

## D ZONE CONTINUES TO DELIVER SIGNIFICANT COPPER-IRON MINERALISATION

### Highlights

- Assays results indicate all seven drill holes intersected copper and iron mineralisation from 10m to 38m down hole thickness;
- Best intersections include:
  - VDD0149: 34.8m @ 1.2% CuEq\*, including 11.2m @ 1.6% CuEq\*.
  - VDD0147: 38.0m @ 1.0% CuEq\*, including 4.3m @ 1.7% CuEq\* and 8.0m @ 1.5% CuEq\*.
  - VDD0146: 28.25m @ 1.0% CuEq\*, including 4.0m @ 2.0% CuEq\*.
  - VDD0150: 15.42m @ 1.0% CuEq\*, including 3.42m @ 2.1% CuEq\*.
  - VDD0138: 10.0m @ 1.5% CuEq\*, including 3.6m @ 2.3% CuEq\*.
- These intersections have extended the known mineralisation zones between 30m and 80m down-dip and up to 100m along strike;
- Drilling at D Zone continues to define two relatively thick (up to 88m down-hole thickness), high grade (up 2.7% CuEq) copper-iron plunging zones;
- Avalon on track to define increases to the D Zone Mineral Resource which will underpin delivery of Development Cases A and C (see Scoping Study Announcement 11 October, 2012), potentially increasing the NPV of the D Zone Mineral Resource by \$78M to \$126M.

Australian resources company Avalon Minerals Limited ('Avalon' or 'Company') (ASX: AVI) is pleased to announce assay results for seven drill holes of the current drill program from the D Zone Prospect on the Viscaria Copper Project ('Viscaria Project') in northern Sweden (Figure 1).

This drill program will comprise approximately 25,000 metres of drilling, with the objective of extending the known Mineral Resources at the A and D Zone prospects and delivering on the potential increases to the project Net Present Value (NPV) outlined in the Viscaria Scoping Study (see ASX announcement 11 October 2012).

Managing Director, Mr Jeremy Read, said, "These latest results have extended the known mineralisation at D Zone and are consistent with previous drilling results, which defined two thick, high-grade copper-iron mineralisation zones. It is a very positive outcome that these thickened higher grade zones are continuing at depth with no sign of diminishing".

"This suggests there is excellent potential for the D Zone Mineral Resource to be significantly extended at depth. This would enhance the economics of the D Zone Mineral Resource and deliver the Development Cases A and C, which would result in a \$78M increase to the NPV of D Zone, to \$126M".

### **D Zone Extensional Drill Program**

Four of the seven holes were drilled in the northeast of the D Zone Prospect (VDD0138, VDD0145, VDD0147 and VDD0150), while the other three were drilled in the southwest of the D Zone Prospect (VDD0142, VDD0146 and VDD0149).

The drilling in the northeast of the D Zone Prospect was designed to follow up the excellent previous drill intersections from VDD0128 (68.5 @ 1.0 % CuEq\* including 8.1m @ 2.1% CuEq\* and 8.0m at 2.0% CuEq\*) and VDD0129 (88.3m @ 0.7% CuEq\* including 9.0m @ 2.1% CuEq\* and 5.0m at 1.5% CuEq\*). It was interpreted that the mineralisation intersected in VDD0128 and VDD0129 plunged moderately to the southwest.

The success of VDD0138, VDD00147 and VDD0150 follows the success of previously announced drill holes VDD0141 and VDD0134 in this area. This represents further proof that the geological model is correct and that a relatively thick, high-grade copper-iron mineralisation zone extends at depth and along strike. Further drilling in this area is necessary to fully define the lateral and depth extent of this high-grade mineralisation zone and this will be a major focus of upcoming drill holes.

The drilling in the southwest of the D Zone Prospect was designed to follow up the very encouraging drill intersections from VDD0111 (44m @ 1% CuEq\*, including 7.45m @ 2.7% CuEq\*) and VDD0120 (21.62m @ 1.0% CuEq\*, including 4.77m @ 2.3% CuEq\*). It was interpreted that the mineralisation, intersected in VDD0111 and VDD0120, also plunged moderately to the southwest.

The success of drill holes VDD0142, VDD0146 and VDD0149, follows the positive results of drill holes VDD0132, VDD0140 and VDD0144 in this area. Overall, these drill holes indicate that the second relatively thick, high-grade copper-iron mineralisation zone extends approximately a further 100m along strike and at least 100m further down dip.

The details of the geochemical assay data for these drill holes are shown in Table 1 with the location of each hole outlined in Figure 2.

Drilling is continuing and further geochemical results are expected to be received within the next two weeks.

#### **VDD0150: Northeast D Zone (Figure 3)**

Drill hole VDD0150 intersected 15.42m @ 1.0% CuEq\* from 174.0m down hole, including a high grade interval of 3.42m @ 2.1% CuEq\*. This drill hole was completed 30m down dip of VDD0084. Therefore, the success of VDD0150 could potentially result in a significant increase to the D Zone Mineral Resource.

The results of the previously announced Viscaria Project Scoping Study indicate that the thickness and grade of this relatively shallow mineralised intersection has the potential to increase the tonnes of mineralisation which could be extractable using open pit methods at D Zone (Development Case A).

#### **VDD0138: Northeast D Zone (Figure 4)**

Drill hole VDD0138 intersected three copper zones: 10.0m @ 1.5% CuEq\* from 239.2m down hole, including 3.6m @ 2.3% CuEq\*; 6.8m @ 1.1% CuEq\* from 270m down hole, including 2.8m @ 1.6% CuEq\*; and 1.1% Cu from 286.0m down hole. It was drilled approximately 50 metres down dip of VDD0078. Therefore, the success of VDD0138 could potentially result in a significant increase of the D Zone Mineral Resource.

The results of the previously announced Viscaria Project Scoping Study indicate that the mineralised intersections from VDD0138, especially 10.0m @ 1.5% CuEq\* from 239.2m down hole, including 3.6m @ 2.3% CuEq\*, has the potential to increase the tonnes of mineralisation which could be extractable using underground mining methods at D Zone (Development Case C).

#### **VDD0147: Northeast D Zone (Figure 5)**

Drill hole VDD0147 intersected 38.0m @ 1.0% CuEq\* from 304.0m down hole, including 4.3m @ 1.7% CuEq\* and 8.0m @ 1.5% CuEq. It was drilled 80m down dip of drill hole VDD0130.

This hole demonstrates that the mineralisation is thickening and increasing in grade at depth. This is interpreted to be the result of VDD0147 intersecting the high-grade copper-iron mineralisation zone that was first identified in VDD0128 and VDD0129. This trend is expected to continue to develop with additional drilling at depth and along plunge.

The results of the previously announced Viscaria Project Scoping Study indicate that the mineralised intersections from VDD0147 has the potential to increase the tonnes of mineralisation which could be extractable using underground mining methods at D Zone (Development Case C).

#### **VDD0145: Northeast D Zone (Figure 6)**

Drill hole VDD0145 intersected 12m @ 1.1% CuEq\* from 84m down hole. It was drilled 50 metres along strike to the northeast of VDD0134 and 50 metres down dip of drill hole VPP0062. Therefore, VDD0145 could potentially result in an increase of the D Zone Mineral Resource.

The results of the previously announced Viscaria Project Scoping Study indicate that this broad, shallow mineralised intersection has the potential to increase the tonnes of mineralisation which could be extractable using open pit methods at D Zone (Development Case A).

#### **VDD0149: Southwest D Zone (Figure 7)**

Drill hole VDD0149 intersected 34.8 @ 1.2% CuEq\* from 225.0m down hole, including 11.2m @ 1.6% CuEq\*. This mineralised intersection extends the known mineralisation over 100m along strike to the southwest from previous drill hole VDD0142 and therefore, could potentially result in a significant increase of the D Zone Mineral Resource.

#### **VDD0142: Southwest D Zone (Figure 8)**

Drill hole VDD0142 intersected 33.0 @ 0.6% CuEq\* from 187.0m down hole, including 2.0m @ 2.6% CuEq\*. This mineralised intersection extends the known mineralisation over 100m down dip from previous drill hole VDD0100.

#### **VDD0146: Southwest D Zone (Figure 9)**

Drill hole VDD0146 intersected 28.25 @ 1.0% CuEq\* from 191.8.0m down hole, including 4.0m @ 2.0% CuEq\* and 2.05m @ 2.2% CuEq\*. This mineralised intersection extends the known mineralisation approximately 50m down dip from previous drill hole VDD0116 and therefore, could potentially result in a significant increase of the D Zone Mineral Resource.

The results of the previously announced Viscaria Project Scoping Study indicate that this broad, shallow mineralised intersection has the potential to increase the tonnes of mineralisation which could be extractable using open pit methods at D Zone (Development Case A).

Table 1: Drill hole details and assays results.

Hole	Prospect	Easting (RT90, m)	Northing (RT90, m)	Azi. (°)	Dip (°)	From (down hole m)	To (down hole m)	Interval Width (down hole m)	% Cu	% Fe	% CuEq	End of Hole (m)
VDD0138	D Zone	1,680,760	7,537,447	133.1	-54.5	239.20	249.20	10.00	1.1	27.7	1.5	234.00
						including						
						245.00	248.60	3.60	1.8	33.4	2.3	
						270.00	276.80	6.80	0.6	27.5	1.1	
						including						
						274.00	276.80	2.80	1.1	30.0	1.6	
						286.00	289.00	3.00	1.1			
VDD0142	D Zone	1,680,259	7,536,892	134.5	-55	187.00	220.00	33.00	0.2	24.8	0.6	234.00
						including						
						217.00	219.00	2.00	2.0	38.5	2.6	
VDD0145	D Zone	1,681,048	7,537,599	134.3	-55	84.00	96.00	12.00	0.7	23.2	1.1	108.00
VDD0146	D Zone	1,680,476	7,537,167	134.1	-55	191.80	220.05	28.25	0.6	26.4	1.0	267.00
						including						
						193.00	197.00	4.00	1.5	36.3	2.0	
						also including						
						218.00	220.05	2.05	1.6	34.3	2.2	
VDD0147	D Zone	1,680,806	7,537,543	134.6	-58.3	304.00	342.00	38.00	0.6	25.2	1.0	360.00
						including						
						321.00	325.30	4.30	1.2	31.4	1.7	
						also including						
						334.00	342.00	8.00	1.2	18.1	1.5	
VDD0149	D Zone	1,680,192	7,536,818	135.3	-55.5	225.00	259.82	34.82	0.8	27.1	1.2	261.70
						including						
						225.00	236.20	11.20	1.3	19.2	1.6	
VDD0150	D Zone	1,680,682	7,537,320	134.5	-55	174.00	189.42	15.42	0.5	27.9	1.0	207.00
						including						
						186.00	189.42	3.42	1.5	39.5	2.1	

**\*Copper Equivalent Formula**

% CuEq = % Cu + ((%Fe x Fe price US\$/tonne x Fe recovery)/(Cu price US\$/tonne x Cu recovery))

Cu price US\$/tonne = \$7,163.00 (US\$3.25/lb)

Cu Recovery = 90%

Fe price US\$/tonne = \$144.93 (calculated from US\$100 Net Price per tonne of magnetite concentrate containing 69% Fe)

Fe Recovery = 70%

Results from extensive metallurgical test work completed by Avalon Minerals Limited indicate that both copper (Cu) and iron (Fe) have a reasonable potential to be recovered from the D Zone mineral resource contained within the Viscaria Project.

Table 2: Currently Defined Mineral Resources on the Viscaria Project.

Resource Name	Classification	Tonnes (t)	Cu Grade (%)	Cu Metal (t)
A Zone*	Measured	14,439,000	1.66	239,000
	Indicated	4,690,000	1.22	57,000
	Inferred	2,480,000	1.03	26,000
	<b>Subtotal</b>	<b>21,609,000</b>	<b>1.49</b>	<b>322,000</b>
B Zone*	Measured	123,000	1.33	2,000
	Indicated	4,118,000	0.72	30,000
	Inferred	15,410,000	0.77	118,000
	<b>Subtotal</b>	<b>19,650,000</b>	<b>0.76</b>	<b>150,000</b>
D Zone Cu Resource	Indicated**	3,500,000	0.94	32,900
	Inferred**	1,870,000	0.80	14,960
	<b>Subtotal</b>	<b>5,370,000</b>	<b>0.89</b>	<b>47,860</b>
<b>Overall Cu</b>	<b>Total</b>	<b>46,629,000</b>	<b>1.01</b>	<b>519,860</b>

Resource Name	Classification	Tonnes (t)	Fe Grade (%)	Fe Mass Recovery (%)	Fe Metal (t)
D Zone Fe Resource	Indicated***	9,470,000	25.90	31.3	2,964,110
	Inferred***	5,320,000	25.60	30.8	1,638,560
<b>Overall Fe</b>	<b>Total</b>	<b>14,790,000</b>	<b>25.80</b>	<b>31.1</b>	<b>4,602,670</b>

\* 2011 Mineral Resources for A Zone and B Zone are reported above a cut-off grade of 0.4% Cu.

\*\* 2012 Copper Mineral Resource for D Zone above a cut-off grade of 0.4% Cu.

\*\*\* 2012 Iron Mineral Resource for D Zone above a cut-off grade of 15% Fe Mass Recovery.

## ABOUT AVALON

Avalon is an ASX listed mineral exploration company with high quality assets in Sweden, one of the leading metal producing countries in the European Union.

Avalon's flagship asset is the Viscaria Copper-Iron Project located 1,200km north of Stockholm where the Company has delineated a global resource of 66.2 million tonnes of mineralisation, containing 51,000 tonnes of copper and 2.4 million tonnes of iron.

The Viscaria Project is surrounded by established infrastructure, lying immediately adjacent to LKAB's Kirunavaara Iron Ore operation and in close proximity to high-capacity rail and ports.

## ABOUT SWEDEN

Sweden has a 1,000 year mining history, is a leading producer of base metals (copper, zinc, lead) and precious metals (gold and silver) and is the largest producer of iron ore in the European Union.

There are excellent discovery opportunities, with much of the country underexplored by modern standards. Furthermore, Sweden possesses a world-class geological database and favourable minerals legislation, is politically and economically stable and has mining know-how, highly trained personnel and excellent infrastructure. Sweden is ranked number 2 on the Fraser Institute Survey of best countries for mining investment.

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

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### 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.

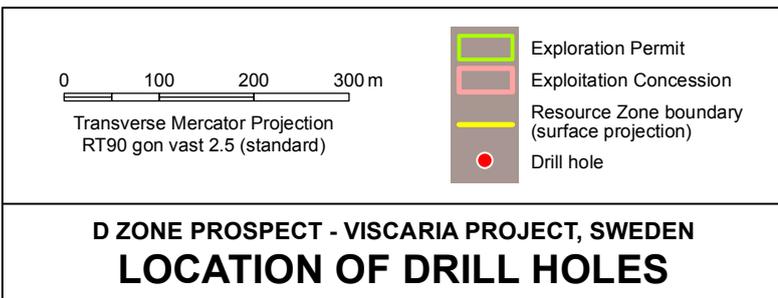
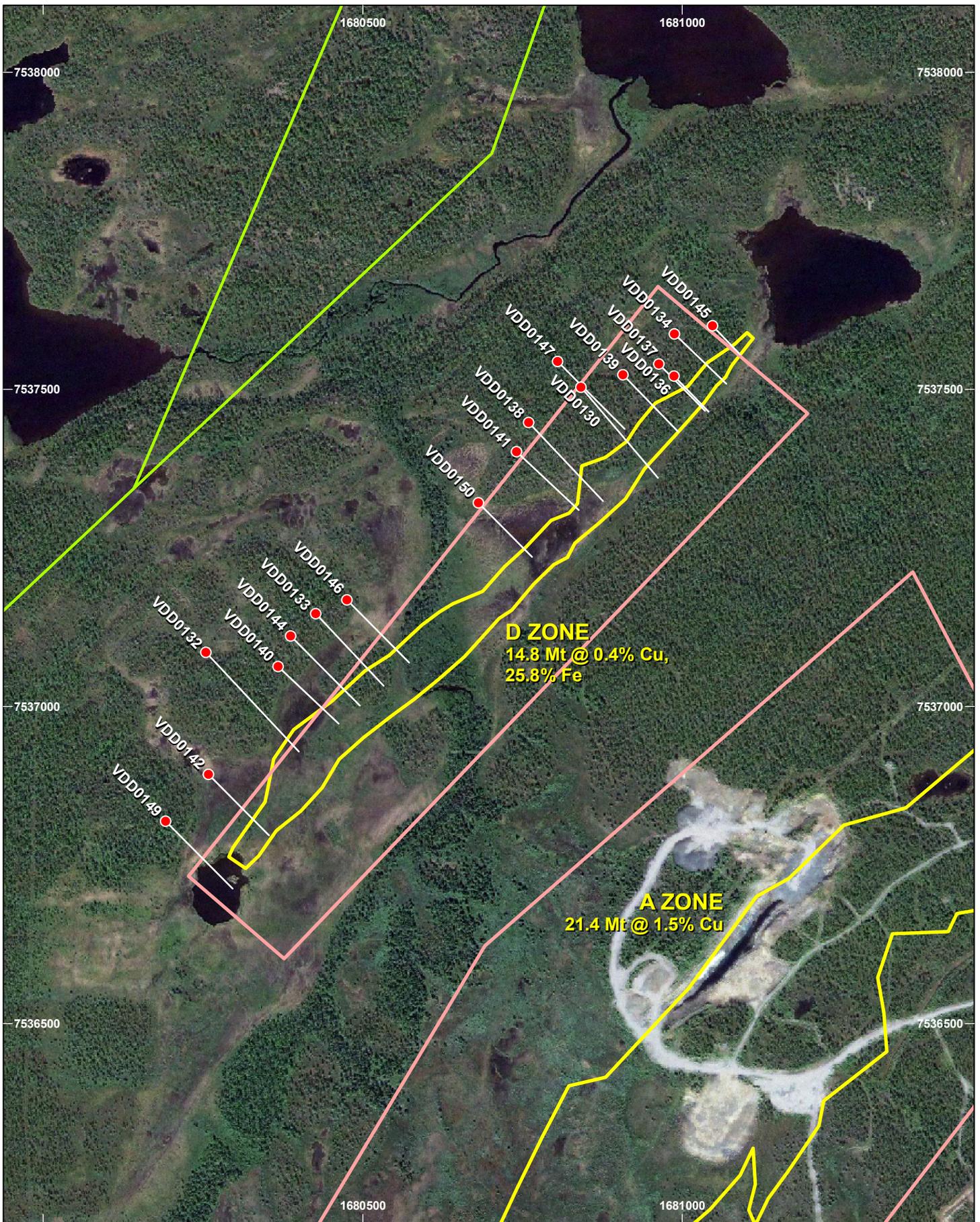
The Mineral Resource estimate for the D Zone Prospect was compiled and prepared by Stefan Mujdrica (MAusIMM) of Xstract Mining Consultants who is a Competent Person as defined by the Australasian Code for the reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2004 Edition 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 Scoping Study results were compiled and prepared by Tim Horsley (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.



Figure 1 - Project Location



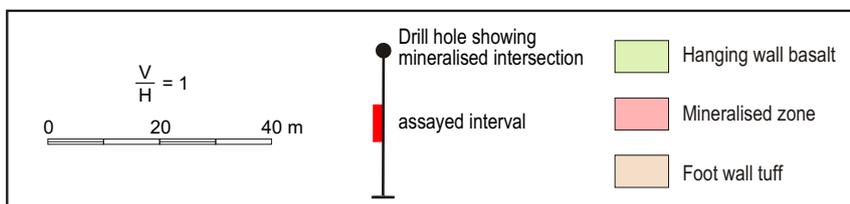
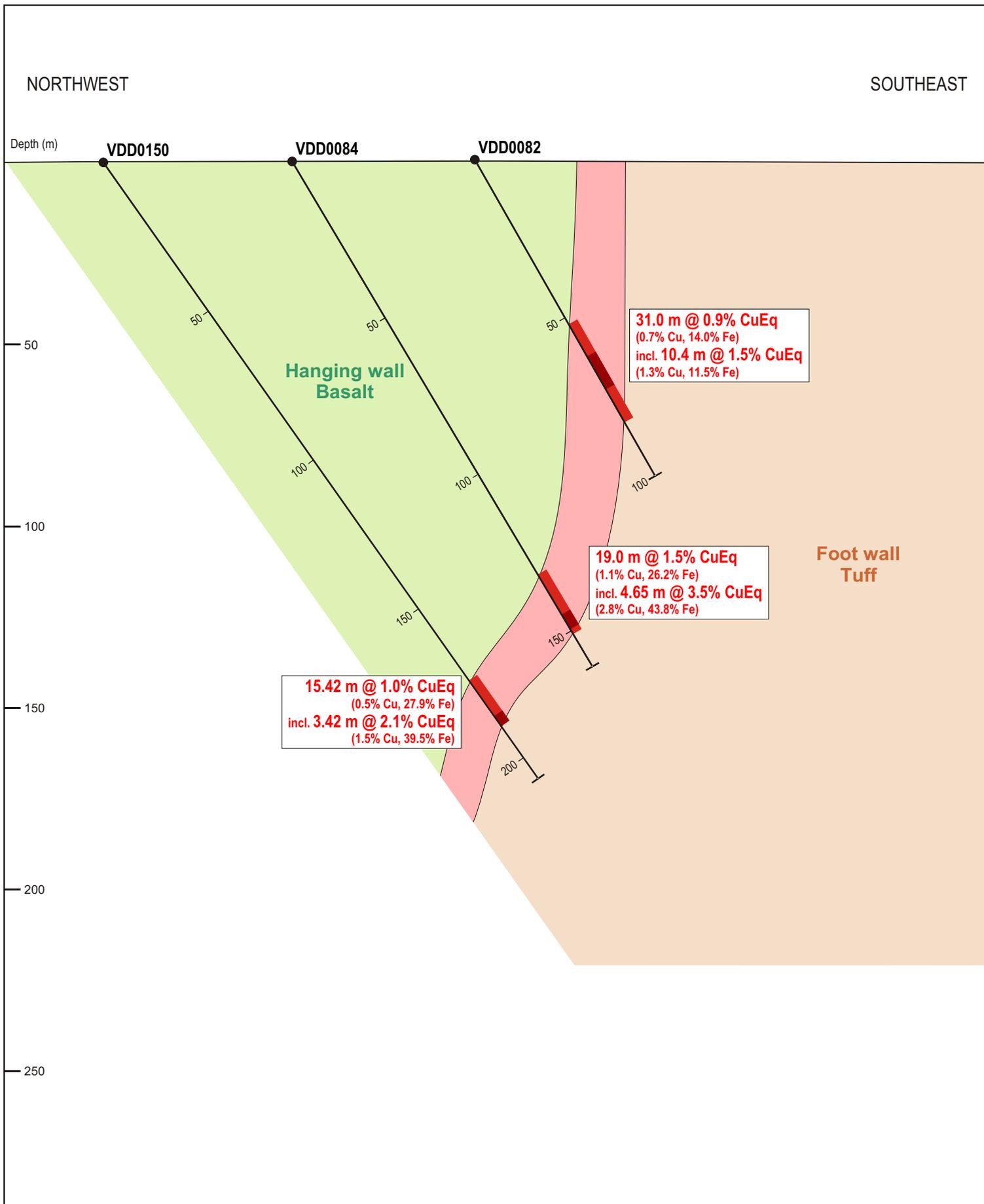




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Revised:	Drwg: AV-028
<b>FIGURE 2</b>	



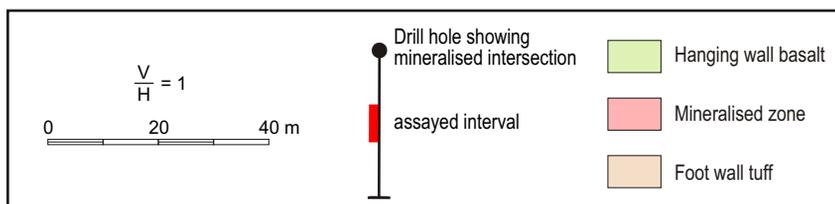
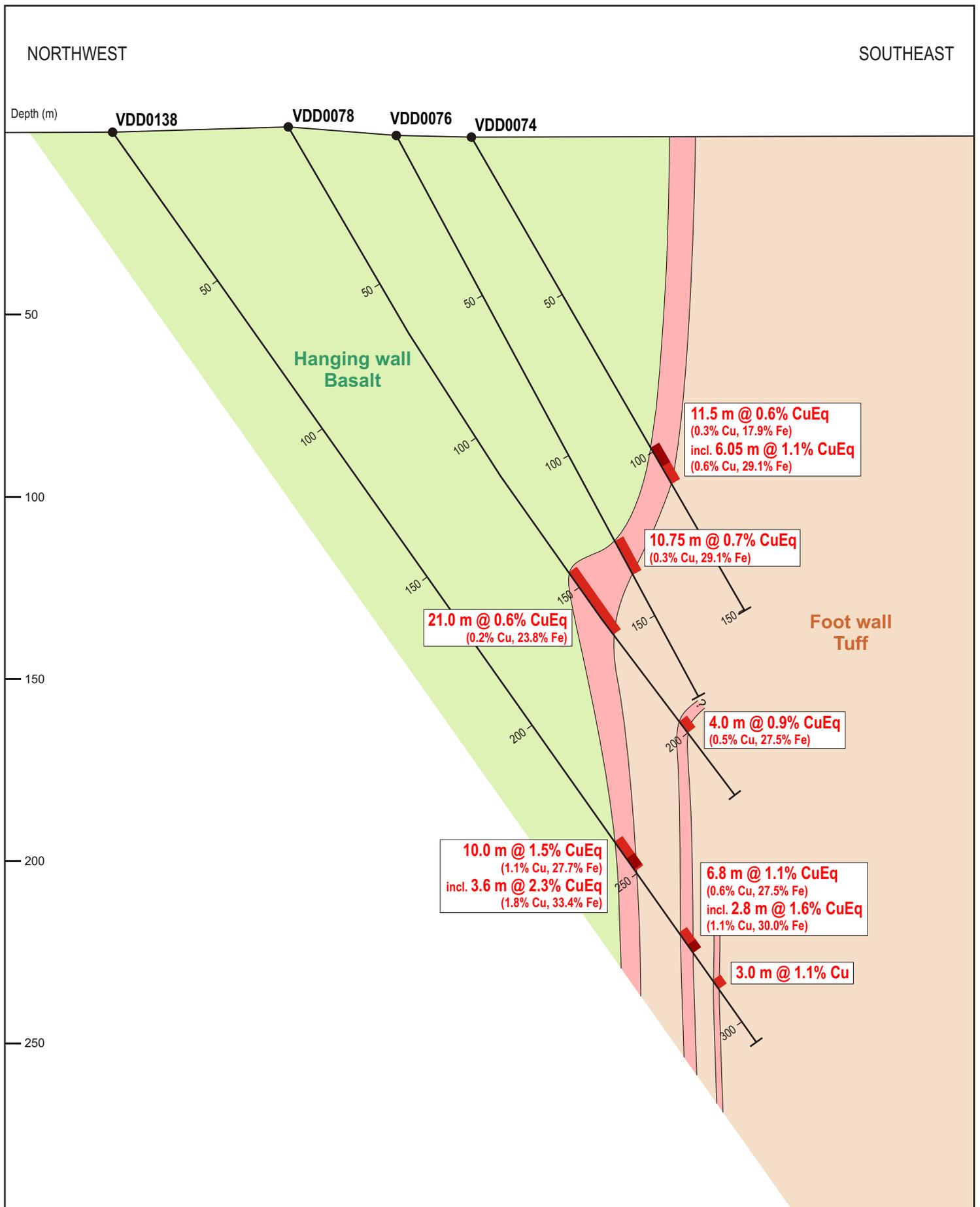
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Revised:	Drawing: AV-027

**FIGURE 3**

**D ZONE PROSPECT - VISCARIA PROJECT, SWEDEN  
SCHEMATIC CROSS-SECTION SHOWING VDD0150**



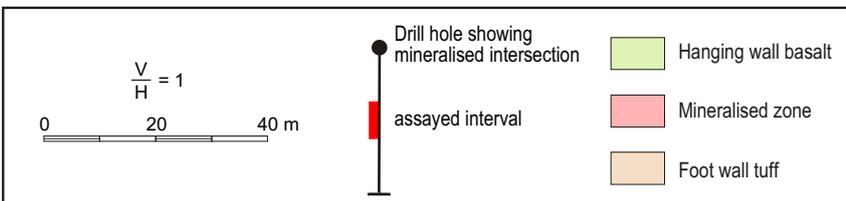
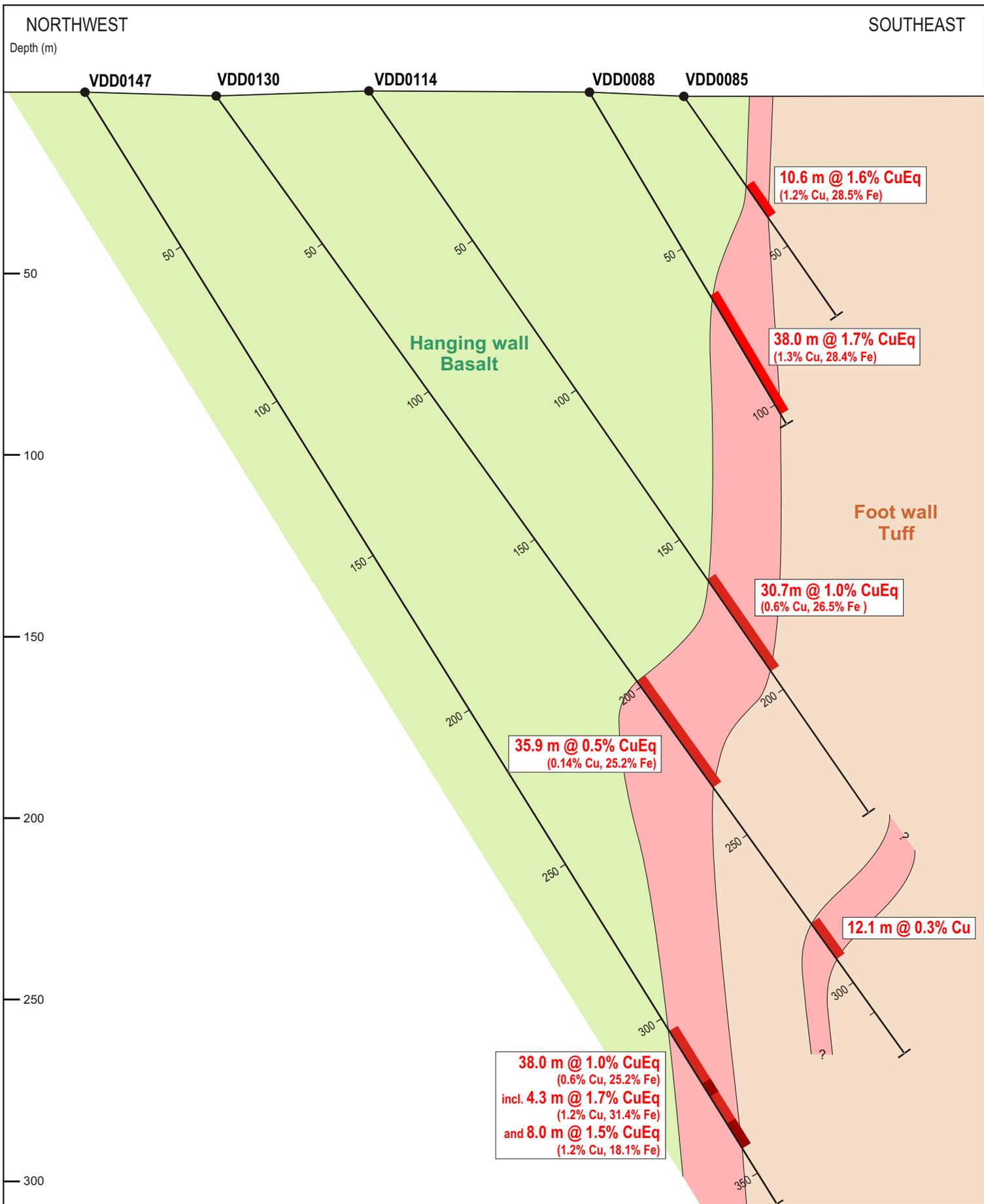
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Revised:	Drawing: AV-022

**FIGURE 4**

**D ZONE PROSPECT - VISCARIA PROJECT, SWEDEN  
SCHEMATIC CROSS-SECTION SHOWING VDD0138**



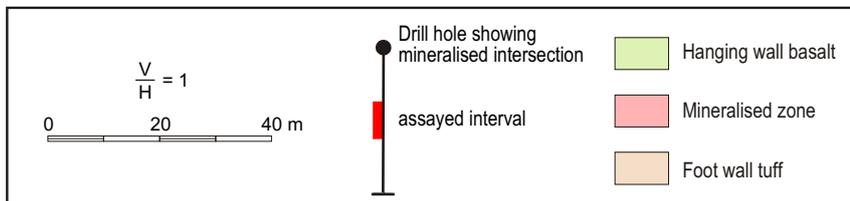
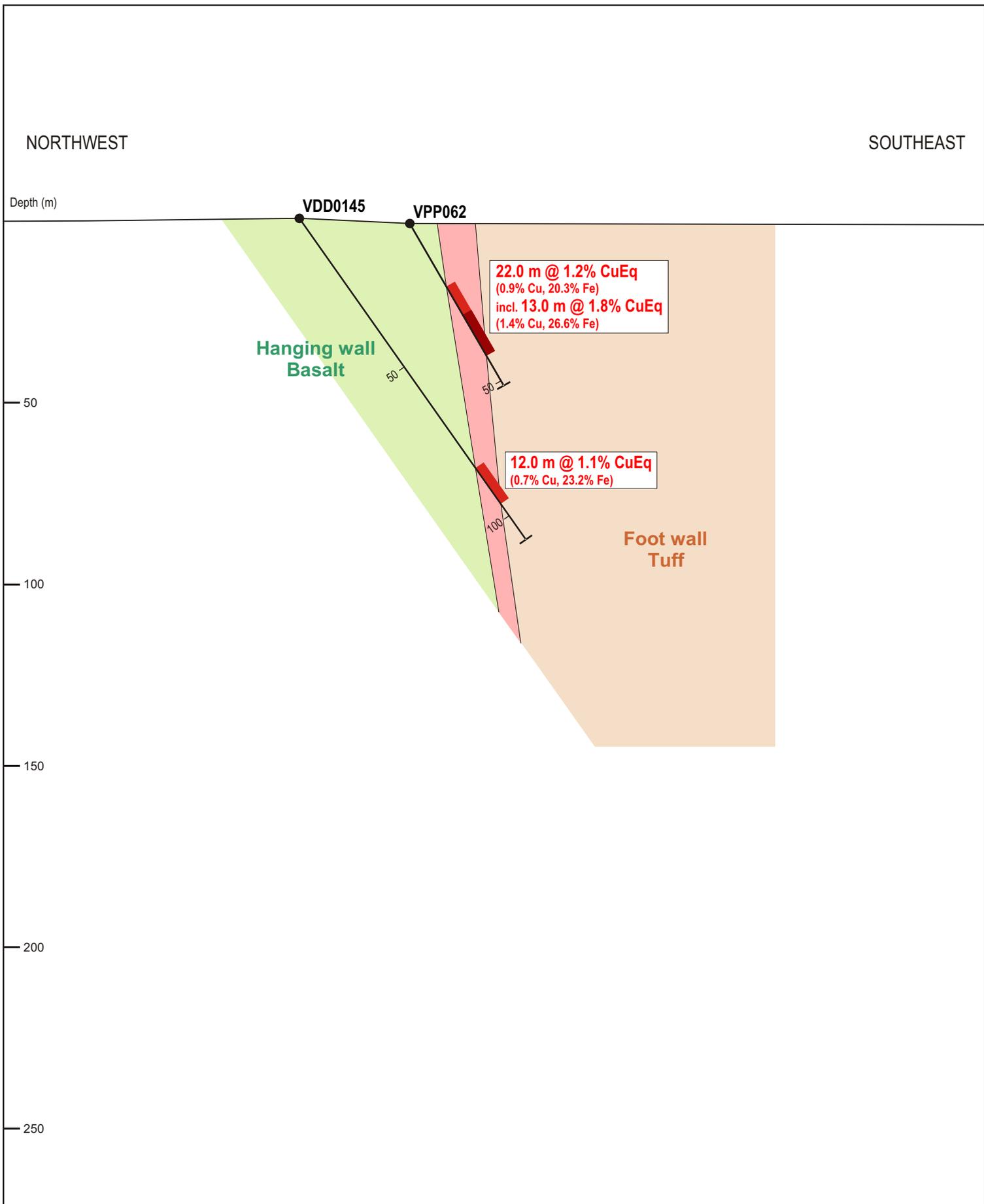


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**D ZONE PROSPECT - VISCARIA PROJECT, SWEDEN**  
**SCHEMATIC CROSS-SECTION SHOWING VDD0130 & VDD0147**

Prepared: QH	Date: 05.12.2012
Revised: 03.03.2013	Drawing: AV-003
<b>FIGURE 5</b>	



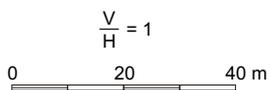
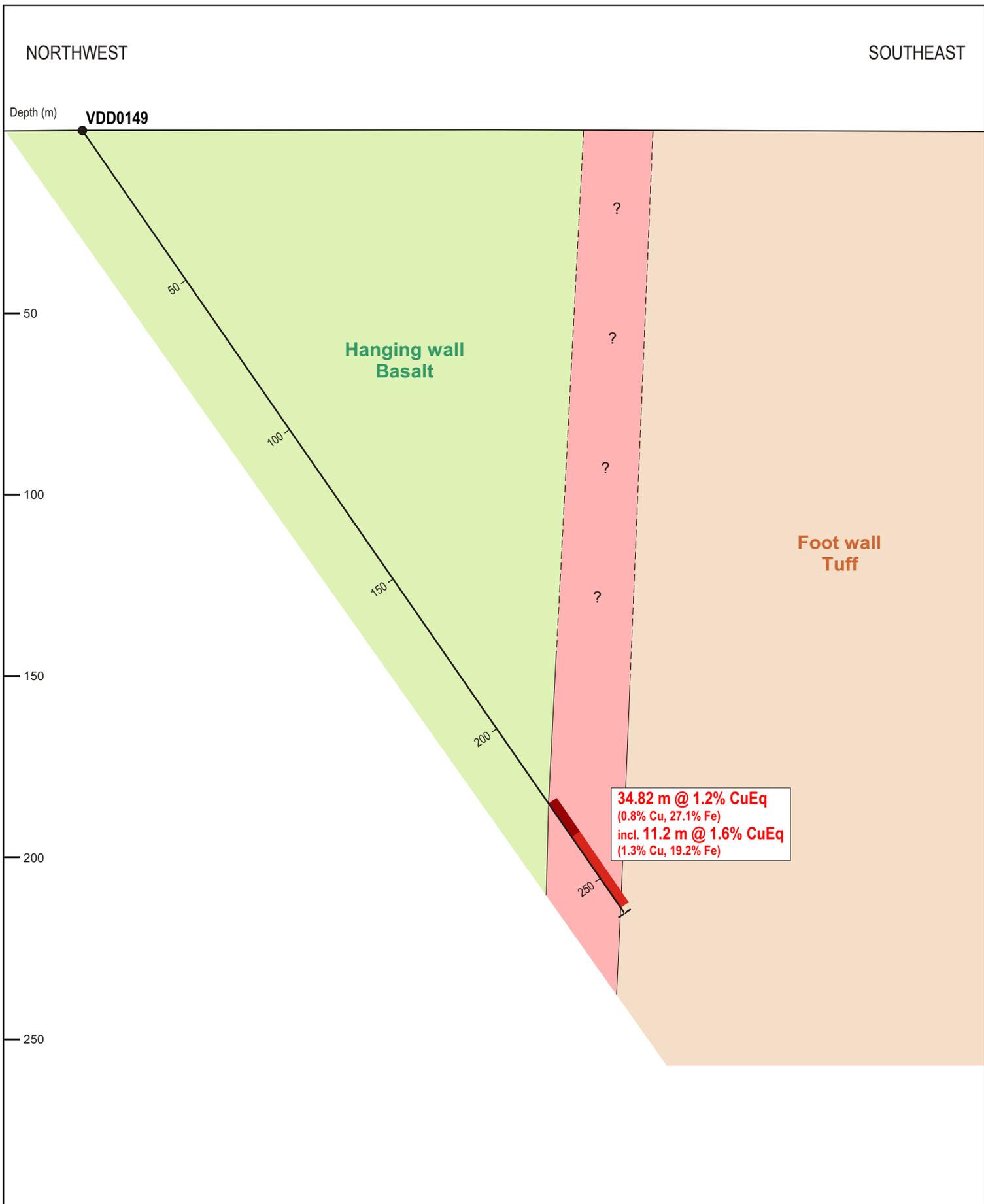


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Revised:	Drawing: AV-024
<b>FIGURE 6</b>	

**D ZONE PROSPECT - VISCARIA PROJECT, SWEDEN  
SCHEMATIC CROSS-SECTION SHOWING VDD0145**



Drill hole showing mineralised intersection

assayed interval

Hanging wall basalt

Mineralised zone

Foot wall tuff

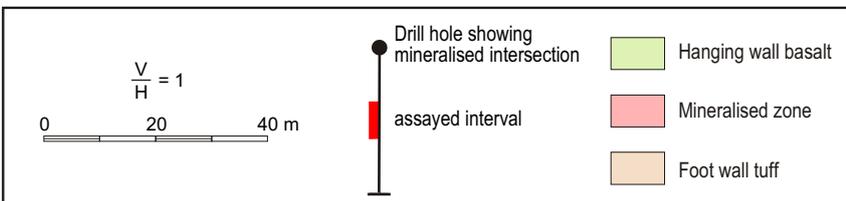
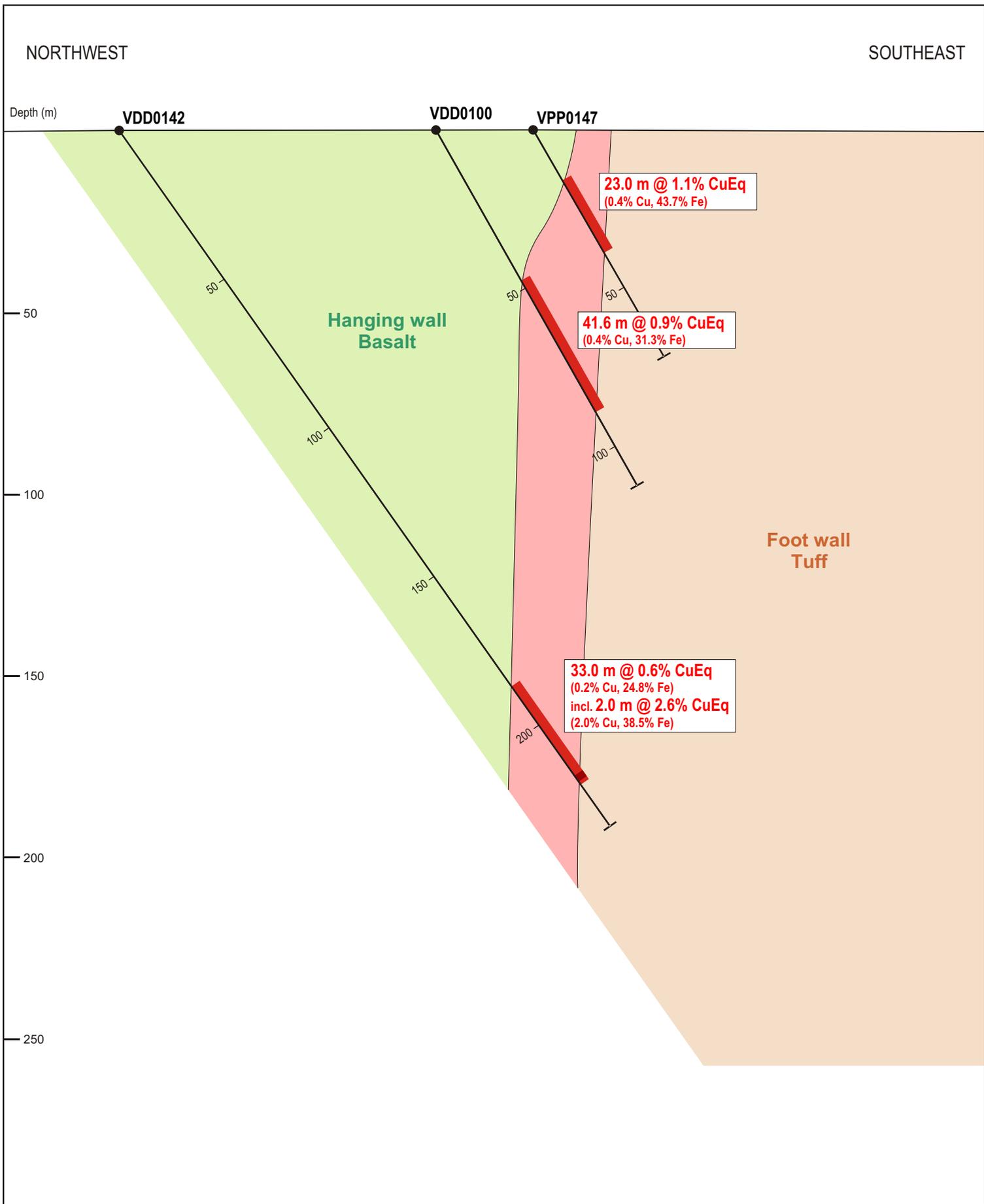
**D ZONE PROSPECT - VISCARIA PROJECT, SWEDEN**  
**SCHEMATIC CROSS-SECTION SHOWING VDD0149**

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 Revised: Drawing: AV-026

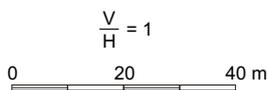
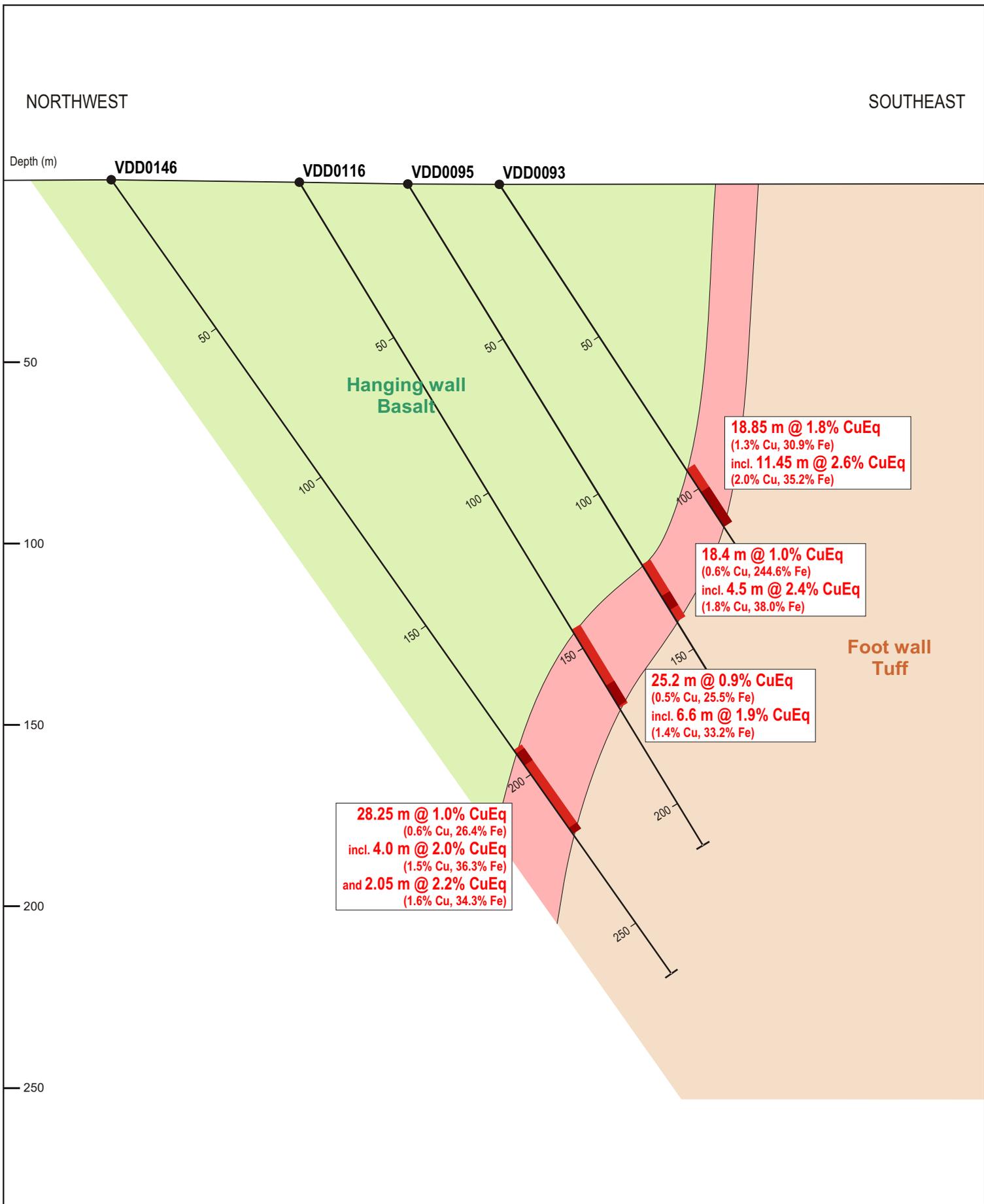
**FIGURE 7**



  
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**D ZONE PROSPECT - VISCARIA PROJECT, SWEDEN**  
**SCHEMATIC CROSS-SECTION SHOWING VDD0142**

Prepared: QH	Date: 03.03.2013
Revised:	Drawing: AV-023
<b>FIGURE 8</b>	



● Drill hole showing mineralised intersection

■ assayed interval

■ Hanging wall basalt

■ Mineralised zone

■ Foot wall tuff



**D ZONE PROSPECT - VISCARIA PROJECT, SWEDEN**  
**SCHEMATIC CROSS-SECTION SHOWING VDD0146**

Prepared: QH Date: 03.03.2013  
Revised: Drawing: AV-025

**FIGURE 9**