

ASX Announcement Wednesday, 8<sup>th</sup> August 2018 Ref: /VMS/606/VMS0461

## Drilling intersects massive sulfides at Thor confirming VMS system, Southwest of Western Australia

Venture Minerals Limited **(ASX code: VMS)** ("Venture" or the "Company"), is pleased to announce that the Company has **intersected a 17m zone of disseminated, semi-massive and massive sulfides** (Refer Figure One and Appendix One) (243.4m to 260.4m) (Refer Table 2) in the Company's maiden drill program at the Thor VMS (Volcanogenic Massive Sulfides) Prospect. Thor has the same electromagnetic ("EM") and geochemical signature as Teck's adjacent VMS Kingsley discovery (Refer Figure Three and Image One) but is **substantially larger in scale with up to 20 strike kilometres of a VMS style target sequence** (Refer Figure Two).

Venture has completed a visual inspection and preliminary hand-held XRF analyses on the diamond core has verified the presence of copper and zinc (chalcopyrite and sphalerite) within the pyrrhotite dominated sulfides. Additionally, other elements such as lead, bismuth, tin, tungsten and arsenic have also been identified confirming VMS style mineralisation. Samples have been submitted for assay to confirm the system is mineralised.

In response to the new discovery the **Company is commissioning an airborne electromagnetic survey to commence immediately over the entire 281 km<sup>2</sup>** of the Southwest tenement package. The survey will not only target the 20 strike km of the Thor priority VMS drill target, but also the other VMS targets within Venture's tenure (Refer Figure Four). Using the latest EM technology will further enhance the Company's ability to identify potentially higher grade areas of the Thor VMS system.

Teck's VMS Kingsley discovery is one of a number of VMS occurrences in the Archean Yilgarn Craton of Western Australia with the Golden Grove Camp (Mine), 450 kms north-east of Perth, being the prime example with nine VMS deposits spread over 13 kms of strike. At the end of 2004, Golden Grove had an endowment (resources and production) of 40.2Mt @ 1.8% Cu, 0.9% Pb, 7.6% Zn, 103 g/t Ag & 0.8 g/t Au<sup>1</sup>. In February 2017, EMR Capital purchased Golden Grove for \$US210M and states that after 27 years of production there is over 10 years of mine life in reserve for the 1.3Mt per annum operation<sup>2</sup>.

**Venture's Managing Director commented** *"Confirmation that the EM signature represents sulfides has substantially raised the prospectivity of the 20 km long VMS Thor target. In addition, the identification of copper and zinc within those sulfides has made Thor a top priority target for Venture moving forward."* 

1. Department of Mines and Petroleum Report 165, VMS Mineralization in the Yilgarn Craton, Western Australia: A review of known deposits and prospectivity analysis of felsic volcanic rocks by SP Hollis, CJ Yeats, S Wyche, SJ Barnes and TJ Ivanic 2017. 2. www.emrgoldengrove.com

#### Venture Fast Facts

ASX Code: VMS Shares on Issue: 518.6 million Market Cap: \$12.96 million Cash: \$2.3m (30 June 18) (\$0.7m received post 30 June 2018)

#### **Recent Announcements**

Quarterly Activities Report (31/07/2018)

Completion of Placement-Tranche 2 and Section 708A Notice (18/07/2018)

Results of General Meeting (11/07/2018)

Drilling Commences at Thor Testing Cu-Pb-Zn Target, WA (19/06/2018)

Completion of Placement-Tranche 1 and Section 708A Notice (25/05/2018)

Drilling approval granted for Cu-Pb-Zn Target at Thor, WA (23/05/2018)

Venture to Raise \$2.5 million through Placement (17/05/2018)

Drilling at Odin unearths substantial Nickel-Copper Target (11/05/2018)

Quarterly Activities Report (24/04/2018)

Quarterly Cashflow Report (24/04/2018)

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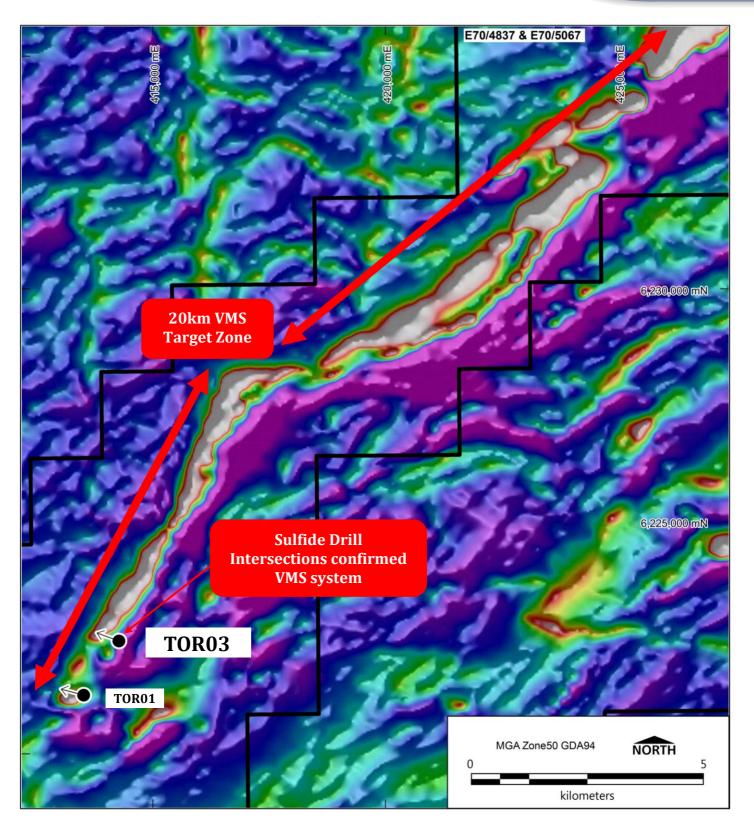


### Figure One | Massive Sulfide in Drill Core from Drilling at the Thor Prospect



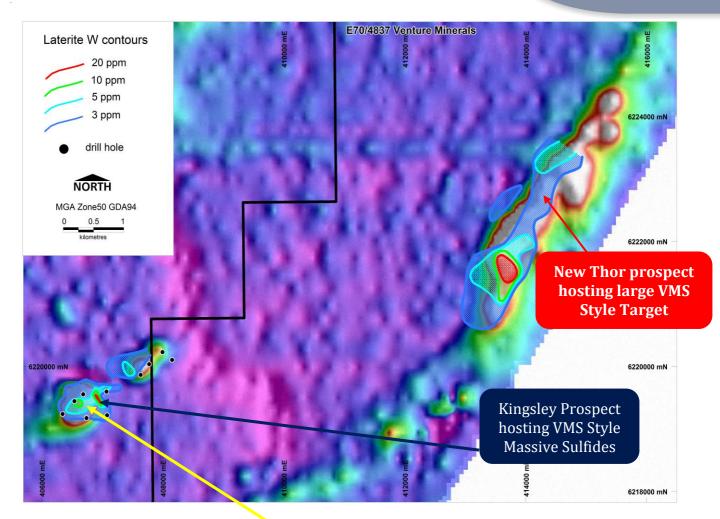


### Figure Two | Thor VMS Target with drilling on aeromagnetic image





#### Figure Three | Thor and Kingsley Tungsten in laterite anomalies over airborne EM

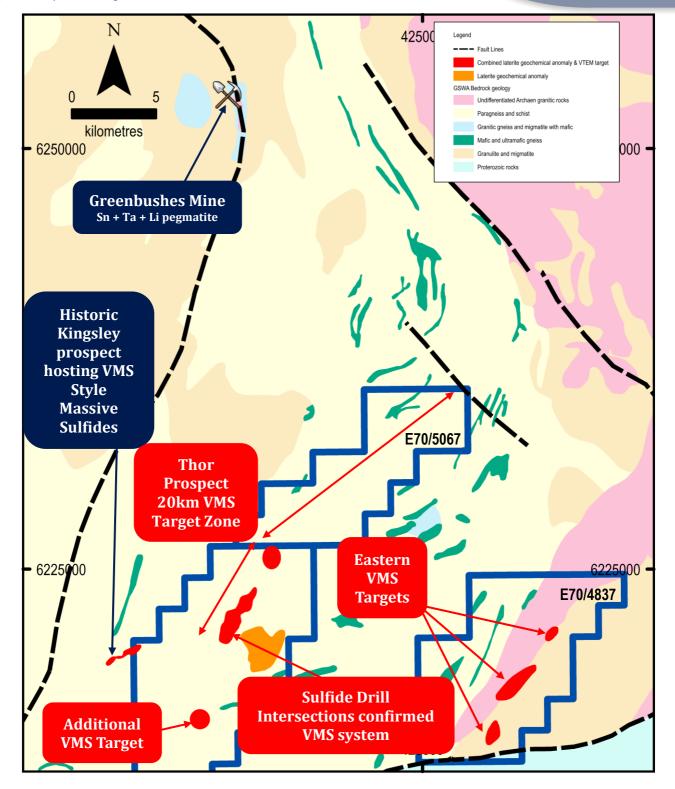


# Image One | Historic Kingsley Drill Core with massive sulfides





#### Figure Four | Thor Prospect Location Plan





#### **Table 1: Thor Drill hole locations**

Hole Number	East (m) MGA Zone50 GDA94	North (m) MGA Zone50 GDA94	RL AHD (m)	Azimuth MGA Zone50 GDA94	Dip (°)	End of hole (m)	End of pre- collar (m)
TOR01	413484	6221367	310	285	-60	494.35	13.5
TOR03	414247	6222529	260	290	-50	359.5	27.2

NOTE: Drill hole TOR02 was drilled to test a separate target is not relevant to this announcement

#### Table 2: Summary log of significantly sulfide mineralised zones with visually estimated sulfide mineral abundances

Hole Number	From (m)	To (m)	Interval (m)	Description	Pyrrhotite + Pyrite %	Chalcopyrite %	Sphalerite %
TOR01	139.5	143.0	3.5	Felsic gneiss with disseminated and foliation-parallel stringers of pyrrhotite and pyrite, trace sphalerite.	1.5	0	0.1
TOR01	205.0	209.3	4.3	Mafic gneiss with disseminated pyrrhotite and pyrite, minor sphalerite laminations and quartz + pyrite + chalcopyrite veins.	0.9	0.1	0.1
TOR01	262.1	264.8	2.7	Mafic gneiss with disseminated pyrrhotite, pyrite and chalcopyrite, some pyrite bands.	5	0.1	0
TOR03	236.5	243.4	6.9	Mafic gneiss with disseminated and stringers of pyrite and pyrrhotite, trace chalcopyrite and arsenopyrite.	0.1	<0.1	0
TOR03	243.4	244.3	0.9	Semi-massive and massive pyrrhotite, minor pyrite, chalcopyrite arsenopyrite and sphalerite, clasts of felsic gneiss.	54	0.1	0.5
TOR03	244.3	257.3	13	Banded magnetite, quartz and epidote gneiss with disseminated and stringers of pyrrhotite and pyrite, trace sphalerite.	1	<0.1	<0.1
TOR03	257.3	257.5	0.2	Massive pyrrhotite and pyrite with mafic gneiss clasts, trace sphalerite.	65	0	<0.1
TOR03	257.5	260.4	2.9	Felsic and mafic gneiss with disseminated and cm-scale pyrrhotite and pyrite bands.	6	0	0

### **Project Overview**

The Thor Prospect is located 240 km south of Perth, hosted within the Balingup Complex. The 2.8-2.1 Ga Balingup Complex comprises medium to high grade metamorphic rocks formed mainly from sedimentary protoliths and lesser granitoid rocks. Gneiss and amphibolite sequences derived from interlayered mafic and felsic volcanic units, banded iron formation, mafic and ultramafic intrusive rocks and carbonate protoliths area also present within the Balingup Complex and interpreted to represent meta-greenstone belts. The Greenbushes Tin-Tantalum-Lithium Pegmatite (Mine) is located within one such meta-greenstone belt in the northern part of the Balingup Complex, and the Kingsley meta-VMS Prospect a few kilometres west of the Thor Prospect is hosted by a sequence of high grade (garnet and staurolite) meta-volcanic rocks. Much of the Balingup Complex is covered by laterite and a thin veneer of Cenozoic sediments and is considered significantly under explored for lithium pegmatite and base metal deposits. A joint venture between Teck Cominco, BHP Billiton and Hampton Hill Mining NL (Teck JV), first identified the southern part of the Balingup Complex as being prospective for base and precious metals.



The Teck JV completed surface sampling and airborne EM surveys which culminated in the discovery of the Kingsley base and precious metals meta-VMS prospect. There has been no significant exploration for VMS systems in the area since that of the Teck JV. Venture's Thor prospect consists of a series of coincident EM and base metal anomalies that are consistent with deeply weathered laterite covered VMS systems.

This announcement effectively lifts the trading halt requested on the 3<sup>rd</sup> of August 2018. The company is not aware of any reason why the ASX would not allow trading to commence immediately.

Yours sincerely

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Andrew Radonjic Managing Director

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Andrew Radonjic, a fulltime employee of the company and who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Andrew Radonjic has sufficient experience which is relevant to the style of mineralisation and type of deposits 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'. Mr Andrew Radonjic consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



## **Appendix One** JORC Code, 2012 Edition | 'Table 1' Report

**Section 1 Sampling Techniques and Data** (Criteria in this section apply to all succeeding sections).

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g.: cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g.: 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g.: submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>The reported mineral abundances were visually estimated on NQ drill core by a suitably qualified Venture Minerals geologist.</li> <li>Visually estimated sulfide mineral abundances are given in Table 1.</li> <li>Spot analyses of the sulfide zones in hole TOR03 by Venture Minerals personnel using an Olympus Vanta portable XRF confirmed elevated Cu and Zn levels associated with logged chalcopyrite and sphalerite within pyrrhotite-dominated sulfide zones.</li> </ul>
Drilling techniques	<ul> <li>Drill type (e.g.: core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g.: core diameter, triple or standard tube, depth of diamond tails, face- sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul> <li>The observed sulfides reported here relate to diamond core holes TOR01 and TOR03 drilled to test the Thor geophysical and geochemical target.</li> <li>TOR01 and TOR03 were pre-collared by mud rotary to mainly fresh basement rock, then cored HQ to diameter to completely fresh basement, then NQ diameter to end of hole (see Table 1).</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	• Average drill core recovery was >99%.
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>TOR01 and TOR03 were lithologically and structurally logged in their entirety by a suitably qualified Venture Minerals geologist.</li> <li>TOR01 and TOR03 were orientated using a REFLEX ACT Mark III NQ tool between 66 m and 356 m end of hole, and structurally logged by a suitably qualified Venture Minerals geologist.</li> <li>TOR01 and TOR03 were orientation surveyed using REFLEX EZITRAC survey tool.</li> <li>All core was photographed.</li> <li>Mineral Resources have not been estimated.</li> <li>The detail of geological logging is considered sufficient for mineral exploration.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> </ul>	• The visually estimated sulfide abundances in TOR03 were confirmed by portable XRF testing. Factory calibration settings were used. The portable XRF analysis window is approximately 10 mm x 10 mm dimension and c. 35 spots of mainly sulfide-rich zones were non-destructively tested.



Criteria	JORC Code explanation	Commontony
Criteria		Commentary
	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>Spot analyses on drill core were conducted by Venture Minerals personnel using an Olympus Vanta portable XRF to confirm the presence of Cu and Zn with the sulfides. The portable XRF was in factory Geochem Mode calibration and 60 second reading times were utilized. The portable XRF results for commercial standards were within 30% of the reference values and agree well with the observed mineralogy.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>The use of twinned holes is not applicable at this stage.</li> <li>Primary data is stored and documented in industry standard ways.</li> <li>The portable XRF results were not adjusted in any way (factory calibration).</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Drill hole locations were determined by handheld GPS considered accurate to ±5 m.</li> <li>All co-ordinates were recorded in MGA Zone 50 datum GDA94.</li> <li>Topographic control is provided by government 250,000 topographic map sheets and a Digital Terrain Model based on the 30 m Shuttle Radar Topographic Mission data.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Current drill spacing (&gt;1.4 km between drill holes) is of reconnaissance nature and in no way sufficient to define Mineral Resources.</li> <li>Sample compositing is not applicable.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	Fabrics in orientated drill core indicate drilling was at a high angle (nearly perpendicular) to stratigraphy and observed sulfide zones.
Sample security	• The measures taken to ensure sample security.	• The chain of custody from the drill rig and the storage and sampling of all drill core is managed by Venture personnel. After preliminary portable XRF testing selected intervals have cut and dispatched for laboratory assay testing. The level of security is considered appropriate for such reconnaissance sampling.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• The portable XRF results agree well with the observed sulfide mineralogy.

**Section 2 Reporting of Exploration Results** (Criteria listed in the preceding section also apply to this section).

Criteria	Explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	• The Thor VMS Prospect is located within Exploration Licences 70/4837 and 70/5067 which are 100% held by Venture Lithium Pty Ltd, a wholly owned subsidiary of Venture Minerals Ltd.



Criteria	Explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Documented previous explorers within the area now covered by E70/4837 most notably include Teck Cominco, Pancontinental Mining, Amerod Holdings Ltd and WA Exploration Services Pty Ltd.</li> </ul>
Geology	• Deposit type, geological setting and style of mineralisation.	<ul> <li>The exploration area is within the Balingup Metamorphic Belt which is considered prospective for pegmatite hosted lithium, tin and tantalum- niobium deposits including the world class Greenbushes tin-tantalum-lithium mine, and as the work of the Teck JV shows also prospective for metamorphosed VMS deposits. Ultramafic units to the north of E70/4837 have also been previously explored for ultramafic-hosted chromium and nickel, most notably by WMC and BHP Minerals during the 1980-1990s period.</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>Two drill holes TOR01 and TOR03 have been drilled to test part of the Thor Prospect.</li> <li>TOR01 was collared at 413484mE 6221367mN, 310m RL, Azimuth 285° MGA, dip -60°, 494.4m end of hole.</li> <li>TOR03 was collared at 414247mE 6222529mN, 260m RL, Azimuth 290° MGA, dip -50°, 359.5m end of hole.</li> <li>Coordinates are in MGA Zone 50 datum GDA94.</li> <li>Collar location was determined by handheld Garmin GPS62CSx and is considered accurate to c. 5m.</li> <li>RL is based on the 30 m Shuttle Radar Topographic Mission data.</li> <li>TOR01 was drilled as part of the Western Australia Department of Minerals, Industry and Safety Exploration Initiative Scheme co-funded drilling programme.</li> </ul>
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>No data aggregation methods have been applied.</li> <li>Metal equivalents have not been applied.</li> </ul>