PACE DISCOVERY DRILLING 2016 FINAL REPORT

Red Range Project – DPY9-31
Flinders Ranges, South Australia

PERILYA LIMITED – EXPLORATION

Licence No: EL 5367
Tenement Group Name: Copley ACO JV
Licence Holder: Perilya Freehold Mining Pty Ltd (85%)
Australian Coloured Oxides Pty Ltd (15%)
Operator/Manager: Perilya Freehold Mining Pty Ltd (ABN 85 009 135 695)

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EXECUTIVE SUMMARY

This report covers planning, execution, results and rehabilitation activities relating to a program of Reverse Circulation (RC) drilling undertaken by Perilya on EL5367 at the Red Range prospect in August-September 2016. As part of the greater North Flinders project area, the work was aimed at evaluating the target for potentially economic Beltana style zinc silicate mineralization. An application for funding under the SA Department of State Development's PACE Discovery Drilling 2016 program was submitted on 29 April 2016 with approval of the proposal received from the Department on 12 August 2016. A Program of Environmental Protection and Rehabilitation (PEPR) application covering the work was submitted in May 2016 with approval received on 14 June.

Drilling commenced in August 2016 and saw the completion of 494m of RC drilling in 6 holes from three separate drill pad areas. Drilling targeted pXRF base metal soil anomalism and multielement trace element anomalies as identified from earlier work on the target area in 2013-2015. No mineralization considered to be of economic significance was intersected by the drilling. Results returned were similar to observations from surface exposures consisting of broad zones of anomalous zinc (+/- lead) enrichment within Cambrian aged Woodendinna dolomite and Parachilna Fm. The best analytical results were returned from the Central drill pad (drillholes RRC005 & RRC006) which intersected wide (>50m) intervals of 1,000-10,000ppm Zn from pXRF data. The highest assay results were returned from RRC005 (1.14% Zn over 1m @ 19m downhole) and RRC008 (1.52% Zn over 1m @ 37m downhole). Rehabilitation of the drill sites and access tracks was completed in late 2016 and early 2017 however continued monitoring will be undertaken to evaluate natural revegetation and potential increased erosion due to the surface disturbances.

Direct drilling and analytical costs for the program totalled $71,216.09 with 50% ($35,608.05) eligible for reimbursement under the PACE Discovery Drilling 2016 program. As per the terms of Grant Agreement DPY9-31 however, a maximum of $30,000 is available for rebate from the program.

Work in 2016 has significantly downgraded the prospectivity of the Red Range area however the potential for economic mineralization occurring along the ~6km strike length of the target area cannot completely be discounted given the ~1km spacing between drilling sections. Future work will include major and trace element analysis of selected samples from the 2016 program as well as detailed geological and structural mapping along the southernmost target area.

1. INTRODUCTION

This report covers planning, execution, results and rehabilitation activities relating to a program of Reverse Circulation (RC) drilling undertaken by Perilya on EL5367 at the Red Range prospect in August-September 2016. As part of the greater North Flinders project area, the work was aimed at evaluating the target for potentially economic zinc silicate mineralization similar to that at the Beltana minesite approximately 25km to the north. An application for funding under the SA Department of State Development's PACE Discovery Drilling 2016 program was submitted on 29 April 2016 with tentative approval of the proposal received from the Department on 12 August 2016. Planning and a PEPR work approval application were initiated in mid May with drilling undertaken between 23 August and 08 September. In all, a total of 6 holes totalling 494m were completed from three separate drill pads. Progressive and final rehabilitation of the sites was completed in early 2017.

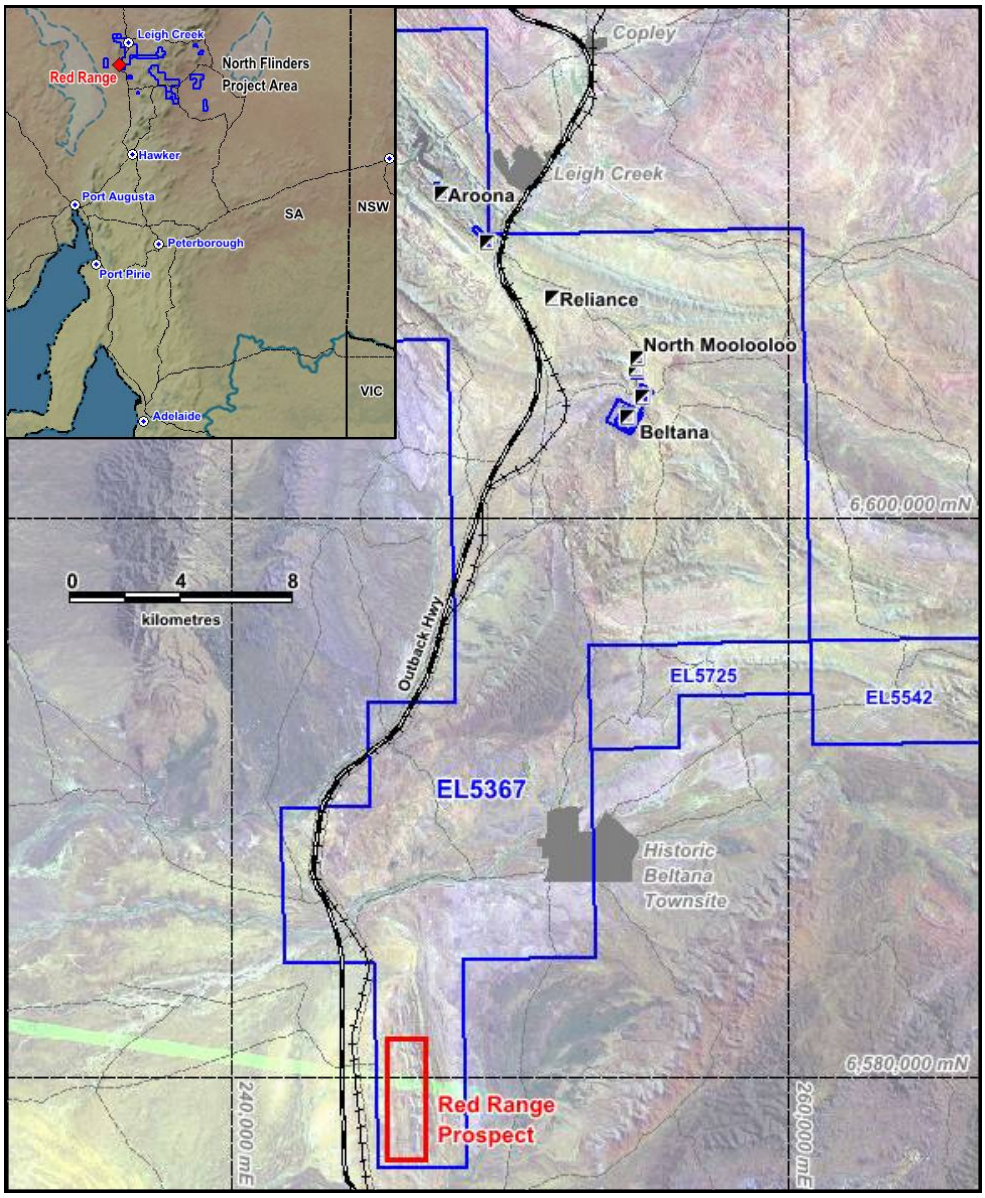

Figure 1 – EL5367 & Red Range Project Location (MGA 94)

2. LOCATION, ACCESS & TENURE

The project area is located 480km north of Adelaide near the town of Leigh Creek, SA (Figure 1). The Red Range target area itself occurs 2km east of the Outback Hwy (Flinders Ranges Way), approximately 35km south of Leigh Creek. The Leigh Creek Railway parallels the highway through the project area and provides direct access to shipping facilities in Port Augusta and Port Pirie. Access to the Red Range prospect is via a series of station tracks off of the main highway as well as the service road along the railway. A well established station track runs north-south directly through the prospect area providing relatively easy access to most parts of the property.

The Red Range prospect occurs with Exploration Licence EL5367. Originally granted as EL2524 to Australian Coloured Oxides Pty Ltd (ACO) on 25 June 1998 over an area of ~513km^2, the licence has had several replacement tenements issued including EL3111 (2003), EL4211 (2008) and finally the current EL5367 issued in 2013 and having an expiry date of 23 November 2018. Relinquishments totalling 97km^2 have been undertaken since the original grant of EL2524 with the current tenement area of EL5367 at approximately 416km^2.

A joint venture agreement was signed between Australian Coloured Oxides Pty Ltd and Perilya Mines NL (Now Perilya Freehold Mining Pty Ltd, "Perilya") on 31 January 2000 with Perilya assuming management of the licence. Perilya currently holds an 85% registered interest in the tenement with the remaining 15% in favour of ACO. Excluded from the licence area are 4 ML's and 3 RL's which are 100% Perilya owned, being acquired through a separate agreement with the former Pasminco Limited.

3. GEOLOGY AND MINERALIZATION

Regional Geology

The North Flinders project area is located within the Arrowie Basin (Figure 2a) which consists of an Early to Middle Cambrian succession overlying Neoproterozoic rocks of the northern Adelaide Geosyncline (Groves et al, 2003). The Arrowie Basin margins are defined by regional northwest and northeast basement structures which were present at the onset of Neoproterozoic sedimentation and controlled the sedimentation thickness distribution within the basin. During the Delamerian Orogeny (~500 ma) these northwest and northeast structures were reactivated as thrust faults during regional north–south shortening. The shortening caused zones of extension along existing north–south structures close to the basin margin providing a locus for mineralisation.

Stratigraphy within the basin area consists of basement Neoproterozoic aged siliclastic rocks of the Wilpena Group. These are unconformably overlain by predominantly carbonate sequence of rocks of the Hawker Group, consisting of the basal Parachilna Fm and progressing upwards through the Woodendina dolomite and Wilkawillina limestone. Younger, clastic dominated units of the Billy Creek and Moodlantana formations are exposed only in the far northwestern portions of the basin. Large bodies of Proterozoic aged Callana breccia often occur near the contact between Proterozoic and Cambrian rocks and are spatially associated with several mineralized areas. The bodies appear to be diapiric in origin or otherwise structurally emplaced.

Local Geology

The area of the Red Range prospect occurs on the far western margin of the Arrowie basin before bedrock dips below significant thicknesses of Quaternary sediments to the west. The local geology consists of a thin, fault emplaced wedge of Cambrian stratigraphy juxtaposed against Proterozoic-aged sandstones by a series of north-south trending fault structures (Figure 2b). Although regional mapping indicates primarily Ajax Limestones overlying Parachilna Fm sandstones in the area, recent rock chip sampling has identifiied Woodendinna Dolomite along the length of the target area, the unit known to host mineralization at both the Aroona and North Moolooloo deposit areas. Lacking from the local geology is any significant thickness of Callana

Gp breccias however several of the known deposits, including the Reliance and Aroona II deposits have no spatial association with Callana Gp breccias.

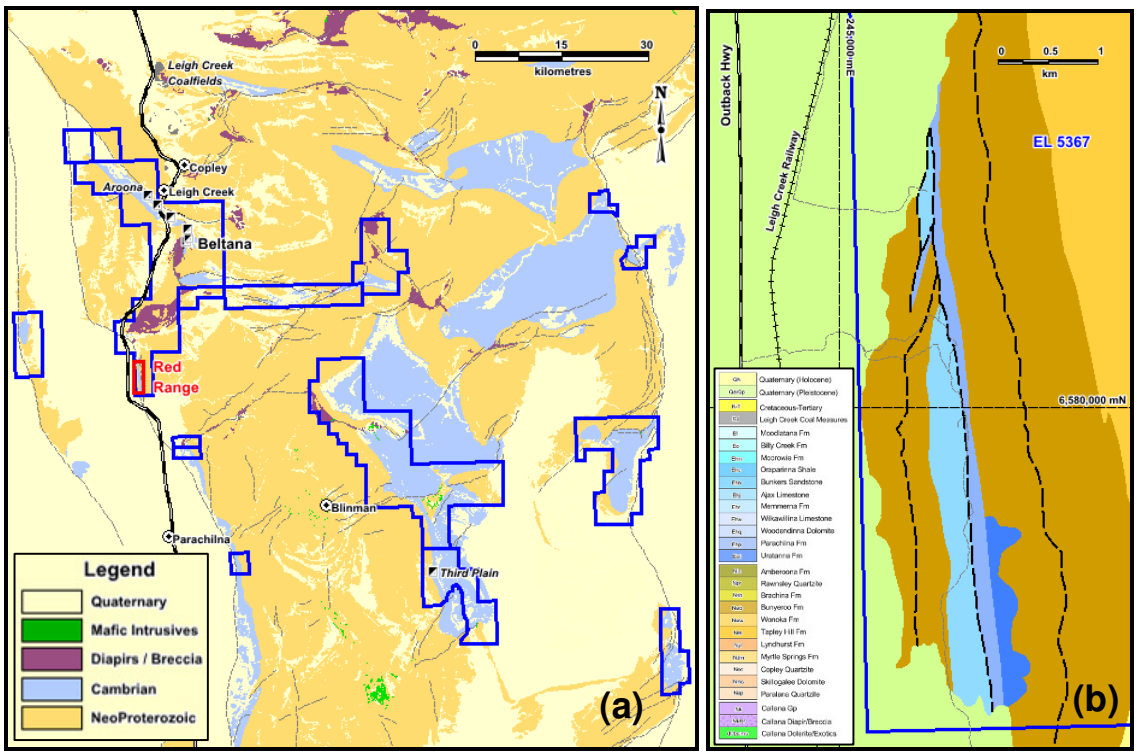

Figure 2 – Regional Geology (a) and Local Geology of the Red Range Prospect Area (b)

Mineralization

Significant zinc silicate mineralisation exists within the carbonate sequences of the Early Cambrian Hawker Group, mostly within the lower Wilkawillinna Limestone and Woodendinna Dolomite. Mineralisation is most abundant on the margins of the basin where the stratigraphy thins near major regional structures (i.e. the Norwest Fault). The Beltana–Aroona trend is located in such a setting and is characterised by complexly deformed carbonate sequences hosting primarily willemite (zinc silicate) mineralisation. The trend is host to numerous zinc silicate deposits including the larger Beltana and Aroona deposits as well as the smaller Reliance and North Moolooloo deposits. Zinc silicate mineralization however is known to occur throughout the basin including the Third Plain deposit in the southern map area (Figure 2a). Hematitic dolomite alteration and brecciation of the host limestone occurs around the mineralization. The Beltana area deposits are among the highest-grade zinc deposits in the world with their combined pre-mining resource of approximately 1.5 Mt @ 33% Zn and 2% Pb. Controversy over the genesis of these deposits focuses on two opposing theories: supergene willemite formed by enrichment of sulphide mineralization and hypogene willemite. While the latter model is preferred, supergene processes also clearly affect the hypogene ore. All willemite deposits in the area are however sulphur poor, containing virtually no sulphides, nor event relict sulphide textures.

4. HISTORIC EXPLORATION

Previous Companies

The target area has seen limited historic work. The earliest signs of exploration are several undocumented, shallow pits excavated into surface malachite (copper) occurrences within the Parachilna Fm. Such oxidized copper zones are ubiquitous within the Parachilna Fm and occur throughout the region.

Government initiated work in the North Flinders project area has included detailed mapping programs as well as broad spaced regional airborne magnetic and gravity surveys. Most recently a TEMPEST airborne electromagnetic survey was completed in 2010 however no flight lines from the survey occurred over the Red Range prospect area.

The most significant program of exploration in the area was by Carpentaria Exploration Company (CEC) between 1967-1971 on then Special Mining Lease SML170 which covered the entirety of the Red Range target area and extended northward towards the Beltana Diapir approximately 4km to the north. CEC completed regional stream sediment and soil sampling programs over the area defining a broad low-level soil anomaly along the target area. Two percussion drill holes were completed in late 1969 although neither was completed to targeted depth due to difficult drilling conditions (Figure 3). Drill hole RRN-1 (33.5m) intersected elevated base metals (up to 1.2% Zn & 0.5% Pb) within dolomitic rocks while RRS-1 (32.0m) returned slightly lower values of up to 0.5% Zn &0.1% Pb. No further work was recommended on the area.

Work in the area was also undertaken by Bridge Minerals on EL118 from 1973-1975 although the primary target was supergene copper mineralization to complement their operations at the "Mountain of Light" copper mine near Copley. Initial field investigations suggested potential for sulphide mineralization associated with the surface gossans however no additional work was completed

Perilya

Work by Perilya on the Red Range target began in mid 2000 with the completion of mapping and rock chip sampling over the historic copper workings in the area. A regional, conventional soil sampling program (892 samples) was completed during 2000-2001 which defined 2 prominent anomalies in the central portion of the target area. RC drilling of two holes, RRC1 (110m) & RRC2 (159m) was then undertaken in early 2003 to test the southern, stronger multi-element anomaly (Zn+Pb+Cu) defined by the soil surveying program. Both holes, drilled approximately 100m to the south of RRS-1 displayed similar results, returning maximum values of up to 0.68% Zn, 0.67% Pb and 0.23% Cu.

No further work was completed in the Red Range area until regional reconnaissance programs were initiated on the project area in 2013. The prospect was identified as a high priority for follow-up given the geological setting and previously defined surface anomalies. During 2014-2015 an extensive pXRF soil surveying program was completed over the target area with approximately 2,160 readings taken on 100m spaced lines. An additional 126 rock chip samples were also collected and submitted for major and trace element analysis. Results of detailed studies on the geochemical signature of the recently discovered North Moolooloo deposit (214kt @ 34.4% Zn) were then applied to the geochemical data. At North Moolooloo a distinct, >2,000ppm Zn pXRF soil anomaly defines the deposit area and studies of trace elements from rock chip samples taken from the surrounding arrea have defined anomalies in multiple elements (As, Cd, Mn, Sb, Se & V) extending up to 400m away from the deposit itself compared to 'unaltered' host carbonate rocks. Based on these criteria the geochemical data from Red Range defined four discreet anomalies along the prospective contact area including that previously tested by drilling in 2003 (A-D, Figure 3). Note that for clarity XRF Pb+Zn values of <2,000ppm have been omitted from Figure 3A and Cd < 2x background have been omitted from Figure 3B.

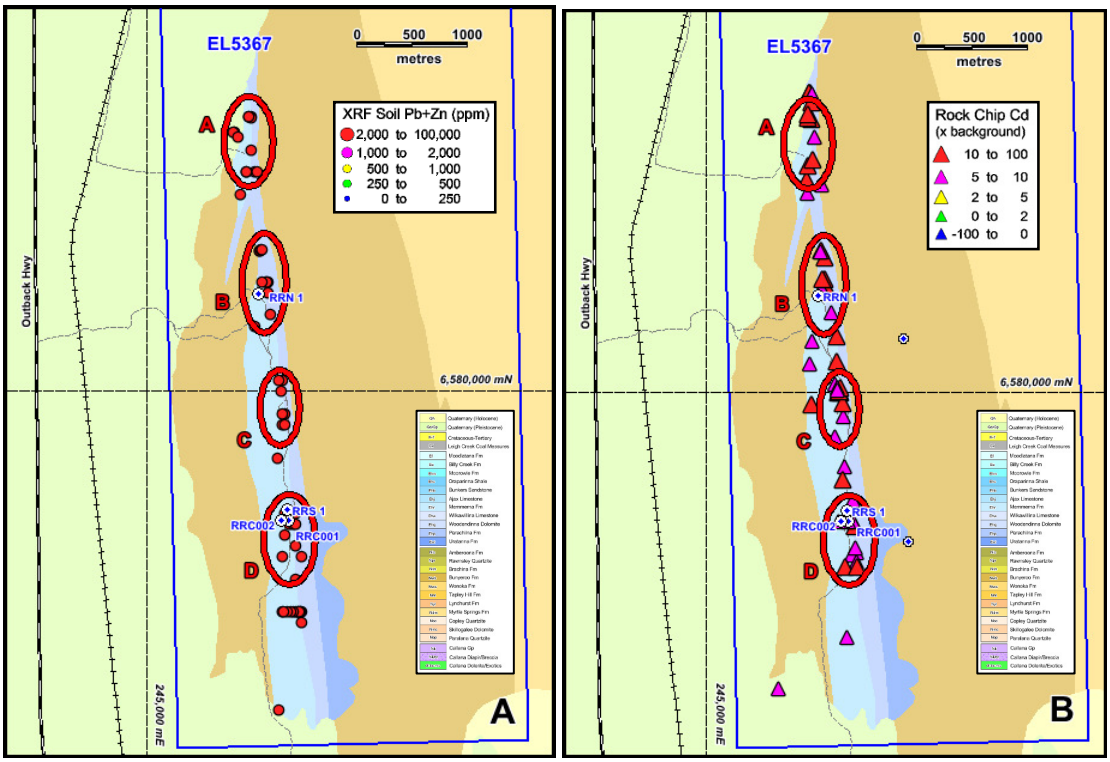

Figure 3 – Red Range pXRF Soil Pb+Zn (A) and Rock Chip Cd (B) w/ Historic Drilling

5. TOPOGRAPHY AND ENVIRONMENT

Landform and Topography

The Red Range area is located approximately 1.8km northwest of Beltana Hill in the western foothills of the Flinders Ranges in what is referred to as the Stirrup Iron Hills. Topography consists of moderately undulating relief and low hills of 20-40m elevation above the surrounding Torrens Plains elevation of ~160msl. Slopes are cut by small gullies and ephemeral creeks, Much of the area consists of rocky outcrops with thin stony soil cover. To the west topography flattens considerably where it is covered by Quaternary alluvial and colluvial deposits. The EPBC Protected Matters website characterizes the land as South Australia Arid Lands.

In a biological survey report by Brandle (1998) covering the North West Flinders Ranges area, dominant landforms were characterized as 1) Rocky hills, outcrops and ranges, 2) clay plains and hill slopes, 3) wetlands (including creeks, flood plains lakesand springs) and 4) sandy desert. All four of these types are present in the general project area with the specific drilling occurring within 2) clay plains and hill slopes.

The physiography and infrastructure of the project area is summarized in Figure 4. Drainage patterns in the area are dominantly east-west with the work area occurring between two major drainage channels, the Wariooota Creek to the north and the Breakfast Time Creek to the south which are fed by 2nd and 3rd order ephemeral creek and gullies.

Soil and surface cover data is not available on the Location SA web-based viewer with detailed soil mapping data ending just south of Hawker, SA and therefore a combination of other sources was therefore consulted with regard to soil information. 100,000 scale regolith mapping indicates the area is dominated by fresh to moderately weathered bedrock (Material Code: SFM) and data from the Australian Soil Resource Information System (ASRIS) website indicates the area is

dominated by sandy loam soil types. This is repeated in several vegetative and landform reports regarding the general North Flinders area. In the area of the proposed drill pads, soil is characterized by reddish, loose, rocky/gibber calcareous soil developed on Cambrian limestone and dolomite. Photographs of the proposed drill sites in Section 8 of this report provide excellent representation of the surface cover in the area.

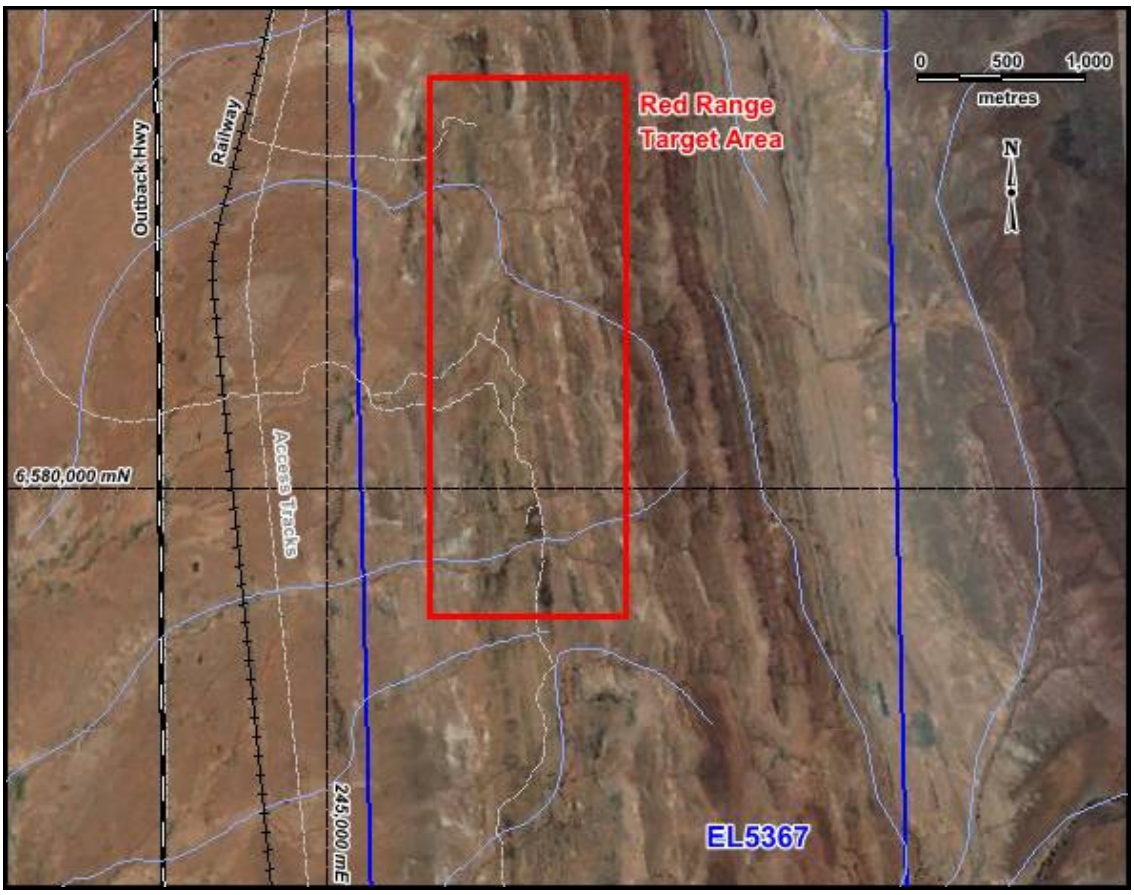

Figure 4 – Red Range Landforms and Physiography

Flora & Fauna

The Red Range project area is located primarily in the Chenopod Shrubland vegetation group but near the transition to Acacia Woodland to the east (Figure 5). A flora monitoring site (BEL1609) occurs approximately 6km south of the survey area. Observations at the site included 24 native and 8 introduced species. Dominant vegetation included Maireana astrotricha (Low Bluebush) above ground level Carrichtera annua (Wards Weed), Brassica tournefortii (Wild Turnip) and Austrostipa nitida (Spear Grass). As referenced from the SA Nature website several occurrences of invasive Buffel Grass were identified, all of which however were located along the highway to the west of the project area. A search of fauna species sitings in the project area was completed using the Atlas of Living Australia, the SANature web viewer as well as the report of Bandle (1998). Dominant mammals included Gray and Red Kangaroos as well as feral species (goats/donkeys). Small lizards were the most common reptiles with Emus and Wedge-tailed Eagles being the dominant birds.

A compilation of these results, along with dominant flora and fauna species is provided in Table 1 below.

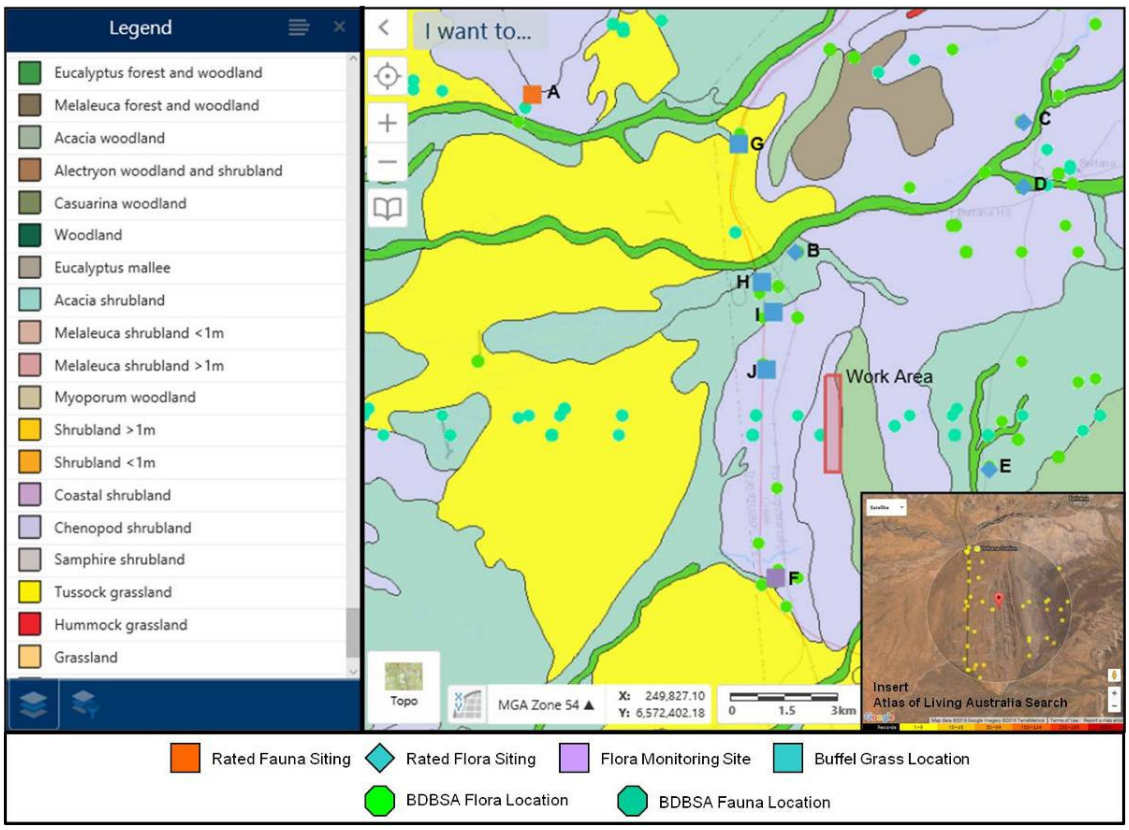

Figure 5 – Red Range Flora and Fauna Summary

Flora	Mammals	Reptiles	Birds
Atriplex vesicaria (Bladder Saltbush) Ptilotus obovatus (Silver Mulla Mulla) Enchylaena tomentosa (Ruby Saltbush) Rhagodia spinescens (Spiny Saltbush) Solanum ellipticum (Velvet Potato Bush) Acacia victoriae (Elegant Wattle) Maireana pyramidata (Black Bluebush) Sida petrophila (Rock Sida) Eremophila freelingii (Rock Fuchsia)	Macropus rufus (Red Kangaroo) Macropus giganteus (Eastern Gray Kangaroo) Macropus robustus (Eastern Wallaroo) Capra Hicus (Feral Goat) Equus asinus (Feral Donkey) Sminthopsis macroura (Stripe-faced Dunnart) Pseudomys bolami (Bolam's Mouse)	Ctenophorus nuchalis (Central Netted Dragon) Diplodactylus byrnei (Pink-blotched Gecko) Gehyra variegata (Tree Dtella) Tiliqua rugosa (Sleepy Lizard) Cryptoblepharus plagiocephalus (Desert Wall Skink) Pogona vitticeps (Central Bearded Dragon) Varanus gouldii (Sand Goanna)	Dromanaius novaehollandiae (Emu) Aquila audax (Wedge-tailed Eagle) Eolophus roseicapillus (Gallah)

Table 1 – Red Range Dominant Flora and Fauna Species

6. STAKEHOLDER CONSULTATION

Figure 6 below illustrates the location of existing land-use, aboriginal heritage and other areas of significant in the Red Range prospect area. Discussion of these values are presented below.

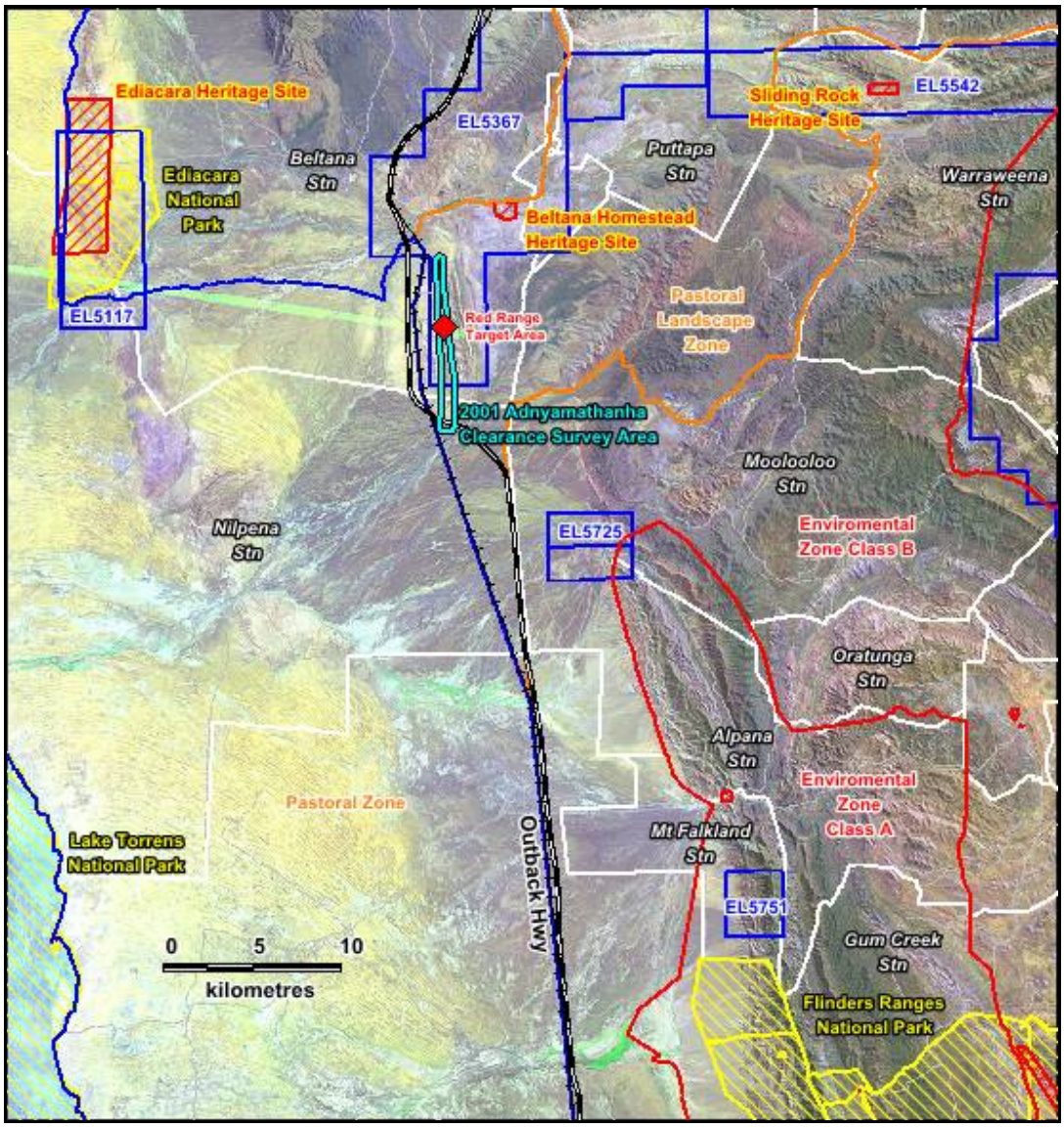

Figure 6 – Red Range Area Stakeholder and Other Values

Pastoral / Landowner

The Red Range target area occurs entirely within Beltana Station (CL1285/37). Land use with the surface lease includes low density sheep grazing as well as tourism/outpost activities at the nearby Beltana homestead approximately 10km to the northwest. An updated access agreement was signed with the landowner in early 2016 which included both Beltana Station as well as Putappa Station which covers the existing Beltana minesite. Communication and consultation with the landowner was maintained throughout the planning, execution and rehabilitation of the drill program in order to minimize conflicts with pastoral and other activities and to prevent damage or degradation to existing infrastructure.

Aboriginal Heritage

The greater Flinders Ranges project occurs within the Adnyamathanha No. 1 Native Title Claim (SAD6001/98) which was given consent determination in March 2009. In 2001 Perilya entered into a Mining Native Title Agreement with the Adnyamathanha People including all of Perilya's

exploration properties. Aboriginal heritage clearance surveys were undertaken over the Red Range area in September 2001 in advance of the previous RC drilling program, including the entirety of the current target area (Ellis & Fitzpatrick, 2001). Several sites and artefacts of significance were identified by the surveying which were logged into a site register of aboriginal heritage. As previous clearance surveys had already been undertaken, new clearances were not required for the current program however all sites identified from the 2001 clearance surveys were demarcated to ensure no damages to the sites would occur. Note that to deter access by the general public, individual sites have not been located on Figure 6.

Other Values

The Red Range area occurs within the Pastoral Landscape Zone of the Flinders Development Plan which has the stated objective of "the preservation of the environmental and scenic qualities of the foreground of the most prominent ranges" (DPTI, 2012). Although the drilling program was carried within the foothills to the Ranges, the impact was temporary and limited to the duration of the drill program itself. Progressive rehabilitation and monitoring as outlined in Section 8 below will monitor any potential increase in erosion from the project area. Several National Parks occur in the general region, namely the Flinders Ranges, Lake Torrens and Ediacara Conservation Park, however none are in proximity to the Red Range target area. The nearest State heritage site is Beltana Station, managed by the local pastoral landowner. Being approximately 10km to the northwest of the Red Range area however, no impact to the site was anticipated.

Permitting

Permitting for the current drill program was initiated in mid May 2016 with a Program of Environmental Protection and Rehabilitation (PEPR) Application through the Department of State Developments online web portal. Approval of the PEPR was received on 14 June 2016 (EPEPR 2016-1093). No other approvals were required in order for the work to commence.

7. 2016 DRILLING PROGRAM

Exploration Model & Targeting

As indicated above, the primary target for exploration in the North Flinders project area is Beltana-style zinc silicate mineralization. Known deposits are relatively small (<1Mt) but are near surface and typically exhibit extremely high grades (>30% Zn) making them suitable as Direct Ship Ore (DSO). The deposits are typically found within Lower Cambrian aged carbonate rocks, namely the Woodendinna Dolomite and Wilkawillina Limestone in fault contact with the underlying Neoproterozoic basement stratigraphy. Mineralization appears structurally controlled with evidence of sustained episodic deposition however replacement textures within the host carbonates are rare. Deposits often show a spatial association with Callana Gp breccias as well as karstic stratigraphy in the host rocks however a genetic link with these features is difficult to determine. Known deposits in the region are composed primarily of willemite [Zn_2SiO_4] with minor amounts of smithsonite [$ZnCO_3$], coronadite [$Pb(Mn_6^{4+}Mn_2^{3+})O_{16}$] and other hydrated, zinc-rich clay minerals. Alteration around the deposits is dominated by a strong hematization of the host rocks impinging a pervasive reddish brown colouration to the rocks to the point of often masking the willemite mineralization present.

Due to the non-sulphide nature of the mineralogy, most geophysical prospecting methods are ineffective for this style of mineralization. Although micro-gravity surveying has potential of locating larger deposits (>1Mt ?), burial to any significant depth would render the deposits invisible to even the most detailed gravity surveys. Geology, alteration and geochemistry are therefore the primary tools in targeting for zinc silicate mineralization.

The Red Range prospect was identified as a high priority for follow-up in 2013 given the geological setting and previously defined base metal surface anomalies. During 2014-2015 an extensive pXRF soil surveying and rock chip sampling was completed over the approximate 6km strike length of target stratigraphy. Soil surveying was originally completed on 500m spaced lines

however more detailed, prospect wide coverage at a 100m spacing was required to more accurately define the extent of individual anomalies.

The work defined four discreet anomalies along the prospective contact area including that previously tested by drilling in 2003 (Targets A-D - Figure 3, Table 2). The current drilling program targeted the three most northerly, untested geochemical anomalies. Targets A & C had seen no previous historic drilling. Target B was partially tested by drilling by Carpentaria in 1969 however the shallow depth of drilling (30m) suggested that the target had not been fully evaluated. Target D had also been previously tested by Carpentaria drilling as well as Perilya in early 2003 and was therefore given a lower priority for follow-up.

	Strike Length	pXRF Soil Survey			Rock Chip Trace Elements					
Anomaly *	(m)	Max Zn (ppm)	Max Pb (ppm)	Max Cu (ppm)	As	Cd	Mn	Sb	Se	V
A	700	14,572	4,271	282	na	A	A	a	a	A
B	450	6,208	2,853	300	A	A	A	A	A	A
C	450	52,022	16,585	3,154	a	A	A	A	a	A
D	400	7,574	11,521	702	a	A	A	A	a	A

Table 2 – Red Range Targeted Anomaly Summary

"na" = not anomalous
"a" = locally anomalous
"A" = extensively anomalous

Drilling was planned to target as near as possible to the strongest point of each pXRF anomaly accounting for the intensity, width and multi-element nature of the anomaly. Topography in some areas however necessitated relocating holes up to 100m away from the original planned hole locations. Drilling was planned from three separate drill pads with two holes completed at each pad. As evidenced from surface exposures, stratigraphy strikes north-south and dips steeply to moderately west in the area and therefore drilling will was oriented to the east with holes dips of -50deg and -75deg. The pierce points through the target zones were planned at vertical depths of approximately 50m and 95m to give sufficient indication whether potential for an open-pittable resource occurred at each target area.

Program Logistics, Execution & Timing

Planning and field work actually began in late 2015 after submission of budgets for the 2017 calendar year. Initial reconnaissance to determine access routes and the most optimal drill pad locations were initiated in December 2015 however final drill sites were not finalized until May 2016. The two southernmost drill pads were located within 50m of the existing station track however it was determined that given steep topography to the north, the most efficient way to access the northern pad would be to create a temporary 'overland' access track directly from the railway service road over the relatively flat Quaternary alluvial plain.

Upon receiving approval of the ePEPR application in June, earthworks commenced in early July to upgrade the existing access track to facilitate the mobilization of the drill rig as well as to undertake minor levelling of the proposed drill pad areas to accommodate the drilling equipment. No earthworks was required for the northern overland access track given the relatively flat topography in the area.

Reverse Circulation (RC) drilling commenced on 22 August and was completed on 08 September 2016. All logging of drill chips was completed onsite during drilling with pXRF readings taken on each metre of sample material to guide later selection of sample intervals for analytical work. Overall a total of 494m in 6 drill holes was completed during the program. The total meterage was approximately 318m (39%) below plan owing to more shallowly dipping stratigraphy than anticipated as well as drilling difficulties which hampered drilling too far into the underlying Proterozoic stratigraphy. Significant delays in completing the program were also encountered due to high rainfall events in late August. Table 2 provides a summary of the completed holes.

		Location			Orientation		Depth (m)		
Hole ID	**Drill Pad**	**Easting**	**Northing**	**RL**	**Azimuth**	**Dip**	***Planned***	**Actual**	**End Date**
RRC003	Northern	245870	6582158	220	89	-50	*120*	90	23-Aug-16
RRC004	Northern	245869	6582158	220	89	-75	*150*	84	29-Aug-16
RRC005	Central	246015	6581000	230	89	-55	*120*	78	02-Sep-16
RRC006	Central	246014	6581000	230	89	-75	*150*	78	03-Sep-16
RRC007	Southern	246170	6579785	225	89	-50	*120*	74	06-Sep-16
RRC008	Southern	246169	6579785	225	89	-75	*150*	90	08-Sep-16
						Totals	***810***	**494**	

Table 3 – Red Range RC Drilling Summary (MGA94)

Rehabilitation of the drill sites commenced almost immediately upon completion of the program with general site clean-up. Progressive rehabilitation of the sites continued in October and November however due to an unavailability of contracted equipment in late 2016 final rehabilitation of the drill sites and access roads could not be completed until early 2017. Section 8 below provides a more detailed summary of rehabilitation and reclamation efforts.

Drilling Results

Graphic summary logs and digital data of the completed holes including geochemical data are included as Appendix 3 to this report. Surface drill hole locations are illustrated in Figure 7 and geological cross sections of the drilling from each of the three drill pads are provided in Figures 8, 9 & 10.

Lithologies intersected by each of the holes were very similar and consistent with the geology observed at surface. Three to five metres of Quaternary sediments were intersected in holes at the Northern and Central drill pads consisting of highly oxidized brown clay rich material. Holes from the Southern pad collared directly into bedrock. Primarily massive textured light gray to brown Woodendinna dolomite with minor interbedded clay-rich and conglomeratic beds dominated each of the holes. Weak to moderate hematitic and limonitic alteration occurred throughout the sequence.

Light gray coloured Parachilna Fm sands and silt marked the contact between Cambrian and Proterozoic rocks. Thickness of the unit varied from 2-10m which was significantly less than suggested on the 100k geological map The unit was largely unconsolidated with a high water content and marked by reduced sample recovery and difficult drilling conditions, strongly suggestive of a fault bounded contact. A small creek also mimics the surface expression of the Parachilna Fm locally, likely also adding to the saturated nature of the unit.

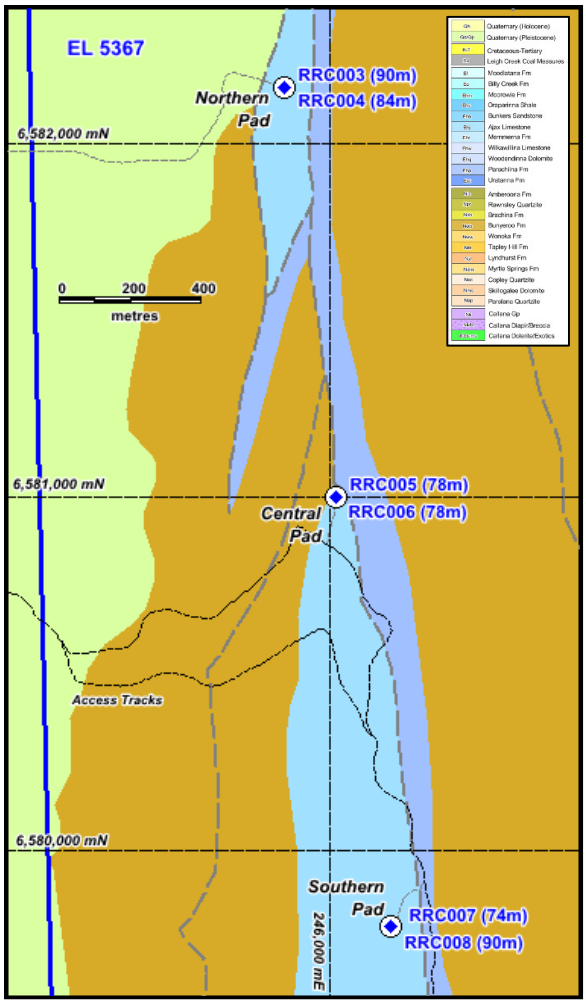

Figure 7 – Red Range 2016 RC Drillhole Locations

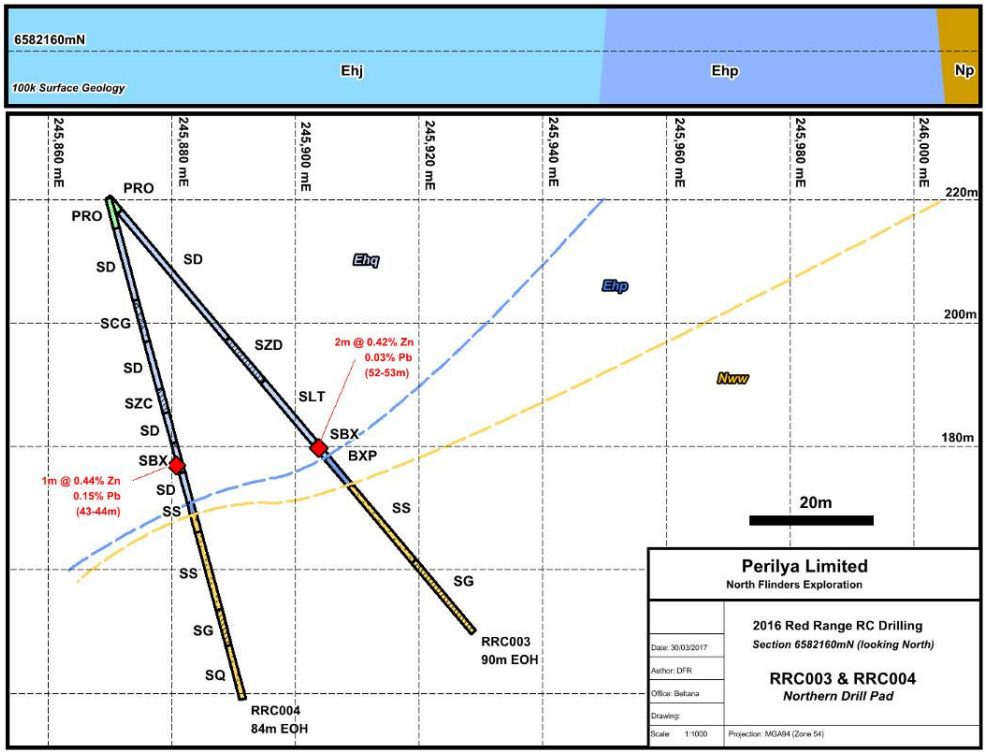

Figure 8 – Northern Drill Pad Section - RRC003 & RRC004 (6582160mN)

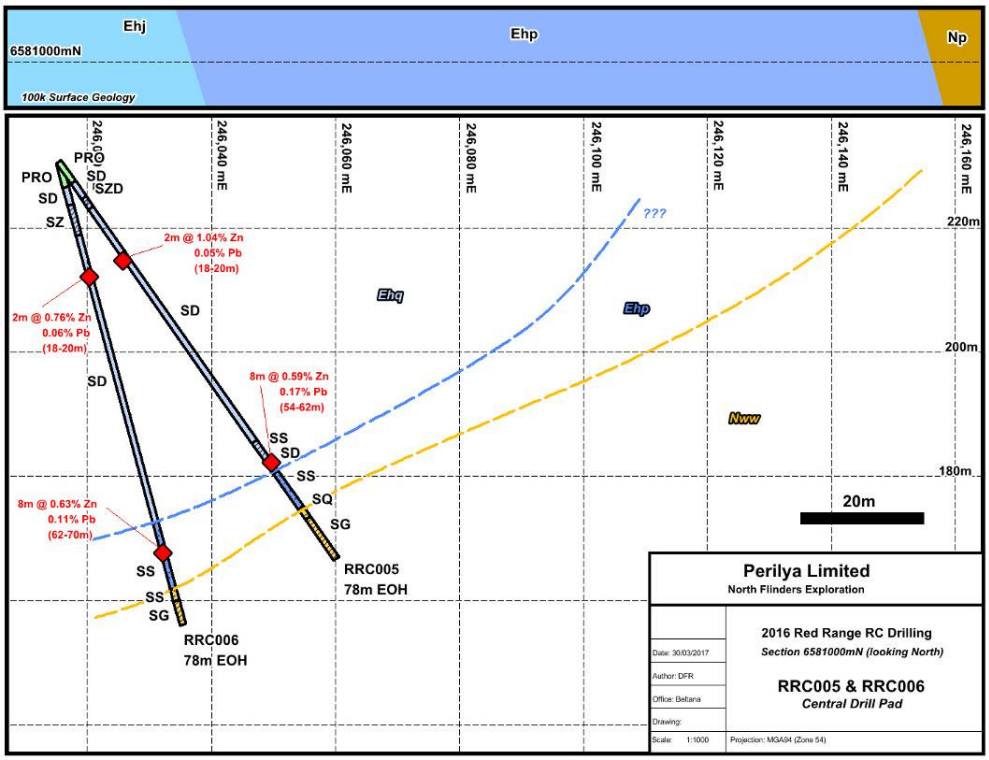

Figure 9 – Central Drill Pad Section - RRC005 & RRC006 (6581000mN)

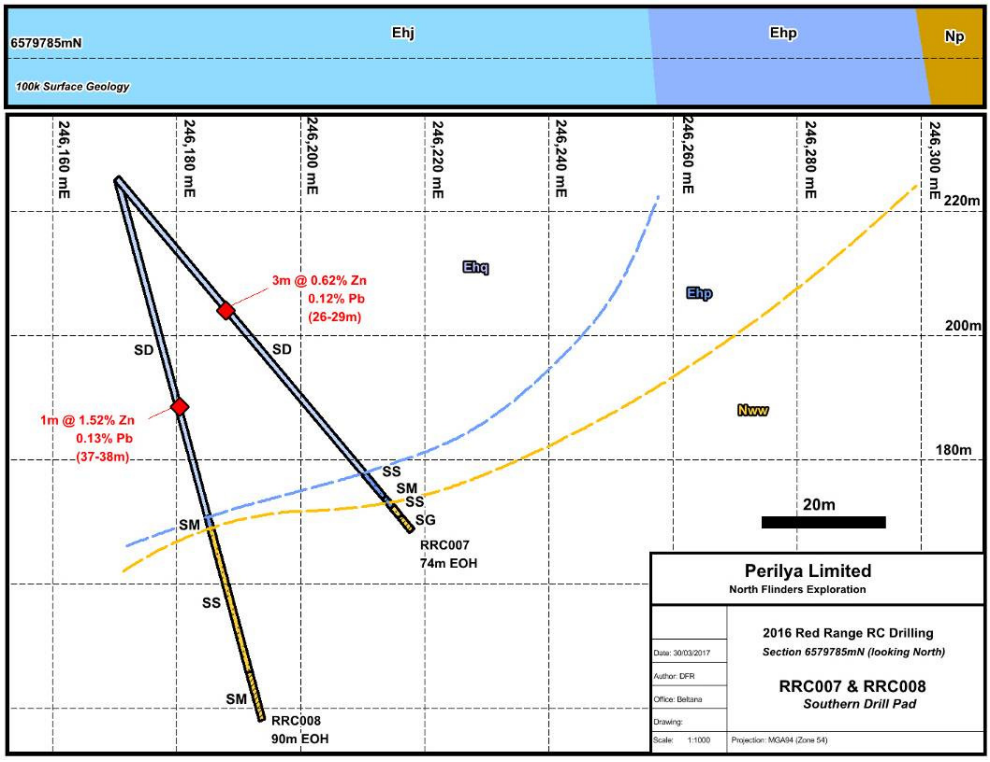

Figure 10 – Southern Drill Pad Section - RRC007 & RRC008 (6579780mN)

Proterozoic rocks intersected by the drilling generally consisted of an upper light to medium gray sand and silt rich unit from 2-15m thickness followed by a dark gray to black argillaceous unit. Rock were interpreted to belong to the Wonoka Fm given the relatively high clay content of the units. Although relatively unaltered, weakly elevated base metals and associated hematite alteration were returned from Proterozoic stratigraphy in holes RRC003 & RRC007 (see below).

Of note was the significantly shallower dip of stratigraphy as evidenced by the drilling compared to surface measurements in the area. Although originally estimated to have a moderate 45-60° dip, a much shallower 30-35° dip is suggested by contacts on the drill sections in Figures 8-10. This resulted in holes being significantly shorter than planned as well as relatively short toe spacing between intersections on each section. The discrepancy may be a function of the Parachilna contact being largely controlled by a low angle thrust fault rather than the primary depositional bedding measured in the Woodendinna dolomite at surface.

Geochemistry & Mineralization

Geochemical results were monitored by two processes for the drill program including pXRF analysis of all samples collected during the drilling activity which then guided analytical assay sampling upon completion of the program. Willemite mineralization, being difficult to identify visually, was only noted in holes from the Northern drill pad and therefore is not a suitable guide for sample selection.

Graphic drill logs provided in Appendix 3 to this report includes pXRF Pb, Zn & Cu results for each metre drilled and results of all subsequent assay sampling are provided in Table 4 below. Note that Table 4 includes only Ag, Pb, Zn & Cu. Full analytical results are included in the digital drillhole database attached as Appendix 8 to this report. Length weighted best assay results are also indicated on the drill sections in Figures 8-10. Standard QAQC procedures were followed during sampling including the submission of duplicate, standard and blank samples within the laboratory shipments.

HoleID	From	To	Interval	Sample	Lith	Fm	Ag_ppm	Pb_%	Zn_%	Cu_%
RRC003	51.00	52.00	1.00	L056001	SLT	Ehq	2	0.020	0.169	0.003
	52.00	53.00	1.00	L056002	SBX	Ehq	1	0.023	0.389	0.002
	53.00	54.00	1.00	L056003	SBX	Ehq	1	0.040	0.446	0.003
RRC004	0.00	1.00	1.00	L056004	PRO	Ter	1	0.077	0.221	0.003
	1.00	2.00	1.00	L056005	PRO	Ter	2	0.077	0.221	0.002
	2.00	3.00	1.00	L056006	PRO	Ter	1	0.089	0.297	0.002
	3.00	4.00	1.00	L056007	PRO	Ter	3	0.103	0.339	0.003
	4.00	5.00	1.00	L056008	PRO	Ter	2	0.116	0.376	0.004
	5.00	6.00	1.00	L056009	SD	Ehq	2	0.123	0.293	0.004
	6.00	7.00	1.00	L056010	SD	Ehq	1	0.112	0.268	0.006
	7.00	8.00	1.00	L056011	SD	Ehq	4	0.087	0.279	0.002
	8.00	9.00	1.00	L056012	SD	Ehq	3	0.055	0.157	0.002
	9.00	10.00	1.00	L056013	SD	Ehq	3	0.060	0.192	0.003
	40.00	41.00	1.00	L056015	SD	Ehq	1	0.064	0.123	0.011
	41.00	42.00	1.00	L056016	SBX	Ehq	3	0.074	0.166	0.006
	42.00	43.00	1.00	L056017	SBX	Ehq	2	0.061	0.231	0.004
	43.00	44.00	1.00	L056018	SBX	Ehq	2	0.149	0.438	0.008
	44.00	45.00	1.00	L056019	SZC	Ehq	2	0.089	0.135	0.007
	45.00	46.00	1.00	L056020	SZC	Ehq	2	0.071	0.073	0.007
RRC005	13.00	14.00	1.00	L056021	SD	Ehq	-1	0.034	0.172	0.005
	14.00	15.00	1.00	L056022	SD	Ehq	-1	0.037	0.248	0.005
	15.00	16.00	1.00	L056023	SD	Ehq	-1	0.045	0.313	0.004
	16.00	17.00	1.00	L056024	SD	Ehq	1	0.108	0.183	0.004
	17.00	18.00	1.00	L056025	SD	Ehq	1	0.053	0.100	0.003
	18.00	19.00	1.00	L056026	SD	Ehq	1	0.052	0.935	0.003
	19.00	20.00	1.00	L056027	SD	Ehq	1	0.045	1.135	0.003
	20.00	21.00	1.00	L056028	SD	Ehq	-1	0.011	0.190	0.001
	21.00	22.00	1.00	L056029	SD	Ehq	1	0.023	0.175	0.002
	37.00	38.00	1.00	L056031	SD	Ehq	1	0.070	0.415	0.004
	38.00	39.00	1.00	L056032	SD	Ehq	-1	0.055	0.267	0.005
	39.00	40.00	1.00	L056033	SD	Ehq	1	0.061	0.246	0.006
	40.00	41.00	1.00	L056034	SD	Ehq	1	0.032	0.302	0.007
	41.00	42.00	1.00	L056035	SD	Ehq	1	0.020	0.148	0.004
	42.00	43.00	1.00	L056036	SD	Ehq	3	0.135	0.560	0.006
	43.00	44.00	1.00	L056037	SD	Ehq	2	0.175	0.242	0.005
	44.00	45.00	1.00	L056038	SD	Ehq	3	0.156	0.287	0.006
	45.00	46.00	1.00	L056039	SD	Ehq	2	0.198	0.487	0.007
	46.00	47.00	1.00	L056040	SD	Ehq	2	0.142	0.336	0.005
	47.00	48.00	1.00	L056041	SD	Ehq	2	0.089	0.243	0.005
	48.00	49.00	1.00	L056042	SD	Ehq	2	0.044	0.177	0.006
	49.00	50.00	1.00	L056043	SD	Ehq	2	0.032	0.197	0.009
	50.00	51.00	1.00	L056044	SD	Ehq	3	0.079	0.202	0.008
	51.00	52.00	1.00	L056045	SD	Ehq	5	0.118	0.303	0.007
	52.00	53.00	1.00	L056046	SD	Ehq	4	0.157	0.497	0.005
	53.00	54.00	1.00	L056047	SD	Ehq	4	0.081	0.346	0.007
	54.00	55.00	1.00	L056048	SD	Ehq	3	0.112	0.542	0.029
	55.00	56.00	1.00	L056049	SZ	Ehq	3	0.091	0.424	0.018
	56.00	57.00	1.00	L056050	SZ	Ehq	2	0.127	0.492	0.034
	57.00	58.00	1.00	L056051	SZ	Ehq	2	0.229	0.662	0.041
	58.00	59.00	1.00	L056052	SZ	Ehq	2	0.205	0.558	0.032
	59.00	60.00	1.00	L056053	SD	Ehq	2	0.087	0.413	0.039
	60.00	61.00	1.00	L056054	SD	Ehq	2	0.106	0.771	0.033
	61.00	62.00	1.00	L056055	SSD	Ehp	3	0.383	0.887	0.063
	62.00	63.00	1.00	L056056	SSD	Ehp	5	0.243	0.140	0.026

HoleID	From	To	Interval	Sample	Lith	Fm	Ag_ppm	Pb_%	Zn_%	Cu_%
RRC006	17.00	18.00	1.00	L056057	SD	Ehq	1.00	0.123	0.210	0.004
	18.00	19.00	1.00	L056058	SD	Ehq	1.00	0.065	0.606	0.003
	19.00	20.00	1.00	L056059	SD	Ehq	1.00	0.050	0.911	0.002
	20.00	21.00	1.00	L056061	SD	Ehq	1.00	0.063	0.442	0.004
	21.00	22.00	1.00	L056062	SD	Ehq	2.00	0.027	0.194	0.002
	60.00	61.00	1.00	L056063	SD	Ehq	2.00	0.071	0.247	0.008
	61.00	62.00	1.00	L056064	SS	Ehp	2.00	0.079	0.383	0.011
	62.00	63.00	1.00	L056065	SS	Ehp	2.00	0.089	0.513	0.017
	63.00	64.00	1.00	L056066	SS	Ehp	2.00	0.070	0.437	0.020
	64.00	65.00	1.00	L056067	SS	Ehp	1.00	0.094	0.655	0.028
	65.00	66.00	1.00	L056068	SS	Ehp	2.00	0.111	0.850	0.023
	66.00	67.00	1.00	L056069	SS	Ehp	3.00	0.130	0.697	0.033
	67.00	68.00	1.00	L056070	SS	Ehp	2.00	0.125	0.761	0.031
	68.00	69.00	1.00	L056071	SS	Ehp	2.00	0.183	0.574	0.031
	69.00	70.00	1.00	L056072	SS	Ehp	2.00	0.092	0.541	0.007
RRC007	25.00	26.00	1.00	L056073	SD	Ehq	5.00	0.073	0.249	0.009
	26.00	27.00	1.00	L056074	SD	Ehq	5.00	0.140	0.550	0.020
	27.00	28.00	1.00	L056075	SD	Ehq	3.00	0.078	0.662	0.042
	28.00	29.00	1.00	L056076	SD	Ehq	4.00	0.155	0.636	0.061
	29.00	30.00	1.00	L056077	SD	Ehq	4.00	0.050	0.360	0.039
	30.00	31.00	1.00	L056078	SD	Ehq	4.00	0.066	0.416	0.035
	31.00	32.00	1.00	L056079	SD	Ehq	6.00	0.042	0.365	0.022
	32.00	33.00	1.00	L056080	SD	Ehq	8.00	0.040	0.246	0.020
	50.00	51.00	1.00	L056081	SD	Ehq	14.00	0.125	0.240	0.028
	51.00	52.00	1.00	L056082	SD	Ehq	12.00	0.164	0.292	0.038
	52.00	53.00	1.00	L056083	SD	Ehq	9.00	0.162	0.243	0.025
	53.00	54.00	1.00	L056084	SD	Ehq	8.00	0.148	0.283	0.019
	54.00	55.00	1.00	L056085	SD	Ehq	5.00	0.123	0.101	0.012
	55.00	56.00	1.00	L056086	SD	Ehq	4.00	0.128	0.373	0.018
RRC008	25.00	26.00	1.00	L056087	SD	Ehq	7.00	0.069	0.138	0.010
	26.00	27.00	1.00	L056088	SD	Ehq	7.00	0.114	0.215	0.011
	27.00	28.00	1.00	L056089	SD	Ehq	5.00	0.194	0.246	0.014
	28.00	29.00	1.00	L056090	SD	Ehq	5.00	0.123	0.202	0.011
	29.00	30.00	1.00	L056091	SD	Ehq	4.00	0.060	0.150	0.007
	30.00	31.00	1.00	L056093	SD	Ehq	8.00	0.067	0.182	0.009
	31.00	32.00	1.00	L056094	SD	Ehq	10.00	0.094	0.163	0.011
	32.00	33.00	1.00	L056095	SD	Ehq	7.00	0.073	0.253	0.018
	33.00	34.00	1.00	L056096	SD	Ehq	4.00	0.033	0.088	0.007
	34.00	35.00	1.00	L056097	SD	Ehq	5.00	0.027	0.136	0.006
	35.00	36.00	1.00	L056098	SD	Ehq	4.00	0.053	0.217	0.008
	36.00	37.00	1.00	L056099	SD	Ehq	4.00	0.081	0.369	0.009
	37.00	38.00	1.00	L056100	SD	Ehq	7.00	0.127	1.520	0.067
	38.00	39.00	1.00	L056101	SD	Ehq	4.00	0.069	0.368	0.012
	39.00	40.00	1.00	L056102	SD	Ehq	4.00	0.053	0.537	0.042
	40.00	41.00	1.00	L056103	SD	Ehq	6.00	0.097	0.733	0.085
	41.00	42.00	1.00	L056104	SD	Ehq	7.00	0.041	0.287	0.026

	Pb	Zn	Cu
	> 0.10%	> 0.20%	> 0.02%
	>0.15%	> 0.50%	> 0.04%
	>0.20%	> 1.00%	> 0.06%

Table 4 – Red Range RC Drilling Assay Results

Portable XRF Results

Portable XRF readings collected during drilling displayed similar results to the surface soil surveying completed over the Red Range target. Although zones of elevated base metal enrichment could be roughly correlated between drillholes on each section, correlation between sections was less evident.

The highest and most consistent zinc results were returned from RRC005 & RRC006 on the Central drill pad. RRC005 displayed a wide interval >1,000ppm Zn within the Woodendinna dolomite, extending >50m above the Parachilna contact. RRC006 returned a similar zone of elevated zinc however the >60m interval extended into most of the Parachilna Fm as well. Sporadic zones of elevated lead also occurred in both holes in proximity to the Parachilna Fm. Although widespread zinc enrichment was also encountered in holes RRC007 & RRC008 from the Southern drill pad, the mineralization is considerably more patchy with higher grade intervals separated by zones of lower grade (<1,000ppm Zn) material. The most significant lead results of the program were however returned from RRC007 which intersected an 8m interval averaging 3,602ppm Pb approximately 15m above the Parachilna contact. Copper results were generally low with very weakly anomalous zones occurring above and within the Parachilna Fm in holes from both the Central and Southern drill pads. Drillholes on the Northern drill pad displayed the least elevated base metal results with one weakly elevated zone apparent near the top of both RRC003 & RRC004 (1,000-2,000ppm Zn) and a second, higher grade interval (1,000-3,000ppm Zn) within and immediately above the Parachilna Fm. Of note however in RRC003 is a discreet zone of zinc enrichment (1,000-2,500ppm) over approximately 10m within the Proterozoic Wonoka Fm, possibly related to a fault structure given the water saturated nature of the interval. Potential fine grained pyrite was also noted immediately below this interval.

Assay Results

In general, assay samples were taken from any sample or sample interval returning greater than 2,000ppm Zn from the pXRF data. Assay results showed overall agreement with the pXRF data with assay results tending to return slightly higher results than pXRF. The highest lead results were returned from RRC005 between 57-63m averaging 0.21% Pb over 6m. As with the pXRF data, RRC005 & RRC006 displayed the widest and most consistently elevated zinc results, returning 0.40% Zn over 25m and 0.57% Zn over 10m respectively. The highest absolute zinc values were returned from RRC005 (1.14% Zn over 1m @ 19m downhole) and RRC008 (1.52% Zn over 1m @ 37m downhole). No significant copper values were returned with the highest result being only 0.08% Cu. Silver values were generally low (<3ppm) however slightly elevated results of up to 5-14ppm Ag were associated with intervals of higher lead content. No mineralization considered to be of economic significance was intersected by any of the drillholes.

8. REHABILITATION AND RECLAMATION

Rehabilitation of the drill pads commenced immediately upon completion of the program with general site clean-up and removal of pegs, flagging and fencing used to demarcate the drill sites. Earth and rock bunding used to prevent water flushed from the drillhole was also removed and if necessary, contaminated material was disposed of in containment areas at the Beltana minesite.

Further rehabilitation was not completed until November 2016 after all data from the program had been reviewed and final selection of samples for analytical work had been determined. Sample bags for analysis were collected and remaining, unused material was tipped back down the open hole in a “last out, first in” order to mimic as closely as possible the original stratigraphy. Any excess material not able to be returned to the hole was removed from site and disposed of at the Beltana minesite along with the used sample bags. Upon completion of backfilling the holes, PVC casings were cut off ~30cm below surface, capped, labelled and buried below surface.

As limited earthworks were required for levelling of the drill pads prior to drilling, final rehabilitation did not require heavy equipment for contouring of the sites. Soil contaminated by drill cuttings was removed and disposed of with the areas then raked and contoured by hand to promote natural revegetation. Figure 11 below provides photographs of each drill site at various stage of the rehabilitation process including prior to drilling, immediately after drilling and after final rehabilitation.

	Pre-Drilling	Pre-Rehabilitation	Post Rehabilitation
Northern Drill Pad			
Central Drill Pad			
Southern Drill Pad			

Figure 11 – Drill Site Rehabilitation Photos

The last stage of rehabilitation for the program was the rehabilitation of the station and usage tracks used to access the drill sites. Due to a lack of contracting equipment in Leigh Creek, this work was delayed until early 2017. Prior to initiating the work, consultation with the landowner was undertaken to determine any requirements they may have had regarding the work with regard to pastoral activities. Limited earthworks were required on the existing station tracks with work restricted to contouring of the banks of small ephemeral creeks to minimize erosion and silting downstream. For the usage track accessing the Northern drill pad, heavy equipment was not utilized in order to prevent further disturbance. Rehabilitation of this track was limited to hand raking where necessary to promote revegetation and the collection of pegs and flagging used to demarcate the track.

Although active rehabilitation of the work areas has been completed, monitoring of the area will continue to evaluate revegetation and any potential increase in erosion resulting from the clearing areas. Note that all rehabilitation activities have been documented in the Exploration Compliance Report submitted in conjunction with the Annual Activities Report for EL5367.

9. EXPENDITURES

Total expenditures for the Red Range program during the active period of May-November 2016 totalled approximately $192,997.13. Total direct drilling and analytical costs related to the program amounted to $71,216.09 of which 50% ($35,608.05) are eligible expenditures for reimbursement under the PACE Discovery Drilling 2016 (Table 5). As per the terms of Grant Agreement DPY9-31 however, a maximum of $30,000 is available for rebate from the program. Invoice drilling costs per metre were approximately $105/m which was considerably increased by “inactive rate” chargeable hours due to high rainfall events when drilling was suspended for access considerations.

Company	Invoice #	Period	Category	Amount
Longstar	15	19 - 31 August, 2016	Medicals	$2,307.37
			Mobilization	$6,605.00
			Drilling	$12,493.00
			Inactive	$8,300.00
Longstar	104	01 - 19 September, 2016	Drilling	$23,007.00
			Inactive	$8,180.00
Longstar	105	04 - 21 October, 2016	Demobilization	$6,830.00
			Drilling Subtotal	***$67,722.37***
ALS Minerals	3712700	13 November, 2016	Assays (104 samples, 68%)	$3,493.72
			Analytical Subtotal	***$3,493.72***
			Total Direct Costs	**$71,216.09**
			PACE 2016 Eligible (50%)	***$35,608.05***
		as per Grant Agreement DPY9-31	**Rebate Requested***	**$30,000.00**

Table 5 – Red Range RC Drilling Direct Cost Summary

A full accounting of expenditures for direct drilling and analytical costs eligible for partial reimbursement under the PACE Discovery Drilling 2016 initiative are provided in Appendix 2 included with this report.

10. CONCLUSIONS

No mineralization considered to be of economic significance was intersected during the 2016 drilling program. The prospectivity of Red Range area has therefore been considerably downgraded based on the current drill program. The target still however represents an area of extensive base metal anomalism with a strike length of greater than 6km. Although the strongest

portions of the surface geochemical expression have been effectively tested, drilling on ~1km spaced sections cannot completely discount the existence of economic mineralization in the target area. Additional work is therefore warranted.

11. FUTURE PROPOSED WORK

Future work will include major and trace element analysis of selected samples from the 2016 drilling which was not completed during the original program. As the most significant mineralization was encountered in RRC005 & RRC006 from the Central drill pad, pathfinder elements will be analysed to determine if additional work in this area is required.

Finally, due to less elevated surface anomalism, the southernmost portion of the target area near the boundary of EL5367 has seen limited historic exploration. The area however, as evidenced from the 100k scale regional geology map, is interpreted to be underlain by Uratanna Fm sediments, the lowermost Cambrian units present in the region (see Figure 2b). This suggests that the area may represent an original basinal, fault-bounded structure. Detailed mapping in this area will be undertaken to confirm the geology and determine if fault structures are present which may have resulted in increased fluid flow and potential base metal deposition.

12. REFERENCES

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Hole ID: RRC003 **Easting:** 245870 **Northing:** 6582158 **Az:** 90 **Dip:** -50 **EOH:** 90m

Hole ID	From	To	Fm	Lith	Col1	Col2	Alt	Min	Wth	Wet/Dry	Rcvy %	Comments	XRF Pb	XRF Zn	XRF Cu	XRF Pb+Zn
RRC003	0	1	Ter	PRO	br		ox4		2	Dry	50	Open hole hammer - weathd soil and dolomite rocks	513	562	0	1075
RRC003	1	2											629	615	0	1244
RRC003	2	3											338	596	0	934
RRC003	3	4	Ehq	SD	br	gy			1	Dry	50	Weathered khaki dolomite, collar at 5m depth	1074	1367	47	2441
RRC003	4	5											632	1191	0	1823
RRC003	5	6											172	756	0	928
RRC003	6	7	Ehq	SSD	kk	br			1	Dry	60	Problems with sample return to 12m depth	497	1147	0	1644
RRC003	7	8											728	1118	0	1846
RRC003	8	9											0	0	0	0
RRC003	9	10											1002	1283	52	2285
RRC003	10	11											626	1076	0	1702
RRC003	11	12											1356	951	74	2307
RRC003	12	13	Ehq	SD	kk	gy			1	Dry	70	Grey khaki dolomite	855	656	0	1511
RRC003	13	14											993	780	0	1773
RRC003	14	15											359	565	0	924
RRC003	15	16											322	492	0	814
RRC003	16	17	Ehq	SD	br	kk			0	Dry	75	Brown dolomite	612	953	0	1565
RRC003	17	18											1200	1418	0	2618
RRC003	18	19	Ehq	SD	gy	kk	si1		0	Dry	80	Red and brown banded dolomites	385	793	77	1178
RRC003	19	20											344	720	50	1064
RRC003	20	21											529	1074	79	1603
RRC003	21	22											352	1644	0	1996
RRC003	22	23											562	1167	50	1729
RRC003	23	24											1130	1143	0	2273
RRC003	24	25											723	1270	55	1993
RRC003	25	26	Ehq	SD	kk				0	Dry	90	Brown khaki monotomous dolomites	1092	1548	60	2640
RRC003	26	27											269	1327	0	1596
RRC003	27	28											268	739	49	1007
RRC003	28	29											332	1425	60	1757
RRC003	29	30	Ehq	SD	rd	br	li2		0	Dry	100	Red oxidized brown hematitic altd	720	1570	0	2290
RRC003	30	31	Ehq	SZD	gy	kk			0	Dry	100	Grey khaki weakly limonitic massive silty dolomites	205	565	89	770
RRC003	31	32											195	506	78	701
RRC003	32	33											415	763	109	1178
RRC003	33	34											1839	982	134	2821
RRC003	34	35											1303	1009	170	2312
RRC003	35	36											579	793	151	1372
RRC003	36	37											1369	841	148	2210
RRC003	37	38											870	1272	109	2142
RRC003	38	39											465	801	72	1266
RRC003	39	40	Ehq	SD	br	or	hm1		0	Dry	100	Brownish orange hematite dolomite	652	1505	54	2157
RRC003	40	41											524	1764	0	2288
RRC003	41	42	Ehq	SLT	gy	br			0	Dry	100	Grey brown massive granular limestone dolomite	323	685	39	1008
RRC003	42	43											115	500	0	615
RRC003	43	44											126	782	0	908
RRC003	44	45											62	592	0	654
RRC003	45	46											200	594	0	794
RRC003	46	47											168	779	0	947
RRC003	47	48											162	480	0	642
RRC003	48	49											126	640	0	766
RRC003	49	50											112	613	0	725
RRC003	50	51											127	575	51	702
RRC003	51	52											192	1807	0	1999
RRC003	52	53	Ehq	SBX	br	rd	fe2	Wil	0	Dry	100	Red brown iron rich dolomite with elevated Zn	251	3465	0	3716
RRC003	53	54											249	2039	0	2288
RRC003	54	55	Ehq	CAV					0	Dry	5	Cavty and water at 54m - almost no sample return	0	0	0	0
RRC003	55	56	Ehp	BXP	br		fe3		1	Wet	70	Clay rich iron zone	304	1401	0	1705
RRC003	56	57											304	1178	0	1482
RRC003	57	58											685	1802	0	2487
RRC003	58	59											462	1516	53	1978
RRC003	59	60	Nww	SS	gn	pk			0	Wet	60	Pink green sandy clayey sands and silts	352	958	0	1310
RRC003	60	61											285	885	0	1170
RRC003	61	62											307	926	0	1233
RRC003	62	63											258	884	37	1142
RRC003	63	64											278	1072	0	1350
RRC003	64	65											439	757	0	1196
RRC003	65	66											598	1372	41	1970
RRC003	66	67											337	889	0	1226
RRC003	67	68											382	1143	48	1525
RRC003	68	69											421	1651	0	2072
RRC003	69	70	Nww	SS	rd	br	fe3		0	Wet	70	Red brown hem altd dolomites with lots of water	200	525	0	725
RRC003	70	71											267	1312	0	1579
RRC003	71	72											392	2328	0	2720
RRC003	72	73											328	1594	0	1922
RRC003	73	74											399	1306	51	1705
RRC003	74	75											378	988	0	1366
RRC003	75	76	Nww	SG	gy	kk			0	Wet	75	Grey shaley limestone with graphite or fgr pyrite?	289	540	0	829
RRC003	76	77											188	425	0	613
RRC003	77	78											116	272	0	388
RRC003	78	79											162	159	0	321
RRC003	79	80											89	232	42	321
RRC003	80	81											53	246	0	299
RRC003	81	82											76	327	0	403
RRC003	82	83											97	294	0	391
RRC003	83	84											46	765	0	811
RRC003	84	85											66	472	0	538
RRC003	85	86											173	265	0	438
RRC003	86	87											130	267	0	397
RRC003	87	88											74	286	0	360
RRC003	88	89											279	633	0	912
RRC003	89	90											204	370	0	574

Hole ID: RRC004 **Easting:** 245870 **Northing:** 6582158 **Az:** 89 **Dip:** -75 **EOH:** 84m

Hole ID	From	To	Fm	Lith	Col1	Col2	Alt	Min	Wth	Wet/Dry	Rcvy %	Comments	XRF Pb	XRF Zn	XRF Cu	XRF Pb+Zn
RRC004	0	1	Ter	PRO	br	kk	fe3		4	Dry	75	Weathered limonitic brown dolomite rubble	650	939	42	1589
RRC004	1	2											762	1868	0	2630
RRC004	2	3											564	1346	0	1910
RRC004	3	4											717	1955	0	2672
RRC004	4	5											727	1617	51	2344
RRC004	5	6	Ehq	SD	br	or	li4		3	Dry	80	Limonitic weathered dolomite	855	1321	0	2176
RRC004	6	7											1062	1423	63	2485
RRC004	7	8											918	1309	0	2227
RRC004	8	9											497	1137	0	1634
RRC004	9	10											518	1354	49	1872
RRC004	10	11											461	628	0	1089
RRC004	11	12											475	1322	0	1797
RRC004	12	13											660	1219	0	1879
RRC004	13	14	Ehq	SD	br	wh	li3	Cb	2	Dry	80	Crg rubbly Manganiferous quartz band	621	1509	0	2130
RRC004	14	15											725	1453	0	2178
RRC004	15	16											468	909	0	1377
RRC004	16	17											237	655	0	892
RRC004	17	18	Ehq	SCG	gr	kk	li2		1	Dry	90	Khaki brown cream leached dolomite	395	782	0	1177
RRC004	18	19											508	892	0	1400
RRC004	19	20											379	989	51	1368
RRC004	20	21											700	866	0	1566
RRC004	21	22											678	623	0	1301
RRC004	22	23											1009	1431	0	2440
RRC004	23	24											515	784	0	1299
RRC004	24	25	Ehq	SD	gy	br	li1		0	Dry	100	Grey fgr lam dolomite with minor lim bands	244	602	0	846
RRC004	25	26											127	434	0	561
RRC004	26	27	Ehq	SD	gy	bk			0	Dry	100	Dk grey limestone dolomitic siltstone	156	570	0	726
RRC004	27	28											1029	1463	92	2492
RRC004	28	29	Ehq	SD	kk	br	li2		0	Dry	100	Lt brown khakifgr dolomite	549	1183	63	1732
RRC004	29	30											294	444	0	738
RRC004	30	31											897	726	164	1623
RRC004	31	32											340	447	39	787
RRC004	32	33	Ehq	SZC	gy	wh			0	Dry	100	Light grey fgr dolomite	1100	610	63	1710
RRC004	33	34											345	432	53	777
RRC004	34	35											414	422	60	836
RRC004	35	36											441	720	50	1161
RRC004	36	37	Ehq	SD	kk	gy			0	Dry	100	Light brown khaki grey dolomite	388	600	46	988
RRC004	37	38											543	547	53	1090
RRC004	38	39											345	462	0	807
RRC004	39	40											295	703	85	998
RRC004	40	41											453	542	47	995
RRC004	41	42	Ehq	SBX	rd	br	fe5	Wil	0	Damp	90	Red dark brown purple hematitic material	466	1830	0	2296
RRC004	42	43											796	2279	0	3075
RRC004	43	44											1167	2901	0	4068
RRC004	44	45	Ehq	SZC	gn	gy	fe1		1	Wet	70	Greenish Pink weathered silts, water, poor recovery	519	524	0	1043
RRC004	45	46											575	431	0	1006
RRC004	46	47	Ehq	SD	br	pk	fe2		1	Wet	60	Red brown oxidized clays	1508	1250	132	2758
RRC004	47	48											904	896	156	1800
RRC004	48	49											1198	1914	250	3112
RRC004	49	50											1531	992	316	2523
RRC004	50	51											844	924	92	1768
RRC004	51	52	Ehp	SS	cr	gy			2	Wet	50	Cream grey green silty	781	957	91	1738
RRC004	52	53											279	388	0	667
RRC004	53	54	Nww	SGC	gy				0	Wet	70	Grey sandy siltstones	247	439	86	686
RRC004	54	55											367	484	51	851
RRC004	55	56											1179	1148	98	2327
RRC004	56	57	Nww	SS	rd	pu	fe3		1	Wet	75	Red sands	819	410	104	1229
RRC004	57	58	Nww	SS	gy				0	Wet	80	Grey green silty sanstones	488	489	71	977
RRC004	58	59											371	765	67	1136
RRC004	59	60											126	408	0	534
RRC004	60	61											106	358	48	464
RRC004	61	62											61	231	0	292
RRC004	62	63											131	587	0	718
RRC004	63	64											84	323	0	407
RRC004	64	65											66	255	0	321
RRC004	65	66											89	351	0	440
RRC004	66	67											134	306	0	440
RRC004	67	68											219	750	0	969
RRC004	68	69	Nww	SS	rd	pk	fe1		0	Wet	90	Pinkish sandstones	103	316	0	419
RRC004	69	70	Nww	SG	gy	wh			0	Wet	100	Pale grey white pallid silty shale greywackes	106	294	0	400
RRC004	70	71											76	240	0	316
RRC004	71	72											52	225	0	277
RRC004	72	73											125	343	0	468
RRC004	73	74											127	545	0	672
RRC004	74	75											104	443	0	547
RRC004	75	76	Nww	SQ	gy			Py	0	Wet	100	Dk grey crystalline laminated quartzite, possible Py	131	761	0	892
RRC004	76	77											71	391	0	462
RRC004	77	78											198	292	0	490
RRC004	78	79											60	359	63	419
RRC004	79	80											246	443	0	689
RRC004	80	81											114	186	0	300
RRC004	81	82											127	316	44	443
RRC004	82	83											103	245	0	348
RRC004	83	84											0	0	0	0

Hole ID: RRC005 **Easting:** 245870 **Northing:** 6581000 **Az:** 89 **Dip:** -55 **EOH:** 78m

Hole ID	From	To	Fm	Lith	Col1	Col2	Alt	Min	Wth	Wet/Dry	Rcvy %	Comments	XRF Pb	XRF Zn	XRF Cu	XRF Pb+Zn
RRC005	0	1	Ter	RPO	ye	br	fe4		3	Dry	50	Primarily clay with rare clasts	272	214	0	486
RRC005	1	2											591	500	0	1091
RRC005	2	3											606	426	0	1032
RRC005	3	4											910	282	0	1192
RRC005	4	5	Ehq	SD	rd	br	fe3		2	Dry	75	Approx 30% Clay with mod/str Hematite	292	825	60	1117
RRC005	5	6											287	169	0	456
RRC005	6	7											161	359	0	520
RRC005	7	8	Ehq	SZD	br	gr	fe2		3	Dry	50	Unconsolidated silt/clay	382	941	75	1323
RRC005	8	9											118	311	0	n/a
RRC005	9	10	Ehq	SD	rd		fe3		2	Dry	75	Pale red mod hem altd	364	734	0	1098
RRC005	10	11											307	1510	0	1817
RRC005	11	12	Ehq	SD	br	gy	fe2		2	Dry	50	mix of clay and weakly altd dolomite	143	762	0	905
RRC005	12	13											240	700	0	940
RRC005	13	14											189	1390	51	1579
RRC005	14	15											187	1265	0	1452
RRC005	15	16											296	1834	0	2130
RRC005	16	17											1028	1085	42	2113
RRC005	17	18											413	648	0	1061
RRC005	18	19	Ehq	SD	bl	br	mn3		1	Dry	80	black chips - hematitic dolomite with Mn enrichment	541	9744	0	10285
RRC005	19	20											339	6133	0	6472
RRC005	20	21	Ehq	SD	rd	gy	li2		1	Dry	75	weakly hematized and limonitic	73	926	0	999
RRC005	21	22											111	1056	0	1167
RRC005	22	23											281	1567	0	1848
RRC005	23	24											125	1253	0	1378
RRC005	24	25											290	1245	0	1535
RRC005	25	26											245	1241	0	1486
RRC005	26	27											531	1028	0	1559
RRC005	27	28	Ehq	SD	ye	gy	li1		2	Dry	75	weakly limonitic dolomite	393	1639	0	2032
RRC005	28	29	Ehq	SD	rd		hm3		1	Dry	80	approx 25% unaltd dolomite	506	1655	0	2161
RRC005	29	30											1036	2413	0	3449
RRC005	30	31											805	1828	0	2633
RRC005	31	32	Ehq	SD	br		li1		1	Dry	80	unaltered dolomite	698	1165	0	1863
RRC005	32	33											749	1534	0	2283
RRC005	33	34											450	1108	0	1558
RRC005	34	35	Ehq	SD	bl		hm3		1	Dry	80	strongly hematite altd dolomite	886	1658	50	2544
RRC005	35	36	Ehq	SD	pk		hm1		1	Dry	80	weakly altd	757	1814	0	2571
RRC005	36	37	Ehq	SD	gy				1	Dry	80	unaltd	343	1814	0	2157
RRC005	37	38	Ehq	SD	rd		hm3		1	Dry	90	strongly hematite altd dolomite	671	4658	0	5329
RRC005	38	39											457	2225	0	2682
RRC005	39	40	Ehq	SD	pk	gy	hm2		1	Dry	50	mixture of analtd and altd dolomite	272	1269	0	1541
RRC005	40	41	Ehq	SD	rd		hm4		1	Dry	100	coarse sample strogly altd crystalline	271	1735	0	2006
RRC005	41	42	Ehq	SD	gy		li1		1	Dry	100	unaltd	148	933	0	1081
RRC005	42	43	Ehq	SD	pk	rd	hm3		1	Dry	100	mod altd dolomite	1569	4524	0	6093
RRC005	43	44	Ehq	SD	rd	pk	hm2		1	Dry	100	wk to mod altn	2019	1353	0	3372
RRC005	44	45											870	1513	50	2383
RRC005	45	46											1444	3462	66	4906
RRC005	46	47	Ehq	SD	gy	pk	hm1		1	Dry	100	weakly altd	1155	2482	74	3637
RRC005	47	48											1507	2045	49	3552
RRC005	48	49											461	2034	0	2495
RRC005	49	50											256	1400	89	1656
RRC005	50	51	Ehq	SD	rd	pk	hm3		1	Dry	80	increasing clay content	966	1535	61	2501
RRC005	51	52											866	2090	78	2956
RRC005	52	53											1036	2595	0	3631
RRC005	53	54											556	2317	59	2873
RRC005	54	55	Ehq	SD	gy	rd	hm4		1	Dry	80	fgr sample strongly hematitic	932	3270	190	4202
RRC005	55	56	Ehq	SZ	rd	br	hm2		1	Dry	80	clay increasing down hole - damp samples	749	2574	147	3323
RRC005	56	57											1226	3625	182	4851
RRC005	57	58											303	1089	92	1392
RRC005	58	59											1181	3295	237	4476
RRC005	59	60	Ehq	SD	gy		hm1		1	Dry	100	rare hematite chips	752	2605	460	3357
RRC005	60	61											1029	5454	410	6483
RRC005	61	62	Ehp	SSD	gy	wh			2	Wet	70	unconsolidated silty sands (presumably Ehp)	3372	5883	578	9255
RRC005	62	63											1518	298	0	1816
RRC005	63	64											1987	345	82	2332
RRC005	64	65	Ehp	SS	gy				1	Wet	60	unconsolidated sands	346	54	0	400
RRC005	65	66											751	201	0	952
RRC005	66	67											702	135	0	837
RRC005	67	68											769	133	59	902
RRC005	68	69	Nww	SC	pk	gy			1	Wet	100	clay content decreasing	755	136	0	891
RRC005	69	70											643	173	68	816
RRC005	70	71	Nww	SG	gy				1	Wet	70	light to dk grey interbedded sandy, fgr sandstones	710	607	88	1317
RRC005	71	72											1251	1351	126	2602
RRC005	72	73											533	238	41	771
RRC005	73	74											405	82	0	487
RRC005	74	75											603	162	0	765
RRC005	75	76											385	115	0	500
RRC005	76	77											235	62	0	297
RRC005	77	78	Nww	SS	gy	ye			1	Wet	80	unalterd sandstone	447	161	61	608

Hole ID: RRC006 **Easting:** 245870 **Northing:** 6581000 **Az:** 89 **Dip:** -75 **EOH:** 78m

Hole ID	From	To	Fm	Lith	Col1	Col2	Alt	Min	Wth	Wet/Dry	Rcvy %	Comments	XRF Pb	XRF Zn	XRF Cu	XRF Pb+Zn
RRC006	0	1	Ter	RRO	rd		li2		4	Dry	75	Weathered clay with minor lithic clasts	619	286	0	905
RRC006	1	2											550	698	59	1248
RRC006	2	3											712	613	90	1325
RRC006	3	4											881	636	61	1517
RRC006	4	5	Ehq	SD	pk	br	hm1		2	Dry	90	Minor clay content	0	0	0	0
RRC006	5	6											500	598	55	1098
RRC006	6	7											364	451	57	815
RRC006	7	8	Ehq	SZ	gy				1	Dry	80	unconsolidated clays and silt	116	190	0	306
RRC006	8	9	Ehq	SD	rd		hm1		1	Dry	90	minor clay content	468	638	89	1106
RRC006	9	10											205	640	0	845
RRC006	10	11	Ehq	SZ	br	rd	hm3		1	Dry	100	mod to stron hem altn	293	2113	65	2406
RRC006	11	12											250	1441	53	1691
RRC006	12	13											189	1215	0	1404
RRC006	13	14	Ehq	SD	gy				2	Dry	90	rare hematite chips	130	810	0	940
RRC006	14	15	Ehq	SD	pk		hm1		1	Dry	100	weakly altered with minor clay	256	1074	0	1330
RRC006	15	16											326	1320	0	1646
RRC006	16	17											453	729	0	1182
RRC006	17	18											1169	1130	54	2299
RRC006	18	19	Ehq	SD	br	gy	hm4	Wil	1	Dry	100	pink Willemite mineralization?	357	3783	0	4140
RRC006	19	20											384	4124	0	4508
RRC006	20	21	Ehq	SD	rd		hm2		1	Dry	90	rare Hem chips	698	2859	0	3557
RRC006	21	22	Ehq	SD	gy	rd	hm1		2	Dry	90	weak to mod altn	470	1447	0	1917
RRC006	22	23											183	1276	0	1459
RRC006	23	24											166	1070	0	1236
RRC006	24	25											97	835	0	932
RRC006	25	26											452	1434	0	1886
RRC006	26	27											244	1049	0	1293
RRC006	27	28											175	1089	0	1264
RRC006	28	29											627	1259	0	1886
RRC006	29	30	Ehq	SD	gy	rd	hm2		1	Dry	100	unaltered dolomite	456	1810	0	2266
RRC006	30	31											1425	3818	61	5243
RRC006	31	32	Ehq	SD	gy				1	Dry	100	unaltered dolomite	312	1167	45	1479
RRC006	32	33											234	920	0	1154
RRC006	33	34											1178	2206	0	3384
RRC006	34	35	Ehq	SD	or		hm1		1	Dry	100	weak hem altn in portions	502	1388	0	1890
RRC006	35	36											280	1361	0	1641
RRC006	36	37											421	1901	0	2322
RRC006	37	38	Ehq	SD	gy				1	Dry	100	unaltered dolomite	308	1836	62	2144
RRC006	38	39	Ehq	SD	pk	gy	hm3		0	Dry	100	weak to mod altd dolomite	352	1658	0	2010
RRC006	39	40											434	2261	0	2695
RRC006	40	41											277	1240	0	1517
RRC006	41	42											598	2177	0	2775
RRC006	42	43	Ehq	SD	gy				0	Dry	100	unaltered dolomite	342	1686	0	2028
RRC006	43	44	Ehq	SD	rd		hm4		0	Dry	100	strongly hematite altd dolomite	442	1258	47	1700
RRC006	44	45	Ehq	SD	or	gy	hm3		0	Dry	100	mod hemtatitic	466	2045	0	2511
RRC006	45	46											260	1015	0	1275
RRC006	46	47											276	1741	0	2017
RRC006	47	48											358	1697	0	2055
RRC006	48	49	Ehq	SD	rd		hm3		0	Dry	100	mod to str hem altd	658	1961	65	2619
RRC006	49	50											330	1520	0	1850
RRC006	50	51	Ehq	SD	or	rd	hm4		0	Dry	100	strongly hematite altd dolomite	296	609	0	905
RRC006	51	52											276	1142	0	1418
RRC006	52	53											387	1562	79	1949
RRC006	53	54											304	912	72	1216
RRC006	54	55	Ehq	SD	rd		hm2		0	Dry	90	clay increasing downhole	336	1320	94	n/a
RRC006	55	56											522	1608	46	2130
RRC006	56	57											161	1011	151	1172
RRC006	57	58											637	2184	110	2821
RRC006	58	59											331	1301	106	1632
RRC006	59	60											523	1765	116	2288
RRC006	60	61											540	1475	98	2015
RRC006	61	62	Ehp	SS	gy				2	Wet	90	mostly unconsolidated rare lithic	658	2158	81	2816
RRC006	62	63											729	3222	167	3951
RRC006	63	64											584	3272	166	3856
RRC006	64	65											1062	4819	267	5881
RRC006	65	66											962	5832	198	6794
RRC006	66	67											843	4793	213	5636
RRC006	67	68											1080	4745	301	5825
RRC006	68	69											1601	4607	352	6208
RRC006	69	70											586	1556	0	2142
RRC006	70	71											1033	1485	74	2518
RRC006	71	72											857	841	153	1698
RRC006	72	73	Nww	SS	pk				1	Wet	75	sandstone to quartzite lithology	468	937	44	1405
RRC006	73	74											447	280	0	727
RRC006	74	75	Nww	SG	gy				0	Wet	90	unconsolidated 50% lithic	467	161	0	628
RRC006	75	76											478	707	47	1185
RRC006	76	77											377	557	0	934
RRC006	77	78											292	718	38	1010

Hole ID: RRC007 **Easting:** 245870 **Northing:** 6579785 **Az:** 89 **Dip:** -50 **EOH:** 74m

Hole ID	From	To	Fm	Lith	Col1	Col2	Alt	Min	Wth	Wet/Dry	Rcvy %	Comments	XRF Pb	XRF Zn	XRF Cu	XRF Pb+Zn
RRC007	0	1	Ehq	SD	ye	or	li2		3	Dry	100	Collar in bedrock	606	698	0	1304
RRC007	1	2											792	665	63	1457
RRC007	2	3	Ehq	SD	rd		hm2		2	Dry	100	wk to mod hem	1219	1137	69	2356
RRC007	3	4											2078	1936	0	4014
RRC007	4	5	Ehq	SD	gy	kk	hm1		1	Dry	100	wk to unaldt	614	425	0	1039
RRC007	5	6											588	415	84	1003
RRC007	6	7											1165	556	56	1721
RRC007	7	8	Ehq	SD	rd		hm3		1	Dry	100	mod-str hematite	3113	3174	307	6287
RRC007	8	9	Ehq	SD	br		hm1		1	Dry	100	weakly altd	402	965	104	1367
RRC007	9	10											471	809	125	1280
RRC007	10	11	Ehq	SD	rd	pk	hm3		1	Dry	100	mod to str altn	1150	2193	74	3343
RRC007	11	12	Ehq	SD	pk	gy	hm2		1	Dry	100	hem decreasing down hole	903	1662	98	2565
RRC007	12	13											453	963	69	1416
RRC007	13	14											687	1179	58	1866
RRC007	14	15											673	1351	72	2024
RRC007	15	16	Ehq	SD	rd		hm3		1	Dry	100	mod hem altd w minor clays	716	881	86	1597
RRC007	16	17											833	1211	53	2044
RRC007	17	18											684	1430	0	2114
RRC007	18	19	Ehq	SD	bk	rd	hm4		1	Dry	100	fgr sample very strongly altd	759	1460	0	2219
RRC007	19	20	Ehq	SD	gy	kk			1	Dry	100	unaltd dolomite	470	446	0	916
RRC007	20	21											234	372	0	606
RRC007	21	22											292	338	0	630
RRC007	22	23	Ehq	SD	rd		hm3		1	Dry	100	mod altd pale red dolm	312	557	63	869
RRC007	23	24	Ehq	SD	gy		hm1		1	Dry	100	weakly altd w rare hem chips	750	1280	0	2030
RRC007	24	25											218	1525	0	1743
RRC007	25	26											1020	916	72	1936
RRC007	26	27	Ehq	SD	rd	br	hm3		1	Dry	100	mod to str altd	1337	9219	276	10556
RRC007	27	28	Ehq	SD	gy	kk	hm2		1	Dry	100	wk to mod altn increasing downhole	757	5902	454	6659
RRC007	28	29											591	2678	205	3269
RRC007	29	30											551	3655	351	4206
RRC007	30	31	Ehq	SD	rd	pu	hm4		1	Dry	100	strongly altd	211	3346	105	3557
RRC007	31	32	Ehq	SD	gy		hm1		1	Dry	100	weakly altd	182	2191	139	2373
RRC007	32	33											307	961	131	1268
RRC007	33	34											585	875	143	1460
RRC007	34	35											647	1754	257	2401
RRC007	35	36											551	1069	124	1620
RRC007	36	37											303	699	69	1002
RRC007	37	38											695	1340	0	2035
RRC007	38	39											721	1192	48	1913
RRC007	39	40	Ehq	SD	gy				0	Dry	100	unaltered	1041	1965	190	3006
RRC007	40	41											2563	1933	341	4496
RRC007	41	42	Ehq	SD	rd		hm4		1	Dry	100	mod altd dolomite	2205	2609	538	4814
RRC007	42	43											12586	826	205	13412
RRC007	43	44											1712	1325	99	3037
RRC007	44	45											1579	830	103	2409
RRC007	45	46											5140	992	203	6132
RRC007	46	47											1988	875	262	2863
RRC007	47	48											565	663	318	1228
RRC007	48	49	Ehq	SD	br		hm1		1	Dry	100	weakly altd	228	1461	182	1689
RRC007	49	50	Ehq	SD	rd	pu	hm3		1	Dry	90	mod altd variable grainsize	140	908	94	1048
RRC007	50	51											1985	3735	447	5720
RRC007	51	52											671	687	72	1358
RRC007	52	53											1437	1979	147	3416
RRC007	53	54											1228	1406	131	2634
RRC007	54	55	Ehq	SD	pk	rd	hm2		1	Dry	80	increasing clay content	1765	1606	203	n/a
RRC007	55	56											602	1202	46	1804
RRC007	56	57	Ehq	SD	gy	rd	hm3		0	Dry	90	hem increasing downhole	301	489	0	790
RRC007	57	58											347	925	0	1272
RRC007	58	59											342	404	0	746
RRC007	59	60											390	1521	0	1911
RRC007	60	61											163	623	0	786
RRC007	61	62											232	900	0	1132
RRC007	62	63	Ehp	SS	gy				0	Dry	100	abrupt transition to Parachilna Fm	320	607	0	927
RRC007	63	64											213	649	0	862
RRC007	64	65											355	446	0	801
RRC007	65	66											287	549	0	836
RRC007	66	67											625	1524	0	2149
RRC007	67	68	Ehp	SM	wh				0	Wet	70	rare lithic clasts	574	2173	56	2747
RRC007	68	69											1905	1048	57	2953
RRC007	69	70	Nww	SS	pk				0	Wet	80	Minor clay content	560	310	54	870
RRC007	70	71											540	305	0	845
RRC007	71	72	Nww	SC	gy	gn			1	Wet	70	mostly clay	2464	486	0	2950
RRC007	72	73											707	742	0	1449
RRC007	73	74											338	1162	0	1500

Hole ID: RRC008 **Easting:** 245870 **Northing:** 6579785 **Az:** 89 **Dip:** -75 **EOH:** 90m

Hole ID	From	To	Fm	Lith	Col1	Col2	Alt	Min	Wth	Wet/Dry	Rcvy %	Comments	XRF Pb	XRF Zn	XRF Cu	XRF Pb+Zn
RRC008	0	1	Ehq	SD	or	br	li4		3	Dry	100	Collar in bedrock weakly oxidized	2290	3342	83	5632
RRC008	1	2											861	706	48	1567
RRC008	2	3											611	479	0	1090
RRC008	3	4	Ehq	SD	rd		hm1		2	Dry	100	weakly hem altd	3031	2732	0	5763
RRC008	4	5	Ehq	SD	br		hm1		1	Dry	100	wk to unaldt	420	301	49	721
RRC008	5	6	Ehq	SD	rd		hm2		1	Dry	100	corase grained	697	1005	107	1702
RRC008	6	7	Ehq	SD	br	gy			0	Dry	100	wk altn	900	1308	109	2208
RRC008	7	8											743	794	160	1537
RRC008	8	9	Ehq	SD	pk		hm2		0	Dry	100	Minor clay content	602	564	107	1166
RRC008	9	10	Ehq	SD	rd		hm2		0	Dry	100	mod hematite altn	971	1343	197	2314
RRC008	10	11											574	852	66	1426
RRC008	11	12											1183	1384	104	2567
RRC008	12	13											780	950	83	1730
RRC008	13	14											1386	1051	85	2437
RRC008	14	15											594	936	80	1530
RRC008	15	16											635	1069	54	1704
RRC008	16	17											814	1360	53	2174
RRC008	17	18											538	1331	75	1869
RRC008	18	19	Ehq	SD	gy	rd	hm3		0	Dry	100	slight increase in altn	1286	2513	0	3799
RRC008	19	20	Ehq	SD	gy				0	Dry	100	weakly altered	578	1298	55	1876
RRC008	20	21											703	1281	66	1984
RRC008	21	22	Ehq	SD	gy				0	Dry	100	change to fgr grainsize	536	1222	0	1758
RRC008	22	23	Ehq	SD	rd		hm2		0	Dry	100	mod altn fgr	711	1617	103	2328
RRC008	23	24	Ehq	SD	gy	kk	hm1		0	Dry	100	weakly altd	345	517	0	862
RRC008	24	25											384	618	0	1002
RRC008	25	26											410	736	0	1146
RRC008	26	27	Ehq	SD	rd		hm3		0	Dry	100	mod to strong hem altn	1896	3181	89	5077
RRC008	27	28											1935	1332	168	3267
RRC008	28	29	Ehq	SD	br	rd	hm4		0	Dry	100	strongly hematite altd dolomite with >1% Zn	480	922	48	1402
RRC008	29	30	Ehq	SD	pk	gy	hm2		0	Dry	100	weak to mod hem altd <>1% Zn	428	897	0	1325
RRC008	30	31											345	841	49	1186
RRC008	31	32											346	685	67	1031
RRC008	32	33	Ehq	SD	gy		hm1		0	Dry	100	wk altn > 1% Zn	242	409	68	651
RRC008	33	34											238	581	0	819
RRC008	34	35	Ehq	SD	br	rd	hm4		0	Dry	100	strong altn	309	1758	74	2067
RRC008	35	36											483	1472	83	1955
RRC008	36	37	Ehq	SD	ye	br	li1		0	Dry	100	almost unaltered	562	3505	106	4067
RRC008	37	38											921	3340	138	4261
RRC008	38	39	Ehq	SD	rd		hm2		0	Dry	100	mix of unaltered and altered	564	9909	556	10473
RRC008	39	40	Ehq	SD	gy	hm1			0	Dry	100	dk grey chips	314	3187	268	3501
RRC008	40	41											561	3820	246	4381
RRC008	41	42											195	1369	145	1564
RRC008	42	43	Ehq	SD	gy	pk	hm2		0	Dry	100	mixture of analtd and altd dolomite	753	884	0	1637
RRC008	43	44											999	718	138	1717
RRC008	44	45	Ehq	SD	gy				0	Dry	100	dark grey unaltered dolomite	1763	695	386	2458
RRC008	45	46											419	385	179	804
RRC008	46	47											388	500	108	888
RRC008	47	48											1501	315	87	1816
RRC008	48	49	Ehq	SD	or	gy	hm2		0	Dry	100	light green and hem altd chips, possible malachite?	711	1201	0	1912
RRC008	49	50	Ehq	SD	bk	gy	mn2		0	Dry	100	dark grey to black manganiferous chips	1164	587	55	1751
RRC008	50	51	Ehq	SD	rd		hm3		0	Dry	100	hem increasing downhole	742	448	94	1190
RRC008	51	52											338	1310	302	1648
RRC008	52	53											306	740	307	1046
RRC008	53	54											199	457	120	656
RRC008	54	55	Ehq	SD	gy				0	Dry	100	unaltered	105	379	49	n/a
RRC008	55	56	Ehq	SD	rd	gy	hm1		0	Dry	100	unaltered dolomite	332	1085	91	1417
RRC008	56	57	Ehp	SS	gy				0	Dry	100	abrupt transition to Parachilna Fm	90	261	59	351
RRC008	57	58											182	383	0	565
RRC008	58	59	Nww	SS	gy				0	Dry	100	alternating light and dark grey silty sands	158	256	0	414
RRC008	59	60											226	266	0	492
RRC008	60	61											392	755	0	1147
RRC008	61	62											137	337	0	474
RRC008	62	63											199	1069	0	1268
RRC008	63	64											198	809	0	1007
RRC008	64	65											85	333	0	418
RRC008	65	66											96	541	0	637
RRC008	66	67											579	1186	0	1765
RRC008	67	68											293	645	0	938
RRC008	68	69											876	1020	71	1896
RRC008	69	70											467	621	0	1088
RRC008	70	71											272	468	0	740
RRC008	71	72											169	347	0	516
RRC008	72	73											79	931	0	1010
RRC008	73	74											500	494	0	994
RRC008	74	75											163	379	0	542
RRC008	75	76											134	348	0	482
RRC008	76	77											226	461	0	687
RRC008	77	78											149	531	0	680
RRC008	78	79											225	630	0	855
RRC008	79	80											88	737	0	825
RRC008	80	81											96	568	0	664
RRC008	81	82											157	509	0	666
RRC008	82	83	Nww	SM	gy	bl			0	Dry	100	dark grey to bk argillaceous material	406	1046	0	1452
RRC008	83	84											128	461	0	589
RRC008	84	85											165	653	0	818
RRC008	85	86											342	1224	0	1566
RRC008	86	87											229	923	0	1152
RRC008	87	88											156	875	0	1031
RRC008	88	89											329	999	0	1328
RRC008	89	90											333	944	0	1277

Red Range Geological & Geochemical Legend

Formation

Ter	Quaternary Cover Sediments
Ehq	Woodendinna Fm (Cambrian)
Ehp	Parachilna Fm (Cambrian)
Nww	Wonoka Fm (NeoProterozoic)

Lithology

BXP	Fault
CAV	Cavity
PRO	Residual Soils
SBX	Breccia
SCG	Conglomerate
SD	Dolomite
SG	Graywacke
SLT	Limestone
SM	Mudstone
SQ	Quartzite
SS	Sandstone
SSD	Sandy Dolomite
SZ	Siltstone
SZC	Gray Siltstone
SZD	Dolomitic Siltstone

Colour

bk	Black
bl	Blue
br	Brown
cr	Cream
gn	Light Green
gr	Dark Green
gy	Gray
kk	Khaki
or	Orange
pk	Pink
rd	Red
wh	White
ye	Yellow

Alteration

fe	Iron Oxides
hm	Hematite
li	Limonite
mn	Manganese
ox	Oxidized
si	Silica

Alteration Intesity

1	Unaltered
2	Weak
3	Moderate
4	Strong
5	Intense

Mineralization

Cb	Carbonate
Py	Pyrite
Wil	Willemite

Weathering

0	Fresh
1	Weak
2	Moderate
3	Strong
4	Intense
5	Complete

Textures

- Massive
- Sandstones/Quartzite
- Siltstones/Mudstone
- Conglomerate/Breccia

Geochemistry

	pXRF Pb & Zn	**pXRF Cu**
	1,000-1,500 ppm	100-250 ppm
	1,500-2,000 ppm	250-500 ppm
	>2,000 ppm	>500 ppm

pXRF Pb+Zn

<-- 0 ppm 10,000 ppm -->

Assays

	Pb	**Zn**	**Cu**
	> 0.10%	> 0.20%	> 0.02%
	> 0.15%	> 0.50%	> 0.04%
	> 0.20%	> 1.00%	> 0.06%