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ASX ANNOUNCEMENT

AVALON MINERALS LTD

D Zone Mineral Resource Increases by 34% to 20.7 million tonnes with a significant increase in contained Cu and Fe

Highlights

- **Overall D Zone Mineral Resource tonnage has increased by 5.2 million tonnes, bringing the overall resource size to 20.7 million tonnes, a 34% Increase;**
- **Interim Mineral Resource estimate for the D Zone Prospect has increased by 46% in copper resource tonnage and 48% in contained copper;**
- **Interim Mineral Resource estimate for the D Zone Prospect has also increased by 28% in iron resource tonnage and 33% in contained iron;**
- **D Zone Mineral Resource is expected to continue to grow as drilling continues to intersect excellent thicknesses and high grades of copper and iron mineralisation;**
- **Interim D Zone Mineral Resource is to be used to revise the project economics to assess the value added, with results expected to be announced within the next few weeks.**

Australian resources company Avalon Minerals Limited ('**Avalon**' or '**Company**') (**ASX: AVI**) is pleased to announce an interim Mineral Resource estimate upgrade at the D Zone Prospect on the Viscaria Copper-Iron Project in northern Sweden (Figures 1 and 2). The D Zone Mineral Resource has been reported in terms of both iron and copper Mineral Resources separately in accordance with the guidelines of the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2004; Tables 1 and 2) as:

- 7.9 million tonnes @ 0.9% Cu above a 0.4% copper cut-off grade and is classified as being 5.2 million tonnes @ 0.92% Cu Indicated and 2.7 million tonnes @ 0.84% Cu Inferred;
- 18.9 million tonnes @ 26.9% Fe at a cut-off above a 15% Fe Mass Recovery grade and is classified as 12.1 million tonnes @ 27.3% Fe Indicated and 6.8 million tonnes @ 26.1% Fe Inferred.

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Table 1: D Zone Mineral Resource for Copper reported above a 0.4% Cu cut-off grade

Mineral Resource Category	Million Tonnes	Cu (%)	Copper Metal (tonnes)
Indicated	5.2	0.92	48,000
Inferred	2.7	0.84	23,000
Indicated + Inferred	**7.9**	**0.89**	**71,000**

Table 2: D Zone Mineral Resource for Iron reported above a 15% Fe Mass Recovery cut-off grade

Mineral Resource Category	Million Tonnes	Fe Mass Recovery (%)	Fe (%)	Recoverable Iron (million tonnes)
Indicated	12.1	33.1	27.3	4.0
Inferred	6.8	31.6	26.1	2.2
Indicated + Inferred	**18.9**	**32.6**	**26.9**	**6.2**

Note that the total Indicated and Inferred Mineral Resource reported for Copper (Table 1) and for above 15% Fe Mass Recovery (Table 2) are not mutually exclusive; the Mineral Resource for above 15% Fe Mass Recovery excludes 1.8 million tonnes at 0.8% Cu above a cut-off grade of 0.4% Cu. Therefore, the overall Mineral Resource contains 20.7 million tonnes; 18.9 million tonnes from the Mineral Resource reported at a 15% Fe Mass Recovery cut-off grade and 1.8 million tonnes at 0.8% Cu above a cut-off grade of 0.4% Cu.

Avalon's Managing Director, Jeremy Read, said "one of our objectives for this drill program at D Zone was to significantly grow the copper resource inventory, so it is very pleasing to be able to announce that the copper Mineral Resource has increased by 46% and contained copper has increased by 48%. The overall tonnage of the D Zone Mineral Resource has been increased by 34% from 15.5 million tonnes to 20.7 million tonnes."

"The D Zone extension drill program is ongoing and we continue to intersect higher grade copper down dip and along plunge of the D Zone Mineral Resource. This indicates that there is scope to continue to significantly increase this Mineral Resource, especially the tonnes that have the potential to be extracted using underground mining methods. The indication that the D Zone mineralisation has the potential to be mined underground, is open at depth and down plunge, could further strengthen the project's economics," Mr Read said.

Geological setting of D Zone

The D Zone deposit consists of a northeast-southwest oriented, magnetite ± chalcopyrite ± pyrite mineralised lens that steeply dips to the northwest. In the hanging wall of the mineralised lens is a sequence of rheologically strong mafic intrusive/extrusive rocks and in the footwall is a sequence of rheologically weak tuffaceous siltstones. This rheological difference has caused strain from a regional deformation/metamorphic event to be partitioned at this geological boundary, resulting in intense shearing. The shear zones appear to completely envelop the mineralised

lens and therefore, it is possible that additional mineralised lenses could have been sheared away, representing further exploration targets.

The magnetite-rich mineralised lens appears to be fine-grained around the margins where it is in contact with the enveloping shear zones and semi-massive to massive towards the core of the lens. It is interpreted that the fine-grained nature of the magnetite around the margins of the mineralised lens is the result of deformational recrystallisation controlled by the ductile shear zones.

Chalcopyrite is closely associated with pyrite and most often occurs as veinlets cross-cutting the semi-massive to massive magnetite mineralisation and is also commonly observed to be coating the individual magnetite grains. On the large scale, this relationship is displayed by the chalcopyrite and pyrite mineralisation being concentrated along the outer margin of the overall magnetite mineralised lens, resulting in the best copper grades around the margins with decreasing copper grade towards the core. This observation is interpreted to indicate that a copper and sulphur rich hydrothermal fluid came into contact with the magnetite mineralised lens (focused by the enveloping shear zones) and that the oxidised chemistry of the magnetite then caused copper and sulphur to be precipitated. It is also interpreted that this hot, copper and sulphur enriched fluid would have most likely been transported up from a deeper, hotter zone within this orogenic belt and therefore the best copper sulphide mineralisation should be associated with the magnetite mineralised lens at depth where it first came into contact with the magnetite. Therefore, it is interpreted that the exploration potential to increase the mineral resource for the D Zone mineral deposit at depth is high.

Drilling

For this interim Mineral Resource upgrade, Avalon incorporated 37 additional drill holes with assays totalling 10,835 metres for the D Zone deposit. This brings the total drilling at D Zone to 239 drill holes for 32,818 metres. Drill holes are supported by detailed collar records as well as down hole surveys and some quality assurance and quality control (QAQC) data. The D Zone deposit has been drilled on northwest-southeast sections spaced approximately 50 metres apart along the strike of mineralisation extending 1,175 metres. There are generally between five and eight drill holes per section, spaced approximately 25 to 50 metres across strike. The majority of the holes are drilled at an approximate angle of 60° from the horizontal at an azimuth of 135° (90° in local mine grid) in order to intersect the plane of mineralisation at a high angle. Xstract Mining Consultants (Xstract) has reviewed all data provided by Avalon and confirms that the information used for modelling is of sufficient quality to support a Mineral Resource for public reporting purposes.

Mineral Resource Interpretation

The mineralised zone of the D Zone deposit has been interpreted on 50 metre sections coincident with drilling. Mineralisation is generally dipping between 70° to the northwest and 85° to the southeast, and has been intersected from the base of till and extends in places to around 350 metres below surface. Mineralisation is tightly constrained within 19 copper and 4 iron zones comprising high and low grade domains.

Avalon provided all 3-dimensional (3D) interpretations of the zones of mineralisation (domains) to Xstract for use in Mineral Resource estimation. The 3D geological interpretation of the copper mineralisation is based primarily on cut-off grades in the drill hole data. Boundaries for low grade copper were generated where the copper grade was above 0.2% Cu, with high grade copper domains being created where grade was above 0.8% Cu over at least a 2 metre width down hole. Copper grades also exist outside of these domains and within the iron domains.

The interpreted iron domains were created by Avalon using a combination of grades and lithological units. The high grade iron follows the boundary of the ironstone along strike, and extends away from the boundary where the composited grade was greater than 25% Fe. The low grade iron is based on grades of less than 20% Fe and generally forms a shell around the high grade iron domains. Very low grade areas were also interpreted where Fe% is less than 10%, and are commonly found to the west of the low grade domains. There is also one further iron domain occurring in the upper shear zone, where the zone outlines an area of 10% to 20% Fe.

Mineral Resource Estimation Methods

Ordinary Kriging (OK) was used to estimate copper and iron into block models of the mineralisation wireframes/domains. The block model parent cells have dimensions of 5 mE by 20 mN by 10 m Elevation, with sub-celling used to represent the geometry and volume of the mineralisation models accurately. The estimation parameters were optimised based on the drill hole data spacing and the models of grade continuity produced by an updated variography study of copper and iron.

Specific gravity data provided by Avalon was used to determine dry bulk density factors for estimating material tonnages. A relationship between iron grade and bulk density was derived and the resultant regression formula was applied across the model to determine dry bulk density. Where no iron grade was calculated in the model, a dry bulk density value of 2.9 t/m^3 was applied.

The Fe Mass Recovery (%) values within the block model were calculated from total Fe (%) estimates using a regression formula. The regression formula was determined by carrying out a regression analysis between Fe Mass Recovery (%) and total Fe (%) results from Davis Tube Recovery (DTR) test work.

There was no material difference in the bulk density and Fe Mass Recovery regression analyses between the new drilling data used in the March 2013 update and that used for the October 2012 estimation. Therefore the same formulae were used for the two estimates.

Comparison with previously reported D Zone Mineral Resource

The previous D Zone Mineral Resource as announced on 2 October 2012 is displayed in Tables 3 and 4. The overall tonnage of the new revised Mineral Resource is approximately 20.7 million tonnes, compared to approximately 15.5 million tonnes in the previous D Zone Mineral Resource. This represents an increase of 5.2 million tonnes or 34%. Importantly, the increased tonnage of the overall Mineral Resource has been achieved without any decrease in copper and iron grade.

The tonnage of the copper resource itself increased from 5.4 to 7.9 million tonnes or 46%. As the grade of the copper Mineral Resource remained stable this has also resulted in a 48% increase to the contained tonnes of copper. Importantly for the possibility of mining parts of D Zone via underground methods, if a 0.8% Cu cut-off is used the copper Mineral Resource has grown from 2.0 to 3.1 million tonnes or 55%.

The tonnage of the iron resource itself increased from 14.8 to 18.9 million tonnes or 28%. As the grade of the iron Mineral Resource has increased this has also resulted in a 33% increase to the recoverable iron.

Cu and Fe grade tonnage data and curves comparing the new revised D Zone Mineral Resource and the previous D Zone Mineral Resource in detail are displayed in Tables 5, 6, 7 and 8 and Figures 3 and 4.

Table 3: Previous October 2012 D Zone Mineral Resource for Copper reported above a 0.4% Cu cut-off grade

Mineral Resource Category	Million Tonnes	Cu (%)	Copper Metal (tonnes)
Indicated	3.5	0.9	33,000
Inferred	1.9	0.8	15,000
Indicated + Inferred	**5.4**	**0.9**	**48,000**

Table 4: Previous October 2012 D Zone Mineral Resource for Iron reported above a 15% Fe Mass Recovery cut-off grade

Mineral Resource Category	Million Tonnes	Fe Mass Recovery (%)	Fe (%)	Recoverable Iron (million tonnes)
Indicated	9.5	31.3	25.9	3.0
Inferred	5.3	30.8	25.6	1.6
Indicated + Inferred	**14.8**	**31.1**	**25.8**	**4.6**

Mineral Resource Extension Continues

The current drill program continues to deliver on the Mineral Resources necessary to achieve the outcomes announced in the Scoping Study on the Viscaria Copper-Iron Project Mineral Resources. An estimate of how much value has been added to the Viscaria Copper-Iron Project from the current drill program is expected to be announced in the next few weeks as the interim D Zone Mineral Resource is currently being used in re-estimating the economics of the D Zone deposit.

For further information please visit www.avalonminerals.com.au or contact:

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Figure 1 – Project Location

Figure 2 – Location of D Zone Mineral Resource, in relation to the A Zone and B Zone Mineral Resources (in mine grid)

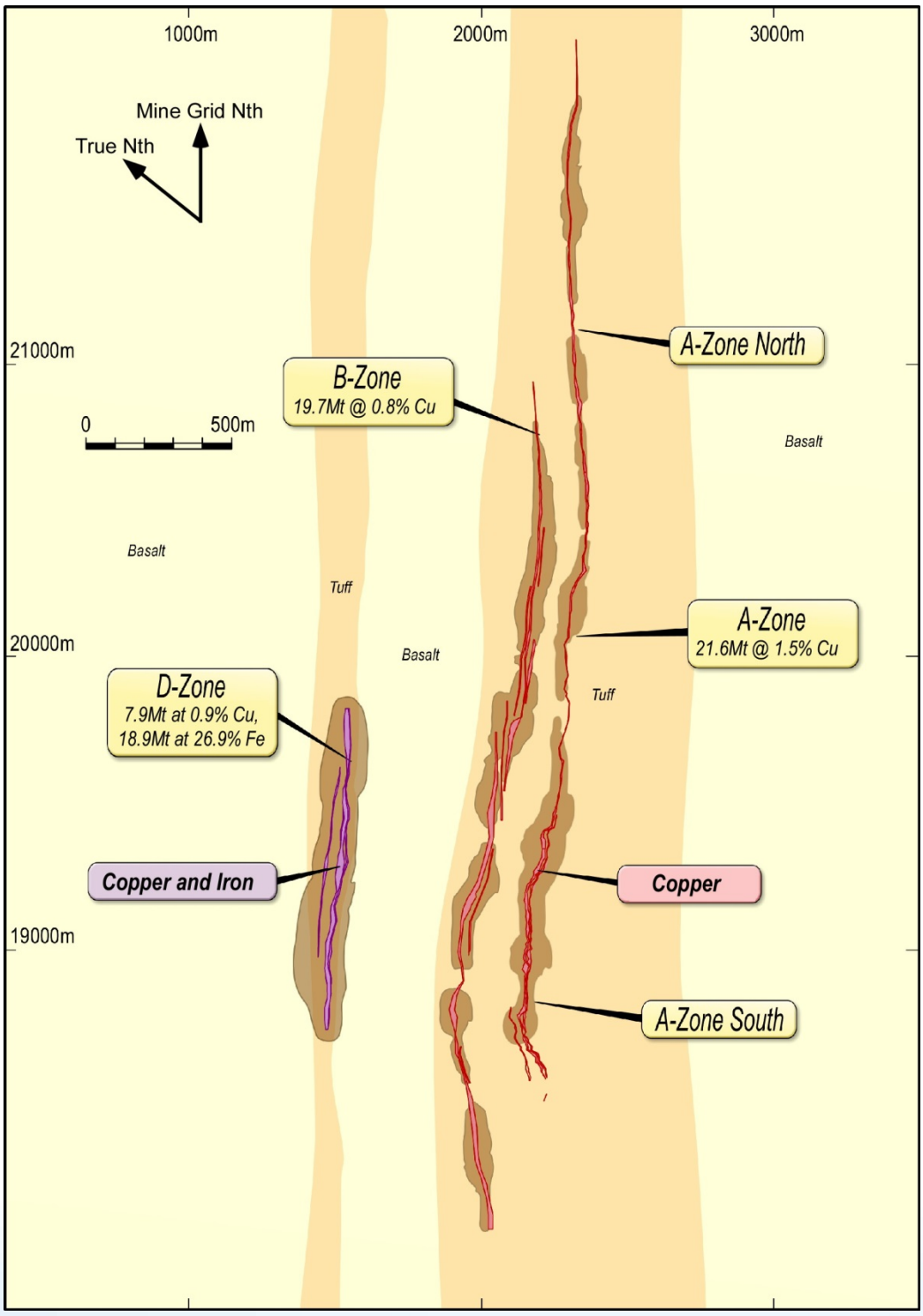


Table 5: March 2013 block model Cu grade tonnage data

CUTOFF (Cu %)	TONNES	Cu (%)
0.01	31,298,000	0.34
0.2	12,605,000	0.68
0.3	10,531,000	0.76
0.4	**7,918,000**	**0.89**
0.5	5,680,000	1.07
0.6	4,331,000	1.23
0.7	3,556,000	1.36
0.8	3,146,000	1.44
0.9	2,900,000	1.49
1	2,717,000	1.53
1.1	2,556,000	1.56
1.2	2,309,000	1.60
1.3	1,983,000	1.66
1.4	1,630,000	1.72
1.5	1,284,000	1.80
1.6	982,000	1.88
1.7	678,000	1.98
1.8	447,000	2.10
2	186,000	2.40

Table 6: Previous 2012 D Zone block model Cu grade tonnage data

CUTOFF (Cu %)	TONNES	Cu (%)
0.01	23,473,000	0.30
0.2	7,856,000	0.71
0.3	6,919,000	0.77
0.4	**5,369,000**	**0.89**
0.5	3,865,000	1.07
0.6	2,794,000	1.27
0.7	2,258,000	1.41
0.8	1,962,000	1.51
0.9	1,822,000	1.56
1	1,693,000	1.61
1.1	1,602,000	1.64
1.2	1,497,000	1.68
1.3	1,365,000	1.72
1.4	1,240,000	1.76
1.5	1,027,000	1.82
1.6	866,000	1.87
1.7	594,000	1.97
1.8	400,000	2.08
2	189,000	2.30

Table 7: March 2013 D Zone block model Fe Mass Recovery grade tonnage data

CUTOFF (Fe Mass Rec %)	TONNES	Fe Mass Rec (%)
0.01	29,897,000	23.6
3	29,054,000	24.2
5	27,218,000	25.5
10	22,718,000	29.2
15	**18,868,000**	**32.6**
20	15,934,000	35.4
25	13,779,000	37.4
30	11,451,000	39.4
35	8,327,000	41.9
40	4,811,000	45.2

Table 8: Previous 2012 D Zone block model Fe Mass Recovery grade tonnage data

CUTOFF (Fe Mass Rec %)	TONNES	Fe Mass Rec (%)
0.01	23,034,000	23.5
3	23,000,000	23.5
5	22,878,000	23.6
10	17,905,000	27.9
15	**14,782,000**	**31.1**
20	11,888,000	34.4
25	9,927,000	36.8
30	8,009,000	39.0
35	5,683,000	41.6
40	3,107,000	44.9

Figure 3 - Grade tonnage chart for copper for March 2013 and September 2012 models

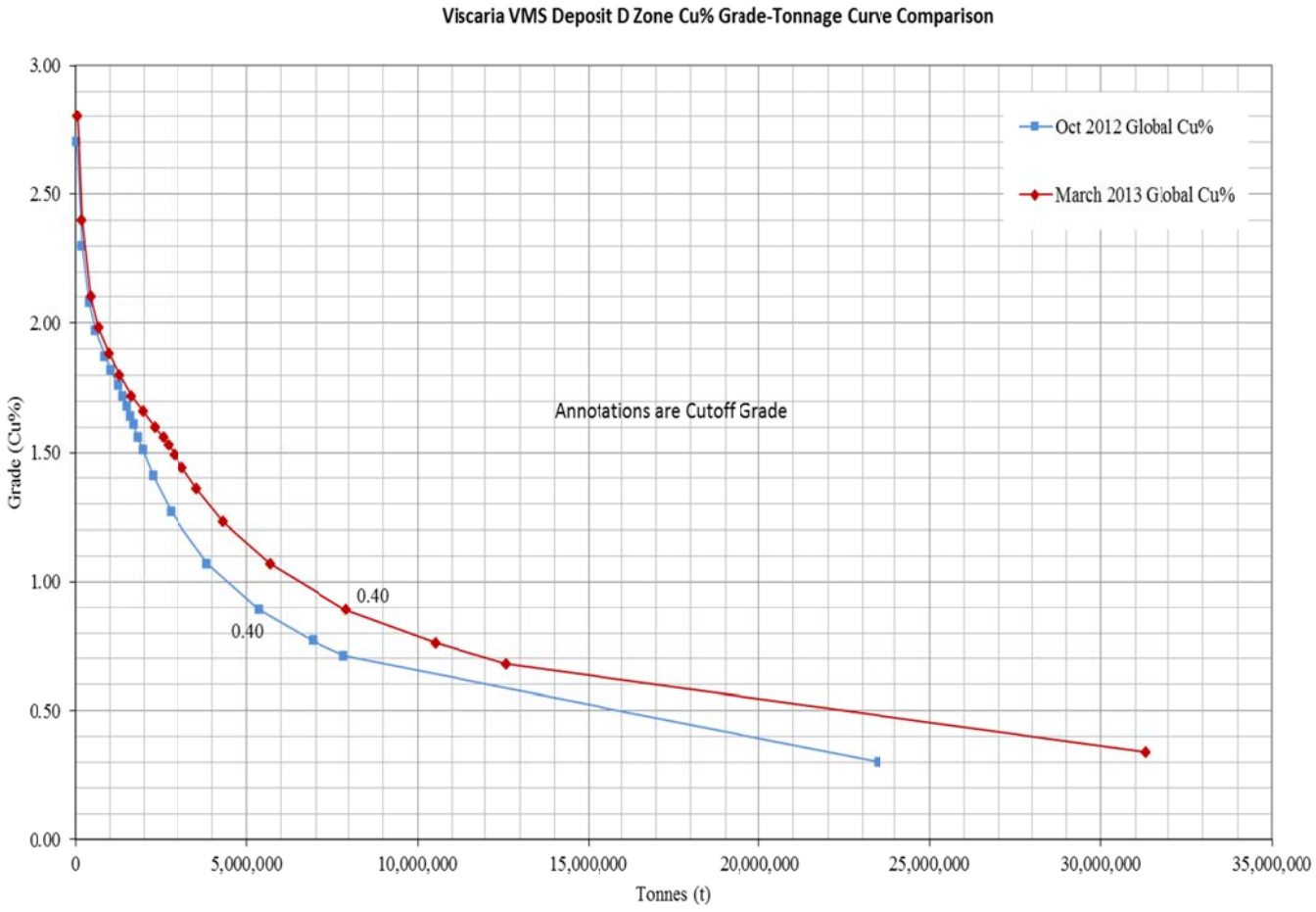
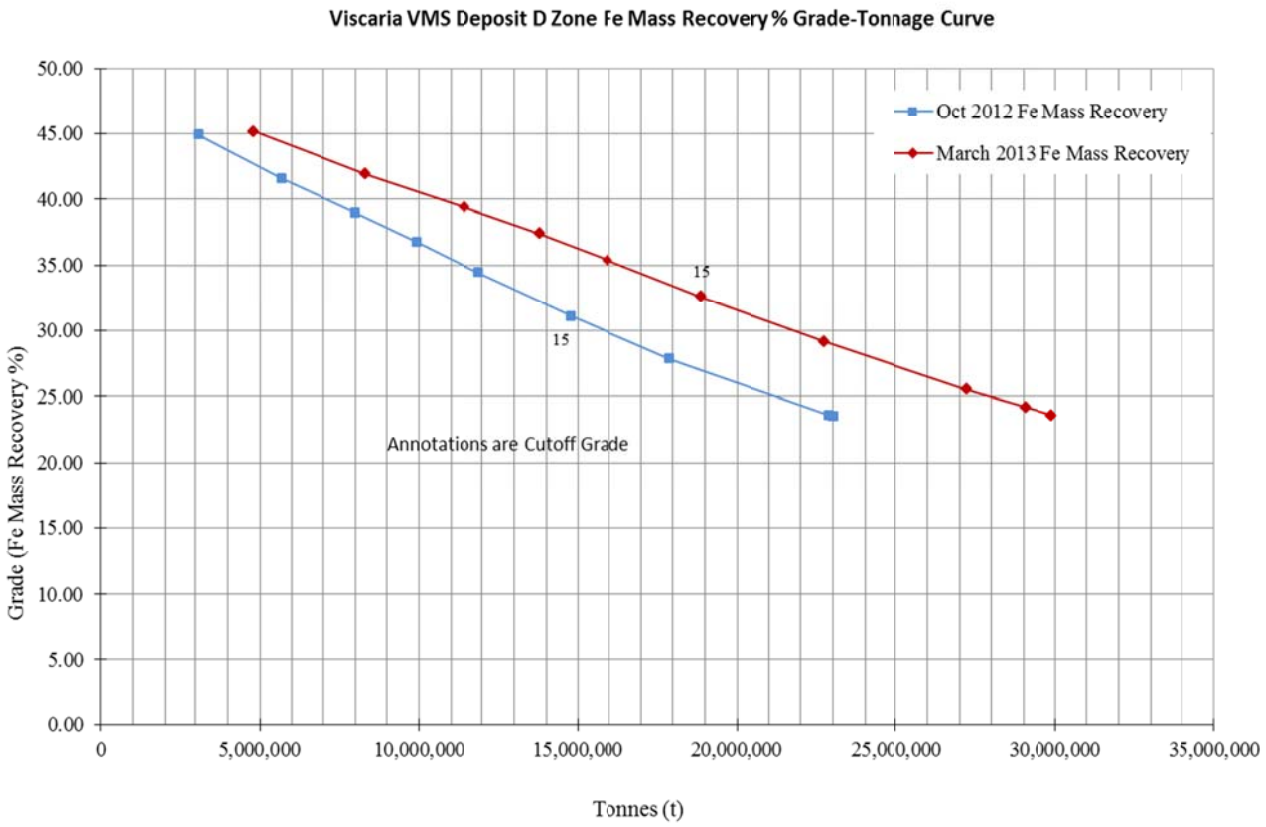


Figure 4 - Grade tonnage chart of iron for March 2013 and September 2012 models



Competent Persons Statement

The information in this report that relates to Mineral Resources and exploration targets is based upon information reviewed by Mr Jeremy Read BSc (Hons) who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Read 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 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Read consents to the inclusion in the 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.