## POSEIDONNICKEL



21 March 2016

## Successful Drilling Programme Finalised at Emily Ann North

## Highlights

- Assays received from the third and final drill hole also intersected nickel sulphide mineralisation, finalising the Emily Ann Extension drill programme at Lake Johnston
- Drill hole PLJD0003 intersected a zone of massive nickel sulphide mineralisation grading 1.13m at 3.35% Ni, including 0.26m at 8.67% Ni, as well as a lower stringer/disseminated zone comprising 0.62m @ 1.75% Ni
- All three drill holes intersected nickel sulphide mineralisation increasing the potential for this zone to develop into a large economic deposit
- DHEM generated large off hole anomalies defining the likely geometry of the nickel sulphide mineralisation and providing future drilling targets
- Advancements in DHEM technology over the last 10yrs will further assist in the exploration for nickel sulphides
- These intersections are located only 360m from the existing flooded decline in the Emily Ann underground mine which averaged a resource grade of 4.1% nickel and produced 46,000 tonnes nickel

Poseidon Nickel Limited (ASX:POS or the Company) is pleased to announce the final results of the successful Emily Ann North extension drill programme which intersected **significant nickel sulphide mineralisation** in all three diamond drill holes spanning a zone of almost 50m wide. The diamond drilling programme targeted an area 360m north of the Emily Ann mine within the Lake Johnston Project which was 50% sponsored via the West Australian Department of Mines and Petroleum's (DMP) Exploration Incentive Scheme (EIS) co-funding grant.

Assay's and downhole electro-magnetic (DHEM) results received this week for the third and final hole PLJD0003 which intersected an upper zone of **massive nickel sulphide mineralisation grading 1.13m at 3.35% Ni**, including **0.26m at 8.67% Ni**, as well as a lower stringer/disseminated zone comprising **0.62m** @ **1.75% Ni**.

PLJD0002 intersected the thickest and highest grade position within the mineralised body (**10.48m grading 3.20% Ni including 2.32m at 7.62% Ni**), with PLJD0001 & PLJD0003 intersecting near the edges of the system, spanning a distance of ~50m (Figure 1).

A complete nickel sulphide intersection summary for all holes is tabulated below.

Hole ID	From_m	To_m	Width	Ni Grade	Details	
PLJD0001	435.39	435.58	0.19	10.2%	Remobilised massive sulphide in felsics	
PLJD0002	432.00	442.48	10.48	3.20%	Felsic, ultramafic and remobilised sulphide in hw & fw	
incl	435.69	441.41	5.72	4.66%	Mineralised Ultramafic Interval	
incl	439.09	441.41	2.32	7.62%	Lower Massive Zone	
incl	440.12	441.41	1.29	10.22%	High Grade base	
PLJD0003	446.10	447.23	1.13	3.35%	Massive sulphides in felsics	
incl	446.10	446.36	0.26	8.67%	Remobilised massive sulphides	
	449.00	449.62	0.62	1.75%	Stringer and disseminated sulphides	

## Table 1: Nickel Sulphide Intersection Summary

## **Table 2: Drill Hole Details**

Hole ID	East_MGA	North_MGA	RL	Dip	Azimuth	EOH Depth
PLJD0001	262766.6	6434776.7	1357	-65.0	247.6	513.80m
PLJD0002	262767.5	6434777.0	1357	-70.6	250.3	478.54m
PLJD0003	262766.5	6434778.0	1357	-70.5	260.0	495.10m

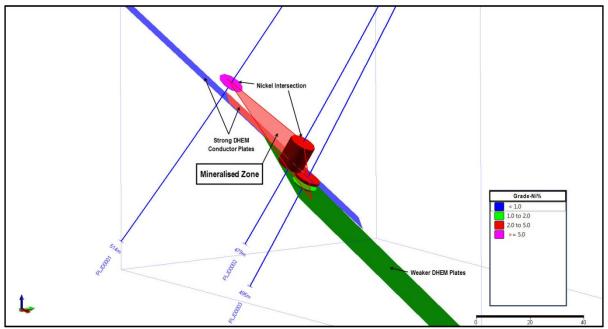


Figure 1: Oblique cross-section showing mineralised zone and the positions of the supporting DHEM conductors which provide both up-dip and down-plunge targets.

Mr Neil Hutchison, General Manager of Geology said, "This has been a highly successful drilling programme based on advanced scientific modelling and a willingness to challenge long standing historical geological models. Our team developed a new geological concept and with the support of the EIS grant were able to test this concept and successfully "discover" a new zone of high grade nickel sulphides close to the existing Emily Ann infrastructure. It is supported by strong off-hole DHEM conductors (detailed below) which are open in several directions, increasing the potential for this to develop into a larger mineralised system. We will name this new zone "Abi Rose" to keep in theme with the Maggie Hays & Emily Ann deposits."

Newexco have completed an interpretation of DHEM survey results from these three holes as well as including DHEM data from five surrounding holes completed by LionOre from 2005-2007. The DHEM has been used to help determine the likely geometry of the mineralised nickel sulphide zone to assist in planning of future drilling programmes.

Two strong bedrock conductors have been interpreted from the data (Figures 1 & 2).

- Conductor PLJD0001\_ONH\_440; was intersected in hole PLJD0001 near 440m depth.
- Conductor PLJD0002\_ONH\_440; was intersected in hole PLJD0002 near 440m depth.

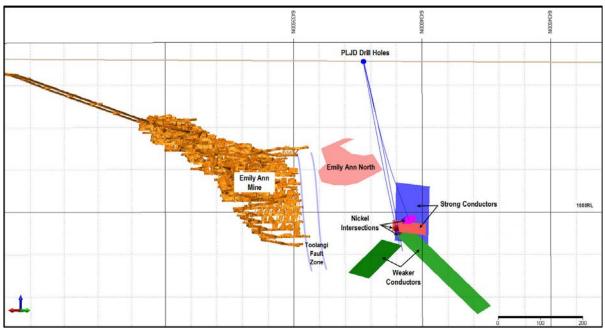


Figure 2: Long-section showing location of new intersection relative to the Emily Ann mine and Emily Ann North mineralisation. Strong conductor locations are shown as red and blue plates. The locations of additional weaker conductors from the DHEM data are shown in green.

Newexco note that DHEM data quality for Poseidon's drill holes PLJD0001, PLJD0002 & PLJD0003 is excellent. Data quality for historic holes EASD053, EASD055 and EASD057 is satisfactory whilst data quality for holes EAUD336 and LJPD0098 is poor but interpretable. This is an important function in the advancement of the DHEM technology used over the last 10yrs which will further assist us in our exploration for nickel sulphides.

Each drill hole was first interpreted using only data collected from within the hole. These results were then refined by comparing the results with DHEM data from nearby historic holes. Where necessary and possible the interpreted models were adjusted to fit with the known geology as logged by the Poseidon geologists.

Newexco note that the western end of the high conductance plate PLJD0002\_ONH\_440m has not been defined and warrants drill testing an addition to a hole to test the upper extent of conductor PLJD0001\_ONH\_440.

Modelling was also completed to test how well the current drilling and DHEM surveys have tested for possible down dip extensions to massive sulphide mineralisation. Forward modelling shows that conductors extending down dip towards the east or NNW might not have been detected with the historically available data, representing additional drill target opportunities and two holes have been recommended to test these positions. The Abi Rose mineralisation discovered by this highly successful drilling programme is offset from Emily Ann vertically and horizontally to the east by a series of late stage faults (Figure 3). The bases of both the Emily Ann and Emily Ann North deposits are sharply terminated by an early flat lying structure which in turn is offset vertically from the Emily Ann North mineralisation by the later Toolangi Fault. This geological model was developed over several months by internal Poseidon geological team in parallel with the Newexco team. Newexco managed the geophysical work and played an integral part in this discovery. Newexco have also been credited with targeting numerous nickel discoveries through geophysical techniques, including most recently those of Sirius Resources, one of the largest new finds of its type in recent years.

Poseidon has successfully discovered the "blind" Abi Rose nickel mineralisation within the modelled target zone and aims to delineate an economically viable deposit utilising modern and already successful industry leading exploration techniques.

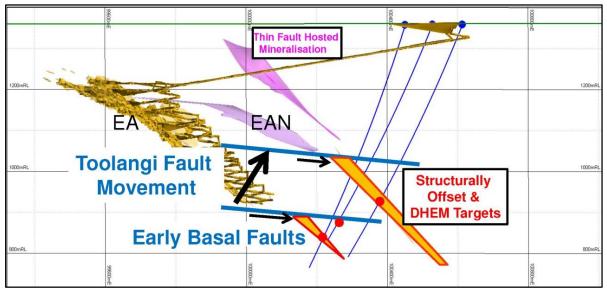


Figure 3: A cross section (looking north) shows the interpreted eastward horizontal offsets to the target zones which corresponds with modelled DHEM geophysical targets. Drilling (dark blue) is located ~800m north of the Emily Ann underground portal.

#### CORPORATE DIRECTORY

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#### Home Exchange

The Company's shares are listed on the Australian Securities Exchange and the home exchange is Perth ASX code: POS

## MINERAL RESOURCE STATEMENT

## **Table 1: Nickel Projects Mineral Resource Statement**

						Mineral R	esource	Category			
Nickel Sulphide	JORC	Cut Off	In	dicated		h	nferred		-	TOTAL	
Resources	Compliance	Grade	Tonnes (Kt)	Ni% Grade	Ni Metal t	Tonnes (Kt)	Ni% Grade	Ni Metal t	Tonnes (Kt)	Ni% Grade	Ni Metal t
WINDARRA PROJECT											
Mt Windarra	2012	0.90%	922	1.56	14,000	3,436	1.66	57,500	4,358	1.64	71,500
South Windarra	2004	0.80%	772	0.98	8,000	-	-	-	772	0.98	8,000
Cerberus	2004	0.75%	2,773	1.25	35,000	1,778	1.91	34,000	4,551	1.51	69,000
BLA	CK SWAN	PROJEC	T								
Black Swan	2012	0.40%	9,600	0.68	65,000	21,100	0.54	114,000	30,700	0.58	179,000
Silver Swan	2012	1.40%	21.1	12.48	2,650	85.5	12.15	10,350	106.6	12.20	13,000
LAK	E JOHNST	ON PRO	JECT								
Maggie Hays	2012	0.80%	2,600	1.60	41,900	900	1.17	10,100	3,500	1.49	52,000
TOTAL				3							
Total Ni Resources	2004 & 2012		16,688	1.00	166,550	27,300	0.83	225,950	43,988	0.89	392,500

Note: totals may not sum exactly due to rounding

### Table 2: Gold Tailings Project Mineral Resource Statement

						Mineral F	Resource	Category	,		
Gold Tailings	JORC	Cut Off	In	dicated		l.	nferred			TOTAL	
Resources	Compliance	Grade	Tonnes	Grade	Au	Tonnes	Grade	Au	Tonnes	Grade	Au
			(Kt)	(g/t)	(oz)	(Kt)	(g/t)	(oz)	(Kt)	(g/t)	(oz)
WI	NDARRA G		ILINGS PR	OJECT							
Gold Tailings	2004	NA	11,000	0.52	183,000	-	-	-	11,000	0.52	183,000
TOTAL											
Total Au Resources	2004		11,000	0.52	183,000	-	-	-	11,000	0.52	183,000

Note: totals may not sum exactly due to rounding.

## **ORE RESERVE STATEMENT**

#### **Table 3: Nickel Project Ore Reserve Statement**

		Ore Reserve Category						
Nickel Sulphide	JORC	Probable						
Reserves	Compliance	Tonnes (Mt)	Ni% Grade	Ni Metal (Kt)				
LAKE	JOHNSTON	PROJECT						
Maggie Hays	2012	1.9	1.19	22.6				
BLAC	K SWAN PR	OJECT						
Black Swan	2012	3.4	0.63	21.5				
WIND	DARRA PROJ	IECT						
Mt Windarra	2012	0.6	1.70	9.6				
Cerberus	2004	1.2	1.30	16.0				
Windarra S	Sub Total	1.8	1.42	25.6				
TOTAL								
Total Ni Reserves	2004 & 2012	7.1	0.98	69.7				

Note: totals may not sum exactly due to rounding.

Calculations have been rounded to the nearest 100,000 t of ore, 0.01 % Ni grade and 100 t Ni metal.

#### <u>Notes</u>

The information in this report which relates to the Lake Johnston Mineral Resource is based on information compiled by Neil Hutchison, General Manager of Geology at Poseidon Nickel, who is a Member of The Australian Institute of Geoscientists and Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy.

The information in this report which relates to the Lake Johnston Ore Reserves Project is based on information compiled by Matt Keenan who is a full time employee of Entech Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy.

The information in this report which relates to the Silver Swan Mineral Resource is based on information compiled by Neil Hutchison, General Manager of Geology at Poseidon Nickel, who is a Member of The Australian Institute of Geoscientists.

The information in this report which relates to the Black Swan Mineral Resource and Ore Reserves is based on information compiled by Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd.as well as Francois Bazin of IMC Mining Pty Ltd. Both are Members of the Australasian Institute of Mining and Metallurgy.

The information in this report that relates to Mineral Resources at the Windarra Nickel Project is based on information compiled by Neil Hutchison, General Manager of Geology at Poseidon Nickel, who is a Member of The Australian Institute of Geoscientists and Ian Glacken who is a full time employee of Optiro Pty Ltd and is a Fellow of the Australiasian Institute of Mining and Metallurgy.

The information in this report that relates to Ore Reserve at the Windarra Nickel Project is based on information compiled Leanne Cureton and Andrew Law who are both full time employees of Optiro Pty Ltd and are a Member and a Fellow of the Australasian Institute of Mining and Metallurgy respectively.

Mr Hutchison, Mr Glacken, Mr Keenan, Mr Weeks, Mr Bazin, Mr Law & Ms Cureton all have sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which they are 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' (the JORC Code 2012). Mr Hutchison, Mr Glacken, Mr Keenan, Mr Weeks, Mr Bazin, Mr Law & Ms Cureton have consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.

This document contains Mineral Resources and Ore Reserves which are reported under JORC 2004 Guidelines as there has been no Material Change or Re-estimation of the Mineral Resource or Ore Reserves since the introduction of the JORC 2012 Codes. Future estimations will be completed to JORC 2012 Guidelines.

The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.

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ATTACHMENT A JORC (2012) Table 1 Emily Ann Extended

## EMILY ANN EXTENDED

metallurgical studies.

**SECTION 1 Sampling Techniques and Data** 

(Criteria in this section apply to all succeeding sections) JORC Code explanation Commentary Sampling techniques Drilling Nature and quality of sampling (e.g. cut NQ2 Diamond drill core was used to obtain channels, random chips, or specific samples which were cut with an automatic core specialised industry standard measurement saw. Quarter core split for sampling and submitted tools appropriate to the minerals under to the lab. A mix of quarter core half will be investigation, such as down hole gamma retained core will be retained by the company and sondes, or handheld XRF instruments, etc.). the remaining core will be submitted to the DMP These examples should not be taken as core library under the terms of the EIS grant. limiting the broad meaning of sampling. Include reference to measures taken to ensure Diamond core has been split on lithological sample representivity and the appropriate contacts for sampling purposes. Sample intervals calibration of any measurement tools or are checked and collected by the supervising systems used. geologist throughout the sampling process. Aspects of the determination of mineralisation that are Material to the Public Report. Assaying was completed by SGS Laboratories In cases where 'industry standard' work has using their ICM40Q method. Assays are been done this would be relatively simple (e.g. determined by four acid digest with ICP- OES and 'reverse circulation drilling was used to obtain ICP-MS finish method. 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In Geophysics other cases more explanation may be All the holes surveyed with DHEM in the Emily Ann required, such as where there is coarse gold Extension Project area used an Atlantis that has inherent sampling problems. Unusual B Field receiving sensor using 0.25Hz base commodities or mineralisation types (e.g. frequency and 400 x 400m transmitter loop. submarine nodules) may warrant disclosure of All holes used a sample spacing that varied detailed information. between 2m and 20m, with more detail being collected in anomalous zones. **Drilling techniques** Diamond core drilling was carried out by TopDrive Drill type (e.g. core, reverse circulation, open-Drillers Australia utilising a Hvdco 1000H rig. Pre hole hammer, rotary air blast, auger, Bangka, collars to competent ground were HQ sized and the sonic, etc.) and details (e.g. core diameter, remainder of the hole was NQ2 sized diamond triple or standard tube, depth of diamond tails, core. face-sampling bit or other type, whether core is oriented and if so, by what method, etc.). **Drill sample recovery** All recovered diamond core has been meter Method of recording and assessing core and marked by on site field technicians and/or chip sample recoveries and results assessed. geologists. Any core loss is determined and Measures taken to maximise sample recovery recorded as part of the geological logging process. and ensure representative nature of the Core recovery is typically 100% with only minor samples. losses in and around shear zones with rare loss in Whether a relationship exists between sample mineralised zones. recovery and grade and whether sample bias may have occurred due to preferential No relationship exists between core recovery and loss/gain of fine/coarse material. grade. Logging Whether core and chip samples have been Core is logged onto Toughbook computers using FieldMarshal software with validated coding. The geologically and geotechnically logged to a data is checked in Micromine then loaded into level of detail to support appropriate Mineral Poseidon's SQL Server database via DataShed Resource estimation, mining studies and which is managed and maintained by Maxwell

JORC Code explanation	Commentary
Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. The total length and percentage of the relevant intersections logged.	Geoservices. All core trays are photographed dry and wet. Core is continuously logged along the entire length of the hole.
Sub-sampling techniques and sample prepar	ation
If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field	NQ2 Diamond drill core was used to obtain samples which were cut with an automatic core saw. Mineralised zones were quartered prior to sampling and submitted to the lab. Assay samples are typically 1 m in length but may vary in length from a minimum of 0.2 m and a maximum length of 1.2 m according to geological boundaries. Sampling overseen by the site Chief Geologist and transported directly to the lab in Perth. Samples were sent to SGS Laboratory in Perth for assaying.
duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.	
Quality of assay data and laboratory tests	
The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 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. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	<ul> <li>Drilling</li> <li>Assaying was completed by SGS Laboratories and are an accredited laboratory operating within the highest standards. QAQC reference materials where used and inserted into the sampling sequence.</li> <li>Geophysics</li> <li>Data was acquired using an AtlantisB Field receiving with a 0.25Hz base frequency and 400 x 400m transmitter loop.</li> <li>Data was delivered by Vortex Geophysics (PLJD0001 &amp; PLJD0003) or Merlin Geophysical Solutions Pty Ltd (PLJD0002). Both companies performed QA/QC on a daily basis. Data was also subject to QA/QC by consultants Newexco Services Pty Ltd on a daily basis. QA/QC was achieved using Maxwell electromagnetic modelling software.</li> </ul>
Verification of sampling and assaying The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	<b>Drilling</b> Significant intersections are calculated by the Chief Geologist on site and verified/reported by the Geology Manager (CP). Assay data is imported directly from laboratory supplied digital files which are QAQC validated via DataShed then loaded into the SQL drillhole database. No adjustments to assays are made.

JORC Code explanation	Commentary
	<b>Geophysics</b> Data was check and validated on a daily basis using Maxwell electromagnetic modelling software.
Location of data points	
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. Specification of the grid system used. Quality and adequacy of topographic control.	<ul> <li>Drilling Drill collars are surveyed by modern hand held GPS units with accuracy of +/- 4m which is sufficient accuracy for the purpose of compiling and interpreting results. </li> <li>Geophysics Locations were planned using a combination of GIS software packages and Maxwell electromagnetic modelling software Location of loops were accomplished with Garmin handheld GPS units with an accuracy of +/- 4m. All data points were located using the Geocentric Datum of Australia 1994 and the Map Grid of Australia zone 51 projection.</li></ul>
Data spacing and distribution	
Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied.	<ul> <li>Drilling</li> <li>Core is collected continuously along hole a meter marked for logging and sampling reference</li> <li>Geophysics</li> <li>All holes used a sample spacing that varied between 2m and 20m, with more detail being collected in anomalous zones.</li> </ul>
Orientation of data in relation to geological s	tructure
Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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.	Drilling was designed to intersect the targeted horizon close to perpendicular so as to minimise sampling bias.
Sample security	
The measures taken to ensure sample security.	The site Chief geologist or General Manager supervised the entire process through to personal delivery of samples to the lab.
Audits or reviews	
The results of any audits or reviews of sampling techniques and data.	There are no documented reviews of audit or review for sampling as it has been completed to high industry standard procedures. QAQC checks have been routinely completed by the laboratory and are within range.

## **EMILY ANN EXTENDED**

# SECTION 2 Reporting of Exploration Results (Criteria in this section apply to all succeeding sections)

Cintena in uns secuon apply to an succeeding sections	
Mineral Tenement and Land Tenure Status 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. 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.	<ul> <li>Emily Ann Mine and the concentrator plant are situated on M63/283 which is located 190km SW of Kalgoorlie.</li> <li>M63/283 is registered to Poseidon Nickel Ltd, following the recent completion of the assets purchase from Norilsk Nickel Australia.</li> <li>A long standing Native Title Agreement (since 1997) exists with the Ngadju People and will be continued by Poseidon Nickel.</li> <li>The tenements are located within the buffer zone of the Bremer Range Priority Ecological Community and within the Proposed Nature Reserve 82.</li> <li>Lake Johnston Plant commenced operation in 2001 and</li> </ul>
	there are no known impediments to continue operating in this area. There are no royalties or other interests held.
Exploration Done by Other Parties	LionOre Australia and Norilsk Nickel Australia previously
Acknowledgment and appraisal of exploration by other parties.	completed exploration, drilling and mining of the Lake Johnston project until Poseidon's acquisition in late 2014.
Geology	The Lake Johnston Project is located 80km ENE of Western
Deposit type, geological setting and style of mineralisation.	Areas' Forrestania Project which contains their flagship Flying Fox Mine. Flying Fox, Maggie Hays and Emily Ann are both intrusive style ultramafic bodies, not extrusive Kambalda style lava flows. They have undergone similar intrusive emplacement, nickel mineralisation, and structural overprinting histories.
Drill hole information	All holes reported are surface diamond drill holes. Collar co-ordinates and hole angles have been tabulated in the
	report.
Data aggregation methods	Length and SG weighted calculation have been applied to the intersections reported.
Data aggregation methods Relationship between mineralisation widths and intercept lengths	Length and SG weighted calculation have been applied to
Relationship between mineralisation	Length and SG weighted calculation have been applied to the intersections reported. No true width corrections have been applied to intersections
Relationship between mineralisation widths and intercept lengths	Length and SG weighted calculation have been applied to the intersections reported. No true width corrections have been applied to intersections as they are close to true widths.
Relationship between mineralisation widths and intercept lengths Diagrams	Length and SG weighted calculation have been applied to the intersections reported. No true width corrections have been applied to intersections as they are close to true widths. See body of report.