

### ASX Release

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#### Issued Capital:

211.75 million shares

ASX Symbol: HAR

## Independent Techno-Economic Assessment Completed on the Selenge Iron Ore Project

A techno-economic assessment by ProMet Engineers has concluded that Selenge has the potential to be a robust iron ore project with an excellent rate of return and an NPV<sub>9</sub> valuation of around US\$1 Billion.

- Initial metallurgical testing on Selenge ore achieved a premium quality magnetite concentrate at a coarse grind.
- ProMet have used these results as primary inputs into their proprietary ORVAL magnetite project modelling software to obtain a range of potential project valuations.
- The model assumes an ore resource at Selenge varying from the lower to the upper end of the current Exploration Targets\*.

**Summary Results from ORVAL Model**  
(9% Discount Rate, US\$130/t Price for 66% Fe Concentrate)

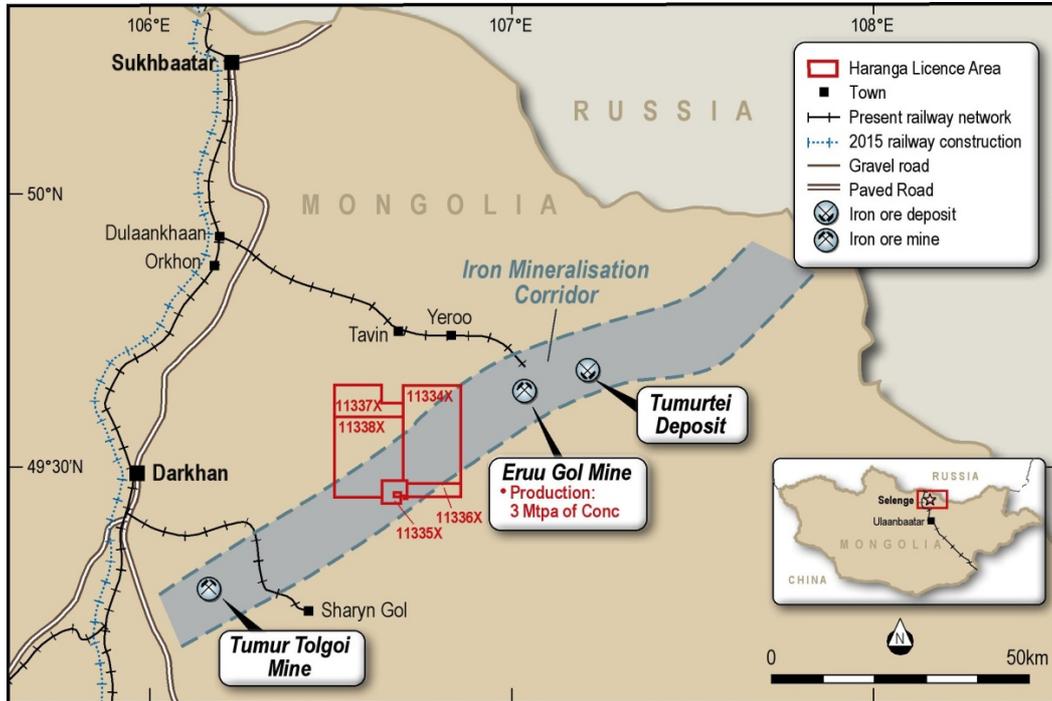
Resource Scenario	Mine Life	Annual Conc Production	CAPEX (US\$M)	NPV (US\$M)	IRR (After Tax)
Lower	16 years	2.5 Mtpa	312	636	80%
Base Case	15 years	4.0 Mtpa	407	1,094	101%
Upper	16 years	5.0 Mtpa	467	1,481	109%

- Further potential valuation upside exists:
  - Pricing is based on current market; in 2011 the inland Chinese price for this product quality was over US\$155/t
  - Assumes a conservative 45 micron grind to ensure product quality; a coarser grind will lower plant costs
  - Assumes a standalone wet magnetic separation plant and logistics solution; no shared infrastructure
  - Earlier production from high grade areas via dry magnetic separation has not been included in the valuation scenarios
  - Value upside if resource and/or grade better than expected
- The clear priority is to drill and build the resource inventory.
- The Company is progressing swiftly at Selenge with nine drilling rigs now in operation.

**Selenge Project – Background**

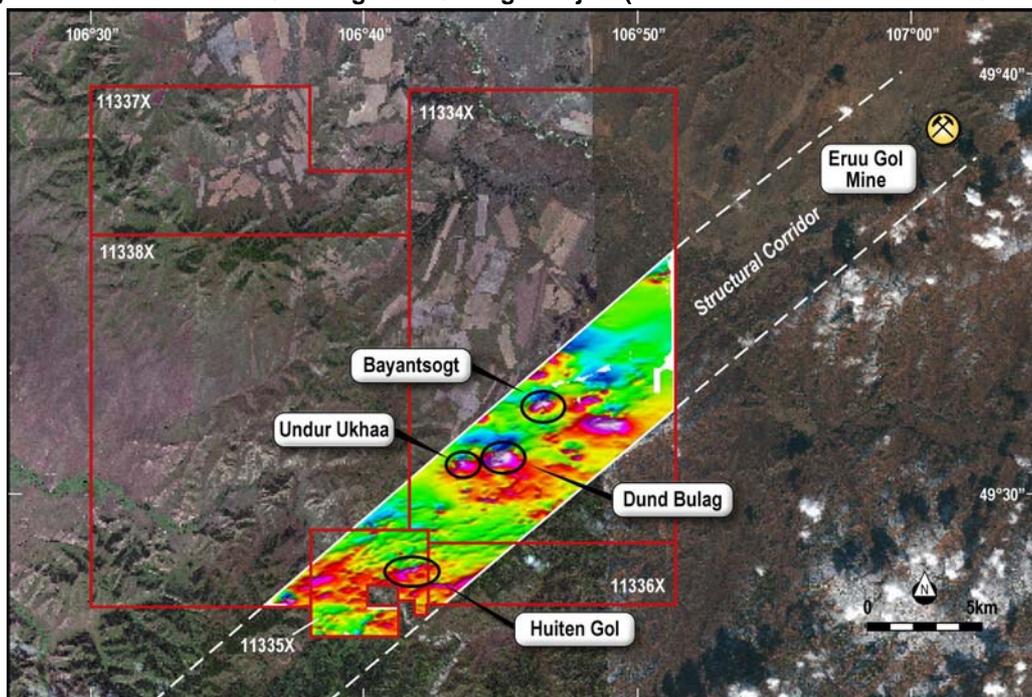
The Company's flagship Selenge iron ore project is located in the heart of Mongolia's premier iron ore development region with excellent access to the main trans-Mongolian rail line and nearby rail spurs.

**Figure 1: Location of the Selenge Iron Ore Project**



There are **four primary exploration targets** at Selenge, all lying within 10km of each other. All four targets are associated with large magnetite skarn hills and lie within the structural corridor that contains the major iron ore deposits in the region. The nearby Eruu Gol mine currently exports three million tonnes of magnetite concentrate per annum and ships the product via a newly constructed rail spur to the main trans-Mongolian rail line. (The Eruu Gol deposit was valued at approximately US\$2Bn based on a 2009 investment by the China Investment Corporation.) The 2011 drill program at Selenge concentrated on the Bayantsogt Deposit, the northernmost of the targets, but first pass drilling was also conducted at the Dund Bulag and Huiten Gol Prospects. The 2012 drill program is underway, with eight drill rigs currently operating at site.

**Figure 2: Location of Iron Ore Targets at Selenge Project (within the Iron Mineralisation Corridor)**



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## Selenge Project Resource and Exploration Target Summary

The 2011 drill program at **Bayantsogt** yielded an initial inferred resource of **32.8Mt at an average grade of 24.4% Fe**, and included some significant higher grade zones as per the Table below.

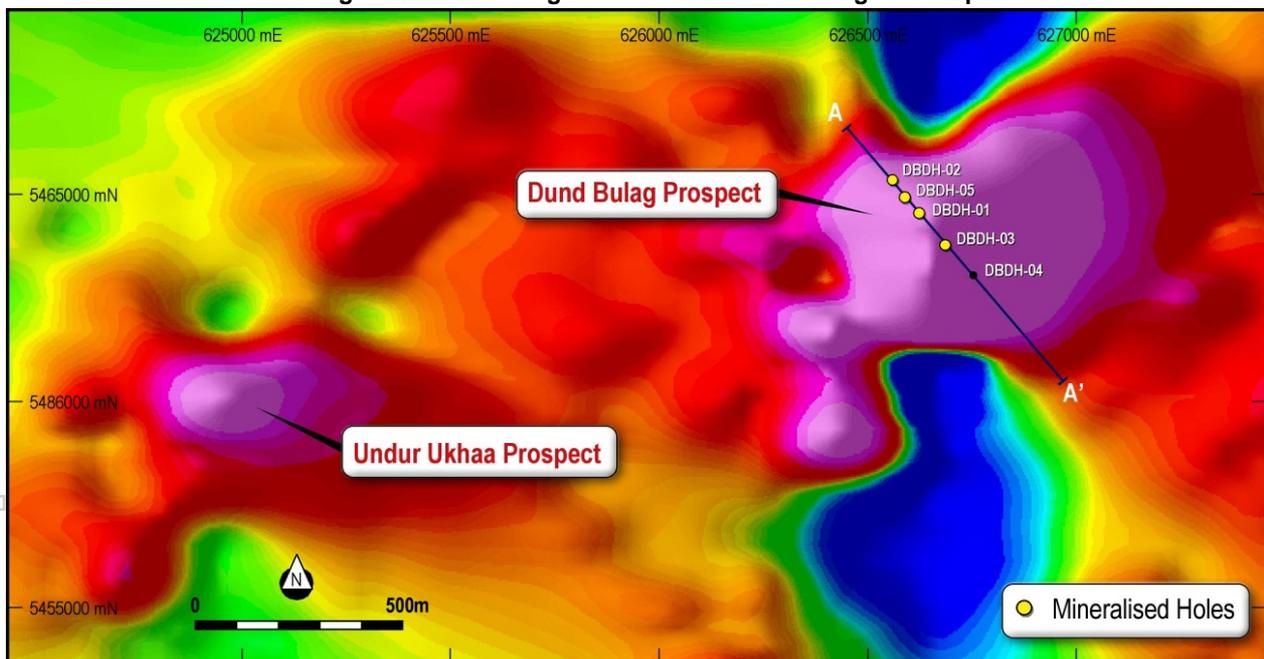
**Table 1: Initial JORC Code (2004) Inferred Resource for Bayantsogt**

<i>Cutoff Grade (% Fe)</i>	<i>Tonnes (million)</i>	<i>Average Grade (% Fe)</i>
<b>15% Cutoff</b>	32.8	24.4% Fe
<b>20% Cutoff</b>	21.6	27.5% Fe
<b>25% Cutoff</b>	11.4	32.4% Fe
<b>30% Cutoff</b>	5.4	38.5% Fe

This resource is based only on the first 35 holes drilled at Bayantsogt and the mineralisation remains open. Further extension and infill drilling during the 2012 drill season is expected to expand the resource and convert some of it to the JORC Measured and Indicated categories. Based on the drilling to date and the size of the magnetic anomaly the current **exploration target\* for Bayantsogt is 40-55Mt** of ore.

**Dund Bulag** is the largest of the magnetite skarn hills at Selenge, coincident with a magnetic anomaly over twice as large as Bayantsogt in area. Five holes were drilled along one cross section at Dund Bulag in 2011 with four of the five holes containing extremely wide iron intersections. An **exploration target\* of 120-250Mt** of ore has been set for Dund Bulag.

**Figure 3: Dund Bulag Drill Plan shown over Magnetic Map**



**Huiten Gol** was the third target to be drilled at Selenge in 2011 and the drilling intersected thinner (4-8m in apparent width), higher grade lodes of iron from surface that have potential for beneficiation by dry magnetic separation or even direct shipping without processing.

The magnetite skarn hill at **Undur Ukhaa** looks to be an adjunct of nearby Dund Bulag and will be drilled this year, as will a number of other smaller anomalies at Selenge that are yet to be ground checked. It is believed that at least some of these smaller anomalies will ultimately add to the total iron ore resource at Selenge.

## Summary of the Previous Metallurgical Test Results

The initial metallurgical test work from Selenge (announced in the Company's ASX release dated 2 July 2012) suggested that a premium quality magnetite concentrate could be produced using a reasonably coarse 75µm grind. The Davis Tube Recovery (DTR\*\*) test work at all three Selenge locations produced a consistent magnetite concentrate with an iron grade that averaged 65-66% Fe with low impurities, a product that would be highly saleable and command a significant premium over standard specification domestic Chinese magnetite concentrates.

## Results of the Techno-Economic Assessment

ProMet Engineers were retained as consultants by the Company to plan the metallurgical program and review the results. In addition, ProMet have completed a number of preliminary, theoretical assessment scenarios on the Selenge project using their proprietary ORVAL magnetite project modelling process. Haranga Resources and ProMet have used the metallurgical test work results from Selenge to generate model inputs such as mass yields, grind size and power requirement in order to assist in generating estimates for both capital and operating expenditures for the project.

To generate the scenarios a range of project resource sizes had to be assumed because the resource definition drilling is ongoing. The model scenarios use a theoretical upper and lower resource case that assumes a final resource size at the high and low end of the exploration target\* ranges at Selenge, along with a base case in the middle of the range. The key inputs and results are shown in Table 2.

**Table 2: Inputs and Results from the Techno-Economic Assessment**  
(NPV calculated at a 9% Discount Rate)

Resource Scenario	Mine Life	Conc Prod.	Conc Grade	Sale Price	CAPEX (US\$M)	Delivered Cost (US\$/t)	NPV (US\$M)	IRR (After Tax)
Lower	16 yrs	2.5 Mtpa	66% Fe	US\$130/t	312	65.70	<b>636</b>	80%
Base Case	15 yrs	4.0 Mtpa	66% Fe	US\$130/t	407	63.39	<b>1,094</b>	101%
Upper	16 yrs	5.0 Mtpa	66% Fe	US\$130/t	467	62.73	<b>1,481</b>	109%

*For further reference, a sample of the ORVAL output sheet and detailed results from the Base Case scenario is appended to this announcement.*

## Commentary on Results

The ultimate resource tonnage at Selenge is the key factor in determining the size of operation that could be supported and any subsequent valuation. The study results confirm that a viable operation is possible at Selenge even with a resource at the lower end of the exploration target\* range and justify the aggressive exploration program currently underway.

These scenarios assume a 43km slurry pipeline (with water return) to a drying facility and a potential rail loading facility on the Sharyn Gol rail spur to the southwest of the project area. Scenarios that instead assumed a 43km dedicated rail spur added approximately \$110m to the forecast capital costs.

The potential for supply of certain equipment, materials and contractors from nearby China at a lower cost than western world averages has been incorporated, thereby reducing some capital cost estimates. In addition, it should be noted that the estimated costs in this early stage assessment do not include contingency amounts.

There are a number of potential factors that could add upside (or in some cases downside) to these project valuation ranges:

- The price of US\$130/t for a 66% Fe concentrate is based on a best estimate of recent market pricing levels in inland northern China. A year ago the price for this product quality was around US\$155/t, and at this average sale price the project would be considerably more valuable. By the same measure, should price levels fall further over the life of the project, the valuation would be reduced.

- The scenarios assume a 45 micron grind operation, a conservative assumption at this point to ensure the 66% Fe product quality. It is believed that further metallurgical test work will give confidence to allow a coarser grind size and hence reduced costs.
- Scenarios assume a standalone wet magnetic separation plant with a dedicated logistics solution, with no shared infrastructure envisaged at this point with the other nearby iron ore developments.
- Earlier production, from high grade areas using a cheaper dry magnetic separation operation, is not factored into any scenarios at this point.
- Any resource or grade exploration upside will result in better project valuations. By the same measure, any downside surprises will reduce the valuation.

## Summary and Next Steps

The techno-economic assessment functions as a very preliminary scoping study in that the results are an early stage, theoretical attempt to ascertain likely project economics and viability. The primary outcome is a confirmation that the Selenge iron ore projects have considerable potential value if exploration targets\* are met and therefore the Company continues to aggressively drill out the iron ore target areas.

Further metallurgical test work is planned to gain greater insight into likely grind sizes required to produce various product qualities and what amount of the mineralisation at Selenge can potentially be upgraded using dry magnetic separation without the need for a grinding circuit.

The Company continues to progress the preparation of its Mining Licence application for the Selenge project and discussions are ongoing with various Mongolian government authorities regarding allocation of sufficient rail capacity for any future export production from Selenge.

The drill program at Selenge is now fully underway with nine drilling rigs currently in operation. Drilling is planned to continue until December 2012. Additional drilling results should allow the existing resource inventory at Selenge to be greatly expanded and the metallurgical test results will ultimately allow future resource models to employ a yield cutoff and report to higher JORC classifications.

Dr Robert Wrixon  
**Managing Director**  
**Haranga Resources Limited**

\* Exploration Targets are conceptual in nature and should not be construed as indicating the existence of a JORC Code compliant mineral resource. There is insufficient information to establish whether further exploration will result in the determination of a mineral resource within the meaning of the JORC Code.

\*\* DTR tests give theoretical yield results which need to be verified by pilot plant scale testing using bulk samples, the results of which may differ from the results presented here.

*The information in this report that relates to Exploration Results is based on information compiled by Mr Kerry Griffin, who is a Member of the Australian Institute of Geoscientists. Mr Griffin has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Griffin is the Technical Director of Haranga Resources Limited and consents to the inclusion in this report of the matters based on his information, and information presented to him, in the form and context in which it appears.*

*The technical information contained in this announcement in relation to the JORC Compliant Resource for the Bayantsogt Deposit has been reviewed by Mr Peter Ball of DataGeo Ltd, who is a member of the Australasian Institute of Mining and Metallurgy. Mr Ball has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves'. Mr Ball consents to the inclusion in this report of the matters based on his information, and information presented to him, in the form and context in which it appears.*

*The preliminary scoping study results contained in this announcement are outputs from ORVAL, a proprietary modelling software for preliminary magnetite project assessment developed by ProMet Engineers. ProMet have been employed as consultants to Haranga Resources Limited. The input variables have been provided by Haranga Resources Limited and both the inputs and results have been reviewed by ProMet Engineers. ProMet Engineers consent to the inclusion in this report of the ORVAL modelling results based on their information, and the information presented to them, in the form and context in which it appears.*

## Executive Summary

Project:	Selenge Magnetite Deposit
Licensee:	Haranga Resources
Job #	C5578
Scenario:	Slurry Mid

Revision:	P6
Date:	20/08/2012
Location:	Mongolia
Version:	v7.0

Economics	
Net Present Value	\$ 1,094m
IRR (After Tax)	100.6%
IRR (Before Tax)	127.8%
Payback Period	0.9 years
Discounted Payback	1.0 years
Profitability Index (Geared)	10.44
Profitability Index (Ungeared)	3.69
Average Profit (After Tax)	\$ 162m
Average Profit (Before Tax)	\$ 230m

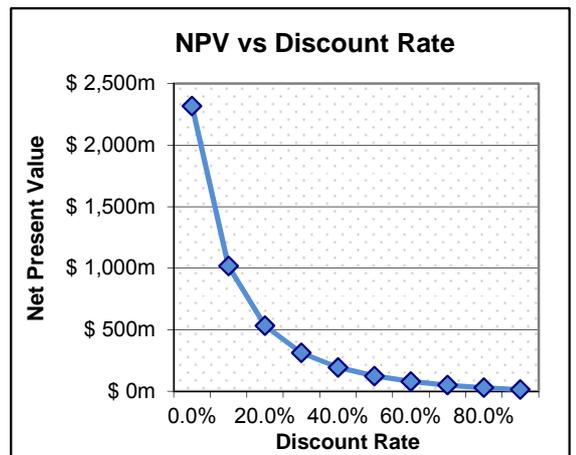
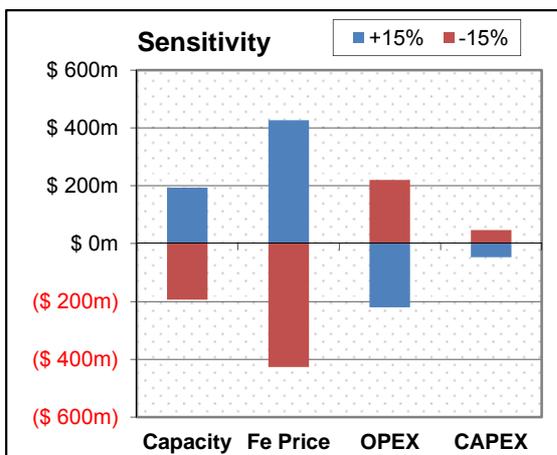
Description	
Based on input sheet V6.	

Finance	
Years to Repay Debt	15 years
Capital (Equity Financed)	\$ 116m
Total Borrowings	\$ 271m
Total Interest Paid	\$ 145m

Cashflow Assumptions	
Annual Production	4.0 Mt/a
Project Life	15 years
Average Strip Ratio	1.9 : 1
Selling Price (Average)	\$ 130.0 /t
OPEX (Average)	\$ 62.6 /t
CAPEX (Total)	\$ 407m
Discount Rate	9.00%
Tax Rate	20.00%
Royalties	5.00%
Finance Charge	5.00%
Equity	30.0%
Debt	70.0%

Breakeven Values	
CAPEX	\$ 1,840m
Selling Price (Average)	\$ 79.8 /t
OPEX (Average)	\$ 110.6 /t
Annual Production	0.57 Mt/a

**\*\* Do not mistake Breakeven values for actual values, see glossary page for more information**



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## Capital Cost Breakdown

Project: Selenge Magnetite Deposit  
 Licensee: Haranga Resources  
 Job #: C5578  
 Scenario: Slurry Mid

Revision: P6  
 Date: 20/08/2012  
 Location: Mongolia  
 Version: v7.0

Direct Costs	
<b>Total</b>	<b>\$ 329.4 m</b>
<b>Mining</b>	<b>\$ 33.7 m</b>
Overburden	\$ 9.2 m
Infrastructure	\$ 10.0 m
Mobilisation	\$ 8.0 m
Establishment	\$ 4.0 m
Fixed Cost	\$ 2.5 m
<b>Concentrator</b>	<b>\$ 172.4 m</b>
Crushing Section	\$ 23.3 m
Primary Section	\$ 17.8 m
Secondary Section	\$ 24.0 m
Tertiary Section	\$ 0.0 m
Flotation Section	\$ 0.0 m
Concentrate Filtration	\$ 0.0 m
Tails Dam	\$ 3.2 m
Handling & Services	\$ 9.3 m
Earthworks / Civils	\$ 16.3 m
Platwork / Steel / Piping	\$ 40.4 m
Electrical / Instrumentation	\$ 33.4 m
Freight	\$ 4.7 m
<b>Site Infrastructure</b>	<b>\$ 62.0 m</b>
Buildings, Ops & Admin	\$ 13.5 m
Water Supply	\$ 15.7 m
Power Supply	\$ 20.0 m
Camp	\$ 12.8 m
<b>Pipeline</b>	<b>\$ 30.6 m</b>
Head Works	\$ 5.5 m
Slurry Line	\$ 9.9 m
Water Line	\$ 8.0 m
Receival	\$ 2.4 m
Concentrate Filters	\$ 4.7 m
<b>Rail</b>	<b>\$ 30.8 m</b>
Track Work	\$ 0.0 m
Locos & Wagons	\$ 0.0 m
Stockpile & Loadout	\$ 30.8 m
Unloading	\$ 0.0 m

Directs (continued)	
<b>Trucking</b>	<b>\$ 0.0 m</b>
Site Works	\$ 0.0 m
Road Upgrade	\$ 0.0 m
Loading Bin	\$ 0.0 m
Reclaim System	\$ 0.0 m
<b>Overland Conveyor</b>	<b>\$ 0.0 m</b>
Conveyors	\$ 0.0 m
Storage & Reclaim	\$ 0.0 m
<b>Port</b>	<b>\$ 0.0 m</b>
Storage Facilities	\$ 0.0 m
Wharf & Shiploader	\$ 0.0 m
Port Development & Dredging	\$ 0.0 m
<b>Other Direct Costs</b>	<b>\$ 0.0 m</b>

Capital Indirects	
<b>Total</b>	<b>\$ 77.4 m</b>
EPCM & Construction Indirects	\$ 49.4 m
Vendor representatives	\$ 3.3 m
Spares	\$ 8.2 m
Owners costs incl insurances	\$ 16.5 m

Grand Total	
Capital Expenditure	<b>\$ 406.8 m</b>

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## Operational Costs and Stats

Project:	Selenge Magnetite Deposit
Licensee:	Haranga Resources
Job #	C5578
Scenario:	Slurry Mid

Revision:	P6
Date:	20/08/2012
Location:	Mongolia
Version:	v7.0

OPEX - Area Breakdown	
<b>Total</b>	<b>\$ 63.39 /t</b>
Site Infrastructure	\$ 0.97 /t
Mining	\$ 21.58 /t
Crushing	\$ 1.98 /t
Concentrator	\$ 16.33 /t
Export Infrastructure	\$ 21.86 /t
Shiploading	\$ 0.00 /t
Additional Plant	\$ 0.00 /t
Head Office	\$ 0.68 /t

OPEX - Major Costs **	
<b>Total</b>	<b>\$ 63.39 /t</b>
Waste Movement	\$ 5.37 /t
Ore Movement	\$ 6.44 /t
Blasting	\$ 8.66 /t
Grinding Media	\$ 2.12 /t
Transport (less power)	\$ 20.79 /t
Shiploading	\$ 0.00 /t
Maintenance	\$ 1.77 /t
Labour	\$ 2.75 /t
Contingency	\$ 0.00 /t
Power	\$ 7.45 /t
Other	\$ 8.04 /t

OPEX - Other Costs	
<b>Total</b>	<b>\$ 0.00 /t</b>

Statistics	
Power Consumption	50.34 MW
Annual Water Consumption	4.51 Glpa
Total Personnel (Paid)	140
Total Personnel (Onsite)	240
Operating Hours	7,900 h/a
Exploration Target	257.8 Mt
Total Mined	773.4 Mt
New Feed Tonnage	2,175 tph 17.2 Mtpa
RMS Concentrate	1,007 tph 8.0 Mtpa
IMS Concentrate	506 tph 4.0 Mtpa
CMS Concentrate	551 tph 4.4 Mtpa
Product Tonnage	506 tph 4.0 Mtpa
Tails Tonnage	1,669 tph 13.2 Mtpa

*\*\* The table; OPEX - Major Costs, is an alternate breakdown of the OPEX, it is not in addition to the values in the OPEX - Area Breakdown table.*

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## Glossary

<b>Net Present Value</b>
Converts the value of a set of cashflows that occur over an extended project life to an equivalent instantaneous cashflow value. The NPV is dependent on the discount rate which reflects the time value of money.
<b>Internal Rate of Return</b>
The discount rate at which the NPV would be \$0.
<b>Discount Rate</b>
Represents a baseline interest rate. A discount rate of 10% would imply that a cashflow of \$1m today is equivalent in value to a cashflow of \$1.1m in a years time. In ORVAL the discount rate represents the <b>nominal</b> discount rate, which means that the value includes inflation.
<b>Payback Period</b>
The number of years until the project makes back its capital expenditure. The discount rate is ignored in the calculation of this value.
<b>Discounted Payback Period</b>
The number of years until the project makes back its capital expenditure with discount rates applied to deferred cashflows. This value is the project life at which the Net Present Value would be \$0.
<b>Profitability Index (Geared)</b>
The ratio of the Present Value of future cashflows to the capital expenditure (only the equity financed portion).
<b>Profitability Index (Ungeared)</b>
The ratio of the Present Value to the total capital expenditure of the project.
<b>Break Even Values</b>
The break-even values represent the value that a parameter needs to reach in order for the NPV to reach \$0 (assuming all other parameters are fixed). It serves as an indicator of the project's tolerance to changes in the parameter.
<b>Equity</b>
The proportion of the project capital that is financed by owners / investors as opposed to debt.
<b>Personnel (Paid)</b>
Personnel directly employed by the Company.
<b>Personnel (Onsite)</b>
Paid personnel as well as contractors or other people not directly employed by the Company.
<b>Exploration Target</b>
The amount of ore that would be required to operate at capacity for the project lifetime.
<b>Total Mined</b>
The amount of material (in tonnes) that is mined including ore and waste.
<b>New Feed Tonnage</b>
Quantity of ore mined (quantity fed to crushers and first stage grinding).
<b>RMS Concentrate</b>
Rougher Magnetic Separator Concentrate (Quantity of product leaving RMS section).
<b>IMS Concentrate</b>
Intermediate Magnetic Separator Concentrate (Quantity of product leaving IMS section).
<b>CMS Concentrate</b>
Cleaner Magnetic Separator Concentrate (Quantity of product leaving CMS section).
<b>Product Tonnage</b>
Quantity of product leaving flotation circuit. Total concentrate production.
<b>Tails Tonnage</b>
Sum of tails leaving all sections of the plant.

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