



ASX & MEDIA RELEASE

Zenith
Minerals
Limited

ABN 96 119 397 938

QUARTERLY ACTIVITY REPORT FOR THE PERIOD ENDING 31st DECEMBER 2015

HIGHLIGHTS

ASX CODE: ZNC

Activities

Exploration / Development

- Develin Creek Copper-Zinc-Gold
- Kavaklitepe Gold
- Mt Minnie Gold
- Earahedy Manganese
- Mt Alexander Magnetite Iron

Details as at 31st Dec 2015

Issued Shares	128.6 m
Unlisted options	1.1 m
Mkt. Cap. (\$0.037)	A\$4.8m
Cash as at 31 st Dec 15	A\$0.43m
Debt	Nil

Directors

Michael Clifford	Managing Director
Mike Joyce	Non Exec Chairman
Stan Macdonald	Non Exec Director
Julian Goldsworthy	Non Exec Director

Major Shareholders

HSBC Custody, Nom.	8.4%
Nada Granich	6.2%
GDR PL	4.8%
Miquilini	4.6%
Citicorp Nom Ltd	3.9%

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Exploration and Development

Develin Creek Copper-Zinc-Gold-Silver Massive Sulphide Project Queensland (51% with right to acquire 100%):

- New soil geochemical anomaly generated at Wilsons South prospect coincident with bedrock conductor defined by airborne HeliTEM survey. This new target in the same rock sequence as the Company's existing Inferred Mineral Resources (JORC 2012) (2.57Mt @ 1.76% copper, 2.01% zinc, 0.24g/t gold and 9.6g/t silver) is 30km to the south and highlights the highly prospective nature of the Company's regional ground holdings.

Kavaklitepe Gold Project Turkey (Teck earning 70%)

- Reorganisation of Kavaklitepe gold project joint venture with a Turkish subsidiary of Teck Resources Limited taking over management under a new option agreement (ASX Release 30th November 2015);
- Continuous rock chip channel samples returned: 54m @ 3.33g/t gold and 21m @ 2.67g/t gold;
- Rock chip samples including: 28.2 g/t, 21.7 g/t, 6.7 g/t and 3.66 g/t gold;
- Three large high-order gold in soil anomalies with locally coincident geophysical chargeability anomalies (gold in soil results up to 6.05 g/t gold); and
- Operational licence approved, drill permits submitted with drilling planned in 2016.

Mt Minnie Gold Project WA (100%)

- Soil geochemical sampling defined a 200m x 200m gold in soil anomaly (ASX Release 26th October 2015) coincident with and extending east of the previously reported discovery of high-grade rock chips (up to 11.4g/t gold) at the Woods Prospect;
- Trenching / drilling planned.

Project Generation

- The Company is continuing to assess resource opportunities that have synergy with existing Zenith projects or that will enhance the Company's existing project portfolio. Although the focus of new project generation is on gold and copper in which 100% ownership can be secured, lithium potential has been recognized within one of Zenith's existing 100% owned projects. As such the Company is now assessing the lithium potential of its entire tenement portfolio as well as several new lithium target opportunities.



ZENITH'S EXPLORATION PROJECTS

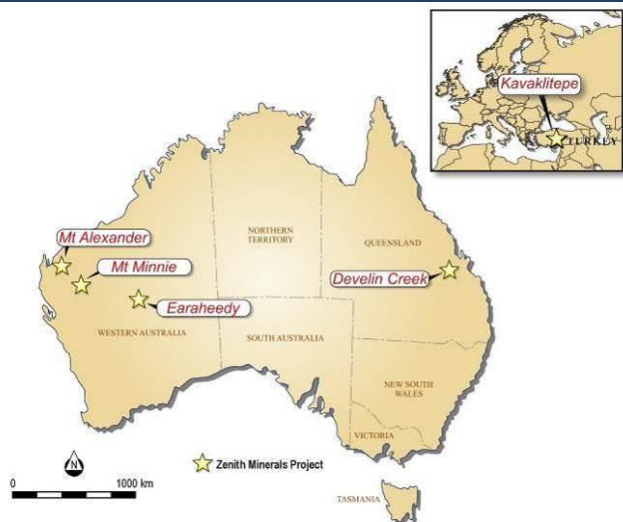


Figure 1: Zenith Project Locations



Develin Creek Soil Samples Ready for Analysis

DEVELIN CREEK COPPER-ZINC-GOLD-SILVER PROJECT – QUEENSLAND

(Zenith 51%, right to acquire 100%)

- Inferred Mineral Resource (JORC 2012) of: 2.57Mt @ 1.76% copper, 2.01% zinc, 0.24g/t gold and 9.6g/t silver (2.62% CuEq) released to ASX on the 15th February 2015.
- Mineralisation remains open at all 3 massive sulphide deposits, with upside to resource grades with Zenith RC hole twinning previous 1993 percussion hole returning significantly higher copper, zinc, gold and silver grades (300% to 700% higher);
- Initial metallurgical testwork results show positive first stage “rougher” recoveries of 90%;
- Highly prospective host rock extends for up to 50km north - south in Develin Creek tenure;
- Ongoing systematic soil geochemical programs proven a successful, initial screening tool;
- Soil sampling has generated several new targets including the Huntsman prospect, where recent follow-up mapping identified gossans containing up to 1.1% copper.

Activities During the Quarter

Wilsons South Prospect

During the Quarter assay results were received from soil and rock sampling in the Wilsons area located 30km south of the known Develin Creek copper-zinc-gold-silver deposits (Figure 4). Results from the program define a 1000 metre by 500 metre, coincident copper-zinc soil anomaly* overlying the Wilsons Copper Prospect where samples of gossans (up to 2.7% copper and 0.4% zinc) were mapped (Figure 2). Based on mapping and historical drilling the Wilsons Prospect represents the footwall stringer or feeder position typically observed below copper-zinc massive sulphide bodies.

In addition to identifying the known prospect at Wilsons, the soil sampling defined a prospective corridor 2000 metres by 750 metres continuing to the south which overlies a discrete EM conductor defined by a HeliTEM geophysical survey (Figure 2). The coincident soil anomaly and EM conductor at Wilsons South are located at higher topographic elevations directly along geological strike from the Wilsons prospect and are therefore considered to be an attractive drill target as preservation of the copper-zinc massive sulphide bodies are considered likely. A second



large copper-zinc soil anomaly situated to the west of the Wilsons South target requires field checking to assess its significance.

*Refer to ASX Release 7th October 2015 for JORC Tables relevant to Develin Creek soil sampling programs.

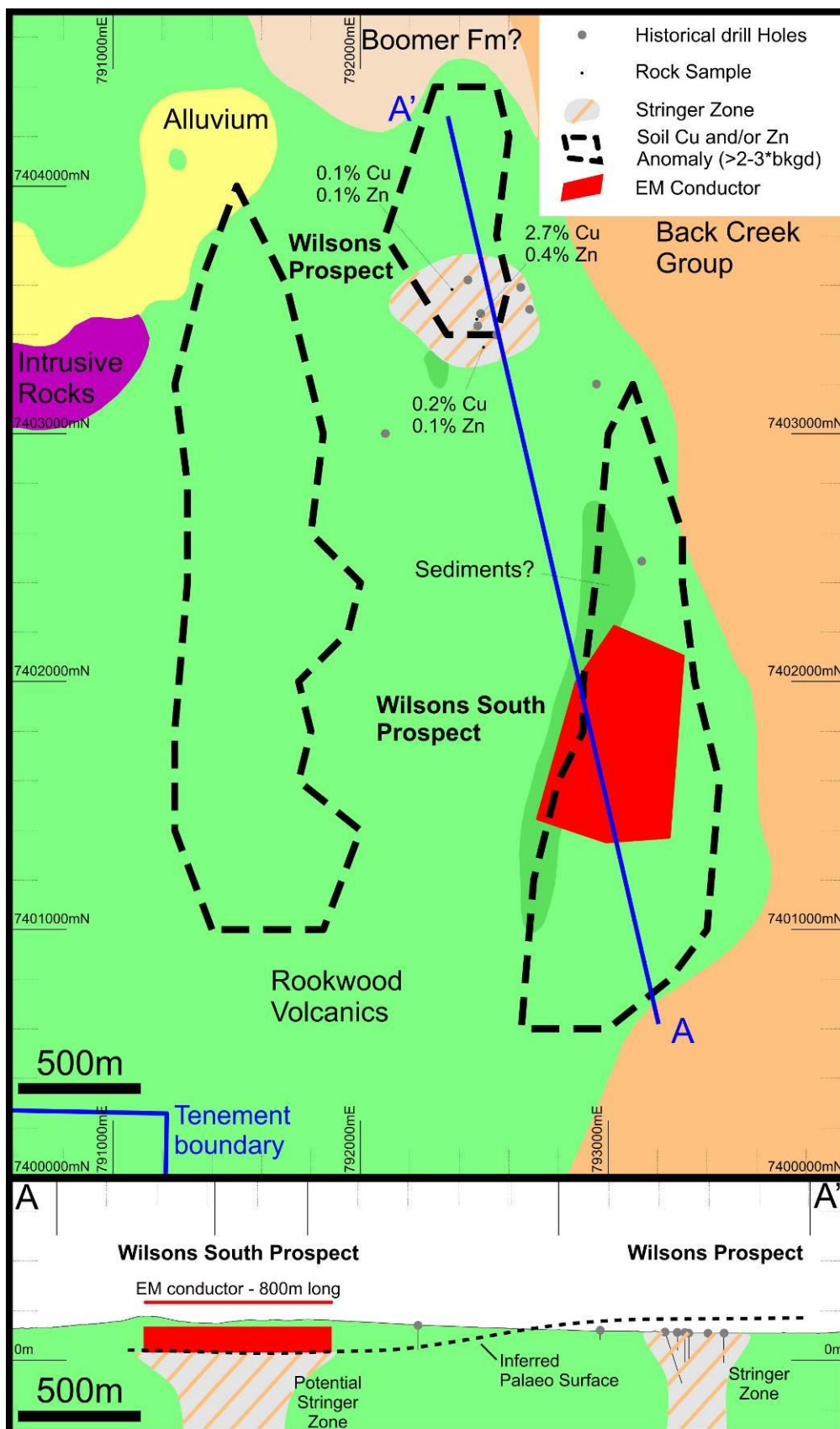


Figure 2: Wilsons South Target



Huntsman Prospect

During the Quarter trenching was completed at the Huntsman Prospect located 3km south of the known Develin Creek copper-zinc-gold-silver deposits to test a 350 metre by 100 metre, coincident, copper-zinc soil anomaly surrounding the area where float samples of gossans (up to 1.1% copper) were found in an area of very poor outcrop. Two trenches were excavated exposing stockwork and veined basalts with anomalous copper and zinc values over significant widths up to 54m. Best results included: 2m @ 0.12% zinc. The style and tenor of the copper-zinc mineralisation mapped in the Huntsman trenches is consistent with a footwall stringer or feeder position typically observed below copper-zinc massive sulphide bodies. The recognition of a well-developed stringer zone at Huntsman increases the prospectivity of a nearby EM conductor identified by the recent VTEM SuperMax airborne geophysical survey (Figure 3).

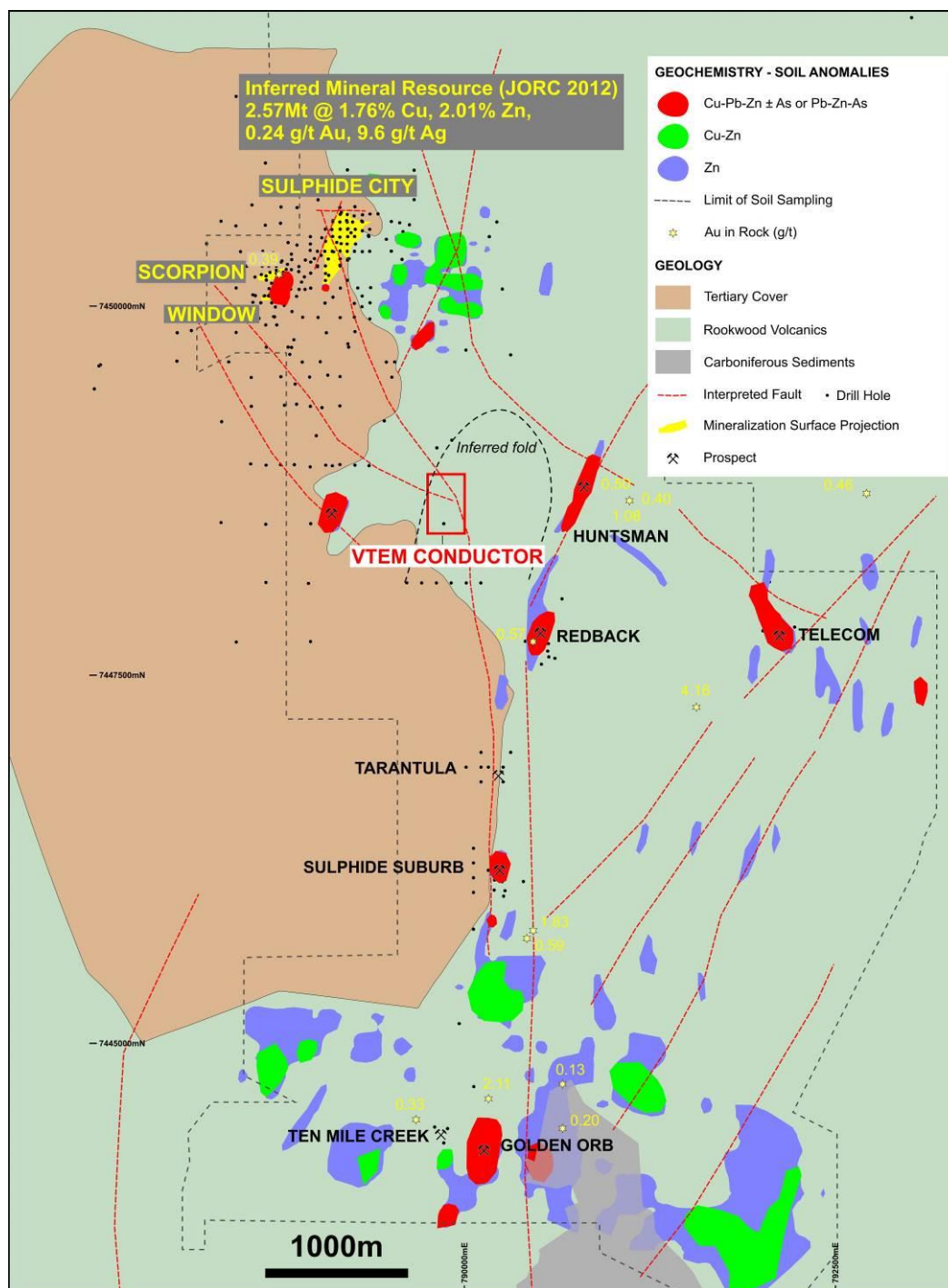


Figure 3: Develin Creek Prospects and Targets



Regional Targets

Within the Develin Creek project area, Zenith believes that there is good potential to discover new massive sulphide copper-zinc mineralisation, in the extensive landholdings totalling 300km². Zenith controls over 50km of strike length of prospective volcanic host rock sequence.

To date approximately 9,000 soil samples have been collected and analysed by Zenith as part of a systematic geochemical surveying program. Historically there has been little to no systematic geochemical soil sampling over much of the prospective target horizons, and thus the Zenith program was the first to provide effective regional geochemical coverage over key portions of the target area.

Following the success of that first and second phase soil programs in discovering the Huntsman and Wilsons South prospects (as well as confirming the location of all historical prospects) further sampling will be conducted in 2016 in an ongoing program to expand coverage over priority host rock horizons within the highly prospective tenure surrounding the Develin Creek deposits.

Planned Activities

- Geological mapping of the Wilsons South prospect, prior to drill testing;
- Completion of review of the recently collected lithogeochemical, multi-element samples and spectral samples in an attempt to trace the prospective mineralisation horizons around the known copper-zinc-gold-silver deposits of Sulphide City, Scorpion and Window.

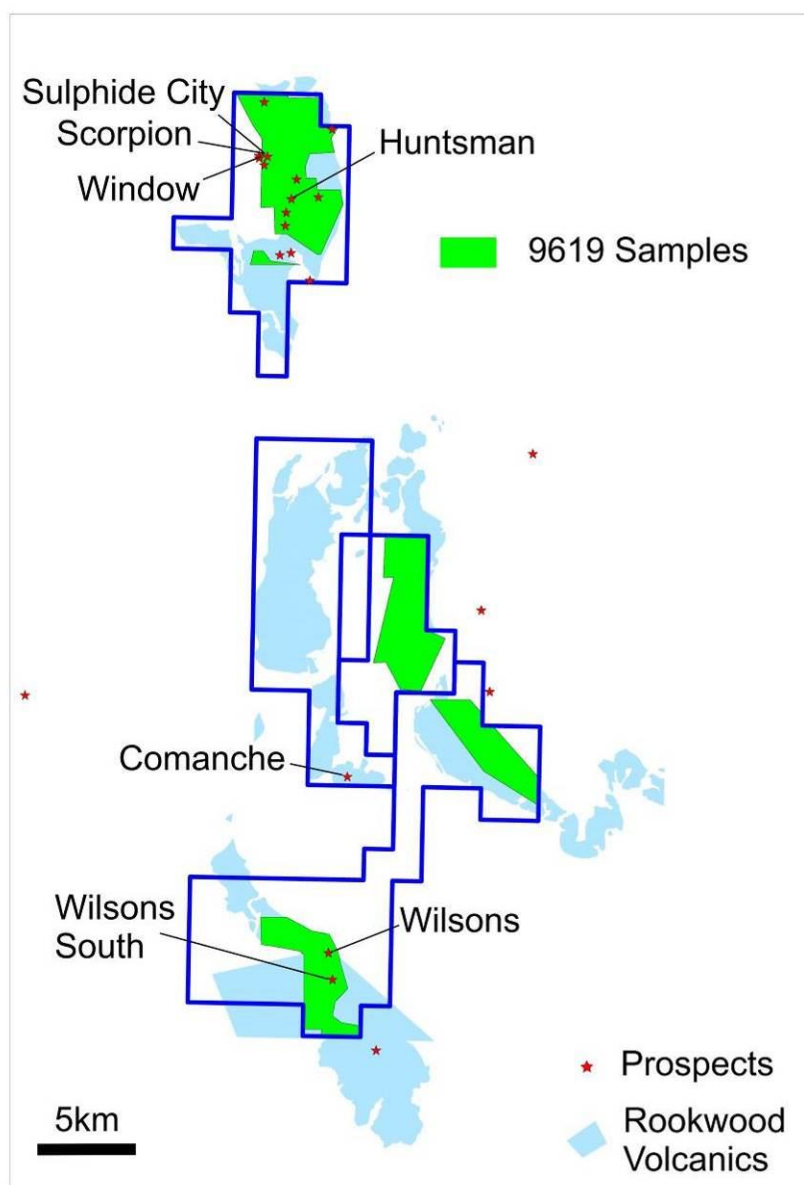


Figure 4: Summary Map of Develin Creek Priority Regional Exploration Targets and Geochemical Survey Coverage



Background on Develin Creek Project

Located 80km north-west of Rockhampton in Central Queensland, the Develin Creek base metals project hosts several copper-zinc-gold-silver volcanic hosted massive sulphide deposits and covers an extensive belt of underexplored prospective host rocks. Mineralisation comprises massive sulphide, stringer and breccia style copper-zinc-gold-silver deposits, hosted by basalts.

The Develin Creek deposits are of a style similar to those currently being mined by Sandfire Resources NL at DeGrussa and Independence Group NL at Jaguar-Bentley, which are both located in Western Australia. These types of deposits typically occur in clusters making them attractive exploration targets.

On the 15th February 2015 the Company announced a new mineral resource of: **2.57Mt @ 1.76% copper, 2.01% zinc, 0.24g/t gold and 9.6g/t silver (2.62% CuEq).**

Develin Creek Inferred Mineral Resource (JORC 2012) - February 2015

Deposit	Tonnes	Cu% Grade	Zn% Grade	Ag g/t	Au g/t
SULPHIDE CITY	1,796,700	1.75	2.37	9.7	0.23
SCORPION	548,900	1.98	1.66	13.0	0.36
WINDOW	225,600	1.30	-	0.8	0.02
TOTAL	2,571,200	1.76	2.01	9.6	0.24

The resource is classified under the JORC Code 2012 as Inferred, based on several criteria including drill spacing, continuity of mineralisation, wireframe geometry and confidence in assays from various drilling campaigns. *CuEq refer to JORC Code Reporting Criteria Section 2, ASX Release 15th Feb 2015.

The resource update followed a successful resource extension drilling campaign (ASX Release 26th Nov 2014) that confirmed the high-grade core of the Sulphide City deposit (Figure 5) extends a further 140m south of the previous resource whilst the thick sub-horizontal copper zone at Window was extended to the north of existing drilling. New results from holes in that drill campaign at Sulphide City included: 5m @ 2.45% copper, 2.14% zinc, 0.4 g/t gold and 30.7 g/t silver and 3m @ 2.63% copper, 0.88% zinc, 0.5 g/t gold and 36.7 g/t silver supporting results from a diamond drill hole completed in 2011 that returned an intersection of 13.2 metres @ 3.3% copper, 4.0% zinc and 0.4g/t gold.

Massive bedded copper-zinc sulphide mineralisation remains open at depth beyond the main Scorpion deposit (Figure 6) to the north and north-east, whilst bedded massive sulphide remain open ended to the north west of the Sulphide City deposit. Incremental resource extensions are likely to the immediate north of the Window resource.

In addition a Zenith RC hole completed in the drill program twinned a 1993 percussion drill hole as the older hole appeared to have anomalously low results compared to the more recent diamond drill holes and other older 1993 diamond drill hole results further to the north. Zenith's new hole returned significantly higher copper, zinc, gold and silver grades (3x copper, 5x zinc, 5x gold and 7x silver) for the equivalent drilled interval. Results from the newer twin hole replaced the older drill hole results allowing a zone of continuous high-grade copper to be defined through the core of the Sulphide City deposit.

The Sulphide City mineralisation consists of stockwork, disseminated and massive sulphide mineralisation. The main Sulphide City lens, outlined with a 1% copper equivalent cut-off, has a horizontal projection of about 400m x 150m. The lens varies from 2.5m to 29m in thickness, generally dips 25-30° west-northwest and has been intersected at depths between 80m and 200m. Better historic drill intersections (previously reported) include:

- **DDH-016** **14.5m @ 0.6% Cu and 4.3% Zn (includes 2.5m @ 12.0% Zn)**
- **DDH-044** **11.3m @ 2.1% Cu, 5.9% Zn, 16g/t Ag & 1.21g/t Au**
- **PD-052** **15.0m @ 3.1% Cu, 2.3% Zn**

The Scorpion deposit, 500m south-west of the Sulphide City deposit occurs in a 400m x 200m zone in altered volcanic rocks. The sulphide body, 2.5m – 9.5m thick consists of brecciated massive sulphides and grades up to 6% Cu, 9% Zn, 43g/t Ag and 1g/t Au. Better historic drill results (previously reported) include:

- **DDH-001** **21.6m @ 2.5% Cu, 1.5% Zn, 13g/t Ag & 0.5g/t Au (includes 16.2m @ 3.2% Cu, 1.6% Zn)**
- **DDH-002** **31.6m @ 1.5% Cu, 1.5% Zn, 15g/t Ag & 0.3g/t Au (includes 16.7m @ 2.1% Cu, 2.0% Zn)**
- **PD-007** **44.0m @ 1.6% Cu, 1.0% Zn, 8g/t Ag & 0.3g/t Au (includes 25.0m @ 2.6% Cu, 1.2% Zn)**

The highly weathered Window mineralisation consists of a ~40m thick sub-horizontal supergene blanket of copper mineralisation at 50m depth within a wider zone of stringer style mineralisation. The location and style of



mineralisation indicates that the Window Deposit may be the partially eroded footwall stringer zone to the nearby Scorpion massive sulphide lenses. Better historic drilling results from Window (previously reported) include:

- **PD-012** **84.0m @ 0.8% Cu (includes 48.0m @ 1.2%)**

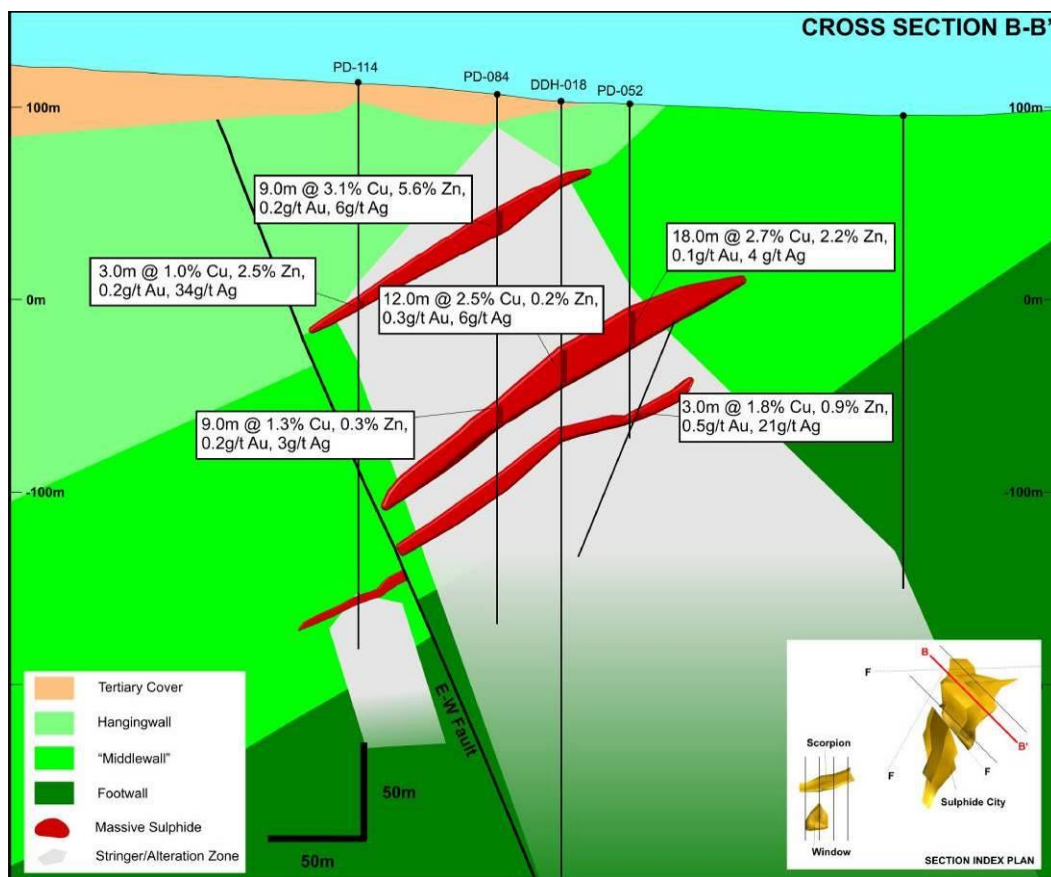


Figure 5: Sulphide City Deposit – Cross Sections

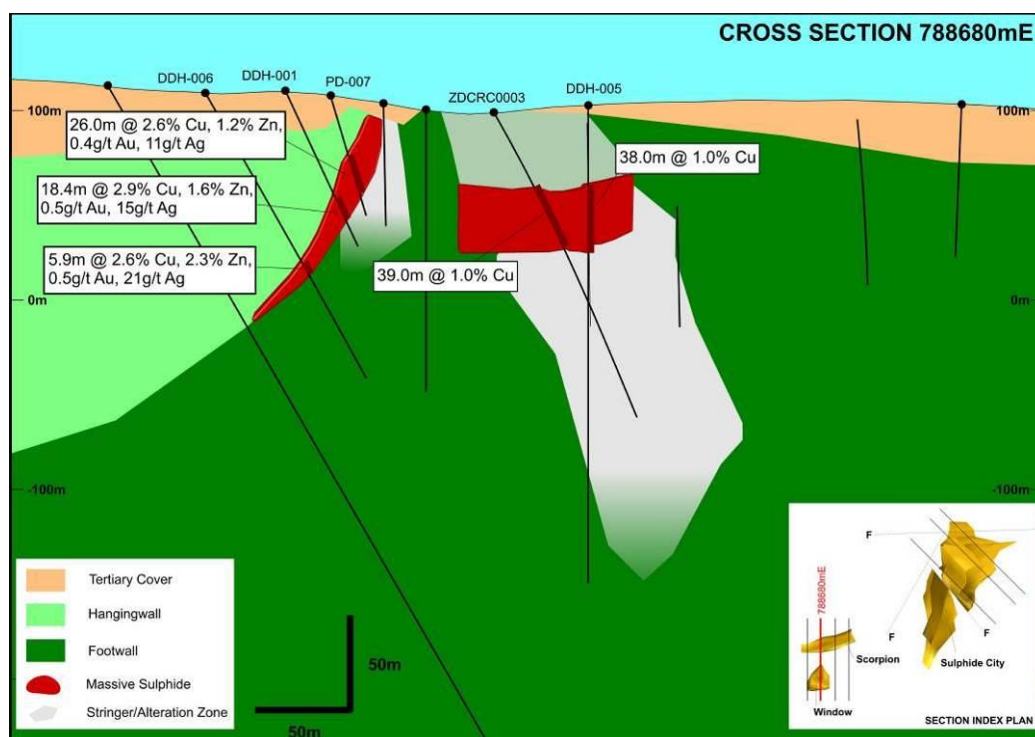


Figure 6: Scorpion-Window Deposit – Cross Section



KAVAKLITEPE GOLD PROJECT – TURKEY (Teck earning up to 70%)

- Two coherent plus 800 metre long, high order gold in soil anomalies, with peak soil sample values over 1 g/t gold,
- Continuous rock chip traverse of 54.0 metres grading 3.33 g/t gold, including 21.5 metres grading 7.2 g/t gold within the northwest soil anomaly (Kuzey Zone),
- Continuous rock chip traverse of 21 metres grading 2.67 g/t gold at the Discovery Zone,
- Strong chargeable IP geophysical anomaly identified directly beneath high-grade surface rock chip samples (7.68, 22.7 g/t gold) and gold in soil (up to 6.05 g/t gold) at the Kuzey Zone,
- Kavaklitepe has yet to be drilled (only discovered in early 2013).

Activities During the Quarter

During the Quarter Zenith announced the restructuring of the Kavaklitepe gold project joint venture, whereby a Turkish subsidiary of Teck Resources Limited will take over management under a new option agreement (ASX Release 30th November 2015).

Under the new arrangement Teck may now earn a 70% interest in the Kavaklitepe gold project by spending US\$700,000 in property expenditures including a minimum of 1500m of drilling. Following the initial option stage both companies can then continue to explore or develop the property by contributing their pro-rata costs or they may elect to dilute their interests according to a standard industry formula. If Zenith reduces its equity below 10% then the remaining interest may be compulsorily acquired by Teck in exchange for a 5% net profit interest royalty.

Should Teck not exercise its initial option to earn 70% equity then Zenith will own 100% of the project with Teck retaining a 2% net smelter royalty.

The new option deal with Teck alleviates Zenith's expenditure and cash payment burden required under the initial Turkish Agreement. It also provides a pathway forward to unlocking the potential of the Kavaklitepe gold project at low initial cost, at the same time as maintaining a significant interest in the project for Zenith shareholders.

Background on Kavaklitepe Project

Zenith's wholly owned subsidiary S2M2 Coal Pty Ltd previously announced that it had entered into an exclusive option to earn up to a 70% interest in the Kavaklitepe gold property ("Kavaklitepe" or "the Property") located in western Turkey (see Zenith December 23, 2013 ASX release).

Columbus Copper announced on the 7th January 2015 the sale of the subsidiary that holds the Bursa and Kavaklitepe properties in Turkey to an affiliate of Teck Resources Limited. Under the Turkish Agreement, S2M2 Coal had the option to earn an initial 51% interest in the Property over three years by making a further US\$100,000 cash payment and completing US\$2,500,000 in cumulative exploration expenditures on the Property. If S2M2 had earned the initial 51% interest in the Property, it may then have elected to earn a further 19%, for 70% in total, by making an additional US\$500,000 payment and by completing a bankable feasibility study within a four year period. The Turkish Agreement has now been replaced by the option agreement with Teck, as detailed in the 30th November 2015 ASX Release.

Columbus Copper discovered mineralization at Kavaklitepe by following up a stream sediment anomaly to a stream bed outcrop that returned 5.2 grams per tonne ("g/t") gold. Subsequently a small trench in a nearby road cut returned 2.67 g/t gold over 21 metres of exposure. About 1.4 kilometres northwest from the discovery outcrop four samples from a gold bearing breccia zone returned 28.2 g/t, 21.7 g/t, 6.7 g/t and 3.66 g/t gold respectively (see Columbus Copper release March 1, 2013). Further rock sampling along a road bank in this zone confirmed the presence of high-grade gold mineralization returning 54.0 metres of continuous rock chips with an average grade of 3.33 g/t gold, including 21.5 metres grading 7.2 g/t gold. A total of 2,127 soil samples were also collected on the Property in 50 metre x 50 metre and 100 metre x 100 metre grids covering an area of approximately 11 square kilometres, of which 176 samples returned gold grades higher than 50 ppb, 112 - higher than 100 ppb and 40 - higher than 250 ppb with 9 of these samples containing more than 1000 ppb (1 g/t) gold. The soil sampling outlined a potentially mineralized zone measuring 850 metres by 250 metres and continuing for another 800 metres to the



southwest and possibly displaced by a northwest southeast trending fault at its southern margin. There are strong, coincident arsenic and antimony anomalies.

Successful IP geophysical survey trials by Zenith over two of the major gold-in-soil anomalies (Guney and Kuzey) identified strong chargeability anomalies beneath the high-grade gold in soil anomalies. Two survey configurations were tested (a grid of gradient array and single pole-dipole lines) both returning strong to moderate chargeable responses ($>20\text{Mv/v}$). Beneath the Kuzey zone a strong chargeable IP geophysical anomaly was identified directly beneath high-grade surface rock chip samples (7.68, 22.7 g/t gold) and gold in soil (up to 6.05 g/t gold), while a second strong chargeable IP geophysical anomaly was identified beneath the Guney Zone (Figure 7). At Kuzey the chargeability anomaly lies directly beneath the 900m long (50ppb Au) high-grade gold in soil anomaly (maximum 6050ppb Au, 6.05 g/t Au) and can be detected in the survey data to a depth of at least 100m (Figure 8).

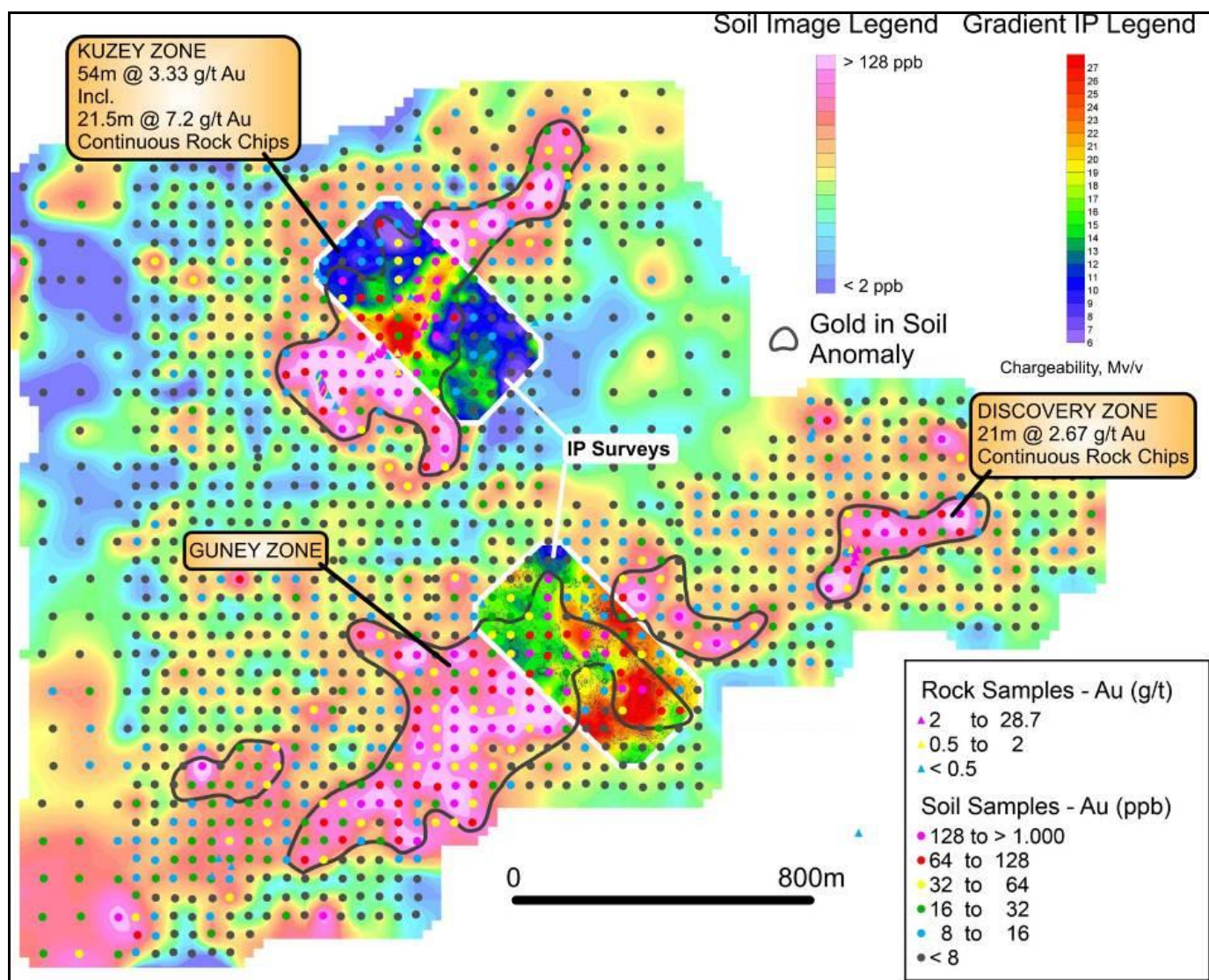


Figure 7: Plan Showing Kavaklitepe Project IP Geophysical Surveys (Images of chargeability at 25m below surface) overlying Gold in Soil Geochemical Anomaly with Rock Chip Sample Locations

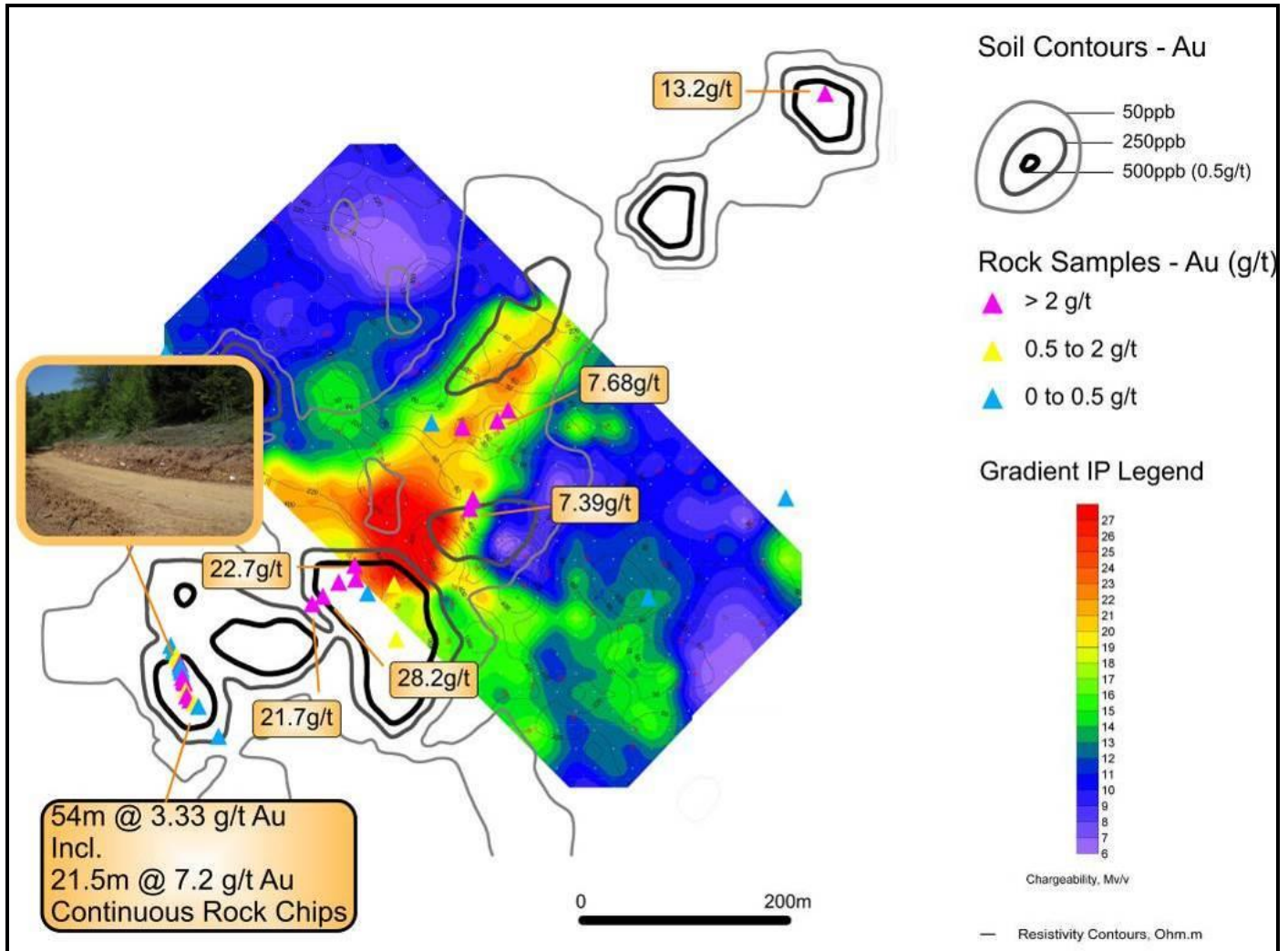


Figure 8: Plan Showing Kuzey Zone Gold in Soil Geochemical Anomaly Contours and Rock Chip Sample Locations overlying IP Geophysical Survey Image of Chargeability (25m depth slice)

EARAHEEDY MANGANESE PROJECT – WA (Zenith 100%)

- Mineral Resources at Red Lake and Lockeridge,
- Red Lake 2012 – 1st direct shipping ore (DSO) grade Mn intersected by drilling in Earacheedy Basin;
 - 3m @ 41.0% Mn within 5m @ 34.8% Mn from 22m
 - 1m @ 40.2% Mn within 3m @ 30.7% Mn from 3m.

Activities During the Quarter

- ◆ New high-grade manganese zones (up to 43.5%Mn) discovered during regional reconnaissance mapping and sampling programs at Zenith's 100% owned Earacheedy Project (ASX Release 5th November 2015);
- ◆ Surface rock sampling from the new Birthday Prospect discovery returned assay results up to 37.6%Mn over a coherent 500m long zone (Figure 9). This new prospect is located 350m east of the previously announced Blue Elbow Prospect (ASX Release 12th August 2014), where surface sampling returned up to 38.2%Mn;



- ◆ Second new zone of high-grade manganese mineralisation 250m long with grades up to 33%Mn has been discovered 1km west of the Bluegrass Prospect (ASX Release 12th August 2014), where previous surface sampling returned up to 48.1%Mn;
- ◆ New isolated manganese outcrops also sampled to the northeast and southwest of the Birthday manganese discovery returned assays results including: 28.0%Mn, 43.5%Mn and 42.3%Mn; and
- ◆ A single sample taken from a zone of iron enrichment along the main access track returned very high-grade iron (61.1%Fe) with very low deleterious elements typical of those in direct shipping iron ores (DSO).



Figure 9: High-Grade Manganese Outcrop at the Birthday Prospect

Planned Activities

The Company noted that during the quarter production halted at two of Australia's premier manganese operations: Woodie Woodie in Western Australia and Bootu Creek in the Northern Territory. As a direct result of the significant fall in manganese prices the Company has reduced its landholdings to key exploration targets and has filed applications for retention licences over its two manganese Mineral Resources, and the latter if successful will allow Zenith to hold the resources but negate any Department of Mines statutory annual expenditure requirements for those licences.

Background on Earahedy Project

The Proterozoic aged Earahedy Basin north of Wiluna in Western Australia is a potential new manganese province with similarities to the giant Kalahari manganese field in South Africa. As first mover Zenith established a strong land position with tenements. Zenith's priority target is high-grade (>40% Mn) manganese oxide formed by weathering or supergene upgrade of primary mineralisation.

Zenith completed the first ever drilling for manganese in the western Earahedy in late 2010 at the Lockeridge prospect, intersecting a shallow dipping bed of primary manganese carbonate mineralisation. Better results from Lockeridge include: 12m @ 11.1% Mn from 28m depth, and 3m @ 18.0% Mn from 37m depth.

Primary mangiferous carbonate at Lockeridge is supergene enriched near surface. Previous Zenith drilling completed in 2010 was stepped out more than 250 metres down dip from the outcrop, and intersected primary mangiferous carbonate with Mn grades in the range 3 to 10% Mn for up to 1.2 km down dip. The 2013 program established potential for supergene manganese oxide with both holes intersecting mineralisation. Hole ZTAC026 (3m @ 25.1% Mn incl. 1m @ 29.6%) intersected the target around 100 metres down dip from the high grade outcrop, and hole ZTAC025 (3m @ 20.2% Mn) hit partially oxidised mineralisation around 150m down dip from surface outcrop.

The first DSO grade Mn drill intersections recorded in the Earahedy Basin were reported by Zenith in 2012 at the Red Lake prospect. Drilling results include; 3m @ 41% Mn (within 5m @ 34.8% Mn from 22m depth), and 3 metres @



34.8% Mn from 19 metres, including 1m @ 42.3% Mn. Subsequent drill programs defined continuous near surface high-grade manganese at Red Lake. Based on a revised geological interpretation (ASX Release 9th September 2014) the Red Lake resource is: **1.4Mt @ 19.0% Mn** at a 10% Mn cut-off grade with a higher grade component of 0.2Mt @ 30.0% Mn at a 25% Mn cut-off grade as presented in the Table below. The resource is classified under the JORC Code 2012 as Inferred, based on confidence in, and continuity of, the results from the drilling campaigns, and surface mapping.

Red Lake Manganese Mineral Resource Estimate as at August 2014									
Classification	Reporting Cut-off Grade	Tonnes (Mt)	Mn %	Fe %	Si %	Al ₂ O ₃ %	P %	S %	LOI %
Inferred	25% Mn	0.2	30.0	14.1	13.85	7.9	0.24	0.03	12.1
	20% Mn	0.5	25.1	16.1	17.0	8.9	0.25	0.06	11.9
	15% Mn	1.1	20.8	17.7	20.5	9.3	0.24	0.17	11.5
	10% Mn	1.4	19.0	19.1	20.8	9.6	0.26	0.19	11.4

On the 15th April 2015 Zenith reported an Inferred Mineral Resource (JORC 12) for the near surface oxide portion of the Lockeridge manganese prospect. The maiden estimate is: **2.6Mt @ 20.6% Mn** at a 10%Mn cut-off grade as presented in the Table below. The resource is classified under the JORC Code 2012 as Inferred, based on confidence in, and continuity of, the results from the drilling campaigns, and surface mapping.

Lockeridge Manganese Mineral Resource Estimate as at April 2015									
Classification	Reporting Cut-off Grade	Tonnes (Mt)	Mn %	Fe %	SiO ₂ %	Al ₂ O ₃ %	P %	S %	LOI %
Inferred	20% Mn	1.0	30.2	7.0	18.9	4.1	0.12	0.01	5.7
	15% Mn	1.9	23.4	6.7	25.4	4.7	0.15	0.01	10.4
	10% Mn	2.6	20.6	6.9	27.6	5.1	0.16	0.01	12.0

Note: The Mineral Resource was estimated within constraining wireframe solids based on the specified nominal lower cut-off grade for Mn. The Mineral Resource is quoted from all blocks above the specified Mn cut-off grade %. Differences may occur due to rounding.

MT MINNIE GOLD PROJECT – WA (Zenith 100%)

- Zenith rock chip sampling confirms high-grade gold in quartz veins. New surface rock sample results include: 17.65 g/t gold and 11.45g/t gold;
- Previous high-grade rock samples returned up to 64.2 g/t gold & 21.5 g/t gold;
- Only cursory historic reconnaissance activity by previous explorer; and
- Zenith is applying a new geological model to assess gold targets over 25km of strike, prospective for reduced intrusion related gold deposits.

Activities During the Quarter

During the Quarter the Company announced (ASX Release 26th October 2015) that assay results were received from a surface soil and rock sampling program from the Woods gold prospect defining a 200 metre by 200 metre gold anomaly surrounding the area where high-grade gold results were returned from quartz vein samples in an area of very poor outcrop (Figure 10).

Soil sampling was conducted by Zenith's field staff, with 25m spaced samples on grid lines 50m apart. Assay results show a discrete gold anomaly (peak 184ppb gold) coincident with the Woods gold-rich quartz vein (rock samples up to 11.45g/t gold). A strong linear gold in soil trend west of known gold rich quartz vein and trending to north where 17.65g/t gold quartz vein float sample provides a buried gold vein target. Note soil and colluvium cover thickens across a creek to the north and east of the gold in soil anomaly and soil samples taken that direction may not be effective.

Drilling is now required to test the subsurface extent of gold mineralisation.

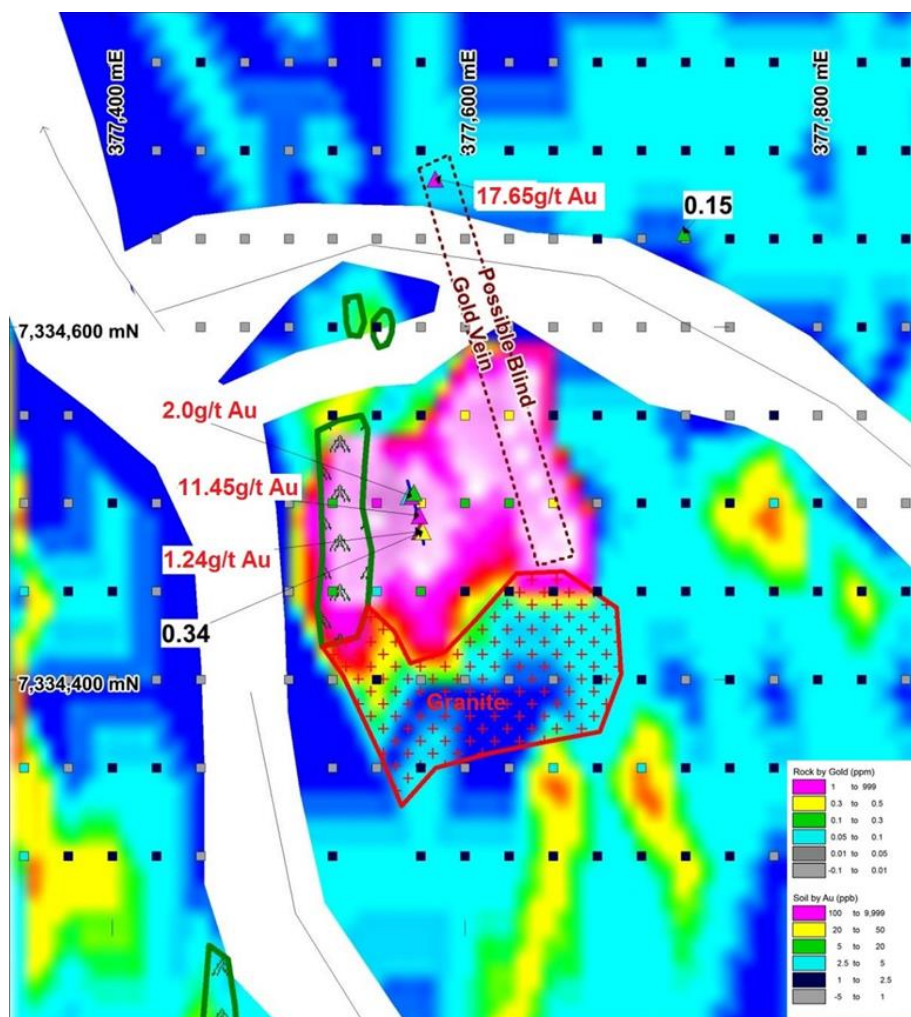


Figure 10: Woods Prospect Gold in Soil Anomaly (Triangles = rock samples, squares = soil samples, green polygons = dolerite dykes, red hatched polygons = granite outcrop)

Planned Activities

Preparation for drill testing.

Background on Mt Minnie Project

The Mt Minnie project consisting of one exploration licence is situated approximately 240 km northeast of Carnarvon in Western Australia. The tenement covers a portion of terrain composed predominantly of mid-Proterozoic granite assigned to the Minnie Creek batholith prospective for reduced intrusion related gold deposits.

Previous rock chip sampling at the Woods Prospect identified a zone of very positive gold results up to 21.5 g/t gold (Au). Sampling by Zenith confirmed the high-grade tenor of gold mineralisation at the Woods Prospect with new samples returning: 11.45 and 1.24 g/t Au from the core of a 2-3m wide ferruginous quartz vein over an outcrop strike length of 30 metres with a further sample taken 200 metres north returning 17.65 g/t Au. A continuous rock chip sample across the strike of the vein returned 2 metres @ 1.24 g/t Au. The prospect is on the edge of a soil covered plain and outcrop is sparse.



MT ALEXANDER IRON PROJECT – WA (Zenith 100%)

- **Advantages over other WA magnetite deposits;**
 - Location close to coast and infrastructure (Well located close to sealed roads, gas pipelines and only 120km from coast near Onslow (Mitsui, Chevron ports)
 - Coarser grained = better beneficiation
 - Low waste to ore ratio ~ 1:1, provides a good compact mining shape
- **Base case in 2011 Scoping study - slurry pipeline, tranship by barge to vessel offshore**
- **80km to API JV (Baosteel-AMCI) West Pilbara proposed railway to Anketell Port – third party access indicated by developers,**
- **Prominent range, magnetite zone +4 km long and up to 200 metres thick,**
- **JORC Inferred Resource of 566Mt @ 30 % Fe is only ~ 50% of target iron formation (“BIF”) area. Clear potential to grow resource within significant additional Exploration Target.**

Activities During the Quarter

No field work was conducted during the quarter.

Background on Mt Alexander Project

The Mount Alexander Project is 120 km from the port of Onslow, and 260 km south west of Karratha in the West Pilbara region of Western Australia, close to the Pilbara coast, the sealed North West Coastal Highway and the Dampier Bunbury gas pipeline. Planned rail from the nearby West Pilbara Iron Project (Baosteel/AMCI JV) to a new port development at Anketell Point provides a possible alternative infrastructure solution.

Zenith has discovered magnetite iron mineralisation occurs in a banded iron formation (BIF) associated with a sequence of amphibolite, dolomite, schist and quartzite of Proterozoic age in the northern Gascoyne Province.

In May 2013 the Company announced an Inferred Mineral resource for magnetite iron at Mount Alexander of 535 million tonnes @ 30.0% Fe. This mineral resource was updated and reported in June 2015 to include magnetite iron zones that extend on to an exploration licence acquired post that May 2013 resource estimate. The new Inferred Mineral resource (JORC12) for magnetite iron at Mount Alexander is: **565.7 million tonnes @ 30.0% Fe**. The resource is the total of the 2013 Inferred Mineral Resource (535.1Mt @ 30.0%Fe) and the updated BIF extensions of the central and south west domains (30.6Mt @ 30.0% Fe). Details are included in JORC Code Reporting Criteria Section 2 of the June 2015 Quarterly Report.

Mount Alexander BIF Inferred Mineral Resource estimate as at June 2015							
		Head Grade					
Classification	Tonnes (Mt)	Fe %	SiO ₂ %	Al ₂ O ₃ %	LOI %	P %	S %
Inferred	565.7	30.0	48.1	2.2	-0.4	0.1	0.46
	DTR	DTR Concentrate Grade					
	Mass Recovery %	Fe %	SiO ₂ %	Al ₂ O ₃ %	LOI %	P %	S %
	24.8	69.9	2.4	0.1	-2.7	0.01	1.1

In addition the Company reported a maiden Inferred Mineral resource estimate for magnetite iron at the Mt Alexander West prospect in June 2015. That Inferred Mineral resource (JORC12) for magnetite iron at Mount Alexander West is: **25.9 million tonnes @ 22.7% Fe**. The resource is classified as Inferred based on confidence in, and continuity of, the results from the drilling campaigns, detailed aeromagnetic data and detailed structural surface mapping. Details are included in JORC Code Reporting Criteria Section 2 of the June 2015 Quarterly Report.



Mount Alexander West BIF Inferred Mineral Resource estimate as at June 2015 (18%Fe cut-off)							
		Head Grade					
Classification	Tonnes (Mt)	Fe %	SiO ₂ %	Al ₂ O ₃ %	LOI %	P %	S %
Inferred	25.9	22.7	50.0	7.9	0.27	0.35	0.04

Substantial additional potential exists for increased tonnage at both Mt Alexander and Mt Alexander West with only ~55% of target BIF drill tested to date. The Company reported in June 2015 a revised additional **Exploration Target of 510 to 620 million tonnes @ 25 to 35% Fe** (excluding the Inferred Resources), in accordance with Section 17 and Section 38 of the JORC Guidelines 2012. *The potential quantity and grade of this Exploration Target is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. The Exploration Target has been estimated on the basis of 3D modelling of the along strike extensions of resource wireframes at Mt Alexander and Mt Alexander West by using outcrop mapping (by Zenith and by Jigsaw Geoscience, assays from outcrop rock chip samples taken by Zenith, magnetic susceptibility measurements, 2.5D profile and 3D inversion modelling of detailed ground (~100-200m line spacing) and airborne magnetic (~50m line spacing) survey data by Core Geophysics,. A volume for the magnetite mineralisation was calculated to -100mRL and a bulk density range of 3.1g/cc to 3.7g/cc (consistent with a grade of 25-35wt% iron as magnetite) was applied to the volume derived from the modelling. Further drilling to test the validity of the Exploration Target is planned within the next 2 years subject to receipt of the necessary permits and approvals, and the availability of funding.*

A Scoping Study by consultants ProMet was reported to ASX on 10 May 2011. The Study assessed the basic mining, processing and infrastructure requirements, and estimated Capital Costs and Operating Costs. Based on detailed test work on diamond drill core the Study applied a weight recovery of 30.2% at p80 minus 40 micron grind and a DTR concentrate grade of 69.9% Fe and 3.0% SiO₂. The Base Case selected included processing by crushing, grinding, wet magnetic separation. The Base Case transport option for the concentrate was by slurry pipeline 120 km to the coast near Onslow, and transport by barge to an offshore mooring for transfer into ships for export (transshipment).

** The Scoping Study referred to in this report is based on low-level technical and economic assessments, and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised.*

Pre-feasibility study elements undertaken aimed at de-risking the project include; finalised Level 1 and Level 2 flora & flora surveys (which did not identify any major environmental triggers), work on securing access to a project water supply, and investigation of export infrastructure options and bulk material transshipment technology.

OTHER

Nil this quarter.

NEW OPPORTUNITIES

The Company is continuing to assess resource opportunities that have both synergies with existing Zenith projects or that will enhance the Company's existing project portfolio.

Although the focus of new projects is on gold and copper in which 100% ownership can be secured, lithium potential has been recognized within one of Zenith's existing 100% owned projects. As such the Company is now assessing the lithium potential of its entire tenement portfolio as well as several new lithium target opportunities.

CORPORATE

The Zenith Minerals Limited 2015 Annual General Meeting was held on the 23rd November 2015, four resolutions put to shareholders were passed unanimously on a show of hands.



Zenith Minerals Limited

29th January 2016

For further information contact;

Directors Michael Clifford or Mike Joyce

Phone 08 9226 1110

COMPETENT PERSONS STATEMENTS

The information in this report that relates to Zenith Exploration Results and Exploration Targets is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an employee of Zenith. Mr Clifford 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'. Mr Clifford 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 in-situ Mineral Resources at the Develin Creek project is based on information compiled by Ms Fleur Muller an employee of Geostat Services Pty Ltd. Ms Muller takes overall responsibility for the Report. She is a Member of the AusIMM and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity she is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition)'. Ms Muller consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

The information in this report that relates to Mineral Resources at Zenith's Red Lake Earraheedy project is based on information compiled by Mr Dmitry Pertel, a Competent Person who is a fulltime employee of CSA Global Pty Ltd and a member of the Australian Institute of Geoscientists (AIG). Mr Pertel has sufficient experience 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 Mineral Resources and Ore Reserves". Mr Pertel consents to the inclusion of such information in this report in the form and context in which it appears.

The information in this report that relates to Mineral Resources at Zenith's Lockeridge - Earraheedy project, Mt Alexander project and Mt Alexander West project is based on information compiled by Mr Rodney Michael Joyce, a Competent Person who is a director of the Company and a Member of the AusIMM. Mr Joyce has sufficient experience 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 Mineral Resources and Ore Reserves". Mr Joyce consents to the inclusion of such information in this report in the form and context in which it appears.

The information in this report that relates to Zenith Exploration Targets at Mt Alexander is based on information compiled by R M Joyce, who is a director of the Company and a Member of the AusIMM. Mr Joyce 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'. Mr Joyce consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has 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.

APPENDIX 5B
CONSOLIDATED STATEMENT OF CASH FLOWS
For Quarter Ended 31 December 2015

	Current Quarter \$A'000	Year to Date (6 months) \$A'000
CASH FLOWS RELATED TO OPERATING ACTIVITIES		
1.1 Receipts from product sales and related debtors	-	-
1.2 Payments for: (i) exploration and evaluation	(130)	(275)
(ii) development	-	-
(iii) production	-	-
(iv) administration	(105)	(202)
1.3 Dividends received	-	-
1.4 Interest and other items of a similar nature received	2	4
1.5 Interest and other costs of finance paid	-	-
1.6 Income Taxes paid	-	-
1.7 Other (provide details if material):		
Research & Development Incentive	<u>179</u>	<u>179</u>
NET OPERATING CASH FLOWS	<u>(54)</u>	<u>(294)</u>
CASH FLOWS RELATED TO INVESTING ACTIVITIES		
1.8 Payment for purchases of: (i) prospect	-	-
(ii) equity investments	-	-
(iii) other fixed assets	(2)	(2)
1.9 Proceeds from sale of: (i) prospects	-	-
(ii) equity investments	-	-
(iii) other fixed assets	-	-
1.10 Loans to other entities	-	-
1.11 Loans repaid by other entities		
1.12 Other - Acquisition costs	-	-
NET INVESTING CASH FLOWS	<u>(2)</u>	<u>(2)</u>
1.13 Total Operating & Investing Cash Flows	(56)	(296)
CASH FLOWS RELATED TO FINANCING ACTIVITIES		
1.14 Proceeds from issues of shares, options, etc.	-	-
1.15 Proceeds from sale of forfeited shares	-	-
1.16 Proceeds from borrowings	-	-
1.17 Repayment of borrowings	-	-
1.18 Dividends paid	-	-
1.19 Other – Expenses of issue	<u>-</u>	<u>-</u>
NET FINANCING CASH FLOWS	<u>-</u>	<u>-</u>
NET INCREASE (DECREASE) IN CASH HELD	(56)	(296)
1.20 Cash at beginning of quarter/year to date	486	726
1.21 Exchange rate adjustments to Item 1.20 above	<u>-</u>	<u>-</u>
1.22 CASH AT END OF QUARTER	<u>430</u>	<u>430</u>

PAYMENTS TO DIRECTORS OF THE ENTITY AND ASSOCIATES OF THE DIRECTORS

PAYMENTS TO RELATED ENTITIES OF THE ENTITY AND ASSOCIATES OF THE RELATED ENTITIES

	Current Quarter \$A'000
1.23 Aggregate amount of payments to the parties included in item 1.2	60
1.24 Aggregate amount of loans to the parties included in item 1.10	-
1.25 Explanation necessary for an understanding of the transactions: Reimbursement of administration and exploration expenses incurred on behalf of the Company and fees paid to Director Related Entities in accordance with service contract, and for the payment of director services.	-

NON-CASH FINANCING AND INVESTING ACTIVITIES

- 2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows: -
- 2.2 Details of outlays made by other entities to establish or increase their shares in projects in which the reporting entity has an interest: -

FINANCING FACILITIES AVAILABLE

Provide details of used and unused loan facilities and credit standby arrangements, adding such notes as are necessary for an understanding of the position	Amount Available \$A'000	Amount Used \$A'000
3.1 Loan facilities	-	-
3.2 Credit standby arrangements	-	-

ESTIMATED CASH OUTFLOW FOR NEXT QUARTER

	\$A'000
4.1 Exploration and evaluation	100
4.2 Development	-
4.3 Production	-
4.4 Administration	70
TOTAL	170

RECONCILIATION OF CASH

Reconciliation of cash at the end of the quarter (as shown in the statement of cash flows) to the related items in the accounts as follows:	Current Quarter \$A'000	Previous Quarter \$A'000
5.1 Cash on hand and at bank	414	467
5.2 Deposits at call	16	19
5.3 Bank overdraft	-	-
5.4 Other – Bank Bills (various)	-	-
TOTAL :CASH AT END OF QUARTER (Item 1.22)	430	486

CHANGES IN INTERESTS IN MINING TENEMENTS

	Tenement Reference and location		Nature of interest	Interest at beginning of quarter	Interest at end of quarter
6 Interests in mining tenements held	E08/1410	Mt Alexander		100%	100%
	E08/1972	Mt Alexander		100%	100%
	E08/1987	Mt Alexander		100%	100%
	E69/1771	Earaheedy		100%	100%
	E69/2733	Earaheedy		100%	100%
	E69/2256	Earaheedy		100%	100%
	E09/2063	Mt Minnie		100%	100%
	IUP08/HAR/III/2 008	Sungai Roi (Indonesia)	Option	Option over 90%	Option over 90%
	EL2007/9861	Kavaklitepe (Turkey)	Earn-In	Earning to 70%	100% - Teck earning 70%
	E47/3071	Pilbara	Application	100%	100%
	E45/4445	Cardinals		100%	100%
	EPM 16749	Develin Creek		51% option over 100%	51% option over 100%
	EPM 17604	Develin Creek		51% option over 100%	51% option over 100%
	EPM 18845	Develin Creek		51% option over 100%	51% option over 100%
6.1 Interests in mining tenements relinquished, reduced or lapsed	E69/2257	Earaheedy		100%	-
	E69/2736	Earaheedy		100%	-
	E69/2737	Earaheedy		100%	-
	E69/3370	Earaheedy		100%	-
	E46/1033	Bocrabee		100%	-
6.2 Interests in mining tenements acquired or increased	E69/3414	Earaheedy	Application	-	100%
	E45/4644	Horse Track Range	Application	-	100%
	L08/155	Mt Alexander	Application	-	100%

ISSUED AND QUOTED SECURITIES AT END OF CURRENT QUARTER

Category of Securities	Number Issued	Number Quoted	Issue Price Per Security (cents)	Amount Paid-Up Per Security (cents)
7.1 Preference securities	-	-	-	-
7.2 Changes during the quarter	-	-	-	-
7.3 Ordinary Securities:	128,634,608	128,634,608	-	-
7.4 Changes during quarter				
(a) Increases through issues-				
Ordinary Securities	-	-	-	-
(b) Restricted Securities	-	-	-	-
7.5 Convertible debt securities	-	-	-	-
7.6 Changes during the quarter				
(a) Increases through issues	-	-	-	-
(b) Decrease through return of capital, buy-backs	-	-	-	-
<i>Exercise Price Expiry Date</i>				
7.7 Options	200,000	-	\$0.29	20 Aug 2016
	1,000,000	-	\$0.13	21 Dec 2017
7.8 Issued during quarter	-	-	-	-
7.9 Exercised during quarter	-	-	-	-
7.10 Expired during quarter	-	-	-	-
7.11 Debentures	-	-		
7.12 Unsecured notes	-	-		

COMPLIANCE STATEMENT

1. This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Law or other standards acceptable to ASX.
2. This statement does give a true and fair view of the matters disclosed.

Sign here: 
 Director/Company Secretary

Date: 29th January 2016

Print name: **Melinda Nelmes**