

9 APRIL 2014

# ASX ANNOUNCEMENT



## Viscaria Copper-Iron Project Significant Upgrade to the Discovery Zone Mineral Resource Estimate for Copper, Gold and Iron

### Highlights

- **Significant increase in grade to 0.80% Copper and 0.19g/t Gold;**
- **Significant increase in contained metals, by 110% for copper to 71,000t and by 96% for Gold to 55,000oz;**
- **30% of the Discovery Zone has been upgraded to JORC 2012 Indicated Mineral Resource classification; resulting in less drilling required to complete further Feasibility Studies;**
- **The Discovery Zone Prospect is one of four deposits that comprise the Viscaria Copper-Iron Project.**

Avalon Minerals Limited ('Avalon' or 'Company') (ASX: AVI), is pleased to announce an upgraded Mineral Resource estimate for the Discovery Zone Prospect on the Viscaria Project in northern Sweden (Figures 1 and 2). The Mineral Resource for the Discovery Zone is reported according to the guidelines outlined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012). Avalon commissioned Salva Resources Pty Ltd ('HDR|Salva'), mining consultants independent to Avalon, to conduct the Mineral Resource estimation.

The Discovery Zone Prospect is one of four deposits that comprise the Viscaria Copper-Iron Project. Discovery Zone and D Zone are copper-magnetite deposits, while A Zone and B Zone are copper only deposits. The A Zone, B Zone and D Zone deposits are located in close proximity to each other and the Discovery Zone is located approximately 10kms to the south (Figure 2). The individual Mineral Resource estimates for each of these deposits are shown in Table 4 and Table 5. A significant component of the Mineral Resource is within 100m of the surface and is shown in cross-section in Figure 3.

The new Discovery Zone Mineral Resource has an increased copper grade of 0.8% Cu, compared to 0.31% Cu in previous estimates, which has resulted in a 110% increase in contained copper to 71,000 tonnes. The gold grade of the new Discovery Zone Mineral Resource has also increased to 0.19g/t Au from 0.08g/t Au, which has resulted in a 96% increase in contained gold to 55,000 ounces. The increase in copper and gold grade and contained metal relate to a re-interpretation of the geology of the Discovery Zone mineralisation and some changes to the modelled distribution of copper and gold grades, within the broader magnetite model.

The upgrading of 30% of the Discovery Zone Mineral Resource to the Indicated resource classification is the result of validation of historic drill assay results and a continuity analysis of the variography of the resource estimate. The validation of historic drill assay results involved re-assaying historic drill samples, which delivered an improved assay database of enhanced quality and confidence.

ASX: AVI

### REGISTERED OFFICE

Avalon Minerals Ltd  
ABN 68 123 184 412  
65 Park Road  
Milton Qld 4064 Australia  
P + 61 7 3368 9888  
F + 61 7 3368 9899  
info@avalonminerals.com.au  
www.avalonminerals.com.au

Avalon's Managing Director, Malcolm Norris, said "The significant increase in copper and gold within the Discovery Zone Mineral Resource, in a near surface position, is an extremely pleasing result and should have a positive influence on the economics of the Viscaria Project.

The increased confidence in the resource means that less drilling will be required to advance this resource to a level that will support future Feasibility Studies".

"Avalon is advancing the Viscaria Project through various studies focussing on a robust base case scenario and is assessing options for expanding the base case" Mr Norris added.

### Mineral Resource Estimate

The magnetite iron ore and copper/gold Mineral Resources whilst broadly coincident, are modelled and reported separately to avoid mixing geological domains. The new Mineral Resources for the Discovery Zone are reported as:

- **9.0 million tonnes (Mt) @ 0.80% Cu and 0.19g/t Au above a 0.4% copper cut-off grade.**
- **9.7 million tonnes (Mt) @ 38.5% Fe at a cut-off above a 15% Mass Recovery grade.**

Table 1 and Table 2 display the Mineral Resources at Discovery Zone for copper/gold and magnetite iron according to Inferred and Indicated classification. Figure 4 and 5 display the grade versus tonnage curves for copper and iron respectively.

**Table 1: Discovery Zone Mineral Resource for Copper-Gold reported above a 0.4% Cu cut-off**

Mineral Resource Category	TONNES (Mt)	Cu (%)	Au (g/t)	Copper Metal (t)	Gold Metal (oz)
Indicated	2.8	1.07	0.23	25,000	21,000
Inferred	6.1	0.96	0.17	46,000	34,000
<b>Indicated + Inferred</b>	<b>9.0</b>	<b>0.80</b>	<b>0.19</b>	<b>71,000</b>	<b>55,000</b>

**Table 2: Discovery Zone Mineral Resource for Iron reported above a 15% Mass Recovery cut-off**

Mineral Resource Category	TONNES (Mt)	Fe (%)	Mass Recovery (%)	Estimated Recoverable Iron* (Mt)
Indicated	3.0	40.6	53.2	1.1
Inferred	6.7	37.7	49.0	2.3
<b>Indicated + Inferred</b>	<b>9.7</b>	<b>38.5</b>	<b>50.3</b>	<b>3.4</b>

\*Estimated Recoverable Iron = Tonnes x Mass Recovery x Fe % in concentrate (69% Fe) and is based on DTR test work at a 75 micron grind size.

The Discovery Zone Mineral Resources are reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code).

### **Geological setting of the Discovery Zone deposit**

The Discovery Zone deposit consists of magnetite breccias filled with a matrix of mainly chalcopyrite + pyrite + calcite. This ranges from a crackle breccia with jigsaw fit of adjacent clasts on the margins of the breccia zones to a matrix supported breccia in the main ore zones. This textural observation is interpreted to indicate that a copper and sulphur rich hydrothermal fluid came into contact with the magnetite (possibly causing the brecciation through hydrofracturing) and that the oxidised chemistry of the magnetite caused copper and sulphur to be precipitated as chalcopyrite + pyrite around the breccia clasts.

The Discovery Zone deposit is hosted within intermediate-mafic metavolcanic rocks that are overprinted by a major NE trending shear zone. The shear zone envelopes the entire Discovery Zone deposit and is interpreted to control its steeply dipping orientation as well as that of the host rocks. Alteration consists of early albitisation associated with magnetite precipitation, overprinted by sodic-potassic (biotite + scapolite + K-feldspar) and then propylitic (calcite + epidote + muscovite + chlorite ± hematite) alteration. Chalcopyrite + pyrite mineralisation is interpreted to be associated with the propylitic stage. Both textural and chemical observations indicate that the chalcopyrite + pyrite post-dates magnetite mineralisation.

### **Drilling**

The Mineral Resource estimate relies on historical diamond core drilling conducted in several campaigns by three companies. A total of 41 drill holes are used for the estimation. Lundin Mining Corporation (Lundin) completed the majority of the drill holes (31 of 41), between 2004 and 2006, with 8 drill holes completed by a Rio Tinto-Anglo American JV between 2000 and 2002 and a further two holes completed earlier in 1999 by Rio Tinto. The location of the drill holes are displayed in Figure 5.

An extensive validation of the assay dataset and re-assay programmes by Avalon and the previous owners Hannans Reward Limited (Hannans) has resulted in analysis data that is generally of high quality. About 50% of the assays relied upon for the estimate are Avalon and Hannans re-assays. Furthermore, correlation between the re-assays and original assays is high and unbiased.

To provide quality assurance and quality control (“QA/QC”), the analysis data is supported by industry practice check sampling and monitoring. Independent reviews of the QA/QC data by HDR|Salva have identified no significant issues of bias or unacceptable error.

### **Mineral Resource Interpretation**

Avalon provided sectional 3D interpretations of the Discovery Zone deposit and HDR|Salva have used this to create a 3D interpretation and geological domains suitable for public reporting using cut-off grades of 0.2% Cu and 10% Fe. The mineralisation strikes east/west, is 600m long by 300m wide, extends to 400m below surface and is coincident with a very strong magnetic anomaly (Figure 5). Drill holes are located on 50m spaced north/south section lines with the majority of holes drilled towards the north. Whilst the occurrence of the copper and iron mineralisation is largely coincident, they have been modelled separately.

### **Mineral Resource Estimation Methods**

HDR|Salva created a 10m by 10m by 10m volume block model within each geological domain. To represent volume better and small scale changes in orientation and shape, sub-celling was allowed down to 1m. There is good agreement between wireframe volumes and block model volumes with differences less than 1%. Ordinary Kriging was used to estimate copper, iron and gold into blocks. Estimation parameters were optimised based on the drill hole data spacing, variography and cross validation. Cross validation involves

consecutive removal of sample values and estimation of the missing value by its neighbours according to estimation parameters provided.

An analysis of specific gravity derived a dry bulk density factor for the relationship between Fe grade and bulk density. For estimating tonnages, dry bulk density was assigned across the model using a regression formula. In a similar manner the relationship between Mass Recovery (%) and total Fe (%) was determined and a regression formula was applied across the model.

Grade models were validated by visual inspection and comparison between sample and block means, on a local and global basis.

### Classification

The Mineral Resource has been reported for the Discovery Zone deposit in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012). The following criteria were taken into consideration when reporting the Mineral Resource:

- The sample spacing along strike and dip and the relation to continuity determined by variography.
- The kriging variance associated with block estimates.
- The quality of assay data supporting the estimate.

### Comparison with previously reported Mineral Resource Estimates

Previously the Discovery Zone Mineral Resource was reported as containing 10.9Mt @ 0.31% Cu, 38.7% Fe and 0.08g/t Au using a cut-off of 20% Fe, according to the guidelines outlined in the 2004 edition of the JORC Code. Table 3 is a comparison between the previous estimate and the Discovery Zone Mineral Resource announced today. Although the new, copper-gold Discovery Zone Mineral Resource contains less overall tonnes of material, the significant increase in the grade of both copper and gold has resulted in a 110% increase in contained copper and 96% in contained gold. The new, magnetite iron ore Discovery Zone Mineral Resource also contains less overall tonnes. However, this has resulted in a minor decrease in recoverable iron because there is no significant change in Fe % grade and mass recovery between the previous Mineral Resource and that announced today.

**Table 3: Comparison of the current and previous Discovery Zone Mineral Resource**

Copper-Gold Resource	Mt	Cu %	Au (g/t)	Estimated Copper Metal (t)	Estimated Gold Metal (oz)	Increased Copper Metal	Increased Gold Metal
April 2014	9.0	0.80	0.19	71,000	55,000	37,000t	28,000oz
September 2012	10.9	0.31	0.08	34,000	28,000	or 110%	or 96%

Iron Resource	Mt	Fe %	Mass Recovery %	Estimated Recoverable Iron (Mt)	Decreased Recoverable Iron (Mt)
<b>April 2014</b>	<b>9.7</b>	<b>38.5</b>	<b>50.3</b>	<b>3.4</b>	<b>0.3</b>
September 2012	10.9	38.7	49.5	3.7	= <b>8%</b>

The differences inherent in the new Discovery Zone Mineral Resource (shown in Table 4) mainly relate to a re-interpretation of the geology of the Discovery Zone mineralisation and some changes to how the copper and gold grades are modelled. Avalon observed that in the previous mineral resource estimation the three metals of economic significance, copper, gold and iron were being modelled within the same geological domain, which was predominantly controlled by the greater spatial distribution of the magnetite iron ore mineralisation. This approach will 'smear' copper and gold into any areas where those metals are absent, resulting in an overestimation of copper and gold. To mitigate this effect in the previous estimate, a top cut of copper grade at 0.4% Cu and gold grade at 0.1g/t Au was used. Top cuts at this threshold are too severe and not justified when the average copper grade of 0.8% Cu and average gold grade of 0.19g/t Au are considered. Therefore, it was deemed top cuts would not be applied in the current estimate. Instead, the copper and gold mineralisation were wireframed separately to the magnetite iron ore mineralisation. This approach is consistent with that taken for the D Zone deposit, a nearby magnetite iron ore and copper occurrence with similar geology, also owned by Avalon. Avalon considers this approach provides a better estimate of metals present at Discovery Zone than previous estimates.

### Viscaria Copper-Iron Project

The Discovery Zone Prospect is one of four deposits that make up the Viscaria Copper-Iron Project. Discovery Zone and D Zone are copper-magnetite iron ore deposits, while A Zone and B Zone are copper only deposits. The A Zone, B Zone and D Zone deposits are located in close proximity to each other and the Discovery Zone is located approximately 10kms to the south (Figure 2). The individual Mineral Resource estimates for each of these deposits are shown in Table 4 and Table 5.

**Table 4: Currently Defined Mineral Resource for Copper reported on the Viscaria Project above a 0.4% Cu cut-off.**

Resource Name	Classification	Tonnes (t)	Cu Grade (%)	Cu Metal (t)
A Zone	Measured	14,439,000	1.66	239,687
	Indicated	4,690,000	1.22	57,218
	Inferred	2,480,000	1.03	25,544
	<b>Subtotal</b>	<b>21,609,000</b>	<b>1.49</b>	<b>322,449</b>
B Zone	Measured	123,000	1.33	1,636
	Indicated	4,118,000	0.72	29,650
	Inferred	15,410,000	0.77	118,657
	<b>Subtotal</b>	<b>19,651,000</b>	<b>0.76</b>	<b>149,943</b>
D Zone Cu Resource	Indicated	5,100,000	1.07	54,570
	Inferred	8,500,000	0.96	81,600
	<b>Subtotal</b>	<b>13,600,000</b>	<b>1.00</b>	<b>136,170</b>
Discovery Zone Cu Resource	Indicated	2,800,000	0.89	25,000
	Inferred	6,100,000	0.75	46,000
	<b>Subtotal</b>	<b>9,000,000</b>	<b>0.80</b>	<b>71,000</b>
<b>Overall Cu</b>	<b>Total</b>	<b>63,860,000</b>	<b>1.05</b>	<b>679,562</b>

**Table 5: Currently Defined Mineral Resource for Iron reported on the Viscaria Project above a 15% Mass Recovery cut-off**

Resource Name	Classification	Tonnes (Mt)	Fe Grade (%)	Mass Recovery (%)	Estimated recoverable iron (Mt)
D Zone Fe Resource	Indicated	11.7	27.5	33.4	2.7
	Inferred	13.9	25.7	31.0	3.0
	<b>Subtotal</b>	<b>25.6</b>	<b>26.4</b>	<b>32.1</b>	<b>5.7</b>
Discovery Zone Fe Resource	Indicated	3.0	40.6	53.2	1.1
	Inferred	6.7	37.7	49.0	2.3
	<b>Subtotal</b>	<b>9.7</b>	<b>38.5</b>	<b>50.3</b>	<b>3.4</b>
<b>Overall Fe</b>	<b>Total</b>	<b>35.3</b>	<b>29.8</b>	<b>37.1</b>	<b>9.1</b>

**Note:**

- The A Zone, B Zone and D Zone Mineral Resources were prepared and first disclosed under the JORC Code 2004. They have not been updated since to comply with the JORC Code (2012) on the basis that the information has not materially changed since it was last reported.
- All Copper Mineral Resource estimates are reported above a cut-off Grade of 0.4% Cu.
- All Iron Mineral Resource estimates are reported above a cut-off of 15% Mass Recovery.
- Estimated recoverable iron is based on Davis Tube Recovery test work at a 75 micron grind size. Estimated contained iron is tonnes x mass recovery % x Fe % in concentrate (69% Fe).
- Total D Zone Indicated and Inferred Mineral Resource reported for the Copper above a cut-off of 0.4% Cu and Iron above a cut-off of 15% Mass Recovery are not mutually exclusive; the Mineral Resource for Iron above a cut-off of 15% Mass Recovery excludes 4.4 million tonnes at 0.89% Cu above a cut-off grade of 0.4% Cu.
- Total Discovery Zone Indicated and Inferred Mineral Resource reported for Copper-Gold above a cut-off of 0.4% Cu and for Iron above a cut-off of 15% Mass Recovery are broadly spatially coincident. However, they are modelled and reported separately to avoid mixing geological domains.

**For further information please visit [www.avalonminerals.com.au](http://www.avalonminerals.com.au) or contact:**

Mr Malcolm Norris

Managing Director

Avalon Minerals Limited

Tel: 07 3368 9888

Email: [malcolm.norris@avalonminerals.com.au](mailto:malcolm.norris@avalonminerals.com.au)



### **Competent Persons Statement**

The information in this report that relates to exploration results is based upon information reviewed by Dr Quinton Hills who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Hills is a full time employee of Avalon Minerals Ltd and 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 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Hills consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to the Discovery Zone Mineral Resources is based on the information compiled by Trevor Ellice who is a Member of the Institute of Mining and Metallurgy and is a full time employee of Salva Resources Pty Ltd ("HDR | Salva"). HDR | Salva are an independent mining consultancy who have been engaged by Avalon Minerals Limited to perform geological consulting on a fee for service basis. Mr Ellice has sufficient experience that is relevant to the style of mineralisation being considered and to the activity being undertaken to qualify as a competent person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Ellice consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The Mineral Resource estimate for the D Zone Prospect was compiled and prepared by Matthew Readford (MAusIMM) of Xstract Mining Consultants who is a Competent Person as defined by the Australasian Code for the reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2004 Edition and who consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The Mineral Resource estimate for the A Zone and B Zone prospects was compiled and prepared by Dr Bielin Shi (MAusIMM, MAIG) of CSA Global Pty. Ltd. who is a Competent Person as defined by the Australasian Code for the reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2004 Edition and who consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.





Figure 1 – Project Location

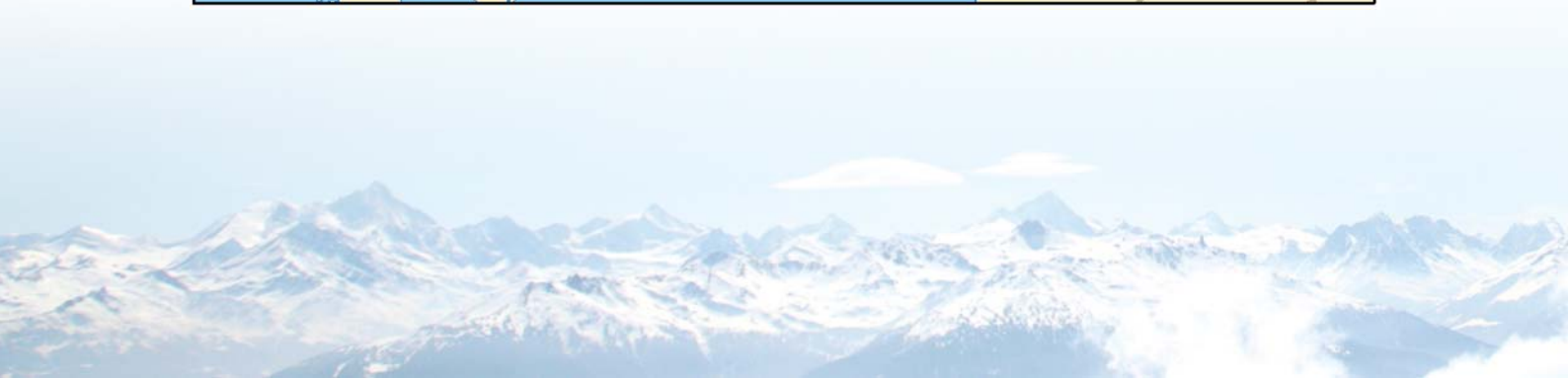
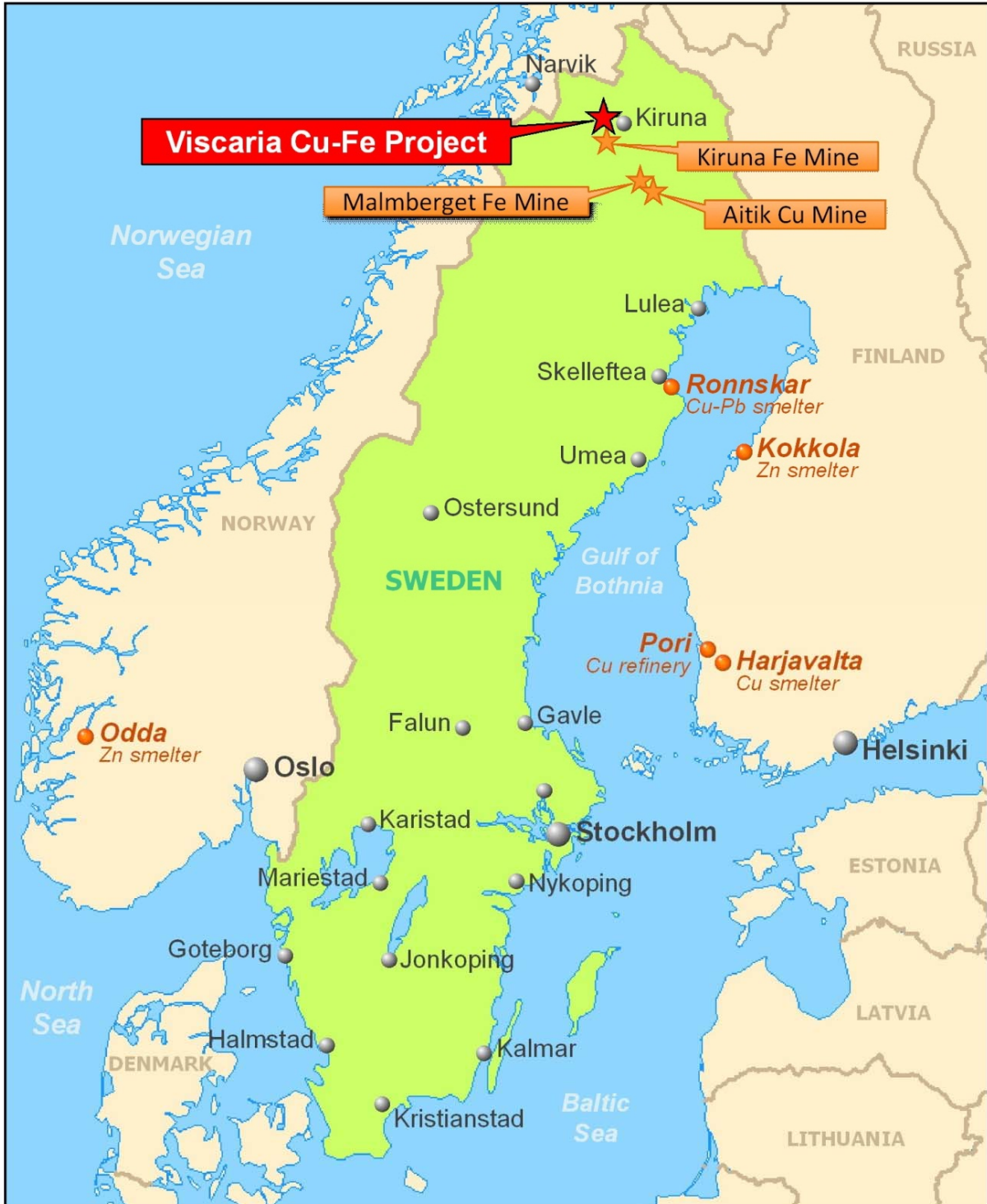


Figure 2 – Location of Discovery Zone Mineral Resource, in relation to the A Zone, B Zone and D Zone Mineral Resources

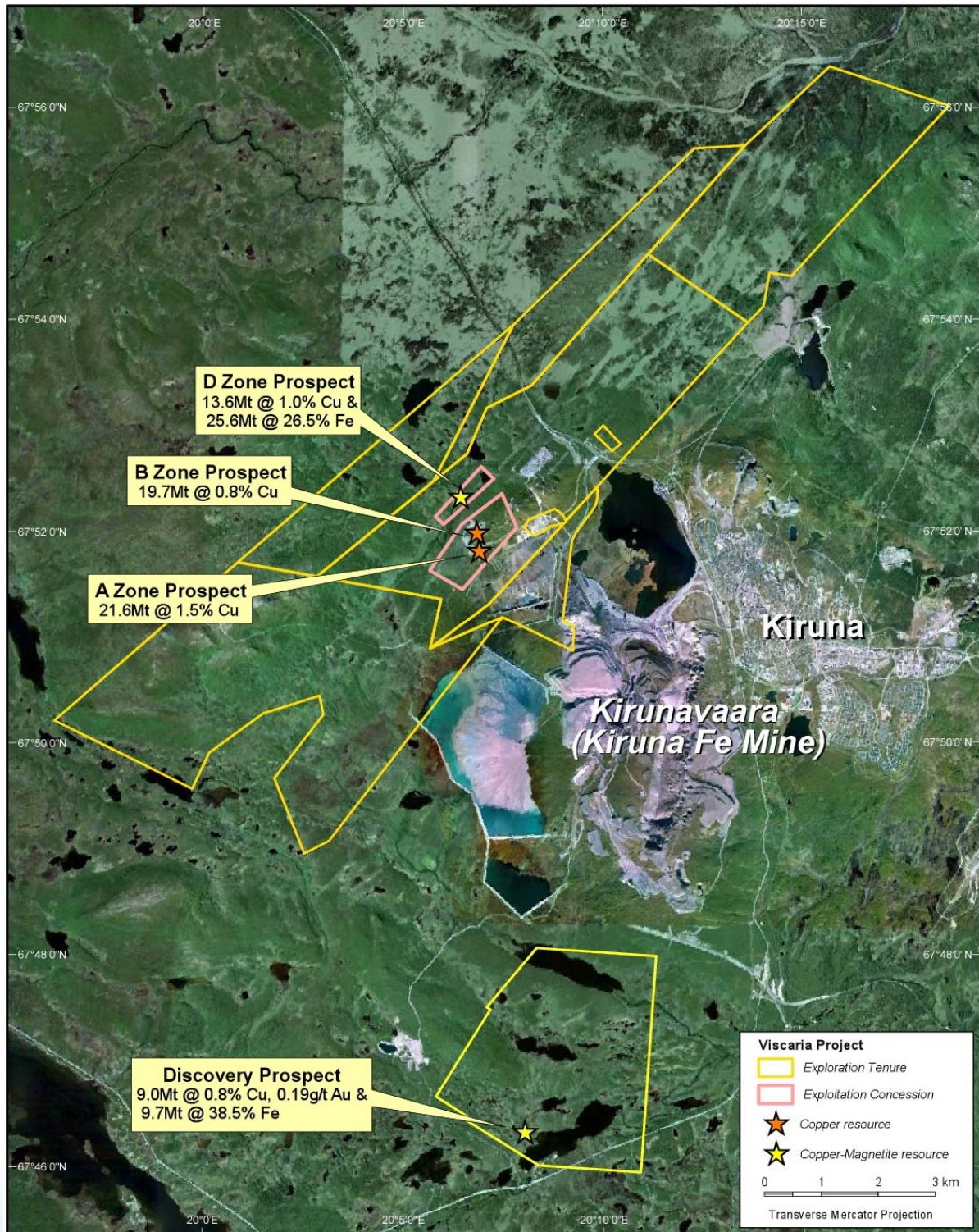




Figure 4 – April 2014 Discovery Zone Mineral Resource Grade tonnage chart for copper

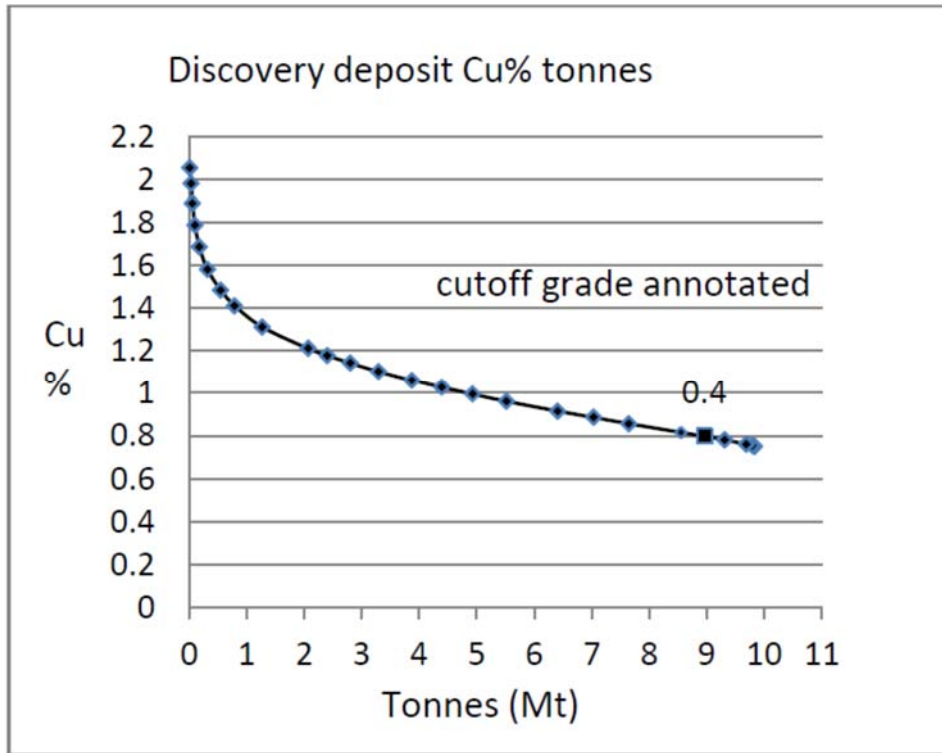
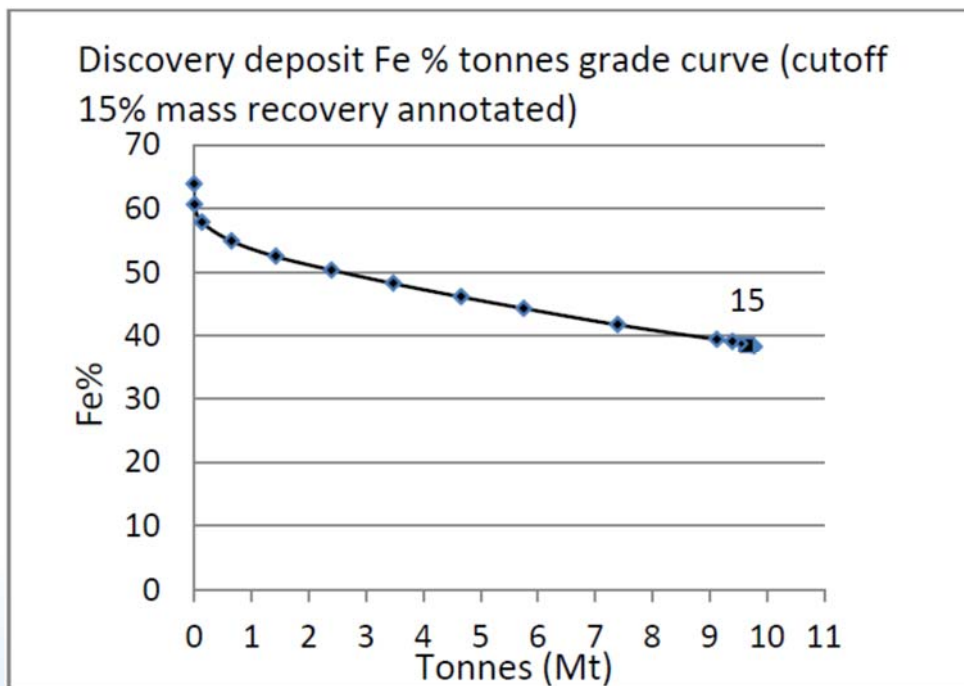


Figure 5 - April 2014 Discovery Zone Mineral Resource Grade tonnage chart of iron



**Appendix One – Assessment of resource estimation (JORC 2012 Table 1)**

Criteria	Assessment
<b>Sampling techniques</b>	Half core – the selection of mineralised intervals for sampling were based on visible copper mineralisation and sampling into weakly mineralised or non-mineralised zones either side of the visible mineralisation was limited. Several holes have entire length sampled. Sampling generally one meter adjusted to geological boundaries and consistent with industry standard
<b>Drilling techniques</b>	All drilling is angled non-orientated NQ diameter diamond core.
<b>Drill sample recovery</b>	Of the 591 sample intervals used in the estimation, 239 have drill sample recovery recorded for the interval. Of these 70% have a drill sample recovery recorded at 100%. Rio Tinto recorded the sample recovery information for drilling programmes prior to those conducted by Lundin who, whilst not recording data, report good core sample recovery.
<b>Logging</b>	The geological logging is from the time of drilling and historical. The logs are written full descriptions 'comments field style logging' without standardised lithological codes. The written logs are being converted to standardised logging codes. All geological logs have been field checked.
<b>Sub-sampling techniques and sample preparation</b>	<p>Laboratory standard for half core samples. All samples relied upon have analysis code from commercial laboratories which include details of sample preparation procedures. Rio Tinto shipped halfcore to ISO 9002 certified OMAC Laboratories in Galway, Ireland for preparation and assaying. Lundin crushed and pulverised samples at their facility in Uppsala, Sweden and pulp subsamples sent to Vancouver.</p> <p>Hannans – Located the coarse rejects from several of the Lundin drill hole samples at the Swedish Geological Surveys core storage facility in Malå, Sweden. The coarse rejects were then sent to ALS Scandinavia in Piteå, where they were prepared into pulp subsamples. The prepared sample was then sent to ALS Iron Ore in Perth, Western Australia for Davis Tube Recovery analysis (DTR) testwork, as well as by the lithium borate fusion technique coupled with X-Ray fluorescence (ALS reference: ME-XRF21).</p> <p>Avalon – Located the coarse rejects from several of the Lundin drill hole samples at the Swedish Geological Surveys core storage facility in Malå, Sweden. The coarse rejects were then sent to ALS Scandinavia in Piteå, where they were prepared and split in two pulp subsamples. One pulp subsample was then sent to ALS Geochemistry Vancouver, Canada for base metal analysis by Sodium Peroxide Fusion and ICP-AES (ALS reference: ME-</p>

Criteria	Assessment
	ICP81). The other pulp subsample was sent to ALS Iron Ore in Perth, Western Australia for Davis Tube Recovery analysis (DTR) testwork as well.
<b>Quality of the assay data and laboratory tests</b>	<p>All analysis at commercial accredited laboratories, good check sampling and monitoring for re-assays conducted by Avalon and Hannans.</p> <p>Historical analysis supported by a monitored check sampling programme. Results of all monitoring results have been reviewed and no bias or unacceptable error detected.</p>
<b>Verification of sampling of assaying</b>	<p>Avalon and Hannans conducted an extensive programme of re-assay of coarse rejects. About 50% of the assays relied upon in resource estimation are Avalon and Hannans re-assays. The re-assays have provided support for historical assays as there is good correlation between new re-assay data and historical data (R=99). Furthermore the historical data is recent (&gt;1999) and conducted by companies of good standing who employ industry standard procedures and practice.</p>
<b>Location of data points</b>	<p>There is no down-hole survey of azimuth. The recorded down-hole azimuths, used to generate drill traces, are based on the initial 'planned' azimuth. Dip angles are measured down-hole and are available. The lack of down-hole azimuth contributes to uncertainty in sample location at depths greater than 100m where deviation for azimuth away from the designed azimuth becomes significant. This contributes to Mineral Resource being classified as Inferred at depth.</p>
<b>Data spacing and distribution</b>	<p>Data spacing is regular on north south-aligned sections. Some early drill holes completed east-west has created some data clustering. Data spacing is sufficient to establish continuity between drill holes. To regularise, sample intervals are composited to 1m for estimation.</p>
<b>Orientation of the data in relation to geological structure</b>	<p>Drilling orientation provides high angle mineralised intersections consistent with appropriate and representative sampling.</p>
<b>Sample security</b>	<p>Due attention has been given and tamper proof bags used when shipping pulps for final analysis.</p>
<b>Audits and review</b>	<p>A Technical Review of the Kiruna Area IOCG projects in Norbotten County, Sweden for South Atlantic Ventures Ltd. NI43-101 Technical Report by John R. Sullivan, P.Geo and Robert Lilljequist, EurGeol. April 27, 2004. Available on SEDAR.</p>

Criteria	Assessment
	<p>Updated Technical Review of the Kiruna Area IOCG projects in Norrbotten County, Sweden for Lundin Mining Corporation. NI43-101 Technical Report by Robert Lilljequist , EurGeol. February 15, 2005. Available on SEDAR.</p> <p>A Technical Review of the Anglo American/Rio Tinto/Lundin JV IOCG Project in Kiruna, Norrbotten County, Sweden. NI43-101 Technical Report by Juki Laurikko, EurGeol. February 12, 2007. Available on SEDAR.</p> <p>Rakkurijärvi – Discovery and Tributary zones, Resource Estimation Memo. JORC 2004 Mineral Resource report by Thomas Lindholm MAusIMM of GeoVista AB. September 6<sup>th</sup>, 2012.</p>
<b>Database integrity</b>	All historical data is validated and migrated into a SQL based database, based on the 'Acquire' data structure. Data is audited on entry for interval error and significant data changes are resolved.
<b>Site visits</b>	Competent person has not visited site, however Avalon staff are on the ground in Sweden and have visited the site often.
<b>Geological interpretation</b>	The geological interpretation for copper and iron has been modified from Avalon's interpretation to make suitable for public reporting. Distances extrapolated to half the drill spacing in the down-dip and along strike directions. Typically this distance is 25 and 50m. Copper gold and magnetite iron ore mineralisation are generally coincident however to better model the metals present separate copper/gold and iron domains are created. Mineralisation in Domain 200 is flat lying, continuity is high, and this part of the mineral resource is classified as Indicated.
<b>Dimensions</b>	Mineralised domains occur as both a flat lying zone and steeply dipping lenses in a zone with dimensions, 600m long by 300m wide by 400m deep.
<b>Estimations and modeling techniques</b>	Ordinary Kriging used to estimate into 10 by 10 by 10 sized blocks. Variography used to determine continuity. No top cuts applied to copper, gold and iron grade populations as they are not overly skewed or influenced by outliers.
<b>Moisture</b>	Dry bulk density used.
<b>Cutoff parameters</b>	Iron Mineral Resource based on 15% mass recovery on block cut-off, copper/gold Mineral Resource based on 0.4% Cu cut-off, based on nearby deposits and chosen for consistency.

Criteria	Assessment
<b>Mining factors or assumptions</b>	Avalon have conducted open pit optimisation studies of the previous Discovery Zone resource estimate and a large portion of the Mineral Resource was selected by the optimisation for mining according to mining assumptions used.
<b>Metallurgical factors or assumptions</b>	The gold will report to saleable concentrates and upgrade to concentrations sufficient to warrant payment. To calculate iron metal content in magnetite concentrate 69% Fe has been used based on metallurgical testwork.
<b>Environmental factors or assumptions</b>	<p>Avalon is currently in the process of progressing an Exploitation Concession for this area but as yet no mining approvals have been granted. As a part of this process, Avalon is currently working towards addressing the concerns of all stakeholders who will be potentially affected by mining at the Discovery Zone Prospect. There is a history of successful project outcomes in Sweden with the environment and local community issues considered.</p> <p>It is assumed that only mining activities will be undertaken at the Discovery Zone Prospect. It is planned to process ore from the Discovery Zone at a processing facility that will be built on the site of the historic Viscaria Mine processing plant, which was situated near the A Zone Prospect. The historic Viscaria Mine was in operation between 1982 and 1997. It is assumed that mining approvals will be more likely to be obtained because the site of the historic Viscaria Mine processing plant is already disturbed.</p>
<b>Bulk density</b>	The dry bulk density is determined by regression formula from correlation with iron grade.
<b>Classification</b>	The Mineral Resource estimate is classified as Indicated where reasonable geological continuity of mineralisation can be determined and sample location is within 100m of the surface where there is good confidence in the sample location as the drill holes are not of sufficient depth to have deviated significantly from surface azimuth. Classification is downgraded to Inferred where sampling is inadequate to model local variability of iron and copper grades, confidence of sampling and estimation is low, and the sample is below 100m where confidence in the location of sample is low due to lack of azimuth data in down-hole survey data. The classification has been determined by the Competent Person for Mineral Resources.