along the pipeline stations for integration within the process and port facilities.

d) Further evaluate the environmental and permitting requirements (if any) related to the pipeline leak detection system and its detection accuracy.

e) Progress the pipeline construction methodology (contracting strategy, schedule, and overall plan) and integrate within project development critical path assessment. One possibility is to utilize joint coupling instead of welding. Depending on its technical suitability, this method can significantly cut down the pipeline construction time, which is important considering the short construction window in a year.

f) Further assessment is required for cold weather engineering in relation to more advanced heat transfer analysis to better understand frost action and seasonal heave and thaw cycles. Subsequently, the relevant mitigation system should be implemented, depending on ALARP (As Low As Reasonably Practicable) levels. This can potentially reduce/eliminate the glycol injection system which has been included as part of pipeline capital cost.

g) Evaluate the feasibility of conveyor versus slurry pipeline, to transport concentrate from the concentrator to the port site, as a potential trade off study during the feasibility stage of the project. The overall costs and operability effects associated with conveying versus slurry pumping may be beneficial.

3. Concentrate filtration and settling: Vendor testing for filtration equipment is recommended. Since the drying of the iron concentrate to 2% moisture during the winter requires large quantities of fuel, producing a low moisture filter cake is impacting the operating costs. Vendor testing for thickeners is also recommended.

4. Pellet production: The balling and pot grate parameter design parameters should be investigated and tested.

5. Concentrate cake freezing: Evaluate the behaviour of filtered concentrate under freezing conditions to optimize dewatering systems.

6. Wet high intensity magnetic separation combined with hydraulic separation: Potentially the weight recovery can be increased by using wet high intensity magnetic separation and or with hydraulic separation. This needs to be further evaluate prior to, or at the beginning of the feasibility study.

7. Increasing the recovery by increasing silica grade in concentrate: The weight recovery can be increased or optimized by increasing the silica content in the concentrate. An increase from 4.5% to 5.0% SiO_2 could potentially increase the weight recovery by 0.5 to 1%.

8. Geotechnical information: A geotechnical drilling program at the concentrator and port areas should be carried out to determine the bedrock depth and soil and bedrock bearing capacities for concrete foundation design.

9. Port and Shipping:

    a. Explore transshipment alternatives and optimize the transshipment approach in order to minimize costs and to enhance the logistical issues associated with shipments to Asia.

    b. Confirm assumed duration of summer and winter shipping seasons.

    c. Initiate an ice measurement program for the Hopes Advance Bay area.

    d. Initiate a geotechnical investigation to collect design parameters for dredging requirements, caisson and causeway designs.

    e. Shipping distance, route, type of shipping contracts, export volume, oil prices and port charges greatly influence export costs, and should be investigated further.

    f. The availability of ice-class vessels for the project, and associated shipping costs, should be further analyzed in order to reduce shipping risk.

    g. Winter/summer shipping volumes should be calculated to optimize shipping costs.

1.15 BUDGET FOR ONGOING WORK

It is recommended that Oceanic proceeds with preparation of the planned Feasibility Study for the Hopes Advance project. This will include detailed environmental and social impact assessment, geotechnical and geo-mechanical investigations, metallurgical testing and analysis, port studies, engineering and marketing studies. The budget for this work, as well as for continued work on the overall development of the project (including environmental and social impact assessment work), totals approximately $16 million and is summarized in Table 1.9. These costs are in addition to project costs presented in this report.

Table 1.9
Hopes Advance Project Budget for Ongoing Work

Item	Cost ($)
Assays[1]	7,500
Environmental and Social Impact Assessment	3,000,000
Geotechnical and Geomechanical investigation	1,000,000
Geotechnical drilling	700,000
Metallurgical testwork and analysis engineering	500,000
Assessment requirements on claims and claims management	690,000
Claims payments	180,000
Pre-production NSR payment	200,000
Port studies[2]	1,000,000
Feasibility Study and report preparation	8,720,000
Total	**15,997,500**

[1] Assumes 75 assays at $100/assay – for drilling and mapping samples.
[2] Includes assessment of transshipment location, wave and current measurement, ice characterization at breakup.

On the basis of this Prefeasibility Study of the Hopes Advance project, Micon concludes that exploitation of the iron resources in the Hope Advance project area could provide attractive economic returns, and that further development is warranted.

Engineering design should proceed to develop the project base case described in this study to further optimize the project during the Feasibility Study stage.

2.0 INTRODUCTION

2.1 BACKGROUND

The Hopes Advance deposits are included in the group of iron deposits held by Oceanic Iron Ore Corp. (Oceanic), known as the Ungava Property, located in the Ungava Bay region of northern Québec. This area represents significant iron resource potential and was extensively explored during the late 1950s through the mid-1960s. The Hopes Advance iron deposits are located north of the Ford River at Hopes Advance Bay. These deposits were well advanced towards production with extensive exploration drilling, metallurgical testwork, process development, and preliminary feasibility studies already having been completed. Interest in these deposits then declined due to the market for iron ore and a prolonged period of depressed iron ore prices during the subsequent 40 years.

The term “Hopes Advance project” refers to the mining and mineral processing of the 10 deposits in the immediate Hopes Advance Bay area. These deposits include: Bay Zone B, Bay Zone C, Bay Zone D, Bay Zone E, Bay Zone F (collectively the “Bay Zone”), Castle Mountain, Iron Valley, West Zone 2, West Zone 4, and West McDonald (collectively the “West Zone”).

Micon International Limited (Micon) has been retained by Oceanic as lead consultant for the Prefeasibility Study on the Hopes Advance Bay Project. The other participants in the preparation of the Prefeasibility Study referred to in this Technical Report are:

- Met-Chem Canada Inc. (Met-Chem), a consulting engineering company with significant metallurgical project experience. Its scope included metallurgical testing and recovery design, infrastructure and utilities, including the power plant, and concentrate drying and loading at the port. Met-Chem also costed the installation and operating costs of the process equipment.

- Golder Associates Ltd. (Golder), a leading consulting engineering company, led the geotechnical drilling, tailings impoundment selection and design, and environmental baseline studies.

- OSD Pipelines (OSD), a leading designer of concentrate pipeline systems, provided designs for the proposed concentrate pipeline.

- Micon also provided mine design, costing, and scheduling.

2.1.1 Previous Technical Reports

A preliminary economic assessment (PEA) and mineral resource estimate was completed on the Hopes Advance project the results of which were disclosed in a Technical Report dated 4 November, 2011 (Micon, 2011).

Subsequently, a Mineral Resource Estimate Update was completed on the Hopes Advance project the results of which were disclosed in a Technical Report dated 2 April, 2012 (Canova 2012).

These reports can be accessed from SEDAR's electronic database http://www.sedar.com/.

2.2 TERMS OF REFERENCE, QUALIFIED PERSONS AND SITE VISITS

Oceanic has retained Micon to prepare a Prefeasibility Study for the Hopes Advance project within the Ungava Bay Region, Québec, Canada.

This NI-43-101 Technical Report presents the Prefeasibility Study for the Hopes Advance project.

2.2.1 Qualified Persons and Site Visits

The qualified persons (QPs) for the Technical Report are:

Valérie J. Bertrand, géo.
Bogdan Damjanović, P.Eng.
B. Terrence Hennessey, P.Geo.
Daniel Houde, Eng.
Christopher Jacobs, C.Eng., MIMMM
Darrin Johnson, P.Eng
Stéphane Rivard, Eng.
Jane Spooner, P.Geo.
Ryan Ulansky, P.Eng.

B. Terrence Hennessey (Micon), Darrin C. Johnson (Golder), Warren King (OSD), and Daniel Houde (Met-Chem) visited the property on June 12-15, 2012.

Each of the qualified persons is independent of Oceanic as defined in Section 1.5 of NI 43-101.

Bogdan Damjanović was responsible for supervising the preparation of the Technical Report.

2.3 UNITS AND ABBREVIATIONS

In this report all currency amounts are stated in US dollars ($). Quantities are generally stated in SI units, the standard practice within Canada, including metric tonnes (t) and kilograms (kg) for weight, kilometres (km) or metres (m) for distance, and hectares (ha) for area. Where applicable, imperial units have been converted to SI units, the standard Canadian and international practice. Table 2.1 provides a list of the various abbreviations used throughout this report.

Table 2.1
List of Abbreviations

Name	Abbreviation
Act respecting threatened or vulnerable species	ATVS
As Low As Reasonably Practicable	ALARP
Canadian Institute of Mining, Metallurgy and Petroleum	CIM
Canadian National Instrument 43-101	NI 43-101
Capital asset pricing model	CAPM
Cent(s), US	¢
Centimetre(s)	cm
Cubic metre(s)	m^3
Day	d
Degree(s)	°
Degrees Celsius	°C
Diamond Drill Hole	DDH
Digital elevation model	DEM
Dollar(s), US	$
Environmental and social impact assessment	ESIA
Foot or Feet (imperial units)	ft
Gallons per minute	gpm
Giga annum (1 billion)	Ga
Global positioning system	GPS
Gram(s)	g
Grams per metric tonne	g/t
Greater than	>
Greenhouse gas	GHG
Ground magnetic survey	GMS
Hectare(s)	ha
High pressure grinding roll	HPGR
Hour (s)	h
Inch(es)	in
Inductively coupled plasma	ICP
inductively coupled plasma mass spectrometry	ICP
Internal rate of return	IRR
Inverse distance cubed	ID^3
Inverse distance squared	ID^2
Inverse distance to the fifth power	ID^5
James Bay and Northern Québec Agreement	JBNQA
Kativik Environmental Advisory Committee	KEAC
Kilogram(s)	kg

Name	Abbreviation
Kilometre(s)	km
Lerchs-Grossmann algorithm	LG algortithm
Less than	<
Life-of-mine	LOM
Litre(s)	L
Low intensity magnetic separation	LIMS
Metre(s)	m
Micron(s)	µ
Milligram(s)	mg
Millimetre(s)	mm
Million metric tonnes	Mt
Million metric tonnes per year	Mt/y
Million years	Ma
Ministère du Développement Durable, de l'Environnement et des Parcs du Québec	MDDEP
Net present value	NPV
Net smelter return	NSR
Net smelter return	NSR
North American Datum	NAD
Not available/applicable	n.a.
Nunavik Marine Region Impact Review Board	NMRIRB
Nunavik Marine Region Planning Commission	NMRPC
Nunavik Marine Region Wildlife Board	NWRWB
Ordinary kriging	OK
Ordre des géologues du Québec	OGQ
Parts per billion	ppb
Parts per million	ppm
Percent(age)	%
Pound(s)	lb
Quality Assurance/Quality Control	QA/QC
Québec Environmental Quality Act	EQA
Québec Ministère des ressources naturalles et faune	MRNF
Rock quality designation	RQD
SAG mill comminution	SMC
Satmagan	Sat
Second	s
Semi-autogenous grinding	SAG
Soluble iron	Sol. Fe
Species at risk act	SARA
Specific gravity	SG

Name	Abbreviation
Système International d'Unités	SI
Tailings management facility	TMF
Three-dimensional	3D
Ton(s) (imperial, 2,000 pounds)	ton
Tonne (metric, 2,205 pounds)	t
Tonnes per cubic metre	t/m^3
Tonnes per day	t/d
Tonnes per hour	t/h
Tons (imperial) per day	tons/d
Tons(s) (long, imperial, 2,240 pounds)	l. ton
Total Suspended Solids	TSS
Two-dimensional	2D
Universal transverse mercator	UTM
Weight percent	wt%
Weight recovery	WRCP
Weighted average cost of capital	WACC
Wet high intensity magnetic separation	WHIMS
X Ray Fluorescence	XRF
X-ray diffraction	XRD
X-ray fluorescence	XRF
Year	y/yr

3.0 RELIANCE ON OTHER EXPERTS

Oceanic, under the supervision of Eddy Canova P.Geo., OGQ, has carried out exploration work on the Hopes Advance project, has drilled holes, has taken samples of core and has sent samples out for independent assaying. Close examination of the geology of the core, use of a magnetic susceptibility meter to aid in identifying units, examination and verification of mineralization in drill core and the assay results have been used to identify the limits of the mineralized iron formation units. While exercising all reasonable diligence in checking all the data, the author has relied on services contracted by Oceanic for surveying, topographic data, drilling, and for assaying the core.

The historical data gathered for the Hopes Advance property is contained in assessment files historical reports.

AMEC Environment & Infrastructure (AMEC) was previously retained by Oceanic to identify a location for a port facility at Hopes Advance Bay for the shipment of 10 Mt/y or 20 Mt/y iron ore products to steel mills in Europe and Asia. Their study was referenced in the Hopes Advance project PEA (Micon, 2011).

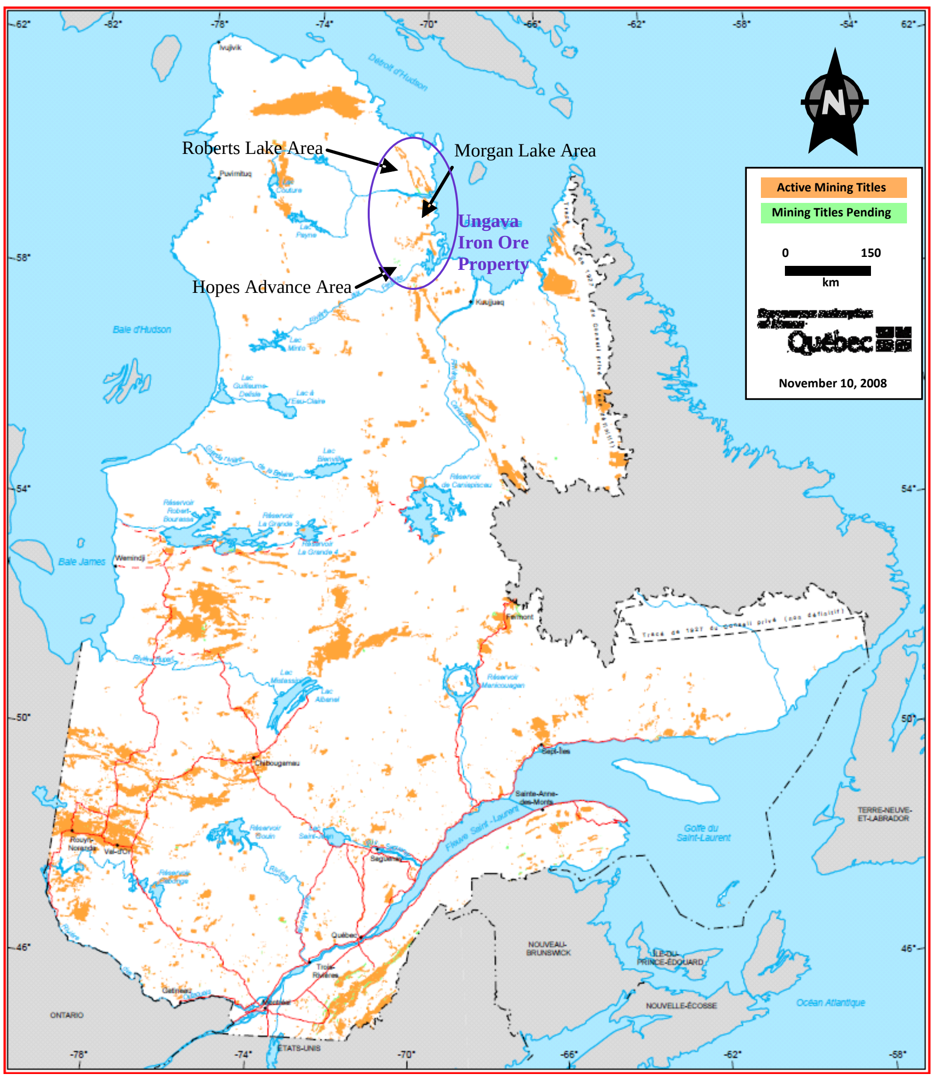
The status of the mining claims under which Oceanic holds title to the mineral rights for the Hopes Advance project and neighbouring properties has been compiled by external services and verified by Oceanic. The description of the property, and ownership thereof, as set out in this report, is provided for general information purposes only.

4.0 PROPERTY DESCRIPTION AND LOCATION

The information in this section is taken from the mineral resource update report (Canova, 2012) and updated to reflect current information on claims.

The Ungava Property contains several significant, historically identified, undeveloped iron deposits. Hopes Advance Bay is located in the south of this iron deposits range. The Ungava Property consists of several blocks of claims on NTS sheets 24K, 24M, 24N, 25C and 25D and covers an area of approximately 147,390 ha. The Ungava Property extends between latitude 59°06' N to 60°50' N and from longitude 69°42' W to 71°05' W. The location of the Ungava Property is shown in Figure 4.1.

Figure 4.1
Location of the Ungava Property in Northeastern Quebec, Canada



The approximate centre of the Hopes Advance claims is 59°17’58N, 69°54’13”W.

The Hopes Advance project is made up of a number of historically identified iron deposits north of Ford Lake, Red Dog Lake, and the Red Dog River. The deposits are about 30 km inland from Hopes Advance Bay and the small village of Aupaluk. The iron deposit contained on the property nearest to tidewater is within about 5 km of Hopes Advance Bay.

There is extensive historical documentation for the properties that make up the Oceanic Ungava Property. The deposits at the Hopes Advance area were the most advanced towards production with a detailed scoping study level report completed in the early 1960s (referred to as a feasibility study at that time).

Pacific Harbour entered into an agreement dated 1 October, 2010 with John Patrick Sheridan of Toronto, Ontario and Peter Ferderber of Nepean, Ontario, (collectively referred to as the Vendors) to acquire a 100% interest, subject to a 2% net smelter return (NSR) royalty, in approximately 3,000 mining claims located near Ungava Bay, Québec. On 30 November, 2010, the company closed the acquisition of the 100% interest, subject to the Vendors retaining a 2% NSR royalty on the property. Also on closing the acquisition agreement, Pacific Harbour changed its name to Oceanic Iron Ore Corp.

As consideration for the acquisition, the company issued 30,000,000 common shares, of which 12,000,000 common shares were free trading and 18,000,000 were in escrow. The shares held in escrow were to be released as follows: 4,500,000 shares on each of the dates that are 18 months, 24 months, 30 months and 36 months following December 3, 2010, respectively.

On 30 November, 2011, Oceanic paid an initial advance NSR payment of $200,000 and, thereafter, will pay minimum advance NSR payments of $200,000 per year which will be credited against all future NSR payments payable from production.

Oceanic may purchase 50% of the NSR by paying $3,000,000 at any time in the first two years following the commencement of commercial production from the property.

Exploration claims are established by paper staking and do not require that the limits be physically walked or marked. Until April, 2010, obtaining claims by map designation could be done by mail, fax, electronically or in person with the Ministry or at its regional centres. Since April, 2010, this can only be done electronically. Sheridan and Ferderber stated that the claims were all obtained through map designation and not by physical staking.

The Ungava Property consists of 3,538 claims on 19 map sheets that extend along the known trace of the iron formation. The claims are valid but require rental fee payments every two years totaling $343,458. Exploration activities require an application and approval of the Québec Ministère des ressources naturalles et faune (MRNF). None of the claims are within parks, forest reserves or other areas that are restricted from exploration and mining. Areas that are restricted from staking or exploration are shown on the figures provided above.

Claims expiring in 2012 have been renewed and the soonest that any claims will expire is 14 January, 2013. The annual rental fees for 6 May, 2012 through August 17, 2014 total $334,513 and have been paid for the claims coming due in 2012, amounting to $71,131. Work required in lieu of assessment fees for 2012 is $228,400 in assessment work filing and $653,795 is similarly due in 2013. There are no pre-existing surface rights held on the property.

A summary of the mineral claims making up the Ungava Property at October, 2012 is given in Table 4.1.

The Ungava Property is presently owned 100% by Oceanic.

Exploration activities are subject to the 1988 Québec Mining Act and the Québec Environmental Quality Act. These statutes set out the requirements for mineral exploration and the environmental controls required to manage exploration activities on site. The Québec Mining Act sets up the requirement for the exploration permit and any development permit if the project proceeds to that stage. The Québec Environmental Quality Act is comprehensive and covers a broad range of protection measures including pollution control, environmental impact assessment, requirements for land protection and rehabilitation, quality of water and waste water, hazardous materials, air quality control, consultation, and residual and hazardous wastes.

Oceanic is not aware of any environmental liabilities associated with the Hopes Advance property that is the subject of this report.

Table 4.1
Summary List of Claims at October, 2012

Property	SNRC	Claims	Area (ha)	Rent ($)	Work Required	
					2012	2013
Hopes Advance	24M01	272	12,009	26,656	100,000	0
Hopes Advance	24M08	371	16,341	36,358	0	0
Hopes Advance	24N05	517	21,944	49,246	113,000	0

Oceanic is conducting exploration activities under the permit (Permit d'Intervention) issued by the MRNF (Number 3011939, issued 19 April, 2012).

On 25 February, 2011, the Nunavik Land Holding Corporation of Aupaluk granted authorization to carry out exploration in the Hopes Advance project area.

The Land Holding of Aupaluk has granted a permit to the company for establishing a camp.

The Hopes Advance project is located in Nunavik, the northern region of Québec which falls under the jurisdiction of the James Bay and Northern Québec Agreement (JBNQA). This agreement, negotiated in 1975 between the Government of Québec, the Grand Council of the Crees of Québec and the Northern Québec Inuit Association, has led to specific provisions of Chapter II of the Québec Environmental Quality Act (EQA). An environmental advisory committee, composed of First Nations, provincial and federal representatives, serves as the official forum to implement and address environmental protection and management in the region.

In 2005, the Nunavik Inuit Land Claims Agreement was reached between the Government of Canada and the Makivik Corporation, the development company that manages the heritage funds of the Nunavik Inuit as provided for in the JBNQA. The 2005 land claims agreement a) affirms the existing aboriginal and treaty rights as recognized under the Constitution Act of 1982; and b) provides additional certainty regarding land ownership and use of terrestrial and marine resources. Three new entities, the Nunavik Marine Region Wildlife Board (NMRWB), the Nunavik Marine Region Planning Commission (NMRPC), and the Nunavik Marine Region Impact Review Board (NMRIRB), have been established as a result of the aforementioned land claims agreement. Each board will play a significant role in assessing and approving any development in the Nunavik region.

Federal legislation will also need to be considered for any development in addition to the Inuit agreements, Nunavik agencies, and the Québec legislation mentioned above. Applicable federal legislation includes the Canadian Environmental Assessment Act, the Fisheries Act, the Canadian Environmental Protection Act, the Canada Water Act, the Navigable Waters Protection Act, Migratory Birds Act, and the Metal Mining Effluent Regulations. Tailings disposal in a natural water body should be avoided in project planning as legislated under the Metal Mining Effluent Regulations. In addition, exploration and potential development needs to consider species of special status that include caribou, beluga whale and musk ox.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The information in this section is taken from Canova, 2012.

The Hopes Advance project area is accessible from Aupaluk 10 km east in Nunavik, Québec, via helicopter or float plane (Figure 5.1). Aupaluk is serviced by regularly scheduled flights by Air Inuit from Kuujjuaq. First Air operates regularly scheduled flights to Kuujjuaq originating out of Montreal.

The nearest road is about 10 km from the Hopes Advance project area near Aupaluk. Aupaluk and Kangirsuk are not connected to each other or to any other community by road. Kangirsuk has a population of 465 (2006) while Aupaluk has a population of 174 (2006). The major population centre for the region is Kuujjuaq, located about 150 km southeast of the property with a population of 2,130 in 2006.

The Hopes Advance project is located within 10 km of Aupaluk. The closest accommodations are located in Aupaluk and Kangirsuk, both of which have both a motel and restaurant.

The Hopes Advance project area is located in the arctic treeless tundra of the Canadian Shield and Labrador Trough. Topographic relief can be up to a few hundred metres above sea level (generally less than 150 m). Much of the area is flat with local hills and ridges forming relatively prominent features. Numerous lakes and streams are found throughout the region. The mean annual temperature is -5.7^{o} C, with the coldest temperatures recorded in January (average -24.3^{o}C) and the warmest in July (average 11.5^{o}C). Average annual precipitation recorded at Kuujjuaq is 527 mm, with the minimum in April and the maximum in August. Rainfall averages 227 mm. Snow falls between October and April. Winds are steady and sometimes reach high velocities, with an average of about 30 km per hour throughout the year. The wind directions are generally from the southwest and northeast. Due to the moderating influence of the sea, winter temperatures are no colder than northern Minnesota or southern Manitoba. The winters are long and the summers are short and cool. These climatic conditions are severe, though no more so than other regions of northern Canada.

The project area is located within the zone of permanent permafrost. Exploration can be carried out on the property between May and October.

The vegetation on the property is composed of sub-Arctic tundra species including various small plants, mosses and lichens. Animal species present on the property include caribou and musk ox. In Ungava Bay, a small population of beluga whales is also present.

Figure 5.1
Location Map of the Communities in Northeastern Quebec, Canada

Oceanic Iron Ore Corp., November, 2011.

No surface rights are held on the property. No power sources are currently available to the project. Water sources are abundant in all areas of the property. Potential port sites have been identified within 26 km of the Hopes Advance project area. Experienced mining personnel would be sourced from mining centres in southern Québec. Adequate space is available for potential tailings storage areas, waste disposal areas, and sites for facilities.

6.0 HISTORY

The information in this section is taken from Canova, 2012.

The history of the discovery and early exploration of iron resources within the Labrador Trough is described by Auger (1958) in a report for the Ungava Iron Ores Company as follows:

> "The Labrador Trough is a stratigraphic and structural unit, which has been reported in northern Quebec as early as 1852, by Father Babel, an Oblate missionary. In the latter part of the 19th Century, A. P. Low of the Geologic Survey of Canada mentioned the presence of abundant iron formation and in his report published in 1895, he recommends that the area be prospected for iron. In 1929, iron ore was found in Labrador by J. E. Gill and W. F. James in the iron formation of the Trough on the present property of the Iron Ore Company of Canada and in 1936, Dr. J. A. Retty made the first discovery of iron ore in Quebec and began the systematic exploration of the Labrador Trough. His work was followed by that of numerous others, including the writer [Auger].
>
> "In the succeeding years from 1946 to date [1958] the Province of Quebec gave various companies large concessions covering most of the Labrador Trough from Knob Lake northward as far as Ungava Bay and southward as far as Mount Wright and Lake Mistassini. In 1951, a prospector, Ross Toms, staked the first claims in the Ford Lake region [Hopes Advance area]. The samples collected on these claims were brought to Mr. Cyrus S. Eaton of Cleveland, Ohio USA, who foresaw the potential economic significance of ore of this type located near tidewater. Mr. Hugh Roberts, a well known consulting geologist from Duluth, examined the samples and recognized at once the economic value of the material under consideration and recommended that some geologic studies and exploratory drilling be done on the ground which is now [1958] the property of Atlantic Iron Ores Limited.
>
> "In 1952 and 1953, exploration was pushed northward along the Labrador Trough and new outcrops of iron ore were discovered with the resultant acquisition by the Cyrus Eaton interests of the mineral rights on the International Iron Ores Properties, north and south of Payne River. In the following years Oceanic Iron Ores Company and Quebec Explorers Limited obtained mining concessions on neighbouring grounds. This completed the granting of all the iron-bearing ground comprised within the Labrador Trough in Quebec."

The most active exploration period was from 1952 through 1961. Large iron mining operations were proposed at Hopes Advance Bay in the south. The project at Hopes Advance Bay was the most advanced in the area with a detailed Scoping Study and Prefeasibility Study being completed (called a Feasibility Study at that time).

During the same time period, large iron resources were developed southward along the Labrador Trough in Labrador and in Québec at Labrador City, Wabush, and Mount Wright. Additionally, large iron production plants (in Taconite) were brought into production in Minnesota and Michigan in the United States. All of this additional capacity was much closer to steel producing centres in the United States and Canada resulting in much lower overall production costs than could be achieved by mining the deposits in the Ungava Bay region. As a result, all of the projects in this area had been suspended or terminated by the mid-1960s.

Minor exploration work continued on the property until the early 1970s. Since that time, other than some minor metallurgical testing, the only exploration work completed by previous companies has been airborne geophysical surveys completed during the 1990s. Airborne geophysics (radiometrics and magnetometer surveys) have been completed in 2006, 2007, 2008 and 2009 by Voisey Bay Geophysics Ltd., as contracted by Ferderber and Sheridan.

6.1 GENERAL EXPLORATION HISTORY

6.1.1 Hopes Advance Project Area

The Hopes Advance area iron deposits were first discovered in 1951 with active exploration from that time continuing through 1962. Exploration work completed on the property included exploration drilling, surface sampling, surface mapping, and metallurgical testwork. Detailed site layouts and pit designs were completed for a processing plant along the Red Dog River and a harbour on Hopes Advance Bay.

Eight of the deposits have had some drilling including Bay, Castle Mountain, Iron Valley, No.1, West Zone 2 - West Zone 4, West Zone McDonald, and Northwest Corner zones. Other mineralization in the Hopes Advance area includes the No. 3 and No. 6 zones. The Northwest Corner zone is not considered in the present mineral resource estimate.

6.2 HISTORICAL MINERAL RESOURCE ESTIMATES

The Ungava Property contains significant historic iron resources. However, the amount of historical exploration drilling in most cases is not enough to define the resource or determine a mineral resource under current reporting criteria. Thus, all of the reported historical iron resources are considered speculative and do not meet any standard of modern reportable resources or reserves.

6.2.1 Hopes Advance Project Area

The Hopes Advance area includes historically identified iron deposits including the Bay Zones A, B, C, D, E and F; Castle Mountain; Zones 1, 2, 3, 4, 5, and 6; the Northwest Corner, McDonald, and Iron Valley zones. The historical estimated resource is more than 590 Mt at a grade of 35.7% $Fe_{soluble}$ and was based on extensive exploration drilling (185 drill holes, 12,935 m), channel sampling, bulk samples, surface mapping, and economic studies. An additional “potential resource” of 229 Mt was reported in the historical documentation but has very little documented support. Table 6.1 summarizes the historical resources identified in the Hopes Advance area.

The historical work at Hopes Advance included mine plans including pit designs with ramps. All drill indicated areas had pits designed on them and waste stripping determined. No detailed annual mine plans were constructed and the overall stripping ratio was estimated to be about 0.32 to 1 on the drill indicated material. Initial mining would have been from the Castle Mountain and Bay Zone F deposits.

Table 6.1
Historical Iron Resources in the Hopes Advance Area

Deposit	Crude Resource (Mt)	Head Iron (Sol. Fe)	Exploration Drill Holes	Metres Drilled	Source	Date
Bay Zones (A to F)	124.4	35.0%	54	3,929	P. E. Auger	1958
Castle Mountain	204.3	34.8%	53	3,966	P. E. Auger	1958
No. 2 Zone	80.8	36.4%	22	1,672	P. E. Auger	1958
No. 4 Zone	72.0	35.7%	27	1,435	P. E. Auger	1958
Northwest Corner	16.7	37.3%	3	252	P. E. Auger	1958
McDonald Zone	14.4	37.7%	7	443	P. E. Auger	1958
Iron Valley Zone	78.3	37.7%	16	1,129	P. E. Auger	1958
Total Drill Indicated	590.9	35.7%	182	12,826		
No. 1 Zone	61.0	35.0%	3	109	P. E. Auger	1958
No. 2 Zone Western Part	40.6	35.0%	0	0	P. E. Auger	1958
No. 3 Zone	12.2	35.0%	0	0	P. E. Auger	1958
No. 6 Zone	10.2	35.0%	0	0	P. E. Auger	1958
Northwest Corner Possible	89.4	35.0%	0	0	P. E. Auger	1958
McDonald Zone Possible	15.2	35.0%	0	0	P. E. Auger	1958
Total Potential	228.6	35.0%	3	109		
Total Hopes Advance Area	**819.5**	**35.5%**	**185**	**12,935**		

The historical estimates presented above use categories other than the ones set out in NI 43-101 and have not been prepared to the standards required by the instrument or modern estimation practices. They are therefore not reportable as a current mineral resource.

6.3 HISTORICAL PRODUCTION

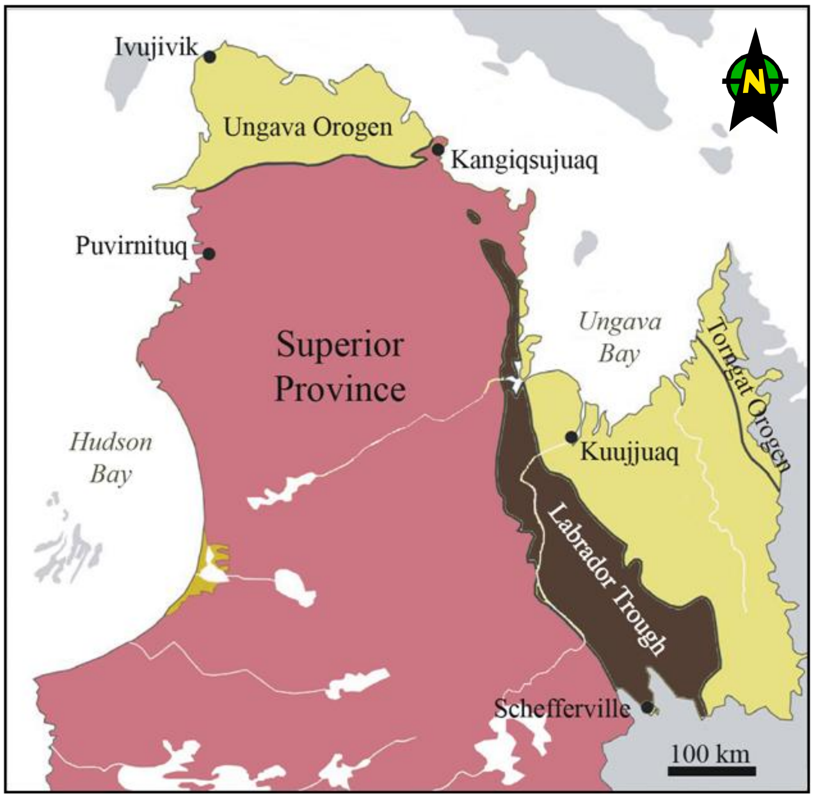
There has been no historical production from any of the iron deposits contained within the Ungava Property.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

The information in this section is taken from Canova (2012).

The iron formation that comprises the deposits of Oceanic's Ungava Property is situated at the northernmost extension of the approximately 1,000-km long Labrador Trough as shown in Figure 7.1. Farther south, the Labrador Trough hosts the iron ore deposits of Schefferville and Wabush Lake. The Labrador Trough, or New Quebec Orogen, is a Paleoproterozoic (1,840 Ga) fold and thrust belt that is situated between the Archean aged Superior and Rae Provinces. The iron formation in the Labrador Trough has been dated at 1,880 Ga ±2 Ma.

Figure 7.1
Map Showing Major Tectonic Subdivisions of Northern Quebec and the Ungava Peninsula



Micon, 2008 after MNRF (http://www.mrnf.gouv.qc.ca/english/publications/mines/quebec-mines/gites_uranium.pdf).

The general stratigraphic sequence observed in the Ungava Property is composed of an Archean age granite gneiss basement; unconformably overlying the granite gneiss is a succession of meta-sedimentary rocks. (See Table 7.1). Immediately overlying the granite gneiss in most areas is quartzite of the Ford Lake Formation. The quartzite may contain magnetite, garnet and lenses or pods of mica schist. The quartzite grades upward into the Sokoman Iron Formation. The iron formation may be further subdivided based on variations in magnetite, hematite, carbonate and iron silicates. A conspicuous spotted iron silicate-carbonate-quartz bed caps the iron formation. Micaceous schist and slate that are intruded by gabbro sills overlie the Sokoman iron formation.

Table 7.1
Stratigraphic Sequence in the Hopes Advance Area

Hopes Advance				Thickness (m)
Late Precambrian	**Leaf Bay Group**	Volcanic and sedimentary rocks. Diorite and gabbro sills and amphibolitic rocks.	--	
	Red Dog Formation	Micaceous schist and slate with minor carbonate and quartzose beds.	--	
	Sokoman Iron Formation	Iron silicate-carbonate-quartz iron formation		15-30
		Grunerite-magnetite-quartz iron formation		10-15
		Hematite-magnetite-quartz iron formation		45-60
		Carbonate-iron silicate-magnetite-quartz iron formation		12-15
	Ford Lake Formation	Quartzite and garnet-biotite-chlorite schist		Up to 30
		Unconformity		
Early Precambrian				
	Archean Complex	Granite and granite gneiss		

The Sokoman Iron Formation is the stratigraphic/geological control of the iron mineralization in the region. Strong folding has resulted in a structural influence on the iron formation. The iron formation in the Ungava Bay area appears to be more or less continuous along its considerable strike length of over 300 km. The iron formation is folded into a south-southeast plunging syncline with the closure of the fold located to the north of Payne Bay. The limbs of this regional syncline are folded in a series of parasitic synclines and anticlines.

Thrusting and recumbent folding of the iron formation in several areas has led to limb thickening, thinning, and doubling up of the mineralized horizons in some locations. The known deposits or more prospective areas on the property are those areas where the iron formation has been deformed and is now flat-lying, raised above the surrounding non-mineralized rocks, deformed into anticlines or synclines, doubled up or otherwise thickened.

Table 7.2 lists the lengths, widths (observed on surface and not corrected to true thicknesses) and depths of mineralized zones as noted from the historic work conducted by the companies noted in Section 6.0 of this report.

Table 7.2
Description of Length, Width, Depth and Continuity of Mineralized Zones

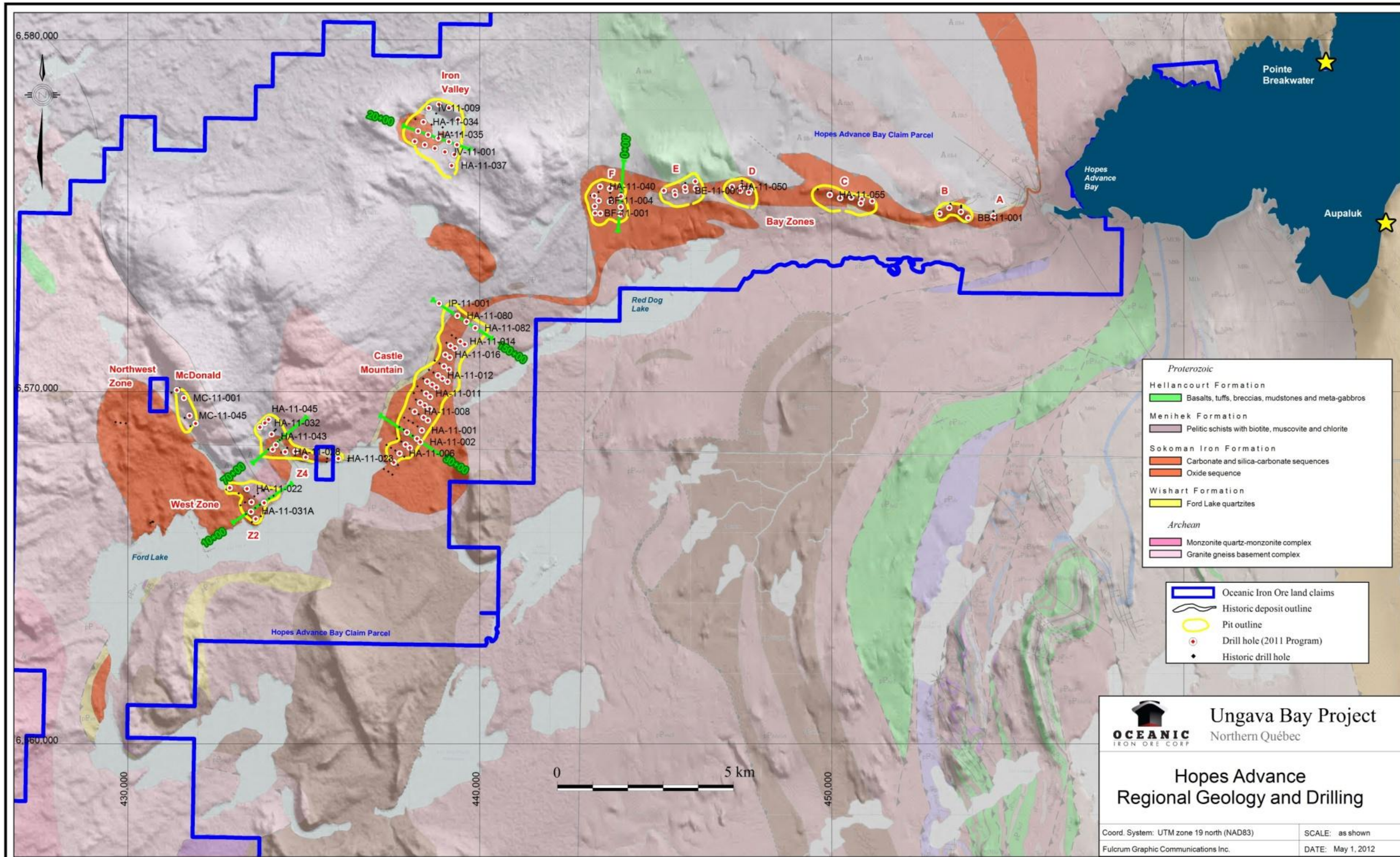
Areas/Mineralized Zone	Length (m)	Width (m)	Known Depth (m)	Orientation	Continuity
Hopes Advance Bay					
A	~1000	100-200	> 50	moderate to S	continuous iron unit with deposits along 10km strike
B	>2000	150-300	> 50	moderate to S	continuous iron unit with deposits along 10km strike
C	>2000	100-150	> 50	moderate to S	continuous iron unit with deposits along 10km strike
D	>1200	50-150	> 50	moderate to S	continuous iron unit with deposits along 10km strike
E	>1500	90-400	> 50	moderate to S	continuous iron unit with deposits along 10km strike
F	>1400	90-400	> 50	moderate to S	continuous iron unit with deposits along 10km strike
Iron Valley	~1400	~1300	~ 40-50	~ flat lying	syncline, forms a bowl shape
Castle Mountain	~4000	200-800	50-75	low angle to flat lying	good contunuity
No.2	~1000	~500	~ 50	low angle to flat lying	good contunuity
No. 4	~2600	150-300	> 75	moderate to SW	folded, good contiinuity

7.1 HOPES ADVANCE PROJECT AREA

The Hopes Advance area is unusual in that it is the only portion of the iron formation which strikes generally east-west. All other areas are dominated by strikes that range from north-northwest to north-south. The geology of the Hopes Advance project is presented in Figure 7.3.

The bedding at Castle Mountain appears to form an open, upright anticline plunging shallowly to the southeast. However, fold closures in the otherwise relatively flat-lying rocks suggest complex folding and thrusting of the beds. Lean chert-magnetite iron formation is locally overlain by higher-grade chert-magnetite-hematite iron formation. Historic bulk sample trenches apparently targeted this horizon. Beds in the chert-magnetite-hematite iron formation are up to several feet thick. The chert-magnetite-hematite iron formation is overlain by spotted chert-magnetite-silicate iron formation, which in turn is overlain by spotted chert-carbonate rock. Fibrous amphiboles were noted in the transition between the chert-magnetite-hematite-silicate iron formation and the overlying chert-carbonate rock.

Figure 7.2
Geology of the Hopes Advance Area



The bedding at Hopes Advance West Zone 4 is folded into a southeast plunging syncline. Chert-magnetite-hematite-silicate iron formation is overlain by spotted chert-magnetite-silicate iron formation and spotted chert-carbonate rock. Beds in the chert-magnetite-hematite-silicate iron formation are up to 0.5 m thick.

The bedding at Hopes Advance West Zone 2 is folded and locally thickened by north-northwest-striking thrust faults. Locally, there is evidence for thrusting where chert-magnetite-silicate iron formation overlies spotted chert-carbonate rock. Bedding dips 30^{o} to 40^{o} to the northeast. The chert-magnetite-silicate iron formation is overlain by spotted chert carbonate. Beds in the chert-magnetite-silicate iron formation are up to a couple of feet thick.

Outcrop at Hopes Advance Iron Valley is sparse. The distribution of outcrop in the area supports a syncline with Iron Valley mineralization lying on the axis. Chert-magnetite-hematite iron formation is overlain by spotted chert-carbonate rock. Two large float boulders of chert-specularite were observed. The float boulders were friable and may represent potentially economic mineralization that does not crop out. Specularite grains are approximately 100 µ in length.

7.1.1 Mineralization

Exploration conducted during the 1950s identified several iron deposits north of Payne Bay to the Red Dog and Ford Lake areas near Hopes Advance Bay in the south.

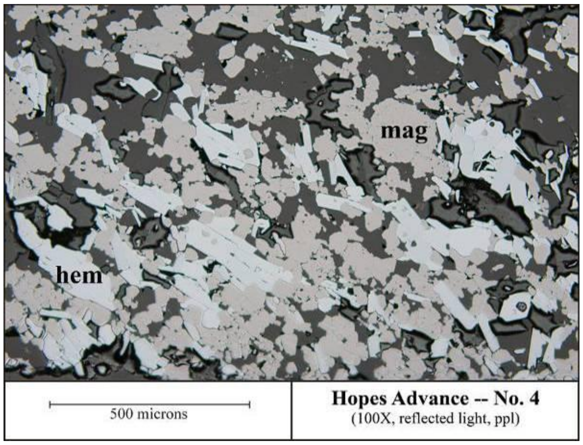
Photomicrographs were prepared for samples collected from sites that were visited by Micon in 2008 (see Figure 7.3). The photomicrographs show the relatively simple mineralogy of the iron formation of the Ungava Property. The figure also demonstrates the potential variation in grain size affecting the potential liberation and recovery of iron oxides.

At the Hopes Advance Castle Mountain iron deposit, the potential iron resource is composed of a mixture of magnetite and hematite. Magnetite grains (Figure 7.4c) range in size from 60 to 125 µ in diameter. Locally, the iron formation appears to be higher grade and relatively coarser-grained than at the occurrences visited to the north.

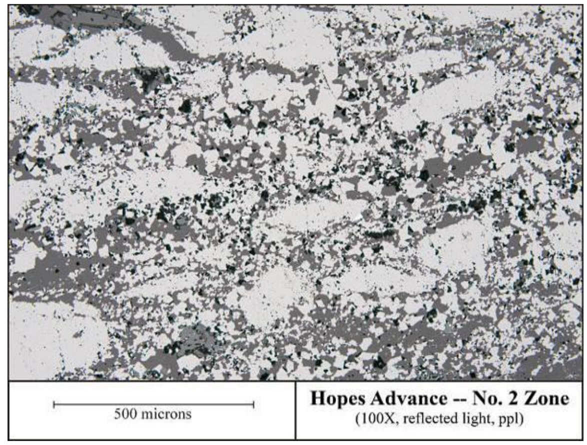
At the Hopes Advance West Zone 4 iron deposit, the relative proportion of magnetite to hematite varies across and along strike in the chert-magnetite-hematite-silicate iron formation. Magnetite grains are approximately 50 to 75 µ in diameter and hematite grains are approximately 100 µ in length (Figure 7.3a).

At the Hopes Advance West Zone 2 iron deposit, the grain size and grade of the chert-magnetite-silicate iron formation appears to be similar to other deposits at Hopes Advance (Figure 7.3b).

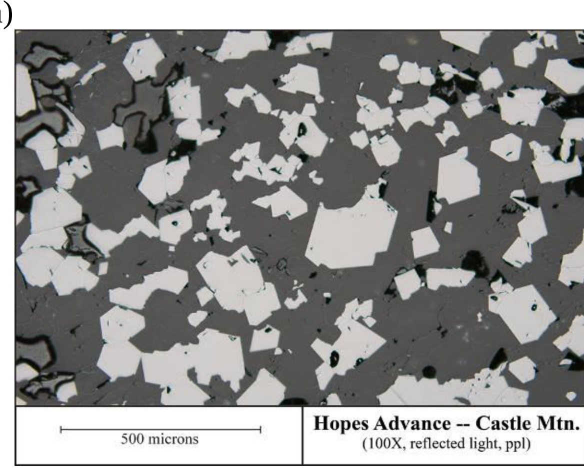
Figure 7.3
Photomicrographs of Grab Samples from Ungava Property, Hopes Advance Project



a)



b)



c)

a) Photomicrograph of grab sample from West Zone 4. Equant grains of magnetite (brown) intergrown with tabular hematite (white) and gangue minerals (gray). b) Photomicrograph grab sample from West Zone 2. Equant, granular disseminated and blocky aggregates (granules) of magnetite (brown) and gangue minerals (gray). c) Photomicrograph of grab sample from Hopes Advance Castle Mountain. Equant, euhedral, disseminated magnetite in a matrix of gangue minerals (gray). All photomicrographs are at the same magnification. Note the variation in the grain size of magnetite. The grab sample from Castle Mountain contains magnetite with an average grain size of 65 µ. The grab sample from West Zone 2 contains magnetite with an average grain size of 12 µ.

8.0 DEPOSIT TYPES

The information in this section is taken from Canova, 2012.

The iron mineralization in the Hopes Advance project area is of the Lake Superior Type (United States Geological Survey, 1995) and contains deposits that have characteristics of iron ores that require concentration to produce saleable products. Lake Superior Type iron formations were deposited in shallow waters on continental shelves and in shallow sedimentary basins. This type of iron formation contains a variety of mineralization types that can be grouped into two main categories: direct shipping and concentrating ores. Direct shipping ores have natural iron content greater than 51% and include the hard ores of northern Michigan and residual ores that have been mined in Australia, Brazil, Michigan, Minnesota and Canada.

Hard ores are high grade, massive and composed of magnetite and hematite. Residual ores are typically composed of hematite and martite and may contain goethite and limonite. Residual ores have been upgraded by weathering processes that have concentrated iron by the removal of gangue minerals, principally quartz. Concentrating ores are typically composed of magnetite and or hematite and silicate minerals at relatively low grades (20-30% Fe) that require grinding to liberate magnetite and/or hematite from the silicate minerals. Magnetite is concentrated by magnetic methods and hematite is concentrated by gravity or flotation methods.

The value of concentrating ores is determined by a combination of Fe grade and ease of liberation. For example, a lower Fe grade ore may have a higher value than a higher Fe grade ore if it liberates at a coarser grind enabling greater throughput with lower grinding costs. The iron ore mining operations that are currently active in the Labrador Trough, Iron Ore Company of Canada (IOC), Quebec Cartier Mining Company (QCM) and Wabush Mines (Cliffs Natural Resources Inc.) all mine iron ores that are suitable for concentrating.

9.0 EXPLORATION

The information in this section is amended from Canova, 2012.

A description of the historical exploration work conducted on the property is provided in Section 6.0.

9.1 GEOPHYSICAL SURVEYS

Work conducted between 2006 and 2009 was predominantly airborne magnetometer and radiometric surveys carried out by Voisey Bay Geophysics Ltd., of Longue-Pointe-de-Mingan, Québec, on behalf of Sheridan and Ferderber. The surveys included:

2006
24M01 - airborne magnetometer and radiometrics
24M08 - airborne magnetometer and radiometrics
24N05 - airborne magnetometer and radiometrics

2007
24C10 - airborne magnetometer and radiometrics
24M15 - radiometrics
24M16 - airborne magnetometer and radiometrics
24N12 - radiometrics
24N13 - radiometrics
24M09 - radiometrics
25C04 - radiometrics
25D01 - radiometrics
25D07 - radiometrics
25D08 - radiometrics

2008
24M01 - airborne magnetometer and radiometrics
24M08 - airborne magnetometer and radiometrics
24N05 - airborne magnetometer and radiometrics

2009
24M15 - airborne magnetometer and radiometrics
24N12 - airborne magnetometer and radiometrics
24N13 - airborne magnetometer and radiometrics
25C04 - airborne magnetometer and radiometrics
25D07 - airborne magnetometer and radiometrics
25D08 - airborne magnetometer and radiometrics
25D10 - airborne magnetometer and radiometrics
25D14 - airborne magnetometer and radiometrics
25D15 - airborne magnetometer and radiometrics

The surveys covered more than 232,600 ha and comprised over 18,400 km of flight lines. The grid coverage was 100 m by 1,000 m or 200 m by 1,000 m on east-west or north-south oriented lines. The results of the surveys were used to outline the iron formation and assist in locating, or determine whether to retain, the claims.

9.1.1 2006 Airborne Geophysical Surveys

A multi-discipline geophysical survey was completed on three claim blocks:

- Block I (Main) - claims on map sheets 24N05, 24M08 and 24M01.
- Block II (North) - claims on 24N05.
- Block III (South) - claims on 24N05.

The program consisted of high-resolution, helicopter airborne magnetic and radiometric surveys. Data acquisition for the airborne phase was initiated on 3 July, 2006 and completed on 7 July, 2006. A total of 3,159.9 line-km of magnetic and radiometric data were acquired. The aircraft used for the towed, bird-magnetometer system was a Robinson R44 Raven. The spectrometer pack was mounted in the rear, passenger compartment of the helicopter. Flight lines were oriented east-west with a line separation of 150 m and tie lines were oriented north-south with a line separation of 1,500 m.

The magnetic anomalies correspond with the trace of an iron formation unit and confirm the location of the iron deposits that were the focus of work completed in the area in the 1950s and 1960s.

Invoices for the work completed in 2006 totaled $398,549 for 3,160 line-km covering a survey area of 345 km^2. The portion of the survey area covered by the claims is approximately 72%.

9.1.2 2007 Airborne Geophysical Surveys

In 2007 a series of multiple-discipline geophysical surveys were completed on:

- Block I to IV claims on 24M16 - 9 to 14 June, 2007.
- Block I and II on 25D08 - 23 to 26, 2007.
- Block I and II on 24N13 - 26 to 29 June. 2007.
- Block I on 25D01 - 17 to 18 July, 2007.
- Block I on 25C04 - 20 to 21 July, 2007.
- Blocks I, II, III, and IV on 24M15 - 21 to 24 July, 2007.
- Block I on 25D07 - 18 to 19, 2007 (radiometric only).
- Block I on 24N12/24M09 and Block II on 24N12 - 22 to 23 July, 2007 (radiometric only).

The programs consisted of high-resolution, helicopter-airborne magnetic and radiometric surveys. The surveys utilized the same aircraft and equipment as described for the 2006 programs. The surveys are summarized in Table 9.1.

Table 9.1
Summary of Airborne Geophysical Surveys

Date	Line Orientation	Map Sheet	Block	Area Name	Number of Claims	Approx. Claim Area (ha)	Survey Area (SqKm)	% on Claims	Survey Grid	Survey Lines (km)	Tie Lines (km)	Subtotal (km)	Total (km)	Total C$
2006	east-west	24M01/24M08/24N05	I	Main	501	20,040	240	84%	150x1500	2,321	350	2,671		
2006	east-west	24N05	II	North	102	4,080	75	54%	150x1500	311	58	369		
2006	east-west	24N05	III	South	18	720	30	24%	150x1500	102	18	120		
													3,160	$ 398,549
2006					**621**	**24,840**	**345**	**72%**		**2,735**	**425**		**3,160**	**$ 398,549**
2007	east-west	24M16	I	Property 1	30	1,200	20	60%	100x1000	147	15	162		
2007	east-west	24M16	II	Property 2	77	3,080	31	100%	100x1000	392	44	435		
2007	east-west	24M16	III	Property 3	74	2,960	30	100%	100x1000	366	42	408		
2007	east-west	24M16	IV	Property 4	38	1,520	16	95%	100x1000	183	20	203		
													1,208	$ 183,364
2007	north-south	25D08	1	Property 1	138	5,520	59	94%	100x1000	750	79	829		
2007	north-south	25D08	2	Property 2	96	3,840	41	94%	150x1000	299	45	344		
													1,173	$ 145,549
2007	east-west	24N13	1	Property 1	406	16,240	176	92%	150x1000	1,279	196	1,475		
2007	east-west	24N13	2	Property 2	32	1,280	14	92%	150x1000	109	15	125		
													1,600	$ 190,774
2007	north-south	25D01	1	Property 1	57	2,696	39	68%	150X1000	263	37	300		
													300	$ 47,735
2007	north-south	25C04	1	Property 1	80	3,438	77	45%	150x1000	513	76	589		
													589	$ 100,062
2007	east-west	24M15	1	Property 1	35	1,512	18	84%	150x1000	120	16	136		
2007	east-west	24M15	2	Property 2	77	3,329	39	86%	150x1000	257	44	301		
2007	east-west	24M15	3	Property 3	44	1,906	22	88%	150x1000	141	22	162		
2007	east-west	24M15	4	Property 4	49	2,123	27	78%	150x1000	181	31	212		
													812	$ 115,714
2007	north-south	25D07	1	Property 1	104	4,388	66	67%	150x1000	436	71	506		
													506	$ 75,891
2007	north-south	24N12/24M09	1	Property 1	61	2,653	29	92%	150x1000	288	30	318		
2007	north-south	24N12/24M09	2	Property 2	36	1,569	18	87%	150x1000	119	20	140		
													458	$ 78,221
2007					**1434**	**59,254**	**721**	**82%**		**5,843**	**804**		**6,646**	**$ 937,310**
2008	east-west	24M01/24M08/24N05	I	Property 1	501	20,040	288	70%	150x1000	2,143	297	2,440		
2008	east-west	24N05	II	Property 2	102	4,080	63	65%	150x1000	417	62	479		
													2,919	$ 430,769
2008					**603**	**24,120**	**351**	**69%**		**2,560**	**359**		**2,919**	**$ 430,769**
2009		25D10	1		130	5,200	66	79%	200x1000	331	79	409		
2009		25D10	2		84	3,360	39	86%	200x1000	310	76	386		
													795	$ 157,951
2009		25D10	3		64	2,560	32	80%	200x1000	159	32	191		
													191	$ 45,063
2009		24N12/24N13	1		467	18,680	204	92%	200x1000	1,022	210	1,231		
													1,231	$ 176,166
2009		25D07/25D08	1		225	9,000	111	81%	200x1000	567	138	706		
2009		25D07/25D08	2		197	7,880	104	76%	200x1000	523	110	633		
													1,338	$ 189,625
2009		24M15	1		71	2,840	33	85%	200x1000	172	34	206		
2009		24M15	2		54	2,160	25	88%	200x1000	124	28	152		
2009		24M15	3		62	2,480	28	89%	200x1000	140	30	170		
2009		24M15	4		77	3,080	35	87%	200x1000	177	38	215		
													742	$ 114,457
2009		25D14/25D15	1	Part 1						175	40	215		
2009		25D14/25D15	1	Part 2	174	6,960	97	72%	200x1000	219	45	263		
													478	$ 81,282
2009		24N12	1		36	1,440	16	87%	200x1000	159	82	241		
													241	$ 51,364
2009		25C04	1		254	10,160	119	85%	200x1000	611	124	736		
													736	$ 155,690
2009					**1895**	**75,800**	**910**	**83%**		**4,687**	**1,065**		**5,753**	**$ 971,598**
TOTAL						184,014	2,327	79%		15,825	2,653	-	18,478	$ 2,738,227
						ha	*SqKm*			*km*	*km*	*km*	*Total (km)*	*Total C$*

The areas covered, flight line orientations, line separation, tie line separation, total line-km of magnetic and radiometric data acquired are summarized in Table 9.1, which also provides data for the subsequent surveys.

The surveys highlighted a series of uranium anomalies (radiometrics) and magnetic anomalies for additional study. Again, the magnetic anomalies correspond with the trace of an iron formation unit and confirm the location of the iron deposits that were the focus of work completed in the area in the 1950s and 1960s.

Invoices for this work completed in 2007 totaled $937,310 for 6,646 line-km covering a survey area of 721 km^2. The portion of the survey area covered by the claims is approximately 82%.

9.1.3 2008 Airborne Geophysical Survey

During 2008, a multiple-discipline geophysical survey was completed on Blocks I and II on map sheets 24M01/24M08/24N05 between 5 and 25 September.

The programs consisted of high-resolution, helicopter-airborne magnetic and radiometric surveys. The surveys utilized the same aircraft and equipment as described for the 2006 programs.

Invoices for this work completed in 2008 totaled $430,769 for 2,919 line-km covering a survey area of 351 km^2. The portion of the survey area covered by the claims is approximately 69%.

9.1.4 2009 Airborne Geophysical Survey

In 2009 a series of multiple-discipline geophysical surveys were completed on:

- Blocks I & II on 25D10 - completed on 6 July, 2009.
- Block III on 25D10 completed on 7 July, 2009.
- Block I on 24N12 and 24N13 - 7 to 10 July, 2009.
- Blocks I-II on 25D07/25D08 - 10 to 15 July, 2009.
- Blocks I-IV on 24M15 completed on 27 July, 2009.
- Block I on 25D14/25D15 completed on 5 August, 2009.
- Block I & II Claims on 25C04 - 1 to 9 August 9, 2009.
- Block I Claims on 24N12 completed on 11 August, 2009.

The programs consisted of high-resolution, helicopter-airborne magnetic and radiometric surveys. The surveys utilized the same aircraft and equipment as described for the 2006 programs.

Technical specifications for the helicopter-borne magnetic surveys are summarized in Table 9.2.

Table 9.2
Technical Specifications of the Helicopter-borne Magnetic Surveys

Area	Survey Specifications	Date	NTS Sheets
Hopes Advance	Survey line spacing and direction: 150 m, east-west, north-south. Tie line spacing*direction: 1,000 or 1,500 m, east-west, north-south. Average magnetic sensor terrain clearance: 70 m.	2006, 2008	24M04, 24M08, 24N04, 24N05

Invoices for this work completed in 2009 totaled $829,318 for 6,079 line-km covering a survey area of 696 km^2. The portion of the survey area covered by the claims is approximately 72%.

9.1.5 Summary of 2007-2009 Geophysical Surveys

The cost of the geophysical surveys for the most recent three years was $2.339 million and the proportion of the 1,982 km^2 of surveyed area that is covered by the property is approximately 80%. Expenditure of approximately $1.88 million can be attributed to the claims for the period 2007 to 2009.

A report was produced for each survey to document the work completed and the geophysical interpretations. The surveys identified numerous radiometric and magnetic targets for additional study and the anomalies are summarized as high, moderate and low priority.

The claims were registered between 7 July, 2004 and 27 October, 2010. The majority of the claims were registered prior to completing the geophysical surveys. However, some were allowed to lapse or were acquired on the basis of the extents of the geophysical anomalies.

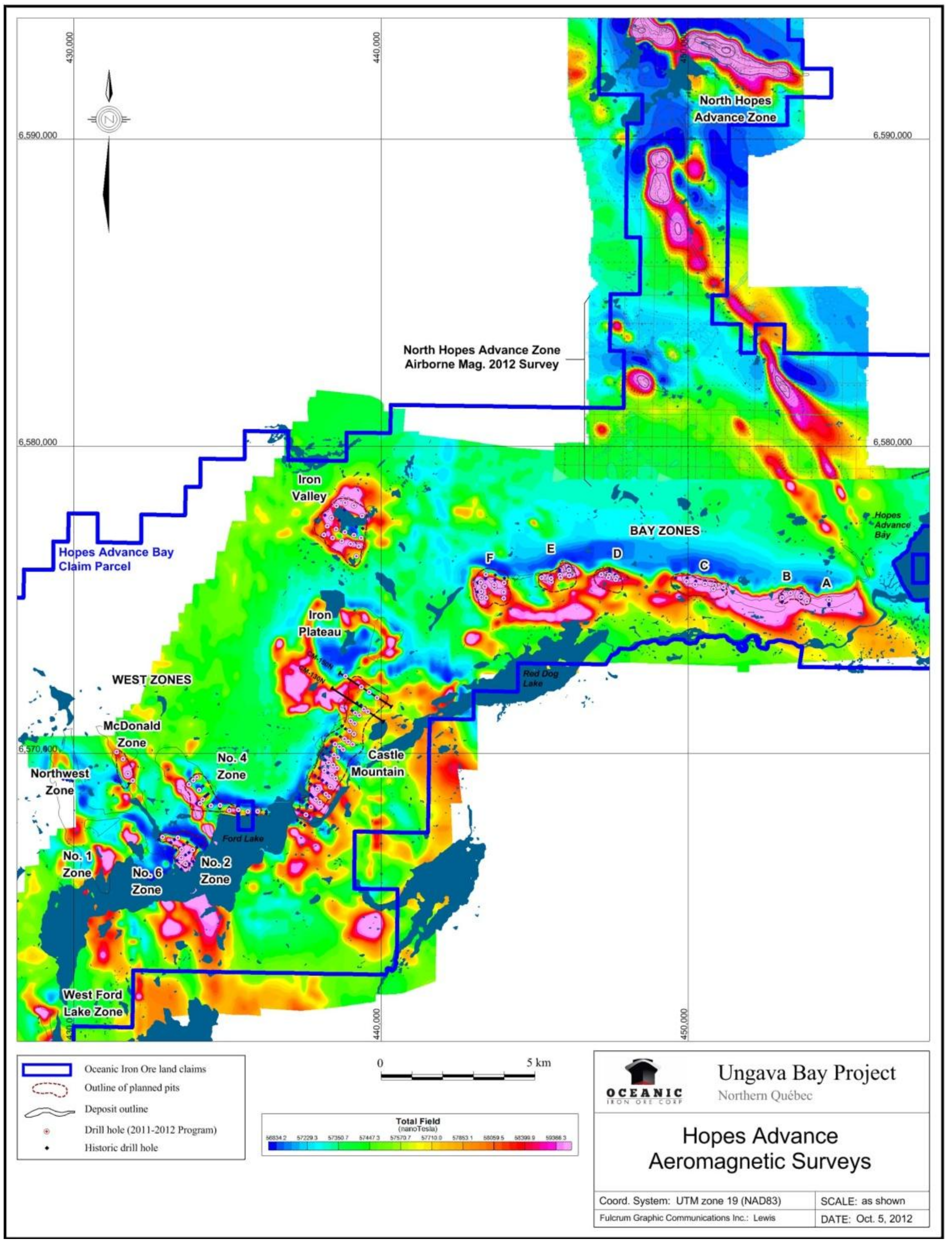
Joel Simard, consulting geophysicist, was contracted by Oceanic in February, 2011 to compile, review, and reprocess the heli-borne magnetic surveys carried out between 2006 and 2009 by Voisey Bay Geophysics on the Ungava Bay project. Simard provided Oceanic with total field, vertical gradient, and tilt angle maps for all the parcels comprising the Ungava property (Simard, 2011).

Géophysique TMC of Val-d'Or, Québec, was contracted by Oceanic to conduct ground magnetic surveys on parts of the McOuat areas and an area south of McOuat in May, 2011. The ground magnetic surveys were conducted using a GSM-19 proton precession magnetometer on 200-m spaced lines. The ground magnetic data were subsequently processed by Simard. Simard provided Oceanic with total field, vertical gradient, and tilt angle magnetic maps of the areas covered by the ground magnetic surveys. This data was levelled and integrated with the airborne magnetic data filling in gaps in the airborne magnetic surveys (Simard, 2011).

Mira Geoscience Ltd., of Vancouver, BC, has been contracted by Oceanic to generate 2D/3D models using the magnetic data on the Hopes Advance airborne magnetics. The modeling was carried out on the Castle Mountain, West Zone 2, West Zone 4, Iron Valley, West Zone McDonald and Bay Zone (A, B, C, D, E, and F) grids. The 2D/3D models were generated in conjunction with the drill data to better define and project potential mineralized targets for exploration (see Mira, 2012).

Figure 9.1 shows the results of aeromagnetic surveys at Hopes Advance, including the work carried out in 2012 (see below).

Figure 9.1
Aeromagnetic Surveys

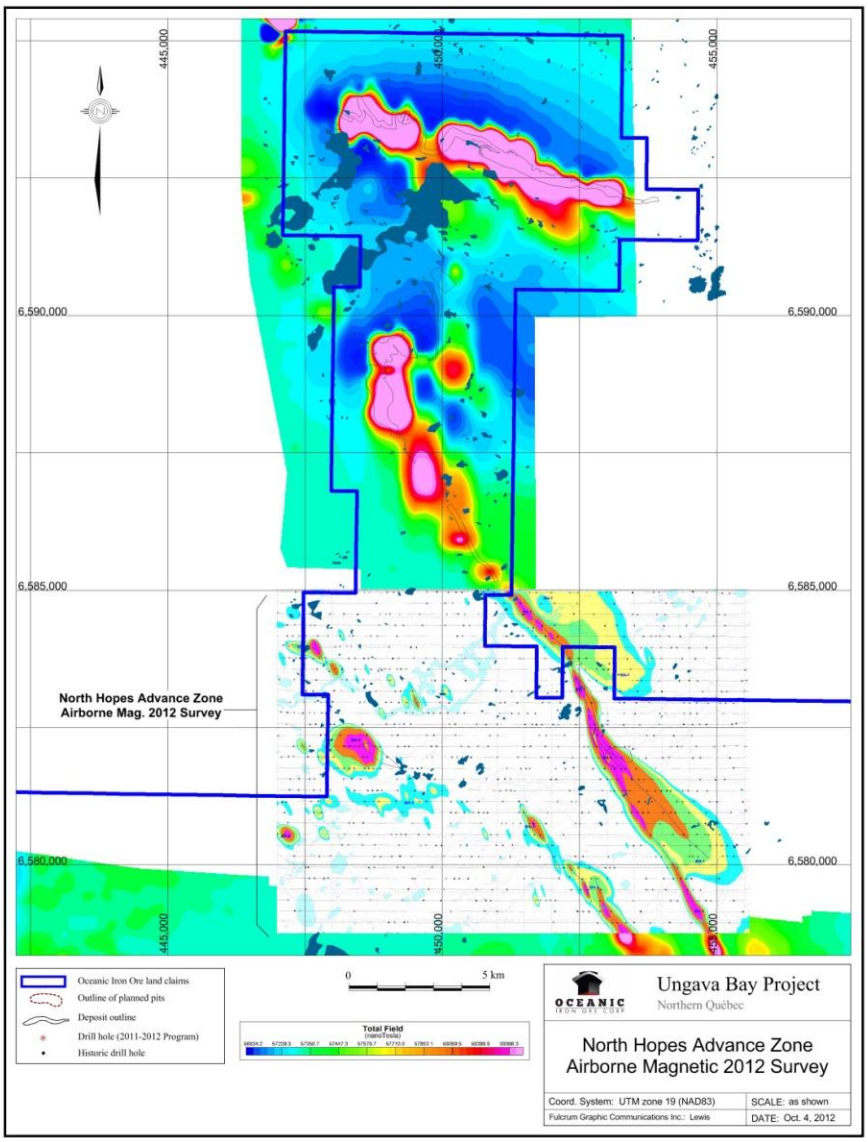


9.1.6 2012 Airborne Geophysical Surveys

On July 31, 2012, K8aranda Geophysics of Wendake, Québec, carried out 288 line-km of high resolution heli-borne magnetic and VLF-EM surveys. The surveys on the eastern part of the Hopes Advance area, on NTS 24N05, were carried out to cover gaps between two blocks that were flown in 2006 and 2008 by Voisey Bay Geophysics and consisted of 32 east-west flight lines 8.5 km long separated at 200 m.

The surveys highlighted a magnetic anomaly stretching north-northwest over a distance of 7 km corresponding with the trace of the iron formation units continuing north of the Hopes Advance Bay Zones (see Figure 9.2).

Figure 9.2
Airborne Magnetic Survey, 2012

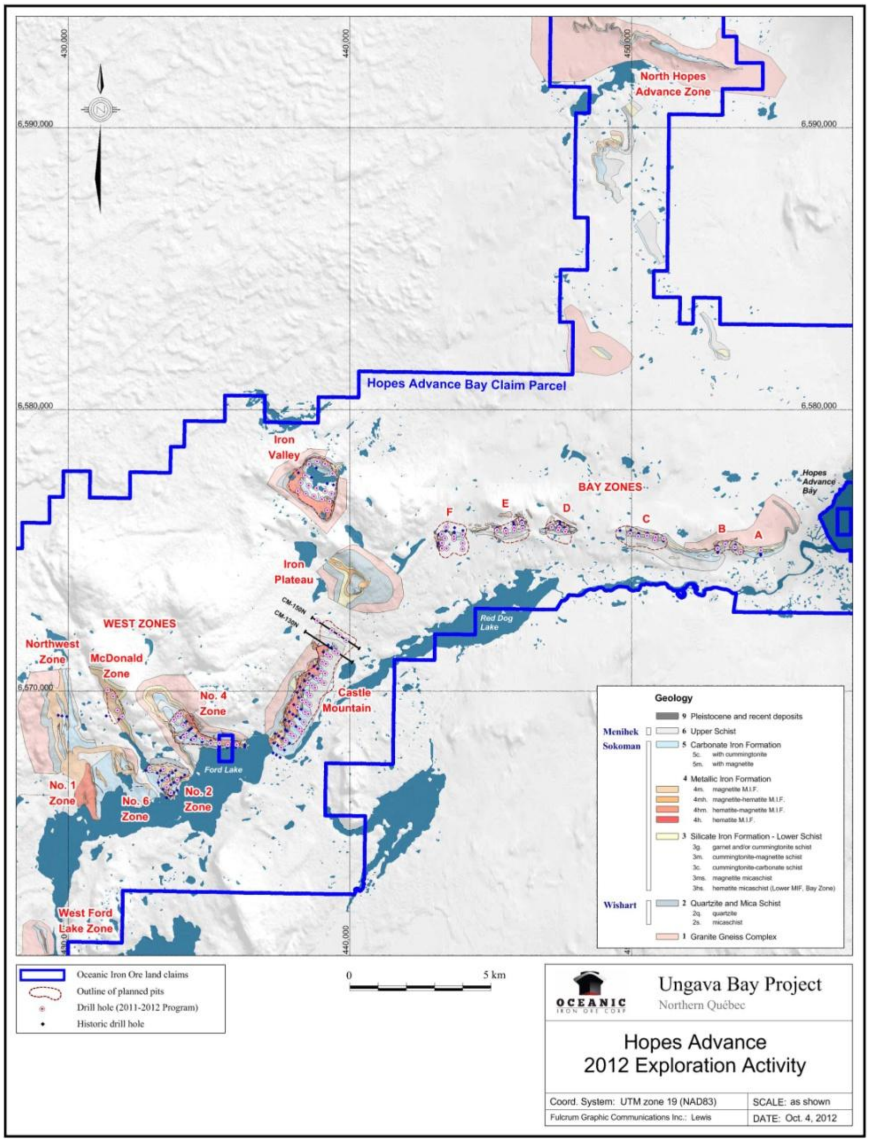


9.1.7 2012 Geological Mapping and Sampling

A mapping program was carried out between 14 June and 1 August, 2012. The mapping focused on 12 areas in the Hopes Advance project (see Figure 9.3):

- North Hopes Advance (north of the Bay Zone B).
- Bay Zones (Bay Zone B, Bay Zone C, and Bay zone F).
- North side of Iron Valley.
- Iron Plateau.
- West Zones (Zone 2, Zone 4, Northwest Zone, Zone 1 and Zone 6).
- West Ford Lake area.

Figure 9.3
2012 Exploration Activity



A total of 151 samples were collected and sent to SGS for analysis of the oxides and total Fe. Five of these were duplicate samples.

The North Hopes Advance area iron formation stretches over a distance of 16.7 km and consists of magnetite, magnetite-hematite and hematite-magnetite iron formation. The units are gently folded as a series of gently southeasterly-plunging synclines and anticlines. Twenty-nine samples were collected (including one duplicate) and 25 returned assays greater than 25% total Fe with an average grade of 36.3% total Fe.

Bay Zones B, C and F were mapped in greater detail to identifying the contacts between the iron formations, the underlying schists and the overlying carbonate-quartz sediments (see Figure 9.3).

The northern contact at Iron Valley was better defined, setting the limits between the iron formations, the underlying schists and quartzites.

Iron Plateau iron formations were identified and mapped on the northeast part of the structure. The iron formations are underlain by schists and overlain by carbonate-quartz sediments. The structure extends to the southwest, confirmed by the airborne magnetic surveys (see Figure 9.2). There is no outcrop and the area is covered by till. Eleven samples were collected; seven from the iron formation with five samples assaying greater than 25% total Fe and averaging 35.6% total Fe.

West Zone 2 was mapped to determine the contacts between the iron formation and the carbonate-quartz sediments. A rolling contact extends west-east with synclines and anticlines plunging south. A number of thrust faults were observed which have faulted the lower iron formation sequences over the higher sequences.

Mapping on West Zone 4 extended the iron formation by 1.4 km and defining the western limb of the syncline with the iron formations (see Figure 9.4). A total of 30 samples were collected (including one duplicate); 28 samples graded above 25% total Fe and averaged 34.8% total Fe.

The Northwest Zone, Zone 1 and Zone 6 extend 4 km north-south and 2.4 km east-west and consist of gently folded and gently dipping iron formations where hematite-magnetite appears to predominate. A total of 32 samples were collected (including two duplicates); 28 samples grade greater than 25% total Fe and averaged 34.9% total Fe.

The West Ford Lake area is located on the extreme west side of Ford Lake. Iron formations were observed to trend north-south over 1.1 km and dip to the west at 24° to 32°. The width of the mineralized zone is 110 m. This area has magnetite iron formations and hematite iron formations with bands of grey and red chert, a characteristic that has not been seen elsewhere on the Hopes Advance project area. A total of 49 samples were collected (including one duplicate); 28 samples assayed greater than 25% total Fe and averaged 35.1% total Fe.

The results of the 2012 mapping program are considered to add future exploration potential in the Hopes Advance project area. The results of the 2012 mapping and sampling program are provided for information purposes only and do not affect the mineral resource estimate on which this Prefeasibility Study is based.

10.0 DRILLING

10.1 HISTORICAL DRILL CORE

All of the historical drilling on the various deposits contained within the Ungava Property was conducted in the 1950s and 1960s. The drilling practices may have been in compliance with industry standards in place at that time but they cannot be validated or compared to current norms. A description of the historical drilling conducted on the property is provided in Section 6.0.

Amongst the remnants of the exploration camp nearest to the Castle Mountain deposit is a rack of diamond drill core boxes. Approximately 70 boxes of core remain in the rack and it may be possible to relog some of the core in those boxes. Unfortunately, most of the core that was stored on site has been disturbed and a further 100 or more boxes have been spilled and emptied of their contents.

Based on the core boxes and core it was possible to determine the following:

- Core was placed in metal trays.
- Drill core diameter was typically small diameter (22 mm; AX or EX diameter).
- Drill hole number and hole depths were marked on the trays.
- Core was split in half for sampling, with one half retained in the core box.

At various locations during Micon's traverses in 2008 and Oceanic's work during the 2011 drilling program it was noted that some collar locations were marked with a piece of drill steel, a metal spike or rebar. Drill pad locations can sometimes be distinguished by the flat platforms that were prepared for the drill rig. The old drill hole sites were surveyed in 2011 in order to incorporate the information from the old drill hole programs and to use it to assist in the geological interpretations.

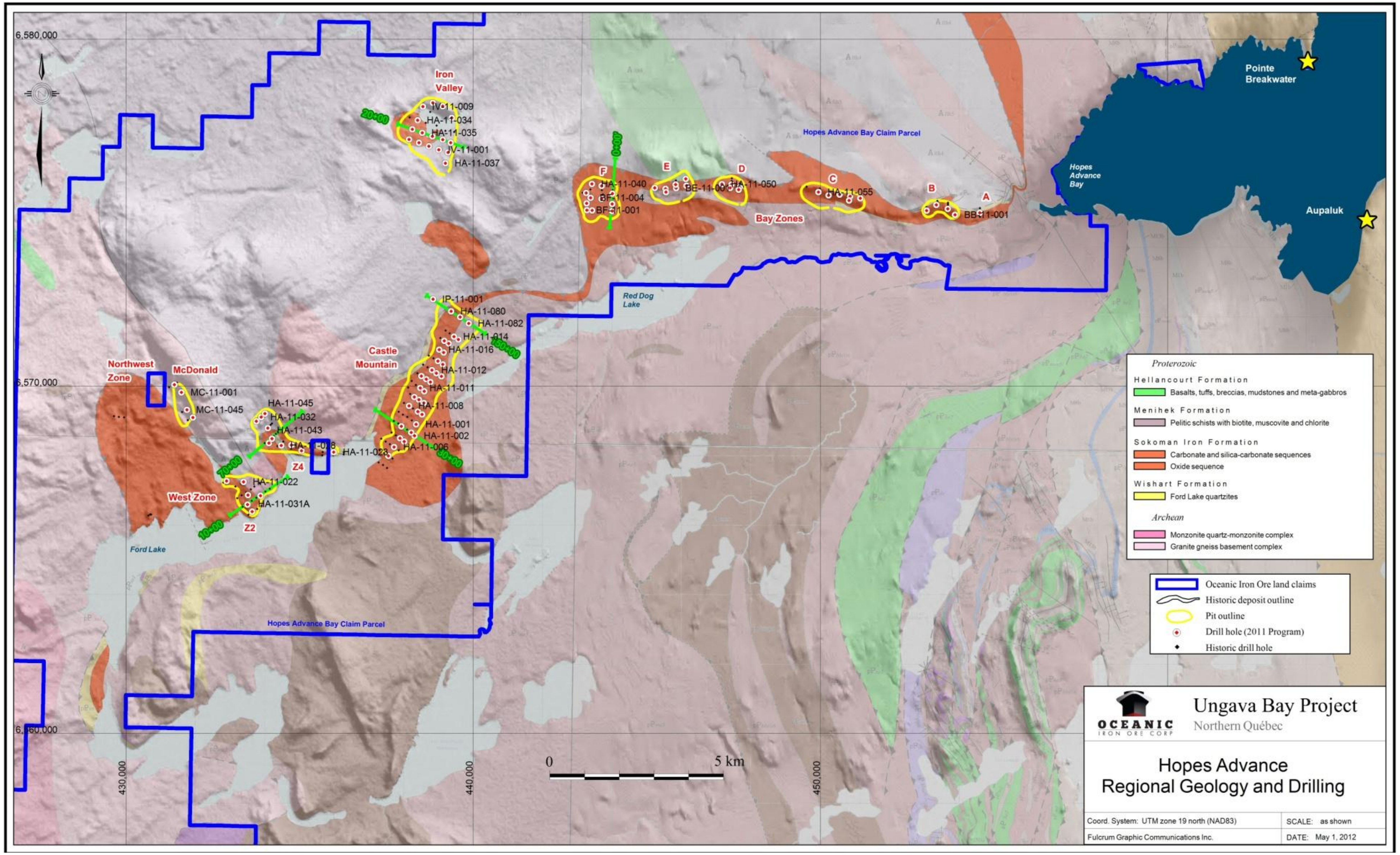
Based on the reports that describe the drilling programs in the 1950s and 1960s, no downhole surveys were completed. Most holes were relatively short (i.e., average of less than 70 m).

Information on drill hole collar locations, hole orientations, core recoveries, apparent dip of stratigraphy, geological logs, assays, collar maps, and sections are available for several of the programs.

10.2 DRILLING UNDERTAKEN BY OCEANIC

In 2011, Oceanic carried out an exploration drilling program on the Hopes Advance project area. The drilling program consisted of 115 NQ diamond drill holes for 11,617.9 m and commenced on 25 March, 2011 and ended on 4 September, 2011. The locations of the Oceanic drill holes, as well as the historic holes, are shown on Figure 10.1.

Figure 10.1
Map Showing the Deposits and Locations of 2011 Drill Holes at Hopes Advance



A total of 115 holes were drilled on the Hopes Advance project area. The drill holes were designed to penetrate the oxide portion of the iron formation and were completed, in most cases, in the underlying mica schist, quartzite, or granite-gneiss.

The drilling program in 2011 was performed using three heli-portable hydraulic diamond core drill rigs from Forage G4 Drilling of Val-d'Or, Québec. The overburden was drilled with NW rods and the casing was secured in bedrock. Bedrock was drilled with NQ rods and a 3-m core barrel. The core was stored in wooden core boxes with a wooden block inserted at the end of each run or every 3 m. The location of the drill hole collars was surveyed by J. L. Corriveau & Associates Inc. of Val-d'Or, Québec.

The drill program in the Hopes Advance project area is summarized in Table 10.1.

Table 10.1
Hopes Advance Area, 2011 Drilling Statistics

Area	No. of Exploration Holes	No. of Twinned Holes	Total No. of Holes	Total Metres
Castle Mountain	20	18	38	3,882.4
Iron Plateau	1	0	1	57.0
West Zone 2	0	6	6	697.3
West Zone 4	4	9	13	931.2
Iron Valley	7	10	17	1,524.0
Bay Zone F	6	5	11	1,669.2
Bay Zone E	4	4	8	877.7
Bay Zone D	2	3	5	619.1
Bay Zone C	2	5	7	638.0
Bay Zone B	1	3	4	381.0
Bay Zone A	0	1	1	60.0
West ZoneMcDonald	1	3	4	281.0
Total	**48**	**67**	**115**	**11,617.8**

Data relating to the drilling program are summarized in Table 10.2.

10.2.1 Hopes Advance Project Area

In the Hopes Advance project area, 115 diamond holes were drilled for a total of 11,617.9 m. As shown on Figure 10.1, the areas drilled as part of the Hopes Advance drilling program included Castle Mountain, Iron Valley, Bay Zones (A, B, C, D, E and F) and the West Zone which includes the West Zone 2, West Zone 4 and West Zone McDonald areas. Sixty-seven of the drill holes in this program were twins of historical drill holes and 43 holes were exploration holes. Five holes were initially unsuccessful and had to be repeated due to technical drilling difficulties but the results are included in the drill data.

Table 10.2
Summary Drill Hole Data, 2011 Drilling Program vs. Historical

2011 Results						Historic Drill Hole Results (1954 - 1957)						
DDH	**From (m)**	**To (m)**	**Width (m)**	**True Width (m)**	**Fe Total (%)**	**Soluble Fe (%)**	**DDH**	**From (m)**	**To (m)**	**Width (m)**	**True Width (m)**	**Zone**
HA-11-001B	58.00	121.00	63.00	62.04	31.1							Castle
HA-11-002	30.60	136.00	105.40	103.79	33.4							Castle
HA-11-003	36.85	96.70	59.85	58.94	34.0	35.4	P34	36.58	96.32	59.74	58.83	Castle
HA-11-004	10.67	83.76	73.09	63.13	32.3	34.9	P49	10.67	83.76	73.09	65.98	Castle
HA-11-005	21.65	79.55	57.90	57.02	34.6	34.9	P35	19.81	79.85	60.04	59.14	Castle
HA-11-006	28.30	71.00	42.70	41.05	31.3	30.8	P28	27.43	82.30	54.87	54.04	Castle
HA-11-007	0.20	64.40	64.20	63.22	32.6	34.5	P27	7.92	59.83	67.06	59.14	Castle
HA-11-008	11.70	75.10	63.40	62.44	32.6	33.4	P47	10.67	74.68	64.01	63.03	Castle
HA-11-009A	6.00	20.00	14.00	13.79	31.9	35.1	P68	3.51	26.52	23.01	21.62	Castle
HA-11-009A	42.50	78.00	35.50	34.96	32.2	29.7	P68	46.53	99.67	53.04	49.84	Castle
HA-11-010	39.20	128.70	89.50	84.10	31.6	35.5	P70	39.62	89.00	49.38	48.63	Castle
HA-11-011	48.43	119.00	70.57	69.86	32.4	34.4	P67	45.72	93.27	47.55	46.83	Castle
HA-11-012	4.40	70.00	65.60	63.65	29.2	29.2	P90	4.97	79.25	74.28	73.15	Castle
HA-11-013	6.25	76.60	70.35	67.28	31.0	31.2	P69	6.10	77.72	71.62	68.49	Castle
HA-11-014	32.10	73.00	40.90	40.28	34.2	32.6	P94	33.53	91.44	57.91	57.03	Castle
HA-11-015	9.40	39.40	30.00	29.54	29.6	31.2	P79	9.14	38.10	28.96	28.52	Castle
HA-11-016	20.80	44.00	23.20	22.85	33.4	34.6	P75	22.86	44.20	21.34	21.02	Castle
HA-11-017	14.20	46.10	31.90	31.42	31.4	32.4	P78	15.24	50.29	35.05	34.52	Castle
HA-11-067	32.80	94.60	61.80	59.67	36.3							Castle
HA-11-068	30.20	45.80	15.60	14.92	32.8							Castle
HA-11-068	51.30	56.30	5.00	4.78	34.9	36.9	P97	47.24	53.34	6.10	5.83	Castle
HA-11-068	79.60	121.00	41.40	39.59	33.9							Castle
HA-11-069	57.60	84.00	26.40	25.25	34.8							Castle
HA-11-069	114.00	140.00	26.00	24.86	33.5							Castle
HA-11-070	73.50	124.00	50.50	48.03	37.3							Castle
HA-11-070	151.40	164.50	13.10	12.46	25.7							Castle
HA-11-071	69.40	108.20	38.80	37.81	34.8							Castle
HA-11-072	59.00	127.00	68.00	66.26	33.7							Castle
HA-11-073	74.65	101.00	26.35	25.95	31.8							Castle
HA-11-074A	52.40	111.00	58.60	58.03	31.5	33.7	P96	51.82	87.66	35.84	35.49	Castle
HA-11-075	36.00	68.00	32.00	31.69	32.4	32.2	P95	36.58	65.53	28.92	28.64	Castle
HA-11-076	48.60	54.30	5.70	5.64	31.9							Castle
HA-11-076	62.60	104.00	41.40	41.00	33.3							Castle
HA-11-077	30.70	33.90	3.20	3.14	28.6							Castle
HA-11-077	41.70	79.00	37.30	36.61	32.1							Castle
HA-11-078	47.40	61.40	14.00	13.39	30.2							Castle
HA-11-079	56.00	89.00	33.00	32.92	29.7							Castle
HA-11-080	39.20	90.80	51.60	50.82	28.4							Castle

2011 Results							Historic Drill Hole Results (1954 - 1957)						
DDH	From (m)	To (m)	Width (m)	True Width (m)	Fe Total (%)	Soluble Fe (%)	DDH	From (m)	To (m)	Width (m)	True Width (m)	Zone
HA-11-081	45.70	55.73	10.03	9.88	27.0							Castle
HA-11-082	41.30	85.94	44.64	44.61	31.3							Castle
HA-11-018	39.60	76.00	36.40	35.85	34.9	33.4	E-136	10.67	59.44	48.77	47.11	West Zone 2
HA-11-018	100.70	165.40	64.70	63.72	33.6							West Zone 2
HA-11-019	13.30	44.00	30.70	30.66	32.3	29.8	E-153	16.76	96.13	79.37	79.26	West Zone 2
HA-11-019	63.90	115.20	51.30	46.49	29.9							West Zone 2
HA-11-020	14.50	91.00	76.50	75.34	36.3	36.2	E-150	15.24	83.21	67.97	65.95	West Zone 2
HA-11-021	33.00	138.00	105.00	103.41	32.0	35.7	E-158	30.48	107.90	77.42	76.25	West Zone 2
HA-11-022	2.00	56.27	54.27	53.45	33.2	33.6	E-159	0	57.91	57.91	54.42	West Zone 2
HA-11-033	2.57	25.00	22.43	22.09	30.6	31.2	E-164	13.72	18.29	4.57	4.29	West Zone 2
HA-11-023	1.25	48.15	46.90	46.19	39.4	36.6	R-101	1.22	45.72	44.50	43.82	West Zone 4
HA-11-024	2.00	35.10	33.10	31.82	30.9	30.6	R-102	0.91	35.05	34.14	32.82	West Zone 4
HA-11-025	1.00	48.90	47.90	45.81	37.4	36.6	R-104	1.52	48.77	47.25	45.19	West Zone 4
HA-11-026	24.45	75.20	50.75	50.74	34.4	35.3	R-120	27.43	68.58	41.15	41.15	West Zone 4
HA-11-027	4.70	38.00	33.30	31.29	36.7	34.3	R-122	8.84	39.62	30.78	28.92	West Zone 4
HA-11-028	39.10	67.00	27.90	25.87	36.3	33.1	R-123	27.43	53.34	25.91	24.02	West Zone 4
HA-11-029	27.30	62.00	34.70	34.36	29.2	28.9	R-131	4.57	70.10	65.53	64.89	West Zone 4
HA-11-030	7.70	94.20	86.50	85.19	32.7	35.0	R-132	15.24	71.63	56.39	54.47	West Zone 4
HA-11-031B	30.60	60.00	29.40	29.11	32.3	35.3	R-130	18.90	48.77	29.87	29.58	West Zone 4
HA-11-065	48.50	85.00	36.50	31.61	33.2							West Zone 4
HA-11-032	51.00	77.90	26.90	23.30	32.8							West Zone 4
HA-11-066	24.90	55.60	30.70	30.03	35.5							West Zone 4
IV-11-001	15.10	30.00	14.90	13.50	37.2							Iron Valley
IV-11-002	34.40	91.60	57.20	56.33	30.4							Iron Valley
IV-11-003	7.20	58.85	51.65	50.86	32.6							Iron Valley
IV-11-004A	16.37	81.5	65.13	64.97	31.9							Iron Valley
IV-11-005	8.90	55.40	46.50	45.79	32.6							Iron Valley
IV-11-006	3.40	32.24	28.84	28.80	32.1							Iron Valley
IV-11-007	59.60	92.10	32.50	32.01	31.9							Iron Valley
IV-11-008	39.00	46.90	7.90	7.42	34.1							Iron Valley
IV-11-009	64.25	75.53	11.28	9.87	26.1							Iron Valley
IV-11-010	12.30	45.70	33.40	28.93	26.1							Iron Valley
IV-11-011	17.73	135.19	117.46	110.38	32.9							Iron Valley
IV-11-012	95.51	107.33	11.82	11.18	26.6							Iron Valley
HA-11-034	28.50	86.40	57.90	55.93	32.2							Iron Valley
HA-11-035	22.75	80.40	57.65	55.68	32.8							Iron Valley
HA-11-036	9.50	74.50	65.00	62.78	31.7							Iron Valley
HA-11-037	2.30	30.00	27.70	27.28	29.7							Iron Valley
HA-11-038	1.56	105.84	104.28	99.18	34.4	34.8	H-148	0.00	86.56	82.32	77.12	Bay Zone F
HA-11-039	8.00	26.70	18.70	18.06	31.4	32.9	H-145	7.62	25.91	18.29	14.01	Bay Zone F
HA-11-039	37.00	96.00	59.00	56.97	32.3	34.7	H-145	36.58	91.44	54.86	42.02	Bay Zone F

2011 Results						Historic Drill Hole Results (1954 - 1957)						
DDH	From (m)	To (m)	Width (m)	True Width (m)	Fe Total (%)	Soluble Fe (%)	DDH	From (m)	To (m)	Width (m)	True Width (m)	Zone
HA-11-040	5.70	102.25	96.55	93.23	34.7	35.7	H-144	5.06	91.44	86.38	83.41	Bay Zone F
HA-11-041	50.70	174.50	123.80	107.21	33.2							Bay Zone F
HA-11-042	3.30	10.70	7.40	6.41	37.9							Bay Zone F
HA-11-042	28.40	134.30	105.90	91.71	36.1	31.8	H-142	1.52	90.98	89.46	77.47	Bay Zone F
HA-11-043	13.70	23.40	9.70	9.55	34.0	33.6	H-118	30.48	39.62	9.14	9.00	Bay Zone F
HA-11-043	28.70	101.20	72.50	71.40	28.2	29.8	H-118	44.20	91.44	47.24	46.52	Bay Zone F
BF-11-001	6.50	28.05	21.55	19.53	26.3							Bay Zone F
BF-11-001	42.10	56.80	14.70	13.32	33.8							Bay Zone F
BF-11-002	88.10	126.00	37.90	34.35	33.4							Bay Zone F
BF-11-002	72.56	127.80	55.24	50.06	29.0							Bay Zone F
BF-11-004	54.80	145.20	90.40	78.29	34.2							Bay Zone F
BF-11-005	61.30	207.90	146.60	132.86	30.5							Bay Zone F
BF-11-006	143.70	147.25	3.55	3.07	29.3							Bay Zone F
BE-11-001A	61.30	132.10	70.80	66.53	32.8							Bay Zone E
HA-11-044	7.90	63.00	55.10	51.78	31.7	31.9	H-116	9.14	53.34	44.20	41.53	Bay Zone E
HA-11-045	8.00	69.00	61.00	57.32	32.2	32.0	H-114	6.10	65.53	59.43	55.85	Bay Zone E
HA-11-046	37.20	77.50	40.30	39.69	30.5							Bay Zone E
HA-11-047	19.30	75.40	56.10	45.95	32.5	32.4	H-113	19.81	82.30	62.49	51.19	Bay Zone E
HA-11-048	4.30	114.80	110.50	84.65	31.5	34.1	H-89	0.00	91.44	91.44	70.05	Bay Zone E
HA-11-049	48.40	184.40	136.00	127.80	32.0							Bay Zone E
HA-11-050	19.90	85.40	65.50	59.36	30.8	31.5	H-87	21.34	82.30	60.96	55.25	Bay Zone D
HA-11-051	13.40	88.70	75.30	69.82	32.2	32.1	H-84	15.24	88.39	73.15	67.82	Bay Zone D
HA-11-052	25.20	98.00	72.80	70.30	32.3							Bay Zone D
HA-11-053	24.40	66.20	41.80	34.24	34.3	32.9	H-83	16.76	74.68	57.92	47.45	Bay Zone D
HA-11-054	40.30	106.80	66.50	65.05	32.8							Bay Zone D
HA-11-055	31.00	95.00	64.00	57.02	36.0	27.4	H-58	35.05	88.48	53.43	47.61	Bay Zone C
HA-11-056A	37.70	142.00	106.30	106.15	32.2	33.2	H-57	36.58	66.48	29.90	29.86	Bay Zone C
HA-11-057	13.45	66.00	52.55	49.98	32.3	32.3	H-55	15.24	59.44	44.20	42.04	Bay Zone C
HA-11-058	1.50	30.00	28.50	28.22	29.8	27.0	H-53	62.48	76.20	13.72	13.59	Bay Zone C
HA-11-059	56.00	97.58	41.58	40.51	33.2							Bay Zone C
HA-11-060	2.50	44.00	41.50	40.59	33.1	31.8	H-51	25.91	74.68	48.77	47.70	Bay Zone C
HA-11-061	22.40	67.00	44.60	43.46	35.5	31.0	H-21	19.81	70.10	50.29	49.00	Bay Zone B
HA-11-062	2.50	34.00	31.50	30.43	35.2	34.0	H-17	6.10	33.53	27.43	26.49	Bay Zone B
HA-11-063	11.80	124.00	112.20	99.07	35.9	34.0	H-12	48.77	83.82	35.05	30.95	Bay Zone B
BB-11-001	13.05	106.00	92.95	91.54	35.8							Bay Zone B
TR-H12AB1	0.00	125.00	125.00	107.15	34.9							Bay Zone B
HA-11-064	15.90	41.00	25.10	24.24	36.6	38.5	H-7	15.24	30.48	15.24	14.72	Bay Zone A
MC-11-040	3.40	22.00	18.60	18.37	27.6	28.6	C-40	1.89	10.67	8.78	8.67	West McDonald
MC-11-001	23.70	47.00	23.30	21.90	30.4							West McDonald
MC-11-045	4.40	56.00	51.60	48.49	32.6	36.5	C-45	1.52	54.86	53.34	50.12	West McDonald
MC-11-060	22.43	26.45	4.02	3.78	25.4	21.3	C-64	15.24	25.91	10.67	10.03	West McDonald

10.2.1.1 Castle Mountain

Thirty eight holes were drilled at Castle Mountain for a total of 3,882.4 m. Eighteen of the drill holes were twins of historical drill holes. At least one twin of an historical drill hole was drilled on each section except for section 40+00 which had one exploration hole, HA-11-001b (31.1% total Fe over 62.04 m). In most cases, the drill holes were completed below the iron formation. The drill holes that were twins of historic drill holes demonstrated good agreement with the historic geology. The total iron assays from the 2011 drilling program correlated well with the soluble iron assays from the historic drilling programs and with the total iron assay composites compared with the historical composites.

Exploration drill holes confirmed that the oxide portion of the iron formation continued shallowly dipping to the southeast with thicknesses between 40 and 91.8 m (Figure 10.2).

Exploration drilling also indicated that the oxide portion of the iron formation continued to the northeast of Castle Mountain. Drill holes HA-11-003 (34.0% total Fe over 58.94 m) and HA-11-004 (32.3% total Fe over 63.13 m) are twins of historic drill holes P-34 and P-49, respectively. Drill hole HA-11-002 (33.4% total Fe over 103.79 m) is an exploration drill hole that confirmed the southeastern continuation of the oxide portion of the iron formation.

The oxide portion of the iron formation at Castle Mountain is composed of a succession of higher grade magnetite-hematite and hematite-magnetite iron formation overlying lower grade magnetite-hematite and hematite iron formation. The higher grade portions of the iron formation contained between 28 and 42% total iron. The lower grade portion of the iron formation contained between 18 and 28% total iron. The oxide portion of the iron formation lacks the conspicuous lean chert beds typical of most Lake Superior type iron formations.

The drilling confirmed a high degree of continuity of rock types and iron grade between drill holes and sections. North-northwest striking thrust faults thickened and repeated all or portions of the iron formation.

The exploration drilling, with drill holes HA-11-001b (31.1% total Fe over 62.04 m), HA-11-002 (33.4% total Fe over 103.79 m), HA-11-067 (36.3% total Fe over 59.67 m) to HA-11-073 (31.8% total Fe over 25.95 m), HA-11-076 (33.3% total Fe over 41.00 m) to HA-11-082 (31.3% total Fe over 44.61 m), extended the mineralization eastward and northeastward along most of the sections for a distance of 4.57 km.

Sections 130+00 (Figure 10.3) and 150+00 (Figure 10.4) demonstrate the continuity of the mineralization northeast of drill hole HA-11-082. This is also supported by the airborne magnetics that demonstrate potential continuity of iron formation to the east-northeast over a distance of 1,500 m.

Figure 10.2
Castle Mountain, Cross-section CM 30+00N

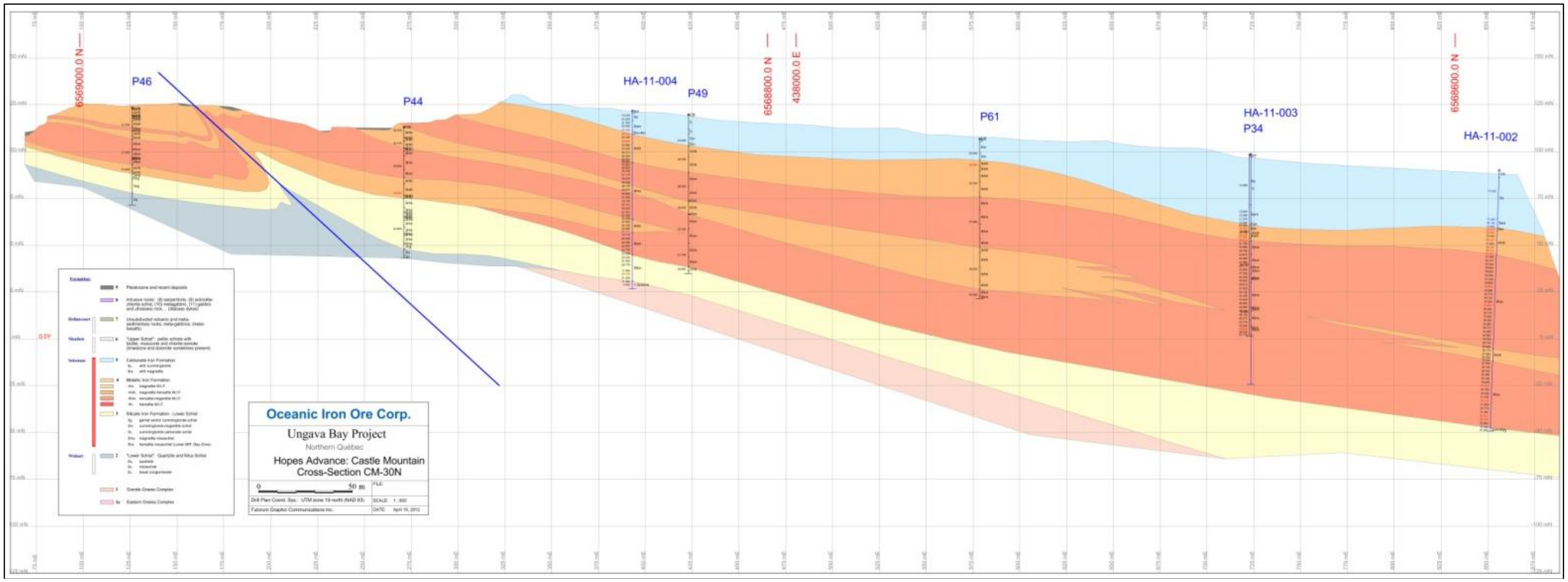


Figure 10.3
Castle Mountain Cross-section on CM 130+00N

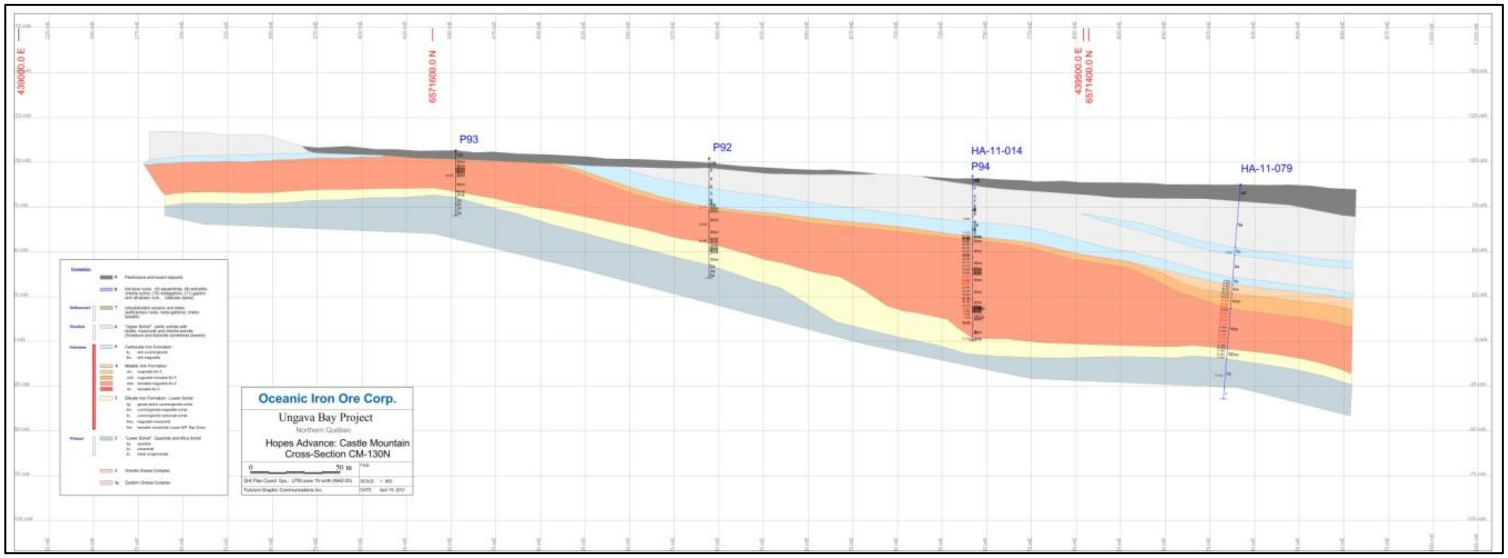
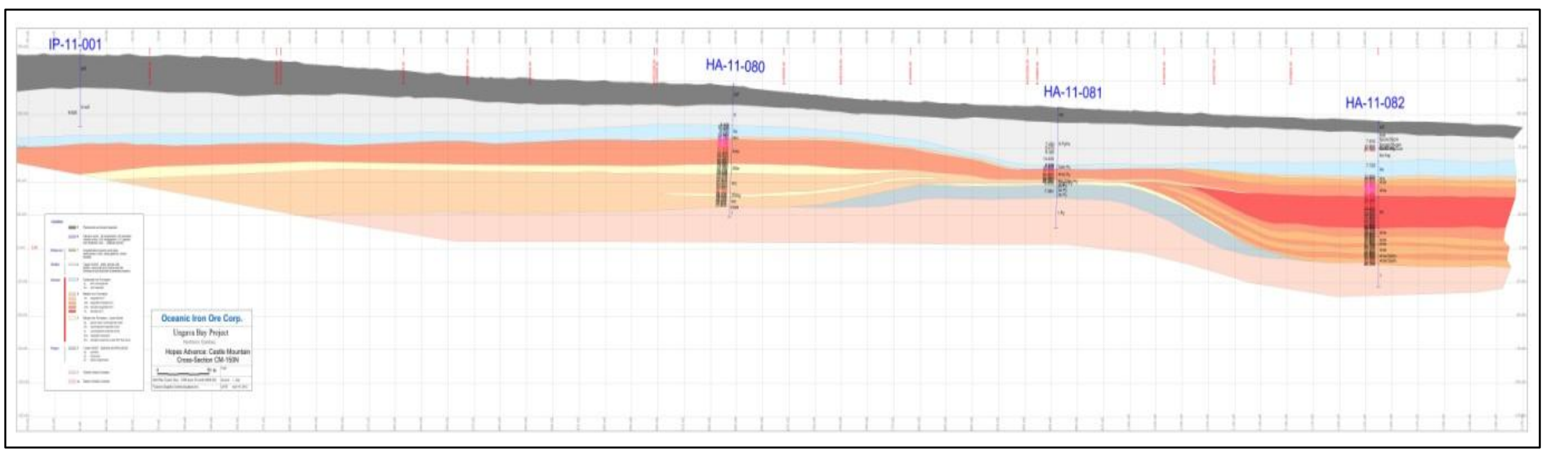


Figure 10.4
Castle Mountain, Cross-section on CM 150+00N



Drill holes HA-11-080 (28.4% total Fe over 50.82 m) on section 150+00 and P-93 (historical hole grading 30% soluble Fe over 17.71 m) on section 130+00 occur on the eastern margin of the Iron Plateau zone that is outlined by the airborne magnetics (Figure 9.1). The airborne magnetics show that the Iron Plateau zone is a bowl-like iron formation feature similar to that of Iron Valley, with a diameter of 3.0 to 3.5 km.

10.2.1.2 West Zone 4 Drilling

West Zone 4 is located 1.1 km to the west of Castle Mountain. Thirteen holes were drilled for a total of 931.15 m. Nine of the drill holes were twins of historical drill holes. The oxide portion of the iron formation varies from 25 to 86 m (see Figure 10.5). The thicker intercepts of oxide iron formation are probably due to repetition of parts of the iron formation by thrust faulting.

Historic drill holes R-129 and R-132 were twinned by drill holes HA-11-029 (29.2% total Fe over 34.36 m) and HA-11-030 (32.7% total Fe over 85.19 m), respectively. These two holes were slightly removed by 46 m east and 72 m south-southeast from the respective historical holes.

The oxide portion of the iron formation is composed of a succession of higher grade magnetite-hematite and hematite-magnetite iron formation overlying lower grade magnetite-hematite and hematite iron formation. The higher grade portions of the iron formation contain up to 45.7% total iron. While the lower grade portions of the iron formation contain down to 21.0% total iron. The drilling confirmed a high degree of continuity of rock types and iron grade between drill holes and sections.

The recent drilling confirms the historical drilling and reported grades with the recent drill holes grading 29.2% total Fe over 34.36 m to 39.4% total Fe over 46.19 m. The West Zone 4 has been extended to the north-northwest by 300 m (30 m thickness) with section 90+00 and drill holes HA-11-032 (32.8% total Fe over 23.30 m), HA-11-065 (33.2% total Fe over 31.61 m) and HA-11-066 (35.5% toal Fe over 30.03 m). The mineralization is open to the northwest.

10.2.1.3 West Zone 2 Drilling

West Zone 2 is located 3.7 km to the southwest of the Castle Mountain. Six holes were drilled for a total of 697.3 m and all holes were twins of historical drill holes. The oxide portion of the iron formation varies from 82 to 108 m (Figure 10.6). The thicker intercepts of oxide iron formation are probably due to repetition of parts of the iron formation by thrust faulting. Historic drill holes R-150 and R-153 were twinned by drill holes HA-11-020 (36.3% total Fe over 75.34 m) and HA-11-019 (32.3% total Fe over 30.66 m and 29.9% total Fe over 46.49 m), respectively. Note the repetition of the iron formation by thrust faulting at the southwest end of the section.

Figure 10.5
West Zone 4, Cross-section on Z4 70+00W

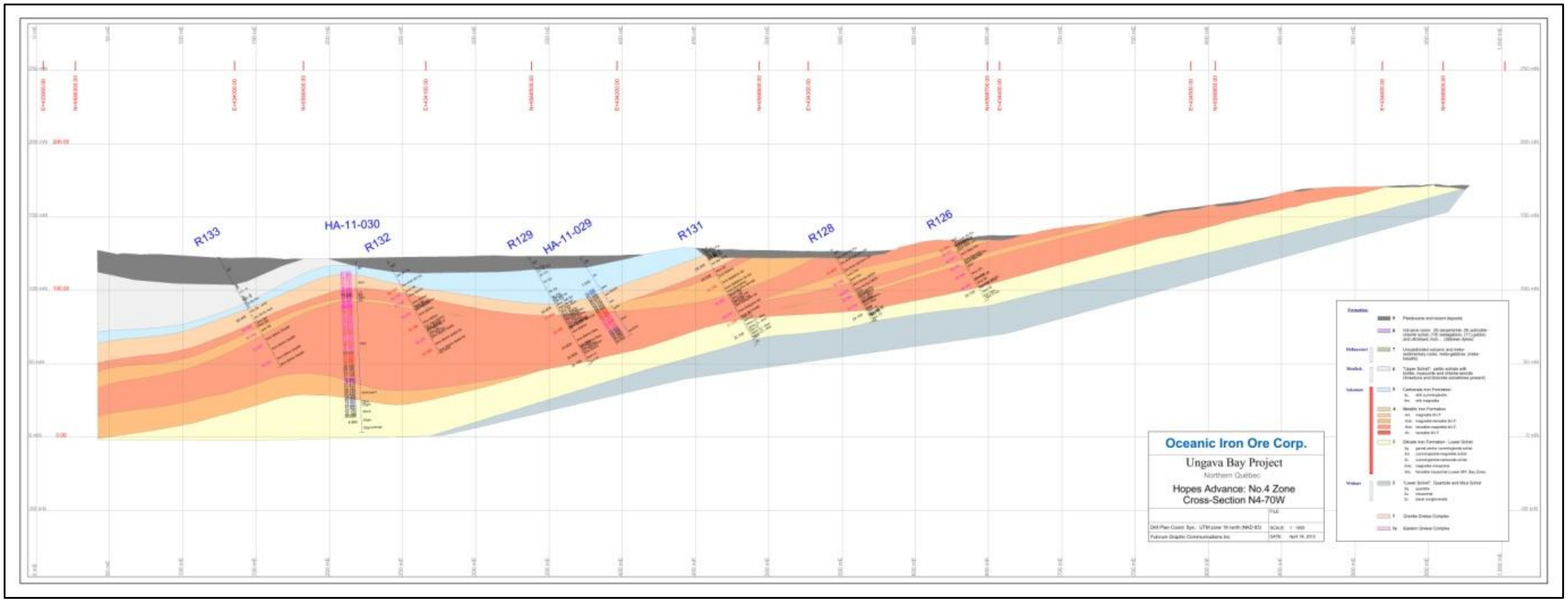
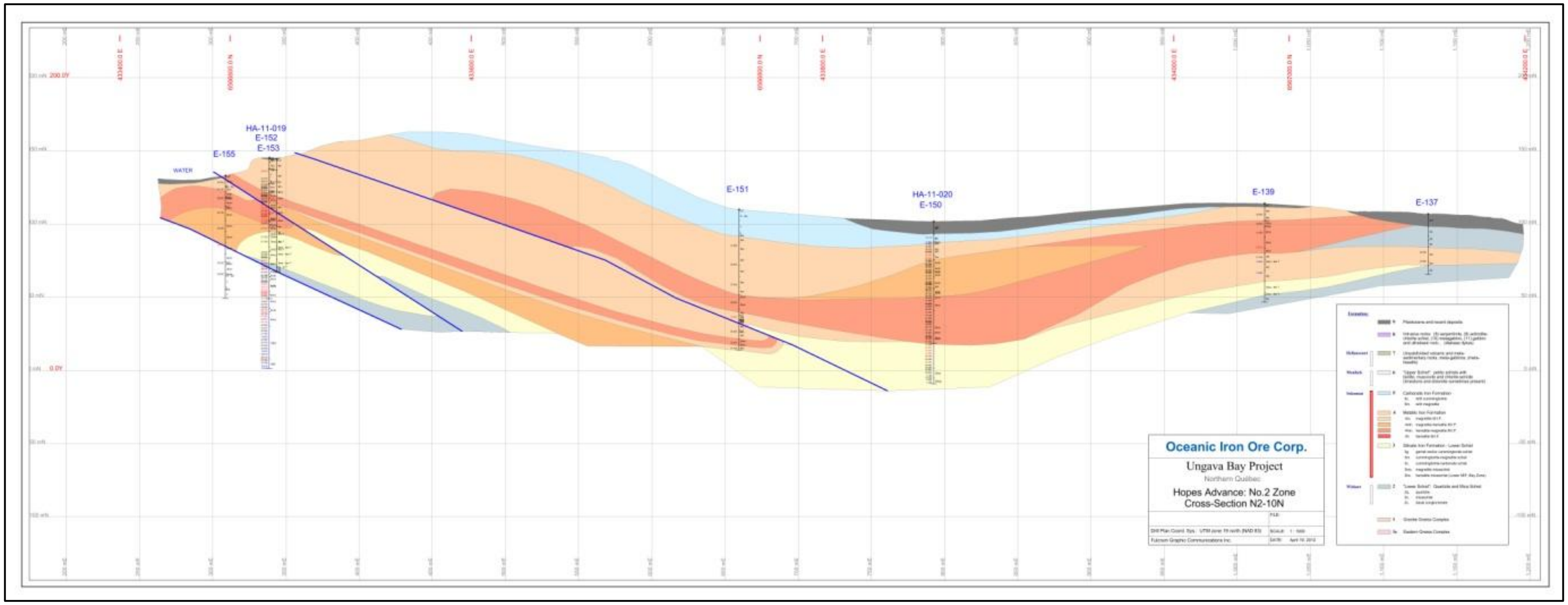


Figure 10.6
West Zone 2, Cross-section on Z2 10+00N



The oxide portion of the iron formation is composed of a succession of higher grade magnetite-hematite and hematite-magnetite iron formation overlying lower grade magnetite-hematite and hematite iron formation.

The higher grade portions of the iron formation contain up to 47.0% total iron while the lower grade portions of the iron formation contain a minimum of 22.1% total iron. The continuity of the iron formation is good between drill holes, but in some cases lacks continuity between sections because of intervening thrust faults, such as drill hole HA-11-018 (34.9% total Fe over 35.85 m and 33.6% total Fe over 63.72 m). The recent drilling confirms the historical drilling and reported grades. In some cases, the exploration drill holes intercepted thicker iron oxide portions of the iron formation and higher total iron than were intercepted in the historic drilling, as is demonstrated by HA-11-021 grading 32% total Fe over 103.41 m. West Zone 2 is limited to the extent identified in the 1950s and is not expected to extend further than the presently identified limit.

10.2.1.4 Iron Valley Drilling

Iron Valley is located 5.3 km north of Castle Mountain. Seventeen holes were drilled for a total of 1,524 m. Ten of the holes were twins of historical drill holes. The iron formation is bowl-shaped with the unit cropping out along the edge of the valley (see Figure 10.7).

The oxide portion of the iron formation varies from 11.20 m to 35.04 m thick near the edges and 50.90 m to 68.20 m in the centre of the valley. On the north side of Iron Valley, hole IV-11-011 intercepted 113.61 m of iron formation. Hole IV-11-010 intercepted 33.4 m of iron formation (26.1% total Fe over 28.93 m) and ended in iron formation. The thicker intercepts of oxide iron formation are probably due to repetition of parts of the iron formation by thrust faulting. The drill holes demonstrate iron formation richer in hematite and the metallurgical work also tends to show higher hematite contents than magnetite.

Historic drill holes M-173, M-175, and M-180 were twinned by holes IV-11-004A (31.87% total Fe over 64.97 m), HA-11-035 (32.8% total Fe over 55.68 m) and IV-11-005 (32.6% total Fe over 45.79 m), respectively. Drill holes IV-11-007 (31.9% total Fe over 32.01 m) and IV-11-008 (34.1% total Fe over 7.42 m) are exploration drill holes.

The oxide portion of the iron formation is composed of a succession of magnetite, magnetite-hematite and hematite-magnetite iron formation. The higher grade portions of the iron formation contain up to 47.1% total iron. In the central and southern portions of the Iron Valley deposit, grades vary from 30.4% total Fe over 56.33 m to 37.2% total Fe over 13.50 m. While the lower grade portions of the iron formation contain down to 20.6% total iron. The drilling confirmed a high degree of continuity of rock types and iron grade between drill holes and sections. The recent drilling confirms the historical drilling and reported grades. On the northern side of Iron Valley, drill hole IV-11-011 intersected 110.38 m of iron formation grading 32.9% total Fe, hence improving the thickness of iron formation at this end of Iron Valley. Drill hole IV-11-010, 300 m west of IV-11-011, intersected 28.93 m of iron grading 26.1% total Fe. Drill hole IV-11-010 terminated in the iron formation unit (4 m)

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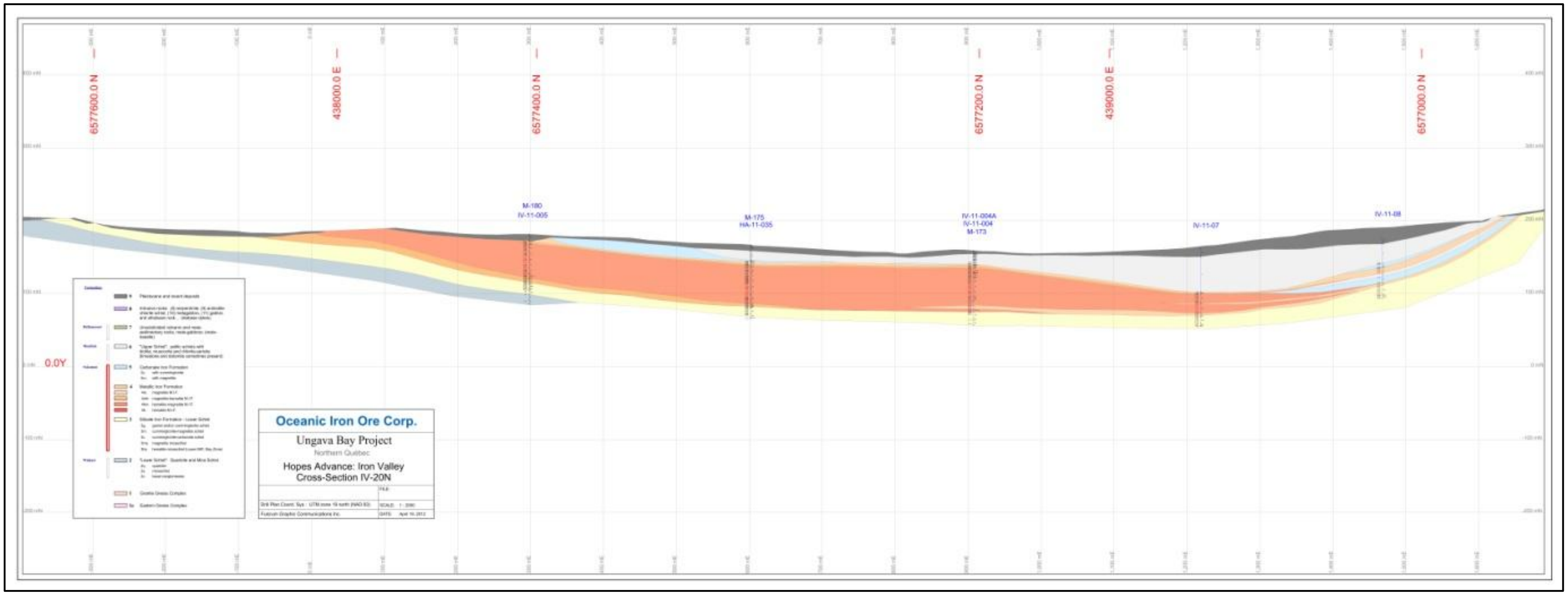
Figure 10.7
Iron Valley Cross-section 20+00N



and, as a result, the hole will have to be extended past its termination depth of 57 m. Results from drill hole IV-11-011 and the airborne magnetic survey indicate that the iron formation continues to the north and northeast.

10.2.1.5 Bay Zone Drilling

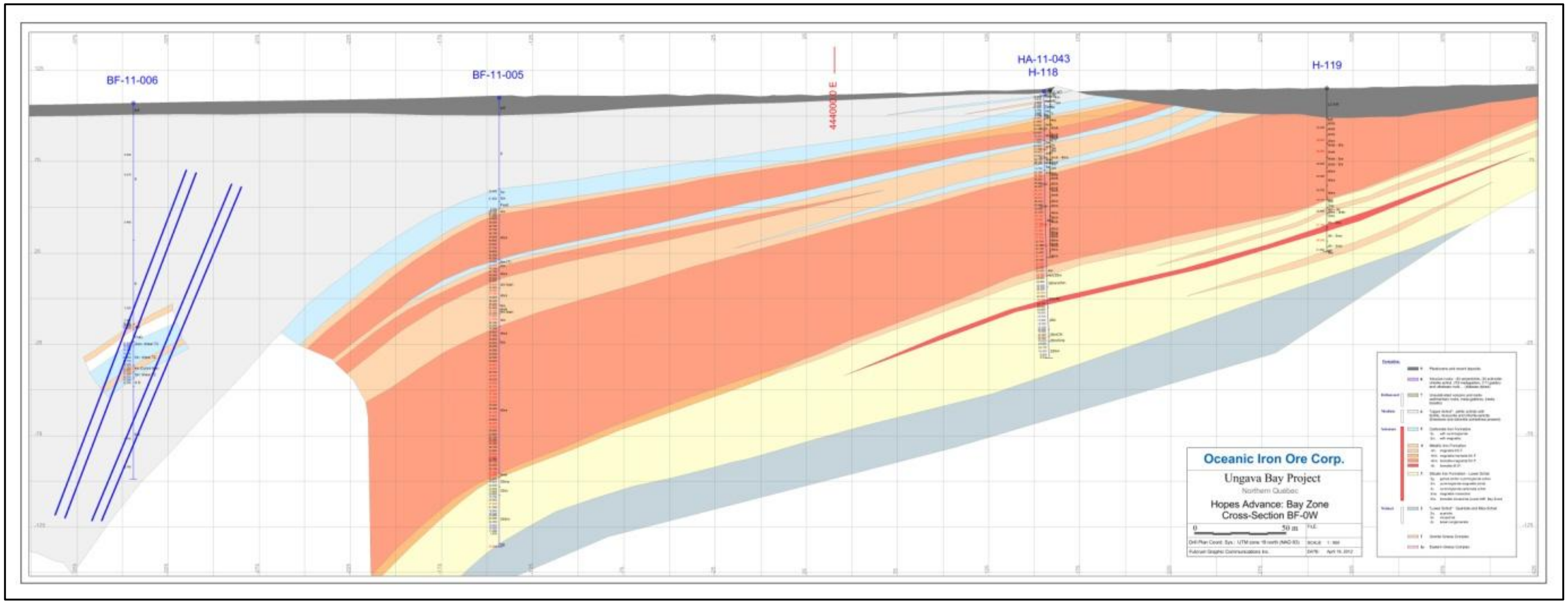
The Bay Zone is composed of deposits A, B, C, D, E and F and is located from 5.6 km (F) to 15.7 km (A) northeast of Castle Mountain. Thirty six holes were drilled on the Bay Zones for a total of 4,244.95 m. Twenty one of the holes were twins of historic drill holes. The drilling on the Bay Zone deposits is summarized below, going from west to east progressing away from the Castle Mountain deposit. The deposits Bay Zone A to F extend over a distance of 11.49 km as six separate deposits.

Eleven holes were drilled at Bay Zone F for a total of 1,669.2 m. Five of the holes were twins of historical drill holes and 6 were exploration holes. The thickness of oxide iron formation intercepted varied from 80.95 m to 132.86 m (Figure 10.8). Historic drill holes H-118, H-142, H-144, H-145 and H-148 were twinned by drill holes HA-11-043 (28.2% total Fe over 71.4 m), HA-11-042 (36.1% total Fe over 91.71 m), HA-11-040 (34.7% total Fe over 93.23 m), HA-11-039 (32.3% total Fe over 56.97 m) and HA-11-038 (34.4% total Fe over 99.18m), respectively. Drill holes HA-11-041, BF-11-001, BF-11-002, BF-11-004, BF-11-005 and BF-11-006 are 2011 exploration drill holes. Holes BF-11-001 (19.53 m grading 26.3% total Fe and 13.32 m grading 33.8% total Fe, BF-11-002 (34.35 m grading 33.4% total Fe), HA-11-041 (107.21 m grading 33.2% total Fe), BF-11-004 (78.29 m grading 34.2% total Fe) and BF-11-005 (132.86 m grading 30.5% total Fe) helped to tighten the interpretation and extend the mineralization by 300 m further south and 735 m across the syncline. The structure is a south-southeast plunging synclinal half-cone. Hole BF-11-006 appears to indicate that the iron formations terminate at this point and may down-throw the iron formation along a fault.

Eight holes were drilled at Bay Zone E for a total of 877.7 m. Four of the holes twinned historical drill holes. The thickness of oxide iron formation intercepted varied from 39.69 m to 127.8 m. On the east side of Bay Zone E, holes HA-11-048 (31.5% total Fe over 84.65 m) and HA-11-049 (32.0% total Fe over 127.80 m) intersected thicker iron formation sequences and demonstrate a thickening of the iron formation sequence eastward. The zone also demonstrates thickening to the east and plunges to the southeast. The twinned holes have comparable grades but with improved thicknesses (see Table 10.2). The average grades vary between 30.5% total Fe and 32.8% total Fe.

Five holes were drilled at Bay Zone D for a total of 619.1 m. Three of the holes were twins of historical drill holes. The thickness of oxide iron formation intercepted varied from 34.24 to 70.30 m. The iron formation in Bay Zone D dips gently to the south and maintains a consistent thickness down-dip. The grades vary from 30.8% total Fe to 34.3% total Fe (see Table 10.2). The thickest intersection is in hole HA-11-052 which grades 32.3% total Fe over 70.30 m.

Figure 10.8
Bay Zone F Cross-section on 0+00W



Six holes were drilled at Bay Zone C for a total of 638 m. Five of the holes were twins of historical drill holes. The thickness of oxide iron formation intercepted varied from 28.22 m to 106.15 m. The grades of the five twinned holes improved upon the historical drill holes, grading from 29.8% total Fe to 36.0% total Fe. The iron formation in Bay Zone C is thickest on the west side of the zone and maintains a consistent thickness in each section, dipping to the south. The thickest intersection is in hole HA-11-056A grading 32.2% total Fe over 106.15 m.

Four holes were drilled at Bay Zone B for a total of 381 m. Three holes were twins of historical drill holes. The thickness of oxide iron formation intercepted varied from 30.43 m to 99.07 m. The thickest intersection is in hole HA-11-063 grading 35.9% total Fe over 99.07 m. Trench TR-H12AB1 was excavated near drill holes HA-11-063 and BB-11-001 which grades 35.8% total Fe over 91.54 m. Sampling of the trench returned a grade of 34.9% total Fe over 107.15 m on the surface. The thickest intercepted iron formation is on the east side of the zone in drill holes HA-11-063 and BB-11-001, and trench TR-H12AB1. The zone dips south-southeast.

One hole was drilled at Bay Zone A. The drill hole was 60-m deep and intercepted 24.24 m of iron oxide iron formation grading 36.6% total Fe. There is a flexure in the trend of the iron formation between Bay Zone B and Bay Zone A and a rapid thinning of the iron formation at Bay Zone A.

The iron formation along the Bay Zone tends to carry both magnetite and hematite with successions of magnetite, magnetite-hematite and hematite-magnetite. The total iron assays vary between 29.0% and 37.9% with weight recoveries of 40.08% and iron recoveries of 81.01% at 4.5% SiO_2.

10.2.1.6 West Zone McDonald Drilling

The West Zone McDonald area is located 6.1 km west of Castle Mountain. Four holes were drilled, MC-11-040, MC-11-045, MC-11-060 and MC-11-001, for a total of 281 m. Three of the holes were twins of historical drill holes. The thickness of the oxide portion of the iron formation varies from 3.78 m to 48.49 m with grades varying from 25.4% total Fe (MC-11-060) to 32.6% total Fe (MC-11-045).

The oxide portion of the iron formation is composed of hematite-magnetite, hematite and magnetite. The West Zone McDonald carries both magnetite and hematite and the recoveries are slightly lower than in the other zones. The hematite appears as specularite and is medium-grained and often friable.

10.2.1.7 Iron Plateau Drilling

A large circular magnetic anomaly north of Castle Mountain is referred to as Iron Plateau. Most of the iron formation in this area is covered by glacial deposits. Outcrops of flat-lying, magnetite-rich iron formation were identified on the northern margin of the magnetic anomaly. Iron Plateau had not been identified in the 1950s. One hole, HA-11-080, intercepted iron formation at a depth of 39.2 m on the east side of Iron Plateau, with a grade of 28.4% total Fe over 50.82 m (see Figure 10.4). Hole IP-11-001, 631.9 m west of HA-11-080, was drilled to a depth of 57 m and did not penetrate the iron formations which may be deeper. On section 130+00 (Figure 10.3), the historical hole P-93 demonstrated an intersection of 177.71 m grading 30% soluble iron and continuity to the west. The airborne magnetic survey shows that the Iron Plateau zone is a bowl-shaped iron formation feature similar to that at Iron Valley, with a diameter of 3.0 to 3.5 km.

Several drill holes will be planned on Iron Plateau: approximately 2,060 m in 20 holes.

10.3 GEOTECHNICAL DRILLING

A geotechnical drilling investigation program was carried out in 2012 with a total drilled depth of 102 m.

Four geotechnical holes (BH-12-01 to BH-12-04) were drilled east of the Iron Valley pit to characterize ground conditions under the proposed tailings management facility and one hole (BH-12-05) was located at the proposed concentrator site. Adjacent boreholes were drilled at some locations to penetrate difficult ground conditions (e.g., boulders).

The drill holes were 8.8 m to 18.3 m in depth and overburden varied from 3.0 m to 13.7 m in depth. The underlying bedrock in holes BH-12-01 to BH-12-04 is Archean basement rock with granitic gneisses and gabbro. Hole BH-12-05 is underlain by quartzites with a quartz vein.

None of the geotechnical drill holes were located on areas of iron formation.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The information in this section is taken from Canova, 2012.

The core sampling protocol for the 2011 drilling program was established under the supervision of Mr. Eddy Canova, P.Geo., OGQ, Director of Exploration for Oceanic.

The core boxes were covered with wooden lids that were secured with wire ties at the drill site. The wooden core boxes were transported by helicopter from the drill site to the village of Aupaluk in sling nets. The boxes were then brought to the core shack, the covers removed, and the boxes placed onto logging tables for logging.

The placement of measuring blocks and core recovery were verified by measuring the entire core and determining the core recovery every 3 m and recording the measured recovery in a recovery table. The RQD (rock quality designation) is measured every 3 m and recorded in the physical property table.

The lithology and fabrics were described in detail. Rock types were assigned codes to assure consistent core logging and sampling. The rock codes used are those that were used in the 1950s (6, 5, 5a, 5am, 4m, 4mh, 4hm, 4h, 3sm, 3smh, 3sc, 3sg, 2, 2b, and 1). The rock types were fully described, color of the unit, grain size, main oxides observed, textures, fabrics were measured relative to the core axis and recorded, alteration, main minerals in percentages, and a detailed description of the unit. Narrower units, veins or dykes are entered into the secondary geology table, and the same information is entered as the main units. The magnetic susceptibility of the core was recorded for the entire length of each drill hole. The data for each drill hole is entered in a spreadsheet, with separate worksheets for collar, survey, geology, assay, metallurgical, RQD and magnetic susceptibility data.

After the core was measured, fitted together and described, digital images were acquired of consecutive core boxes in groups of four. Each image acquired includes a card indicating the hole identification numbers, box numbers, and depth identification. Digital records of all the images are stored with the data for each drill hole.

Samples of mineralized material and waste were collected and submitted for chemical analysis. Both types of samples were collected with a minimum length of 30 cm, a maximum length of 2 m, and honoured geological contacts. A sample tag was inserted at the start of the core sample and stapled to the core box with a sample number and two stubs. The sample number, sample interval, width of sample along the drill length, comments about the sample collected, are entered in the drill hole log. The sample booklets were supplied by ALS Chemex from Val-d'Or and contain tags with unique numbers.

The core was split with a hydraulic splitter and half of the core was retained in the core box and the remaining half put into doubled plastic sample bags. The sample number was written on the plastic bag and a sample tag with a bar code was placed inside the sample bag. A sample tag for a duplicate analysis was inserted every 25th sample. Five or six bags of consecutive samples were put into rice bags, placed on pallets, and stored in a secure area at the airport in Aupaluk. The accumulated samples were inventoried and a manifest was created with details of the shipment. The samples were flown weekly from Aupaluk to Val-d'Or.

The majority of samples were sent to ALS Chemex in Val-d'Or for sample preparation and chemical analysis. Some samples were sent to AGAT Laboratories for sample crushing and pulverizing and then shipped to SGS Mineral Services (SGS) in Lakefield, Ontario, for chemical analysis. A rotary splitter was used to create splits for shipment to SGS for metallurgical analysis. Every 25th sample had an additional split collected for duplicate analysis. Every drill hole at Hopes Advance had composite samples sent to SGS for metallurgical analysis and characterization. At Hopes Advance, 611 composite samples were produced. Each hole had composite samples selected and samples were regrouped assay samples within a geological unit to form a composite of one sample, or as much as 10 samples, within the same geological unit and composite sample.

All samples were pulverized to 90% passing 100 mesh and split using a rotary splitter at ALS Chemex in Val-d'Or, or by AGAT Laboratories in Sudbury, Ontario. One split was used for chemical analysis and another split was retained for metallurgical analysis. All mineralized material and waste samples were analyzed with the same analytical suite that included: whole rock XRF, loss on ignition, C and S (by LECO combustion analyzer), and ferrous Fe. Specific gravity was determined on every fifth sample. Most of the chemical analyses were determined by ALS Chemex in Val-d'Or. The XRF whole rock analysis included the following elements reported as oxides or elements: Al_2O_3, As, Ba, CaO, Cl, Co, Cr_2O_3, Cu, Fe, K_2O, MgO, Mn, Na_2O, Ni, P, Pb, S, SiO_2, Sn, Sr, TiO_2, V, Zn, and Zr. Ferrous iron was determined by titration. A suite of characterization samples that were selected as being representative of each rock type were collected from each drill hole. The characterization samples in addition to the analyses just described included ICP analyses (34 elements) and samples submitted for mineralogy and petrography.

The analytical results in combination with rock descriptions were used to identify intervals to be composited for metallurgical testwork at SGS.

Each of ALS Chemex, AGAT Laboratories and SGS are independent of Oceanic.

The ALS Chemex laboratory in Val d'Or (1324 rue Turcotte, Val d'Or, QC, J9P 3X6) is certified to standards within ISO 9001:2008. AGAT Laboratories (2054 Kingsway, Sudbury, ON, P3B 4J8) is certified under ISO 9001:2008. SGS (185 Concession Road, Lakefield ON, K0L 2H0) is certified under ISO/IEC 17025.

It is the opinion of the Micon that the sample preparation, security and analytical procedures used in the Oceanic drill program are appropriate.

12.0 DATA VERIFICATION

The information in this section is taken from Canova, 2012.

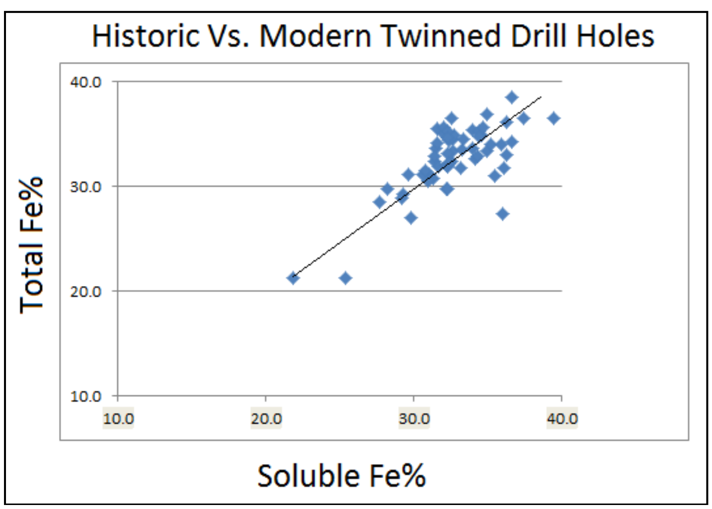
The casings, holes, and stakes with tags of several drill holes from the 1950s drilling program were identified and located with GPS. Core logging procedures, data entry, and core sampling procedures were established for the drilling program and recently recovered drill sections from the 1950s drilling program were reviewed.

The criteria for the identification of rock types were reviewed to assure consistent identification of rock types. Three trenches from the 1950s work at Castle Mountain were identified and located with hand-held GPS.

12.1 VERIFICATION OF THE HISTORIC EXPLORATION DRILLING RESULTS

In order to verify the historic drilling results, Oceanic twinned one to two drill holes per cross-section at all of the historically identified iron deposits at Hopes Advance. All of the historically drilled exploration holes were located on the surface and surveyed. One to two historic holes per cross-section were then selected and twinned. A total of 67 drill holes were twinned totalling 6,400 m of drilling. These 67 holes were compared to the historic logged geology and found to closely match the modern results. The result of geological logging was, for all practical purposes, identical to the twinned historic drill holes. The composites from the 67 twinned holes were compared to the modern drill holes and covered 2,015 m of composite sample intervals totalling 1,721 m. A comparison of these twinned assay results is shown below in Figure 12.1.

Figure 12.1
Comparison Between Historic and Oceanic Drilling Results at Hopes Advance



Other than a few outliers, the vast majority of the modern results fall within the normal assay ranges expected for iron assays. For all of the twinned assays results to date, the average weighted iron assay is 33.2% versus the modern assay of 33.0%. This close relationship, along with the consistency between the historic and modern geologic logging, validates the historic geologic and assay results. Because of this, the historic data were used without modification in the resource estimation described below.

The presence of extensive iron formation in outcrop at Hopes Advance is obvious from the visual examination completed by Micon.

It is Micon's opinion that the data have been verified and are suitable for use in the mineral resource estimate.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 INTRODUCTION

Two metallurgical testwork programs were designed to assess the resource at Hopes Advance.

The first program, carried out by SGS in Lakefield, Ontario, provided weight recovery and concentrate quality data on composites from drill holes. The results from this metallurgical test program were used to further define the mineral resource. Approximately 611 composite samples from Hopes Advance were analyzed in this program.

The second program, a pilot plant program designed to characterize the mineralization and to produce a flowsheet that would maximize weight recovery and produce an iron ore concentrate assaying greater than 66.6% Fe and less than 4.5% SiO_2 was completed at the facilities of SGS.

Additional testwork was also conducted at the facilities of FLSmidth, Derrick and OSD.

13.2 HISTORICAL TESTWORK SUMMARY

Considerable metallurgical work was done on Hopes Advance in the late 1950s. This metallurgical work was used to design a flowsheet using spirals followed by LIMS. Most of the historic resource estimate was based on soluble iron assays supplemented with metallurgical work on a few drill holes, and the results of metallurgical testing on a bulk sample from Castle Mountain. A summary report by Lone Star Mining and Exploration published in 1973 demonstrates that concentrate weight recoveries of 40% at 5% SiO_2 were achieved with the spirals and magnetic separation alone. The results from the current metallurgical testwork confirm the historic metallurgical work. The iron in both the hematite and magnetite mineralization is largely recovered by gravity due to the apparent inter-grown magnetite with the hematite and the aggregation of magnetite grains.

13.3 SGS INITIAL TESTWORK PROGRAM AND RESULTS

Testwork carried out by SGS on behalf of Oceanic prior to the pilot plant program conducted in 2012 has been described in Micon, 2011 and Canova, 2012 from which the following has been extracted.

As part of the characterization program, SGS determined weight recovery and concentrate grade data on composites from Hopes Advance. Since the Castle Mountain deposit contains both hematite and magnetite (hematite >magnetite), a program was designed to simulate recoveries that could be expected in a concentrating plant using gravity separation followed by regrinding and low intensity magnetic separation (LIMS). A series of grind grade tests were first conducted to determine an appropriate grinding method and grinding time to achieve good liberation of hematite. Stage pulverizing, dry rod mill and wet rod mill grinding methods and grinding times were compared. The gravity circuit is simulated by a single stage of dry rod mill grinding to 80% passing 150 mesh (106 μ) followed by gravity recovery using a Mozley table. This stage recovers relatively coarse grained hematite and aggregates of magnetite and magnetite and hematite. After regrinding the magnetic circuit was simulated using Davis tube testing. Davis tube tests were run on Mozley table tails when normalized iron recovery (normalized to 4.5% SiO_2) was less than 70% and the magnetite content of a sample (analyzed using a Satmagan analyser) was greater than 15%. The Satmagan analyser is designed to measure the magnetite content of a sample. The tailings were then ground to 100% passing 400 mesh and passed through a Davis tube to recover the magnetite. The concentrate from the Mozley table test and the Davis tube test were combined to produce a total concentrate weight recovery and concentrate grade. The composite intervals selected from samples within geologic units are continuous, and have similar chemical characteristics.

The characterization program determined that concentrate with good chemical characteristics can be produced using gravity separation and that recoveries can be improved by additional grinding of gravity tails followed by LIMS. The characterization program also indicated that concentrate of good quality; weight and iron recovery may be achievable with gravity separation alone.

SGS analyzed approximately 611 composite samples from Hopes Advance. This included duplicate samples (QA/QC) and a few samples of underlying mica schists that contained magnetite and hematite. Results from the duplicate analyses and the mica schists are not included in the following discussion.

In order to ensure that the results of the metallurgical analysis are representative of the material included in the resource estimate, a total of 507 composites with head grade greater than 25% Fe were considered in the overall analysis. The distribution of the composites across the Hopes Advance project area is summarized in Table 13.1.

Table 13.1
Summary of Distribution of 507 Composites with Head Grade Greater than 25% Fe

Deposit	No. of Composites	Total Length (m)	Average Composite Length (m)
Castle Mountain	150	1,533.3	10.22
Iron Valley	60	570.2	9.50
Bay Zone	206	2,119.1	10.29
West Zone	91	881.8	9.69

Table 13.2 shows the overall recovery achieved by combining the gravity concentrate and the magnetic concentrate while maintaining approximately 4.5% SiO_2.

Table 13.2
Summary of Overall Concentrate Grade and Grade at Approximately 4.5% SiO_2

Deposit	Overall Concentrate Grade					Overall Recovery			
	Fe (%)	SiO_2 (%)	Al_2O_3 (%)	Satmagan[1] (%)	MnO (%)	Wt (%)	Fe (%)	SiO_2 (%)	Satmagan (%)
Castle Mountain	65.87	4.42	0.02	30.84	0.33	39.34	78.60	4.34	73.97
Iron Valley	65.97	4.64	0.04	25.48	0.33	40.49	80.58	4.76	62.92
Bay Zone	66.96	4.46	0.03	59.15	0.28	40.08	81.01	4.38	81.06
West Zone	65.81	4.34	0.03	41.28	0.73	38.80	74.58	4.40	72.50

[1] Magnetite content using a Satmagan analyzer.

Combined recovery methods at the high gravity recovery deposits (Bay Zone, Iron Valley and Castle Mountain) achieved weight recoveries and iron recoveries above or approaching 40% and 80%, respectively.

13.4 PILOT PLANT TESTWORK

A pilot plant program was completed at the facilities of SGS in Lakefield, Ontario to characterize the mineralization and to produce a flowsheet that would maximize weight recovery and produce an iron ore concentrate assaying greater than 66.6% Fe and less than 4.5% SiO_2. This work is described in SGS Final Reports 13169-001, 13169-002, and 13169-003.

Additional testwork was also conducted at the facilities of FLSmidth, Derrick and OSD Pipeline (OSD).

Table 13.3 lists the laboratories and suppliers that were involved with the testwork as well as the specific techniques or equipment tested.

Table 13.3
Summary of Metallurgical Testwork

Type of Test	SGS	FLSmidth	Derrick	OSD
Mineralogy	✓			
Comminution	✓	✓		
Classification			✓	
Gravity Separation	✓	✓		
LIMS - Magnetic Separation	✓			
Pipeline Transportation				✓
Hydraulic Separation	✓			
WHIMS - Magnetic Separation	✓			
Pilot Plant Testwork	✓			
Dewatering	✓			

In September and October, 2011, a 250 t bulk sample was collected from four zones, Castle Mountain, West Zone 2, West Zone 4 and Bay Zone F. This bulk sample was collected by

Oceanic and shipped from the site for a pilot plant test program conducted at the facilities of SGS.

During pilot plant testing, the Castle Mountain material was tested separately while the four zones were blended to provide representative life-of-mine material (LOM material).

The initial five pilot plant tests (PP-01 to PP-05) were conducted on the LOM material. PP-06 introduced Castle Mountain material and this continued until PP-12. PP-13 and PP-14 were vendor sample production runs using Castle Mountain material. PP-15 was the production run test and used LOM material. Table 13.4 lists the standard pilot plant set-up conditions.

Table 13.4
Summary of Pilot Plant Runs

Test Run	Date	Purpose	Bulk Sample	Time Total	Total Ind.	Feed Cum	Circuit Config.	Thrg. Dry	SAG Mill Screen		Primary Screen		Regrind Screen	
				h	t	t		kg/h	mesh	µ	mesh	µ	mesh	µ
PP-01	19-Apr-12	Grinding/Gravity Commissioning	LOM Composite	2.6	4.4	4.4	FAB	1,021	6	3,350	80	180	-	-
PP-02	23-Apr-12	Grind/Grav Optimisation and LIMS Comm.	LOM Composite	8.1	7.1	11.6	FAB	790	6	3,350	80	180	400	38
PP-03	24-Apr-12	Optimise recleaner spiral	LOM Composite	7.5	5.5	17.1	FAB	728	6	3,350	80	180	400	38
PP-04	26-Apr-12	SAG run plus optimisation	LOM Composite	7.2	13.4	30.5	SAB	1,514	6	3,350	80	180	-	-
PP-05	30-Apr-12	Optimise at target silica grade	LOM Composite	2.3	3.3	33.8	SAB	-	-	-	-	-	-	-
PP-06	1-May-12	New composite with single stage grind	CM Composite	-	2.2	2.2	SAG	-	-	-	-	-	-	-
PP-07	2-May-12	CM with single stage grinding	CM Composite	7.3	10.6	12.8	SAG	1,497	6	3,350	60	250	-	-
PP-08	4-May-12	CM with single stage grinding	CM Composite	7.7	12.3	25.2	SAG	1,426	6	3,350	60	250	-	-
PP-09	7-May-12	CM with 1 cleaner spiral	CM Composite	8.7	10.4	35.6	SAG	1,450	6	3,350	60	250	-	-
PP-10	8-May-12	CM as PP-07 & PP-08 but with DF-400	CM Composite	9.2	12.0	47.6	SAG	1,503	6	3,350	60	250	-	-
PP-11	9-May-12	Cm with new spiral recycle and no scav.	CM Composite	7.6	11.4	59.0	SAG	1,412	6	3,350	60	250	-	-
PP-12	10-May-12	CM as PP-11 but with coarser screen	CM Composite	6.8	8.9	68.0	SAG	1,328	6	3,350	50	300	-	-
PP-13	15-May-12	CM production runs	CM Composite	8.9	11.9	79.9	SAG	1,363	6	3,350	50	300	-	-
PP-14	16-May-12	CM production runs	CM Composite	5.5	7.2	87.1	SAG	1,244	6	3,350	50	300	-	-
PP-15	17-May-12	LOM as PP-13 & PP-14	LOM Composite	7.2	11.0	44.8	SAG	1,368	6	3,350	50	300	-	-

Figure 13.1 shows the flowsheet used for tests PP-11 through PP-12.

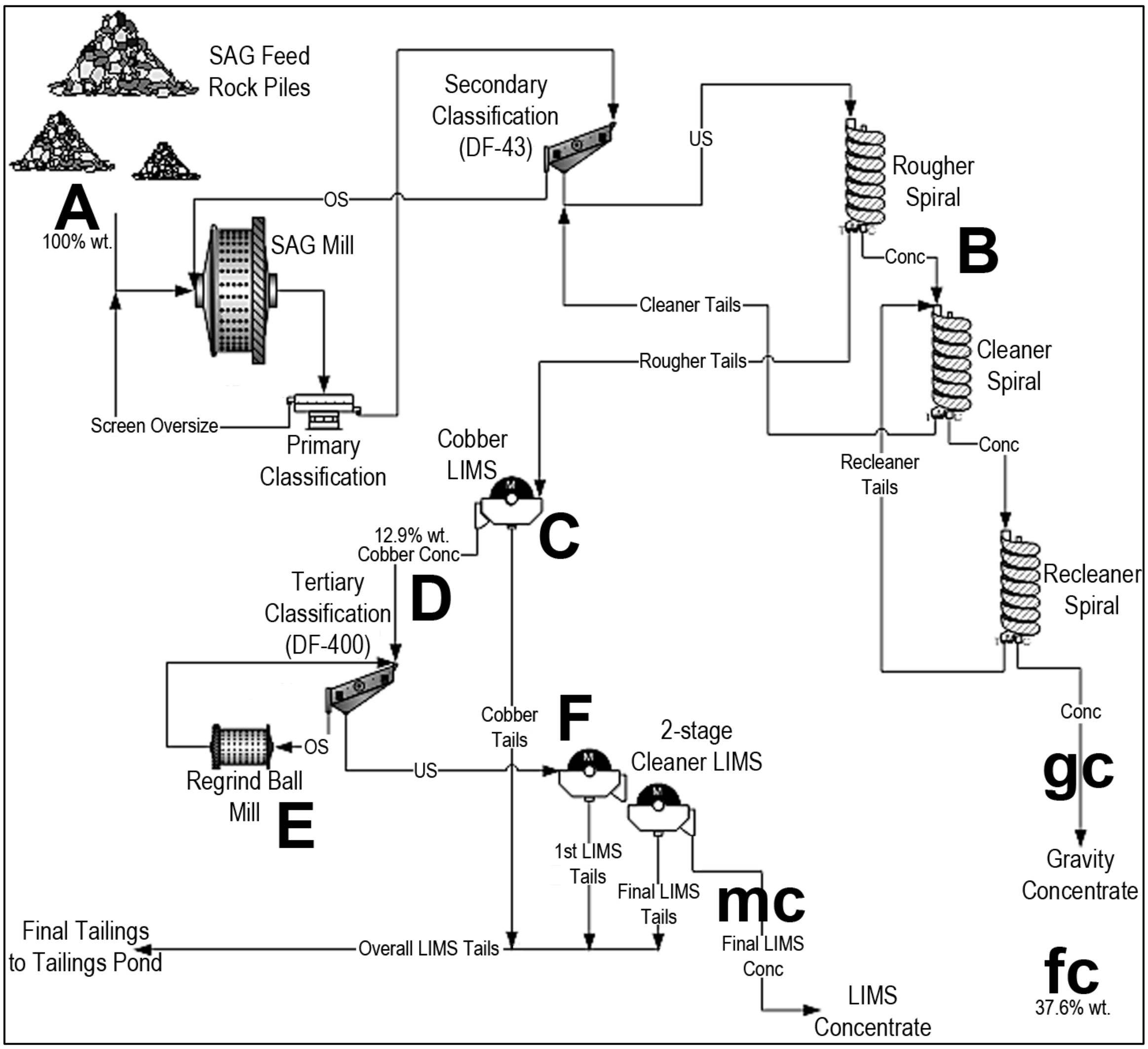
The pilot plant testwork program comprised the following:

- Comminution.
- Bench-scale beneficiation.
- Heavy Liquid Separation.
- Gravity Separation.
- Magnetic Separation.
- Hydraulic Separation.
- Dewatering.

13.4.1 Comminution

Initial bench scale testwork used rod mill grinding to determine the optimal liberation size for gravity separation. Later, a variety of grindability tests were conducted on pilot plant samples.

Figure 13.1
Pilot Plant Flowsheet for Tests PP-11 through PP-12



Source: SGS Final Report 13169-002 Revision 1, dated October 16, 2012.

Pilot plant samples from the four deposit zones were separately tested using:

- JKTech drop-weight tests.
- Semi-autogenous grinding (SAG) mill comminution (SMC) tests.
- MacPherson autogenous grindability tests.
- Bond grindability tests.

- High pressure grinding roll (HGPR) tests (conducted on composite samples only).

The grindability test results indicate that the test material, when coarse, is of medium hardness, but once broken to ball mill size it is significantly softer. This makes the test material quite amenable for SAG mill grinding as there will not be a build-up of a critical size within the SAG mill.

Table 13.5 lists the JKTech drop weight and the SMC test results.

Table 13.5
JKTech Drop-weight and SMC Test Results

Sample Name	Parameter										
	A	b	Axb	Hardness Percentile	t_a	Hardness Percentile	DWI	M_{ia}	M_{ih}	M_{ic}	Relative Density
Castle Mountain PP Feed	84.0	0.62	52.1	43	0.50	45	-	-	-	-	3.42
Life-of-mine PP Feed	84.1	0.77	64.8	29	0.47	49	-	-	-	-	3.47
Castle Mountain	75.4	0.69	52.0	43	0.39	-	6.6	15.1	11.2	5.8	3.43
West Zone 2	80.2	0.65	52.1	43	0.39	-	6.6	15.0	11.1	5.7	3.46
West Zone 4	80.1	0.59	47.3	50	0.39	-	7.3	16.2	12.2	6.3	3.48
Bay Zone F	72.0	0.93	67.0	27	0.39	-	5.3	12.4	8.7	4.5	3.49

A – impact breakage parameter
b – impact breakage parameter
Axb – value which has been found to have the best correlation with rock resistance to impact breakage
t_a - the abrasion characteristic of the sample which is estimated using a tumbling test
DWI – drop weight index
M_{ia} – grinding of coarse sizes in tumbling mills work index
M_{ih} – HPGR work index
M_{ic} – crushing work index

During the pilot plant testwork it was determined that the autogenous grinding mill throughput would be low, and the discharge would be too fine for gravity separation. SAG mill grinding demonstrated increased throughput rate and weight recovery. For the pilot plant primary SAG mill grinding circuit, SGS estimated an average power requirement of 6.6 kWh/t. The testwork resulted in a SAG mill circuit design F_{80} = 155 mm, and P_{80} = 140 µ.

The LIMS mill is referred to by SGS as the regrind mill (see Figure 13.1). This LIMS mill regrinds the cobber LIMS concentrate, prior to the cleaner LIMS. SGS estimates the LIMS mill power requirement as 21 kWh/t. This calculation is based on a re-grind mill feed size F_{80} of 188 µ, and a product size P_{80} of 27 µ. For Castle Mountain material, the cobber LIMS concentrate could be ground coarser. The design criteria used a P_{80} of 29 µ.

HPGR testing conducted by SGS determined that an HPGR-ball mill circuit has a significantly lower power requirement compared with a rod mill-ball mill set-up. The power reduction was 37% for Castle Mountain material and 45% for LOM material. Met-Chem also identified several key disadvantages to using HPGR at Hopes Advance involving additional operating and capital costs when compared with the SAG milling option in the current flowsheet.

13.4.2 Bench-scale Beneficiation on Pilot Plant Samples

SGS completed flowsheet simulations using Mozley table gravity separation and Davis tube magnetic separation tests. The flowsheet was based on the drill core sample test results. The bench-scale tests yielded improved results obtained over the earlier drill cores test results, see Table 13.6.

Table 13.6
Summary of Bench Scale Beneficiation Separation Results on Pilot Plant Samples

Test	Sample	Final Concentrate Grade					Final Recovery			
		Fe[1] (%)	SiO_2 (%)	Al_2O_3 (%)	Sat (%)	MnO (%)	Wt (%)	Fe (%)	SiO_2 (%)	Sat (%)
M-9 & DT-17	Castle Mountain PP	66.4	4.94	-	32.7	0.24	46.3	87.5	5.07	97.6
M-10 & DT-18	Life of Mine PP	66.3	5.27	-	36.1	0.26	46.3	87.8	5.44	97.5
M-1	Castle Mountain	66.4	4.5	-	19.6	0.28	39.4	78.3	4.01	72.3
M-2 & DT-2	West Zone 4	68.1	3.88	-	55.5	0.2	44.3	80.3	3.8	98.4
M-3 & DT-3	West Zone 2	67.1	5.67	-	86.9	0.77	49.6	88.7	6.78	98.7
M-4	Bay Zone F	67.5	4.5	0.06	18.6	0.3	45.2	80.9	4.63	68.6

[1] Fe grade calculated from the Fe_2O_3 WRA result

However, the West Zone 2 pilot plant samples seem to contain substantially higher amounts of magnetite than West Zone 2 drill core samples. It was concluded that the West Zone 2 sample was not representative due to the variances in feed characteristics observed in the bulk sample when compared to those observed in drill core samples.

13.4.3 Heavy Liquid Separation

Heavy liquid separation using liquids with densities 2.96 and 3.30 kg/L were not successful as the silica grade in the iron concentrate remained above 4.5% silica for all tests.

13.4.4 Magnetic Separation

The use of magnetic separation alone did yield good quality iron concentrates, but the weight recoveries were low, with a maximum of 25% except for West Zone 2. West Zone 2 demonstrated nearly 50% magnetic weight recovery. However, this result is questionable as it is significantly different from the results obtained from the drill core material. Thus, its influence has been discarded in specifying the process flowsheet and results.

13.4.4.1 Low Intensity Magnetic Separation Tests

Low intensity magnetic separation (LIMS) tests were conducted using Davis tube tests on Mozley table tailings. These tests were conducted to study the potential of the magnetic separators to recover additional magnetic iron minerals from the spirals tailings. The spirals tailings were ground to less than 53 µ to ensure liberation of locked iron minerals. Good results were obtained. In general, magnetic separation delivered higher iron concentrate grades than the gravity concentrates. The amount of iron recovered using magnetic separation is significant and established the necessity for this process in the concentrator.

13.4.4.2 Wet High Intensity Magnetic Separation Tests

The objective of the wet high intensity magnetic separation (WHIMS) tests was to increase weight recovery to the concentrate, by recovering fine hematite that was lost by the gravity spiral concentrators. The WHIMS was applied to the final tailings stream to induce a high intensity magnetic field thereby attracting weakly magnetic minerals such as hematite and other iron containing minerals. The testwork results indicated that WHIMS does not provide a clear net benefit to the project.

13.4.5 Gravity Separation

Mozley table testwork demonstrated that the Oceanic zones are very amenable to gravity separation techniques. More than 94% of Mozley testwork products were greater or equal to 66% Fe, while averaging 2.2% SiO_2. Table 13.9 summarizes the gravity table results.

Table 13.7
Summary of Mozley Table Separation Results from Drill Core Samples

Deposit	Head Grade		Concentrate Grade			Table Recovery		Table Tailings Grade	
	Fe (%)	Sat (%)	Fe (%)	SiO_2 (%)	Sat (%)	Wt (%)	Fe (%)	Fe (%)	Sat (%)
Castle Mtn.	31.7	14.7	68.0	2.46	31.9	33.3	70.7	13.6	6.83
West Zone 2	31.4	16.1	66.5	2.66	34.0	25.3	52.4	19.3	11.8
West Zone 4	34.0	22.7	68.1	2.49	44.3	33.4	66.3	16.9	12.8
Bay Zone F	32.1	24.8	68.6	2.59	52.3	29.7	62.5	16.5	15.6

13.4.6 Hydraulic Separation Tests

The hydraulic separation test samples were collected from pilot plant streams. The objective was to evaluate the removal of fine silica from rougher gravity concentrates. An early test indicated that hydraulic separation may be used to improve cleaner gravity concentrate. However, subsequent testwork did not significantly decrease the silica contents using hydraulic separation in comparison with gravity separation.

13.4.7 Dewatering Testwork

SGS completed static testing on several pilot plant concentrator products. The Castle Mountain LIMS concentrate (P_{80} of 33 µ) is most indicative of the final plant concentrate. The LIMS concentrate settled fast and required 3 g/t of flocculant producing a maximum thickener underflow of 79% solids. The Castle Mountain tailings required 25 g/t flocculant producing a maximum of 71% solids. Settling tests on product from LOM material yielded similar results as Castle Mountain. (It should be noted that the gravity concentrate was not ground to the OSD recommended P_{80} of 45 µ, as the SGS tests were in progress prior to the release of the OSD pipeline report.)

Vacuum filtration tests were performed on pilot plant concentrates. The Castle Mountain unground gravity concentrate produced a filter cake moisture content of 8.1% at 26.6 in Hg of vacuum. LIMS concentrate yielded a moisture content of 10.8 % at 26.6 in Hg of vacuum. The combined LIMS concentrate and unground gravity concentrate produced a filter cake of 8.4% moisture at 20.7 in Hg of vacuum. The improved result is due to the finer particles creating a better vacuum seal. The combined LOM concentrate produced similar results as the Caste Mountain concentrate.

Pressure filtration tests on Castle Mountain gravity concentrate produced a filter cake moisture content of 4.6 %, while LIMS concentrate produced a filter cake of 6.8% moisture (both at 100 psi air pressure). The combined LIMS concentrate and unground gravity concentrate produced a filter cake of 4.4% moisture at 100 psi air pressure. The improved result is due to the finer particles creating a better seal. As with vacuum filtration, the combined LOM concentrate produced similar results as the Castle Mountain concentrate.

Based on results of this study, vacuum filtration was selected for concentrate dewatering requirements.

13.4.8 Pilot Plant Testwork Results

The mineralization itself does not require complex treatment for successful beneficiation. Most of the silica and fine iron silicates are eliminated by spiral concentration. The magnetic separation process will maximise weight recovery to the final concentrate.

The pilot plant results shown in Table 13.8 were used to develop the processing plant design criteria. The figures in Table 13.8 may be considered to be conservative estimates since the results indicate progressive improvements in pilot plant operation. Therefore the target concentrate grade of 66.6% Fe and 4.5% SiO_2 can be achieved using the PP-14 flowsheet.

Table 13.8
Summary of Final Flowsheet Pilot Plant Results

Castle Mountain Test	Head Grade	Final Gravity Concentrate			Cleaner LIMS Concentrate			Combined Concentrate		
	Fe %	Wt %	Fe %	SiO_2 %	Wt %	Fe %	SiO_2 %	Wt %	Fe %	SiO_2 %
PP-11	34.9	35.7	63.5	6.45	5.5	66.7	5.60	41.2	63.9	6.34
PP-12	34.0	30.0	66.0	5.15	6.4	68.4	3.96	36.4	66.4	4.94
PP-13	33.8	29.5	66.5	4.75	6.1	69.3	3.61	35.6	67.0	4.56
PP-14	34.2	31.5	65.9	4.79	6.1	70.0	2.99	37.6	66.6	4.49
Average	34.2	31.6	65.5	5.2	6.0	68.6	3.9	37.6	66.0	5.0

Used geometric mean to calculated averages.

13.5 DERRICK TESTWORK

As a leader in wet fine screening, Derrick was selected to perform testwork on secondary classification. The Derrick Stack-Sizer™ is a high-capacity, small-profile screening system. Fine screening requires more surface area than coarse screening. Also, screening is more efficient than other methods of classification such as cyclone and spiral classification.

The testwork was carried out at the Derrick test facility in Buffalo, New York on a large secondary classification sample from the pilot plant testwork. The testwork results were used to select the number of screens for the process.

It was determined that one Derrick Stack-Sizer™ can handle a throughput of 180 t/h of pre-screened Castle Mountain SAG mill discharge at 20% solids by volume.

13.6 OSD TESTWORK

OSD was contacted to assist with the transport of iron concentrate from the concentrator to the port. A sample of the concentrate was shipped to the OSD laboratory in Australia.

OSD determined that a P_{80} of 45 µ is the most economic particle size for this transport process. For this reason a concentrate grinding circuit is included to the processing facility.

13.7 FLSMIDTH TESTWORK

Bond Ball Work Index (BWi) tests were conducted by FLSmidth to determine the amount of energy required for secondary grinding. BWi averaged 5.79 kWh/t, which is extremely low. FLSmidth also conducted gravity separation tests on sized fractions of a composite sample. Each size fraction underwent gravity separation and the concentrates, middlings and tailings were each assayed. The subsequent analyses determined that mill feed should be ground to 106 µ to produce iron concentrate assaying 65.9% iron, and 4.5% silica.

14.0 MINERAL RESOURCE ESTIMATES

The information in this section is taken from Canova, 2012.

14.1 INTRODUCTION

In April, 2012 a technical report was published describing Oceanic's preparation of an updated mineral resource estimate (Canova, 2012) compliant with the reporting requirements of NI 43-101 for its Hopes Advance project area based on the complete drill hole assay data for 2011. Micon has reviewed this estimate.

As mentioned in Section 6.2, the Hopes Advance area was subject to a historic mineral resource estimate in the late 1950s. This historic estimate used 185 drill holes totaling 12,935 m.

During 2011, the Hopes Advance project area had an additional 115 drill holes completed totaling 11,618 m. These drill holes were designed to test the historic drilling as well as provide step-out exploration. This information resulted in the preparation of the resource estimate for the Hopes Advance project disclosed in November, 2011.

14.2 HISTORIC MINERAL RESOURCE ESTIMATE

The historic mineral resource estimate was completed during the late 1950s and is not considered NI 43-101 compliant. It is discussed in Section 6.2 of this report.

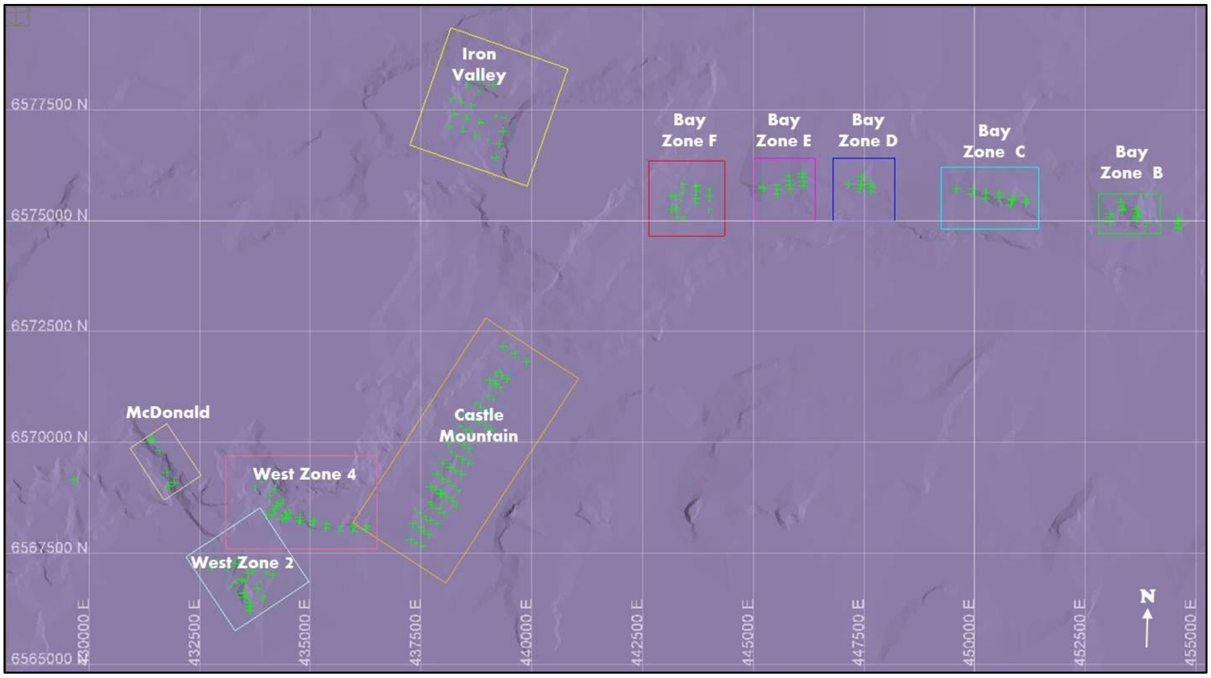
14.3 MINERAL RESOURCE ESTIMATION PROCEDURE

For the Hopes Advance project area, the mineral resource estimation procedure included developing mineralized domains, a block model constrained by those mineralized domains, development of variography in each domain, and grade estimation for the same. The mineralized domains included various individual iron deposits in a shallow dipping bedded iron formation. Only assay information contained within each individual domain was allowed to be used to estimate grade into the same domain within the block model.

14.3.1 Topography

Topography for the Hopes Advance project was provided by Oceanic and is based on a detailed aerial survey completed during the summer of 2011. This topography covers a significantly larger area than for the eight individual iron deposits modeled in the mineral resource estimate. The topographic surface is shown below in Figure 14.1.

Figure 14.1
Plan View Showing the Topography of the Hopes Advance Area Iron Deposit, Drill Hole Collar Locations and Block Model Extents



14.3.2 Drill Hole Database

All drilling data on the Hopes Advance project were stored in the form of a Microsoft Excel spreadsheet file. A total of 285 drill holes are contained within this database. This data was used to develop various drill cross-sections within each of the individual mineralized domains. These drill cross sections were used to develop the mineralized domain interpretations used in this mineral resource estimate. Locations of drill hole collars are shown in Figure 14.1. Using the drill hole information, a Vulcan ISIS database was constructed for use in statistics, geostatistics, compositing, and grade estimation.

The Vulcan ISIS database was validated and minor corrections applied. The assay table of the database contains 5,437 assay intervals for Fe. All location data are expressed in metric units and grid coordinates are in a NAD83 UTM system. The survey table of the database contains 1,986 records, while the geology table contains 4,715 records.

14.3.3 Mineralized Domain Interpretation

For each of the drill hole cross-sections, geology and iron assays were plotted. Only areas within identified Unit 4 (metallic iron formation) lithology were used to determine mineralized boundaries. All other areas were only considered as waste regardless of the iron assay. In some cases, internal waste (non-Unit 4) was included within the identified mineralized domain.

The Hopes Advance resource estimate is broken into 10 different mineralized domains (shown above in Figure 14.1).

These are all part of the same Labrador Trough metallic iron formation. At Hopes Advance this lithological member is called Unit 4 and is made up of massive hematite and magnetite mineralization. The areas between the various mineralized domains continue to contain Unit 4 metallic iron formation. These areas have limited exploration or are covered, and the composition and structure of the Unit 4 member is unknown. As a result, these areas are always considered as waste in this resource estimate.

From east to west, the mineralized domains are:

- Bay Zone B - A relatively high grade zone which outcrops at surface and dips towards the south.

- Bay Zone C - A lower grade zone made up mostly of higher magnetite materials and outcrops at the surface and dips towards the south.

- Bay Zone D - Just west of Bay Zone C, similar in character to that zone, outcrops at the surface, and dips towards the south.

- Bay Zone E - Just west of Bay Zone D, slightly higher grade than Bay Zones C and D. This zone outcrops at the surface and dips towards the south.

- Bay Zone F - Located just west of Bay Zone E. This area of Unit 4 contains significantly higher grade iron formation than the other Bay Zone areas. It is made up of a mix of hematite and magnetite. This zone outcrops at the surface and dips towards the south and southeast.

- Iron Valley - Located northwest of Bay Zone F. This area of Unit 4 is made up of iron formation with significantly high percentages of hematite. This zone has very minor outcrops and is flat lying.

- Castle Mountain - Located southwest of Bay Zone F. Castle Mountain is the largest individual mineralized domain identified at Hopes Advance to date. It is made up of about 1/3 magnetite to 2/3 hematite. The Unit 4 in this area dips at a very shallow angle to the southeast, averages nearly 100 m thick and has significant outcrop at the surface.

- West Zone 4 - Located just west of Castle Mountain, this Unit 4 area dips to the south and has about the same composition as Castle Mountain with higher iron grades. It also outcrops and has a strike that varies from due west to northwest as the deposit follows the Unit 4 trend.

- West Zone 2 - Located just south and west of Zone 4, this structurally complex Unit 4 area has very high grades of iron. This deposit has extensive outcrops with almost no cover. Because of extensive thrust faulting, the deposit appears to be relatively flat lying when in fact it is made up of a sequence of moderately dipping zones that have been faulted in way to produce a deposit that is flat lying.

- West Zone McDonald - Located just over 6 km west of Castle Mountain and to the northwest of West Zones 2 and 4, grades are generally lower than in West Zone 2.

All of the drilling used in the generation of the mineralized domains contained geologic logs which were used to develop the boundaries of the Unit 4 metallic iron formation for each individual domain.

On each individual drill hole section, polygons were digitized to generate the Unit 4 boundary on that section. Using these digitized polygons, each mineralized domain was connected to form a geologic solid. The mineralized domain solids created were then checked on every drill hole cross-section to ensure that the solids were accurate to the exploration drilling and had been correctly interpreted. A typical cross-section is shown in Figure 14.2 while the overall mineralized domains are shown in Figure 14.3 through Figure 14.12.

Figure 14.2
Typical Geologic Cross-Section - Castle Mountain Section 50+00
(View Looking N33E)

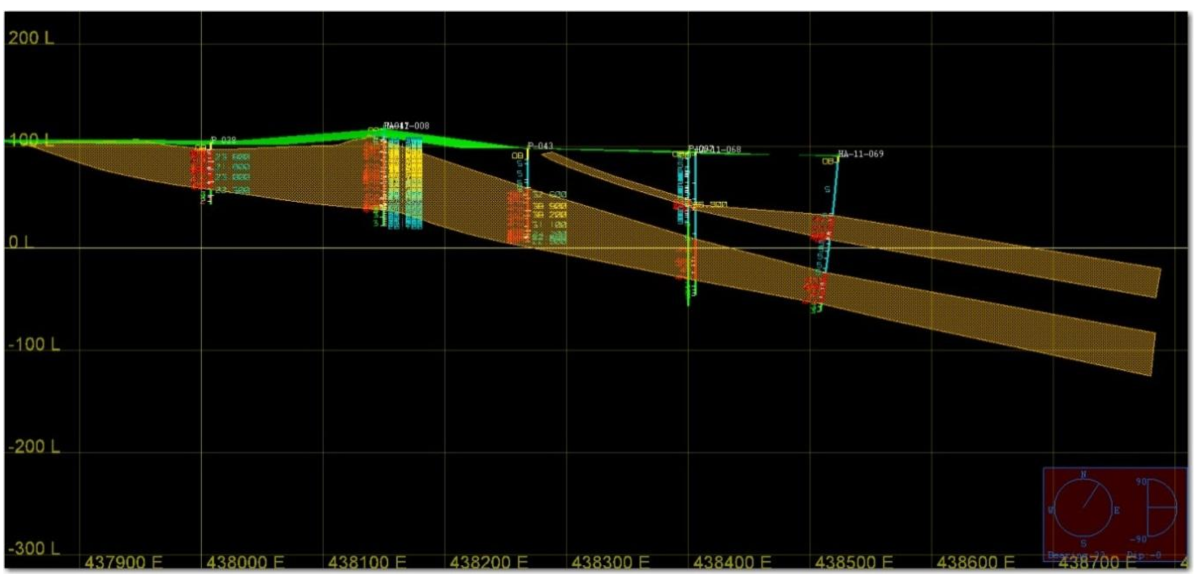


Figure 14.3
Isometric View of Bay Zone B
(View Looking Northeast)

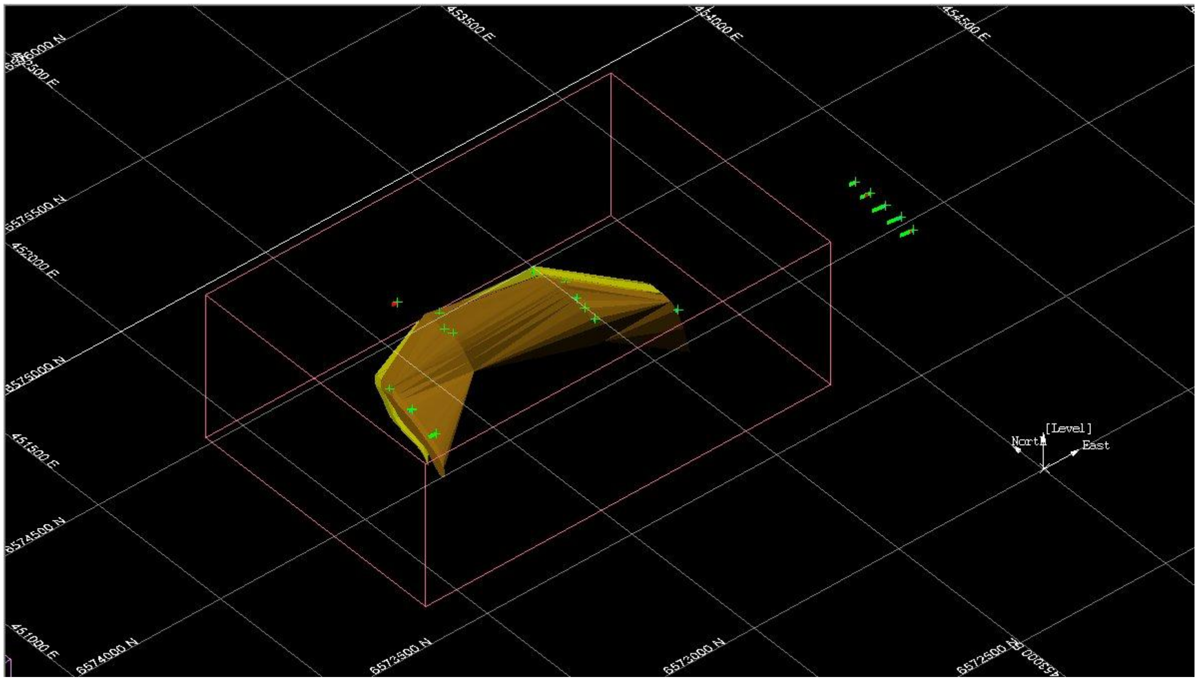


Figure 14.4
Isometric View of Bay Zone C
(View Looking Northeast)

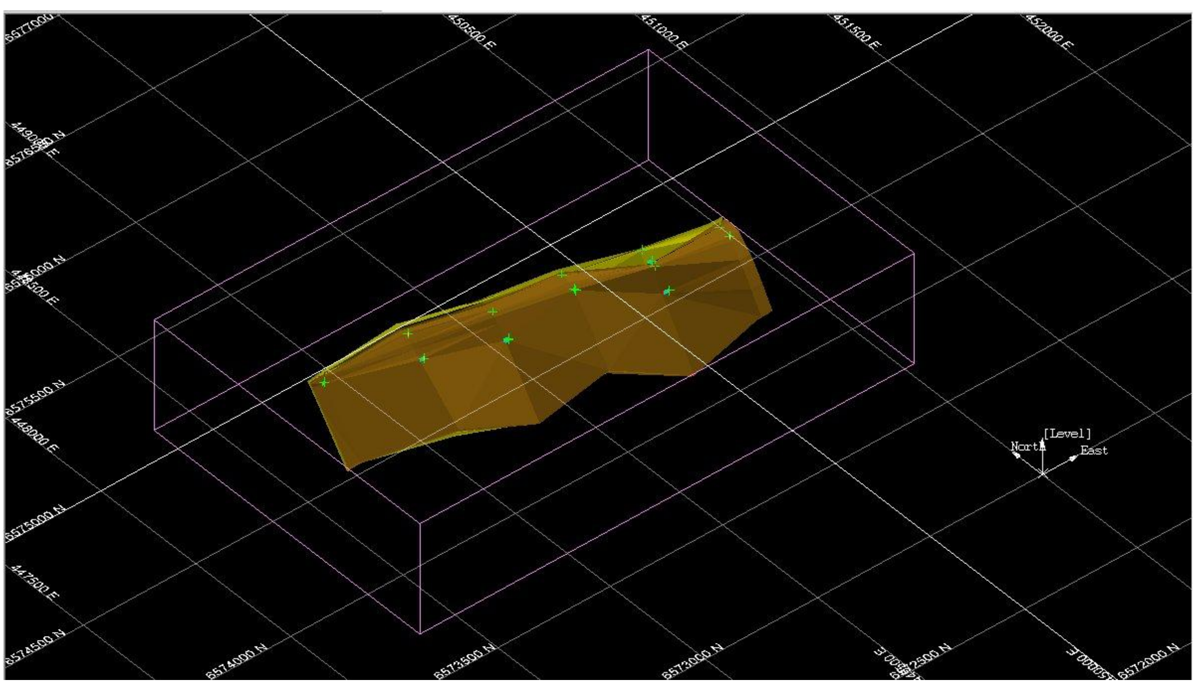


Figure 14.5
Isometric View of Bay Zone D
(View Looking Northeast)

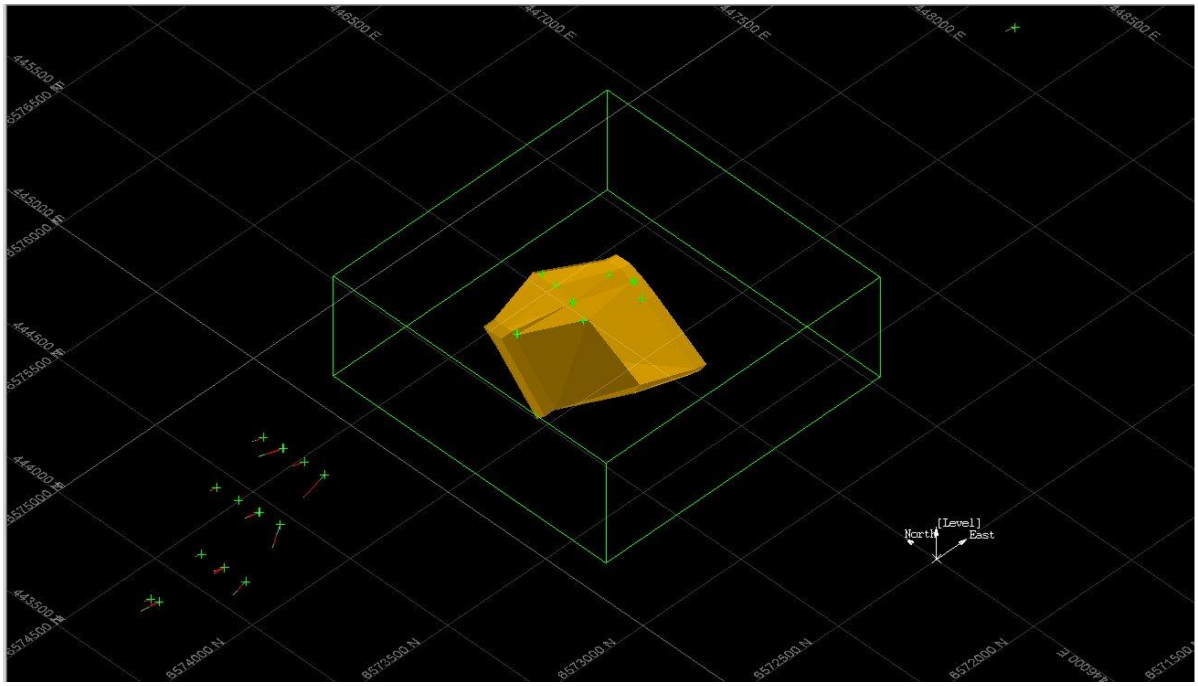


Figure 14.6
Isometric View of Bay Zone E
(View Looking Northeast)

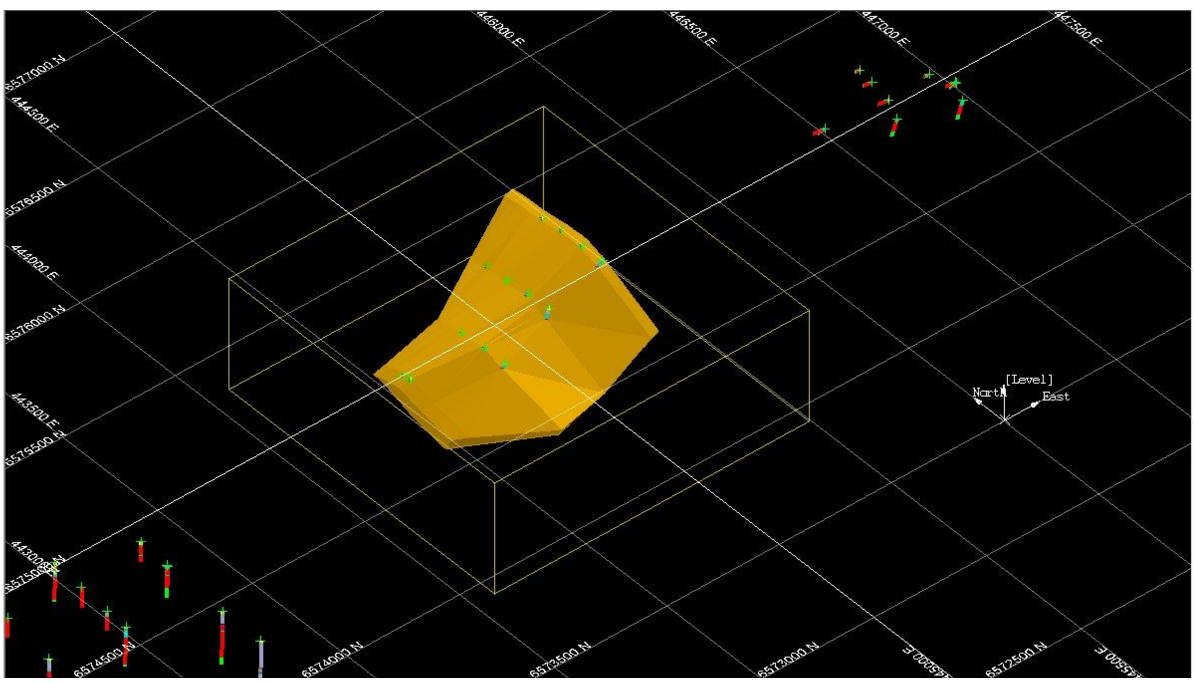


Figure 14.7
Isometric View of Bay Zone F
(View Looking Northeast)

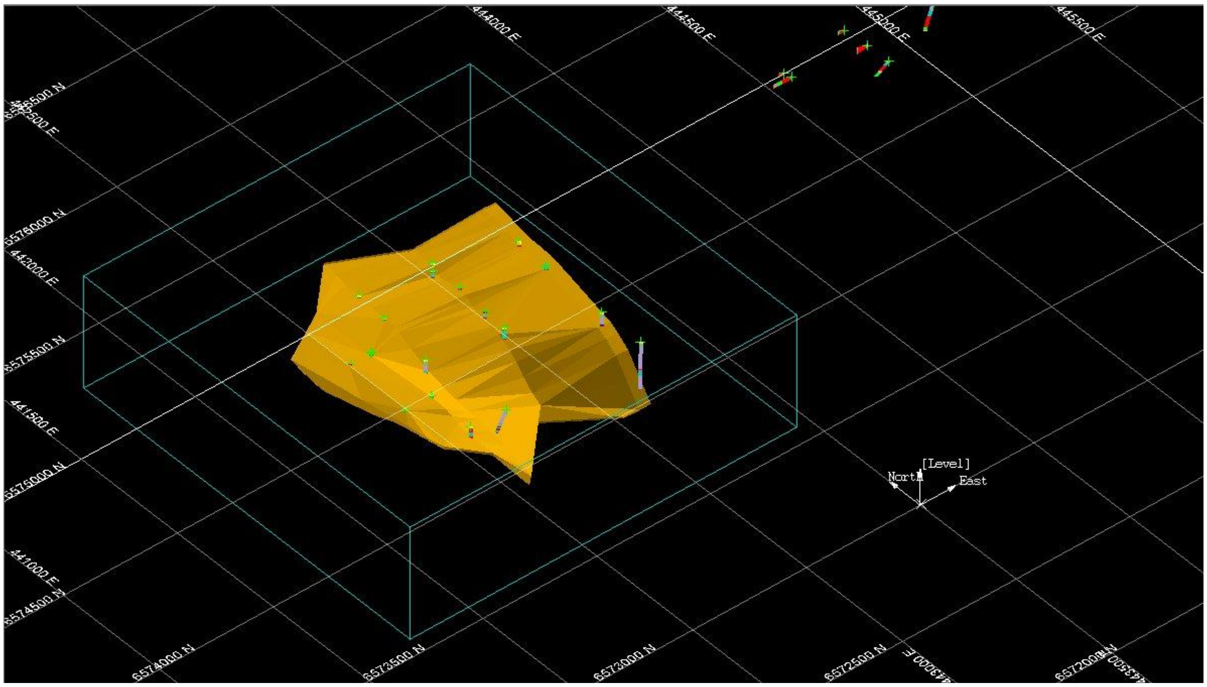


Figure 14.8
Isometric View of the Iron Valley Zone
(View Looking Northeast)

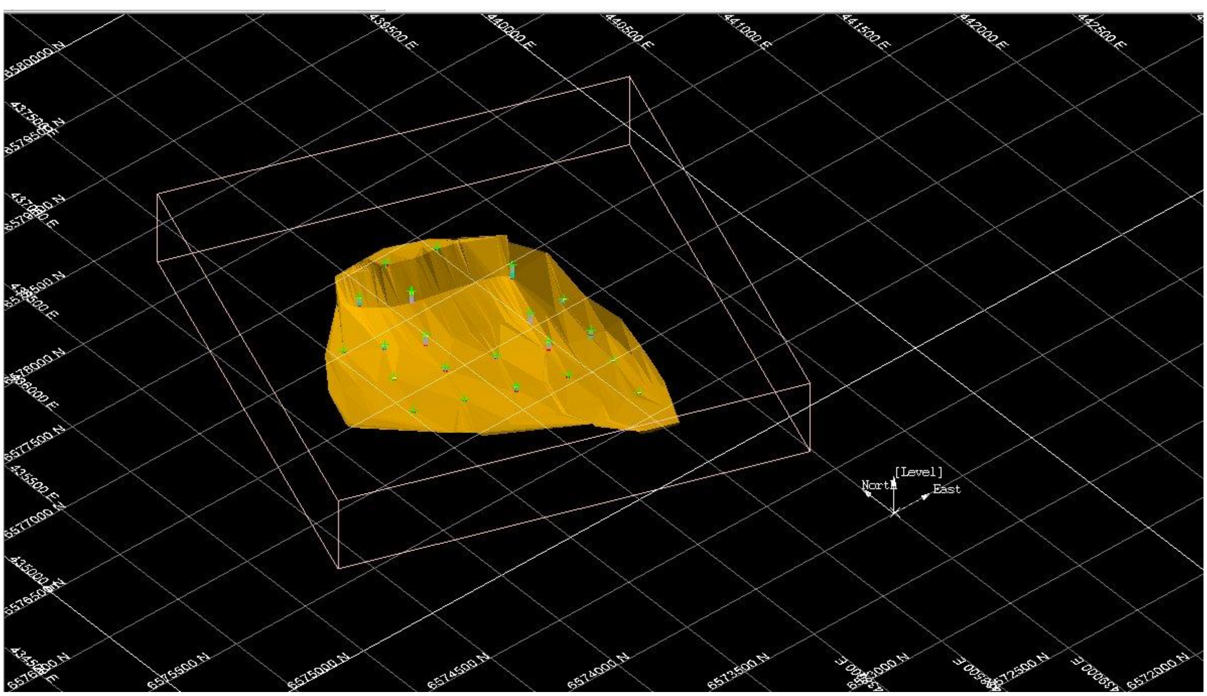


Figure 14.9
Isometric View of the Castle Mountain Zone
(View Looking Northeast)

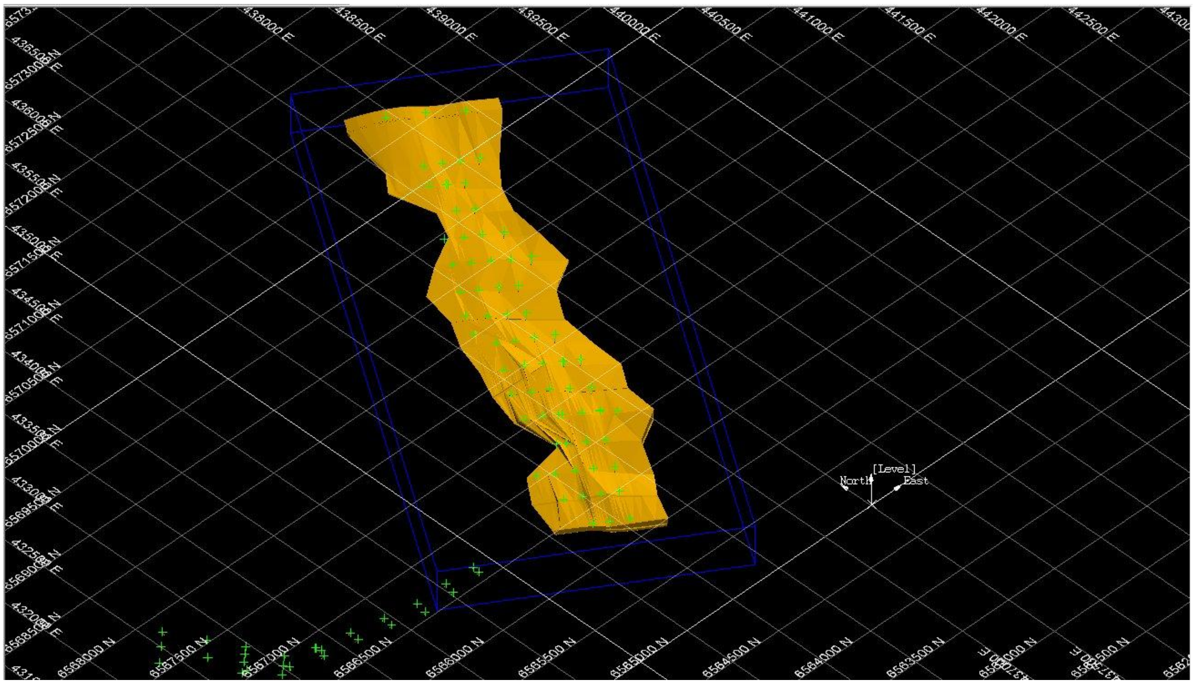


Figure 14.10
Isometric View of West Zone 4
(View Looking Northeast)

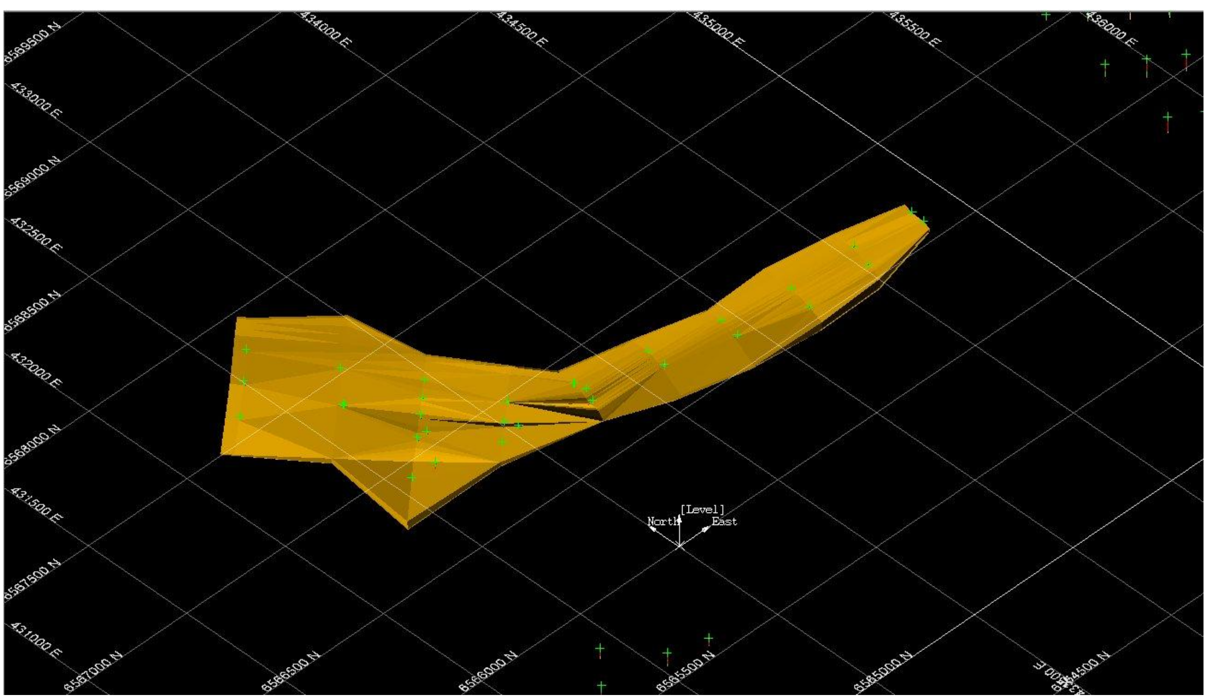


Figure 14.11
Isometric View of West Zone 2
(View Looking Northeast)

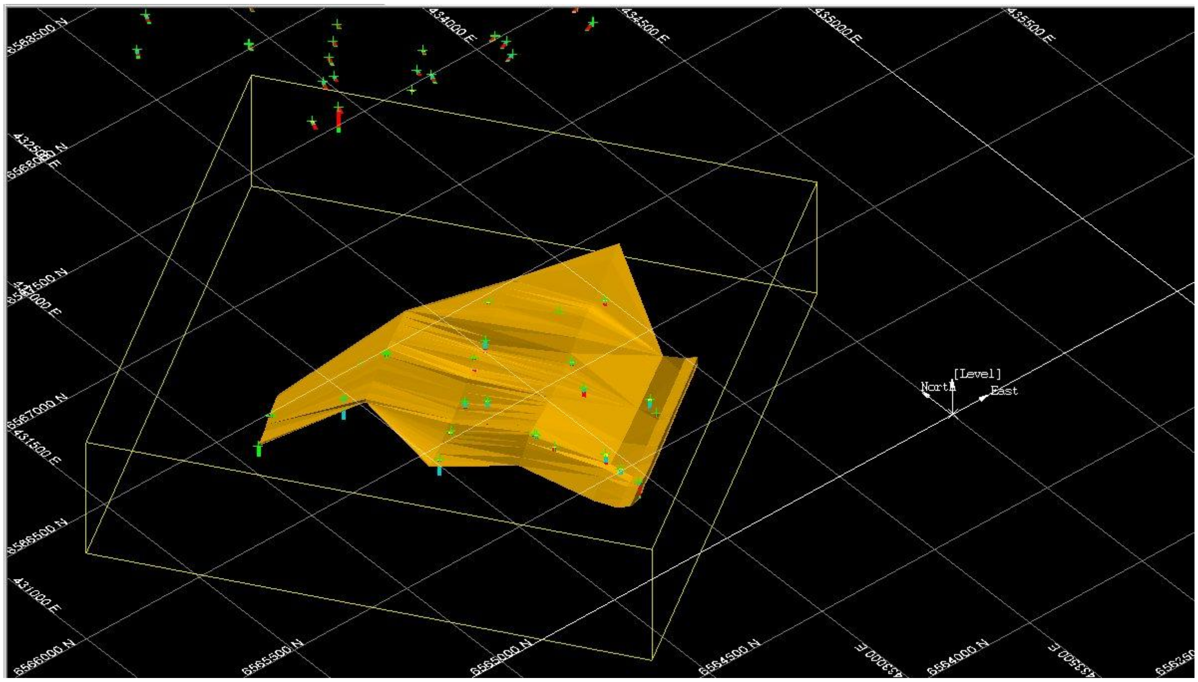
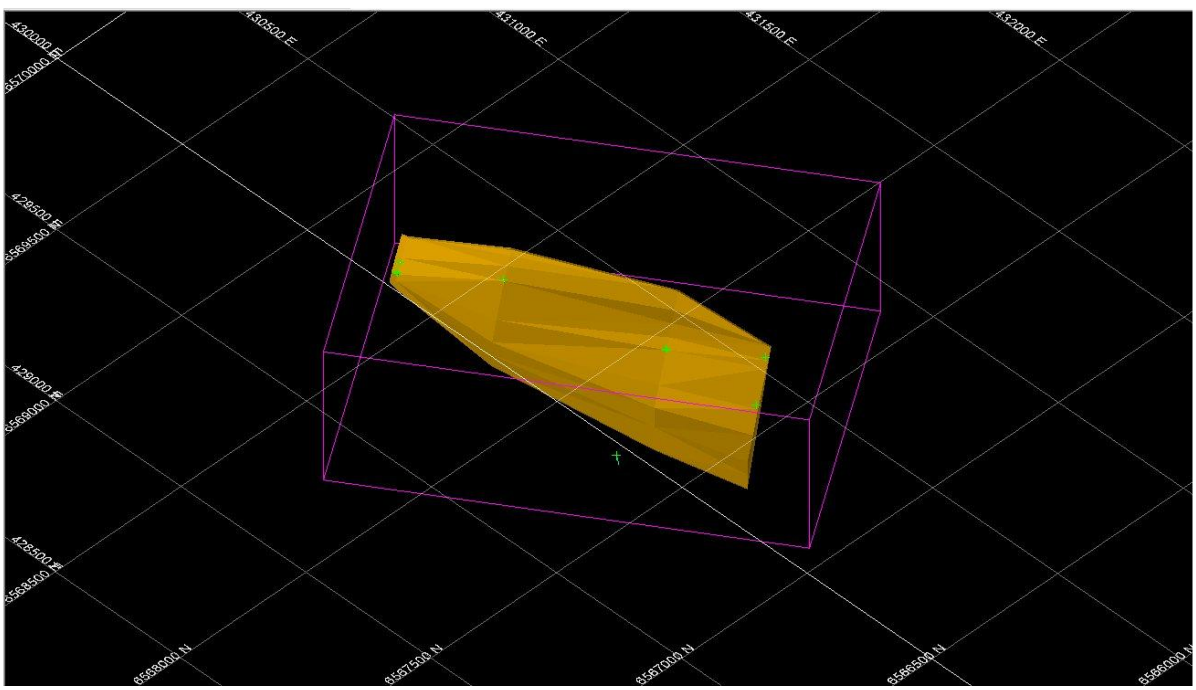


Figure 14.12
Isometric View of West Zone McDonald
(View Looking Northeast)



14.3.4 Vulcan Block Model Domain Code Determination

The Vulcan block model domain codes used for the resource model were derived from the mineralized domain solids. The list of Vulcan block model domain codes used is shown in Table 14.1 below.

Table 14.1
Vulcan Block Model Domain Codes

Vulcan Model Code	Domain
Air	Air
Unit 4	Unit 4 Metallic Iron Formation
Waste	Waste (mine) Rock

These codes were flagged in the block model during construction as well as into the composite database during compositing runs.

14.3.5 Mineralized Domain Block Models

Each of the mineralized domain solids were used to construct individual block models. The block models were flagged according to the domain codes listed in Table 14.1 above. The extents for each block model are shown in Table 14.2 through Table 14.11.

Table 14.2
Bay Zone B Block Model Extents

Item	X	Y	Z
Origin	452,800.00	6,574,700.00	-200.00
Offset from Origin (to maximum extents)	1,400.00	900.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			90.00

Table 14.3
Bay Zone C Block Model Extents

Item	X	Y	Z
Origin	449,250.00	6,574,800.00	-200.00
Offset from Origin (to maximum extents)	2,200.00	1,400.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			90.00

Table 14.4
Bay Zone D Block Model Extents

Item	X	Y	Z
Origin	446,800.00	6,575,000.00	-200.00
Offset from Origin (to maximum extents)	1,400.00	1,400.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			90.00

Table 14.5
Bay Zone E Block Model Extents

Item	X	Y	Z
Origin	445,000.00	6,574,800.00	-200.00
Offset from Origin (to maximum extents)	1,400.00	1,400.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			90.00

Table 14.6
Bay Zone F Block Model Extents

Item	X	Y	Z
Origin	442,650.00	6,574,650.00	-200.00
Offset from Origin (to maximum extents)	1,700.00	1,700.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			90.00

Table 14.7
Iron Valley Block Model Extents

Item	X	Y	Z
Origin	437,250.00	6,576,700.00	-200.00
Offset from Origin (to maximum extents)	2,800.00	2,800.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			109.25

Table 14.8
Castle Mountain Block Model Extents

Item	X	Y	Z
Origin	438,058.204	6,566,826.385	-200.00
Offset from Origin (to maximum extents)	5,500.00	2,500.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			33.00

Table 14.9
West Zone 4 Block Model Extents

Item	X	Y	Z
Origin	433,100.00	6,567,600.00	-200.00
Offset from Origin (to maximum extents)	3,400.00	2,100.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			90.00

Table 14.10
West Zone 2 Block Model Extents

Item	X	Y	Z
Origin	433,300.00	6,565,750.00	-200.00
Offset from Origin (to maximum extents)	2,000.00	2,000.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			56.446

Table 14.11
West Zone McDonald Block Model Extents

Item	X	Y	Z
Origin	431,700.00	6,568,700.00	-150.00
Offset from Origin (to maximum extents)	1,000.00	1,400.00	495.00
Parent Block Size	50.00	50.00	15.00
Child Block Size	25.00	25.00	1.00
Orientation (absolute bearing of X axis around Z axis)			56.446

14.3.6 Composites

Compositing was completed using Vulcan software and a composite database was constructed for each mineralized domain as a Vulcan ISIS file. Length-weighted composites were generated for the drill hole data that fell within the constraints of the above-mentioned domains. These composites were calculated for Fe (%) over 15.0-m lengths starting at the first point of intersection between assay data from the drill hole and the solid representing the wall of the 3D zonal constraint or mineralized domain. Compositing continued until the lower contact of the mineralized domain was reached. Composites outside of known mineralized domains were also composited and flagged in the waste domain. Un-assayed intervals were considered as having an iron value of nil. Any composites calculated that were less than 0.5 m in length, were discarded so as to not introduce a short sample bias in the interpolation process. The composites were stored in a Vulcan ISIS database as points and included the composite assay and mineral domain name. Composite runs were completed for each mineralized domain and the results stored for each domain individually such that a separate composite file was created for the Bay Zone B, C, D, E, F, Iron Valley, Castle Mountain, West Zone 4, West Zone 2 and West Zone McDonald mineralized domains.

14.3.7 Vulcan Tetra Modelling

The Unit 4 metallic iron formation has a varying dip and strike that makes a conventional fixed search ellipsoid not representative of the actual deposit. In order to correct this, an unfolding method needed to be applied to the search ellipsoid during statistical analysis, variography and resource estimation. A tool within the Vulcan mine planning software called Tetra Modeling was used to accomplish this.

According Maptek (vendor of the Vulcan software) Tetra Modeling is described as:

> "Tetra modeling is used in the grade estimation and variography of deformed strata bound deposits. Tetra modeling can be applied to deposits where mineralization is controlled by a structural surface that can be modeled. In Tetra modeling the grade estimation search ellipse or variography search ellipse is distorted from the usual "football" shaped ellipse to follow nominated surfaces.
>
> "The great benefit of using distorted search ellipses is that the block model stays in the position that it was created and the samples stay in their true position. The difference between a normal estimation and tetra estimation is that the search ellipse is molded to follow the surfaces used to bound the deposit.
>
> "A tetra model is created from two triangulated surfaces (the hanging and floor surfaces). These surfaces are the two "nearest" surfaces to the block cell. A line is calculated that passes through the centroid of the block cell with one end point touching the hanging surface and the other end point touching the floor surface. The line of minimum distance is then used to define a "mid-surface" between the hanging surface and the floor surface.

> "A line of minimum distance is calculated for each block cell. Tetrahedra are then constructed from the end points of the lines, alternating in direction. A tetra model is made up of these tetrahedral that are used to calculate the minimum distance between the two surfaces at any given point in the model."

For the Hopes Advance deposits, all of the mineralized domains used Tetra Modeling for ellipsoid unfolding. Because areas of these two domains are partially overturned, a true three-dimensional variation of Tetra Modeling called Bend modeling was applied. In Bend modeling, instead of a grid surface being used for the lower and upper surfaces of the mineralized domain, a triangulation surface is used instead. According to Maptek:

> "The Bend Model option allows you to locate samples near a point in space and to establish the relative position of the samples to that point as well as to each other. The relative positions are not the standard Euclidean co-ordinates but are instead based on distances between the surfaces that define a seam or ore body."

The Hopes Advance iron deposits are a true stratigraphic type deposit and thus a Tetra model can be constructed and used to unfold the search ellipsoid. To accomplish this, a line was digitized at the footwall and hanging wall contacts of each mineralized domain on every cross-section. These lines were then used to create a triangulation surface (both upper and lower surfaces) that would act as boundaries for the Tetra Bend model. The resulting Tetra Bend model was used to unfold the ellipsoid and better approximate the nature of the deposit.

14.3.8 General Statistics and Grade Capping

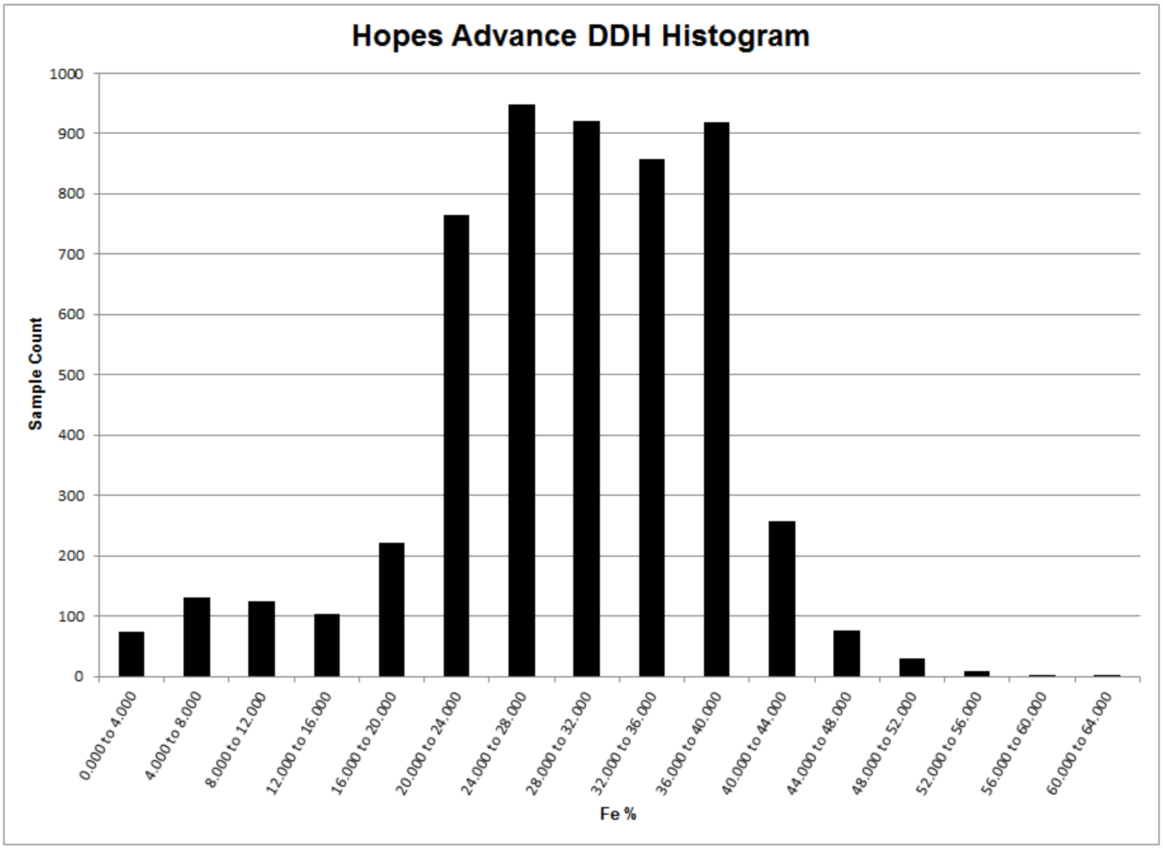
Basic statistics were run on the raw assay database. The histogram of this data set is shown below in

Figure 14.13 while Table 14.12 shows the basic statistics. A review of this data indicates a range of iron assays ranging between 20 to 60% iron with the largest number of assays around the 28% iron value. No significant outliers were encountered and as a result no grade capping was required.

Table 14.12
Hopes Advance Raw DDH - Fe Basic Statistics

Number of samples	5437
Minimum	0.70
Maximum	60.6
Range	59.9
Average	28.85
Standard deviation	8.95
Variance	80.16

Figure 14.13
Hopes Advance Raw Drill Hole Data Set Log Histogram



Basic statistics were also run on each mineralized domain composite file as well. The log normal probability results of these runs are shown below in Figure 14.14 through Figure 14.23. Basic statistics are shown in Table 14.14 through Table 14.22. None of the mineralized domains had any grade cap applied.

Figure 14.14
Bay Zone B Mineralized Domain - Fe Log Normal Probability Graph

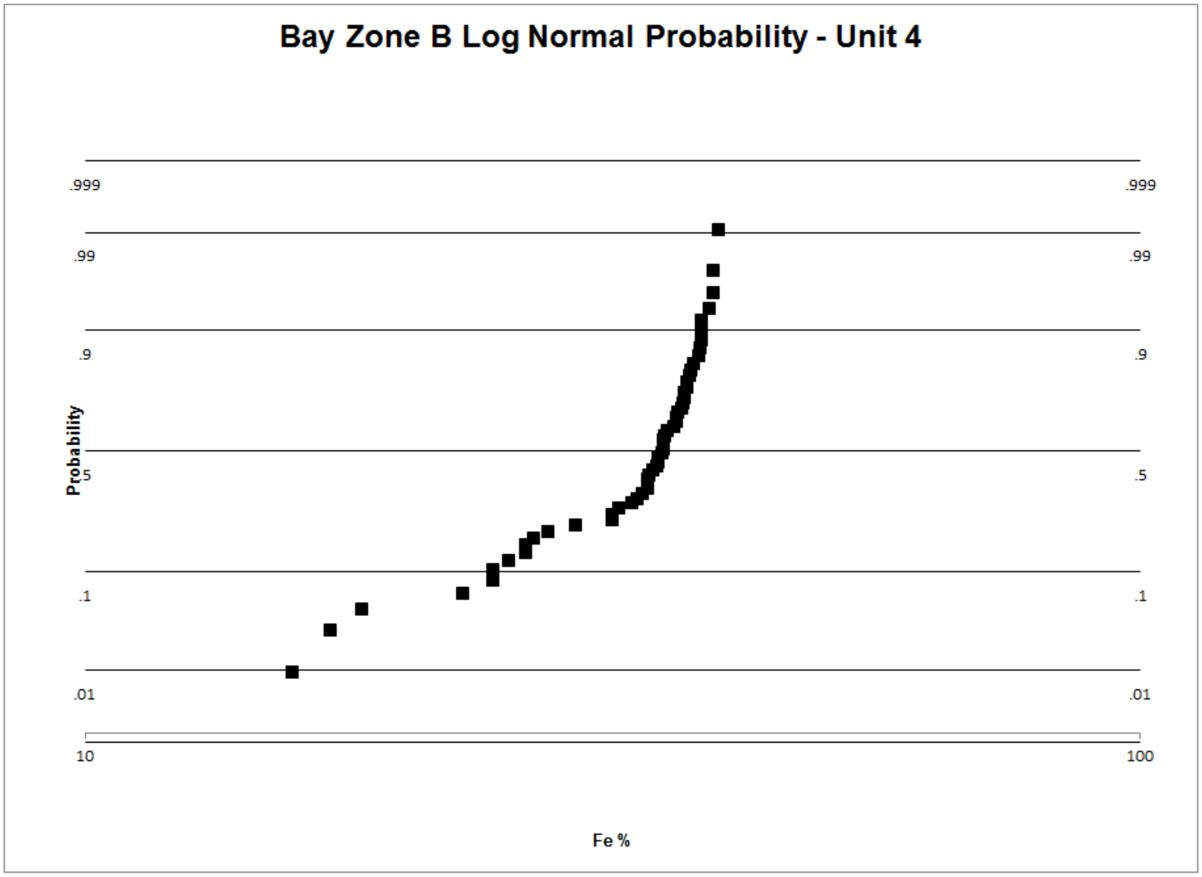


Table 14.13
Bay Zone B Mineralized Domain - Fe Basic Statistics

Number of samples	54
Minimum	15.76
Maximum	39.88
Range	24.13
Average	33.32
Standard deviation	5.83
Variance	33.95

Figure 14.15
Bay Zone C Mineralized Domain - Fe Log Normal Probability Graph

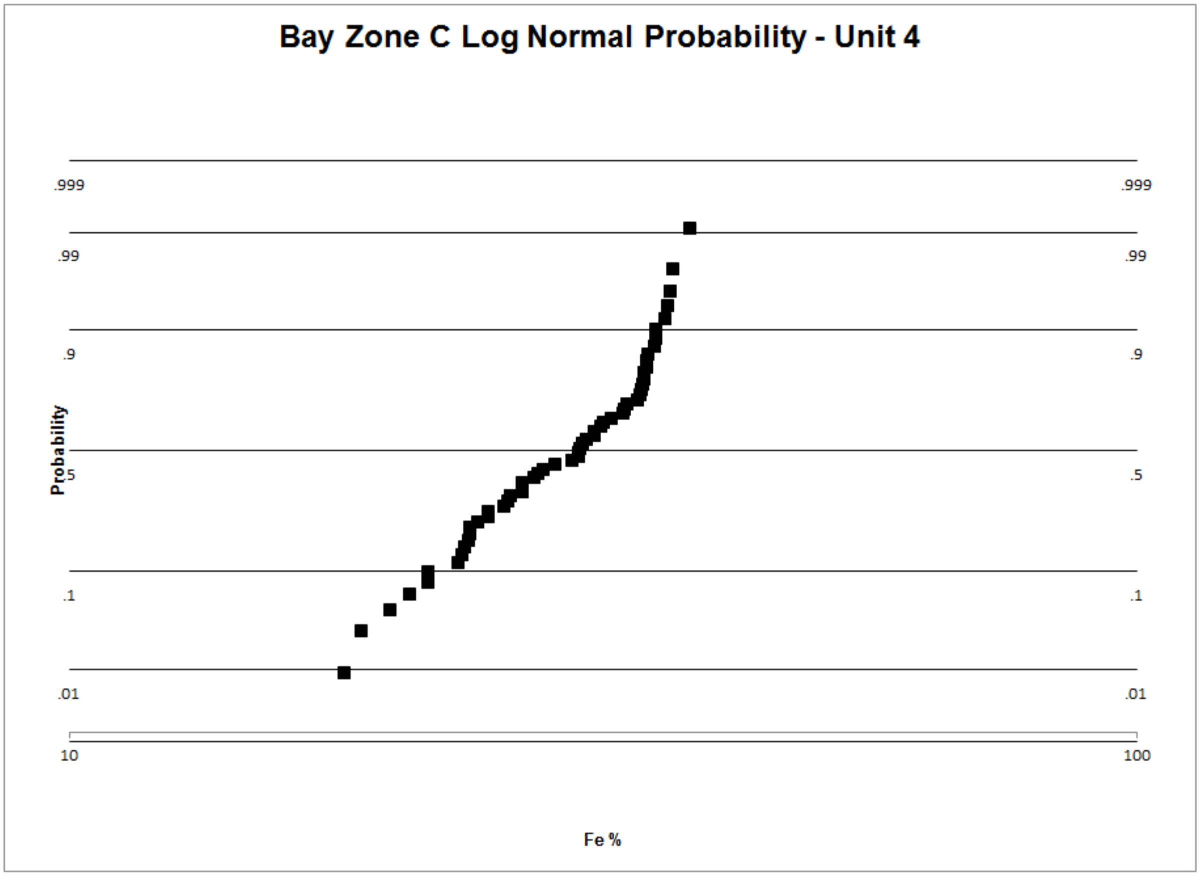


Table 14.14
Bay Zone C Mineralized Domain - Fe Basic Statistics

Number of samples	56
Minimum	18.10
Maximum	38.16
Range	20.06
Average	29.36
Standard deviation	5.30
Variance	28.07

Figure 14.16
Bay Zone D Mineralized Domain - Fe Log Normal Probability Graph

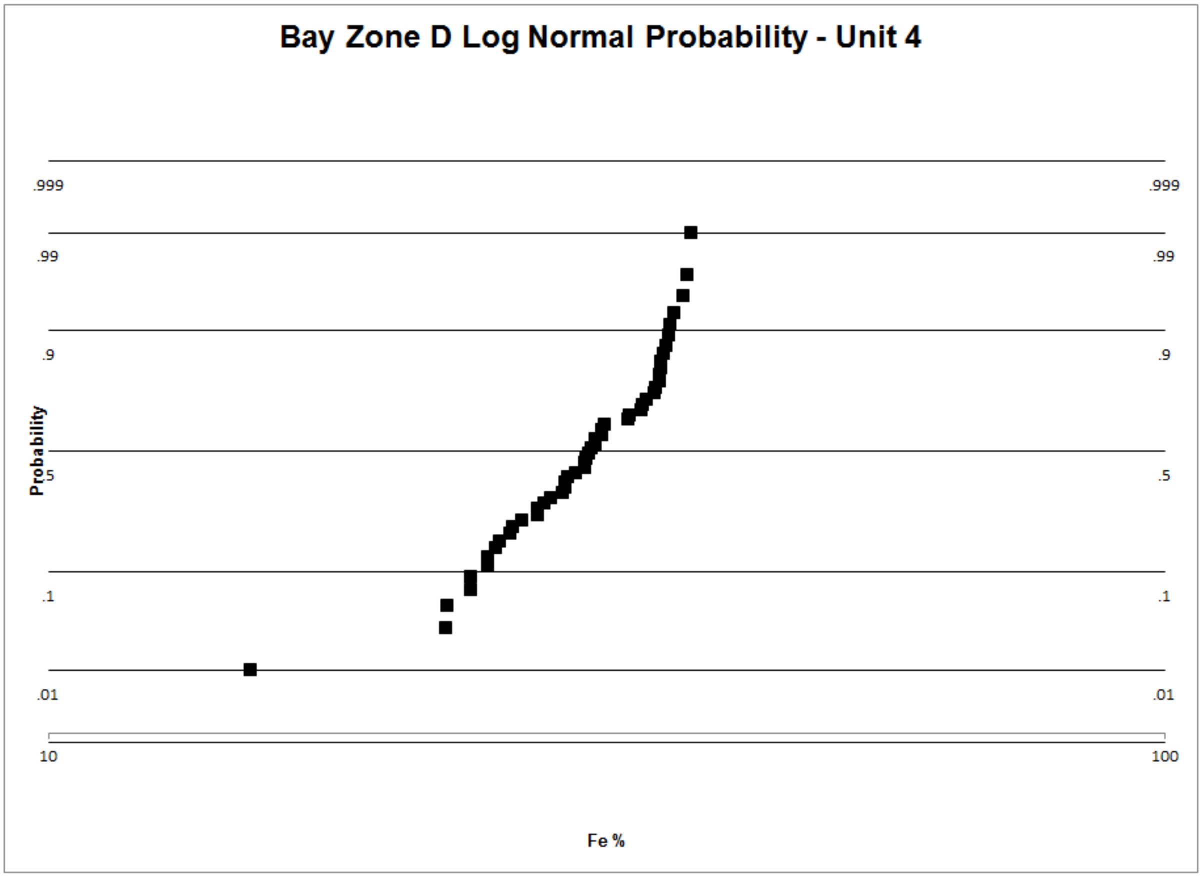


Table 14.15
Bay Zone D Mineralized Domain - Fe Basic Statistics

Number of samples	50
Minimum	15.20
Maximum	37.70
Range	22.50
Average	30.50
Standard deviation	4.77
Variance	22.76

Figure 14.17
Bay Zone E Mineralized Domain - Fe Log Normal Probability Graph

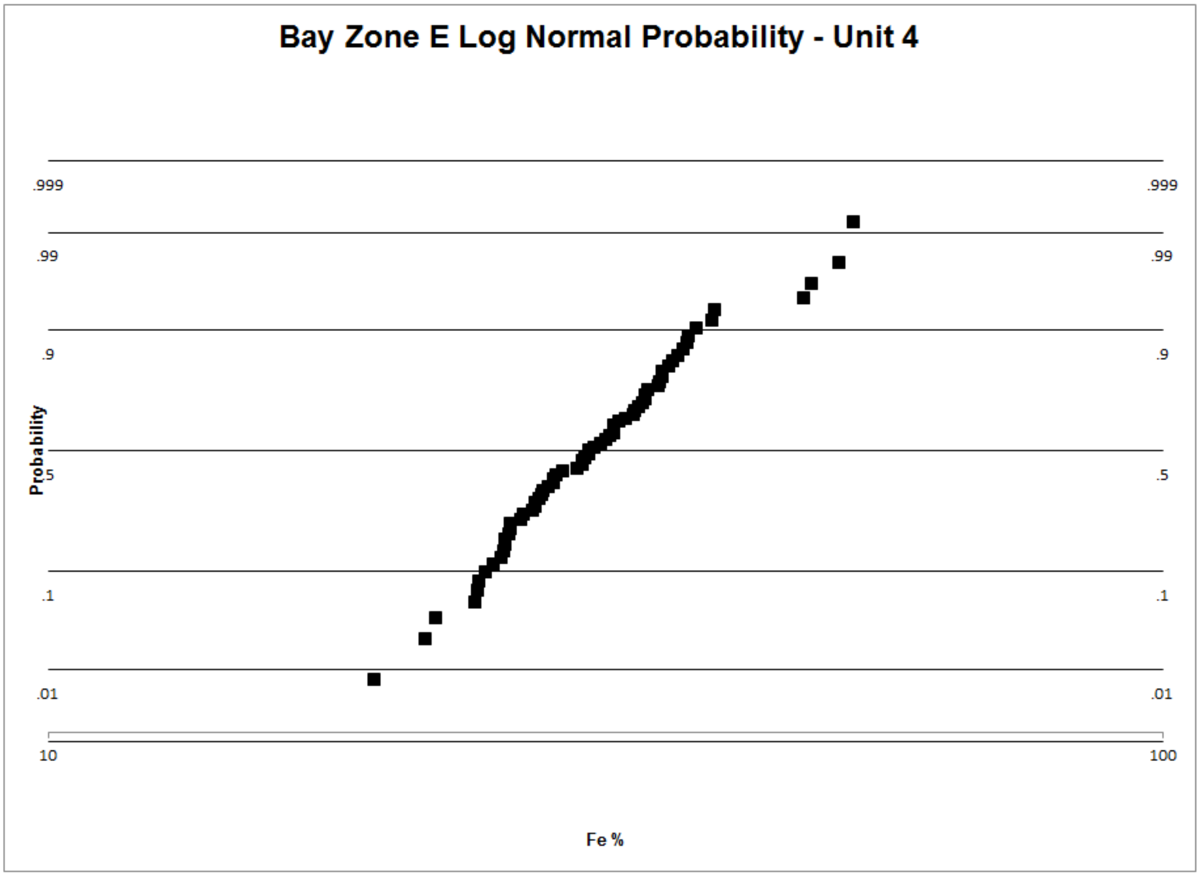


Table 14.16
Bay Zone E Mineralized Domain - Fe Basic Statistics

Number of samples	67
Minimum	19.62
Maximum	52.82
Range	33.21
Average	31.62
Standard deviation	6.53
Variance	42.62

Figure 14.18
Bay Zone F Mineralized Domain - Fe Log Normal Probability Graph

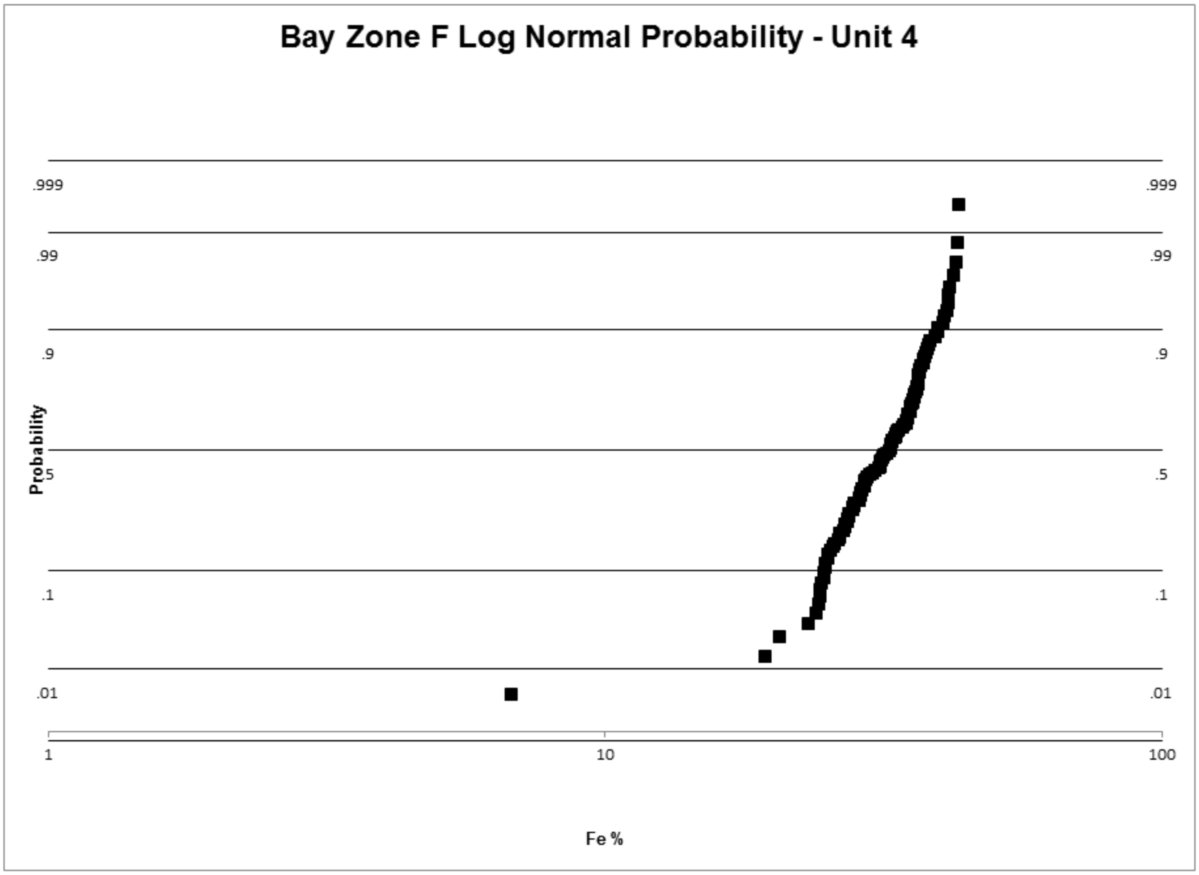


Table 14.17
Bay Zone F Mineralized Domain - Fe Basic Statistics

Number of samples	110
Minimum	6.8
Maximum	43.27
Range	36.47
Average	32.06
Standard deviation	5.96
Variance	35.56

Figure 14.19
Iron Valley Mineralized Domain - Fe Log Normal Probability Graph

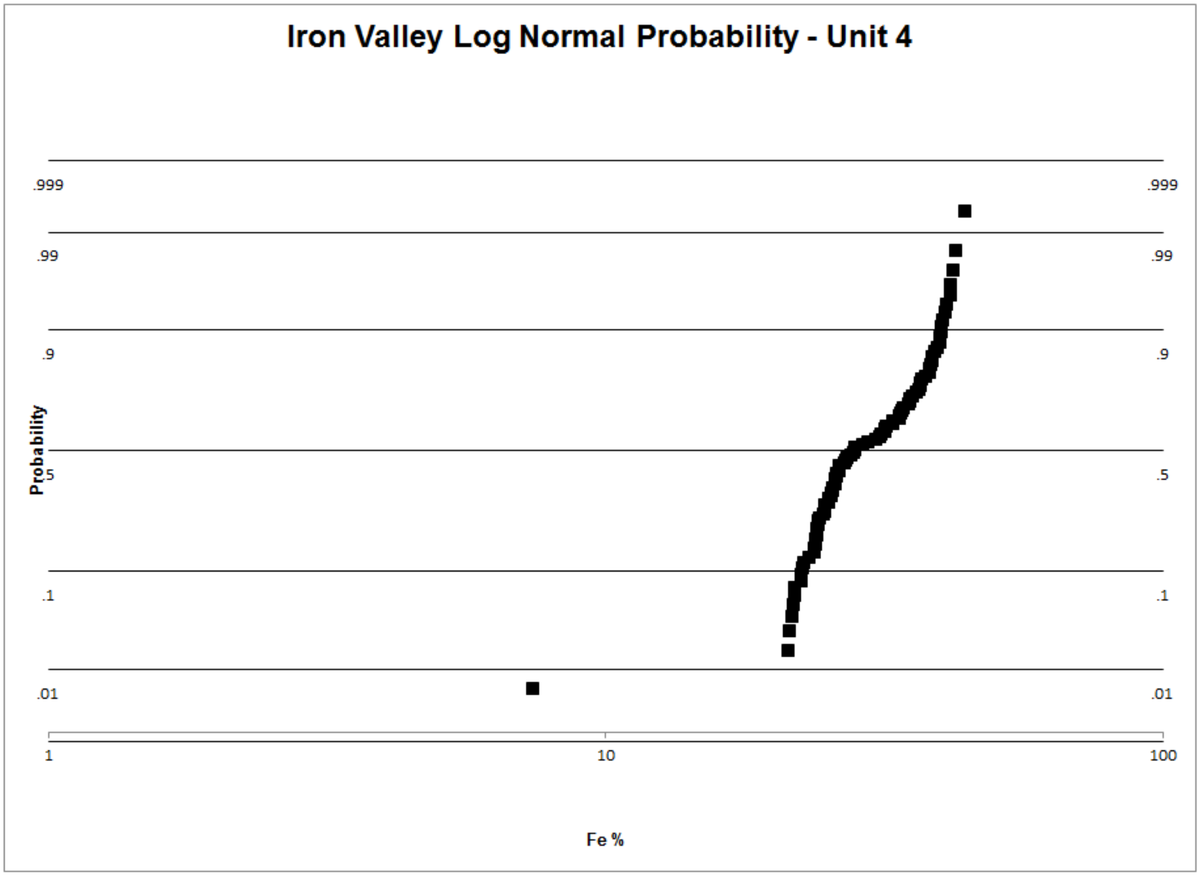


Table 14.18
Iron Valley Mineralized Domain - Fe Basic Statistics

Number of samples	91
Minimum	7.43
Maximum	44.19
Range	36.76
Average	30.28
Standard deviation	7.04
Variance	49.61

Figure 14.20
Castle Mountain Mineralized Domain - Fe Log Normal Probability Graph

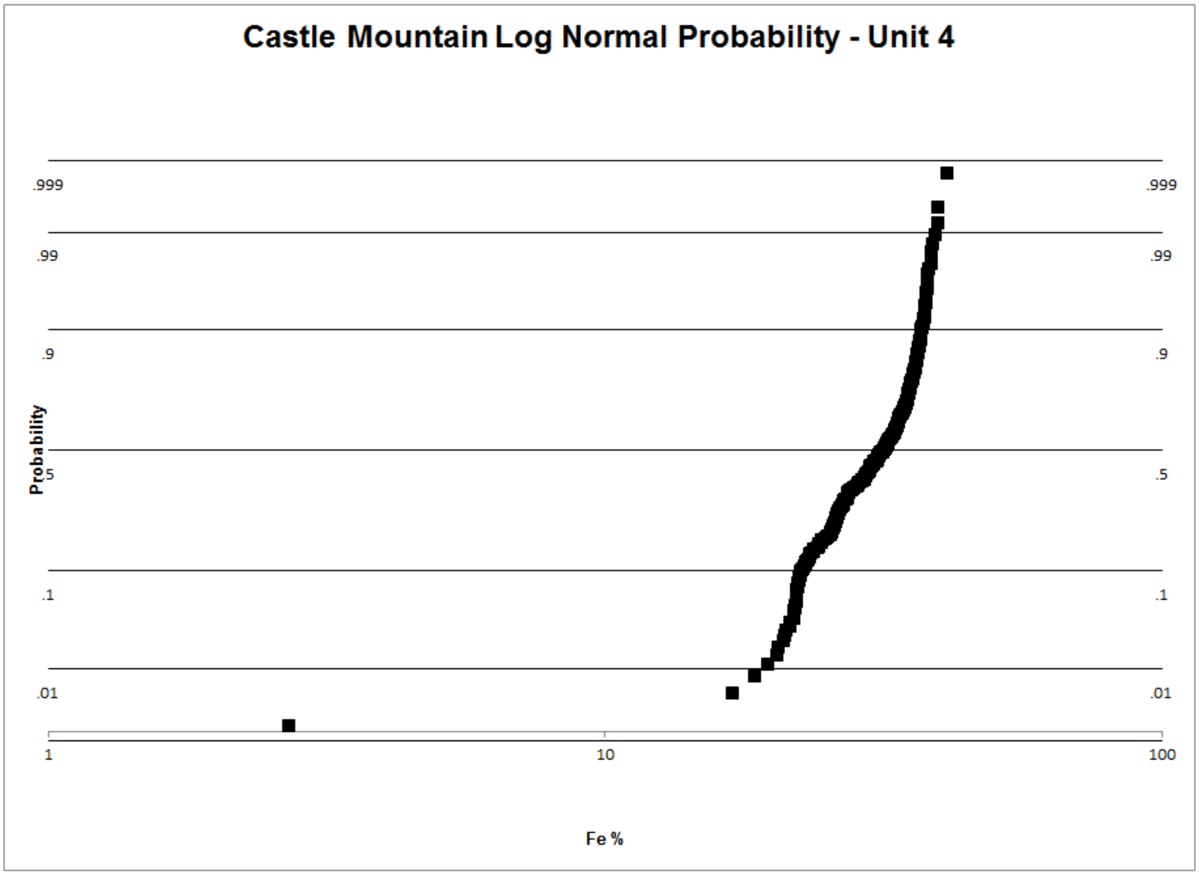


Table 14.19
Castle Mountain Mineralized Domain - Fe Basic Statistics

Number of samples	315
Minimum	2.72
Maximum	41.20
Range	38.48
Average	30.76
Standard deviation	5.54
Variance	30.64

Figure 14.21
Zone 4 Mineralized Domain - Fe Log Normal Probability Graph

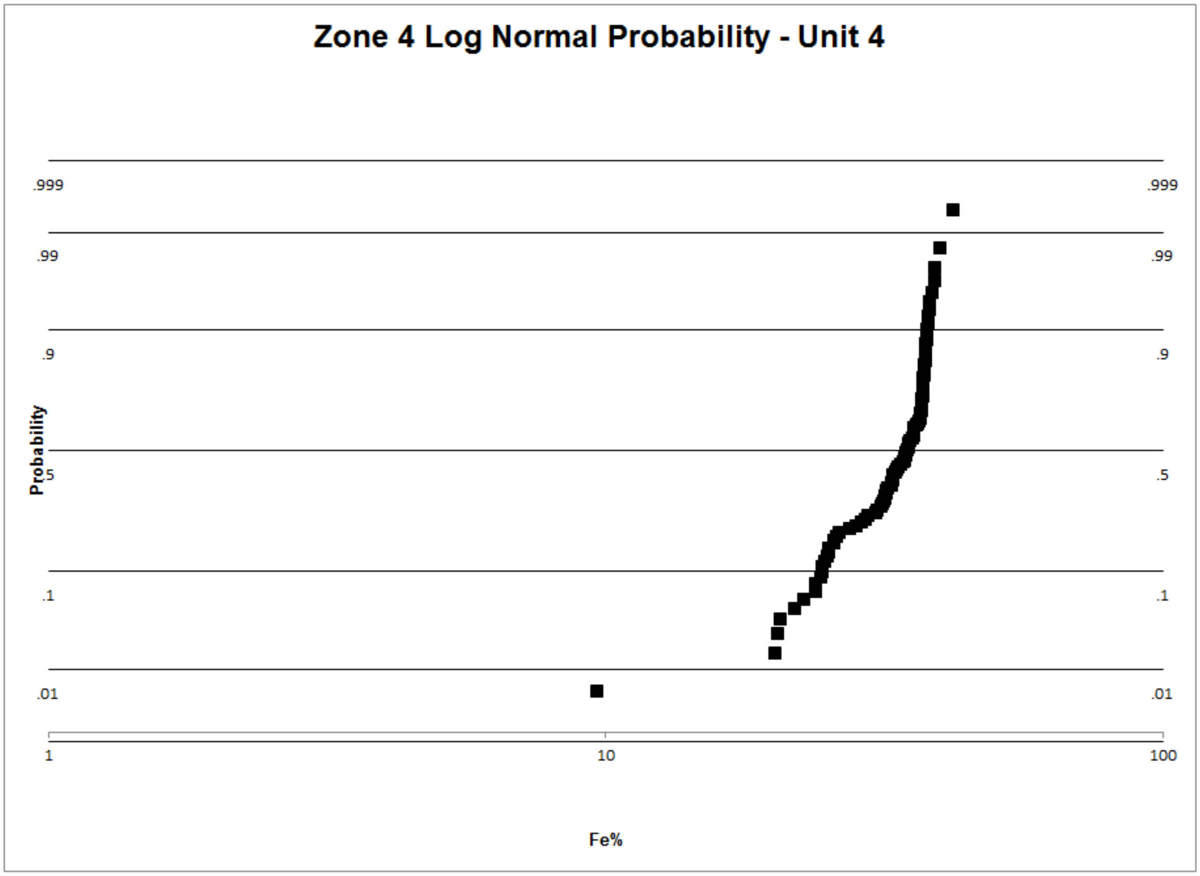


Table 14.20
West Zone 4 Mineralized Domain - Fe Basic Statistics

Number of samples	97
Minimum	9.70
Maximum	42.15
Range	32.45
Average	32.94
Standard deviation	5.70
Variance	32.52

Figure 14.22
West Zone 2 Mineralized Domain - Fe Log Normal Probability Graph

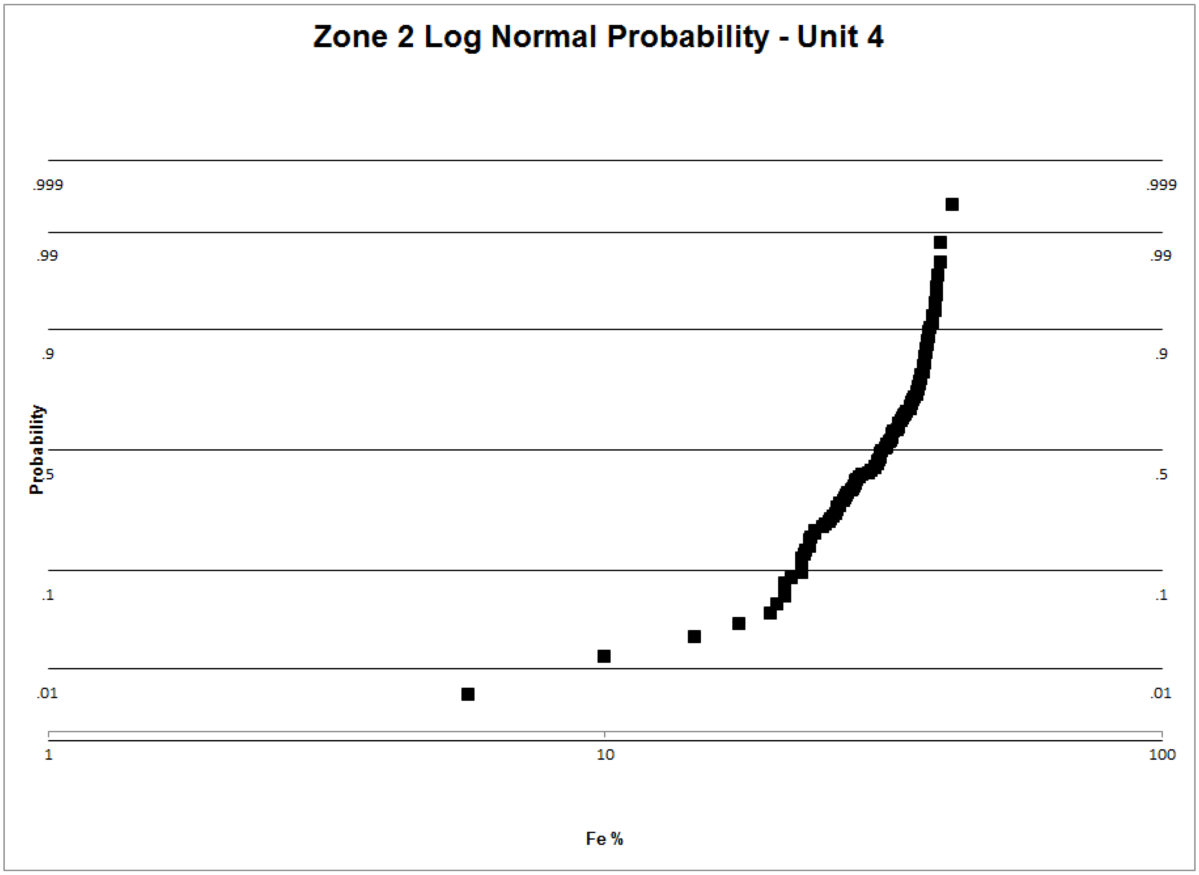


Table 14.21
West Zone 2 Mineralized Domain - Fe Basic Statistics

Number of samples	110
Minimum	5.70
Maximum	42.12
Range	36.42
Average	30.74
Standard deviation	6.86
Variance	47.08

Figure 14.23
West Zone McDonald Mineralized Domain - Fe Log Normal Probability Graph

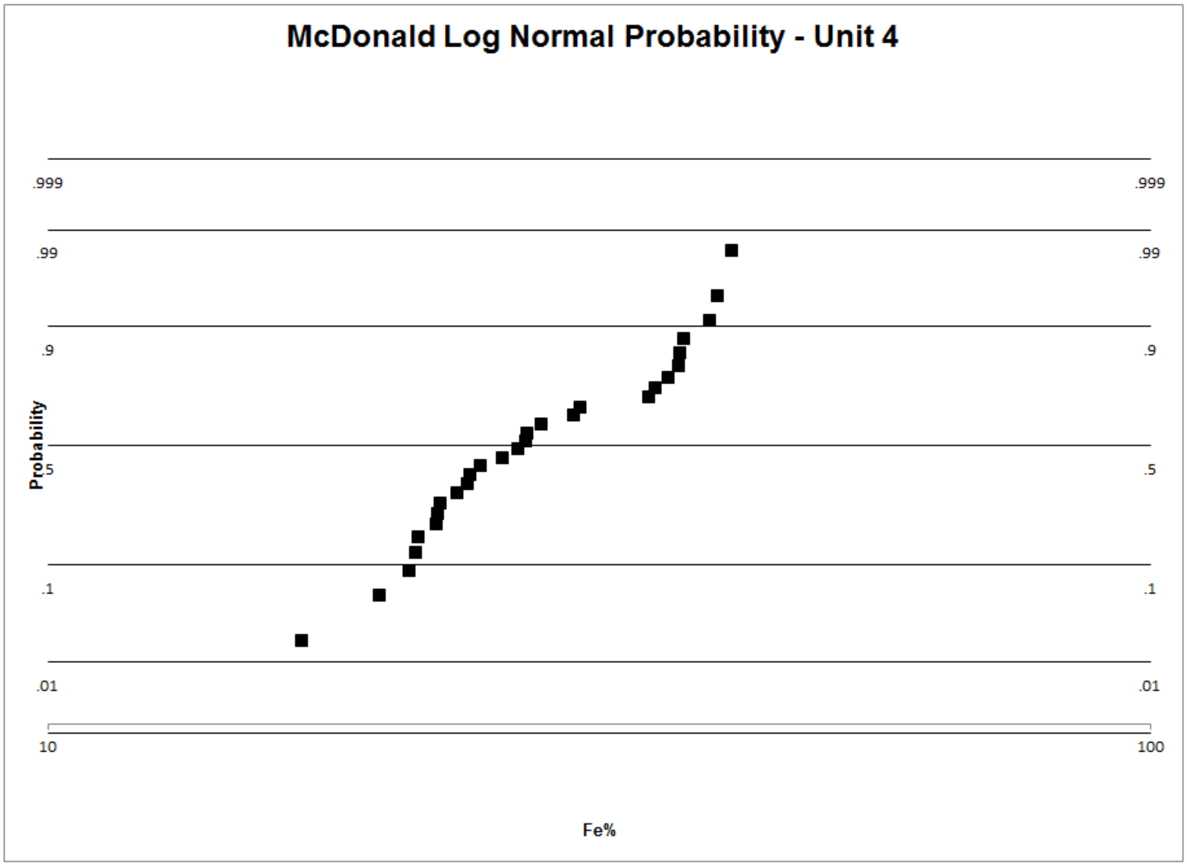


Table 14.22
West Zone McDonald Mineralized Domain - Fe Basic Statistics

Number of samples	28
Minimum	17.01
Maximum	41.73
Range	24.72
Average	28.72
Standard deviation	7.09
Variance	50.27

14.3.9 Variography

Omni-directional variography was completed for the Fe samples contained within each individual mineralized domain. The variogram for each mineralized domain was plotted and an autofit routine was run to determine an approximate curve fit. The results of the variography in the unfolded X-Y plane, shown in Table 14.20, were used to determine the search parameters for grade estimation. As additional drilling is completed, more robust directional variography should be utilized in future modeling efforts.

14.3.10 Bulk Density

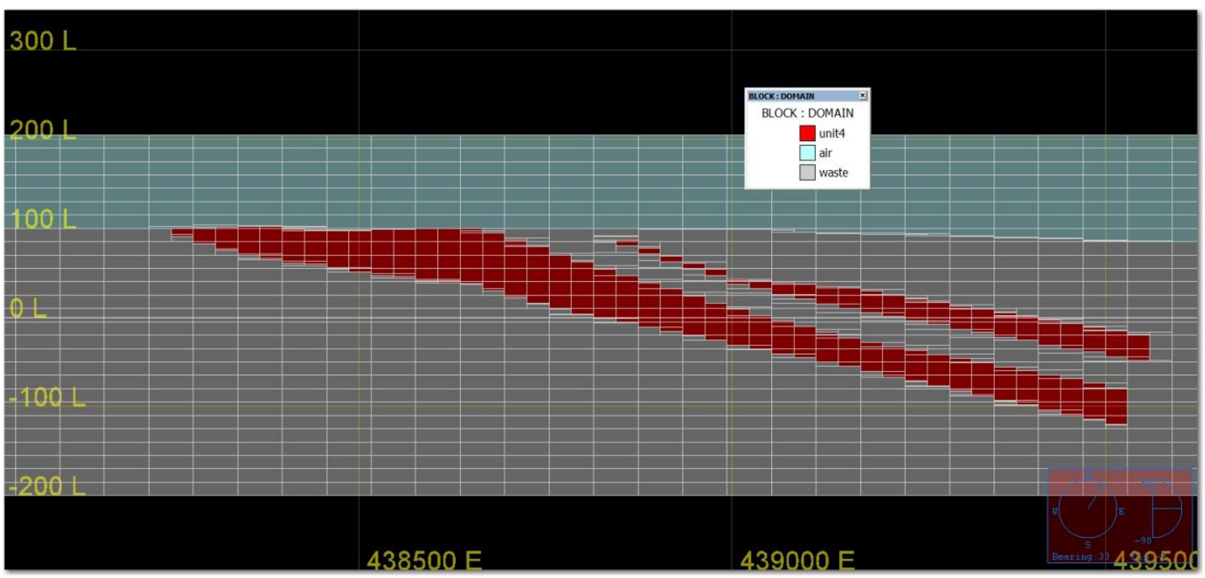
A bulk density of 2.70 t/m^3 was assumed for all materials other than Unit 4. For Unit 4 materials, a bulk density formula was applied on a block-by-block basis. The formula is a function of the interpolated head iron grade, as shown below:

Density = Head Fe*0.0253+2.6178

14.3.11 Block Model

A 3D block model was constructed in the Vulcan mine planning software that was constrained by the various mineralizing domain solids. The block model is sub-blocked with the minimum block size being 25 m by 25 m by 1 m (X, Y, Z) to a maximum block size of 50 m by 50 m by 15 m (X, Y, Z). Ten block models were constructed as described above in Section 14.3.5. A typical cross-section through the block model is shown in Figure 14.24 below.

Figure 14.24
Typical Block Model Cross-Section - Castle Mountain Section 50+00
(View Looking N33E)



No attempt was made to apply a block percentage (percent of the block that is mineralized material and waste), instead sub-blocking along the mineralized domain boundaries was used. This creates a cleaner model for later resource estimation runs. Grade interpolation runs for head iron were set-up for each domain.

14.3.12 Grade Estimation

Using the Vulcan ISIS composite file (described above), interpolations were run in each mineralized domain for Fe. Runs were completed in all domains for iron using ordinary kriging (OK), inverse distance squared (ID^2), inverse distance cubed (ID^3) and inverse distance to the fifth power (ID^5, roughly a polygonal estimate). All of these estimates are used to check the resulting values relative to each other. The block model interpolation parameters are shown in Table 14.23.

14.3.13 Mineral Resource Classification

For the purposes of this mineral resource estimate, classifications of all interpolated grade blocks were determined from the ID^3 Fe interpolations for Measured, Indicated and Inferred. The mineral resource classification logic is shown below in Table 14.24.

As part of the mineral resource classification, the concentrate weight recovery was estimated on a block-by-block basis using the following formulas for each of the respective deposits:

Castle Mountain/Iron Valley:
Dry wt Rec = (1.3383* Head Fe) - 4.3905

Zone 2, Zone 4:
Dry wt Rec = (1.4358* Head Fe) - 8.7213

MacDonald:
Dry wt Rec = (1.3847*Head Fe) - 10.574

All Bay Zones:
Dry wt Rec = (1.2935*Head Fe) - 2.8375

These formulae were used to calculate the estimated weight recovery crude to concentrate for every block where an iron grade was estimated. This value multiplied by the block tonnes generates the estimated block concentrate tonnes produced if the block is processed to concentrate. The geological interpretations for two zones (Bay Zone B and West Zone 2) are too speculative in nature to warrant classification of any resources in the indicated or measured resource categories.

14.3.14 Block Model Checks

Following grade estimation, the model was checked to ensure that the resource estimation procedure correctly populated the various block models. These checks included an overall review and comparison of the various estimated iron values to each other, a section by section comparison between the selected ID^3 iron values and the underlying composites and, lastly, a Q-Q plot of the block iron values versus the composite iron values.

The overall block iron grades were examined at the cut-off grade of 25.0% total Fe. The results are shown below in Table 14.25 and the comparison shows very close agreement between all resource estimation methods. Each of the drill hole cross-sections were also reviewed and the underlying composites agree closely with the overlying estimated block model iron grade. Lastly, the Q-Q plots for each of the 10 block models are shown below in Figure 14.25 through Figure 14.34.

Table 14.23
Block Model Interpolation Parameters

Item	Block Models									
	Bay Zone B	**Bay Zone C**	**Bay Zone D**	**Bay Zone E**	**Bay Zone F**	**Castle Mtn.**	**Iron Valley**	**West Zone McDonald**	**West Zone 4**	**West Zone 2**
Geostatistical Parameters										
Nugget (C_0)	25.5000	6.5800	8.6700	31.1000	17.3000	23.5000	28.9000	0.0123	13.5000	31.4000
Sill Difference (C_1)	8.4466	21.4870	14.1000	11.5161	12.6763	4.7283	20.7110	50.2571	13.7000	10.1128
Major Range (m)	1500	1000	2000	2300	800	1200	1400	2000	1500	1200
Semi-Major Range (m)	1500	1000	2000	2300	800	1200	1400	2000	1500	1200
Minor Range (Tetra %)[1]	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Azimuth (°)	0	0	0	0	0	0	0	0	0	0
Plunge (°)	0	0	0	0	0	0	0	0	0	0
Dip (°)	0	0	0	0	0	0	0	0	0	0
Search Ellipsoid										
Azimuth (°)	0	0	0	0	0	0	0	0	0	0
Plunge (°)	0	0	0	0	0	0	0	0	0	0
Dip (°)	0	0	0	0	0	0	0	0	0	0
Major (m)	1500	1000	2000	2300	800	1200	1400	2000	1500	1200
Semi-Major (m)	1500	1000	2000	2300	800	1200	1400	2000	1500	1200
Minor (m)[1]	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Estimation Parameters										
Minimum Number of Composites	1	1	1	1	1	1	1	1	1	1
Maximum Number of Composites	15	15	15	15	15	15	15	15	15	15
Maximum Composites Per Drill Hole	2	2	2	2	2	2	2	2	2	2

[1] The minor search axis in Tetra modeling uses a maximum search distance that is a percentage of the distance in that direction between the upper and lower Tetra surfaces. If that distance were 100 m, then a 0.04 search distance would be 4 m on either side of the point being estimated.

Table 14.24
Hopes Advance Resource Classification Logic

Domain	Bay Zone B	Bay Zone C	Bay Zone D	Bay Zone E	Bay Zone F	Castle Mtn.	Iron Valley	West Zone McDonald	West Zone 4	West Zone 2
Criteria for Measured Resources										
Maximum Search Distance (m)		200	400	460	160	240	280	400	300	
Minimum Number of Composites		7	7	7	7	7	7	7	7	
Criteria For Indicated Resources										
Maximum Search Distance (m)		400	800	920	320	480	560	800	600	
Minimum Number of Composites		5	5	5	5	5	5	5	5	
Criteria for Inferred Resources										
Maximum Search Distance (m)	1500	1000	2000	2300	800	1200	1400	2000	1500	1200
Minimum Number of Composites	2	2	2	2	2	2	2	2	2	2

Table 14.25
Detailed Hopes Advance Iron Grade Estimation Results
(Cut-off Grade 25% Total Fe)

Block Zone	Classification	Fe (%)				WRCP (%)	Resource Tonnes	Concentrate Tonnes
		ID2	ID3	ID5	OK			
Bay Zone B	Measured							
Bay Zone B	Indicated							
Bay Zone B	M+I							
Bay Zone B	Inferred	33.9	34.0	34.1	33.6	41.1	25,325,000	10,421,000
Bay Zone C	Measured	30.8	31.1	31.4	30.7	37.4	30,280,000	11,334,000
Bay Zone C	Indicated	30.5	30.7	30.9	30.7	36.8	59,944,000	22,089,000
Bay Zone C	M+I	30.6	30.8	31.0	30.7	37.0	90,224,000	33,423,000
Bay Zone C	Inferred	30.5	30.5	30.5	30.5	36.6	9,865,000	3,615,000
Bay Zone D	Measured	31.3	31.4	31.5	31.1	37.8	38,035,000	14,372,000
Bay Zone D	Indicated	31.3	31.4	31.4	31.3	37.8	16,985,000	6,413,000
Bay Zone D	M+I	31.3	31.4	31.5	31.2	37.8	55,020,000	20,785,000
Bay Zone D	Inferred	31.1	31.1	31.1	31.0	37.4	3,545,000	1,325,000
Bay Zone E	Measured	32.3	32.4	32.4	32.1	39.0	88,720,000	34,624,000
Bay Zone E	Indicated	32.6	32.5	32.4	32.5	39.2	23,328,000	9,149,000
Bay Zone E	M+I	32.4	32.4	32.4	32.2	39.1	112,048,000	43,773,000
Bay Zone E	Inferred	31.0	30.9	30.7	30.9	37.2	4,047,000	1,504,000
Bay Zone F	Measured	32.7	32.7	32.8	32.5	39.5	115,175,000	45,481,000
Bay Zone F	Indicated	32.3	32.3	32.4	32.3	39.0	130,225,000	50,795,000
Bay Zone F	M+I	32.5	32.5	32.6	32.4	39.2	245,400,000	96,277,000
Bay Zone F	Inferred	33.4	33.5	33.6	33.3	40.5	9,443,000	3,823,000
Castle Mountain	Measured	32.0	32.1	32.2	31.8	38.5	421,330,000	162,304,000
Castle Mountain	Indicated	31.8	31.8	31.9	31.8	38.2	291,535,000	111,396,000
Castle Mountain	M+I	31.9	32.0	32.0	31.8	38.4	712,865,000	273,700,000
Castle Mountain	Inferred	32.1	32.1	32.1	32.1	38.5	11,507,000	4,435,000
Iron Valley	Measured	33.1	33.2	33.2	32.9	40.0	73,409,000	29,381,000
Iron Valley	Indicated	32.7	32.8	32.8	32.5	39.5	140,737,000	55,541,000
Iron Valley	M+I	32.9	32.9	33.0	32.6	39.7	214,146,000	84,922,000
Iron Valley	Inferred	33.0	33.0	33.0	32.7	39.8	41,718,000	16,598,000
West Zone 2	Measured							
West Zone 2	Indicated							
West Zone 2	M+I							
West Zone 2	Inferred	32.1	32.3	32.5	31.9	37.7	152,922,000	57,620,000
West Zone 4	Measured	33.1	33.1	33.1	32.8	38.8	70,485,000	27,346,000
West Zone 4	Indicated	33.1	33.1	33.0	32.8	38.8	39,026,000	15,128,000
West Zone 4	M+I	33.1	33.1	33.0	32.8	38.8	109,511,000	42,474,000
West Zone 4	Inferred	34.5	34.6	34.7	34.3	40.9	3,309,000	1,355,000
West McDonald	Measured	32.2	32.8	33.2	32.7	34.9	19,824,000	6,912,000
West McDonald	Indicated	32.2	32.7	33.3	33.3	34.7	22,927,000	7,962,000
West McDonald	M+I	32.2	32.8	33.3	33.0	34.8	42,751,000	14,874,000
West McDonald	Inferred	32.8	32.8	32.9	33.6	34.9	7,718,000	2,694,000
All Zones	**Measured**	**32.2**	**32.3**	**32.4**	**32.0**	**38.7**	**857,258,000**	**331,754,000**
All Zones	**Indicated**	**32.1**	**32.1**	**32.2**	**32.0**	**38.4**	**724,707,000**	**278,473,000**
All Zones	**M+I**	**32.2**	**32.2**	**32.3**	**32.0**	**38.6**	**1,581,965,000**	**610,227,000**
All Zones	**Inferred**	**32.4**	**32.6**	**32.7**	**32.2**	**38.4**	**269,399,000**	**103,390,000**

(1) The tonnes and grade presented above are global and do not reflect conceptual open pit shells or detailed designs.

The estimate of the global mineral inventory for the Hopes Advance project is effective 2 April, 2012. It was prepared under the direction and supervision of Eddy Canova, P.Geo., OGQ. For this Prefeasibility Study, B. Terrence Hennessey, P.Geo., has reviewed this work and is the QP for this section of the report.

Figure 14.25
Q-Q Plot for Bay Zone B

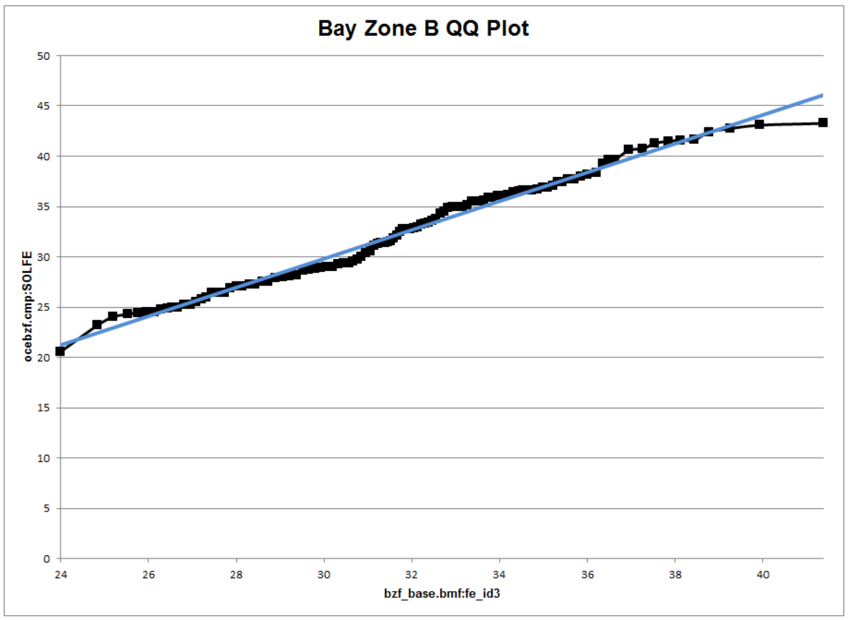


Figure 14.26
Q-Q Plot for Bay Zone C

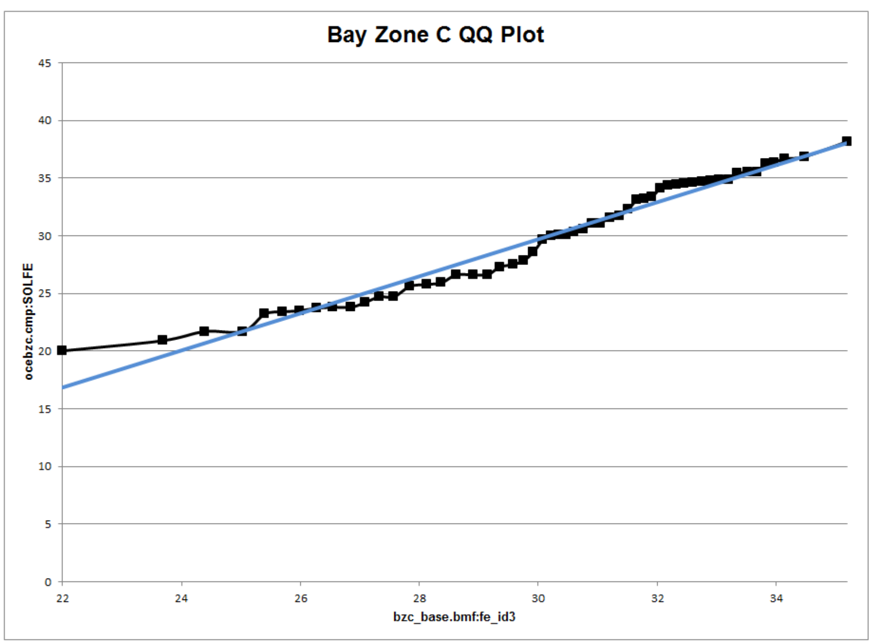


Figure 14.27
Q-Q Plot for Bay Zone D

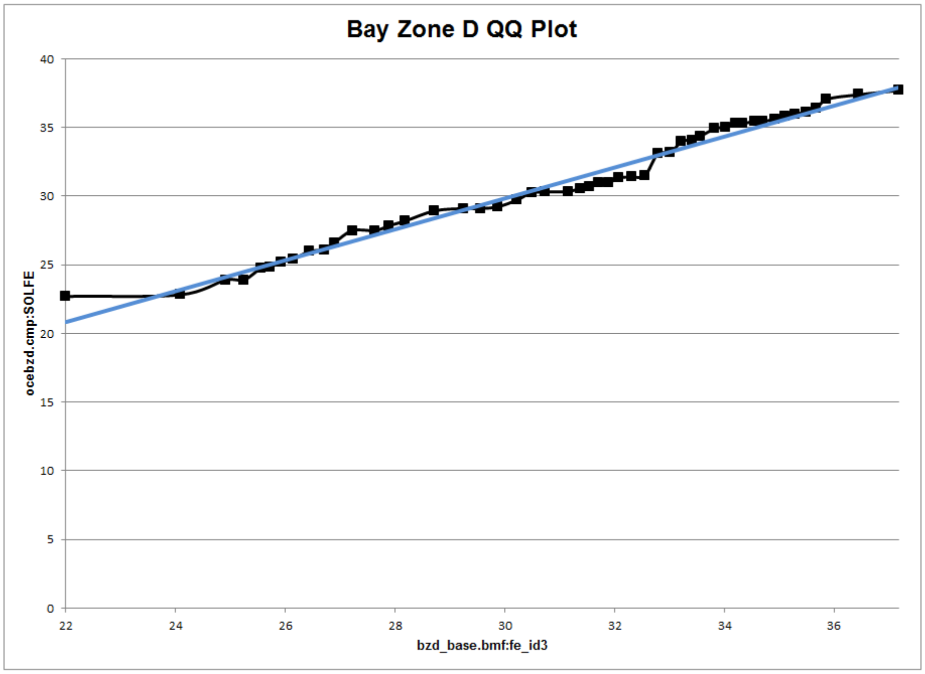


Figure 14.28
Q-Q Plot for Bay Zone E

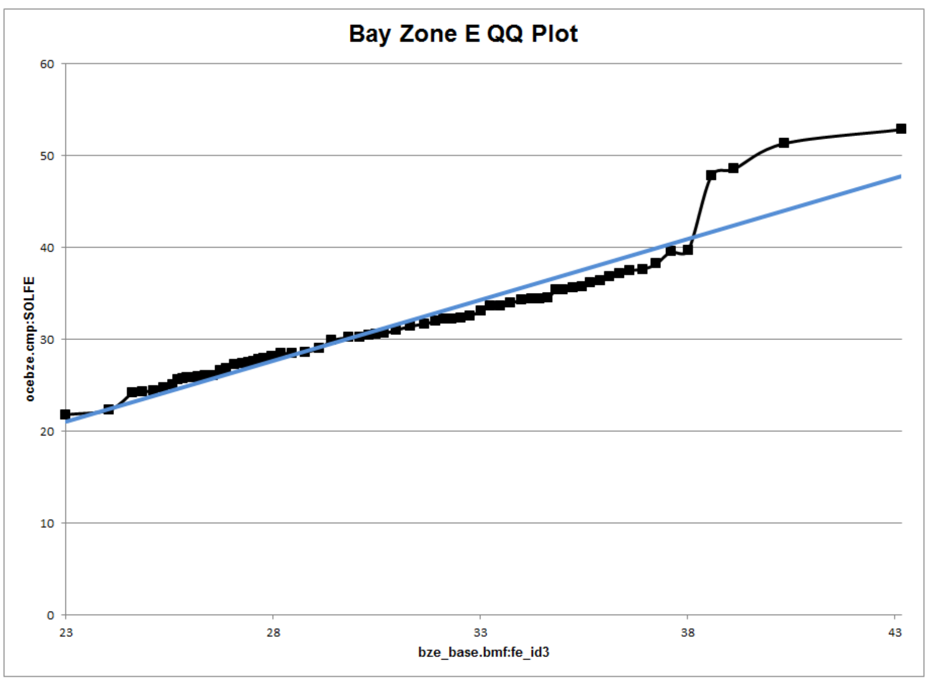


Figure 14.29
Q-Q Plot for Bay Zone F

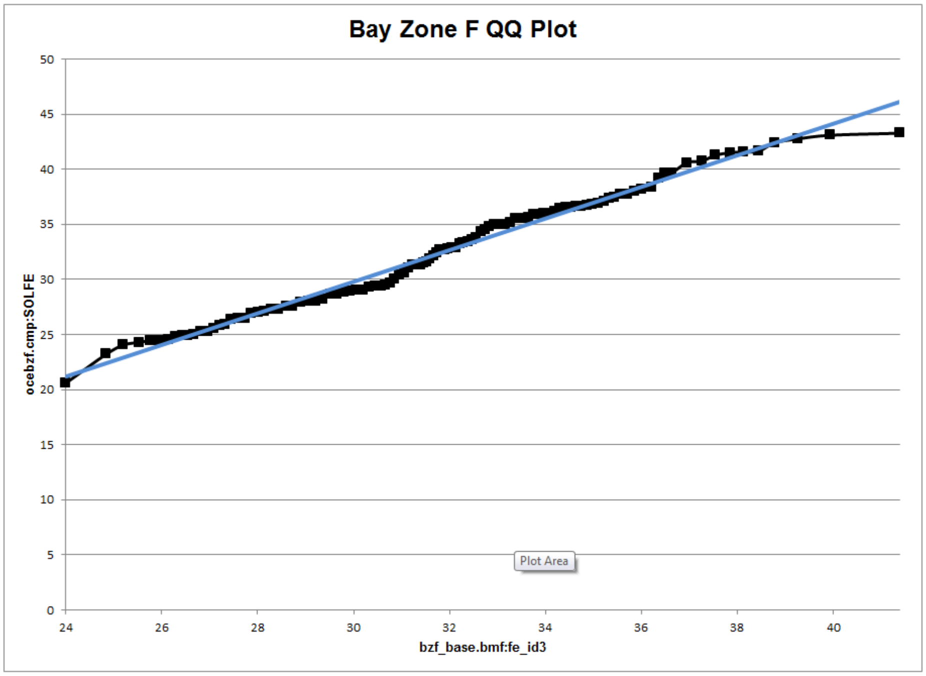


Figure 14.30
Q-Q Plot for Castle Mountain

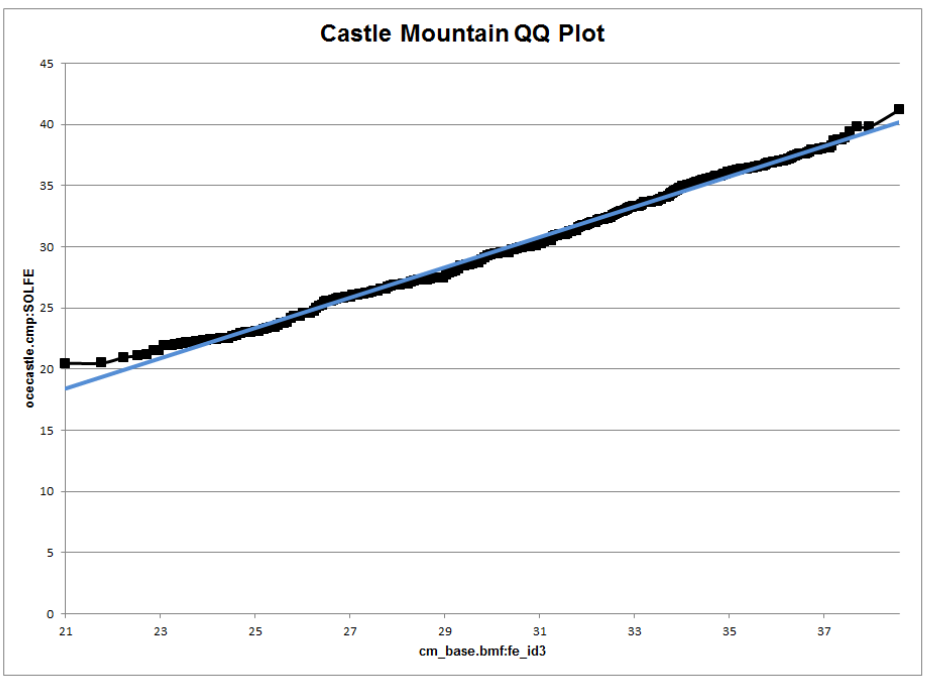


Figure 14.31
Q-Q Plot for Iron Valley

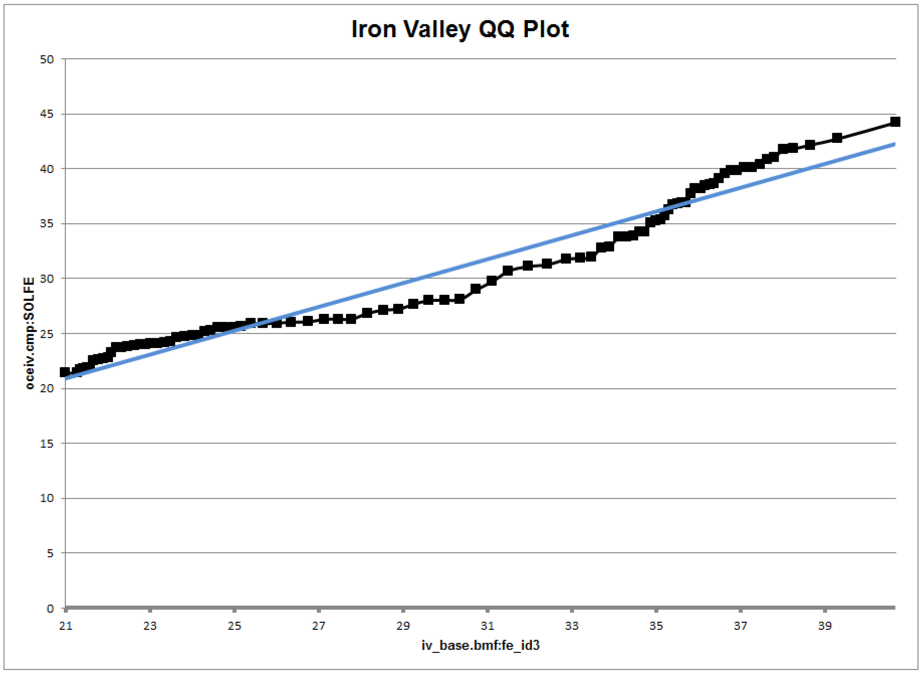


Figure 14.32
Q-Q Plot for West Zone 2

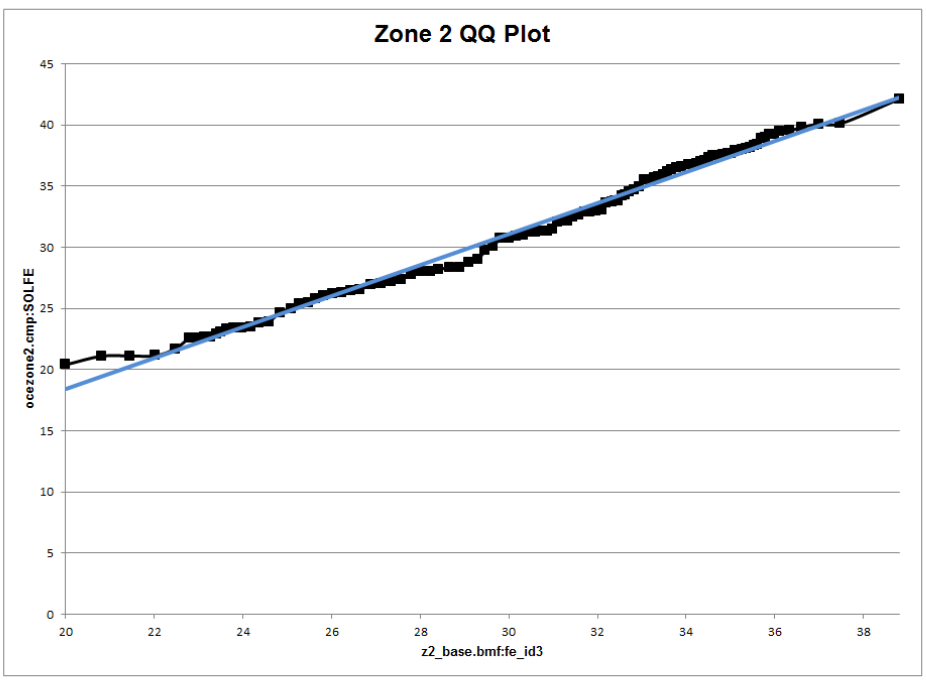


Figure 14.33
Q-Q Plot for West Zone 4

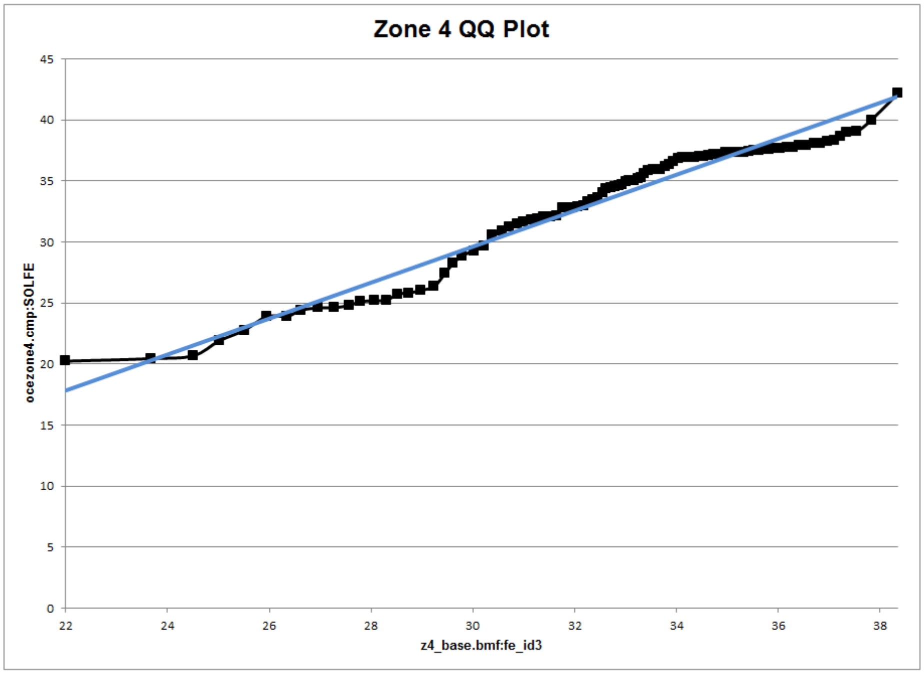
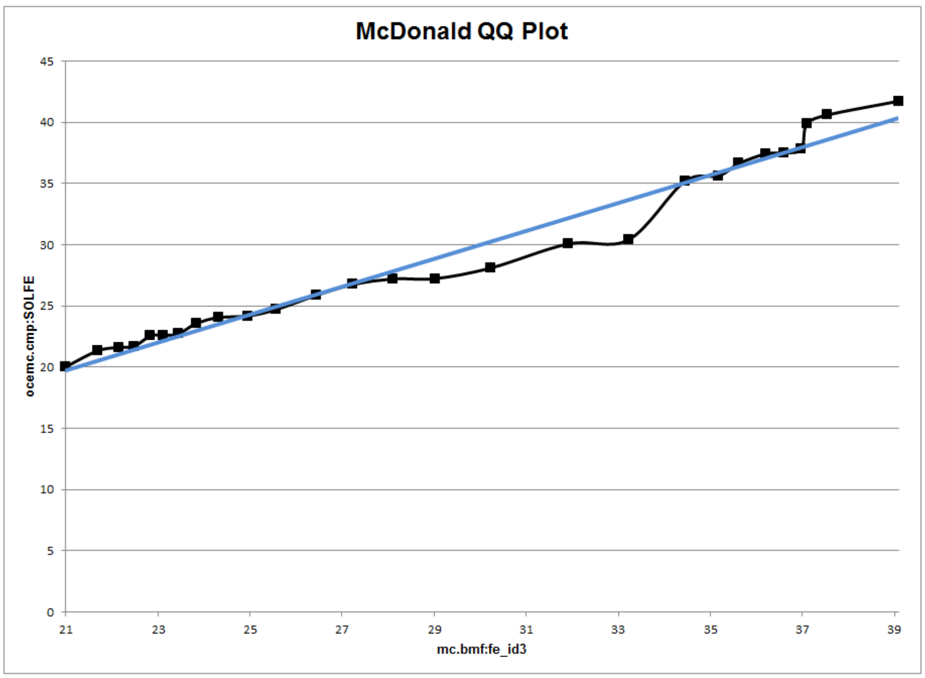


Figure 14.34
Q-Q Plot for West Zone McDonald



14.4 MINERAL RESOURCE ESTIMATE

The mineral resource estimates in this report used the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by CIM Standing Committee on Reserve Definitions and adopted by CIM Council on November 27, 2010. The mineral resource estimates provided in this report are classified as "measured", "indicated", or "inferred" as defined by CIM.

According to the CIM definitions, a Mineral Resource must be potentially economic in that it must be "in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction". For the Hopes Advance iron deposits, an iron cut-off grade was assigned based on metallurgical and economic assumptions and was used in resource estimates. For the Hopes Advance iron deposit, a minimum total iron grade of 25% was selected as the cut-off for the deposit. The cut-off grade is higher than current economics warrant, but represents the best estimate of a minimum recoverable iron grade given the metallurgical knowledge base at the time of estimation.

14.4.1 Global Mineral Inventory

Using the estimated cut-off grade of 25.0% total Fe, the Hopes Advance project has a global mineral inventory as summarized in Table 14.26 (based on Table 14.25).

Table 14.26
Hopes Advance Global Mineral Inventory
Cut-off Grade 25.0% Total Fe

Classification	Tonnes	Fe (%)	Concentrate Tonnes
Measured	857,258,000	32.3	331,754,000
Indicated	724,707,000	32.1	278,473,000
M+I	**1,581,965,000**	**32.2**	**610,227,000**
Inferred	269,399,000	32.6	103,390,000

(1) The tonnes and grade presented above are global and do not reflect conceptual open pit shells or detailed designs.

14.4.2 In-pit Mineral Resources

Using the block models described above, an economic pit optimization and design was completed in order to be able to report in-pit mineral resources. Whittle pit optimization software from Gemcom was used to complete an economic pit optimization in order to determine the economic pit limits for each of the 10 block models at the Hopes Advance project. For the Whittle economic pit optimization, certain economic assumptions were made and a pit optimization was completed for each block model. The assumed economic constraints used in the pit optimization are shown in Table 14.27.

Table 14.27
Hopes Advance Economic Assumptions Used for Whittle Pit Optimization, as at April, 2012

Item	Units	$
Mining Cost	$/t all material	2.71
Process Cost	$/t resource	14.87
Pipeline	$/t product	1.08
Port	$/t product	3.00
Camp	$/t product	1.50
G&A	$/t product	1.50
Royalty	%	2.0
Concentrate Value	$/t product	100.00

These values resulted in optimized pit shells for each of the 10 block models. These conceptual pit shells were then used to define the in-pit mineral resources that have reasonable prospects for economic extraction. The Whittle optimization assumed an overall slope of 50^{o} for all pits, and the resulting in-pit mineral resource estimate is summarized in Table 14.28.

Table 14.28
In-pit Mineral Resource Estimate for the Hopes Advance Project as at April, 2012
(Cut-off Grade 25% Total Fe)

Zone	Classification	Fe (%)	WRCP (%)	Resource Tonnes	Concentrate Tonnes
Bay Zone B	Measured	0.0	0.0	0	0
Bay Zone B	Indicated	0.0	0.0	0	0
Bay Zone B	M+I	0.0	0.0	0	0
Bay Zone B	Inferred	34.3	41.5	21,258,000	8,821,000
Bay Zone C	Measured	31.3	37.6	28,791,000	10,829,000
Bay Zone C	Indicated	30.8	37.0	52,640,000	19,490,000
Bay Zone C	M+I	31.0	37.2	81,431,000	30,319,000
Bay Zone C	Inferred	30.5	36.7	7,199,000	2,640,000
Bay Zone D	Measured	31.6	38.0	35,627,000	13,551,000
Bay Zone D	Indicated	31.7	38.2	14,351,000	5,479,000
Bay Zone D	M+I	31.6	38.1	49,978,000	19,030,000
Bay Zone D	Inferred	32.0	38.6	2,752,000	1,061,000
Bay Zone E	Measured	32.6	39.4	82,107,000	32,342,000
Bay Zone E	Indicated	32.8	39.6	20,322,000	8,050,000
Bay Zone E	M+I	32.7	39.4	102,429,000	40,392,000
Bay Zone E	Inferred	31.7	38.2	3,293,000	1,257,000
Bay Zone F	Measured	32.8	39.6	112,754,000	44,665,000
Bay Zone F	Indicated	32.5	39.2	123,709,000	48,489,000
Bay Zone F	M+I	32.6	39.4	236,463,000	93,154,000
Bay Zone F	Inferred	33.7	40.7	7,777,000	3,168,000
Castle Mountain	Measured	32.0	38.4	328,091,000	125,934,000
Castle Mountain	Indicated	31.5	37.8	172,108,000	65,011,000
Castle Mountain	M+I	31.8	38.2	500,199,000	190,945,000
Castle Mountain	Inferred	32.1	38.6	7,994,000	3,087,000
Iron Valley	Measured	33.9	41.0	65,427,000	26,843,000
Iron Valley	Indicated	33.5	40.4	121,897,000	49,288,000
Iron Valley	M+I	33.6	40.6	187,324,000	76,131,000
Iron Valley	Inferred	33.6	40.6	35,308,000	14,334,000

Zone	Classification	Fe (%)	WRCP (%)	Resource Tonnes	Concentrate Tonnes
West Zone 2	Measured	0.0	0.0	0	0
West Zone 2	Indicated	0.0	0.0	0	0
West Zone 2	M+I	0.0	0.0	0	0
West Zone 2	Inferred	32.5	37.9	100,560,000	38,126,000
West Zone 4	Measured	32.8	38.3	51,562,000	19,757,000
West Zone 4	Indicated	32.5	38.0	22,976,000	8,729,000
West Zone 4	M+I	32.7	38.2	74,538,000	28,486,000
West Zone 4	Inferred	32.5	37.9	635,000	241,000
West McDonald	Measured	33.5	35.9	16,406,000	5,885,000
West McDonald	Indicated	33.5	35.8	19,515,000	6,980,000
West McDonald	M+I	33.5	35.8	35,921,000	12,865,000
West McDonald	Inferred	33.5	35.9	6,627,000	2,377,000
All Zones	**Measured**	32.4	38.8	720,765,000	279,806,000
All Zones	**Indicated**	32.3	38.6	547,518,000	211,516,000
All Zones	**M+I**	32.3	38.7	1,268,283,000	491,322,000
All Zones	**Inferred**	32.9	38.8	193,403,000	75,112,000

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.

(2) The mineral resources were estimated using a block model with parent blocks of 50 m by 50 m by 15 m sub-blocked to a minimum size of 25 m by 25 m by 1m and using ID^3 methods for grade estimation. A total of 10 individual mineralized domains were identified and each estimated into a separate block model. Given the continuity of the iron assay values, no top cuts were applied. All resources are reported using an iron cut-off grade of 25% within Whittle optimization pit shells and a mining recovery of 100%.

(3) The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

(4) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council November 27, 2010.

The mineral resource estimate presented in Table 14.26 is effective as of 2 April, 2012. The mineral resource estimate was prepared under the direction and supervision of Eddy Canova, P.Geo., OGQ. For this Prefeasibility Study, B. Terrence Hennessey, P.Geo., has reviewed this work and is the QP for this section of the report.

14.4.3 September, 2012 Resource Update

For the Prefeasibility Study presented herein the mineral reserves were estimated using different, updated, pit optimization parameters and a minor change in the weight recovery factors from those employed in the April, 2012 mineral resource update (Canova, 2012). This has resulted in a mineral reserve which is larger than the April, 2012 mineral resource despite having been generated from the same, unchanged block model. For this reason, and to limit confusion, Micon has re-reported the in-pit mineral resources using the updated parameters.

The resources were reported by re-optimizing the pit shells using the Lerchs-Grossmann (LG) algorithm in the MineSight software package.

Fixed mining costs of $2.00/t for drilling, blasting, loading, pit support and G&A were estimated based on the results of the November, 2011 preliminary economic assessment and this was applied to all ore and waste rock types.

In June 2012, Micon set the pit optimization parameters at $115/t concentrate and a CAD$/$ exchange rate of 0.97. These parameters were also used for the selection of shells to guide the pit designs. The concentrate price and exchange rate used in the Prefeasibility Study economic base case were $100/t and 1.00 respectively. The difference in size of the $115/t optimized shell and the $100/t optimized shell is not material so Micon concluded that these June 2012 designs would still be valid at the $100/t concentrate price which is used in the economic evaluation.

A total ore based cost of $7.32 was applied to each tonne of mill feed as shown in Table 14.29.

Table 14.29
Total Ore-Based Costs

Item	Units	Value
Concentrator	$/t Con	16.07
Heating (HVAC)	$/t Con	0.15
Camp & Infrastructure	$/t Con	1.73
G&A (Site Only)	$/t Con	1.65
Total	$/t Con	19.60
Average Mass Recovery	%	37.4
Total Ore Based Cost	$/t Feed	7.32

The value of the concentrate at the mine was calculated to be $115.92/t as shown in Table 14.30 and is based on a concentrate sales price of $US115/t FOB port.

Table 14.30
Concentrate Value at Mine

Item	Units	Value
Concentrate Revenue FOB Port	$/t Con	115.00
Exchange Rate	$CAD/$	0.97
Concentrate Revenue FOB Port	$/t Con	118.56
Royalty	%	1.00
	$/t Con	1.19
Port Costs	$/t Con	1.45
Total	$/t Con	115.92

The updated in-pit mineral resource estimate for the Hopes Advance project is presented in Table 14.31.

Table 14.31
Updated In-pit Mineral Resource Estimate for the Hopes Advance Project as at September, 2012
(Cut-off Grade 25% Total Fe)

Zone	Classification	Fe (%)	WRCP (%)	Resource Tonnes (t 000)	Concentrate Tonnes (t 000)
Bay Zone B	Measured	-	-	-	-
Bay Zone B	Indicated	-	-	-	-
Bay Zone B	M+I	-	-	-	-
Bay Zone B	Inferred	34.0	39.9	22,367	8,915
Bay Zone C	Measured	31.1	36.2	28,295	10,228
Bay Zone C	Indicated	30.7	35.6	58,100	20,695
Bay Zone C	M+I	30.8	35.8	86,395	30,924
Bay Zone C	Inferred	30.5	35.4	9,558	3,386
Bay Zone D	Measured	31.4	36.6	37,953	13,876
Bay Zone D	Indicated	31.4	36.6	16,738	6,123
Bay Zone D	M+I	31.4	36.6	54,692	19,999
Bay Zone D	Inferred	31.2	36.3	3,464	1,256
Bay Zone E	Measured	32.4	37.8	88,407	33,436
Bay Zone E	Indicated	32.5	38.0	23,202	8,824
Bay Zone E	M+I	32.4	37.9	111,609	42,259
Bay Zone E	Inferred	31.0	36.1	3,963	1,430
Bay Zone F	Measured	32.7	38.3	115,150	44,056
Bay Zone F	Indicated	32.4	37.8	129,771	49,041
Bay Zone F	M+I	32.5	38.0	244,921	93,097
Bay Zone F	Inferred	33.5	39.3	9,424	3,701
Castle Mountain	Measured	31.8	37.0	354,138	131,031
Castle Mountain	Indicated	31.3	36.3	194,977	70,679
Castle Mountain	M+I	31.6	36.7	549,115	201,710
Castle Mountain	Inferred	31.9	37.0	8,850	3,276
Iron Valley	Measured	33.2	38.8	73,408	28,475
Iron Valley	Indicated	32.8	38.2	140,703	53,791
Iron Valley	M+I	32.9	38.4	214,110	82,265
Iron Valley	Inferred	33.0	38.6	41,703	16,077
West Zone 2	Measured	-	-	-	-
West Zone 2	Indicated	-	-	-	-
West Zone 2	M+I	-	-	-	-
West Zone 2	Inferred	32.2	36.3	114,169	41,455
West Zone 4	Measured	32.8	37.1	57,211	21,237
West Zone 4	Indicated	32.4	36.6	27,731	10,155
West Zone 4	M+I	32.7	37.0	84,942	31,392
West Zone 4	Inferred	33.0	37.5	1,099	412
West McDonald	Measured	32.9	33.7	19,679	6,632
West McDonald	Indicated	32.8	33.6	22,575	7,594
West McDonald	M+I	32.8	33.7	42,253	14,226
West McDonald	Inferred	33.0	33.8	7,589	2,567
All Zones	**Measured**	**32.2**	**37.3**	**774,241**	**288,971**
All Zones	**Indicated**	**32.0**	**37.0**	**613,796**	**226,901**
All Zones	**M+I**	**32.1**	**37.2**	**1,388,037**	**515,872**
All Zones	**Inferred**	**32.5**	**37.1**	**222,188**	**82,475**

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.

(2) The mineral resources were estimated using a block model with parent blocks of 50 m by 50 m by 15 m sub-blocked to a minimum size of 25 m by 25 m by 1m and using ID^3 methods for grade estimation. A total of 10 individual mineralized domains were identified and each estimated into a separate block model. Given the continuity of the iron assay values, no top cuts were applied. All resources are reported using an iron cut-off grade of 25% within Whittle optimization pit shells and a mining recovery of 100%.

(3) The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.
(4) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council November 27, 2010.

The mineral resource estimate presented in Table 14.31 is effective as of 19 September, 2012 and is reported from a block model current as of 2 April, 2012. It was prepared under the direction of Eddy Canova, P.Geo., OGQ, internal Qualified Person for Oceanic. For this Prefeasibility Study, B. Terrence Hennessey, P.Geo., has reviewed this work and is the QP for this section of the report.

The updated in-pit mineral resource estimate is compared with the estimate dated April, 2012 in Table 14.32.

Table 14.32
Hopes Advance Comparison of In-pit Mineral Resources
(Cut-off Grade 25% Total Fe)

	April, 2012			September, 2012		
Classification	**Tonnes (t 000)**	**Fe (%)**	**Concentrate Tonnes (t 000)**	**Tonnes (t 000)**	**Fe (%)**	**Concentrate Tonnes (t 000)**
Measured	720,765	32.4	279,806	774,241	32.2	288,971
Indicated	547,518	32.3	211,516	613,796	32.0	226,901
M+I	**1,268,283**	**32.3**	**491,322**	**1,388,037**	**32.1**	**515,872**
Inferred	193,403	32.9	75,112	222,188	32.5	82,475

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.
(2) The mineral resources were estimated using a block model with parent blocks of 50 m by 50 m by 15 m sub-blocked to a minimum size of 25 m by 25 m by 1m and using ID^3 methods for grade estimation. A total of 10 individual mineralized domains were identified and each estimated into a separate block model. Given the continuity of the iron assay values, no top cuts were applied. All resources are reported using an iron cut-off grade of 25% within Whittle optimization pit shells and a mining recovery of 100%.
(3) The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.
(4) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council November 27, 2010.

15.0 MINERAL RESERVE ESTIMATES

Mineral reserves for the Hopes Advance project have been estimated as summarized in Table 15.1. Mineral reserves have not been estimated for the Bay Zone B or West Zone 2 pits as they are classified as inferred resources.

The ultimate pit limits are based on the economic Lerchs-Grossmann algorithm designed to honour the property boundary and the setback from the lakes. The mine plan developed in this feasibility study is based on Measured and Indicated resources only. There is opportunity to upgrade some minor amounts of the inferred resource mineralization to ore classification with additional infill drilling.

Table 15.1
Mineral Reserve Estimate for the Hopes Advance Project

	Units	Castle Mountain	Iron Valley	Bay Zone C	Bay Zone D	Bay Zone E	Bay Zone F	West Zone McDonald	West Zone 4	Total
Proven[1]	t 000	353,270	70,866	27,474	37,324	86,113	114,245	18,231	55,753	763,276
Fe Grade	%	31.9	33.4	31.2	31.5	32.5	32.8	33.2	32.8	32.3
Weight Recovery	%	37.0	39.1	36.2	36.6	38.0	38.3	34.1	37.1	37.4
Concentrate	t 000	130,731	27,714	9,957	13,679	32,697	43,746	6,220	20,684	285,428
Probable[1]	t 000	195,100	133,595	55,337	16,250	22,052	125,505	21,548	26,603	595,990
Fe Grade	%	31.3	33.1	30.8	31.6	32.8	32.5	33.0	32.5	32.1
Weight Recovery	%	36.3	38.6	35.7	36.8	38.3	37.9	34.0	36.7	37.1
Concentrate	t 000	70,784	51,588	19,766	5,974	8,457	47,604	7,316	9,758	221,246
Proven & Probable[1]	t 000	548,370	204,461	82,811	53,574	108,165	239,750	39,779	82,356	1,359,266
Fe Grade	%	31.7	33.2	30.9	31.5	32.6	32.6	33.1	32.7	32.2
Weight Recovery	%	36.7	38.8	35.9	36.7	38.0	38.1	34.0	37.0	37.3
Concentrate	t 000	201,515	79,302	29,723	19,653	41,153	91,350	13,536	30,442	506,675

[1]Material above an Fe grade of 25%

CIM Standards on Mineral Resources and Reserves Definitions and Guidelines defines A Proven Mineral Reserve as "the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified."

The effective date of the mineral reserve estimate is September 19, 2012.

16.0 MINING

A conventional open pit mining operation is proposed for the Hopes Advance project. Mining will be undertaken by Oceanic using its own equipment and workforce and will provide the open pit equipment, operator training, supervision, pit technical support services, mine consumables, and the pit operations and maintenance facilities. Specialized contractors will be used for the initial site clearing and initial haul road construction in preparation for the mining equipment fleet, and will source explosives, blasting agents, fuel and other consumables from established suppliers.

Mineral resources for the Hopes Advance project are contained in 10 deposits. Two of the deposits, Bay Zone B and West Zone 2, contain only inferred material and are not included in the Prefeasibility Study. The locations of the 10 deposits, concentrator, port facility and tailings impoundment are shown in Figure 16.1. The eight deposits used in the Prefeasibility Study have been subdivided into a total of 13 phases for mine scheduling.

Figure 16.1 also shows the locations of the maintenance shop and the processing plant. The men's and women's dry, lunchroom, first aid station, and supervisor's offices will be located in a building adjoined to the maintenance shop. The mine superintendent office and the technical services offices will be located at the processing plant.

16.1 OPEN PIT DESIGN

The design of the open pits is based on the mineral reserves presented in Section 15.0. The average density of the barren waste rock has been estimated at 2.75 t/m^3 and the average weight recovery of the concentrate has been reduced by 1.23% to represent the recovery expected from the concentrator. This offset factor reflects the difference between bench tests (Davis tube test and Mozley table) that are nearly perfect tests and plant and pilot plant performance that is less efficient than bench tests. The offset factor was applied to bench test results to more accurately predict plant performance.

16.1.1 Optimization Parameters

The economic pit limits were determined using the MineSight® optimization routines which are based on the Lerchs-Grossmann (LG) algorithm. The LG algorithm utilizes the ore grades and bulk density for each block of the 3D block model, evaluating the costs and revenues of the blocks within potential pit shells. Economic pit limits were determined for each pit area using data from the mine planning 3D block model and the project topography based on a detailed aerial survey completed in the summer of 2011.

16.1.2 Geotechnical Pit Slope Design Criteria

The LG optimized shells were generated with an average wall slope of 45° to account for additional flattening of the walls from the ramps. With the mineralization in most zones dipping at around 20°, most of the optimized shells follow the mineralization and not the inter-ramp limit.

16.1.3 LG Mining and Processing Costs

Fixed mining costs for drilling, blasting, loading, pit support were estimated based on the results of the November, 2011 PEA.

An average mining cost of $2.00/t of rock was used in the pit optimization study. This was applied to all ore and waste rock types.

A total ore based cost of $7.57 was applied to each tonne of mill feed as shown in Table 16.1.

Table 16.1
Total Ore Based Costs (Initial Assumptions Made for Pit Optimization)

Item	Units	Value
Concentrator	$/t concentrate	16.07
Heating (HVAC)	$/t concentrate	0.15
Camp & Infrastructure	$/t concentrate	1.73
G&A (Site Only)	$/t concentrate	1.65
Total	$/t concentrate	19.60
Average Mass Recovery	%	39
Total Ore Based Cost	$/t feed	7.57

16.1.4 Concentrate Value at Mine

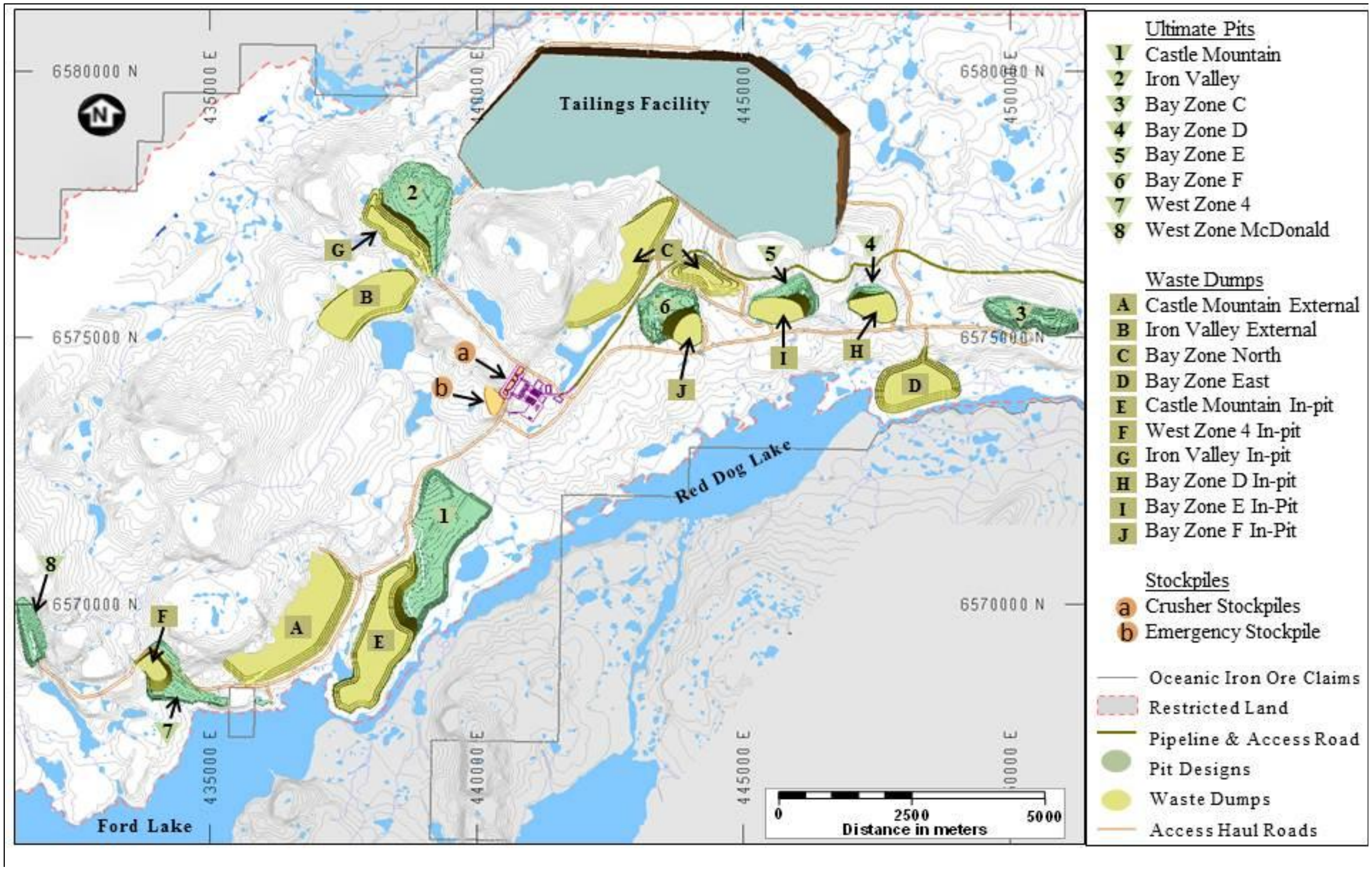
The value of the concentrate at the mine was calculated to be $115.92/t as shown in Table 16.2 and is based on a concentrate sales price of $115/t FOB port.

In June 2012, Micon set the pit optimization parameters at $115/t concentrate and a CAD$/$ exchange rate of 0.97. These parameters were also used for the selection of shells to guide the pit designs. The difference in size of the $115 optimized shell and the $100 optimized shell is very small as observed in the following Pit Shell figures. Thus, these original designs would still be valid at the $100 rate which is used in the economic evaluation.

Table 16.2
Concentrate Value

Item	Units	Value
Concentrate Revenue FOB Port	$/t	115.00
Exchange Rate	CAD$/$	0.97
Concentrate Revenue FOB Port	$/t	118.56
Royalty	%	0.01
Royalty	$/t	1.19
Port Costs	$/t	1.45
Total	**$/t**	**115.92**

Figure 16.1
Mine Site Layout



16.1.5 Optimization Results

Optimized pit shells were generated for concentrate values from $20 to $160 in $5 increments, with measured and indicated material being treated as potential ore and inferred material being treated as waste. The material contained in each shell is shown in Figure 16.2 to Figure 16.9. The shells generated at a concentrate value of $115/t were selected to guide the ultimate pit designs, as shown in Table 16.3.

Figure 16.2
Castle Mountain Optimized Pit Shells

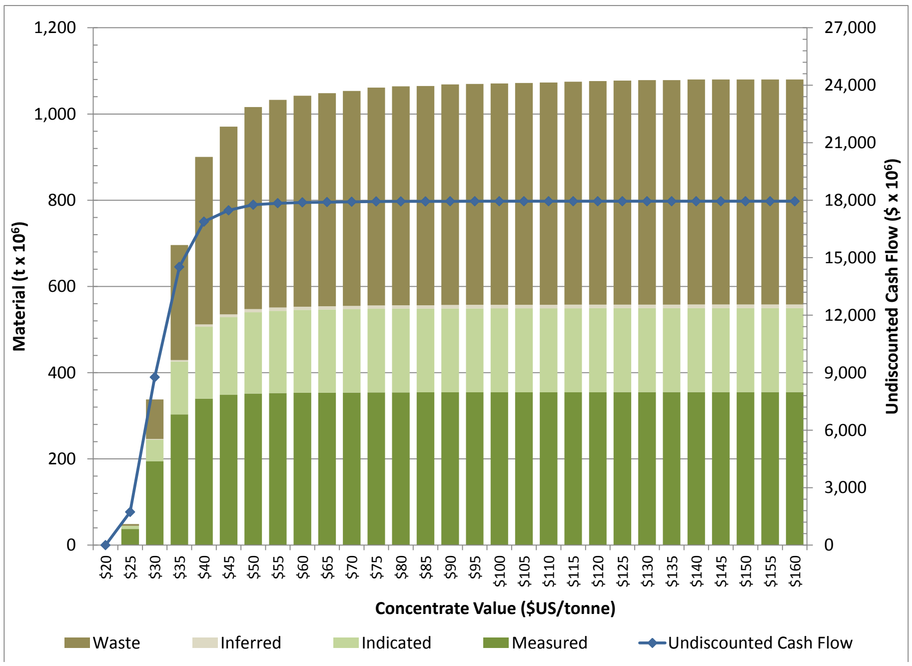


Figure 16.3
Iron Valley Optimized Pit Shells

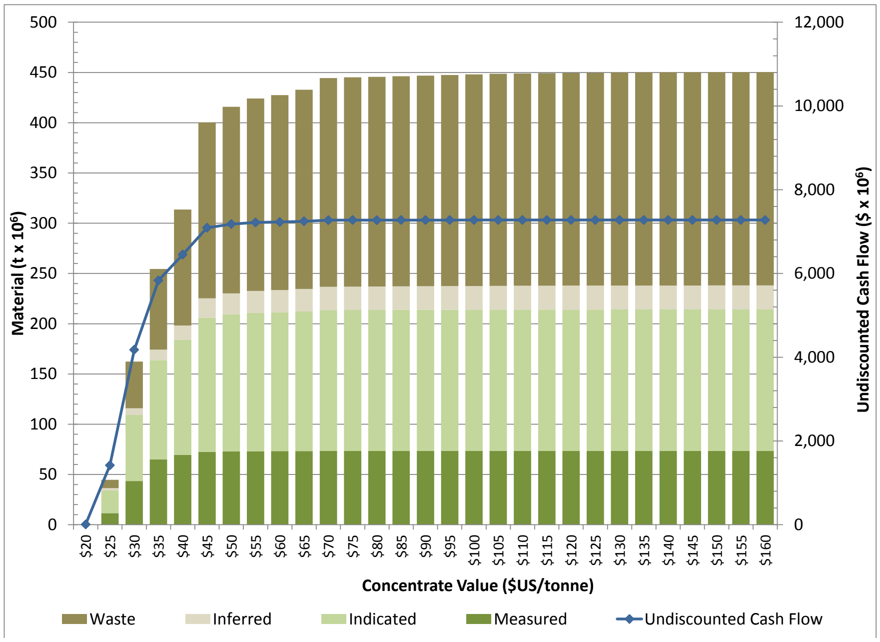


Figure 16.4
Bay Zone C Optimized Pit Shells

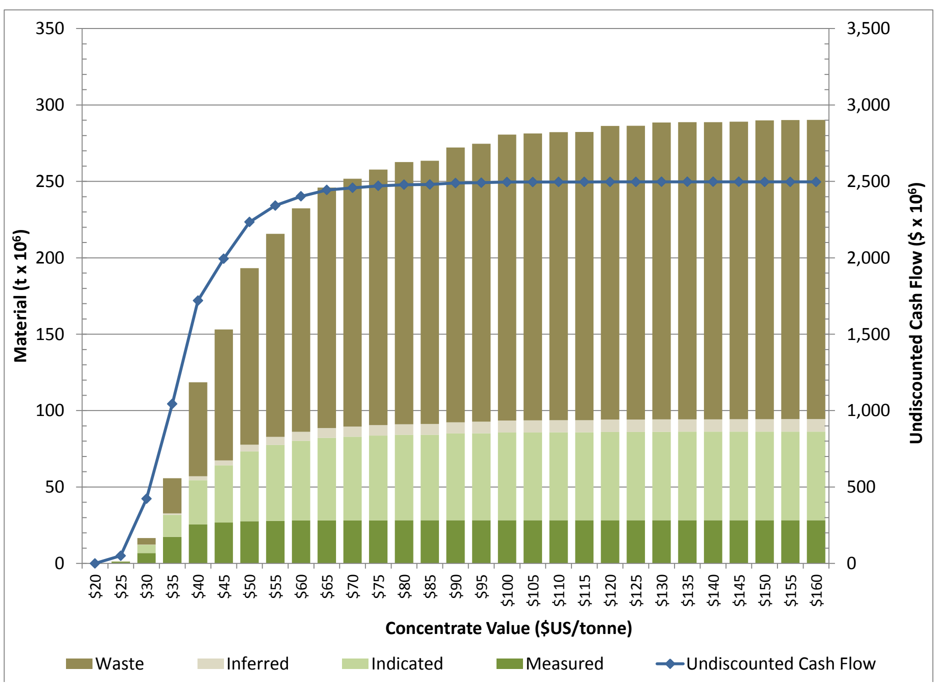


Figure 16.5
Bay Zone D Optimized Pit Shells

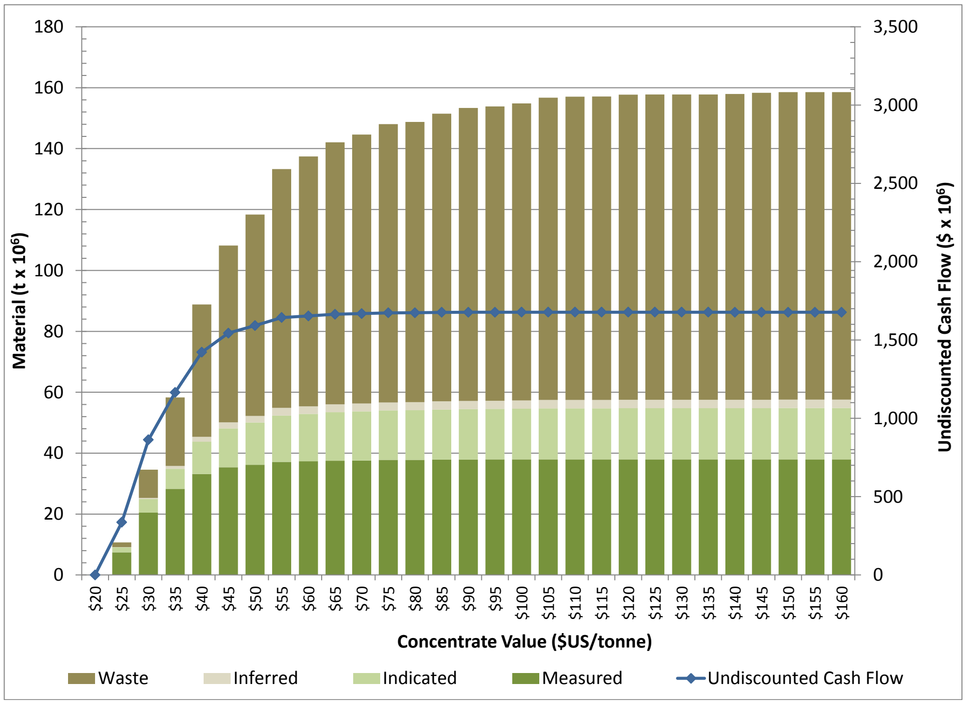


Figure 16.6
Bay Zone E Optimized Pit Shells

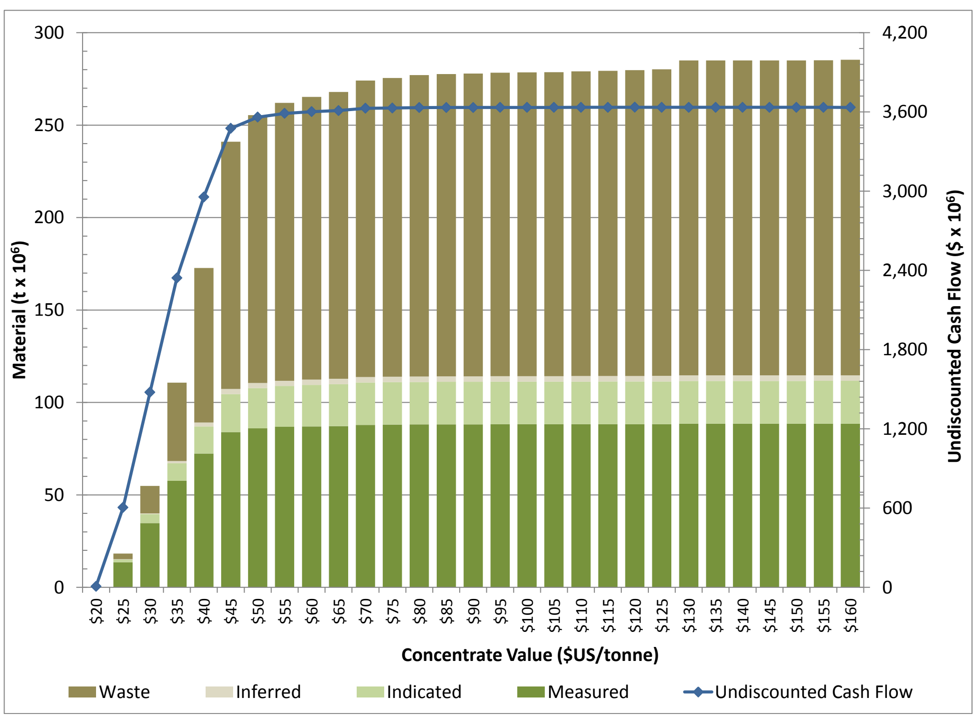


Figure 16.7
Bay Zone F Optimized Pit Shells

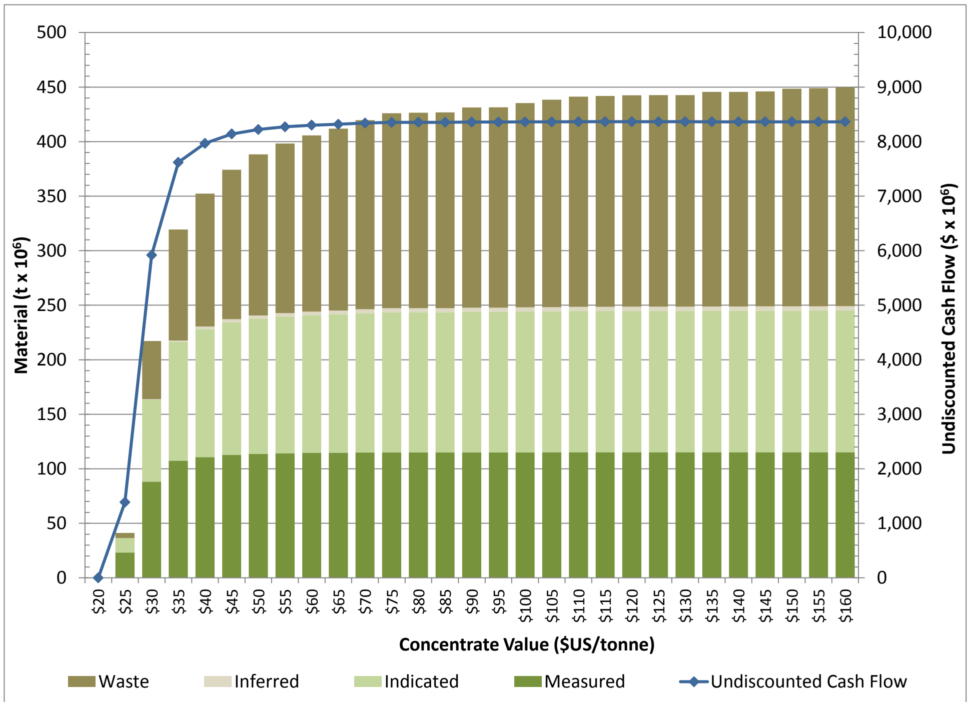


Figure 16.8
West Zone McDonald Optimized Pit Shells

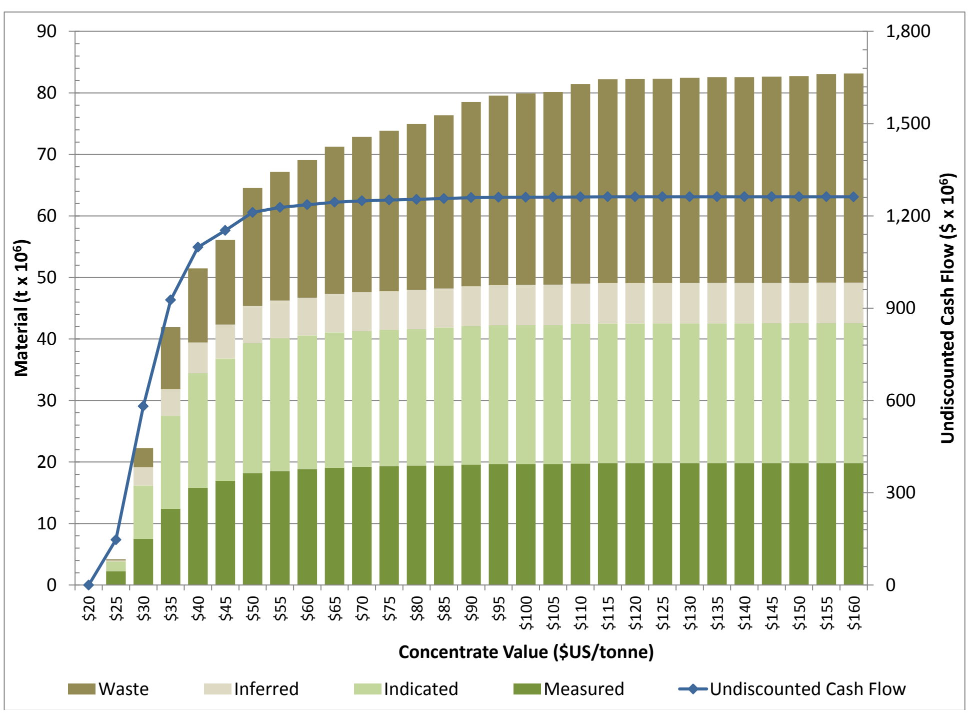


Figure 16.9
West Zone 4 Optimized Pit Shells

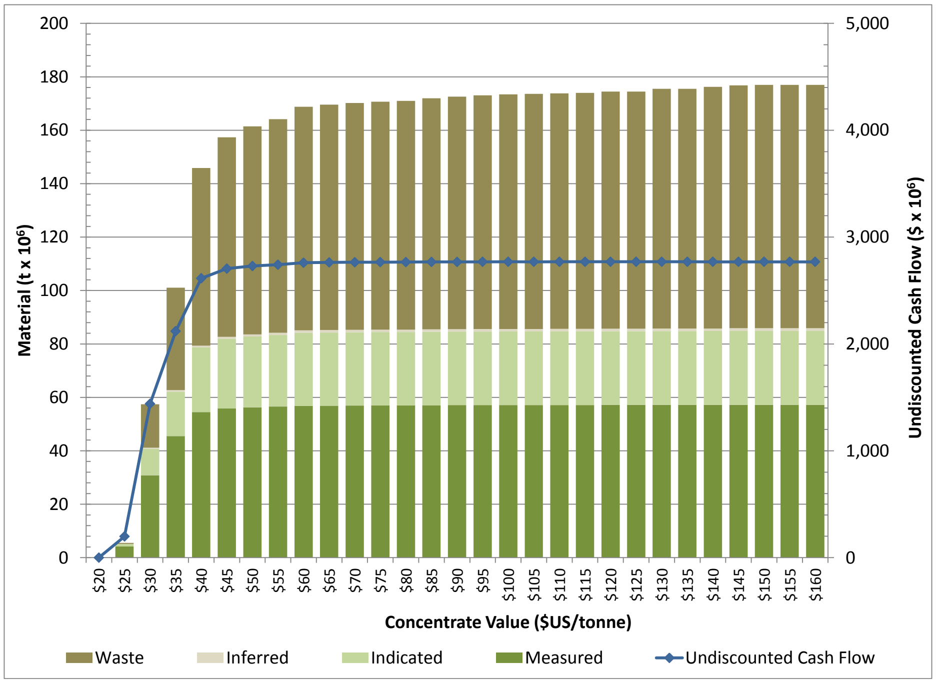


Table 16.3
Selected $115/t LG Shells Used to Guide Pit Design

	Units	Castle Mountain	Iron Valley	Bay Zone C	Bay Zone D	Bay Zone E	Bay Zone F	West Zone McDonald	West Zone 4	Total
Measured	t 000	354,656	73,406	28,278	37,964	88,252	115,152	19,783	57,136	774,627
Fe Grade	%	31.9	33.2	31.1	31.4	32.4	32.7	32.8	32.8	32.2
Wt. Recovery	%	37.0	38.8	36.2	36.6	37.8	38.3	33.7	38.4	37.4
Concentrate	t 000	131,258	28,474	10,223	13,880	33,386	44,057	6,657	21,918	289,852
Indicated	t 000	194,839	140,624	57,525	16,756	23,077	129,502	22,734	27,569	612,628
Fe Grade	%	31.3	32.8	30.7	31.4	32.6	32.4	32.8	32.5	32.0
Wt. Recovery	%	36.3	38.2	35.6	36.6	38.1	37.8	33.6	37.9	37.0
Concentrate	t 000	70,629	53,775	20,502	6,131	8,783	48,952	7,632	10,443	226,847
Measured & Indicated	t 000	549,495	214,030	85,803	54,720	111,329	244,655	42,517	84,706	1,387,255
Fe Grade	%	31.7	32.9	30.8	31.4	32.4	32.5	32.8	32.7	32.1
Wt. Recovery	%	36.7	38.4	35.8	36.6	37.9	38.0	33.6	38.2	37.2
Concentrate	t 000	201,887	82,249	30,724	20,011	42,169	93,009	14,289	32,361	516,699
Inferred Material	t 000	8,212	23,814	7,914	2,770	2,958	3,852	6,564	937	57,021
Fe Grade	%	32.2	34.9	30.6	32.5	32.5	33.4	33.7	33.1	33.4
Wt. Recovery	%	38.7	41.1	35.5	37.9	37.9	39.2	34.9	38.8	38.8
Concentrate	t 000	3,180	9,797	2,812	1,050	1,122	1,509	2,288	363	22,122
Waste	t 000	517,343	211,464	188,603	99,640	165,087	193,314	33,138	88,349	1,496,938
Strip Ratio		1.0	1.1	2.3	1.9	1.5	0.8	0.9	1.1	1.1

16.1.6 Mine Design and Layout

Pit and internal phases were designed using MineSight® software, preliminary geotechnical designs, recommended standards for road widths and minimum mining widths based on efficient operation for the size of mining equipment chosen for the project.

16.1.7 LG Phase Selection

The LG pits previously discussed were used to evaluate alternatives for determining the economic pit limit and optimum phasing for detailed design work. LG pits provide a geometrical guide to detailed pit designs.

The LG pit shells optimized with a \$115/t concentrate value were selected to guide the design of the ultimate pit shells. Smaller pit shells exist within the ultimate economic pit limits. When considered at base case economics, these smaller pit shells generated higher revenue per tonne due to lower strip ratios or better grades than the full economic pit limits. Mining these pits as phases allows the mine production schedule to expose ore for the mill start-up with less pre-stripping. This mining sequence will improve project economics as higher value ore is produced in the early years of the production schedule, resulting in higher front end revenues. The pit phases reduce the mining cost of ore at the start of mining operations and combined with the higher revenues from higher grades, shorten the project capital payback period and improve the project cash flow.

The design of internal phases must also allow for the following design considerations to ensure efficient and practical mining operations:

- Highwall ramps allow access to the lower benches and should avoid being placed in the highest elevation highwalls, where they would cause an increase in strip ratio.
- Each phase must have a sufficient mining width on each bench for efficient and safe operations.
- The bench face angle/berm width combination, inter-ramp slope angles and highwall roads must meet the limiting overall pit slope angle for the final wall.
- The first phase or starter pit requires some practical mining constraints to ensure efficient operations which are as follows:
- The pit benches should be large enough to allow an efficient area for mining and avoid an excessive vertical bench mining rate of more than eight benches per year.
- The phase contains enough waste to construct the tailings impoundments, access routes, and any other infrastructure requiring pit run waste during pre-production development.

16.1.8 Designed Pit Wall Slopes

Pit walls were designed with the parameters shown in Table 16.4. Where the pit walls have been flattened to follow the limit of the mineralization the vertical spacing has been reduced from double benching at 30-m intervals to single benching at 15-m intervals, and the berm width has been increased as required to follow the mineralized contact.

Table 16.4
Geotechnical Wall Design

Item	Units	Value
Bench Height	m	15
Face Angle	º	68
Minimum Berm Width	m	13
Maximum Vertical Berm Spacing	m	30
Maximum Inter Ramp Angle (IRA)	º	50

16.1.9 Haul Road Design Parameters

Haul road widths were designed to the following minimum specifications:

- Dual-lane traffic: travel width not less than 3 times the width of the widest haulage vehicle used.
- Single-lane traffic: travel width of not less than 2 times the width of the widest haulage vehicle used.
- Safety berms of at least three-quarters of the height of the largest tire on any vehicle hauling on the road.
- Ditches not included within the travel width allowance.

Ramps designed in the ultimate pit walls have been designed to the minimum width to reduce the amount of pit waste stripping required. Ramps in temporary walls between pit phases, on waste dumps, and roads external to the pit have been designed with an additional 5 m of running width for added safety, to provide working room to deal with snow accumulation and to provide room to deal with material landing on the road from blasts in an adjacent phase. The parameters used for road and ramp design are shown in Table 16.5.

Table 16.5
Road and Ramp Design

Item	Units	Value
Total Width Allowance on Temporary Roads and Ramps	m	44
Minimum Width Allowance for Two Way Pit Ramps	m	39
Minimum Width Allowance for One Way Pit Ramps	m	27.5
Minimum Inside Radius on Corners	m	15
In-pit Ramp Grade	%	10
Maximum Ramp Grade for Last Two Benches in Ultimate Pits	%	12
Maximum Ex-pit Ramp Grade	%	8

16.1.10 Minimum Mining Width

A minimum mining width between pit phases is used to maintain a productive mining platform for later development, based on equipment size and operating characteristics. For the Hope Advance project the minimum mining width generally conforms to 150 m, although, due to the configuration of merging phases, it is sometimes less.

16.1.11 Access Considerations

In this study, two-way haul roads and ramps are used throughout the project. One-way roads are only employed to access the last two benches (30 m) of each ultimate pit.

Access ramps have been designed primarily into the northwest side of the pits where the pit wall has been flattened to follow the mineralization. This minimizes the amount of waste mining required to build the ramp.

16.1.12 Pit Development

Below the pit rim, bench mining will progress using sinking cuts from the ramp location within the initial pit phase. Each bench in each phase will be mined from the top bench downwards. Benches within the intermediate phase will not be mined until that bench is mined in the previous phase.

The detailed design for the pit phases needs to consider access to the next phase, and final retreat from the pit bottoms. The general design objectives for the ramp system to the phases are as follows:

- Target low strip and high grade areas first.
- Provide areas for backfilling by subsequent phases.
- Provide access to all benches in each phase.

- Minimize switch backs and traffic restriction areas, to allow for optimal haul truck cycle times.

- Minimize ramp widths at the smaller bottom benches where traffic volume will be low and single lane ramps will be sufficient.

16.1.13 Pit Design Results

The detailed pit designs are developed from the LG pit shells and design considerations reviewed above. The resultant cumulative pit phase designs are illustrated in the figures below. Topographic contours are shown every 5 m.

16.1.13.1 Castle Mountain

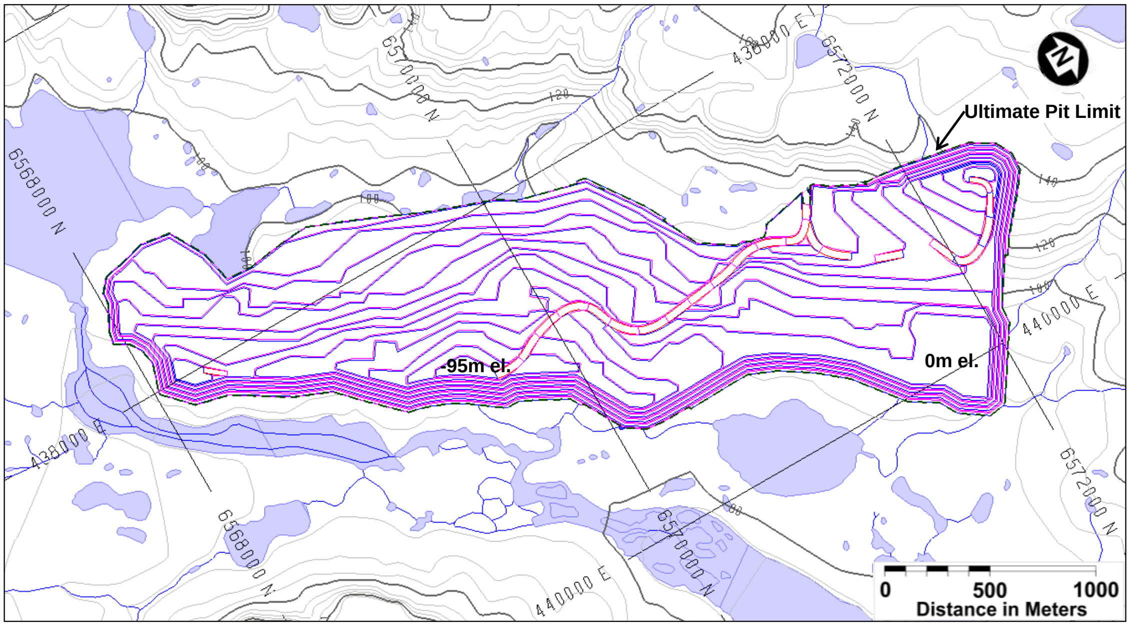
The Castle Mountain pit is constrained by a 100-m offset from Red Dog Lake, Red Dog River and Ford Lake. The pit has been divided in to four phases to access higher grade and lower stripping material first while providing areas for subsequent phases to backfill the pit with waste rock. Mineralized material mined by phase is summarized in Table 16.6 and the ultimate pit is shown in Figure 16.10.

Table 16.6
Castle Mountain Mineralized Material by Phase

	Units	Phase 1	Phase 2	Phase 3	Phase 4	Total
Measured [1]	t 000	110,630	112,630	85,400	44,610	353,270
Fe Grade	%	32.3	32.5	31.6	29.5	31.9
Weight Recovery	%	37.6	37.9	36.7	33.8	37.0
Concentrate	t 000	41,640	42,697	31,307	15,087	130,731
Indicated[1]	t 000	30,153	28,389	58,222	78,336	195,100
Fe Grade	%	32.3	32.9	32.4	29.5	31.3
Weight Recovery	%	37.6	38.5	37.7	33.9	36.3
Concentrate	t 000	11,349	10,918	21,961	26,556	70,784
Measured & Indicated[1]	t 000	140,783	141,019	143,622	122,946	548,370
Fe Grade	%	32.3	32.6	31.9	29.5	31.7
Weight Recovery	%	37.6	38.0	37.1	33.9	36.7
Concentrate	t 000	52,989	53,615	53,268	41,643	201,515
Inferred Material[1]	t 000	1,053	574	1,748	5,324	8,699
Fe Grade	%	32.4	32.9	34.3	31.0	32.0
Weight Recovery	%	37.7	38.4	40.3	35.9	37.1
Concentrate	t 000	397	220	704	1,909	3,231
Waste	t 000	41,603	92,490	195,798	212,496	542,387
Strip Ratio		0.3	0.7	1.4	1.8	1.0

[1]Material above Fe grade of 25%.

Figure 16.10
Castle Mountain Ultimate Pit (Phase Four)



16.1.13.2 Iron Valley

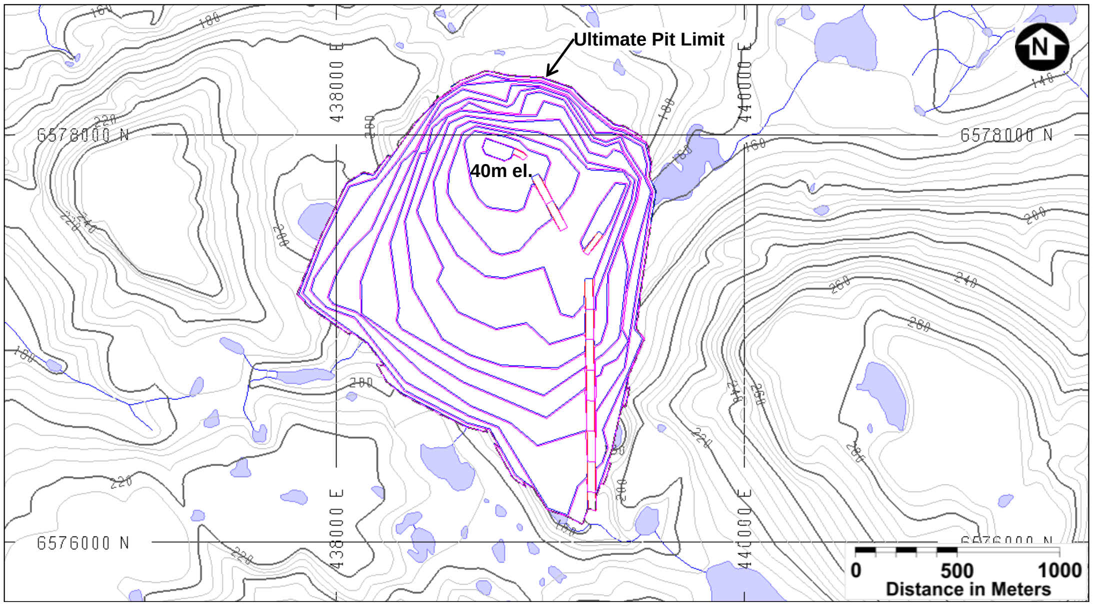
Iron Valley is divided in to two phases to delay waste stripping and to provide opportunities to backfill a portion of the pit with waste rock. Mineralized material mined by phase is summarized in Table 16.7 and the ultimate pit is shown in Figure 16.11.

Table 16.7
Iron Valley Mineralized Material by Phase

	Units	Phase 1	Phase 2	Total
Measured[1]	t 000	50,015	20,851	70,866
Fe Grade	%	33.5	33.2	33.4
Weight Recovery	%	39.2	38.8	39.1
Concentrate	t 000	19,630	8,084	27,714
Indicated[1]	t 000	72,087	61,508	133,595
Fe Grade	%	33.3	32.7	33.1
Weight Recovery	%	39.0	38.2	38.6
Concentrate	t 000	28,099	23,489	51,588
Measured & Indicated[1]	t 000	122,102	82,359	204,461
Fe Grade	%	33.4	32.9	33.2
Weight Recovery	%	39.1	38.3	38.8
Concentrate	t 000	47,729	31,573	79,302
Inferred Material[1]	t 000	15,719	21,085	36,804
Fe Grade	%	34.1	33.0	33.5
Weight Recovery	%	40.1	38.5	39.2
Concentrate	t 000	6,297	8,118	14,415
Waste	t 000	52,659	167,286	219,945
Strip Ratio		0.6	2.3	1.3

[1]Material above Fe grade of 25%.

Figure 16.11
Iron Valley Phase Two (Ultimate Pit)



16.1.13.3 Bay Zone C

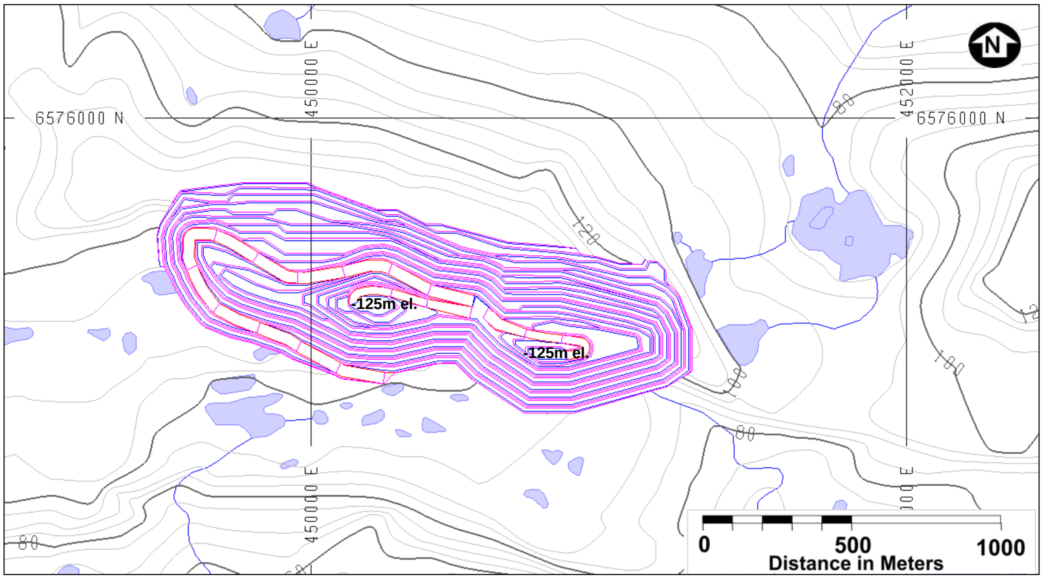
Bay Zone C is a relatively small pit measuring 1,800 m long and 500 m wide and is mined as a single phase. Mineralized material is summarized in Table 16.8 and the ultimate pit is shown in Figure 16.12.

Table 16.8
Bay Zone C Mineralization

	Units	Ultimate Pit
Measured[1]	t 000	27,474
Fe Grade	%	31.2
Weight Recovery	%	36.2
Concentrate	t 000	9,957
Indicated[1]	t 000	55,337
Fe Grade	%	30.8
Weight Recovery	%	35.7
Concentrate	t 000	19,766
Measured & Indicated[1]	t 000	82,811
Fe Grade	%	30.9
Weight Recovery	%	35.9
Concentrate	t 000	29,723
Inferred Material[1]	t 000	8,300
Fe Grade	%	30.6
Weight Recovery	%	35.5
Concentrate	t 000	2,946
Waste	t 000	187,138
Strip Ratio		2.4

[1]Material above Fe grade of 25%.

Figure 16.12
Bay Zone C Ultimate Pit



16.1.13.4 Bay Zone D

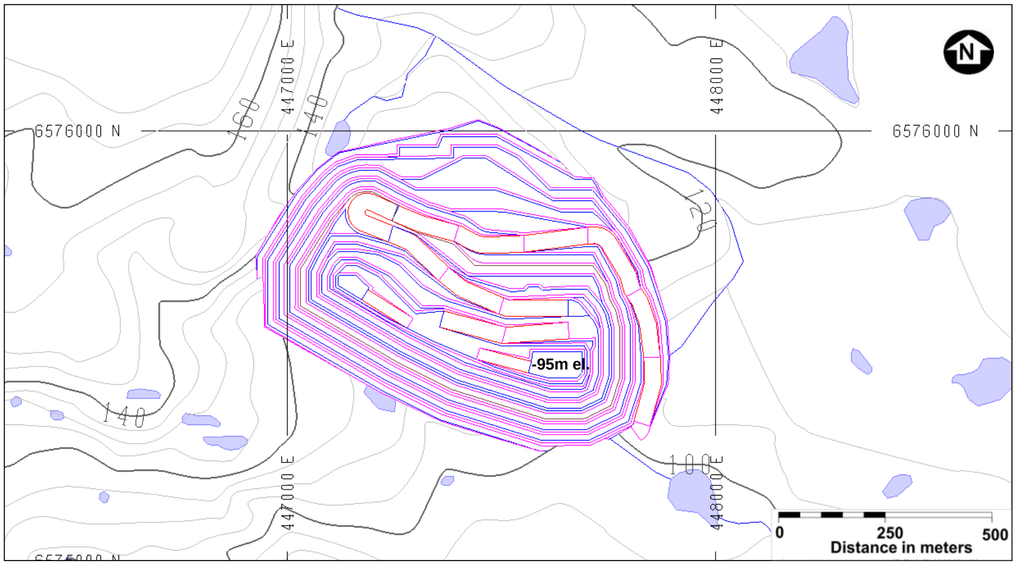
The Bay Zone D ultimate pit is approximately 800 m long and 500 m wide and is mined as a single phase. Mineralized material is summarized in Table 16.9 and the ultimate pit is shown in Figure 16.13.

Table 16.9
Bay Zone D Mineralization

	Units	Ultimate Pit
Measured	t 000	37,324
Fe Grade	%	31.5
Weight Recovery	%	36.6
Concentrate	t 000	13,679
Indicated	t 000	16,250
Fe Grade	%	31.6
Weight Recovery	%	36.8
Concentrate	t 000	5,974
Measured & Indicated	t 000	53,574
Fe Grade	%	31.5
Weight Recovery	%	36.7
Concentrate	t 000	19,653
Inferred Material	t 000	3,172
Fe Grade	%	31.6
Weight Recovery	%	36.9
Concentrate	t 000	1,170
Waste	t 000	95,435
Strip Ratio		1.8

[1]Material above Fe grade of 25%.

Figure 16.13
Bay Zone D Ultimate Pit



16.1.13.5 Bay Zone E

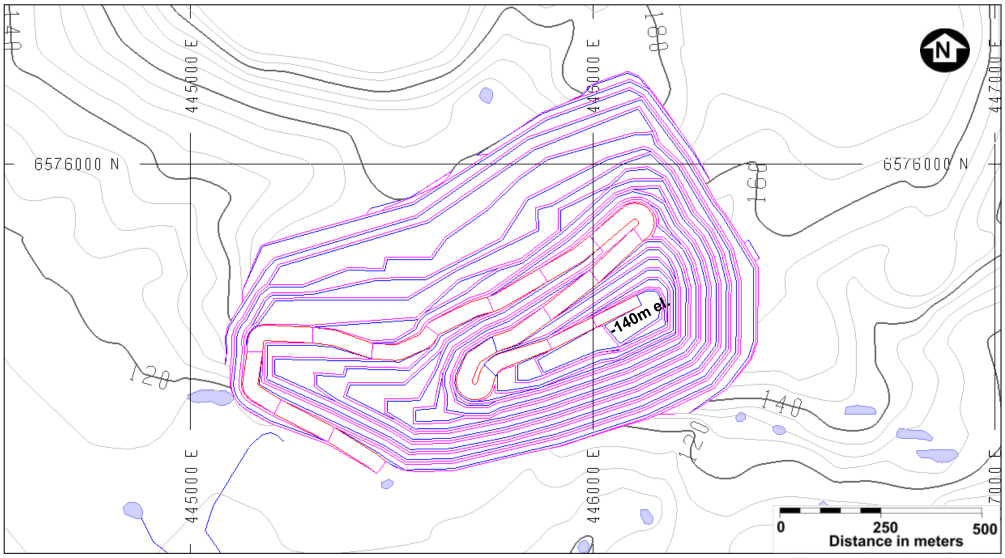
The Bay Zone E Ultimate Pit is approximately 1,200 m long and 600 m wide and is mined as a single phase. Mineralized material is summarized in Table 16.10 and the ultimate pit is shown in Figure 16.14.

Table 16.10
Bay Zone E Mineralization

	Units	Ultimate Pit
Measured[1]	t 000	86,113
Fe Grade	%	32.5
Weight Recovery	%	38.0
Concentrate	t 000	32,697
Indicated[1]	t 000	22,052
Fe Grade	%	32.8
Weight Recovery	%	38.3
Concentrate	t 000	8,457
Measured & Indicated[1]	t 000	108,165
Fe Grade	%	32.6
Weight Recovery	%	38.0
Concentrate	t 000	41,153
Inferred Material[1]	t 000	3,292
Fe Grade	%	32.0
Weight Recovery	%	37.3
Concentrate	t 000	1,227
Waste	t 000	157,727
Strip Ratio		1.5

[1]Material above Fe grade of 25%.

Figure 16.14
Bay Zone E Ultimate Pit



16.1.13.6 Bay Zone F

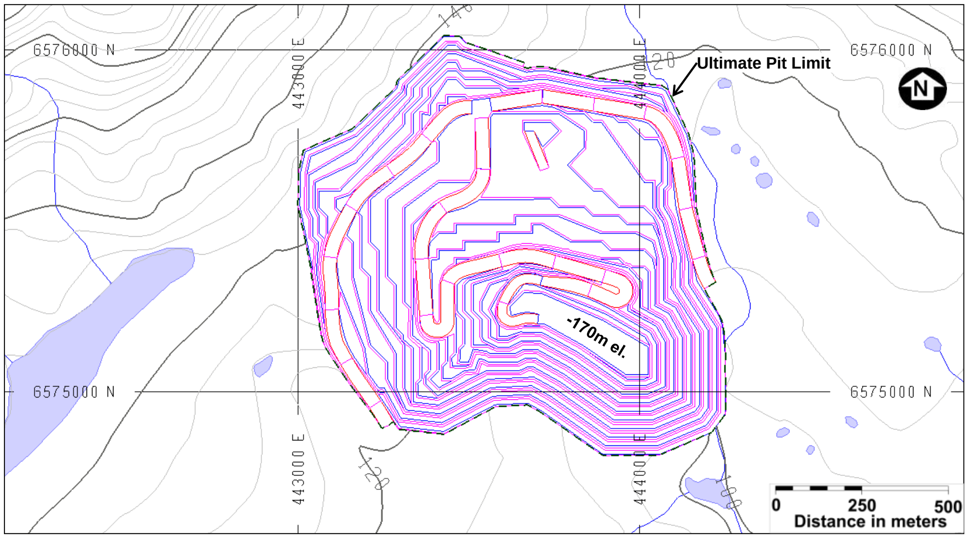
Bay Zone F is mined in two phases beginning with the lower stripping zone where the mineralization outcrops. Mineralized material mined by phase is summarized in Table 16.11 and the ultimate pit is shown in Figure 16.15.

Table 16.11
Bay Zone F Mineralization by Phase

	Units	Phase 1	Phase 2	Total
Measured [1]	t 000	76,377	37,868	114,245
Fe Grade	%	34.0	30.3	32.8
Weight Recovery	%	39.9	35.1	38.3
Concentrate	t 000	30,458	13,288	43,746
Indicated[1]	t 000	63,257	62,248	125,505
Fe Grade	%	33.0	32.0	32.5
Weight Recovery	%	38.6	37.3	37.9
Concentrate	t 000	24,410	23,193	47,604
Measured & Indicated[1]	t 000	139,634	100,116	239,750
Fe Grade	%	33.5	31.3	32.6
Weight Recovery	%	39.3	36.4	38.1
Concentrate	t 000	54,869	36,481	91,350
Inferred Material[1]	t 000	472	3,805	4,277
Fe Grade	%	32.1	33.4	33.3
Weight Recovery	%	37.5	39.2	39.0
Concentrate	t 000	177	1,490	1,667
Waste	t 000	44,345	139,010	183,355
Strip Ratio		0.3	1.4	0.8

[1]Material above Fe grade of 25%.

Figure 16.15
Bay Zone F Phase Two (Ultimate Pit)



16.1.13.7 West Zone McDonald

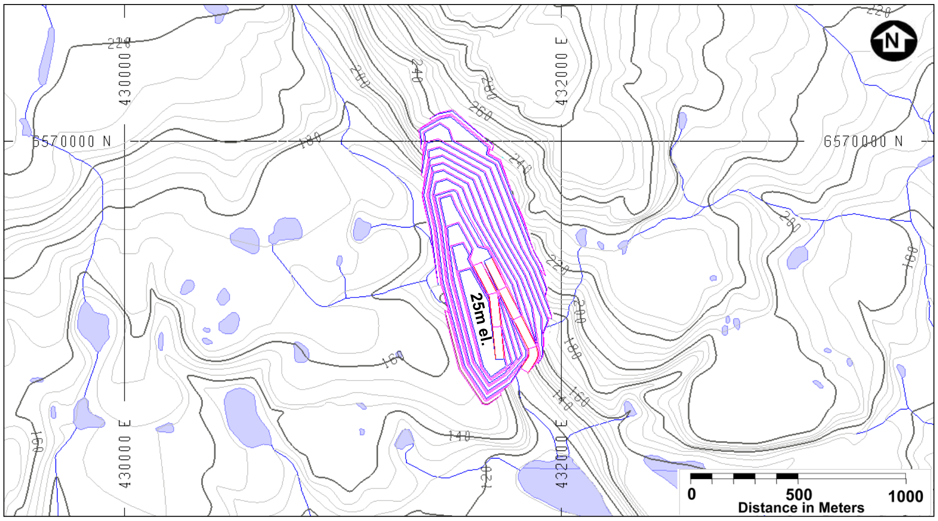
The West Zone McDonald pit is approximately 1,200 m long and 400 m wide and is mined as a single phase. Mineralized material is summarized in Table 16.12 and the ultimate pit is shown in Figure 16.16.

Table 16.12
West Zone McDonald Mineralization

	Units	Ultimate Pit
Measured[1]	t 000	18,231
Fe Grade	%	33.2
Weight Recovery	%	34.1
Concentrate	t 000	6,220
Indicated[1]	t 000	21,548
Fe Grade	%	33.0
Weight Recovery	%	34.0
Concentrate	t 000	7,316
Measured & Indicated[1]	t 000	39,779
Fe Grade	%	33.1
Weight Recovery	%	34.0
Concentrate	t 000	13,536
Inferred Material[1]	t 000	7,276
Fe Grade	%	33.2
Weight Recovery	%	34.1
Concentrate	t 000	2,483
Waste	t 000	43,399
Strip Ratio		1.3

[1]Material above Fe grade of 25%.

Figure 16.16
West Zone McDonald Ultimate Pit



16.1.14 West Zone 4

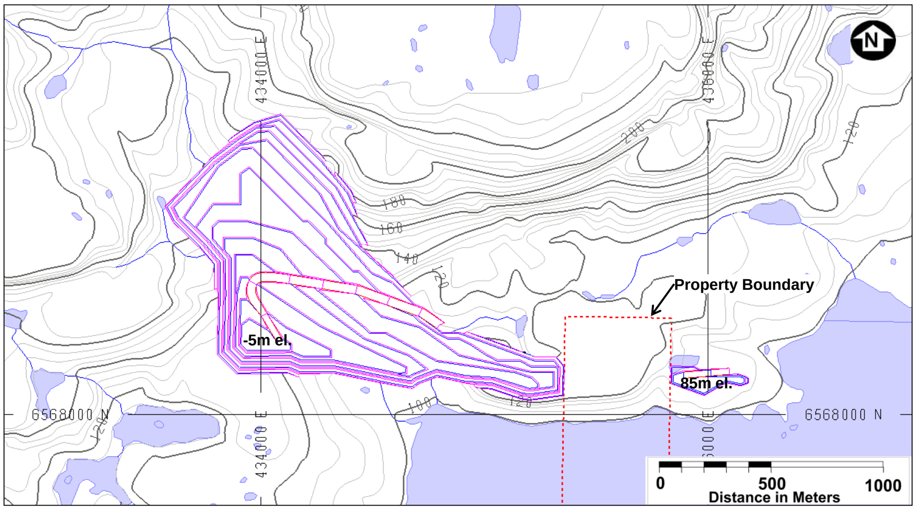
The West Zone 4 pit is constrained by a 100-m offset from Ford Lake and the claim boundary which sterilizes a portion of the mineralization. Due to these constraints the ultimate pit is split into the main portion located to the west and a small pit located to the east. The entire pit is mined as a single phase. The mineralization contained in the West Zone 4 pit is shown in Table 16.13 and the ultimate pit is shown in Figure 16.17.

Table 16.13
West Zone 4 Ultimate Pit Mineralization

	Units	Ultimate Pit
Measured[1]	t 000	55,753
Fe Grade	%	32.8
Weight Recovery	%	37.1
Concentrate	t 000	20,684
Indicated[1]	t 000	26,603
Fe Grade	%	32.5
Weight Recovery	%	36.7
Concentrate	t 000	9,758
Measured & Indicated[1]	t 000	82,356
Fe Grade	%	32.7
Weight Recovery	%	37.0
Concentrate	t 000	30,442
Inferred Material[1]	t 000	897
Fe Grade	%	32.9
Weight Recovery	%	37.2
Concentrate	t 000	334
Waste	t 000	85,597
Strip Ratio		1.1

[1]Material above Fe grade of 25%.

Figure 16.17
West Zone 4 Ultimate Pit



16.1.14.1 Pit Mineralization

As shown in Table 16.14, reconciliations of the pit optimizations to Prefeasibility level pit designs result in a 2% global reduction in Measured and Indicated material and a 1% increase in waste, which is within industry standards.

Table 16.14
Designed Pits versus Optimized Shells

	Units	Optimized Shells	Designed Pits	Difference
Measured[1]	t 000	774,627	763,276	-1%
Fe Grade	%	32.2	32.3	0%
Weight Recovery	%	37.4	37.4	0%
Concentrate	t 000	289,852	285,428	-1%
Indicated[1]	t 000	612,628	595,990	-3%
Fe Grade	%	32.0	32.1	0%
Weight Recovery	%	37.0	37.1	0%
Concentrate	t 000	226,847	221,246	-2%
Measured & Indicated[1]	t 000	1,387,255	1,359,266	-2%
Fe Grade	%	32.1	32.2	0%
Weight Recovery	%	37.2	37.3	0%
Concentrate	t 000	516,699	506,675	-2%
Inferred Material[1]	t 000	57,021	72,717	28%
Fe Grade	%	33.4	32.8	-2%
Weight Recovery	%	38.8	37.8	-2%
Concentrate	t 000	22,122	27,472	25%
Waste	t 000	1,496,938	1,514,983	1%
Strip Ratio		1.1	1.2	4%

[1]Material above Fe grade of 25%.

16.2 OPEN PIT PRODUCTION SCHEDULE

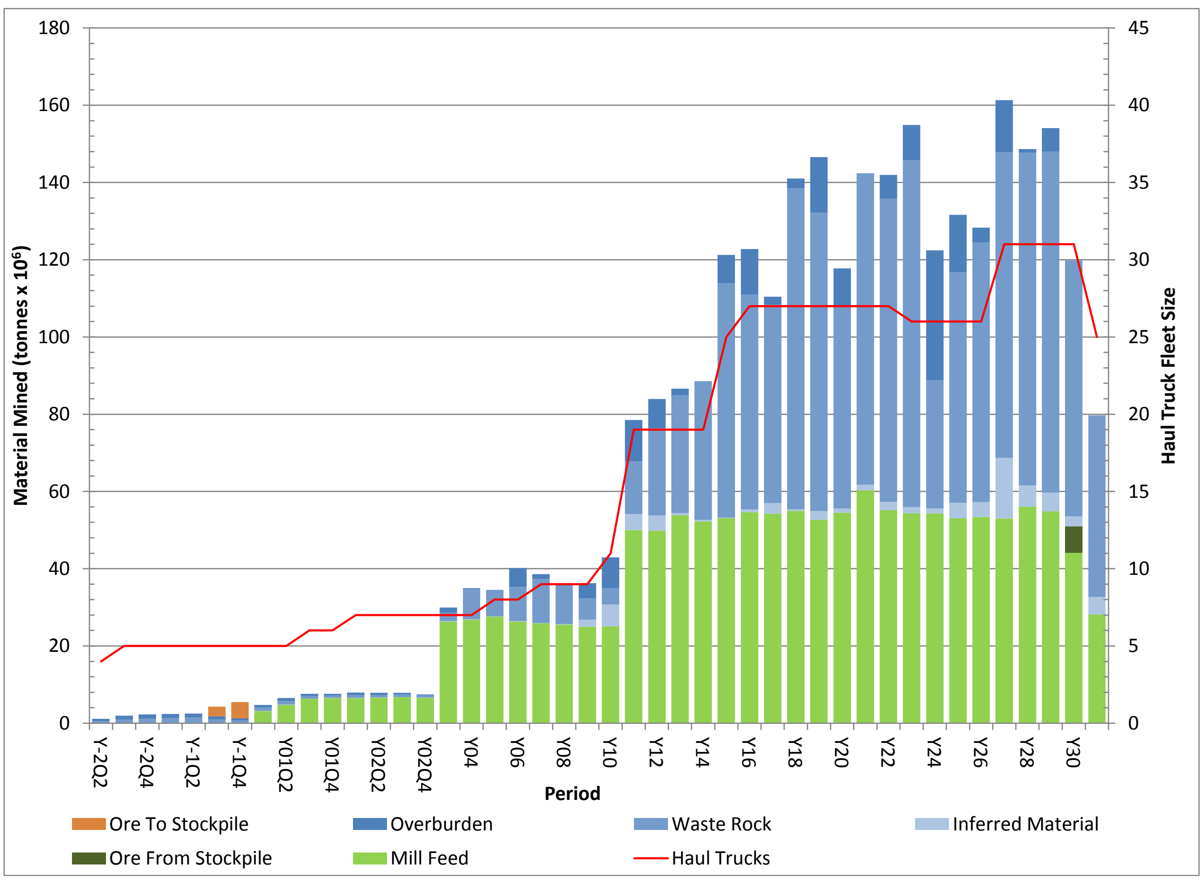
The open pit production schedule shown in Figure 16.18 includes a pre-production development phase which includes Y-2 and Y-1, followed by the pit operating phase. The operation is scheduled to produce 507 Mt of concentrate from 1,359 Mt of ore over a 31-y operating life. The mining operation will supply the processing plant with direct ore haulage from the pits to the primary crusher.

16.2.1 Production Schedule Criteria

The main criteria used to guide the creation of the mine schedule include:

- Providing sufficient ore to feed the mill.
- Supplying waste material to construct the tailings dams.
- Minimizing the size of the mining fleet in the early portion of the plan.
- Maximizing the use of pit back fill dumps.

Figure 16.18
Mine Production Schedule



The operation will use three main stockpile locations:

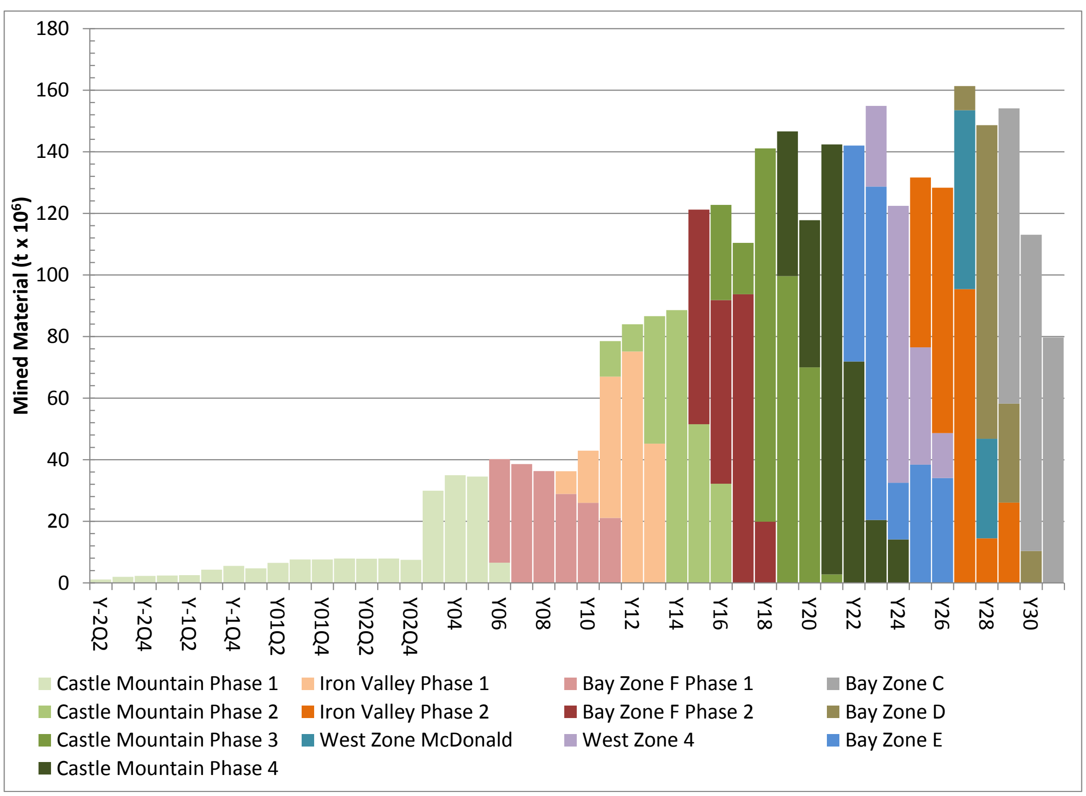
- 0.14 Mt of crushed ore between the primary crusher and the mill. This stockpile is doubled when the mill is expanded in Year 11.
- 1 Mt of ore in short-term stockpiles next to the crusher.
- 6 Mt of ore near the concentrator during preproduction mining as an emergency reserve to ensure consistent feed to the crusher in the event of both scheduled and unscheduled operational delays and downtime.

These stockpiles provide capacity for a total of 7 Mt of ore, which is comparable to three-months of mill feed at the 10 Mt/y production rate.

16.2.2 Phased Pit Development

The mine production schedule is based on the phased development and mining of the eight ultimate pits which have been subdivided into 13 phases to achieve the production plan criteria. The mining sequences of the respective phases are shown in Figure 16.19. The overall waste tonnes to ore tonnes stripping ratio is 1.2:1.

Figure 16.19
Total Material Mined by Phase



16.2.3 Pit Preproduction Development

The mine preproduction development is carried out in Castle Mountain Phase One concurrently with the construction of the ore processing plant and the site infrastructure. The mineralization outcrops so the primary objective of the preproduction mining is to commission the mining fleet and to supply construction material to the tailings dam.

16.2.4 Mining Rates

The open pit is scheduled to produce at an average rate of 40,000 t/d (combined ore and waste rock) in Year 1. The average pit production rate fluctuates over the remaining years of the mine life depending on scheduled pit pushbacks, tailings dam construction, and haul truck requirements. The average pit production rate (combined ore and waste tonnage) is projected to peak in Year 27 at 442,000 t/d.

16.2.5 Open Pit Mining – Drilling and Blasting

Production drilling will utilize up to 11 Cat model 6750 electric rotary drills with 406 mm (16 in) diameter bits.

Grade control will be overseen by the mine geologist. Cuttings from ore zone blastholes will be sampled for grade control purposes.

The blastholes will be loaded with a 70:30 blend of emulsion explosive and ANFO delivered to the holes by the explosives supplier. The explosive supplier will construct an emulsion plant on the mine property and deliver the emulsion, non-electric detonators, boosters and other blasting accessories to the pit blasting crew. The design powder factor is 0.29 kg/t in ore and 0.28 kg/t in waste.

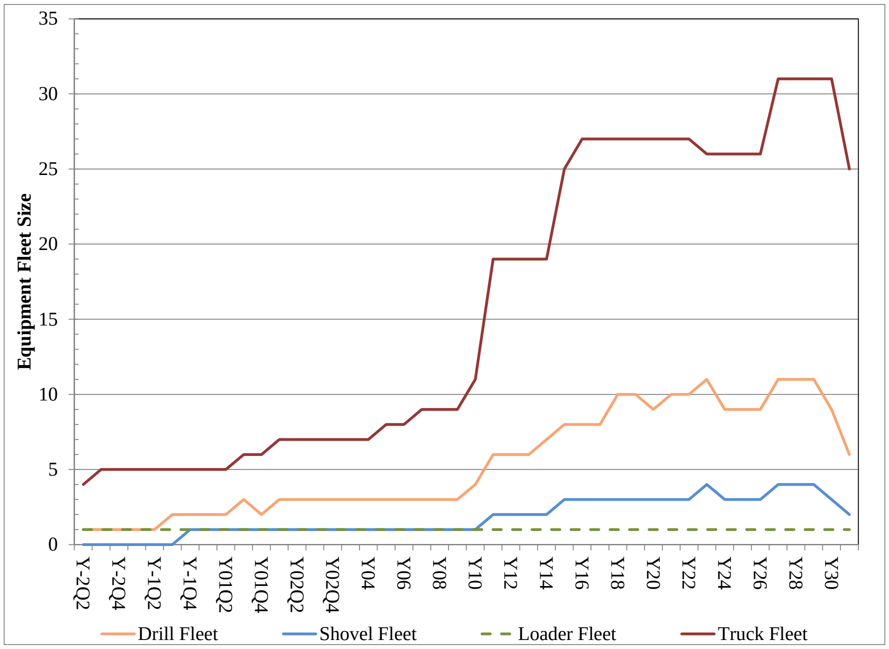
16.2.6 Open Pit Mining – Loading and Haulage

Mining will utilize conventional open pit equipment and practices and operations will commence with the following key loading and haulage equipment: one electric hydraulic shovel, one large wheel loader, five haul trucks, and ancillary equipment.

Cat 6090 electric-hydraulic shovels, a Letourneau L1850 High Lift wheel loader, and Cat 797F diesel-powered mechanical drive haulage trucks were selected as representative equipment for the purposes of this Prefeasibility Study and are well suited to the project.

The drill, shovel, loader, and truck fleet sizes by year are shown in Figure 16.20. The primary equipment will be supported by ancillary mobile equipment will be procured over time starting in the preproduction phase.

Figure 16.20
Primary Equipment Fleet Size



The mechanical availability of the drills, shovels, loader, and trucks varies with the age of the equipment between 89% and 92% early in the life, to 78-80% later during equipment life. The mechanical availability of the support equipment averages 85% for the life of the equipment. Operator training has also been factored into equipment availability.

16.2.7 Pit Maintenance Facilities

The mine maintenance shop will include a main shop building and adjoining heated warehouse, offices, first aid station, lunch room, supervisors offices, mine superintendent office, and technical services office.

The shop will be utilized to service and repair the pit mobile equipment and bays were sized to accommodate a Cat 797 haul truck and the Letourneau L1850 loader. The shop will be equipped with an overhead crane to facilitate maintenance and materials handling. The shop will have one wash bay, three heavy equipment servicing bays, and three small vehicle repair bays. Truck tires will be stored next to the shop and in an enclosed cold storage area.

The shop will be well-equipped with a central lubricant and coolant distribution system, welding equipment, tire manipulating equipment, office furniture and computers, a computerized preventative maintenance system, tools and diagnostic equipment, safety equipment, a used oil and used coolant collection system, and waste bins. The pit trucks will re-fuel at the diesel fuel storage and dispensing facility, and a fuel truck will be used for fueling the loading units and other equipment in the field.

16.2.8 Mine Consumables

16.2.8.1 Diesel Fuel

Diesel fuel and lesser amounts of lubricants and gasoline will be shipped to the port and trucked to the mine site.

The pit will commence operations with approximately 1.6 ML of above-ground diesel fuel storage on-site; this capacity will be doubled when the plant expands to 20 Mt/y. The quantity is required to provide the pit with sufficient fuel in the event of interruption of delivery and is adequate to allow the pit to operate for at least 40 days depending on the fuel demand at the time.

In Year 10, the on-site diesel fuel storage facility will be expanded by adding an additional 1.6 ML of capacity in above-ground tanks, sufficient to run the mine for 22 days during the highest consumption period.

16.2.8.2 Electricity

The primary shovels and drills will be electrified. From the start of production to Year 10 electricity is generated at the port after which time the mine will be connected to the Quebec power grid.

16.2.8.3 Lubricants and Coolant

Engine coolant and most lubricants will be supplied in bulk containers for use in the shop coolant and lubricant distribution system. The mine will also purchase lubricants in smaller containers primarily for use in the field.

16.2.8.4 Spare Parts and Tires

The heated warehouse in the mine shop will be used to store frequently-used small parts as well as other parts and consumables that need to be stored in controlled conditions. Large parts will be stored in secure, cold storage areas.

Tires will be stored in secure, enclosed cold storage area adjacent to the mine shop.

16.2.9 Mine Waste Rock Deposition Plan

Geochemical investigations were completed to assess the acid generation potential and metal leaching characteristics of material that is anticipated to be representative of waste rock and tailings associated with the Hopes Advance mineralization. Criteria used to determine the ARD potential of the waste rock and tailing material are derived from the provincial guidance document on mine waste characterization (Directive 019, MDDEP, 2012). The Upper Schist rock type from all deposits tested is classified as potentially acid generating and, for very few samples, is leachable for copper and zinc and. Thus, this rock type requires Level A aquifer protection measures. Tailings and all other waste rock types analyzed (Metallic and Carbonate Iron Formations, Lower Schist, Granite Gneiss Complex, and Quartzite) are classified as low risk waste according to Directive 019. These rock types are non-acid generating and all but 1 sample meet the double criteria of Directive 019[1] to designate material as low risk. These rock types do, however, release some metals for some samples at concentrations that exceed groundwater criteria under neutral pH leaching conditions. Although these rock types are low risk, contact water drainage will be collected and monitored prior to release to the receiving environment.

The mine production schedule assumes that the low risk waste materials will be used for construction or be placed in the nearest available storage dump. There are a total of 11 waste dump facilities used in the mine plan as shown in Figure 16.1, above.

Twelve percent of the waste rock is used to construct and lift the tailings dam, 31% is placed in the five external dumps, and 57% is placed in the six pit backfill dumps.

16.2.10 Pit Operations and Maintenance Personnel

The pit will be operated on the basis of two 12 h shifts per day on 14 days on, 14 days off crew rotations.

A total of 18 people will work in mine geology, survey, and engineering and are included in the mine general department. The number of people working in mine operations and mine maintenance will vary by year, depending on the amount of equipment being operated and maintained. Mine maintenance is based on Oceanic performing all of its own maintenance at site with major components being returned to the vendors for rebuilding. It is assumed that workers will be hired from the local region and will be flown in and out for their work rotations.

[1] chemical composition meeting soil criteria A and TCLP leachate meeting effluent and groundwater criteria

17.0 RECOVERY METHODS

The process design for the Hopes Advance project was undertaken by Met-Chem.

Processing of the Hopes Advance iron mineralization is based on production of an iron concentrate in a facility located northwest of Red Dog Lake approximately 26 km inland, transportation of the concentrate by slurry pipeline to the port near Ungava Bay, and filtration and drying of the concentrate for shipping in a plant at the port facility.

The developed flowsheet is robust and will produce a clean iron concentrate. The mill feed is ground to less than 300 µ and then fed to the gravity concentration circuit. The gravity concentration circuit spiral separators will have a weight recovery of 31.6% or 84% of total concentrate produced. The gravity concentration circuit tails is then fed to the Cobber Magnetic Separator circuit. The product from the Cobber circuit (which represents only 13.0% of mill feed) is ground to less than 38 µ. The material is then fed to the Low Intensity Magnetic Circuit (LIMS) to recover the liberated magnetite. The LIMS circuit recovers a further 6.0% by weight or 16% of total concentrate produced. Thus, the total weight recovery to the final concentrate is 37.6% of mill feed.

The first phase production rate is based on the production of 10 Mt/y of concentrate. An expansion to 20 Mt/y of concentrate will take place in Year 11.

Unless otherwise noted, weight and throughput are in dry, rather than wet, tonnes.

17.1 PROCESS PLANT - 10 MT/Y CONCENTRATE

The processing plant flowsheet and design criteria are based on the results from the metallurgical testwork, program discussed in Section 13.0 of this Technical Report.

The concentrator has been designed to produce an iron concentrate grading 66.6% iron and 4.5% silica from an average feed containing 32.3% iron and 44.3% silica. The beneficiation processes include crushing, grinding, screening, gravity and magnetic separation.

At the port facility, filtration, drying and material handling will be carried out, including storage and loading of dried iron concentrate on ocean-going vessels.

17.1.1 Process Design Criteria

Both the concentrator and concentrate dewatering/drying facilities will operate for 24 h/d, 7 d/w, and 52 w/y. Most equipment has a design factor of 20% to assure constant production even with minor changes in mill feed.

All throughput rates are based on the concentrate production of 10 Mt/y of iron concentrate. The weight recovery of 37.6% is an average figure based on the pilot plant testwork results and may vary depending on the feed composition.

Concentrator design capacity is based on an average operating rate of 72,863 t/d, or a nominal throughput rate of 3,264 t/h feed. The port facility will operate at a nominal throughput rate of 1,227 t/h iron concentrate. Shiploading will operate at a nominal rate of 10,000 tph.

A detailed process design criteria has been developed for the Prefeasibility Study. A summary of the design basis for the crusher, concentrator and the port facility is presented in Table 17.1.

Table 17.1
Process Design Basis

Parameter	Unit	Value
Total feed processing rate	t/y	26,595,127
Crusher operating time	%	66.7
Nominal feed crushing rate	t/h	4,552
Concentrator operating time	%	93.0
Nominal feed processing rate	t/h	3,264
Port facility operating time	%	93.0
Nominal concentrate production rate	t/h	1,227
Nominal shiploading rate	t/h	10,000
Total weight recovery	%	37.6
Spiral separation iron concentrate production	t/y	8,400,064
Magnetic separation iron concentrate production	t/y	1,599,936
Total iron concentrate production	t/y	10,000,000

17.1.2 Flowsheets and Process Description

Simplified flowsheets for the concentrator and port facilities are shown in Figure 17.1 and Figure 17.2 respectively. The process is described in the following sub-sections.

17.1.2.1 Crushing Circuit

Run-of-mine feed, containing 32.3% iron, 44.3% silica and 5% moisture is dumped directly into a gyratory crusher by the mine haul trucks. The crusher discharges rock with a particle size analysis of 80% less than (P_{80}) 155 mm. The crushed feed covered stockpile has a total capacity of about 150,000 wet t.

17.1.2.2 Primary Grinding and Secondary Classification Circuits

There are three parallel lines of primary grinding and secondary classification circuits. SAG mills will operate at a pulp density of 65% solids by mass in a closed circuit with vibrating screens and Stack-Sizer™ screens. The stack-sizer oversize is pumped back to the SAG mill feed chute. The grinding circuit product will have a particle size P_{80} of 140 μ that will be pumped to the gravity separation circuit.

Figure 17.1
Simplified Concentrator Flowsheet

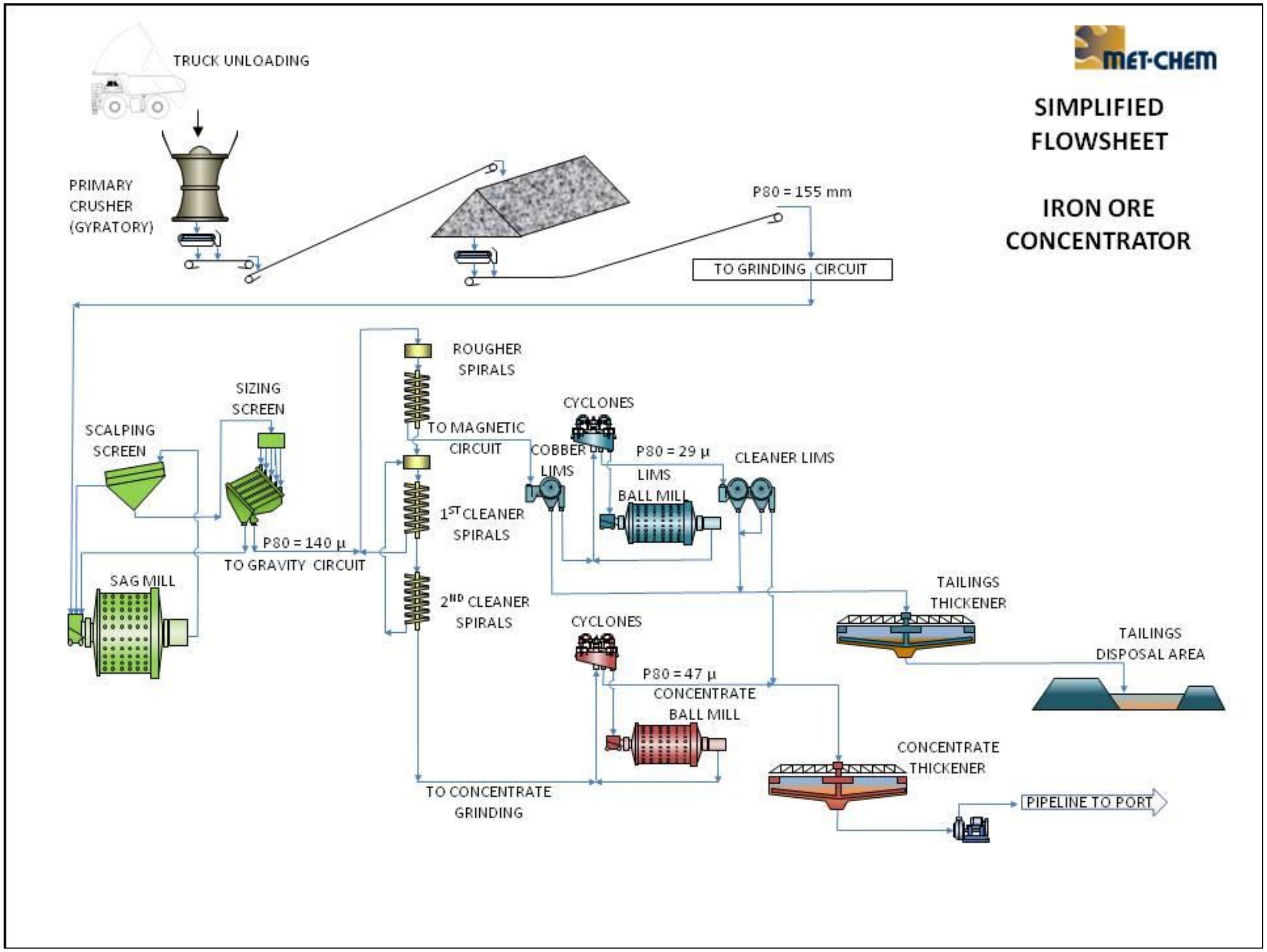
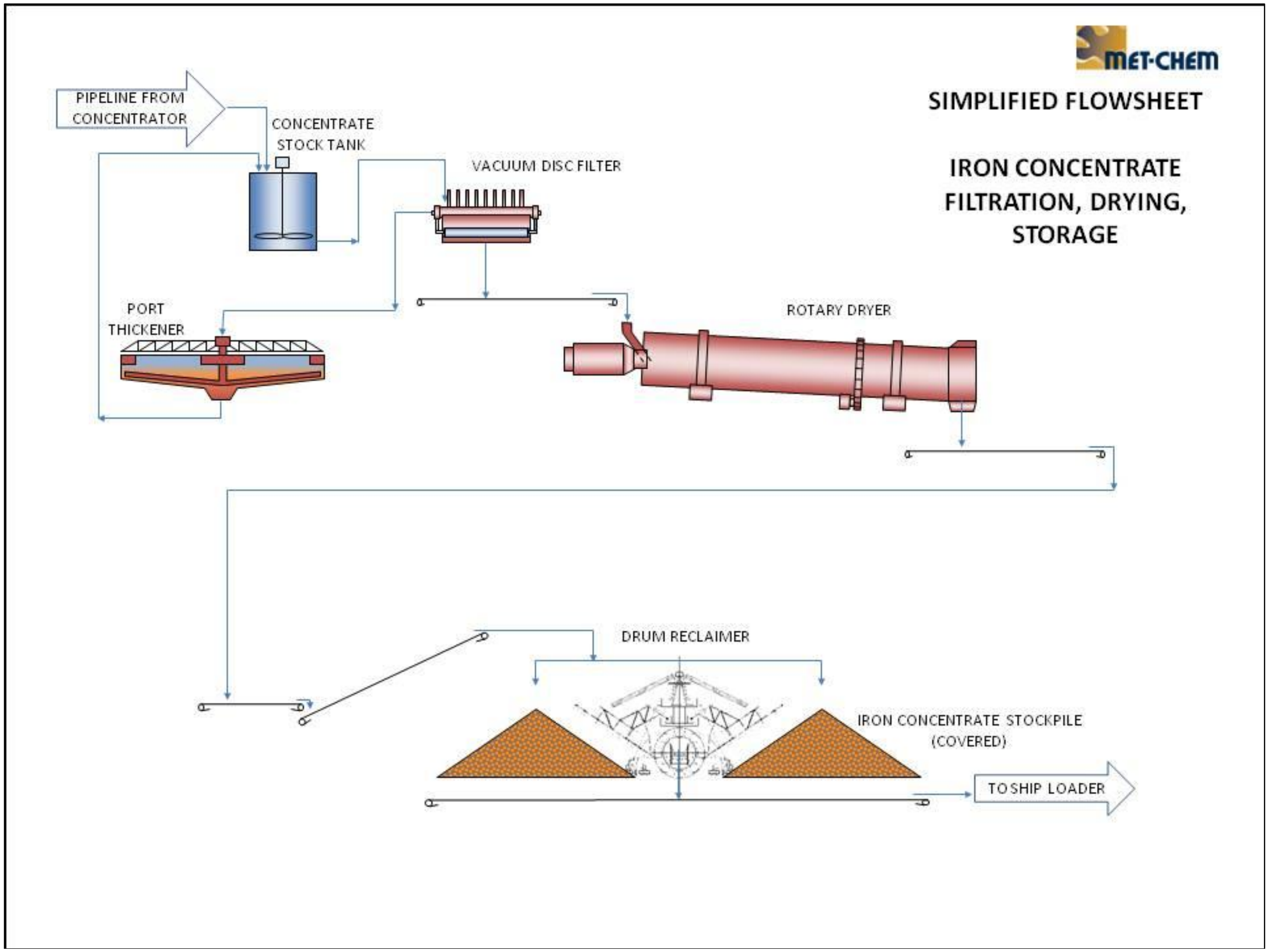


Figure 17.2
Simplified Flowsheet for Port Facilities



17.1.2.3 Gravity Separation Circuit

The gravity separation circuit comprises three stages of spiral gravity separators, rougher, first cleaner and second cleaner. Stacker-sizer undersize is pumped at 40% solids to the rougher spiral separators. The rougher tailings, containing 20% iron and 60% silica flow by gravity to the magnetic separation circuit. The rougher spiral concentrate flows by gravity to the first cleaner spiral circuit. The first cleaner concentrate flows by gravity to the second cleaner spiral circuit. The second cleaner concentrate has a target grade of 66.6% iron and less than 4.5% silica and is pumped to the concentrate preparation circuit. The first cleaner spiral tailings are pumped back to the rougher spiral feed distributors, while the second cleaner spiral tailings are pumped back to the first cleaner feed distributor.

17.1.2.4 Magnetic Separation Circuit

The magnetic separation circuit consists of cobber separation, LIMS concentrate grinding and concentrate cleaning. The cobbers pick-up magnetic minerals, such as magnetite, from the rougher tailings. In order to liberate the magnetic iron particles in close association with silica, the cobber concentrate with a particle size F_{80} of 188 µ is ground in the LIMS ball mill in closed circuit with cyclones to a P_{80} of 29 µ. The coarser cyclone underflow returns to the ball mill for more grinding. The fine cyclone overflow flows by gravity to the two-stage cleaning magnetic separators. The cleaner magnetic concentrate, containing 68.4% iron and 3.9% silica, flows by gravity to concentrate thickeners. Both the cobber and cleaner tailings go to the final tailings thickeners. The cobber tailings are pumped, while the cleaner magnetic tailings flow by gravity.

17.1.2.5 Concentrate Preparation Circuit

A preparation circuit is required for the concentrate to be transported to the port by pipeline since the second cleaner spiral concentrate, with a particle size K_{80} of 142 µ, is too coarse to be pumped economically. The concentrate is ground in ball mills in closed circuit with cyclones to a product particle size of P_{80} of 47 µ and is then combined with the cleaner magnetic concentrate in the concentrate thickener. The iron concentrate is thickened to 62.5% solids and pumped, using horizontal centrifugal pumps, through the 25.5 km long pipeline to the port.

17.1.2.6 Final Tailings Circuit

The final tailings consist of the combined magnetic tailings, thickened to 55% solids, and pumped to the tailings management facility. Eighty percent of the water in the thickened tailings slurry is returned as reclaim water. The thickener overflow is pumped to the process water tanks. The final tailings contain 15% iron and 65% silica.

17.1.2.7 Filtration and Drying at Port Facility

The port facility consists of two-stages of water removal, concentrate storage and ship loading.

The iron concentrate pipeline discharges to a buffer concentrate storage tank and an extra buffer tank has enough storage capacity for the entire pipeline content. Three parallel concentrate filtration and drying lines will be installed. The concentrate slurry at 62.5% solids is then pumped to vacuum disk filters. The filter cake contains 10% moisture. The filtrate is returned via the port thickener to the concentrator as process water. The filter cake is dried in rotary dryers to 7% moisture (2% in the winter).

The dried concentrate is moved by conveyor to the port concentrate storage facility.

17.1.2.8 Concentrate Storage and Reclamation

An overhead tripper conveyor creates an iron concentrate stockpile of 250,000 t, representing nine days of nominal operation. This will be stored in a covered facility. The concentrate is transported from the stockpile to the ship loader using a drum reclaimer and one line of conveyors operating at 10,000 t/h.

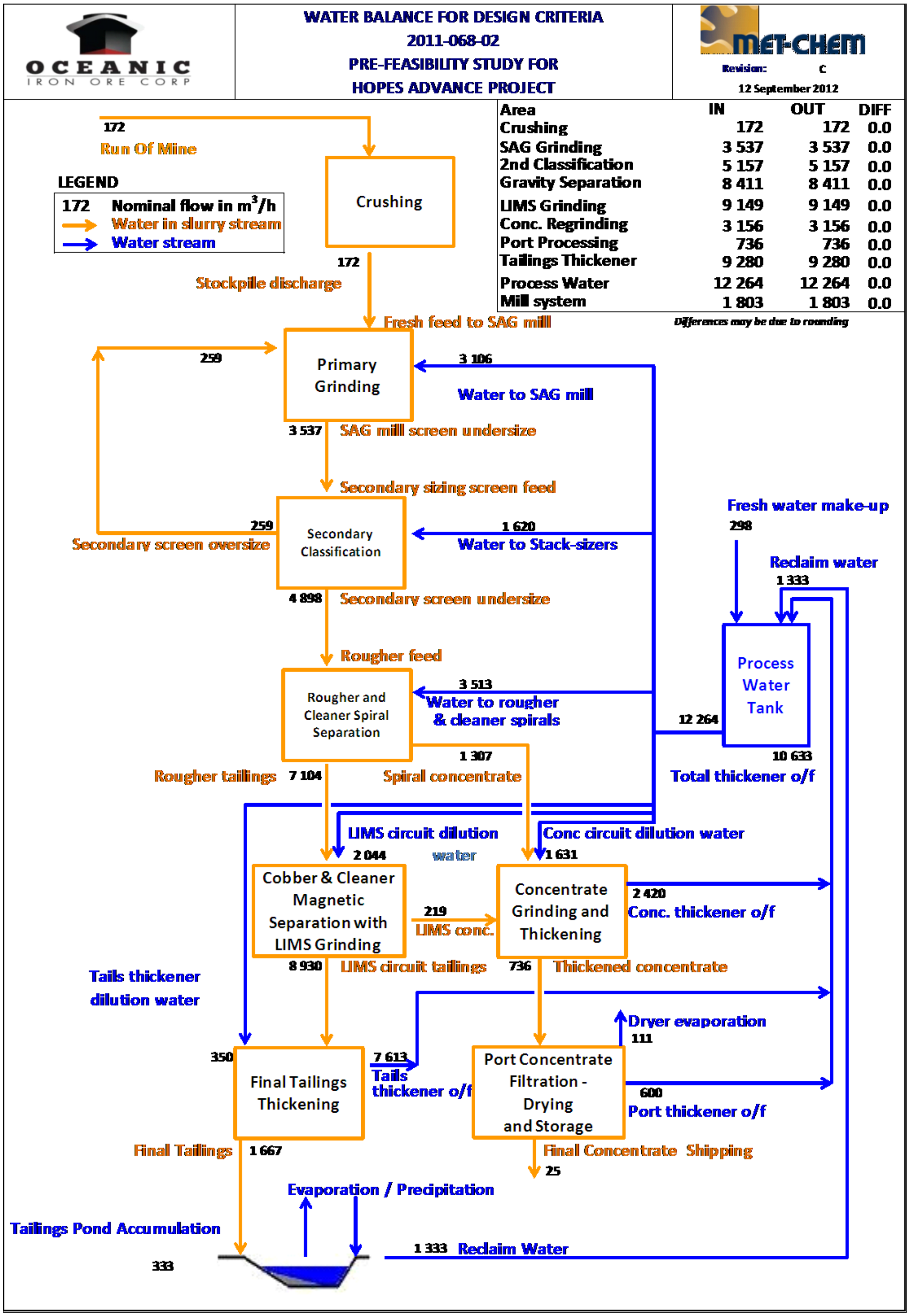
17.1.3 Mass Balance and Water Balance

The process plant mass balance has been calculated based on the developed flowsheet and the process design criteria. Table 17.2 summarizes the process mass balance and Figure 17.3 shows the simplified process water balance.

Table 17.2
Hopes Advance Project, Summary Process Mass Balance

Mass Entering System				Mass Exiting System			
Streams	**Dry Solids (t/h)**	**Water m^3/h**	**Total Mass (wet t/h)**	**Streams**	**Dry Solids (t/h)**	**Water m^3/h**	**Total Mass (wet t/h)**
Feed to Concentrator	3,264.5	171.8	3,436.3	Evaporation from Dryer	-	111.3	111.3
Fresh water from Ford Lake	-	297.9	297.9	Final Concentrate	1,227.5	25.1	1,252.6
Reclaim Water from Tailings Pond	-	1,333.3	1,333.3	Final Tailings	2,037.0	1,666.6	3,703.6
Total Entering	3,264.5	1,803.0	5,067.5	Total Exiting	3,264.5	1,803.0	5,067.5

Figure 17.3
Water Balance, 10 Mt/y



17.1.4 Equipment Sizing and Selection

The equipment selection was based on the design criteria and the design factor applied for most pieces of equipment was 20%, and 5% for slurry pumps.

17.1.5 Utilities

17.1.5.1 Concentrator Water Services

The estimated water consumption is based on the nominal concentrator plant mass and water balance.

Fresh water: Ford Lake will be the main water source of fresh water near the concentrator. The nominal fresh water requirement is 298 m^3/h.

Process water: Reclaim water is recycled back, at a nominal rate of 1,333 m^3/h, from the tailings management facility, using a vertical pump on a barge. The remainder of the process water demand (10,633 m^3/h) comes from the overflow of the concentrate and the tailings thickeners.

Gland water: The gland water system has a separate water tank.

17.1.5.2 Concentrator Compressed Air

A compressor will supply concentrator plant with 600 Nm^3/h of compressed air. An air dryer will be used for instrument air only. The crusher complex has its own compressed air system.

17.1.5.3 Port Water Services

The water consumption is based on port facility (concentrate dewatering) nominal water balance.

Process water: Port process water is recycled back to the concentrator process water tank, at a nominal rate of 600 m^3/h.

Gland water: Port gland water is filtered thickener overflow.

17.1.5.4 Port Compressed Air

Three air compressors will supply the port facility with 960 Nm^3/h of compressed air. For the feasibility stage variable speed drive air compressors will be investigated. An air dryer will be used for instrument air only.

17.1.6 Power Requirements

The peak power requirement for the initial 10 Mt/y capacity plant is estimated at 127 MW. This includes 87 MW for the concentrator process areas, 17 MW for the port process areas, 4 MW for the mining operation, 2 MW for the port ship loading system, 13 MW for both areas infrastructure and 4 MW estimated as losses through main sub-station equipment and power lines.

17.1.7 Layouts

General arrangement drawings for the concentrator and concentrate dewatering and drying facilities at the port are shown in Figure 17.4 and Figure 17.5 respectively.

17.2 EXPANSION TO 20 MT/Y CONCENTRATE

For the 20 Mt/y of concentrate expansion it has been assumed that the weight recovery will not change with time. The expansion to 20 Mt/y will include a second separate crusher line and a second concentrator, which will be a separate plant complete with three grinding, secondary classification and gravity separation lines, a LIMS circuit, gravity concentrate preparation and tailings dewatering system and pipeline.

The concentrate pipeline will be replaced with a larger diameter line, as described in Section 18.3. The port facility will be duplicated.

17.2.1 Design Criteria for 20 Mt/y Concentrate

Operating criteria for the expansion will remain the same as for the 10 Mt/y phase. The basis for the design is summarized in Table 17.3.

Table 17.3
Design Basis for the 20 Mt/y Expansion

Parameter	Unit	Value
Total feed processing rate	t/y	53,190,255
Crusher operating time	%	66.7
Nominal feed crushing rate	t/h	9,103
Concentrator operating time	%	93.0
Nominal feed processing rate	t/h	6 ,529
Port facility operating time	%	93.0
Nominal concentrate production rate	t/h	2,455
Nominal shiploading rate	t/h	10,000
Total weight recovery	%	37.6
Spiral separation iron concentrate production	t/y	16,800,128
Magnetic separation iron concentrate production	t/y	3,199,872
Total iron concentrate production	t/y	20,000,000

Figure 17.4
Concentrator General Arrangement, Plan View

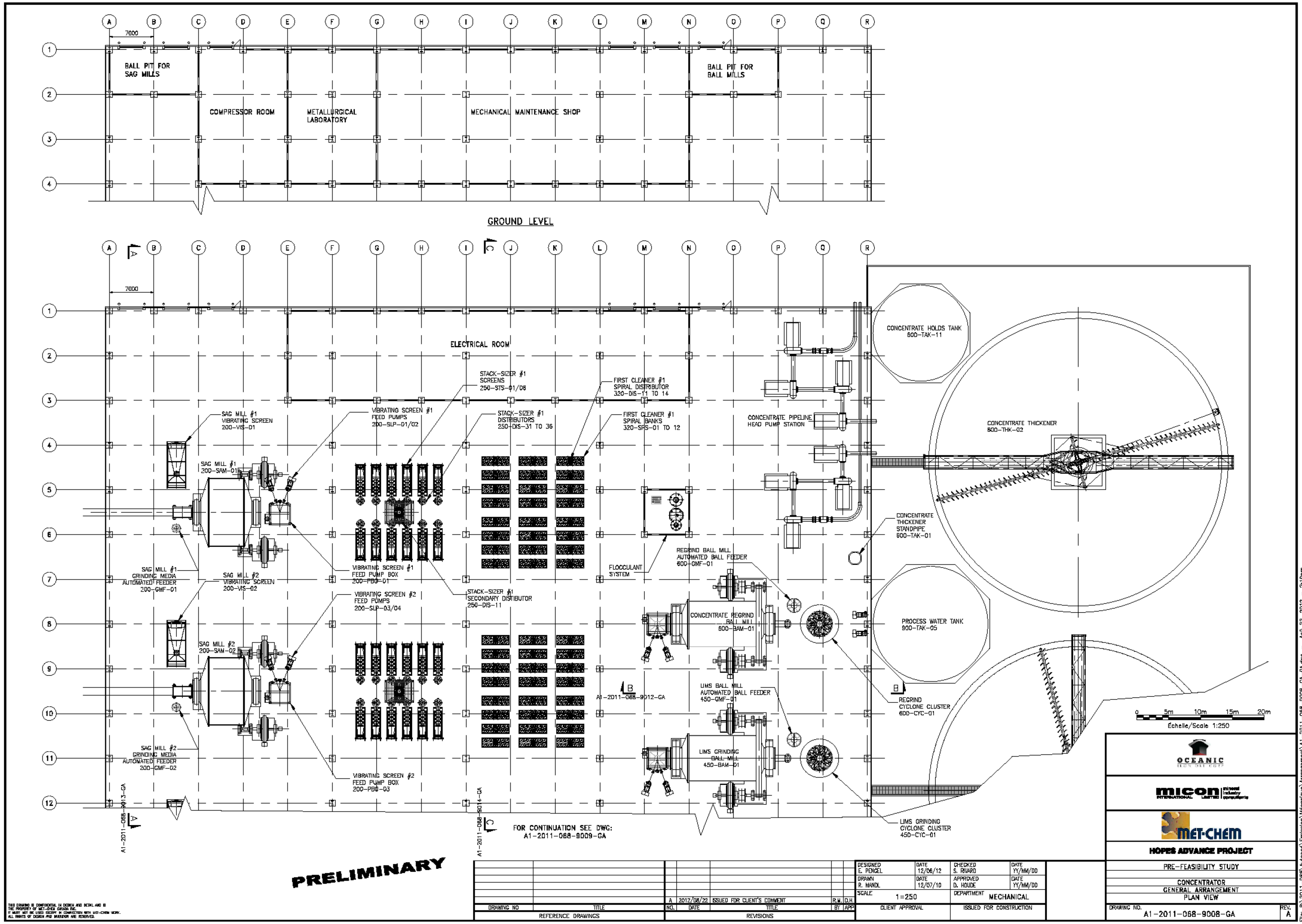
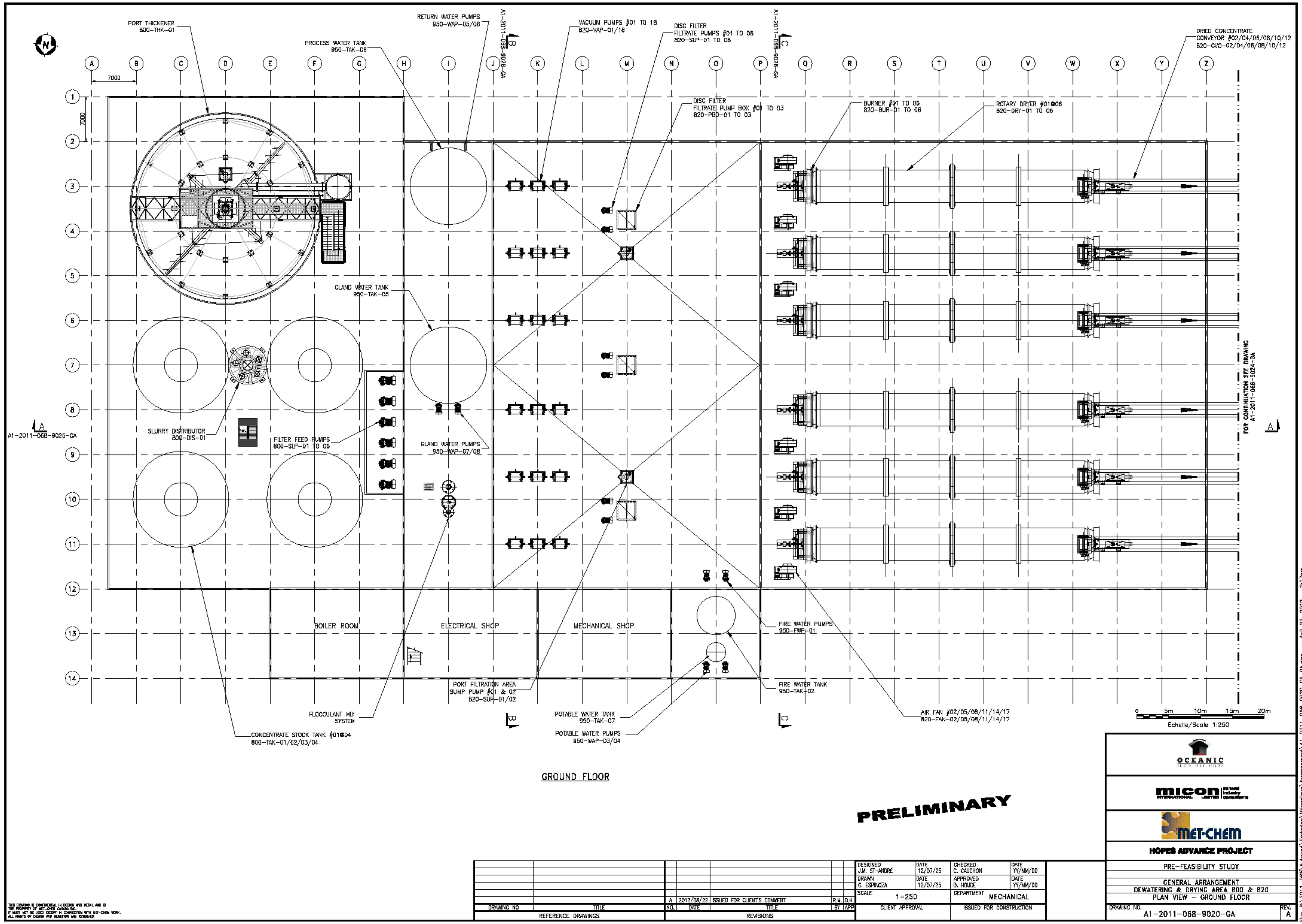


Figure 17.5
Port Concentrate Facilities General Arrangement Plan View



17.2.2 Mass Balance for 20 Mt/y Concentrate

The mass balance for the 20 Mt/y expansion is summarized in Table 17.4.

Table 17.4
Hopes Advance Project Summary Process Mass Balance for 20 Mt/y

Mass Entering System				Mass Exiting System			
Streams	Dry Solids (t/h)	Water m^3/h	Total Mass (wet t/h)	Streams	Dry Solids (t/h)	Water m^3/h	Total Mass (wet t/h)
Feed to Concentrator	6,529.0	343.6	6,872.6	Evaporation from Dryer	-	222.6	222.6
Fresh water from Ford Lake	-	595.8	595.8	Final Concentrate	2,455.0	50.1	2,505.1
Reclaim Water from Tailings Pond	-	2,666.6	2,666.6	Final Tailings	4,074.0	3,333.3	7,407.3
Total Entering	6,529.0	3,606.0	10,135.0	Total Exiting	6,529.0	3,606.0	10,135.0

17.2.3 Process Description for 20 Mt/y Expansion

The flow sheet will not change for the 20 Mt/y expansion. In general, the crusher, concentrator and port facilities will be duplicated.

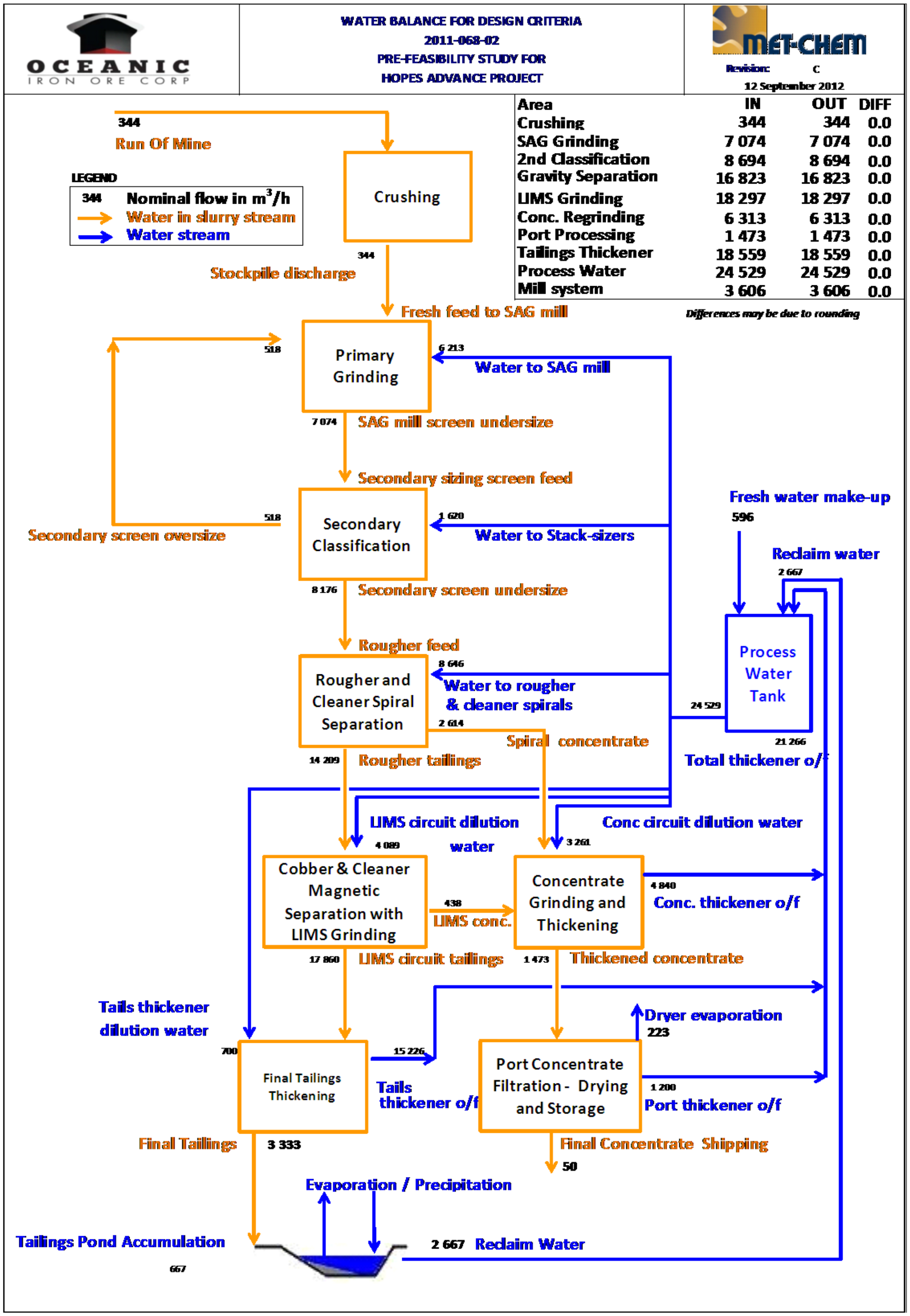
To produce 20 Mt/y concentrate, 53,190,255 t/y feed will be processed assuming the same weight recovery factor of 37.6%.

The water balance for the expansion is shown in Figure 17.6.

17.2.4 Power Requirement 20 Mt/y

The peak power requirement for the complete 20 Mt/y capacity plant is estimated at 233 MW. This includes 173 MW for the concentrator process areas, 23 MW for the port process areas, 8 MW for the mining operation, 2 MW for the port ship loading system, 19 MW for both areas infrastructure and 8 MW estimated as losses through main sub-station equipment and power lines.

Figure 17.6
Water Balance, 20 Mt/y Expansion



18.0 PROJECT INFRASTRUCTURE

18.1 POWER

Power for the Hopes Advance project will be generated at the port site using nine generators each of 18.5 MW/13.8 kV capacity fuelled with No. 6 oil in an N+2 configuration. The power plant will be installed in a separate building close to the concentrate dryer building and waste heat will be recovered and directed towards drying of the concentrate.

A 26 km long, 120 kV overhead power line will supply the concentrator area and mining areas from the power plant and will follow the alignment of the main access road to the concentrator plant. The voltage will be stepped-up to 120 kV at the main sub-station at the port site for transmission to the mine site. Power will be distributed to the port process area, facilities and wharf via 13.8 kV and 4.16 kV overhead lines.

At the concentrator main sub-station, voltage will be stepped-down to 13.8 kV and 4.16 kV for distribution to the concentrator, to the mine sites and other infrastructure facilities via 13.8 kV overhead lines. The power will be further stepped down to 4,160 V, 575 V, 220 V and 110 V to supply the equipment and service requirements.

The power plant will operate until a new Hydro-Québec power line is constructed and connected to the project to provide power from the grid. This is expected to occur in early 2025 and the power plant will be decommissioned. The Hydro-Québec power line will be connected to the concentrator area main sub-station. With minor modifications, the voltage will be transformed to 120 kV and power will be transmitted to the port area facilities via the 120 kV power line. No changes are expected to the power distribution from the two main sub-stations to process areas and infrastructure when connection to the Hydro-Québec grid is completed.

During construction, four diesel generator sets of 4 MW each will be provided for construction, early mining activities and to supply construction camps. After construction, these will be relocated to permanent positions close to the process areas to supply emergency power to the two camps and to support process equipment that cannot be stopped for long periods of time. Two will be installed near the concentrator building and two near the dryer building at the port.

18.2 PORT

Oceanic retained AMEC Environment & Infrastructure (AMEC) to identify a location for a port facility at Hopes Advance Bay for the shipment of 10 Mt/y or 20 Mt/y iron concentrate products to steel mills in Europe and Asia. The following description has been extracted from the PEA (Micon, 2011).

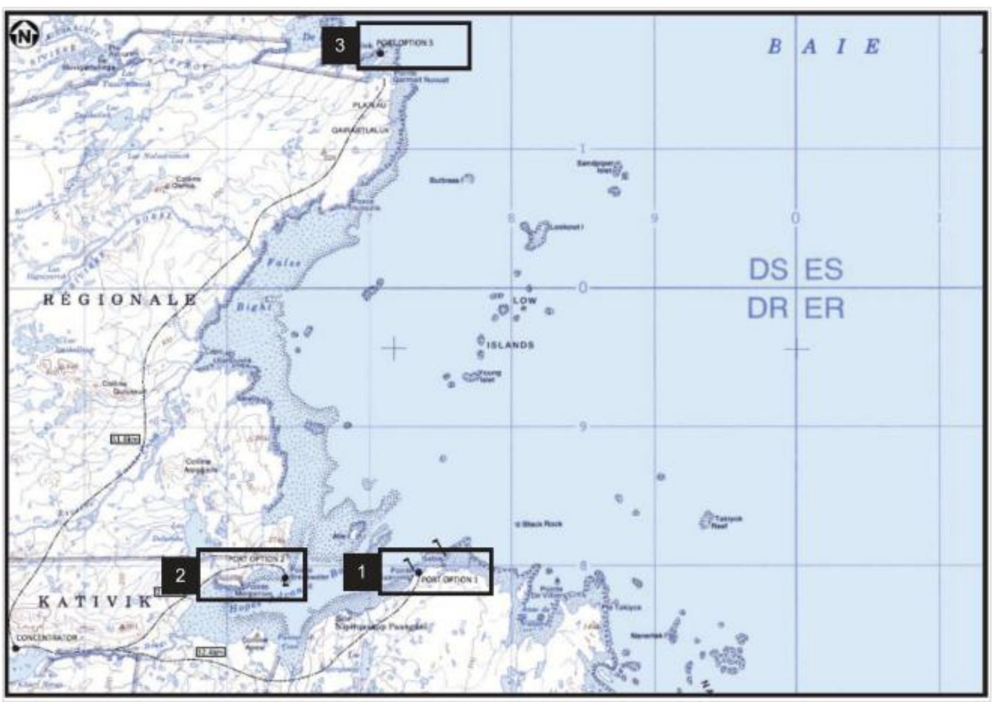
A port site selection matrix is provided in Table 18.1, to identify parameters used to select the optimum location for the Hopes Advance Bay Project marine facility. The three locations are shown in Figure 18.1.

Table 18.1
Proposed Port Selection Matrix

Evaluation Parameter	Option 1: Gable Point	Option 2: Breakwater Point	Option 3: Qarmait Nuvuat Point
Distance from concentrator (PEA)	32.4 km	21.8 km	51.6 km
Distance from onshore facilities to deep water port[1]	990-1,330 m	328 m	600+ m
Shelter water (required for ship loading operation)[2]	Open sea, waves and current may not allow safe ship operation.	It appears that the site is fairly sheltered.	Open sea, waves and current may not allow safe ship operation.

[1] Capesize vessels
[2] ADCP instruments measuring sea conditions needed to confirm these assumptions.

Figure 18.1
Proposed Port Locations



Option 2, Breakwater Point, was selected as the preferred location for the construction of the proposed port facility and its onshore infrastructure. Based on available information, it is assumed to be sheltered from ocean conditions as well provides a short causeway length to connect onshore structures with its marine facilities. The distance from Red Dog Lake to Breakwater Point is only 21.8 km, providing the shortest route to deep sea port.

The following has been extracted from the Executive Summary of AMEC's report, Hopes Advance Bay Project, Marine Facility Preliminary Assessment (AMEC, 2011).

"As part of the Hopes Advance Bay Marine Facility Preliminary Assessment, the following tasks were performed:

- Identify, evaluate and select the most optimum location for Hopes Advance project marine facility;
- Establish marine terminal configuration at the selected location;
- Propose and evaluate iron concentrate ocean shipping logistics to European and Asian mills;
- Establish onshore infrastructure required for port operation;
- Execute Hopes Advance Bay bathymetric survey;
- Establish required field data collection for Ungava Bay and Hopes Advance Bay environmental conditions.

"The marine design basis for the port infrastructure relies on oceanographic environmental conditions present within Ungava Bay. The shoreline experiences Nordic climate conditions through the calendar year with average monthly temperatures range from -24.3°C to 11.5°C in January and July, respectively. Low visibility is a factor in the summer and fall months, in the forms of fog and low cloud formations.

"The local ice conditions in Hopes Advance Bay have not been documented previously; however the general trends in Ungava Bay are described based on historic (1971-2000) aerial and satellite observations compiled by the Canadian Ice Service, as well as from data derived from a high resolution numerical model. According to the historical data, Ungava Bay begins to freeze up around November 19 and ice begins to break up around June 18, creating a seven-month ice cover (215 days assumed in the report).

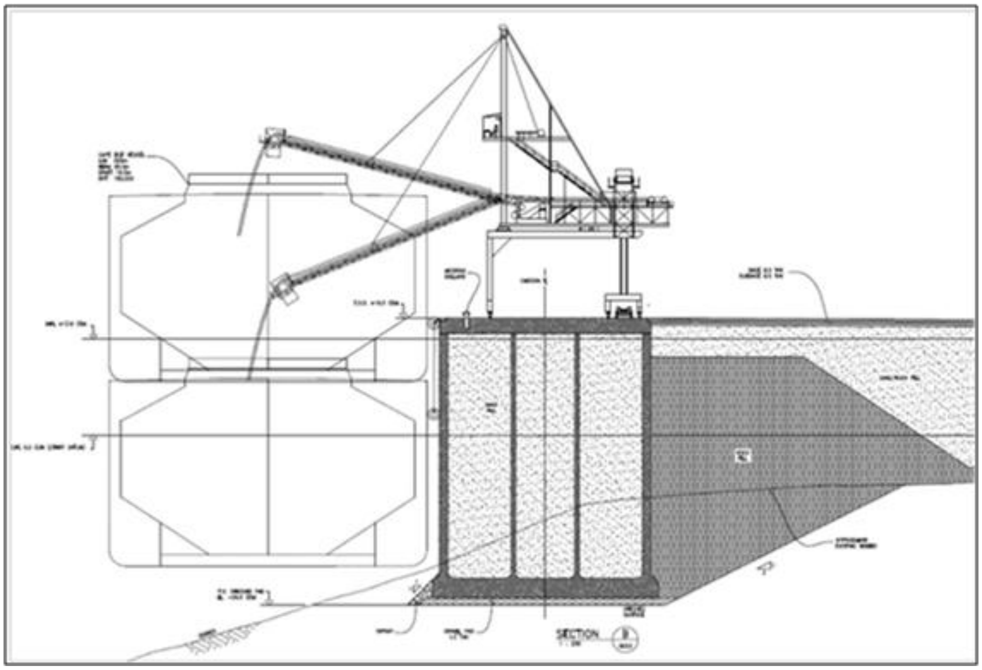
"More recent numerical modeling studies indicate that there is significant spatial and interannual variability in ice conditions, and a possible trend of sea ice melting earlier in the year than seen in the historic data, potentially due to the effects of climate change. Thus, according to numerical modeling studies Ungava Bay could be free of ice by June in warmer years, and only by July in colder years. These findings offer only a broad picture of the conditions in the wider region and local freeze-up and melting dates, as well as sea ice thickness in Hopes Advance Bay may be vastly different.

"The proposed port location at Breakwater Point has been chosen based on distance from the concentrator, onshore area topography, distance to deep waters, optimal ship navigation, and minimal exposure to open sea conditions. From the bathymetric survey by Aquatics ESI, the proposed port location shows adequate deep water for wharf construction suitable for Cape-size vessels. Deep waters are present just after the tidal flats of Breakwater Point, thus creating an ideal location for port construction.

"The proposed marine facility consists of: wharf, tug boat wharf and causeway.

"The wharf is a caisson gravity base structure containing hollow concrete pre-cast boxes for the …wharf, commercial and tug wharf in a series configuration. Each caisson contains three equally spaced compartments. The gravity structure compartments are filled with sand/rock, when connected together." (Figure 18.2).

Figure 18.2
Cross-section of Proposed Wharf



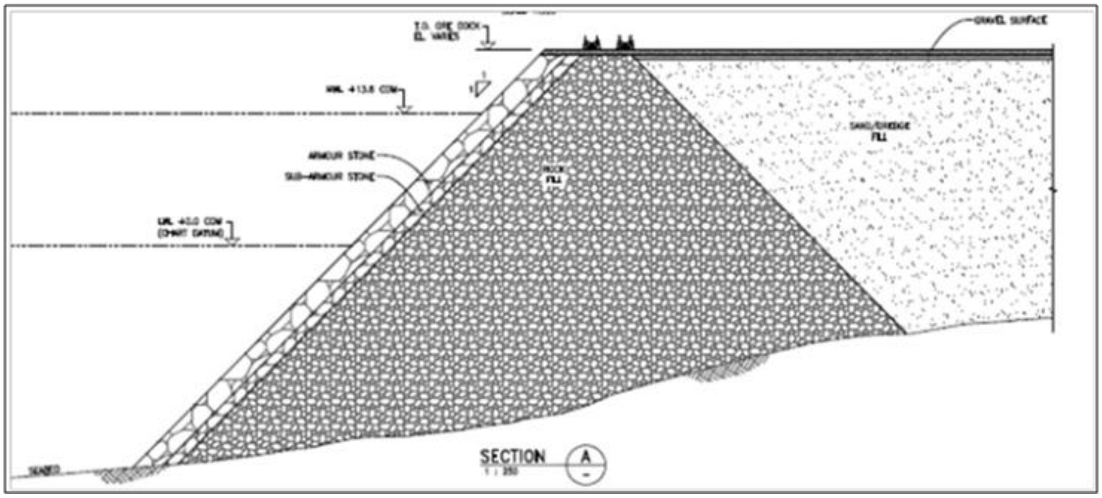
"The proposed wharf is to be connected to its onshore facilities by a 328m long causeway extending from the edge of concrete caisson to the transfer location onshore. Backfill directly behind the caisson wall consists of rock fill, remaining fill shall be sand/rock beyond the rock fill wedge zone." (Figure 18.3)

"The shipment of iron ore from Hopes Advance Bay to Global markets (European and Asian markets) requires navigation through Ungava Bay and the entrance to Hudson Strait and Labrador Sea.

"The current commercial shipping activities in Hudson Strait and Ungava Bay are as follows:

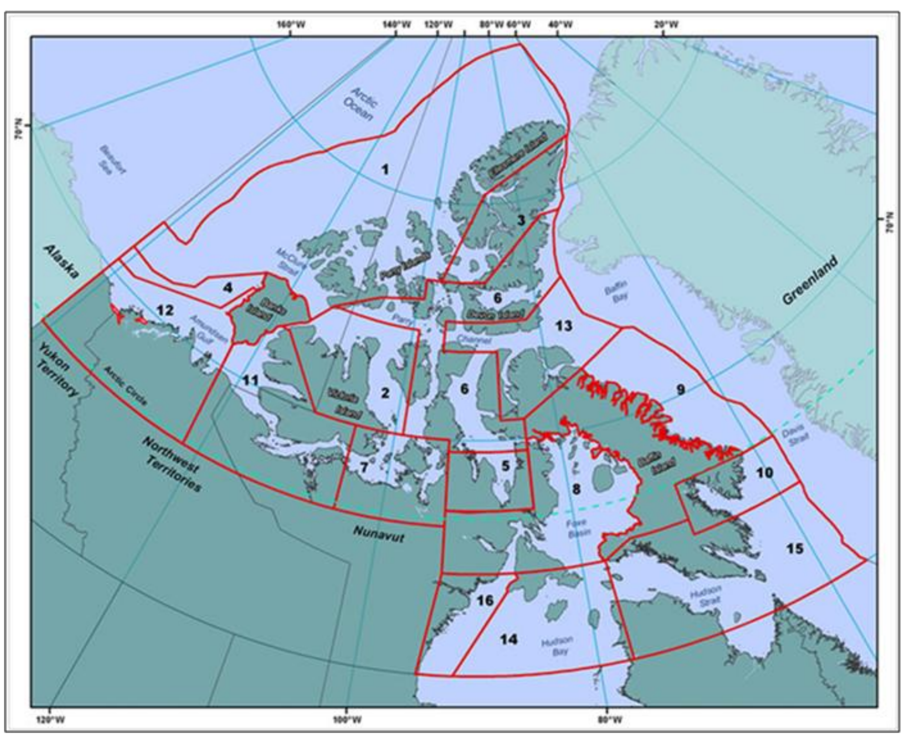
- The Churchill Port summer operation.
- All year shipping in ice class vessels from Deception Bay, located in Hudson Strait.

Figure 18.3
Cross-section of Causeway



"The Arctic Shipping Pollution Prevention Regulations regulate navigation north of 60° through the Zone/Date System. The system consists of 16 zones as per Map of the Shipping Control Zones, [see Figure 18.4]. Entrance to a specific zone and time of the year is based on historical ice data and ship classification.

Figure 18.4
Shipping Control Zones



Transport Canada.

> "The proposed Hopes Advance Bay port location is outside the Zone/Date System, but vessels have to navigate through Zone 15. Currently, all year commercial shipping in Zone 15 is to Deception Bay to service the Raglan mine in northern Nunavik.
>
> "For this phase of the project, two shipping destinations are analyzed: Rotterdam and Qingdao Port. Due to the Nordic weather conditions, two shipping seasons are defined as follows: ice-free season from mid-June to mid-November (150 days), and ice season from mid-November to mid-June (215 days). Bulk material can either be shipped directly to final destination, or transshipped via the fjord in Nuuk, Greenland during the ice season. The shipping cost summary for all export options is presented in Section 8 [of the AMEC report]. Optimal shipment to Europe is through direct shipment with ice-class or blue-water vessels. Export to China will use the transshipment option in Greenland, with increased export in the ice-free season to 50% of total annual production of the mine. During the ice-free season, direct shipment to China is the most economical option.

In addition to year round shipping from Deception Bay, year round shipping using ice-class vessels also occurs from Voisey's Bay operation of Vale to the south east.

The preliminary transshipment assessment focused on a transshipment location in Greenland. It is understood that Oceanic intends to explore alternatives during the Feasibility Study stage and will optimize the transshipment approach in order to minimize costs and to enhance the logistical issues associated with transhipments to Asia.

18.3 CONCENTRATE PIPELINE

The pipeline to transfer concentrate from the concentrator building to the port was designed by OSD Pipelines (OSD) of Australia.

The 25.4 km long buried pipeline starts at the concentrator building and ends at the slurry tanks at the port near the filtration and drying building. It will run alongside the main access road. Reclaim water from the dewatering process area will be returned in a pipeline also designed by OSD and similarly buried alongside the concentrate pipeline.

The concentrate pipeline will be 400 mm in diameter for the 10 Mt/y capacity plant and will be replaced by a 550 mm diameter pipe for the 20 Mt/y capacity plant. The reclaim water pipelines have similar diameters for the different plant capacities.

18.4 MAIN ACCESS ROAD AND SITE ROADS

A 26 km permanent main access road connects the port facilities and the concentrator area. It will be 14 m wide and constructed in layers from three types of fill:

- The first 1.25 m thick layer will consist of rock fill either from the quarries or blasted material from road cuts.

- The second layer, 600 mm thick, will be made up of crushed rock to comply with MG 112 (100 mm - 0).

- The top layer will be 150 mm thick and made up of crushed rock to comply with MG 20 (20 mm – 0).

Site roads will provide access to the following areas:

- The fresh water source at Ford Lake.
- Communication towers.
- Explosives plant.
- Fresh water intake at the port.
- Wharf.
- Fuel tank farm.

They will be constructed for light to medium traffic and have widths of 10 m to 12 m.

18.5 MAINTENANCE FACILITIES

The maintenance facilities building will include the following:

- Three major mining equipment maintenance bays.
- Three light maintenance bays.
- One vehicle wash bay.
- One oil/water separation bay.
- A small warehouse.
- Offices.
- Lunch room.
- Restrooms.

The building will be 26 m by 102 m with 12 m by 11 m garage doors to accommodate large mining trucks. The maintenance building is located near the concentrator building. There is no maintenance building at the port area.

18.6 CAMP ACCOMMODATIONS

The permanent residential camp will be located close to the concentrator building and will have capacity for 400 people. It will comprise single-occupancy bedrooms with individual shower and toilet facilities, lounges, recreational areas, a fitness area, kitchen and lunch rooms.

A 25-person permanent camp will be installed at the port for operators and maintenance employees in that area. It will included similar sleeping quarters to those in the main camp at the concentrator area, a recreation room, a fitness area, a lunch room and a kitchen to serve hot meals prepared at the main camp.

During construction of the 10 Mt/y plant, a 500-person construction camp will be rented and installed near the site of the permanent camp. It will be demobilized at the end of the construction period.

For the 20 Mt/y capacity phase, an additional 100 modular rooms will be added at the main camp. During construction of the 20 Mt/y expansion, a 500-person temporary camp will be rented and installed near the permanent camp. It will be demobilized at the end of construction period.

18.7 ADMINISTRATION OFFICES

Administration offices and conference rooms will be provided on the second floor above the kitchen and lunch rooms of the permanent camp at the concentrator site.

18.8 AIRSTRIP

It has been determined that the existing runway can be improved to meet the requirements of a large mining operation. The design criteria were based on the requirements of Boeing 737-C200 aircraft which can combine freight and passengers.

The runway will be widened from approximately 30 m to 36 m, and extended from 1,470 m to 1,900 m and will be equipped with a lighting and visual approach system.

A modular air terminal building will be located near the airstrip. The building will include a waiting room with services, a ticket counter, a scale area, a locker and a cargo/baggage storage area.

The entire area runway, parking and air terminal building is fenced to prevent wild animals from moving onto the runway.

18.9 WAREHOUSES AND STORAGE

A conventional structural steel building warehouse of dimensions 25 m by 50 m will be located in the concentrator area. The building will have a concrete slab on grade and will be insulated and heated.

At the port area, spare parts and materials will be stored in dedicated small areas as appropriate within the buildings.

At both sites, there will be one cold 25 m by 100 m warehouse.

Also at both sites, there will be laydown areas for large equipment and material storage.

18.10 EMERGENCY VEHICLE BUILDING AND FIRST AID

An 18 m by 36 m emergency vehicle building will be located at the concentrator area. A three-door garage will be built for the fire truck, the rescue truck and the ambulance.

First aid facilities will be located in the same building and include sanitary services, an office for a nurse and waiting, examination and recovery rooms.

18.11 SITE COMMUNICATIONS

There will be three communication towers installed on site, one at the concentrator area, one at the port area and one near the airstrip.

The following communication systems are included:

- Telephone network.
- Computer network.
- Automation network (for instrumentation/control).
- Surface radio system.
- Cable television network (camps only).

The communications equipment will be installed during the first phase of mine and camp construction and will serve for both the construction and production phases.

18.12 ASSAY LABORATORY

The fully-equipped assay laboratory will be located in the concentrator building.

For the expansion phase, a second laboratory will be included in the additional concentrator building.

18.13 WATER MANAGEMENT AND SERVICES

Fresh water will come from Ford Lake, approximately 7 km from the concentrator building. A floating barge will house the pumps and electrical equipment and will be fitted with a de-icing pump system. Water will be distributed to the different buildings and camps and will be treated for potable use.

All sanitary waste water will be collected and directed to sanitary treatment plants. These will be located at the permanent camp, one at the temporary construction camp and one at the port area permanent camp. Smaller units will also be included at the explosive plant and airstrip.

18.14 WASTE MANAGEMENT

Waste will be separated into four types, kitchen waste, metals, garbage and wood and other dry construction material. Metals will be sent out for recycling. Kitchen waste, garbage, wood and construction materials will be incinerated on site or disposed of in a nearby trench disposal facility.

18.15 FUEL STORAGE

The principal fuel storage facility will be located at the port area close to the power plant. The design criteria for storage capacity are 8-months storage capacity at the port for all fuels and 10-days capacity for diesel fuel at the concentrator area for mining equipment and services. All fuel tanks will be installed within a bermed area, lined with geo-membrane.

The fuels stored at site will be:

- No. 6 oil for power generation and drying of concentrate.
- Diesel for mining equipment, mobile equipment and service vehicles.
- Jet fuel A for aircraft.
- Gasoline for small tools and equipment, all-terrain vehicles and snowmobiles.

At the expansion phase, the No. 6 oil tanks dedicated to the power plant will no longer be needed and these tanks will be adapted to store diesel fuel.

19.0 MARKET STUDIES AND CONTRACTS

Approximately 98% of mined iron ore is used in steel making. The production of steel, worldwide, is closely linked to gross domestic product (GDP) and, therefore, reflects global and regional economic conditions.

Iron ore production and trade is dominated by three companies, Vale SA, the Rio Tinto Group and BHP Billiton. These have operations in Brazil, Australia and Canada and account for approximately 35% of total iron ore production. Mine output in the 10 largest producing countries is shown in Table 19.1. Production has increased significantly over the past decade, primarily in response to demand from China's rapidly expanding economy, and production in China, itself, has grown by nearly 1 Mt/y since 2000. (The USGS notes that most countries report production of useable ore while China reports crude ore production).

Table 19.1
World Iron Ore Production
(Million t gross weight)

	2000	2007	2008	2009	2010	2011[1]
Australia	168	299	342	394	433	480
Brazil	213	355	351	310	370	390
Canada	35	33	32	32	37	37
China	223	707	824	880	1,070	1,200
India	76	207	215	225	230	240
Iran	12	32	32	26	28	30
Russia	87	105	100	92	101	100
South Africa	34	42	49	55	59	55
Ukraine	56	78	73	66	78	80
United States	63	53	54	27	50	54
Others	110	129	138	123	134	134
Total	**1,079**	**2,040**	**2,210**	**2,230**	**2,590**	**2,800**

[1] Estimated.
USGS: Minerals Yearbooks and 2012 Mineral Commodity Summaries.

Iron ore is produced and marketed as lump ore, fines and pellets. Lump, or direct shipping, ore is generally high grade, 64% to 68% Fe, and the majority is used for direct reduction or sinter feed. Pellets are generally 8-18 mm in diameter and made by mixing the iron ore with a binder and heating to produce hard spheres of uniform chemical composition that are easily handled during transportation. Iron ore fines should not exceed 10 mm grain size.

China dominates crude steel production, as it does iron ore and pig iron production. Among the 10 largest producers listed in Table 19.2, only China and India saw steadily increasing output through the second half of the last decade while Japan, Germany and the United States have yet to recover to the levels seen in 2007.

Table 19.2
World Crude Steel Production
(Million t)

	2000	2007	2008	2009	2010	2011
Brazil	28	34	34	27	33	35
China	129	490	512	577	637	683
Germany	46	49	46	33	44	44
India	27	54	58	64	68	72
Japan	106	120	119	88	110	108
Russia	59	72	69	60	67	69
South Korea	43	52	54	49	59	69
Turkey	14	26	27	25	29	34
Ukraine	32	43	37	30	33	35
United States	102	98	91	58	81	87
Others	263	309	294	225	268	254
Total	**849**	**1,347**	**1,341**	**1,236**	**1,429**	**1,490**

www.worldsteel.org.

19.1 APPARENT CRUDE STEEL DEMAND

World apparent demand for crude steel increased steadily between 2000 and 2007, reaching 1,325 Mt. The increase was dominated by use in China, but was also due to increases in countries such as India and South Korea. By 2010, demand had exceeded the 2007 level to reach 1,386 Mt. Preliminary figures from the World Steel Association indicate little change for 2011.

The construction, automotive, transport, power and machine goods industries are the principal end-use sectors for crude steel. Average use per capita, worldwide, has increased from 150 kg in 2000 to 220 kg in 2010 and, as the economies of the emerging and developing economy countries has grown, the share of world steel demand has increased from 42% in 2000 to 71% in 2010.

19.2 OUTLOOK

The market for crude steel drives production of iron ore and, as noted above, economic growth in China resulted in expansion of total steel production by nearly 60% between 2000 and 2007. China is the world's largest importer of iron ore, accounting for nearly 50% of seaborne trade in 2008. In its short range outlook published in April, 2012, the World Steel Association projected increased steel demand for 2013 at 1,486 Mt, compared with the 1,422 Mt anticipated for 2012. Over the short term, steel demand is affected by the uncertain impact of the financial crisis in Europe on developing country economies and slower growth in China.

In June, 2012, the International Monetary Fund (IMF) projected that world real GDP will grow at rates of 3% and 3.5% in 2013 and 2014, respectively, while the rates in developing countries will be 5.9% and 6.0%, respectively.

Over the medium and long term, demand for crude steel will continue to be driven by population growth and the associated need for urbanization, industrial development and infrastructure.

19.3 PRICES

Traditionally, international iron ore prices were set through annual negotiations between the three major producers, Rio Tinto, BHP Billiton and Vale SA, and major consumers, principally European, Chinese and Indian steel manufacturers. These benchmark prices, established between the largest market participants, provided the basis for price negotiations by smaller producers.

In 2009, the benchmark system broke down due to the volatility in spot iron ore prices. As a result, pricing is increasingly based on monthly or quarterly contracts which reference the spot market.

Price trends in iron ore are illustrated by spot prices for iron ore fines to October, 2012, as shown in Figure 19.1.

Figure 19.1
Spot Prices for Iron Ore Fines

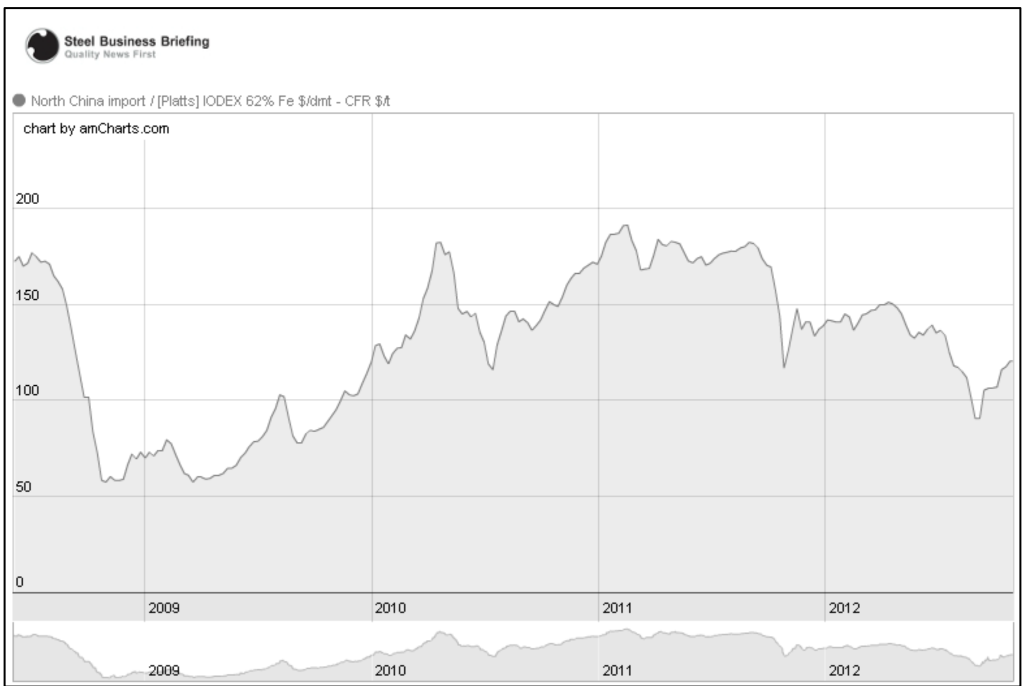


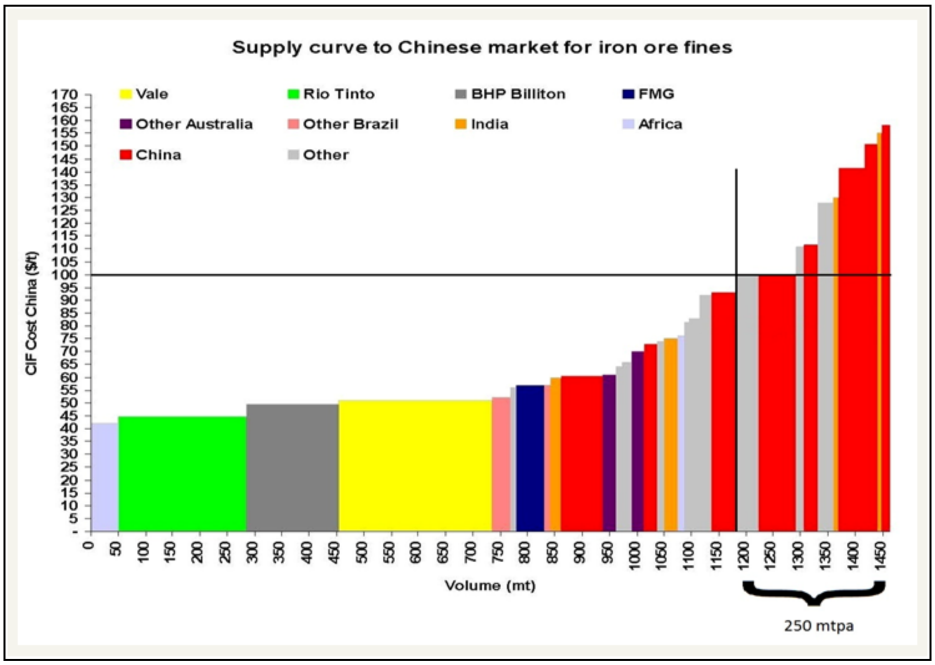
Figure provided by Oceanic from www.platts.com

Through the month of October, 2012, iron ore prices have strengthened and, at 29 October, stood at $120.00-121.00 based on the IODEX for 62% Fe iron ore fines CFR North China, as reported by Platts SSB Steel Markets Daily (www.platts.com).

19.3.1 Price Outlook

Iron ore prices softened from the third quarter of 2011 reflecting uncertainty in financial markets, slower growth in China and increased iron ore supply. Over the medium to long term, prices are expected to be supported by continued growth in demand from developing economies, China in particular. Analysis by Macquarie Capital (Europe) Limited, (2012) indicates, further, that iron ore production costs in China will continue to increase as the quality of available resources decreases and that this will also provide support to international prices. Figure 19.2 illustrates the magnitude of supply to China which exceeds a delivered cost of $100/t.

Figure 19.2
Cost Supply Curve for Chinese Market for Iron Ore Fines



Macquarie Capital (Europe) Limited, (2012)

The base case average price selected for this Prefeasibility Study is $100/t with sensitivity analysis of 30% below and above the base case.

Concentrate from the Hopes Advance project, at 66.5% Fe may be anticipated to command a premium over benchmark pricing which is based on product grading 62% Fe.

19.4 CONTRACTS

There are no contracts in place relating to property development and sales arrangements.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Oceanic initiated environmental and social studies for the Hopes Advance project in 2011. Government reports, databases and publications were reviewed in order to prepare the basis for the environmental and social impact assessment (ESIA). Field surveys were conducted for fish, hydrology, hydrogeology and water and sediment quality. Additional surveys will be conducted in the coming months.

The project description was submitted to the federal and the provincial/Nunavik agencies to initiate the permitting process. The project description was accepted under the Canadian Environmental Assessment Act, 2012 and the Kativik Environmental Advisory Committee (KEAC) issued the guidelines for the preparation of the ESIA. Project Guidelines from the Canadian Environmental Assessment Agency are anticipated during November of 2012.

The initial baseline conditions and permitting process are discussed below.

20.1 PROJECT OVERVIEW

The Hopes Advance project is located in the arctic tundra domain which is associated with cold temperatures and sparse vegetation. Lakes and watercourses are found throughout the region. Migratory birds, terrestrial mammals (e.g., caribou and polar bear), marine mammals (e.g., beluga whales) and fish (e.g., arctic char) hold both an ecological significance and social importance to the Inuit population. Some of these species have also been designated as special status species by provincial law (Act respecting threatened or vulnerable species – ATVS) and/or federal law (Species at Risk Act – SARA). The region lies within the zone of continuous permafrost.

Four distinct potential issues will need to be considered throughout the life of the project with respect to the social and biophysical environment, based on the relatively limited information available at this point in its development:

- Close proximity of the Inuit population of Aupaluk: Inuit have been involved in the project and Oceanic's intent is to continue to keep the Inuit community completely informed and engaged in the process of project development.

- Presence of species at risk and valued indigenous species in the region: This will require special consideration or measures in order to avoid or minimize the effects of the project on these populations.

- Requirement for new infrastructure facilities: The construction and operation of a new port may alter the hydrodynamic conditions (currents, waves and ice conditions), particularly in Hopes Advance Bay, and may potentially affect high-profile species, increase shoreline erosion and sediment transport, and modify Inuit hunting and fishing activities.

- Effects of climate change: Given the amount of energy that will be required by the project, the source of energy itself will have potential impacts on the project carbon emissions. Also to be considered is the Québec government effort directed at reducing greenhouse gas (GHG) emissions.

As the project advances, it is anticipated that the design will take into account the potential social and environmental issues and, wherever possible, efforts will be made to avoid or reduce potential impacts. Where impacts cannot be avoided, measures will be proposed to mitigate the residual effects.

The project is located within Inuit territory governed by the James Bay and Northern Québec Agreement (JBNQA) which defines rights related to issues such as resource management, economic development, administration of justice, health and social services and environmental protection. It also defines the management system for wildlife resources, including hunting, fishing and trapping activities.

The land regime defined by the JBNQA divides the area covered by the agreement into three categories:

- Category I lands: Self-administered lands located in and around native community villages, allocated to native peoples for their exclusive use. Owners of mining rights adjacent to Category I lands are able to exercise them within the limits they retain, but are obliged to obtain consent from the native community and to compensate the Band whose territory is affected by their operations.

- Category II lands: Public lands owned by the Crown-in-right-of-Québec where native people have exclusive hunting, fishing and trapping rights, but no special rights of occupancy. Mining exploration and technical surveys may be carried out freely on Category II lands but these undertakings must not unfairly interfere with the hunting, fishing and trapping activities of the native people.

- Category III lands: These make up the majority of northern Québec. While exclusive rights or privileges are not granted to native people, they are able to carry out traditional activities year-round without a permit or limit (although conservation principles apply) and certain species are reserved for their use.

The majority of the Hopes Advance project claims are located on Category III lands. One area of claims, south of Red Dog River, is on Category II lands but no mining activity is planned there under the presently designed project.

Regional and local administration is carried out by the Kativik Regional Government and the Makivik Corporation.

The closest community to the project, Aupaluk, is one of 14 Inuit communities in Nunavik. The population was 174 in 2006.

Some 50 archeological sites have been identified near Aupaluk. The majority are located outside the project area, but only two are located close to some project facilities.

20.2 INITIAL DATA

20.2.1 Vegetation and Wetlands

The project region is located within the low sub-arctic, shrub arctic tundra bioclimatic domain which extends from the 58th to the 61st parallel. Willows (*Salix* spp.) and birch (*Betula* spp) grow alongside herbaceous species, mosses and lichens.

20.2.2 Wildlife

No specific studies on populations of terrestrial and avian wildlife species that frequent the area surrounding Aupaluk appear to have been published to date. However, the information collected from agencies, databases and general scientific documents consulted allowed a general picture to be drawn of the wildlife and birds likely to frequent the project area.

Based on trapping statistics for fur-bearing species, the most common in 2011 were red fox (*Vulpes vulpes*), marten (*Martes americana*), wolf (*Canis lupus*), polar bear (*Ursus maritimus*) and arctic fox (*Alopex lagopus*). Caribou (*Rangifer tarandus*) were also hunted.

20.2.2.1 Birds

Thirty-seven bird species were observed in the Red Dog Lake area. The peregrine falcon (*Falco peregrines*) uses the area for mating and raising young and snow goose (*Chen caerulescens*), Canada goose (*Branta canadensis*), greater scaup (*Aythya marila*), herring gull (*Larus argentatus*) and king eider (*Somateria spectabilis*) may also use the area. Other species observed were thought to be migrants and these include golden eagle (*Aquila chrysaetos*), common eider (*Somateria mollissima*), black guillemot (*Cepphus grylle*), surf scoter (*Melanitta perspicillata*) and several species of seagull.

20.2.2.2 Terrestrial and Marine Mammals

The Ministère des Ressources naturelles et de la Faune du Québec (MRNF) indicated that the project region is frequented by the Leaf River caribou herd (*Rangifer tarandus*) and muskox (*Ovibos moschatus*). According to their general distribution, the following terrestrial mammals, amongst others, may potentially be seen within the project region: polar bear (*Ursus maritimus*), grey wolf (*Canis lupus*), red fox (*Vulpes vulpes*), arctic fox (*Vulpes lagopus*), Canada lynx (*Lynx canadensis*) and wolverine (*Gulo gulo*).

Based on their general distribution, the following marine mammals may frequent Hopes Advance Bay: harbour seal (*Phoca vitulina*), bearded seal (*Erignathus barbatus*), ringed seal

(*Pusa hispida*), walrus (*Odobenus rosmarus*), beluga whale (*Delphinapterus leucas*) Sei whale, (*Balaenptera borealis*) and blue whale (*Balaenoptera musculus*).

20.2.2.3 Amphibians and Reptiles

No reptile species distributions in Québec go as far north as the project region.

20.2.2.4 Fish and Benthos

The following fish species were captured during gillnet and electric fishing surveys performed in September, 2011:

- Lake trout (*Salvelinus namaycush*).
- Arctic char (*Salvelinus alpinus*).
- Brook trout (*Salvelinus fontinalis*).
- Round whitefish (*Prosopium cylindraceum*).
- Mottled sculpin (*Cottus bairdi*).
- Ninespine stickleback (*Pungitius pungitius*).
- Threespines stickleback (*Gasterosteus aculeatus*).
- Burbot (*Lota lota*).

Although not captured during the September, 2011 survey, the following fish species, amongst others, are also likely to frequent the area surrounding the project, according to their general distribution: northern pike (*Esox lucius*), suckers (*Catostomus* spp.), lake whitefish (*Coregonus clupeaformis*) and some Cyprinid species. Amongst marine and anadromous species, Greenland halibut (*Reinhardtius hippoglossoides*), Atlantic cod (*Gadus morhua*) and Atlantic salmon (*Salmo salar*) inhabit Ungava Bay.

The marine benthic community of the region includes such species as: Iceland scallop (*Chlamys islandica*), blue mussels (*Mytilus edulis*) and clams (*Mya arenaria*) which can be found off the shores of Hopes Advance Bay.

20.2.2.5 Species of Special Concern

Some species or populations in the project area are protected at the federal level by the SARA and/or at the provincial level by the ATVS. addition, migratory bird species are protected by the Migratory Birds Convention Act, 1994, administered by the Canadian Wildlife Service of Environment Canada in collaboration with the Canadian provincial and territorial governments.

According to the Centre de données sur le patrimoine naturel du Québec (CDPNQ), no floral species at risk or any important terrestrial habitats have been recorded within the project area. It should be noted, however, that the lack of special status species in the project area may simply be a result of a lack of field investigations in this remote area of Québec.

The following wildlife species of special concern are present in the project area:

- Peregrine falcon tundrius (*Falco peregrinus tundrius*): susceptible of being designated threatened or vulnerable according to the ATVS and listed as a special concern species according to the SARA.

- Golden eagle (*Aquila chrysaetos*): listed as vulnerable according to the ATVS and not at risk according to Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

- Polar bear (*Ursus maritimus*): listed as vulnerable under the ATVS and of special concern by COSEWIC.

- Ungava Bay beluga whale (*Delphinapterus leucas*) population: susceptible of being designated endangered or vulnerable under the ATVS, has been designated endangered by COSEWIC and is under consideration for listing under the SARA.

- Eastern Arctic population of Bowhead whale (*Balaena mysticetus*): listed in Schedule 2 of SARA as endangered.

Based on their general distribution, the following species listed as a special status species may possibly be found in the project area:

- Wolverine (*Gulo gulo*): designated threatened in Québec according to the ATVS and endangered according to the SARA.

- Harlequin duck (*Histrionicus histrionicus*): designated as special concern species by the SARA.

- Red knot (*Calidris canutus*): susceptible to being designated threatened or vulnerable under the ATVS and endangered by COSEWIC.

- Rusty blackbird (*Euphagus carolinus*): susceptible to being designated threatened or vulnerable under the ATVS.

- Short-eared owl (*Asio flammeus*): susceptible to being designated threatened or vulnerable under the ATVS.

- Atlantic cod (*Gadus morhua*): designated as special concern species by SARA.

- Fourhorn sculpin (*Triglopsis* (*Myoxocephalus*) *quadricornis*): susceptible to being designated threatened or vulnerable under the ATVS.

It should be noted that although the caribou, muskox, salmonids, Canada goose, snow goose, seals, and ptarmigan (*Lagopus* spp) are not officially listed as special status species at the provincial or federal levels, they warrant a special mention as they are important to the local Inuit population.

20.2.3 Protected Areas

The closest protected area, located 15 km south of the proposed mining site, is the Réserve de parc national du Québec de la Baie-aux-Feuilles. It is entirely located outside the area of project works and activities. This 3,850 km^2 area, managed by the Ministère du Développement Durable, de l'Environnement et des Parcs du Québec (MDDEP), received special recognition from the Québec Government in 2008, and is awaiting a legally protected status.

20.3 POTENTIAL PROJECT-RELATED ISSUES

20.3.1 General

Typically, mining projects have the potential to affect the surrounding social and biophysical environments through the wastes generated (including waste rock and tailings) and their management, as well as in the management and disposal of water and wastewater. Careful planning of the design and location of infrastructure facilities, such as water storage facilities and the effluent treatment system, are important considerations since they have the potential to affect water quality and environmental habitat, most notably, federally-protected fish habitat. Water from the open pits may also be an issue depending on the intensity of precipitation, extent of permafrost, rock and soil permeability and proximity of water bodies. With careful planning, these potential effects can be mitigated so that the project will be fully acceptable to the regulatory agencies.

20.3.2 Distinct Potential Issues

Potential distinct issues will need to be considered throughout the life of the project with respect to the social and biophysical environment, based on the limited available information:

- Effect on the Inuit population.
- Presence of species at risk and valued indigenous species in the region.
- Issues related to the need for major new infrastructure for the port and power plant.

As discussed below, the Inuit population will be directly affected by the project and will closely monitor progress and development. While the project will provide new sources of income, especially for the village of Aupaluk, it may also introduce economic disparities and result in tension between Inuit and non-Inuit workers. Residents of Aupaluk will need access to the land and its resources throughout the life of the project.

There are a number of registered archeological sites in the vicinity of Aupaluk. An assessment of archeological potential will need to be carried out.

Particular attention will be needed to avoid or mitigate impacts on woodland caribou, muskox, polar bear, beluga whale and arctic char populations.

The construction and operation of a new port, which will entail frequent visits by large sea vessels throughout the year, may change hydrodynamic conditions in Ungava Bay and within Hopes Advance Bay. These, in turn, may potentially affect certain species at risk, for example, beluga whales, due to potential interference with echo-location abilities, and polar bears due to the regular activities of Ice Class ships during the winter. Shoreline erosion and sediment transport may modify Inuit hunting and fishing activities.

The area is not currently on the Hydro-Québec grid and a fossil fuel power plant for the project could be a significant contributor to greenhouse gas emissions within the province. Alternate sources of energy such as hydroelectricity instead of fossil fuels are therefore being considered.

20.4 SOCIAL ENGAGEMENT

Inuit people have occupied the region of the project for centuries and remain closely tied to the land and its resources. Oceanic has stated its commitment to community and social issues (http://oceanicironore.com/company/social-community-considerations) and the agreement of a letter of intent between the company, the Makivik Corporation and the Nunavik Landholding Corporation of Aupaluk was announced on 4 August, 2011, as well as the announcement on 20 September, 2011 of support received from the Makivik Corporation in Oceanic's submission to the Québec government relating to port and power line infrastructure.

Oceanic initiated consultations before the beginning of the exploration program of the Hopes Advance project and has prepared a consultation plan for the duration of the project ESIA. The objective of this plan is to gain traditional knowledge from the Inuit and to keep the Inuit engaged in dialogue and involved, and to maximize their participation in the project. Consultations with the stakeholders will ensure that the ESIA report optimizes the measures required for the social acceptability of the project.

At this stage, the jurisdictions and parties consulted include mostly Inuit organizations such as the village of Aupaluk, Kativik Regional Government, Kativik Municipal Housing Bureau or Nunavik Mineral Exploration Fund and Makivik Corporation. Additional stakeholders will also be consulted.

The consultation program includes three key activities:

1) Consultation on the current and anticipated land and resource uses.

2) Identification of stakeholders' issues and concerns on potential impacts and benefits of the project and identification of the appropriate mitigation measures.

3) Disclosure of the draft ESIA through public consultation sessions.

The main concerns expressed during the first consultation activities with the Inuit relate to the employment situation, the potential social inequity in the community and the possible rise of drug and alcohol consumption. Concern has also been raised about loss and deterioration of wildlife habitat caused by the project.

Communication and consultation with the Inuit will be key to the success of the project. During the ESIA, in order to increase understanding of the study area, as well as to keep Inuit involved at each step of the environmental assessment process, meetings will be held with the Inuit community and representatives.

20.5 WASTE ROCK AND TAILINGS DISPOSAL

The Prefeasibility Study design of the waste rock and tailings disposal facility was undertaken by Golder Associates (Golder).

20.5.1 Mine Waste Geochemistry

A total of 85 waste rock samples, one tailings sample and five process water samples were submitted for static testing to characterize the potential to generate acid rock drainage (ARD) and to leach metals to the receiving environment. Criteria used to determine the ARD potential of the waste rock and tailing material are derived from the provincial guidance document on mine waste characterization (Directive 019, MDDEP, 2012). The Upper Schist rock type from all deposits tested is classified as potentially acid generating and leachable for copper and zinc on a few samples; thus, this waste rock type requires Level A aquifer protection measures. Tailings and all other waste rock types are classified as low risk waste according to Directive 019. However, based on neutral and acid-rain simulated leach tests, there is potential for low risk waste rock to release metals above provincial groundwater criteria including aluminum, chromium, copper, iron, silver and zinc. This waste should be managed to minimize potential metal leaching and generation of Total Suspended Solids (TSS) under neutral conditions, and drainage from this waste should be captured and monitored prior to release to the environment. Settling ponds are likely to be required for the temporary holding of runoff from the waste rock piles in order to settle suspended solids and decrease the concentration of metals associated with solids in suspension.

20.5.2 Tailings Disposal

The tailings to ore ratio is 0.612 resulting in 536.7 x 10^{-6} m^3 of tailings solids generated over the projected mine life, assuming a deposited void ratio of unity and a calculated deposited density of 1.55 t/m^3. The specific gravity of the tailings particles is 3.1. The tailings will be discharged at slurry density of 55% solids by mass. The tailings will be pumped to the TMF located immediately east of the Iron Valley pit and north of Bay Zones E and F pits. Tailings containment dams will be constructed in stages by the downstream method with non-acid generating waste rock. The ultimate volume of the dams will be about 93 x 10^{-6} m^3 for a

TMF with capacity for 600 x 10^{-6} m^3 of tailings and accumulated ice during the winter months. Figure 20.1 illustrates the proposed tailings deposition plan and dam construction staging. The starter dams will have a water-retaining barrier in the early years to retain water for reclaim to the mill. As the tailings beach develops, the reclaim pond will be pushed away from the dams and up against the natural topography.

20.5.3 Waste Rock Disposal

The waste rock to ore ratio is 1.17 resulting in 1,590 Mt of waste rock being generated over the projected mine life. The specific gravity of the waste rock is 2.7. The volume of deposited waste rock will be 981.7 Mm^3, assuming a dumped porosity (bulking factor) of 0.40. As described in Section 16.2.9 above, approximately 12% of the waste rock will be used to construct the tailings dams. Overburden is minimal and will be disposed of with waste rock in the waste rock dumps or in mined-out open pits.

The waste rock dumps are all located in sub-watersheds that drain to the Red Dog River. The waste rock dumps should be designed and managed to control potential metal leaching and generation of TSS.

20.5.4 Water Management

The TMF has a reclaim pond to collect tailings water and runoff. A perimeter seepage collection ditch will collect seepage that can be pumped into the reclaim pond if required. Water from the reclaim pond will be recycled to the mill and the excess will be monitored and treated if needed before being discharged to the environment. A polishing pond, adjacent to the TMF, will be available to settle suspended solids before discharge to the environment.

Runoff from the waste rock dumps will be captured and conveyed to a settling pond where water quality will be monitored prior to release to the environment.

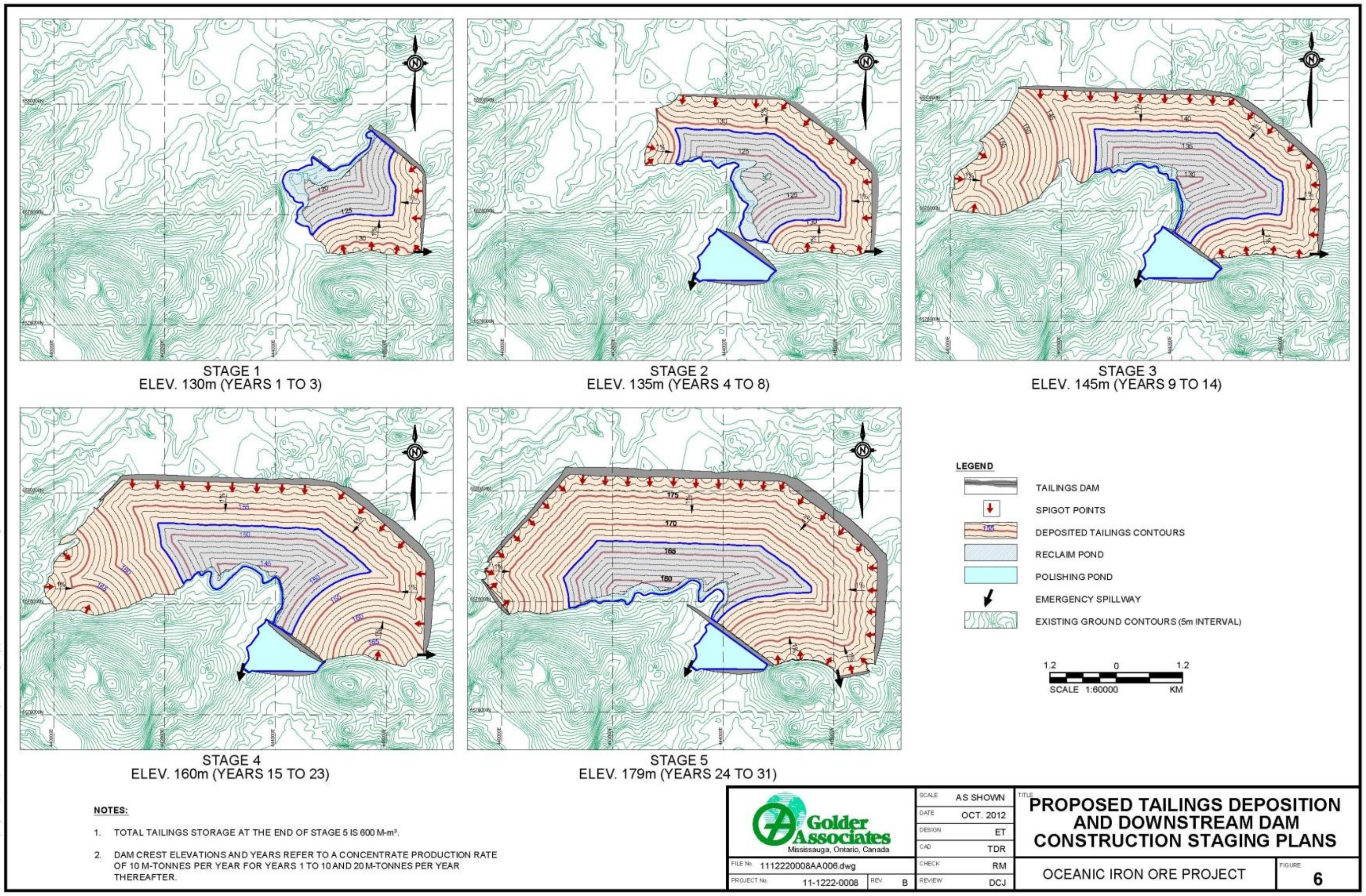
20.5.5 Environmental Monitoring

Groundwater and surface water quality monitoring will be implemented around the waste rock dumps and TMF. Effluent from the water treatment system, polishing pond and settling ponds will be monitored to verify compliance with applicable discharge criteria.

20.5.6 Rehabilitation

Closure of the TMF will involve revegetation and prevention of wind-blown tailings. Pipelines will be decommissioned and water drainage modified for long-term post-closure conditions.

Figure 20.1
Proposed Tailings Deposition Plan and Dam Construction Staging



20.6 PROJECT PERMITTING REQUIREMENTS

The project is subject to the Québec environmental and social impact assessment and review procedure as per Chapter 23 of the JBNQA and Chapter II of the Québec Environment Quality Act (EQA). An environmental advisory committee, composed of Inuit, provincial and federal representatives, serves as the official forum to implement and address environmental protection and management in the region. The project description was submitted to the committee in January, 2012 and specific guidelines for the preparation of the ESIA were issued in September, 2012.

In 2005, the Nunavik Inuit Land Claims Agreement was reached between the Government of Canada and the Makivik Corporation, the development company that manages the heritage funds of the Nunavik Inuit as provided for in the JBNQA. The 2005 land claims agreement a) affirms the existing aboriginal and treaty rights as recognized under the Constitution Act of 1982; and b) provides additional certainty regarding land ownership and use of terrestrial and marine resources. Three new entities, the Nunavik Marine Region Wildlife Board (NMRWB), the Nunavik Marine Region Planning Commission (NMRPC) and the Nunavik Marine Region Impact Review Board (NMRIRB), have been established as a result of the aforementioned land claims agreement. Each board will play a significant role in assessing and approving any development in the Nunavik region.

Federal legislation also must be considered for any development in addition to the Inuit agreements, Nunavik agencies, and the Quebec legislation mentioned above. The project falls under the Canadian Environmental Assessment Act 2012. The Hopes Advance project description was accepted by the Canadian Environmental Assessment Agency (CEAA) in August, 2012 and the project is currently under review by the CEAA to determine whether a federal environmental assessment is required.

Applicable federal legislation also includes the Canadian Environmental Assessment Act 2012, the Fisheries Act, the Canadian Environmental Protection Act, the Navigable Waters Protection Act, the Migratory Birds Convention Act, the Explosives Act, the Arctic Waters Pollution Prevention Act, the Species at Risk Act, and the Metal Mining Effluent Regulations. Tailing disposal in a natural water body should be avoided in project planning as legislated under the Metal Mining Effluent Regulations. In addition, exploration and potential development needs to consider species of special status that include caribou, beluga whale, and muskox.

20.7 CLOSURE

At this stage in project development, a reclamation and closure plan has not been developed. A provision for closure cost has been included in the capital cost estimate.

21.0 CAPITAL AND OPERATING COSTS

21.1 CAPITAL COST ESTIMATE

Capital costs considered in the Prefeasibility Study were allocated into one of three categories:

- Initial capital costs prior to start-up, spent in Years -3 to -1 (i.e., 2014-6), for a production capacity of 10 Mt/y of iron concentrate. The capital cost estimate includes the material, equipment, labour and freight required for pre-production mine development, mine equipment, processing facilities, port facilities, tailings storage and management, infrastructure and services necessary to support the mine operation.

- Expansion capital expenditure in Years 9 and 10 (i.e., 2025-6) to increase production capacity to 20 Mt/y of iron concentrate.

- Sustaining capital expenditure, comprised mainly of replacement mining equipment and expansion of the tailings storage facility.

The capital estimate was compiled by Met-Chem from the following source documents:

Mining Equipment	Micon, August 29 Mine Plan Summary
Mining Development	Micon, August 29 Mine Plan Summary
Mining Services	Met-Chem, Capital Cost Rev-G
Processing	Met-Chem, Capital Cost Rev-G
Infrastructure	Met-Chem, Capital Cost Rev-G
Tailings	Golder Associates, 11-1222-0008 Final Oceanic TMA Dam Quantities and Cost Estimate 24 August 2012
Port and Marine	AMEC, 2011
Indirect Costs	Met-Chem, Capital Cost Rev-G
Contingency	Micon (Mining, TMF) Met-Chem (Plant, Infrastructure)

Capital cost estimates for the Prefeasibility Study are summarized in Table 21.1.

Table 21.1
Summary of Capital Cost Estimates
(Thousand $)

Item	Initial 2014 to 2016	Expansion 2026/2026	Sustaining	LOM Total
Mine Equipment	92,658	61,231	577,956	731,845
Mine Development	66,203	2,918		69,121
Crusher	29,674	30,355		60,029
Concentrator	481,514	492,643		974,157
Pipeline	56,740	83,787		140,527
Port Filtering and Drying	325,654	267,401		593,055
Port and Marine Infrastructure	288,000	84,000		372,000
Power	377,892	26,775		404,667
Site Infrastructure	81,591	25,675		107,266
Site Roads	33,583	-		33,583
Camp and Offices	29,575	7,175		36,750
Airstrip Upgrade	11,824	-		11,824
Fresh Water Supply	10,469	3,621		14,090
Sewage	4,554	1,574		6,128
Tailings and Hazardous Waste Disposal	23,577	30,122	149,219	202,918
Communications	2,305	-		2,305
Mobile Equipment	9,983	-		9,983
Indirect Costs	499,962	249,378		749,340
Contingency and Closure Bond	427,899	241,135	40,000	709,034
Total	**2,853,657**	**1,607,790**	**767,175**	**5,228,622**

Figure numbers may not add due to rounding.

21.1.1 Basis of Estimate

The base date for the cost estimate is the third quarter of 2012. The estimate is expressed in US dollars. No allowances for escalation or currency fluctuation are included. The exchange rates used are 1.00 CAD$/$ when quotations were received in Canadian dollars, and €1.00 Euro/$1.2718 when quotations were received in Euros.

The labour rate was established as an all-inclusive hourly cost to the owner of $130, based on Commission de la Construction du Québec (CCQ) schedule of labour cost and the hourly rates published by the Association de la Construction du Québec (ACQ). The basic assumptions included are as follows:

- Union labour.
- Heavy industry construction site as defined in the convention collective.
- Weekly calendar to be seven days per week, one shift per day, 10 hours per shift.
- Workers turnaround after 21 days on site.
- Cost to the contractor, included in the “all-in” hourly rate:
  - All fringes, social charges and contribution costs to contractor.
  - CSST.
  - Heavy industry (presentation hour).

  - Some premiums for welding, height.
  - Direct supervision (general foreman and foremen).
  - Small tools and consumables.
- The following costs are not included in the "all-in" hourly rate:
  - Room and board (by owner).
  - Airfare (by owner).
  - Transportation from camp to site (by owner).
  - Heavy lifting equipment, estimated separately.
  - Productivity factor, estimated separately.
  - Contingency, estimated separately.
  - Contractor's site management, mobilization and demobilization, estimated separately.

The calculation method and figures used to estimate the hourly rate were confirmed with local, qualified contractors for similar projects.

Power generation plant was quoted by an established supplier of similar plants around the world. The quote was based on a turnkey type. The civil and concrete quantities were estimated by Met-Chem based on preliminary layouts supplied with the quote.

Main access road estimate was based on a quote received from a contractor with experience in northern Quebec.

Campsite accommodation costs were based on actual quotes received from two established suppliers of accommodations in northern countries.

The infrastructure buildings costs were established based on preliminary design and layouts and in-house databases adapted for northern conditions.

Site roads and water management costs were established based on preliminary design and contractor budget unit rates for similar northern projects.

Fuel storage and distribution and waste management costs were established based on preliminary design and quotes from suppliers.

Plant mobile equipment costs were established from budgetary quotes supplied by qualified suppliers and in-house database.

21.1.2 Mining Capital Costs

Table 21.2 shows the breakdown of mining capital costs.

Table 21.2
Mining Capital Costs

Item	Unit Price $ 000	Initial No. of items	Expansion No. of items	Sustaining No. of items	LOM Total
Drills	6,648	2	1	19	22
Shovels	16,898	1	0	3	4
Wheel Loader	6,976	1	0	1	2
Trucks	6,458	5	7	54	66
Track Dozers	1,775	2	1	8	11
Rubber Tired Dozers	1,705	2	1	5	8
Graders	1,703	2	2	5	9
Water Trucks	1,665	2	1	1	4
Loader at Crusher	5,150	1	0	1	2
Tire Handler	1,035	1	0	1	2
Cable Realer	838	1	0	1	2
Support Excavator	703	1	0	1	2
Fuel & Lube Truck	414	2	2	2	6
Mechanics Truck	200	2	0	8	10
Welding Truck	200	2	0	8	10
Hydraulic Rock Breaker	150	1	0	4	5
Total Capital Cost ($ 000)		**$ 92,658**	**$ 61,231**	**$ 577,956**	**$ 731,845**

Figure numbers may not add due to rounding.

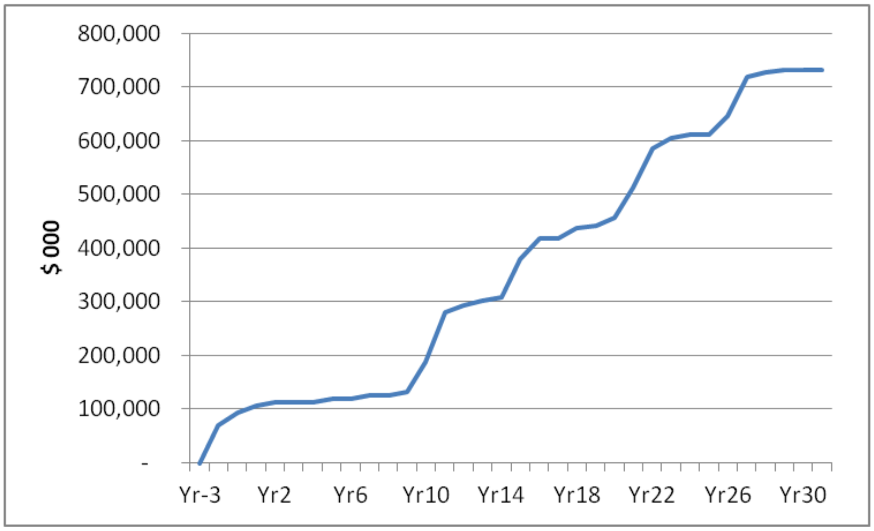
Equipment unit costs are based on quotes received from a reputable mining procurement company and include base cost, applicable tires, transportation, assembly, commissioning and training. The basis for the selected size and required number of units included in the cost estimate is described in Section 16.0.

The mine expansion and sustaining capital expenditures include the cost for procurement of additional mobile and ancillary equipment. Over the operating life of the open pit (i.e., Years 1 to 31) it is estimated that the procurement of the additional mine and ancillary equipment will cost approximately $639 million.

Over the project period, a total of 66 haul trucks, 22 drills, four shovels, and two loaders will be purchased. On closure of the mine, some of this equipment may still have a portion of its serviceable life remaining. Depending on market conditions, part of this value may be recouped on disposal. Nevertheless, no residual value has been assigned to the mining fleet.

Over the LOM period, expenditure on equipment is distributed as shown in Figure 21.1.

Figure 21.1
Cumulative LOM Mining Equipment Capital



21.1.3 Processing Capital Costs

The basis of estimate for the processing plant is summarized below.

21.1.3.1 Civil Work, Concrete Quantities and Unit Costs

Quantities for site preparation, buildings civil work including excavation, backfill, buildings foundations, for slabs on-grade, elevated slabs and equipment foundations were calculated from site plans and preliminary building layouts. Budgetary unit costs include material, freight, labour and equipment. They were obtained from qualified contractors and recent databases of similar projects.

21.1.3.2 Buildings, Structural Steel Quantities and Unit Costs

Quantities for buildings and structural steel were calculated from preliminary building layouts. Budgetary unit costs include material, labour, equipment and freight. They were obtained from qualified contractors and recent databases of similar projects.

21.1.3.3 Process Equipment

The process equipment list was derived from the flow sheets. Single source quotations were obtained for major equipment. The remaining equipment was estimated from recent in-house databases of similar projects.

Equipment installation man-hours were estimated from in-house databases of similar projects. Freight was established at 15% of the material and equipment value.

21.1.3.4 Piping and Pipelines

Process piping cost was established for each process area by factorization on delivered process equipment cost. The process piping cost includes supply, fabrication, freight and installation of piping, flanges and couplings, fittings and valves, secondary steel and supports.

The concentrate pipeline and reclaim water pipeline were designed and estimated for both cases by OSD.

Process pipelines were estimated as a combination of steel and HDPE pipes supplied in 40-ft lengths with flanges every 200 ft. Quantities were established from site plans. Unit cost for HDPE pipelines, fittings and freight as well as installation and bolt-up man-hours were estimated from industrial database.

21.1.3.5 Electricity and Instrumentation

For the process buildings and the main substation; electrical equipment list and quantities were derived from the single line diagrams and process equipment load list. Budget quotes were obtained for the major electrical equipment. Other equipment was estimated from recent in-house databases. Quantities and costs for material as well as installation man-hours were established based on recent similar projects.

Instrumentation and automation costs were established for each process area by factorization on electrical costs based on similar size projects.

Table 21.3 shows the crusher area capital costs, and Table 21.4 shows the breakdown of direct processing capital costs, before indirect costs and contingencies.

Table 21.3
Crusher Area Capital Costs
(Thousand $)

Item	Initial	Expansion	Sustaining	LOM Total
Crusher				
Civil and Building Works	9,957	10,306	-	20,263
Mechanical Equipment	14,877	14,877	-	29,754
Piping and Pipelines	323	323	-	646
Electrical	2,447	2,780	-	5,227
Instrum., Autom., Commun.	1,293	1,293	-	2,586
Services and Supplies	776	776	-	1,225
Total Capital Cost ($ 000)	**29,674**	**30,355**	**-**	**60,029**

Figure numbers may not add due to rounding.

Table 21.4
Processing Capital Costs
(Thousand $)

Item	Initial	Expansion	Sustaining	LOM Total
Stockpile reclaim				
Civil and Building Works	43,781	43,781	-	87,562
Mechanical Equipment	9,043	9,043	-	18,086
Piping and Pipelines	73	73	-	146
Electrical	-	-	-	-
Instrum., Automtn, Commun.	730	730	-	1,460
Services and Supplies	438	438	-	876
Concentrator				
Civil and Building Works	123,816	123,701	-	247,517
Mechanical Equipment	190,157	186,605	-	376,762
Piping and Pipelines	25,053	24,633	-	49,686
Electrical	38,005	50,012	-	88,017
Instrum., Automtn, Commun.	16,702	16,422	-	33,124
Services and Supplies	10,021	9,853	-	19,874
Tailings Pipeline	12,500	17,946	-	30,446
Return Pipeline	11,196	9,407	-	20,603
Total	**481,514**	**492,643**	**-**	**974,157**

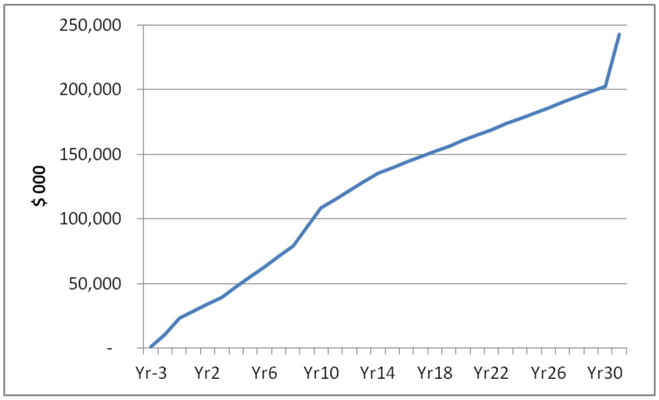
Figure numbers may not add due to rounding.

21.1.4 Tailings Management Facility Capital Costs

The tailings dam estimate of material quantities assumes downstream dam construction, based on a Prefeasibility Study level design with an expected accuracy of ±25%. The TMF design provides a final (stage 5) tailings storage capacity of 600 x 10^6 m^3 with an ultimate constructed dam volume of approximately 93 x 10^6 m^3. A unit rate cost for the 890,000 m^2 of geomembrane liner for the TMF was estimated to be $14/$m^2$ based on shipping costs to site of $300/t in 2012 United States dollars, excluding taxes.

Figure 21.2 shows the progressive expenditure on construction of the TMF over the LOM period.

Figure 21.2
Cumulative LOM Tailings Storage Facility Capital



The schedule includes $23.6 million in the pre-production period, and $30.1 million spent during the expansion phase, as well as $149.2 million spent during the remainder of the operating period and $40 million spent upon closure of the mine.

21.1.5 Port Capital Costs

Table 21.5 shows the port and conveyor capital cost.

Table 21.5
Port and Conveyor Capital Costs
(Thousand $)

Item	Initial	Expansion	Sustaining	LOM Total
Conveyor	30,000	84,000	-	114,000
Port	258,000	-	-	258,000
Total Capital Cost ($ 000)	**288,000**	**84,000**	**-**	**372,000**

Figure numbers may not add due to rounding.

Table 21.6
Port Capital Costs
(Thousand $)

Item	Initial	Expansion	Sustaining	LOM Total
Filtering and Drying				
Civil and Building Works	28,616	21,617	-	50,233
Mechanical Equipment	67,729	63,945	-	131,674
Piping and Pipelines	8,758	8,390	-	17,148
Electrical	10,813	33,945	-	44,758
Instrum., Automtn., Commun.	5,838	5,594	-	11,432
Services and Supplies	3,503	3,356	-	6,859
Storage and Reclaim				
Civil and Building Works	84,079	84,079	-	168,158
Mechanical Equipment	25,257	25,498	-	50,755
Pipeing and Pipelines	1,122	1,132	-	2,254
Electrical	3,816	5,681	-	9,497
Instrum., Automtn., Commun.	2,245	2,264	-	4,509
Service and Supplies	1,347	1,359	-	2,706
Port Infrastructure				
Site Preparation and Port Area	25,072	8,442	-	33,514
Permanent Camp at Port	1,500	-	-	1,500
No. 6 Fuel Storage for Power	20,152	-	-	20,152
No. 6 Fuel Storage for Dryer	17,980	-	-	17,980
Diesel and Jet Fuel Storage	15,729	-	-	15,729
Waste Disposal	1,000	1,000	-	2,000
Cold Warehouse at Port	1,098	1,098	-	2,196
Total	**325,654**	**267,401**	**-**	**593,055**

Figure numbers may not add due to rounding.

21.2 OPERATING COSTS

Life of mine total direct operating costs are summarized in Table 21.7.

Table 21.7
Summary of LOM Operating Costs

Category	LOM Total	$/t	$/t
	$ million	milled	conc.
Mining	3,732	2.75	7.37
Processing	9,128	6.72	18.02
Port	801	0.59	1.58
Site Services	1,149	0.85	2.27
G&A	481	0.35	0.95
Total	**15,293**	**11.25**	**30.18**

Figure numbers may not add due to rounding.

21.2.1 Mining Operating Costs

Table 21.8 shows the breakdown of mining operating costs.

Table 21.8
Mining Operating Costs

Category	LOM Total	$/t	$/t	$/t
	$ million	mined	milled	conc.
Salaries and Wages	790	0.27	0.58	1.56
Fuel	805	0.27	0.59	1.59
Power	211	0.07	0.16	0.42
Service Contracts	47	0.02	0.03	0.09
Consumables and Spares	1,879	0.64	1.38	3.71
Total	**3,732**	**1.27**	**2.75**	**7.37**

Figure numbers may not add due to rounding.

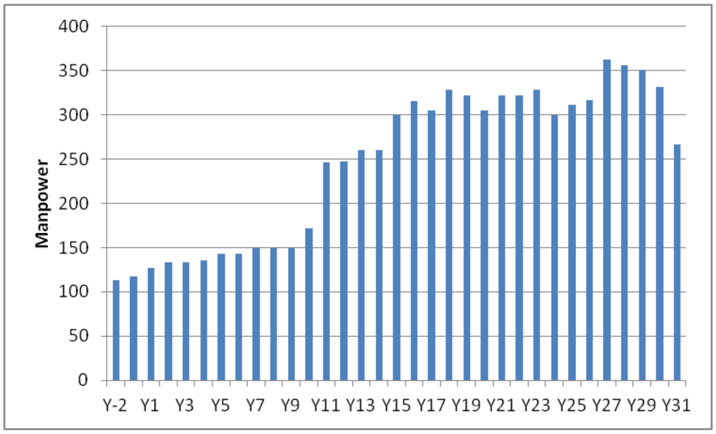
The mining operating costs were developed from first principles based on the open pit plan and production schedule; haul road layouts, the waste rock storage facility and primary crusher locations; projected equipment performances; information for similar operations; and suppliers input.

The diesel fuel price was assumed to be $0.75/L. An electrical power cost of $0.25/kWh during pre-production, $0.156/kWh during Years 1 to 10 and $0.115/kWh from Years 11 to 31 was also assumed. These variations in electricity cost are due to changing sources of power. During pre-production mining, power is supplied from temporary generators. In Years 1 to 10, electricity will be supplied by the generating plant at the port. In Years 11to 31, the mine will be connected to the main Quebec grid.

The mining costs include operating and maintenance labour, supervision, fuel and lubricants, maintenance and repair parts and consumables including tires and tracks, as applicable and indirect costs. The operating costs cover pit drilling, blasting, excavating and loading and haulage operations including the reclaim of stockpiled mid and low-grade feed and haulage to the primary crusher.

The mining manpower requirement has been estimated annually over the LOM period. The pit will operate on the basis of two 12-h shifts per day, with 7 days on, 7 days off shift rotations. From startup the mining section requires approximately 150 people. Following the planned expansion of the plant to produce 20 Mt/y, approximately twice this number is required, growing to a peak of 350 people towards the end of the LOM period when the depth of the pits requires additional truck capacity. Figure 21.3 shows the LOM annual manpower requirements.

Figure 21.3
LOM Mining Manpower



21.2.2 Processing Operating Costs

Unit operating costs for processing at the Hopes Advance project are shown in Table 21.9. These costs were derived from supplier information, Met-Chem's database, or factored from similar operations.

Table 21.9
LOM Concentrator Operating Costs
(Thousand $)

Period	2017-2024	2025-2026	2027-2047	LOM Total
Production Rate	**10 M t/y**	**10 M t/y**	**20 M t/y**	**-**
Power	**Self-Generated**	**Hydroelectric**	**Hydroelectric**	**-**
Operating Cost				
Manpower	126,113	32,285	424,882	583,280
Electric Power	977,857	184,539	3,641,264	4,803,661
Consumables, etc	103,948	26,611	543,593	674,152
Grinding Media, Reagents	222,816	57,041	1,165,205	1,445,062
Dryer - Bunker C	173,080	59,078	1,206,816	1,438,974
Dryer - Diesel	6,188	2,112	43,143	51,442
Materials handling - fuel	621	159	2,634	3,415
Materials handling - other	20,074	5,139	103,243	128,457
Total	**1,630,698**	**366,964**	**7,130,780**	**9,128,443**

Period	2017-2024	2025-2026	2027-2047	LOM Total
Production Rate	**10 M t/y**	**10 M t/y**	**20 M t/y**	**-**
Power	**Self-Generated**	**Hydroelectric**	**Hydroelectric**	**-**
Unit cost ($/t concentrate)	**20.87**	**18.35**	**17.45**	**18.02**

Figure numbers may not add due to rounding.

21.2.2.1 Labour Costs

In the 10 Mt/y concentrate process plant, it is estimated that there will be 144 employees. This includes the supervision staff for the crusher, process plant and port facility operation, the process plant installations electrical and maintenance planning, the operation hourly employees as well as the mechanical and electrical repairmen. The total annual manpower cost is estimated at $16.1 million per year. This corresponds to $1.61/t concentrate produced.

When producing 20 Mt/y of iron concentrate, the number of employees is estimated at 193 and the labour costs will increase to $20.8 million per year. This corresponds to $1.04/t concentrate produced.

21.2.2.2 Electrical Power Costs

In the 10 Mt/y concentrate process plant, electrical power is required for the equipment in the process plant such as: crushers, grinding mills, conveyors, screens, pumps, agitators, services (compressed air and water), etc. The unit cost of electricity was established at $0.156/kWh when self-generated at site. The total annual cost for the process plant manpower is estimated at $125 million per year. This corresponds to $12.52/t concentrate produced.

After 2025 the cost of electricity will be $0.115/kWh using hydroelectricity. When producing 10 Mt/y concentrate the costs are estimated at $92.3 million per year or $9.23/t concentrate produced.

When producing 20 Mt/y of iron concentrate the electricity costs will increase to $178.3 million per year using hydroelectricity at $0.115/kWh. This corresponds to $8.91/t concentrate produced.

21.2.2.3 Consumables and Wear Parts Costs

In the 10 Mt/y concentrate process plant, the consumption and cost for the bowls, mantles, screen decks, grinding mill liners, cyclones vortex finders and apexes, pump wear parts, filters cloths, etc. for the different equipment was obtained from the equipment suppliers and from experience with similar operations. The cost consumables and wear parts are estimated at $13.3 million per year or $1.33/t concentrate produced.

When producing 20 Mt/y of iron concentrate the consumables costs will increase to $26.6 million per year. This corresponds to $1.33/t concentrate produced.

21.2.2.4 Grinding Media and Reagents Costs

In the 10 Mt/y concentrate process plant, the grinding mills will need a regular addition of balls to replace the worn media and exercise the proper grinding action on the material. The media consumption has been estimated based on steel consumption observed in similar operations and the abrasion indices and power consumption. Grinding balls will have to be added every day to maintain the steel load in the mills. The only reagent is flocculant required for thickener operation. The total cost for grinding media and reagents at the process plant and port facility are estimated at $28.5 million per year or $2.85/t concentrate produced.

When producing 20 Mt/y of iron concentrate the grinding media and reagent costs will increase to $57.0 million per year. This corresponds to $2.85/t concentrate produced.

21.2.2.5 Process Fuel Costs

Dryer No. 6 Heavy Fuel Oil Costs

For the initial production of 10 Mt/y of concentrate, the annual No. 6 oil costs for drying the concentrate at the port facility are estimated at $22.2 million per year or $2.22/t of concentrate produced. This estimate assumed using the waste heat from the generators for the equivalent of 25% of the total estimated fuel consumption.

After 2025, the No. 6 oil cost is estimated at $29.5 million per year or $2.95/t concentrate produced. Note: waste heat from the power plant is not available due to the changeover to hydroelectric power.

When producing 20 Mt/y of iron concentrate, the cost for No. 6 oil will increase to $59.1 million per year. This corresponds to $2.95/t concentrate produced.

Dryer Diesel Fuel Costs

For initial the production of 10 Mt/y of concentrate, the annual diesel fuel costs for drying the concentrate at the port facility are estimated at $0.8 million per year or $0.08/t concentrate produced.

After 2025 the costs, with the removal of the waste heat, is estimated at $1.06 million per year or $0.11/t concentrate produced.

When producing 20 Mt/y of iron concentrate the diesel fuel costs will increase to $2.11 million per year. This corresponds to $0.11/t concentrate produced.

21.2.2.6 Material Handling Costs

In the 10 Mt/y concentrate process plant, the material handling costs include the diesel fuel for mobile equipment, replacement of worn equipment parts and pipeline operating costs. The total cost for material handling at the process plant and port facility are estimated at $2.6 million per year or $0.26/t concentrate produced.

When producing 20 Mt/y of iron concentrate the material handling costs will increase to $5.2 million per year. This corresponds to $0.26/t concentrate produced.

21.2.2.7 Tailings and Water Management Operating Costs

The tailings and water management operating costs are included in the process plant operating costs.

21.2.3 Port Operating Costs

Port operating costs at the Hopes Advance project are shown in Table 21.10.

Table 21.10
LOM Port Operating Costs
(Thousand $)

Period	**2017-2024**	**2025-2026**	**2027-2047**	**LOM Total**
Production Rate	**10 M t/y**	**10 M t/y**	**20 M t/y**	**-**
Port Operating Cost				
Staff	97,656	25,000	367,695	490,352
Facility maintenance	57,031	14,600	163,420	235,051
Miscellaneous	11,719	3,000	61,283	76,001
Total Port	**166,406**	**42,600**	**592,398**	**801,404**
Unit cost ($/t concentrate)	**2.13**	**2.13**	**1.45**	**1.58**

Figure numbers may not add due to rounding.

21.2.4 Site Services Operating Costs

Site Services operating costs at the Hopes Advance project are shown in Table 21.11.

Table 21.11
LOM Site Services Operating Costs
(Thousand $)

Period	2017-2024	2025-2026	2027-2047	LOM Total
Production Rate	**10 M t/y**	**10 M t/y**	**20 M t/y**	**-**
Site Services Cost				
Staff	20,008	5,122	67,452	92,581
Materials and Services	240,287	50,212	766,123	1,056,622
Total Site Services Costs	**260,295**	**55,334**	**833,575**	**1,149,204**
Unit cost ($/t concentrate)	**3.33**	**2.77**	**2.04**	**2.27**

Figure numbers may not add due to rounding.

These cost estimates were derived from Met-Chem's database, discussions with Oceanic, or factored from similar operations. These costs include; manpower, waste removal, food services contract, potable water consumables, site infrastructure building maintenance, site infrastructure power, plant mobile equipment maintenance and power losses in overhead lines and substations. The power is based on self-generation at the port power plant. For 10 Mt/y, manpower is estimated at 25 employees, rising to 32 employees at 20 Mt/y.

21.2.5 General and Administration Operating Costs

G&A operating costs at the Hopes Advance project are shown in Table 21.12.

Table 21.12
LOM G&A Operating Costs
(Thousand $)

Period	2017-2024	2025-2026	2027-2047	LOM Total
Production Rate	**10 M t/y**	**10 M t/y**	**20 M t/y**	**-**
G&A Cost				
Administrative Staff	28,301	7,245	92,046	127,592
Materials and Services - Admin	60,547	15,500	190,997	267,044
Technical Staff	14,133	3,618	47,433	65,184
Materials and Services - Technical	4,492	1,150	15,831	21,474
Total Site Services Costs	**107,473**	**27,513**	**346,308**	**481,293**
Unit cost ($/t concentrate)	**1.38**	**1.38**	**0.85**	**0.95**

Figure numbers may not add due to rounding.

The estimate costs are derived from Met-Chem's database, discussion with Oceanic or factored from similar operations. For 10 Mt/y, manpower in this area is estimated at 46 employees, rising to 60 employees at 20 Mt/y.

22.0 ECONOMIC ANALYSIS

22.1 BASIS OF VALUATION

Micon has prepared its assessment of the project on the basis of a discounted cash flow model, from which net present value (NPV), internal rate of return (IRR), payback and other measures of project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

The objective of the study was to evaluate the economic potential for development of the project as proposed in the base case, and to examine the robustness of the returns to variation in key assumptions such as product price, capital and operating costs.

The base case considered in the Prefeasibility Study comprises an initial phase of iron concentrate production at the rate of 10 Mt/y using self-generated power. Hydroelectric power replaces self-generated power in Year 9 (2025). Further investment in Years 9 and 10 permits an expansion to 20 Mt/y of concentrate production from Year 11 (2027).

22.2 MACROECONOMIC ASSUMPTIONS

22.2.1 Expected Product Prices

Micon based the economic evaluation on recent market prices for iron concentrates, as described in Section 19.0. The base case price used in the evaluation, for a 66.5% Fe concentrate with ≤4.5% silica, FOB Ungava Bay, is $100/t.

22.2.2 Exchange Rate and Inflation

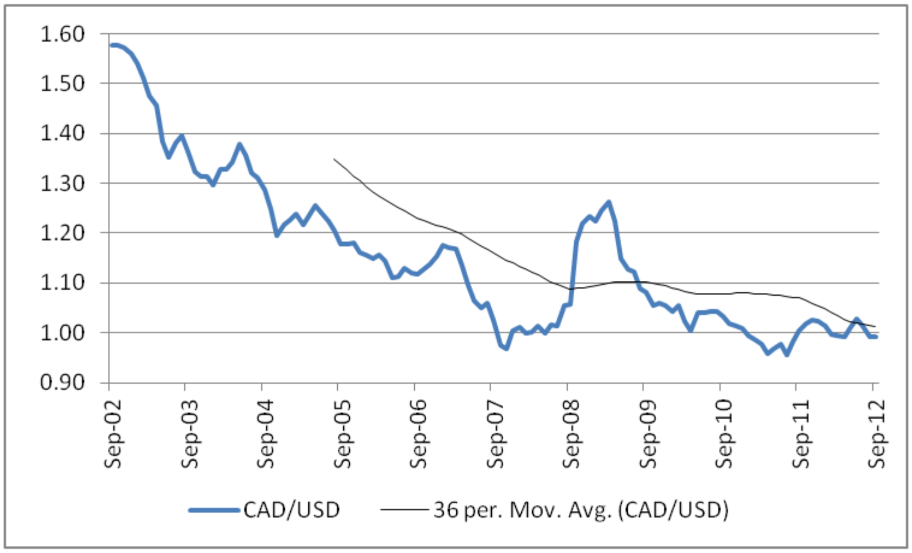
All results are expressed in US dollars ($). Cost estimates and other inputs to the cash flow model for the project have been prepared using constant, mid-2012 money terms, i.e., without provision for inflation. Revenues have been converted from Canadian dollars at parity, which approximates the actual exchange rate over the 36-month period ending August, 2012 and is conservative when compared to the average exchange rate over longer periods, as shown in Figure 22.1.

22.2.3 Corporate Taxation

Quebec mining duty has been provided for at 16%, after deducting depreciation and processing allowances, and assuming the availability of an exemption on the first $5 million of annual profit applicable to 'northern' mines in the first three years of operation.

Federal and Quebec provincial income taxes have been allowed for at the combined rate of 26.9%, after deducting depreciation of capital expenditures at appropriate rates and allowing for Quebec mining duty paid.

Figure 22.1
Exchange Rate CAD$/$, 2001-2011



22.2.4 Royalty

Micon understands that a royalty of 2.0% is payable to the vendors of the property (see Section 4.0). For the purposes of the Prefeasibility Study, it is assumed that Oceanic will, at the start of commercial production, exercise its right to purchase half of this royalty for $3 million. The purchase price and the residual royalty of 1.0% have been fully provided for in the cash flow.

22.2.5 Leverage

In addition to an unlevered base case, Micon evaluated a levered case using the following assumptions with regard to debt finance:

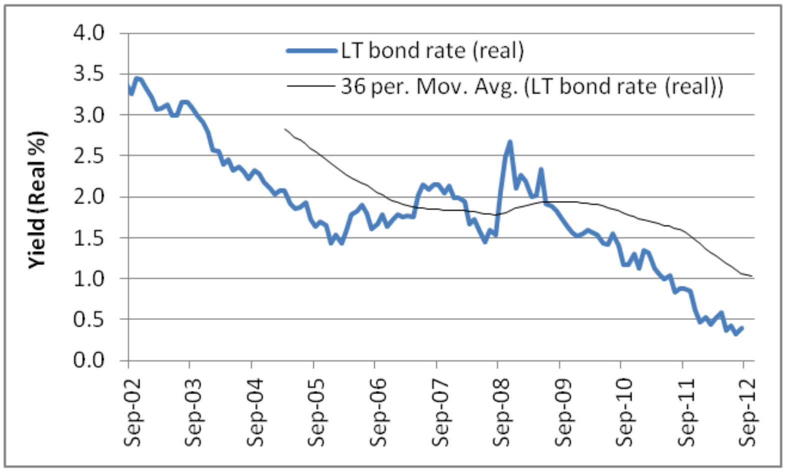
- Initial capital 60% debt financed.
- Annual interest rate of 8%.
- Upfront financing fee of 3%.
- Repayment over seven years, commencing within first year of production.
- Expansion capital funded through operating cash flow.

22.2.6 Weighted Average Cost of Capital

In order to find the NPV of the cash flows forecast for the project, an appropriate discount factor must be applied which represents the weighted average cost of capital (WACC) imposed on the project by the capital markets. The cash flow projections used for the evaluation have been prepared on both a levered and unlevered basis. For the unlevered base case, WACC is equal to the cost of equity.

In real terms, the yield on Canadian long bonds has been less than 2.0% for the three years to August, 2012 and has averaged close to 1.0% over that period (see Figure 22.2). Micon has taken this range of values for the risk-free rate in the capital asset pricing model (CAPM).

Figure 22.2
Real Yield on Canadian Long Bonds, 2001-2011



Assuming the risk premium for equity to be 5.0% and the value of beta (β) for this sector of the market to be in the range 1.4 to 2.0, the market cost of equity for the project is estimated to be in the range of 8.0% to 12.0% in real terms. The base case results are presented using a real discount rate of 8%. In the leveraged case, with a net cost of debt of around 5.0% after-tax, WACC ranges from 6.2 to 7.8%, as shown in Table 22.1.

Table 22.1
Estimated Cost of Equity

Range	Lower	Middle	Upper
Risk Free Rate (%)	1.0	1.5	2.0
Market Premium for equity (%)	5.0	5.0	5.0
Beta	1.4	1.7	2.0
Cost of equity (%)	**8.0**	**10.0**	**12.0**
Leverage (%)	60.0	60.0	60.0
After-tax cost of debt (%)	5.0	5.0	5.0
WACC (%)	**6.2**	**7.0**	**7.8**

22.3 TECHNICAL ASSUMPTIONS

Table 22.2 summarizes the main technical assumptions for the project.

Table 22.2
Base Case Technical Assumptions

Item	Unit	Value
LOM mill feed tonnage	M t	1,359
Waste rock mined	M t	1,588
Stripping ratio	W/O	1.17
Feed grade to mill	% Fe	32.2
Weight recovery to concentrate	%	37.3
Concentrate production rate Years 1-10	000 t/y	10,000
Concentrate production rate Years 11-31	000 t/y	20,000
Mine life (at full production)	years	30.2
Concentrate production (LOM)	M t	506.7
Initial capital cost	$ M	2,854
Expansion capital cost	$ M	1,608
Sustaining capital	$ M	767
LOM revenue (average, net of royalty)	$/t milled	36.90
LOM cash operating cost (average)	$/t milled	11.25
LOM revenue (average, net of royalty)	$/t concentrate	98.99
LOM cash operating cost (average)	$/t concentrate	30.18

22.3.1 Mine Production Schedule

The base case open pit mine production schedule contemplates a variable tonnage and grade of mill feed to achieve a steady-state level of concentrate production. The initial concentrate output of 10 Mt/y is maintained for the first ten years of the LOM period, then increases to 20 Mt/y concentrate for the remainder of the mine life.

Including waste stripping, the mining schedule initially requires around 40 Mt/y from open pit mining, rising to an average of more than 135 Mt/y from Year 15 to Year 30. Figure 22.3 illustrates this schedule.

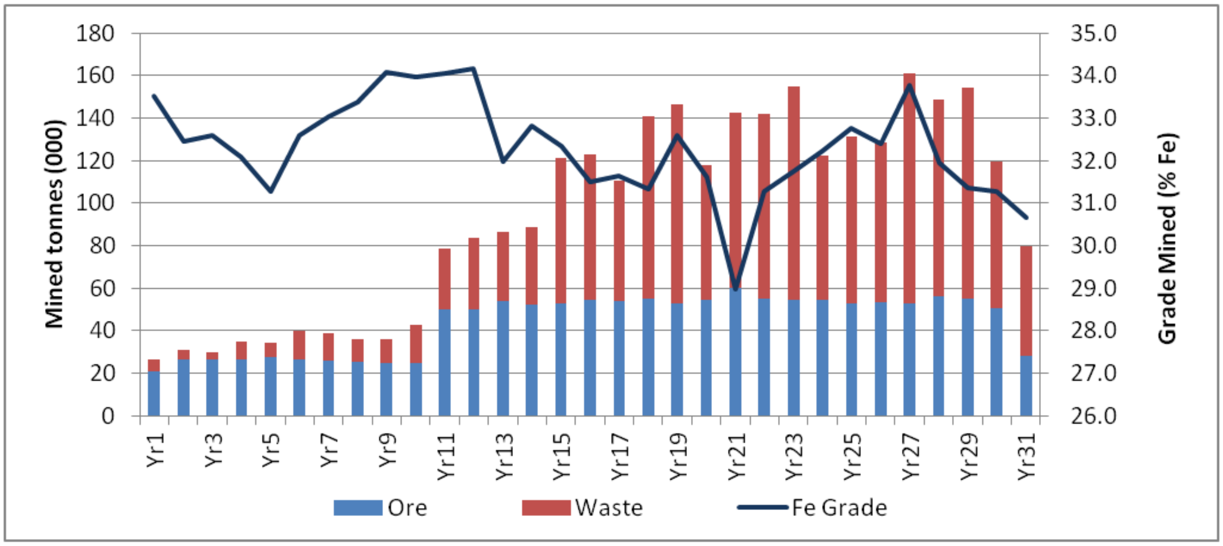
22.3.2 Processing Schedule

In the base case, 6.8 Mt of feed is stockpiled during pre-production mining and is only treated in the penultimate year of operation. No routine stockpiling is accounted for and run-of-mine feed from the open pit is assumed to be treated immediately, with the production of concentrate held steady at an annual rate of 10 Mt/y and then 20 Mt/y over the LOM period.

22.3.3 Working Capital

Year-round sales of concentrate are accounted for in the period of production, subject to an allowance for product inventory of 30 days and accounts receivable of a further 30 days of production.

Figure 22.3
Base Case Open Pit Production Schedule



Additional working capital is provided for 45 days of stores, partly off-set by 30 days of accounts payable.

Provision for first fills and strategic spares is made within indirect initial capital.

22.3.4 Operating Costs

Figure 22.4 shows the direct operating costs on an annual basis over the LOM period. Operating costs are held steady over much of the first ten years, then increases from Year 11 when output doubles. At each rate of production, process and G&A costs are steady, with most variation in costs occurring as a result of increased haulage distance and the need for waste stripping in the open pits.

22.3.5 Capital Expenditures

Figure 22.5 shows the project initial, expansion and sustaining capital costs on an annual basis over the LOM period. It is apparent that, apart from the major expansion programmed for Years 9 and 10, ongoing capital expenditures are insignificant when compared to the forecast cash operating margin.

Figure 22.4
Base Case – Annual Operating Costs

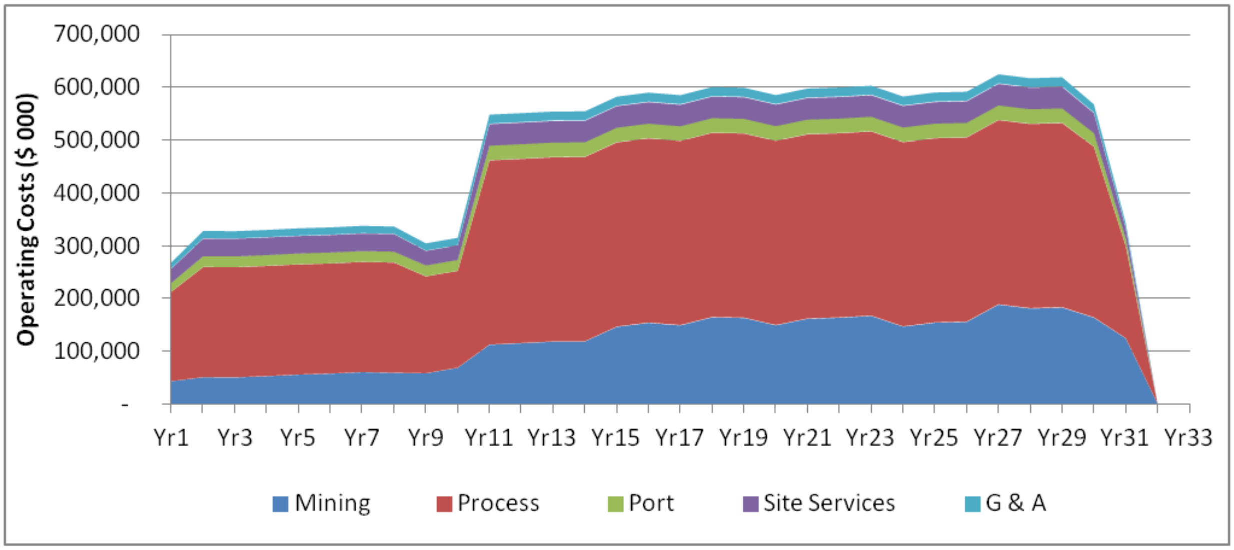
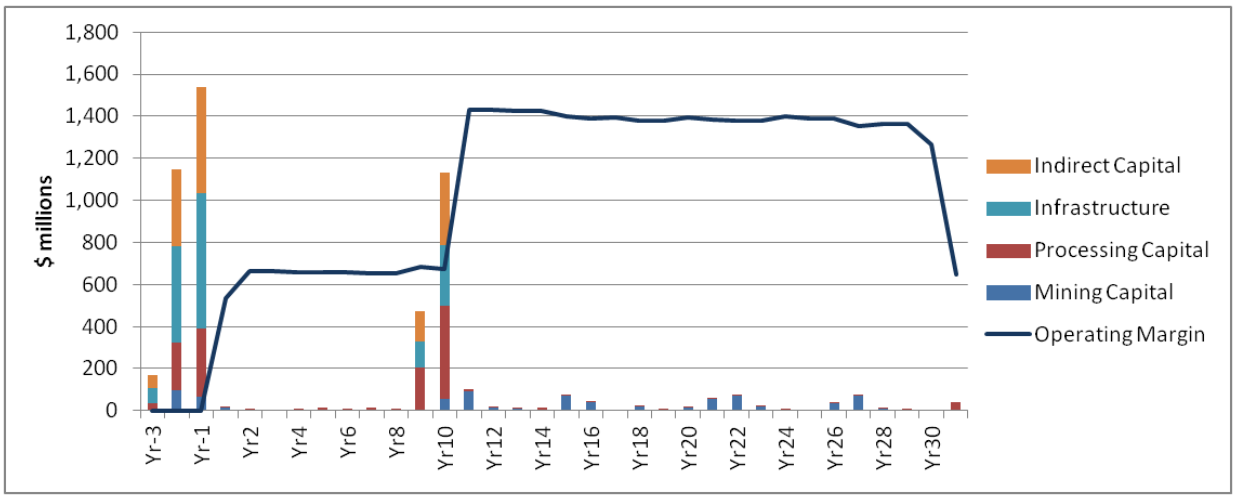


Figure 22.5
Base Case – Annual Capital Costs



22.4 PROJECT ECONOMICS – BASE CASE

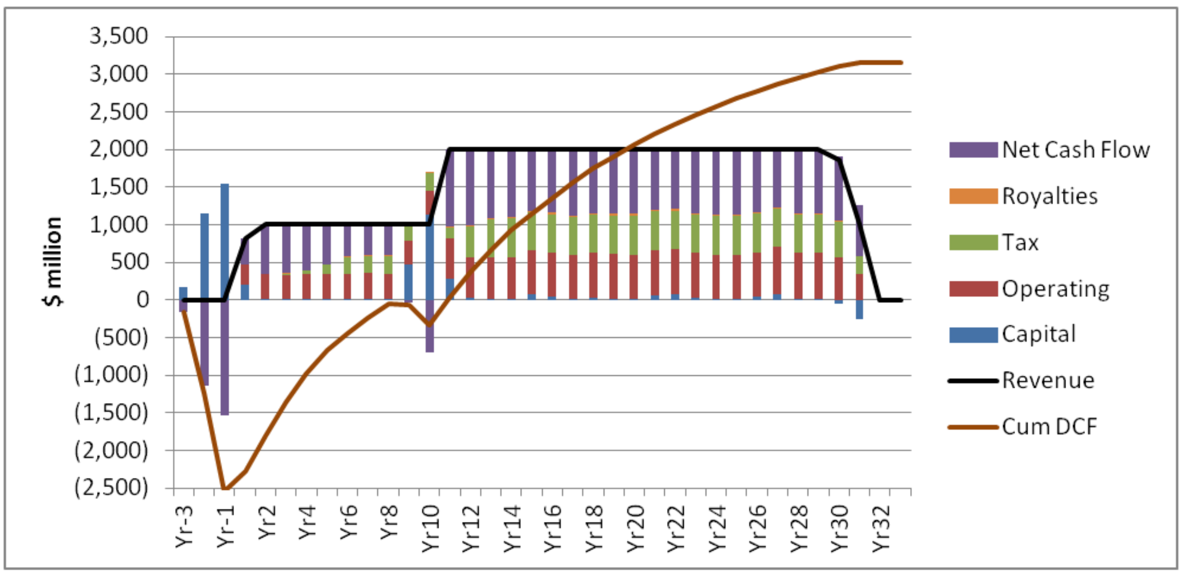
22.4.1 Cash Flow Projection

Table 22.3 summarizes the life-of-mine cash flows for the project, while Table 22.4 presents the annual cash flow schedule for the base case and the chart at Figure 22.6 shows the annual cash flows during this period.

Table 22.3
Base Case – LOM Cash Flow (Unlevered)

	LOM Total ($ million)	$/t Milled	$/t Concentrate
Gross Sales	50,668	37.28	100.00
less Royalties	510	0.37	1.01
Net Sales	50,158	36.90	98.99
Operating Costs	15,293	11.25	30.18
Operating Margin	34,865	25.65	68.81
Capital expenditure	5,229	3.85	10.32
Pre-tax Cash flow	29,637	21.80	58.49
Tax payable	11,254	8.28	22.21
Net Cash flow after tax	18,382	13.52	36.28

Figure 22.6
Life of Mine Annual Cash Flows



22.4.2 Unlevered Base Case Evaluation

The base case cash flow demonstrates that, with a product price of $100/t, the project is able to provide a very robust operating margin of 69%. With an initial capital construction cost of $2,854 million and working capital requirements of almost $176 million in Year 1, the unlevered base case shows a maximum funding requirement of $3,029 million prior to receipt of first revenue.

The unlevered base case cash flow evaluates to a net present value at a discount rate of 8%/y (NPV_8) of $5.6 billion before tax and $3.2 billion after tax. Comparative results at other discount rates are shown in Table 22.5. Internal rates of return (IRR) before and after tax are 20.5% and 16.8%, respectively. The undiscounted cash flow after tax shows a payback period of 5.0 years. Discounted at 8%/y, the payback period on initial capital is 8.1 years.

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Table 22.4
Base Case – LOM Annual Cash Flow Schedule

Production Schedule		LOM total	Yr-3	Yr-2	Yr-1	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12	Yr13	Yr14	Yr15	Yr16	Yr17	Yr18	Yr19	Yr20	Yr21	Yr22	Yr23	Yr24	Yr25	Yr26	Yr27	Yr28	Yr29	Yr30	Yr31
Ore Mined/Reclaimed	t million	**1,359.27**	-	-	-	20.71	26.46	26.31	26.80	27.60	26.29	25.86	25.56	24.99	25.09	50.04	49.86	53.80	52.22	53.05	54.63	54.24	54.99	52.65	54.51	60.32	55.15	54.37	54.32	53.07	53.39	53.03	56.04	54.87	50.91	28.13
Grade of ore mined	% Fe	**32.18**	-	-	-	33.51	32.44	32.60	32.08	31.28	32.59	33.03	33.39	34.08	33.96	34.05	34.17	31.98	32.82	32.36	31.50	31.65	31.34	32.58	31.62	28.97	31.28	31.75	32.24	32.76	32.39	33.78	31.95	31.37	31.29	30.67
Ore stockpiled	t million	**-**	-	-	6.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waste Rock Mined	t million	**1,587.70**	-	5.31	7.87	5.68	4.65	3.61	8.17	6.90	13.88	12.74	10.71	11.26	17.86	28.50	34.11	32.78	36.35	68.18	68.13	56.17	86.07	93.93	63.27	82.05	86.84	100.55	68.10	78.56	74.92	108.27	92.60	99.22	68.94	51.55
W/O ratio		**1.17**	-	-	-	0.274	0.176	0.137	0.305	0.250	0.528	0.492	0.419	0.450	0.712	0.570	0.684	0.609	0.696	1.285	1.247	1.036	1.565	1.784	1.161	1.360	1.575	1.849	1.254	1.480	1.403	2.042	1.652	1.808	1.354	1.832
Wt. recovery (%)	%	**37.28**	-	-	-	39.2	37.8	38.0	37.3	36.2	38.0	38.7	39.1	40.0	39.9	40.0	40.1	37.2	38.3	37.7	36.6	36.9	36.4	38.0	36.7	33.2	36.3	36.8	36.8	37.7	37.5	37.7	35.7	36.4	36.4	35.6
Product tonnage	t million	**506.68**	-	-	-	8.13	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	18.53	10.02
Concentrate Price	US$/tonne	**100.00**	-	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Gross Sales (USD)	US$ million	**50,668**	-	-	-	813	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	1,853	1,002
Exchange Rate	CAD/USD	**1.00**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Product Sales (CAD)	$ million	**50,668**	-	-	-	813	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	1,853	1,002
Royalties		**510**	-	-	-	11	10	10	10	10	10	10	10	10	10	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	10
Net Revenue		**50,158**	-	-	-	801	990	990	990	990	990	990	990	990	990	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,835	992
Mining		**3,732**	-	-	-	43	50	50	52	55	57	60	59	58	68	112	115	118	119	146	154	149	164	163	149	162	164	167	147	154	156	189	181	183	164	124
Process		**9,128**	-	-	-	170	209	209	209	209	209	209	209	183	183	349	349	349	349	349	349	349	349	349	349	349	349	349	349	349	349	349	349	349	323	175
Port		**801**	-	-	-	17	21	21	21	21	21	21	21	21	21	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	27	15
Site Services		**1,149**	-	-	-	27	33	33	33	33	33	33	33	28	28	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	38	20
G & A		**481**	-	-	-	11	14	14	14	14	14	14	14	14	14	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	8
Direct Operating Costs	$ million	**15,293**	-	-	-	268	327	327	329	332	334	337	336	304	314	548	551	554	554	582	590	585	600	599	585	598	599	603	583	590	591	624	617	619	568	343

Cash Flow Projection (Unlevered Base Case	LOM total $ millions	Yr-3	Yr-2	Yr-1	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12	Yr13	Yr14	Yr15	Yr16	Yr17	Yr18	Yr19	Yr20	Yr21	Yr22	Yr23	Yr24	Yr25	Yr26	Yr27	Yr28	Yr29	Yr30	Yr31
Net Revenue	**50,158**	-	-	-	801	990	990	990	990	990	990	990	990	990	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,835	992
Operating Costs	**15,293**	-	-	-	268	327	327	329	332	334	337	336	304	314	548	551	554	554	582	590	585	600	599	585	598	599	603	583	590	591	624	617	619	568	343
Operating Margin	**34,865**	-	-	-	533	663	663	661	658	656	653	654	686	676	1,432	1,429	1,426	1,426	1,398	1,390	1,395	1,380	1,381	1,395	1,382	1,381	1,377	1,397	1,390	1,389	1,356	1,363	1,361	1,267	649
Capital	**5,229**	168	1,147	1,539	18	12	5	8	14	9	14	8	475	1,133	100	20	14	13	75	42	4	24	9	18	61	77	24	11	4	38	77	13	9	4	40
Working Capital	**-**	-	-	-	176	1	(0)	0	0	0	0	(0)	(1)	0	172	0	0	0	1	0	(0)	1	(0)	(1)	1	0	0	(1)	0	0	1	(0)	0	(61)	(290)
Pre-tax c/flow (unlevered)	**29,637**	(168)	(1,147)	(1,539)	339	650	658	653	643	647	638	646	212	(458)	1,159	1,409	1,412	1,412	1,322	1,348	1,391	1,355	1,372	1,377	1,321	1,303	1,353	1,388	1,385	1,350	1,278	1,351	1,352	1,324	899
Tax payable	**11,254**	-	-	-	-	-	13	46	119	223	229	234	249	244	133	402	503	513	506	504	510	508	511	519	513	508	506	517	517	517	501	503	505	471	231
C/flow after tax	**18,382**	(168)	(1,147)	(1,539)	339	650	645	607	524	423	410	413	(36)	(701)	1,026	1,007	909	900	816	844	881	847	860	859	808	795	847	871	869	833	777	848	847	853	668
Cumulative C/Flow		(168)	(1,315)	(2,854)	(2,514)	(1,864)	(1,219)	(613)	(89)	334	744	1,157	1,120	419	1,445	2,452	3,361	4,261	5,077	5,920	6,801	7,648	8,508	9,367	10,175	10,970	11,817	12,688	13,556	14,390	15,167	16,014	16,861	17,714	18,382
Payback on Undiscounted cash flow (yrs)	**5.0**	-	-	-	0.8	1.0	1.0	1.0	1.0	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discounted C/Flow	**3,152**	(168)	(1,062)	(1,319)	269	478	439	382	306	229	205	191	(16)	(279)	377	343	287	263	221	211	204	182	171	158	138	125	124	118	109	97	83	84	78	73	53
Cumulative DCF	**-**	(168)	(1,230)	(2,549)	(2,280)	(1,802)	(1,363)	(981)	(675)	(446)	(241)	(50)	(66)	(344)	33	376	662	925	1,145	1,357	1,561	1,742	1,913	2,071	2,209	2,334	2,458	2,575	2,684	2,781	2,864	2,948	3,026	3,099	3,152
Payback on discounted cash flow (yrs)	**8.1**	-	-	-	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Cash Flow Projection (Levered Case)	LOM total $ millions	Yr-3	Yr-2	Yr-1	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12	Yr13	Yr14	Yr15	Yr16	Yr17	Yr18	Yr19	Yr20	Yr21	Yr22	Yr23	Yr24	Yr25	Yr26	Yr27	Yr28	Yr29	Yr30	Yr31
Net Revenue	**50,158**	-	-	-	801	990	990	990	990	990	990	990	990	990	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,835	992
Operating Costs	**15,293**	-	-	-	268	327	327	329	332	334	337	336	304	314	548	551	554	554	582	590	585	600	599	585	598	599	603	583	590	591	624	617	619	568	343
Operating Margin	**34,865**	-	-	-	533	663	663	661	658	656	653	654	686	676	1,432	1,429	1,426	1,426	1,398	1,390	1,395	1,380	1,381	1,395	1,382	1,381	1,377	1,397	1,390	1,389	1,356	1,363	1,361	1,267	649
Capital	**5,229**	168	1,147	1,539	18	12	5	8	14	9	14	8	475	1,133	100	20	14	13	75	42	4	24	9	18	61	77	24	11	4	38	77	13	9	4	40
Working Capital	**-**	-	-	-	176	1	(0)	0	0	0	0	(0)	(1)	0	172	0	0	0	1	0	(0)	1	(0)	(1)	1	0	0	(1)	0	0	1	(0)	0	(61)	(290)
Pre-tax c/flow (unlevered)	**29,637**	(168)	(1,147)	(1,539)	339	650	658	653	643	647	638	646	212	(458)	1,159	1,409	1,412	1,412	1,322	1,348	1,391	1,355	1,372	1,377	1,321	1,303	1,353	1,388	1,385	1,350	1,278	1,351	1,352	1,324	899
Finance charges/(inflows)	**613**	51	(167)	(1,463)	372	352	333	313	294	274	254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-tax c/flow (levered)	**29,024**	(219)	(981)	(75)	(32)	298	325	340	350	373	384	646	212	(458)	1,159	1,409	1,412	1,412	1,322	1,348	1,391	1,355	1,372	1,377	1,321	1,303	1,353	1,388	1,385	1,350	1,278	1,351	1,352	1,324	899
Tax payable	**11,033**	-	-	-	-	-	-	20	46	141	218	229	244	240	133	402	502	512	506	504	510	508	511	519	513	508	506	517	517	517	501	503	505	471	231
C/flow after tax	**17,991**	(219)	(981)	(75)	(32)	298	325	320	304	232	166	418	(32)	(698)	1,027	1,007	910	900	816	844	881	847	860	859	808	795	847	871	869	833	777	848	847	853	668
Cumulative C/Flow		(219)	(1,200)	(1,275)	(1,308)	(1,010)	(685)	(365)	(61)	171	337	755	723	25	1,052	2,059	2,968	3,868	4,685	5,529	6,410	7,256	8,117	8,975	9,783	10,578	11,425	12,296	13,165	13,998	14,775	15,623	16,470	17,323	17,991
Payback on Undiscounted cash flow (yrs)	**5.1**	-	-	-	0.8	1.0	1.0	1.0	1.0	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discounted C/Flow	**3,210**	(219)	(908)	(65)	(26)	219	221	201	177	125	83	193	(14)	(277)	378	343	287	263	221	211	204	182	171	158	138	125	124	118	109	97	83	84	78	73	53
Cumulative DCF	**0**	(219)	(1,127)	(1,192)	(1,218)	(998)	(777)	(576)	(399)	(273)	(190)	3	(10)	(287)	90	433	720	982	1,203	1,414	1,618	1,800	1,971	2,129	2,266	2,392	2,515	2,633	2,742	2,839	2,922	3,006	3,084	3,157	3,210
Payback on discounted cash flow (yrs)	**7.8**	-	-	-	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 22.5
Unlevered Base Case – Results of Evaluation

Discount Rate	NPV ($ million) before tax	NPV ($ million) after tax
8%	**5,632**	**3,152**
10%	3,764	1,960
12%	2,474	1,135
Internal Rate of Return (%)	20.5	16.8

22.4.3 Levered Base Case Evaluation

The levered case assumes 60% of the initial construction capital is debt financed on the terms described in Section 22.2.5. The amount of debt finance assumed is $1,712 million. The balance of the initial capital construction cost of $1,141 million, pre-production finance costs of $134 million and working capital requirements of almost $176 million in Year 1 bring the maximum *equity* funding requirement to $1,451 million in the levered base case.

For the levered case, cash flow to equity evaluates to NPV_8 of $5.6 billion before tax and $3.2 billion after tax. Comparative results at other discount rates are shown in Table 22.6. Levered internal rates of return (IRR) before and after tax are 23.2% and 19.2%, respectively.

Table 22.6
Levered Case – Results of Evaluation

Discount Rate	NPV ($ million) before tax	NPV ($ million) after tax
8%/y	**5,565**	**3,210**
10%/y	3,784	2,089
12%/y	2,567	1,323
Internal Rate of Return (%)	23.2	19.2

22.5 SENSITIVITY ANALYSIS

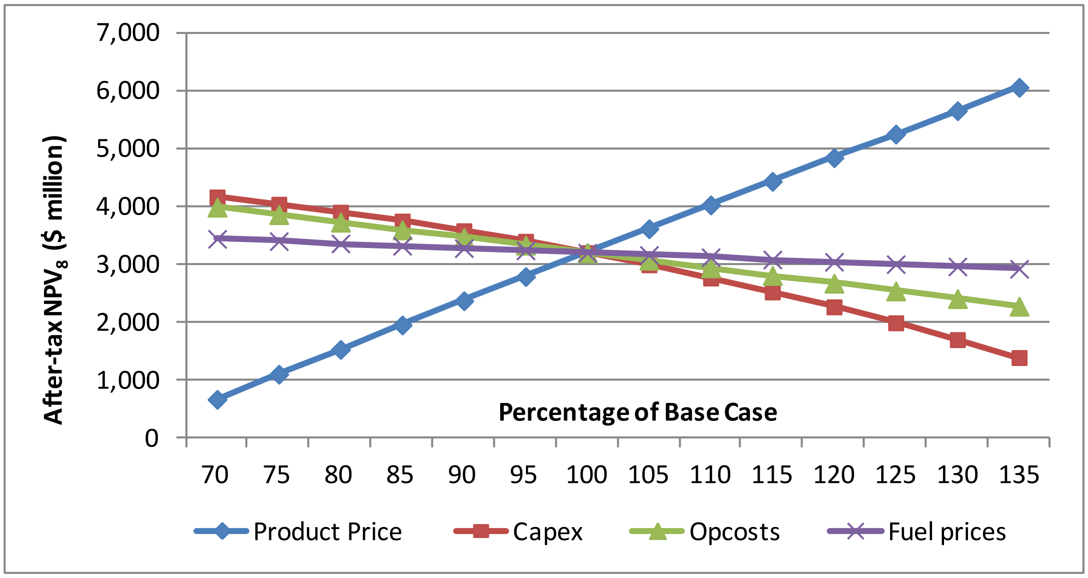
22.5.1 Variation in Base Case Assumptions

Figure 22.7 shows the sensitivity of the unlevered after-tax cash flow discounted at 8% (NPV_8) to variation over a range of 30% above and below the base case in concentrate prices, capital expenditure, operating costs and fuel costs. Concentrate price may be used as a proxy for feed grade and processing weight recovery to concentrate, since each has a direct relationship to revenue.

As might be expected, the project is most sensitive to changes in product price, though NPV_8 remains positive even at 30% below the base case price assumption of $100/t concentrate.

The project is less sensitive to capital and operating costs, so that a 30% increase results in NPV_8 after tax of $1.67 billion and $2.37 billion, respectively. Even if both factors are increased by 30% simultaneously, project returns remain positive, with NPV_8 after tax of \$0.85 billion and an IRR of 12.5% and 10.2% before and after tax, respectively.

Figure 22.7
NPV Sensitivity Diagram



22.5.2 Product Price Sensitivity

The sensitivity of the project economics to specific changes in concentrate price was investigated. The results are shown in Table 22.7, demonstrating positive returns with a concentrate price of \$70/t.

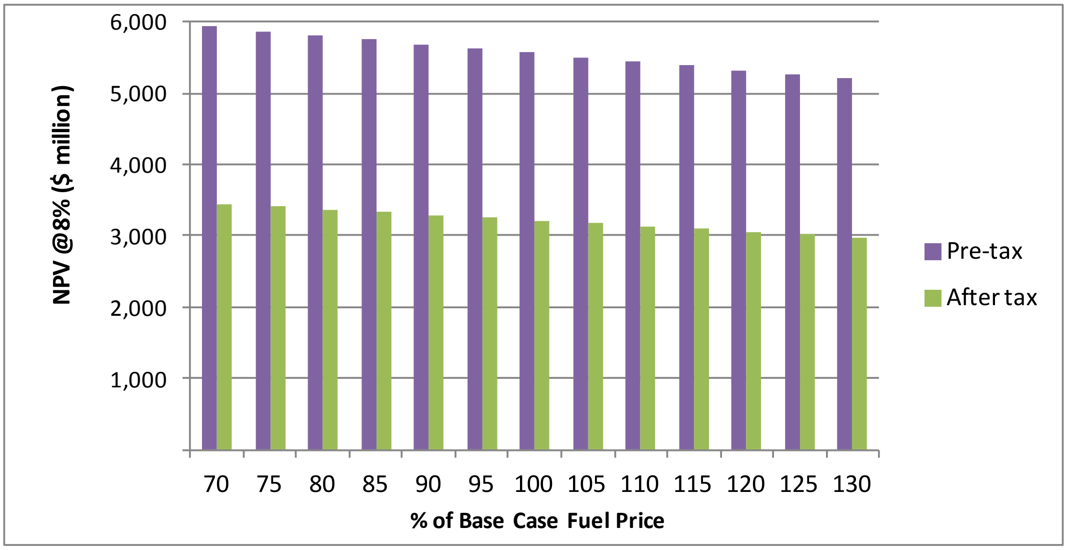
Table 22.7
Unlevered Base Case – Product Price Sensitivity

Product Price	Pre-tax		After Tax	
(\$/t Concentrate)	NPV_8 (\$ million)	IRR (%)	NPV_8 (\$ million)	IRR (%)
70	1,681	12.3	648	10.0
75	2,339	13.8	1,075	11.3
80	2,998	15.2	1,496	12.5
85	3,656	16.6	1,914	13.6
90	4,315	17.9	2,327	14.7
95	4,973	19.2	2,742	15.7
100	**5,632**	**20.5**	**3,152**	**16.8**
105	6,290	21.7	3,560	17.7
110	6,949	22.9	3,970	18.7
115	7,607	24.1	4,378	19.6
120	8,266	25.2	4,783	20.6
125	8,924	26.4	5,188	21.4
130	9,583	27.5	5,592	22.3
135	10,242	28.6	5,997	23.2

22.5.3 Fuel Price Sensitivity Analysis

The sensitivity of the fuel price was separately evaluated, as shown in Figure 22.8. Fuel cost sensitivity was applied as a percentage change to the base case prices of $0.750/L diesel and $0.652/L for No.6 ('Bunker C') heavy fuel oil. The results show that within 30% of the base case, this operating cost item has little direct impact on project economic returns.

Figure 22.8
Fuel Price Sensitivity



22.6 CONCLUSION

On the basis of this preliminary feasibility study of the project, Micon concludes that exploitation of the iron resources in the Hope Advance project area could provide attractive economic returns, and that further development is warranted.

The project base case described in this study provides a reasonable basis on which to proceed with engineering designs required to further optimize the project during the feasibility stage.

23.0 ADJACENT PROPERTIES

The Ungava Property is located in the Labrador Trough, which contains several current iron mining operations along with several historical iron mining operations. Oceanic has determined that the nearest active iron mining operation to the property is at Labrador City, approximately 800 km to the southeast. Immediately to the south of the Ungava Property is the Fenimore property containing several historically identified iron deposits. This area was also explored during the 1950s. No other significant iron properties are known in the area surrounding the Ungava Property. (Information provided in documents supplied by Peter Ferderber to Oceanic.)

South of Aupaluk, stretching 40 km towards Tasuijuaq is a property of 347 claims held by Nickel North Exploration Corp. The property has potential for discovery of copper, nickel, platinum, palladium and gold mineralization. (Based on GESTIM Plus, www.mnrf.gouv.qc.ca, and personal communication Eddy Canova of Oceanic with Nickel North Exploration Corp.).

In the Roberts Lake area, 50 km north of Kangirsuk, 128 claims are held by Mr. Kal Malhi covering the iron formation north of Hump Lake, Roberts Lake. (Information provided by Mr. Malhi).

24.0 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data and information that has not been provided in the respective sections of this report in order to make it not misleading.

25.0 INTERPRETATION AND CONCLUSIONS

This Prefeasibility Study is based on the proposed mining and processing of the Hopes Advance project measured and indicated mineral resources previously defined by Oceanic in an updated mineral resource estimate reported in April, 2012, and updated in September, 2012 using revised pit optimization parameters.

Mineral resources for the Hopes Advance project comprise measured and indicated resources of 1,388.0 Mt grading 32.1% Fe, and an inferred resource of 222.2 Mt grading 32.5% Fe.

25.1 UPDATED MINERAL RESOURCE ESTIMATE

An updated mineral resource estimate for the Hopes Advance project has been prepared as summarized in Table 25.1.

Table 25.1
Updated In-pit Mineral Resource Estimate for the Hopes Advance Project as at September, 2012
(Cut-off Grade Total 25% Fe)

Classification	Tonnes (t 000)	Fe (%)	Concentrate Tonnes (t 000)
Measured	774,241	32.2	288,971
Indicated	613,796	32.0	226,901
M+I	**1,388,037**	**32.1**	**515,872**
Inferred	222,188	32.5	82,475

(1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.
(2) The mineral resources were estimated using a block model with parent blocks of 50 m by 50 m by 15 m sub-blocked to a minimum size of 25 m by 25 m by 1m and using ID^3 methods for grade estimation. A total of 10 individual mineralized domains were identified and each estimated into a separate block model. Given the continuity of the iron assay values, no top cuts were applied. All resources are reported using an iron cut-off grade of 25% within Whittle optimization pit shells and a mining recovery of 100%.
(3) The quantity and grade of reported inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.
(4) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council November 27, 2010.

The results of the updated mineral resource estimates show that the work undertaken by Oceanic has expanded the previously reported estimate for each deposit. Oceanic has identified a number of instances where mineralization continues along the trend of the trough or down dip that was not considered economic in the historic resource estimates.

25.2 MINERAL RESERVE ESTIMATE

Mineral reserves for the Hopes Advance project have been estimated and are summarized in Table 25.2. Mineral reserves have not been estimated for the Bay Zone B or West Zone 2 pits as these deposits only contain inferred resources.

There is opportunity to upgrade some minor amounts of the inferred resource mineralization to ore classification with additional infill drilling.

Table 25.2
Mineral Reserve Estimate for the Hopes Advance Project

	Units	Castle Mountain	Iron Valley	Bay Zone C	Bay Zone D	Bay Zone E	Bay Zone F	West Zone McDonald	West Zone 4	Total
Proven	t 000	353,270	70,866	27,474	37,324	86,113	114,245	18,231	55,753	763,276
Fe Grade	%	31.9	33.4	31.2	31.5	32.5	32.8	33.2	32.8	32.3
Weight Recovery	%	37.0	39.1	36.2	36.6	38.0	38.3	34.1	37.1	37.4
Concentrate	t 000	130,731	27,714	9,957	13,679	32,697	43,746	6,220	20,684	285,428
Probable	t 000	195,100	133,595	55,337	16,250	22,052	125,505	21,548	26,603	595,990
Fe Grade	%	31.3	33.1	30.8	31.6	32.8	32.5	33.0	32.5	32.1
Weight Recovery	%	36.3	38.6	35.7	36.8	38.3	37.9	34.0	36.7	37.1
Concentrate	t 000	70,784	51,588	19,766	5,974	8,457	47,604	7,316	9,758	221,246
Proven & Probable	t 000	548,370	204,461	82,811	53,574	108,165	239,750	39,779	82,356	1,359,266
Fe Grade	%	31.7	33.2	30.9	31.5	32.6	32.6	33.1	32.7	32.2
Weight Recovery	%	36.7	38.8	35.9	36.7	38.0	38.1	34.0	37.0	37.3
Concentrate	t 000	201,515	79,302	29,723	19,653	41,153	91,350	13,536	30,442	506,675

25.3 PREFEASIBILITY STUDY

A Prefeasibility Study mine plan has been developed using the combined measured and indicated resources; no inferred resources have been used. The mining schedule reflects mining of the measured and indicated resource base with a negligible dilution or mining recovery losses. The proven and probable reserves derived from the mining plan and economic evaluation contained in this Prefeasibility Study comprise 1,359.2 Mt averaging 32.2% Fe (producing 506.7 Mt of concentrate).

The Prefeasibility Study is based on the following:

- Each of the Hopes Advance project deposits will be developed using standard open pit mining methods.
- Nominal production rate of 10 Mt/y concentrate for the initial development, which will be expanded to 20 Mt/y in Year 11.
- The life of the operating mine is approximately 31 years.

- Conventional mineral processing technology will be used to produce a single iron ore concentrate product containing iron.

- The Hopes Advance deposits are suited for size reduction using a SAG mill. The medium hardness for coarse rocks combined with the low work index for fine material make it possible to have the one size reduction step in the concentrator.

- The Castle Mountain pilot plant flow sheet can be used to process mill feed during the life of mine with minimal adjustments.

- The tested deposits are very amenable to gravity separation techniques. The average weight recovery using gravity separation is 31.6 percent. The weight recovery was increased by 6.0 percent using magnetic separation.

- Estimated life-of-mine iron weight recovery is 37.6%.

- Production of a concentrate grading greater than 66.6% Fe and less than 4.5% SiO_2.

- All tailings will be stored at the TMF located immediately east of the Iron Valley pit and north of Bay Zones E and F pits.

- Access to site will be via road to an all-season port. Personnel will access the site via a dedicated airstrip capable of handling jet aircraft.

- Construction of a marine facility in Hopes Advance Bay is viable. The preliminary wharf design takes account of wave and tide assumptions.

- Breakwater Point has been identified as the preferred location in terms of iron concentrate shipping logistics and marine facility construction cost.

- Year-round shipping to European and Asian markets using Cape-size vessels is feasible since custom-built ice-class vessels have the ability to manoeuvre through the ice conditions that have historically been present in the bay.

- The estimated incremental shipping cost from Hopes Advance Bay to Rotterdam is $5/t in comparison to shipping from Sept-Iles Bay. The optimum shipping cost is obtained by direct shipment using ice-class vessels from Hopes Advance Bay to Rotterdam.

- The optimum shipping cost from Hopes Advance Bay to China is obtained by direct shipping during summer and through transshipment during winter season. The estimated weighted incremental shipping cost from Hopes Advance Bay to China ranges between $6 to $8/t in comparison to shipping cost from Sept-Iles Bay.

- Electrical power will be provided initially by nine generators (seven operating and two standby) using No. 6 oil located at the port and by hydroelectric grid power commencing in Year 9.

25.4 PROJECT ECONOMICS

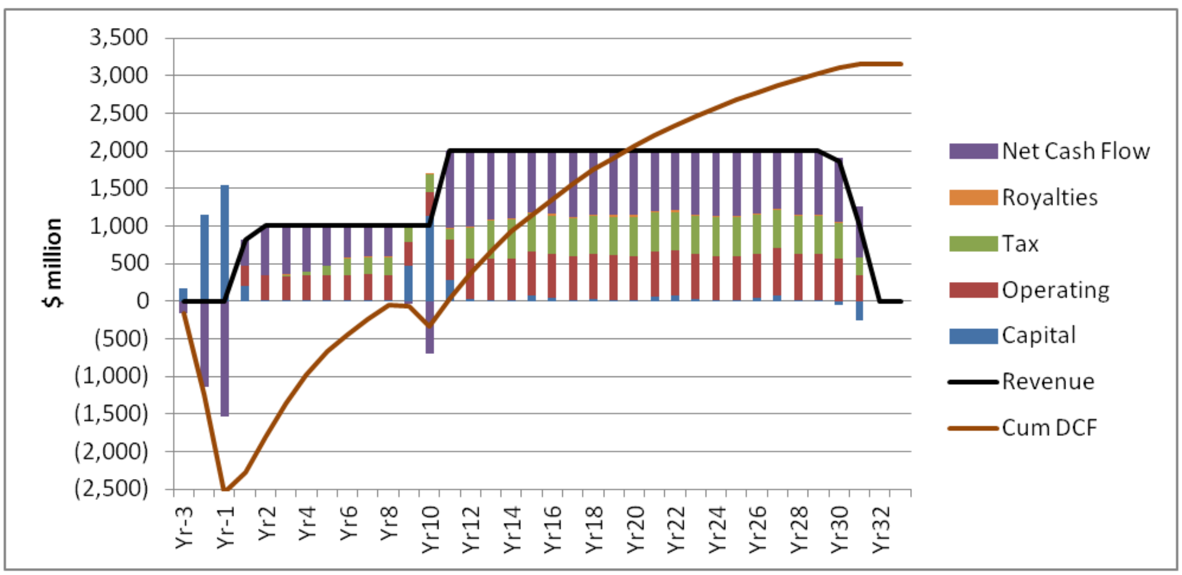
25.4.1 Cash Flow Projection

Table 25.3 summarizes the life-of-mine base case cash flows for the project, while the chart at Figure 22.6 shows the annual cash flows during this period.

Table 25.3
Base Case – LOM Cash Flow (Unlevered)

	LOM Total ($ million)	$/t Milled	$/t Concentrate
Gross Sales	50,668	37.28	100.00
less Royalties	510	0.37	1.01
Net Sales	50,158	36.90	98.99
Operating Costs	15,293	11.25	30.18
Operating Margin	34,865	25.65	68.81
Capital expenditure	5,229	3.85	10.32
Pre-tax Cash flow	29,637	21.80	58.49
Tax payable	11,254	8.28	22.21
Net Cash flow after tax	18,382	13.52	36.28

Figure 25.1
Life of Mine Annual Cash Flows



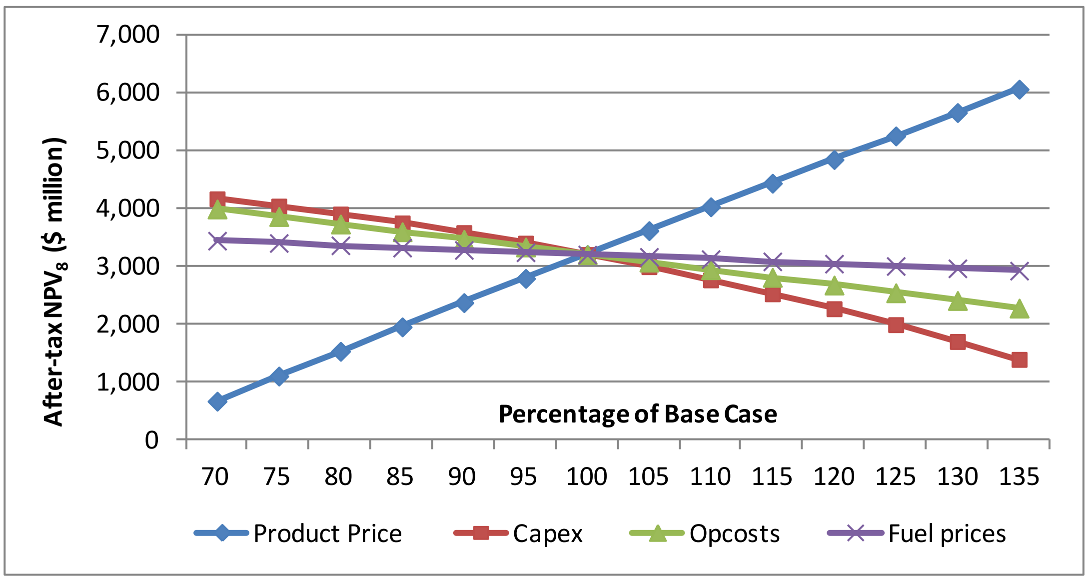
25.4.2 Variation in Base Case Assumptions

Figure 22.7 shows the sensitivity of the unlevered after-tax cash flow discounted at 8% (NPV_8) to variation over a range of 30% above and below the base case in concentrate prices, capital expenditure, operating costs and fuel costs. Concentrate price may be used as a proxy for feed grade and processing weight recovery to concentrate, since each has a direct relationship to revenue.

As might be expected, the project is most sensitive to changes in product price, though NPV_8 remains positive even at 30% below the base case price assumption of $100/t concentrate.

The project is less sensitive to capital and operating costs, so that a 30% increase results in NPV_8 after tax of $1.67 billion and $2.37 billion, respectively. Even if both factors are increased by 30% simultaneously, project returns remain positive, with NPV_8 after tax of $0.85 billion and an IRR of 12.5% and 10.2% before and after tax, respectively.

Figure 25.2
NPV Sensitivity Diagram



25.5 CONCLUSION

On the basis of this Prefeasibility Study of the Hopes Advance project, Micon concludes that exploitation of the iron resources in the Hope Advance project area could provide attractive economic returns, and that further development is warranted.

Engineering design should proceed to develop the project base case described in this study to further optimize the project during the Feasibility Study stage.

26.0 RECOMMENDATIONS

It is recommended that Oceanic continues to develop the project beyond Prefeasibility Study. During the Feasibility Study, the following areas of work should be considered:

1. Grinding: To improve the accuracy of the SAG Mill sizing in the feasibility phase, grindability test work is recommended to evaluate the variability of the feed material. Existing drill core samples should be used for this purpose.

2. Concentrate slurry transport: As the mine plan is developed, further review the expected variability and the impact on the pipeline system sizing and turndown requirements including the following:

   a) Obtain representative samples for concentrate pipeline to progress the slurry testing and design criteria for the concentrate pipeline and subsequently, the return water pipeline.

   b) Progress the selected pipeline route to investigate potential impediments by studying geotechnical, environmental, hydrological, permitting and land acquisition constraints that may be present along the proposed right-of way and may impact the project schedule.

   c) Further study and optimize the selection for the communication system along the pipeline stations for integration within the process and port facilities.

   d) Further evaluate the environmental and permitting requirements (if any) related to the pipeline leak detection system and its detection accuracy.

   e) Progress the pipeline construction methodology (contracting strategy, schedule, and overall plan) and integrate within project development critical path assessment. One possibility is to utilize joint coupling instead of welding. Depending on its technical suitability, this method can significantly cut down the pipeline construction time, which is important considering the short construction window in a year.

   f) Further assessment is required for cold weather engineering in relation to more advanced heat transfer analysis to better understand frost action and seasonal heave and thaw cycles. Subsequently, the relevant mitigation system should be implemented, depending on ALARP (As Low As Reasonably Practicable) levels. This can potentially reduce/eliminate the glycol injection system which has been included as part of pipeline capital cost.

   g) Evaluate the feasibility of conveyor versus slurry pipeline, to transport concentrate from the concentrator to the port site, as a potential trade off study during the feasibility stage of the project. The overall costs and operability effects associated with conveying versus slurry pumping may be beneficial.

3. Concentrate filtration and settling: Vendor testing for filtration equipment is recommended. Since the drying of the iron concentrate to 2% moisture during the winter requires large quantities of fuel, producing a low moisture filter cake is impacting the operating costs. Vendor testing for thickeners is also recommended.

4. Pellet production: The balling and pot grate parameter design parameters should be investigated and tested.

5. Concentrate cake freezing: Evaluate the behaviour of filtered concentrate under freezing conditions to optimize dewatering systems.

6. Wet high intensity magnetic separation combined with hydraulic separation: Potentially the weight recovery can be increased by using wet high intensity magnetic separation and or with hydraulic separation. This needs to be further evaluate prior to, or at the beginning of the feasibility study.

7. Increasing the recovery by increasing silica grade in concentrate: The weight recovery can be increased or optimized by increasing the silica content in the concentrate. An increase from 4.5% to 5.0% SiO_2 could potentially increase the weight recovery by 0.5 to 1%.

8. Geotechnical information: A geotechnical drilling program at the concentrator and port areas should be carried out to determine the bedrock depth and soil and bedrock bearing capacities for concrete foundation design.

9. Port and Shipping:

    a. Explore transshipment alternatives and optimize the transshipment approach in order to minimize costs and to enhance the logistical issues associated with shipments to Asia.

    b. Confirm assumed duration of summer and winter shipping seasons.

    c. Initiate an ice measurement program for the Hopes Advance Bay area.

    d. Initiate a geotechnical investigation to collect design parameters for dredging requirements, caisson and causeway designs.

    e. Shipping distance, route, type of shipping contracts, export volume, oil prices and port charges greatly influence export costs, and should be investigated further.

f. The availability of ice-class vessels for the project, and associated shipping costs, should be further analyzed in order to reduce shipping risk.

g. Winter/summer shipping volumes should be calculated to optimize shipping costs.

26.1 BUDGET FOR ONGOING WORK

It is recommended that Oceanic proceeds with preparation of the planned Feasibility Study for the Hopes Advance project. This will include detailed environmental and social impact assessment, geotechnical and geo-mechanical investigations, metallurgical testing and analysis, port studies, engineering and marketing studies. The budget for this work, as well as for continued work on the overall development of the project (including environmental and social impact assessment work), totals approximately $16 million and is summarized in Table 26.1. These costs are in addition to project costs presented in this report.

Table 26.1
Hopes Advance Budget for Ongoing Work

Item	Cost ($)
Assays[1]	7,500
Environmental and Social Impact Assessment	3,000,000
Geotechnical and Geomechanical investigation	1,000,000
Geotechnical drilling	700,000
Metallurgical testwork and analysis engineering	500,000
Assessment requirements on claims and claims management	690,000
Claims payments	180,000
Pre-production NSR payment	200,000
Port studies[2]	1,000,000
Feasibility Study and report preparation	8,720,000
Total	**15,997,500**

[1] Assumes 75 assays at $100/assay – for drilling and mapping samples.
[2] Includes assessment of transshipment location, wave and current measurement, ice characterization at breakup.

On the basis of this Prefeasibility Study of the Hopes Advance project, Micon concludes that exploitation of the iron resources in the Hope Advance project area could provide attractive economic returns, and that further development is warranted.

Engineering design should proceed to develop the project base case described in this study to further optimize the project during the Feasibility Study stage.

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28.0 DATE AND SIGNATURE PAGE

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Signing Date: 2 November, 2012

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Bogdan Damjanović, P.Eng.
Micon International Limited
Effective Date: 19 September, 2012
Signing Date: 2 November, 2012

"B Terrence Hennessey" *{Signed and sealed}*

B. Terrence Hennessey, P.Geo.
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Jane Spooner, P.Geo.
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"Ryan Ulansky" *{Signed and sealed}*

Ryan Ulansky, P.Eng.
Micon International Limited
Effective Date: 19 September, 2012
Signing Date: 2 November, 2012

29.0 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON
Valérie J. Bertrand, géo

As a co-author of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report").

I, Valerie Bertrand, géo, do hereby certify that:

1. I am employed by, and carried out this assignment for:
   Golder Associates Ltd.,
   32 Steacie Drive, Kanata, Ontario, Canada, K2K 2A9
   tel. (613) 592-9600 fax (613) 592-9601
   e-mail: vbertrand@golder.com

2. I hold the following academic qualifications:
   B.Sc. (Geology), University of Ottawa, ON, Canada, 1991
   M.A.Sc. (Mining Engineering), University of British Columbia, Vancouver, BC, Canada, 1999

3. I am a registered Professional Geoscientist in Ontario (membership number 1458) and a member in good standing of l'Ordre des Géologues du Québec (membership number 1221), and of the Nunavut and Northwest Territories Association of Professional Engineers and Geoscientists (membership number L1811).

4. I have worked as a geoscientist since my graduation from the University of Ottawa. For the past 13 years I have been employed with Golder Associates Limited. During this period I have fulfilled the role of geochemist on mining projects directing and completing environmental geochemistry investigations on mine wastes, soils and water. I currently hold the position of Associate and Senior Geochemist.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101) and certify that by reason of education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purpose of this NI 43-101.

6. I have not visited the Hopes Advance Bay iron property.

7. I am responsible for the Sections 16.2.9, 20.5, and the portions of Sections 1, 25 and 26 summarized therefrom, of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012.

8. I am independent of Oceanic Iron Ore Corp., as defined in Section 1.5 of NI 43-101.

9. I have had no previous involvement with the Hopes Advance project.

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Valérie J. Bertrand" {signed and sealed}

Valérie J. Bertrand, géo. M.A.Sc.
Associate, Senior Geochemist
Golder Associates Ltd.

CERTIFICATE OF QUALIFIED PERSON
B. Damjanović

As a co-author of this report entitled "NI 43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report"), I Bogdan Damjanović , P. Eng., do hereby certify that:

1. I am employed by, and carried out this assignment for:

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2. I hold the following academic qualifications:

B.A.Sc. Geological and Mineral Engineering, University of Toronto, Canada, 1992.

3. I am a registered Professional Engineer of Ontario (membership number 90420456); as well, I am a member in good standing of the Canadian Institute of Mining, Metallurgy and Petroleum.

4. I have worked as an extractive metallurgist in the minerals industry for over 20 years.

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes the management of technical studies and design of numerous metallurgical testwork programs and metallurgical processing plants.

6. I have not visited the Hopes Advance project.

7. I am responsible for the preparation of Sections 1, 2, 3, 18.2, 20-20.4, 20.6, 20.7, 21.2.3, 23, 24, 25, and 26 of this report entitled "NI 43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012.

8. I am independent of Oceanic Iron Ore Corp., as defined in Section 1.5 of NI 43-101.

9. I have had no previous involvement with the Hopes Advance Bay project.

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Bogdan Damjanovic" {signed and sealed}

Bogdan Damjanović, P.Eng.

CERTIFICATE OF QUALIFIED PERSON
B. T. Hennessey

As the author of portions of this report entitled "NI 43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report"), I, B. Terrence Hennessey, P.Geo., do hereby certify that:

1. I am employed by, and carried out this assignment for:
   Micon International Limited
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2. I hold the following academic qualifications:
   B.Sc. (Geology) McMaster University 1978

3. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (membership # 0038); as well, I am a member in good standing of several other technical associations and societies, including:
   The Australasian Institute of Mining and Metallurgy (Member)
The Canadian Institute of Mining, Metallurgy and Petroleum (Member).

4. I have worked as a geologist in the minerals industry for over 30 years.

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 7 years as an exploration geologist looking for iron ore, gold, base metal and tin deposits, more than 11 years as a mine geologist in both open pit and underground mines and over 15 years as a consulting geologist working in precious, ferrous and base metals as well as industrial minerals.

6. I visited Oceanic Iron Ore Corp.'s Hopes Advance project during the period June 12 to 15, 2012 to review exploration results and exposures of mineralization. The property had not previously been visited by me.

7. I am responsible for the preparation of Sections 4 to 12 and 14, and summaries thereof in Section 1, of the Technical Report.

8. I am independent of the parties involved in the transaction for which this report is required, as defined in Section 1.5 of NI 43-101.

9. I have had no prior involvement with the mineral properties in question.

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the portion of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Effective date: September 19, 2012

Dated this 2nd day of November, 2012

"B. Terrence Hennessey" {signed and sealed}

B. Terrence Hennessey, P.Geo.

CERTIFICATE OF QUALIFIED PERSON
D. Houde

As a co-author of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report"), I Daniel Houde, Eng., do hereby certify that:

1. I am employed by, and carried out this assignment for:

    Met-Chem Canada Inc.
    555 René-Lévesque Blvd West
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    e-mail: dhoude@met-chem.com

2. I hold the following academic qualifications:

    B. Eng. In Civil Engineering, Mc Gill University of Montréal, Canada, 1984.

3. I am a registered member of "Ordre des Ingénieurs du Québec" (membership number 39985).

4. I have worked as a construction manager and more recently as a project manager of mining projects continuously since my graduation from university.

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes the management of technical studies and design of numerous metallurgical processing plants.

6. I have visited the Hopes Advance project in June 12-15, 2012.

7. I am responsible for the preparation of Sections 18.1, 18.3 to 18.15, 21.1.1, 21.1.3, 21.1.5, 21.2.4, 21.2.5, and the portions of Sections 1, 2, 25 and 26 summarized therefrom, of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012.

8. I am independent of Oceanic Iron Ore Corp., as defined in Section 1.5 of NI 43-101.

9. I have had no previous involvement with the Hopes Advance Bay project.

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Daniel Houde" {signed and sealed}

Daniel Houde, Eng.

CERTIFICATE OF QUALIFIED PERSON
C. Jacobs

As co-author of this report entitled "NI 43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report"), I, Christopher Jacobs, do hereby certify that:

1. I am employed by, and carried out this assignment for:
   Micon International Limited, Suite 900 – 390 Bay Street, Toronto, ON, M5H 2Y2
   tel. (416) 362-5135 email: cjacobs@micon-international.com
2. I hold the following academic qualifications:
   B.Sc. (Hons) Geochemistry, University of Reading, 1980;
   M.B.A., Gordon Institute of Business Science, University of Pretoria, 2004.
3. I am a Chartered Engineer registered with the Engineering Council of the U.K. (registration number 369178);

   Also, I am a professional member in good standing of: The Institute of Materials, Minerals and Mining; and The Canadian Institute of Mining, Metallurgy and Petroleum (Member);
4. I have worked in the minerals industry for 30 years; my work experience includes 10 years as an exploration and mining geologist on gold, platinum, copper/nickel and chromite deposits; 10 years as a technical/operations manager in both open pit and underground mines; 3 years as strategic (mine) planning manager and the remainder as an independent consultant when I have worked on a variety of deposits including iron ore;
5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101;
6. I have not visited the Hopes Advance project;
7. I am responsible for the preparation of Section 22 of this report, entitled "NI 43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada"
8. I am independent of Oceanic Iron Ore Corp., as defined in Section 1.5 of NI 43-101;
9. I was a co-author of the report entitled "Technical Report on the Mineral Resource Estimate and Results of the Preliminary Economic Assessment, Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec Canada", dated 4 November, 2011;
10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument;
11. As of the date of this certificate to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Christopher A. Jacobs" {signed and sealed}

Christopher A. Jacobs, CEng, MIMMM

CERTIFICATE OF QUALIFIED PERSON
D. Johnson

As a co-author of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report"), I Darrin Johnson, P. Eng., do hereby certify that:

1. I am employed by, and carried out this assignment for:

Golder Associates Ltd.,
2390 Argentia Road,
Mississauga, Ontario,
L5N 5Z7tel.
(905) 567-4444 fax (905) 567-6561
e-mail: darjohnson@golder.com

2. I hold the following academic qualifications:

   B.Sc. (Civil Engineering), Queen's University, Kingston, Ontario, Canada, 1996
   M.Sc. (Geotechnical Engineering), Queen's University, Kingston, Ontario, Canada, 1998

3. I am a registered Professional Engineer of Ontario (PEO membership number 90474396), British Columbia (APEGBC membership number 29465), Yukon (APEY membership number 1501), and Nunavut/Northwest Territories (NAPEG membership number L1820).

4. I have worked as a geotechnical engineer involved with mining and waste management projects since 1996.

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My relevant work experience includes geotechnical engineering, field investigation, mine waste facility siting, tailings deposition planning, mine waste facility design, embankment dam design and mine closure planning.

6. I visited the Hopes Advance Bay iron property on June 12-14, 2012.

7. I am responsible for the preparation of Section 20.5 (excluding mine waste geochemistry), 21.1.4, and the portions of Sections 1, 2, 25 and 26 summarized therefrom, of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012.

8. I am independent of Oceanic Iron Ore Corp., as defined in Section 1.5 of NI 43-101.

9. I have had no previous involvement with the Hopes Advance project.

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Darrin Johnson" {signed and sealed}

Darrin Johnson, P.Eng.

CERTIFICATE OF QUALIFIED PERSON
S. Rivard

As a co-author of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report"), I Stéphane Rivard, Eng., do hereby certify that:

1. I am employed by, and carried out this assignment for:

Met-Chem Canada Inc.
555 René-Lévesque Blvd West
3rd Floor
Montréal, Québec,
H2Z 1B1
tel. (514) 288-5211 fax (514) 288-7937
e-mail: srivard@met-chem.com

2. I hold the following academic qualifications:

   B.Sc Eng. In Metallurgical and Material Science, LAVAL University of Quebec City, Canada, 1994.

3. I am a registered member of "Ordre des Ingénieurs du Québec" (membership number 118538).

4. I have practiced my profession for the mining and metallurgical industry continuously since my graduation from university.

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes plant operation, the management of technical studies and design and commissioning of numerous metallurgical processing plants.

6. I have not visited the Hopes Advance project.

7. I am responsible for the preparation of Sections 13, 17, 21.2.2, and the portions of Sections 1, 2, 25 and 26 summarized therefrom, of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012.

8. I am independent of Oceanic Iron Ore Corp., as defined in Section 1.5 of NI 43-101.

9. I have had no previous involvement with the Hopes Advance Bay project.

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Stéphane Rivard" {signed and sealed}

Stéphane Rivard, Eng.

CERTIFICATE OF QUALIFIED PERSON
J. Spooner

As a co-author of this report entitled "NI 43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Québec, Canada, NTS 24M/08, 24N05", with an effective date of 19 September, 2012, I, Jane Spooner, P.Geo., do hereby certify that:

1. I am employed by, and carried out this assignment for

   Micon International Limited
   Suite 900, 390 Bay Street
   Toronto, Ontario
   M5H 2Y2
   tel. (416) 362-5135 fax (416) 362-5763
   e-mail: jspooner@micon-international.com

2. I hold the following academic qualifications:

   B.Sc. (Hons) Geology, University of Manchester, U.K. 1972
   M.Sc. Environmental Resources, University of Salford, U.K. 1973

3. I am a member of the Association of Professional Geoscientists of Ontario (membership number 0990); as well, I am a member in good standing of the Canadian Institute of Mining, Metallurgy and Petroleum.

4. I have worked as a specialist in mineral market analysis for over 30 years.

5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes the analysis of markets for base and precious metals, industrial and specialty minerals, coal and uranium.

6. I have not visited the project site.

7. I am responsible for the material presented in Section 19, and the portions of Sections 1, 2, 25 and 26 summarized therefrom, of this report entitled "NI 43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Québec, Canada, NTS 24M/08, 24N05", dated 2 November, 2012.

8. I am independent of the parties involved in the Hopes Advance Project, as described in Section 1.5 of NI 43-101.

9. I have had no prior involvement with the mineral property in question.

10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Jane Spooner" {signed and sealed}

Jane Spooner, M.Sc., P.Geo.

CERTIFICATE OF QUALIFIED PERSON
R. W. Ulansky

As a co-author of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012 (the "Technical Report"), I Ryan W Ulansky, P. Eng., do hereby certify that:

1. I am employed by, and carried out this assignment for:

Micon International Limited
Suite 205, 700 West Pender
Vancouver, British Columbia,
V6C 1G8
tel. (604) 647-6463 fax (604) 362-0720
e-mail: rulansky@micon-international.com

2. I hold the following academic qualifications:

   BASc. Mining Engineering, The University of British Columbia, Canada, 1998
   MASc. Mining Engineering, The University of British Columbia, Canada, 2002

3. I am a registered Professional Engineer of British Columbia (membership number 30245).
4. I have worked as a mining engineer in the minerals industry for over 15 years.
5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101.
6. I have not visited the Hopes Advance project.
7. I am responsible for the preparation of Sections 15, 16 (not including 16.2.9), 21.1.2, 21.2.1, and the portions of Sections 1, 2, 25 and 26 summarized therefrom, of this report entitled "NI43-101 Technical Report on a Prefeasibility Study Completed on the Hopes Advance Bay Iron Deposits, Ungava Bay Region, Quebec, Canada", with an effective date of 19 September, 2012.
8. I am independent of Oceanic Iron Ore Corp., as defined in Section 1.5 of NI 43-101.
9. I have had no previous involvement with the Hopes Advance project.
10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.
11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 2nd day of November, 2012

"Ryan W. Ulansky" {signed and sealed}

Ryan W. Ulansky, P.Eng.