FINAL REPORT

EL 8247

23RD NOVEMBER, 1993 - 4TH OCTOBER 1996

WARREGO WEST PROJECT

1:250,000 - TENNANT CREEK

NORTH STAR RESOURCES N.L. - LICENSEE

NEXUS MINERALS N.L. - OPERATOR

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1. SUMMARY

The Warrego West Project (EL8247) lies some 5 kms W-S of Warrego Mine and some 50 kms W-N-W of Tennant Creek.

On the second anniversary of EL8247, 40 graticular blocks representing 50% of the area held under tenure were relinquished in accordance with its Northern Territory Mining Act. A clerical error occurred prior to lodgment of the relinquishment forms with N.T. DOME whereby the wrong portion of EL8247 was relinquished. A relinquishment report (Rafty (1996)) was submitted for the actual segment of EL8247 inadvertently retained. Upon realisation of the error a new EL application (EL9567) was applied for on the 27th May 1996 and granted on the 31st October 1996, covering an area of 56 graticular blocks. Consequently no relinquishment report was submitted for the portion of EL8247 inadvertently relinquished. The 1994-1995 Annual Report (Rafty and Hemming (1996)) was submitted to the NT DOME covering the area relinquished. As this report is a final report on EL8247 it encompasses all exploration undertaken during the life of the license negating the need to submit a separate relinquishment report on the area actually relinquished in November 1995.

Exploration over the Warrego West Project (EL8247) has been oriented at defining Tennant Creek polymetallic mineralisation (Au-Cu-Bi) associated with ironstone bodies with a high magnetite content occurring in early Proterozoic turbitic (arenites, greywackes, siltstone, argillaceous banded ironstone (haematite shale) sediments of the Waramungh Formation. In the Warrego district mineralised bodies appear to be structurally located in WNW trending corridors.

North Star Resources N.L. (licensee) carried out evaluation of past exploration activities and carried out ground magnetic surveys identifying 10 discrete magnetic bulls eyes and dipole like anomalies (see Figure 2) out of 17 possible targets worthy of follow up drilling. These targets labelled T1-T5, T7, T8, T11, T12, T15 remained unexplained by previous geological interpretations.

In 1994-1995 Nexus Minerals N.L. (operator) reviewed all exploration data and carried out an extensive literature review. The review indicated the Warrego West Project area was under explored and possibly misinterpreted as Warrego granite.

Nexus Minerals concluded that although anomalies T8 and T11 required drill testing the likelihood of the magnetic anomalies being magnetic bodies in Waramunga sediments was remote as magnetic anomalies some 6 kms to the east were identified as being in Cambrian sediments overlying Warrego Granite. Anomalies T8 and T11 lie in or on the border of freehold Aboriginal property. Consequently access for drilling would require detailed negotiations. Nexus Minerals N.L. drilled 3,469m of shallow RAB testing six magnetic anomalies (T1-5, 7) located in the eastern sector of EL8247) during 1995 (see Rafty and Hemming (1996)).

The results of the drilling undertaken by Nexus Minerals N.L. (Rafty and Hemming (1996)) confirmed significant although low grade Au (≤ 8pp6), Cu (≤ 410ppm), Pb (≤ 85ppm), Zn (≤ 25ppm) and Bi (≤ 9ppm) mineralisation in the 0-50m vertical depth range from 4m composite sampling of 89 holes (WWR1-89) declined at 60° to grid N (AMG).

Interpretation of the results has indicated the anomalous mineralisation (≥ 1ppbAu; ≥ 10ppmCu, Pb, Zn; ≥ 1ppmBi) forms dispersion haloes as a function of ph changes above and below the water table generally at or near the bottom of the holes. This is reflected in horizontal laying of iron hydroxides/oxides and distinctive haematite-goethite; goethite-limonite; and goethite alteration zones. The drill holes intersected a sequence of sheared Proterozoic psammitic and tuffaceous sediments with sheared intrusive Warrego Granite and pegmatite dykes and sills. Rare Proterozoic dolerite dykes/sills were intersected. The Proterozoic lithologies are overlain by a 20m thick Cainozoic cover consisting of 5 m of Quaternary colluvium and 15m of Tertiary clay, silcrete, laterite, saprolite.

The drill testing of anomalies T1 - T5, T7 defined significant anomalous geochemistry from all anomalies. The T7 anomaly, however, was the only area intersecting significant magnetite-chlorite alteration from 52 - 54m in hole WWR 22 on section 3300E at 8000N at the contact of sheared sediments and granite. Anomalous Cu (20ppm) and Zn (110ppm) mineralisation is recorded from the intersection demonstrating a related Cu - Zn halo on the section.

The style of economic mineralisation at Tennant Creek occurs principally in zoned settings associated with magnetite in fresh psammitic sediments (Waramunga Formation) below 100m vertical. Consequently the likely dispersion detected in the weathered zone at depths ≤ 50m will be far greater than concentrations deemed critical for defining economic concentration of elements. The results of the RAB drilling and interpretations support the need for deep RC drilling of targets T1 - T5, T7 in conjunction with shallow RAB drilling of further targets T6, 9, 10, 12 - 16.

Upon receipt of the 1994/1995 annual report on EL8347 North Star Resources N.L and Nexus Minerals N.L. conferred to formulate an exploration strategy for the 1995/1996 field season. In view of the lack lustre results and the need to drill to depths in excess of 100m vertical coupled with the lack of suitable drilling equipment in the Tennant Creek region due to commitment to long term contracts, it was decided to place the project out for joint venture with a major company operating in the Tennant Creek region. The granting of a new Tenement EL9567 in lieu of the inadvertent relinquishment of a portion of EL8247 hastened a fresh approach to be taken to exploring the Warrego West Project area. At the time of writing a prospective joint venture partner had not been secured.

2. LOCATION

The Warrego West Project area is located just within the Phillip Creek pastoral lease near the western boundary (see fig. 2) with the aboriginal freehold land of the Karlantijpa Land Trust, which also overlaps the western boundary of EL8247. There does not appear to be any current pastoral activity over EL8247.

Excellent road access exists into the Project area. The main access is via the bituminised Tennant Creek - Warrego road for 51kms to the Warrego Townsite fence boundary. Thence westwards on an unformed gravel track around the perimeter of Warrego townsite/minesite for 4.4kms to the intersection of a westward trending formed gravel road with a disused power line on the south side of the gravel road. Thence 1.4kms along the power line cleared unformed gravel track to the intersection of a south trending unformed gravel track (see fig.2). The south trending track provides the main access into EL8247 which is traversed some 900m - 15.7km south of the intersection. A further two south trending unformed gravel tracks intersect the westward trending power line access track some 6.8kms and 11.7kms west of the main south trending access tract. These tracks also transect EL8247. The southward trending tracks are not maintained and regrowth vegetation over the tracks is common from season to season. There are two E-W trending unformed gravel tracks. One track links the three southward bound tracks some 11kms south of the main westward road from Warrego. The second E-W trending unformed gravel track links the main southward bound track with the NW trending formed access track for the Amadeus-Darwin gas pipeline on the far SE boundary of EL8247 some 11kms ESE of the main southward bound unformed gravel track and 10kms south of the main westward formed gravel road from Warrego (see fig.2). The access track for the Amadeus-Darwin gas pipe line intersects the Warrego-Tennant Creek road some 1.7kms east of the Warrego townsite fence line. This track is closed to unauthorised use.

Exploration Licence EL8247 is essentially covered by Quaternary soils (insitu and transported) and alluvium sheet wash over Proterozoic and Cambrian bedrock. Drainage appears to be southward -SW flowing in response to a drop in gradient of the topography from the NE to the SW. In the northern and southern sections of the licence low positive relief occurs as low rounded hills formed by thin flat lying cherts and chert breccias of the Cambrian Gum Ridge Formation over Proterozoic rocks (Sakalidis and Romanoff (1994)).

Vegetation reflects the widespread Cainozoic cover with thick spinifex grass in clumps upto 1m high and kerosene grass interspersed with scattered eucalyptus and turpentine bush. The mulga scrub occurs in areas of deep soil cover (Sakalidis and Romanoff (1994)) particularly in the NE and SE areas of EL8247. Owing to the arid climate with most rainfall from November - March due to monsoon activity in Northern Australia, fires from lightning strikes or deliberately lit leave burned stakes (particularly turpentine bush) creating havoc with vehicle tyres (Sakalidis and Romanoff (1994)).

3. TENEMENT STATUS

Exploration Licence EL8247 is registered in the name of North Star Resources N.L. Nexus Minerals N.L. has entered into a joint venture with North Star Resources to explore EL8247 as part of an integrated joint venture involving EL8246, 8247, 8388, 8461 and 8816 in the Tennant Creek district. Nexus Minerals N.L. is required to meet minimum Mines Department expenditure on EL8247 in conjunction to expending $134,800 over a 4 year period to earn a 65% interest commencing 9th November, 1994.

Nexus Minerals N.L. earned a 25% interest in EL8247 by spending $51,700. This interest was earnt by 12th November 1995. Nexus Minerals N.L. withdrew from the integrated joint venture involving EL8246, 8388, 8461 on the 7th August 1996.

Exploration Licence EL8247 was granted on the 23rd November, 1993 for six years and consists of 80 blocks totalling 251 sq.kms located in the west central sector of Tennant Creek 1:250,000 sheet SE 53 - 14, Northern Territory, and lying some 50km WNW of Tennant Creek. The annual minimum expenditure has been assessed at $32,000. The licence surrounds EL7874 covering 16 blocks (50.2sq.km) (see fig.2).

On the 23rd November, 1995, EL8247 was reduced by 40 blocks (50%) in accordance with the Northern Territory Mining Act - see fig. 2 for reduced boundaries. A clerical error prior to lodgement of the relinquishment lead to the wrong portion of EL8247 being dropped (see Section 1) and the remaining portion of EL8247 being surrendered on 4th October 1996 pending the granting of EL 9567 in its place.

A total of $67,397 has been expended by Nexus Minerals N.L. over the period 23rd November 1994 to 22nd November 1995. North Star Resources expended $50,470 over the period 23rd November 1993 to 22nd November 1994. Nexus Minerals N.L. expended a further $14,448.69 over the period 23rd November 1995 to 4th October 1996 whilst North Star Resources N.L. spent a further $702 over the same period.

4. REGIONAL GEOLOGY, STRUCTURE AND MINERALISATION

The following is taken from Rafty (1996) succinctly describing the regional geology, structure and mineralisation.

"The basement rocks in the Tennant Creek district are Archaean - early Proterozoic greywacke, shale, bif, chert, felsic volcanics. Gneiss, amphibolitised sediments and mafic volcanics occur in the south west (Le Messurier et al (1990)). Unconformably overlying the basement rocks is a 6,000m thick sequence of deep water deposited ? early Proterozoic sediments. Turbiditic greywacke, siltstone, shale and lesser thin discontinuous argillaceous biff (haematite shale) and mudflow breccias with interlayered felsic volcanics. Recent mapping of the Tennant Creek and Flynn 1:100,000 geological sheets by Donnellan et al (1995) has reassigned the sediments to the Waramunga Formation; and the felsic volcanics to the overlying Warrego Volcanics and Bernborough Formation of the Flynn Subgroup comprising a volcano - sediment succession. This is in contrast to earlier interpretations which placed the Berborough Formation in the basal segment and the Warrego volcanics in the middle segment of the Waramunga Group (Le Messurier et al (1990)). The Waramunga Formation rocks are folded and metamorphosed to lower graunchiest facies. The Flynn Subgroup unconformably overlies the Waramunga Formation and are less deformed. The Tomkinson Creek Sub Group overlies the Flynn Subgroup and comprise a 6,500m thick sequence of broadly folded, largely unmetamorphosed dominantly arenaceous sediments (quartz sandstone, lesser siltstone, shale and limestone, minor conglomerate and a thin unit. Le Messurier et al (1990) estimated a total thickness of 13,750m for the Tomkinson Creek units in contrast to 6,500m estimated by Donnellan et al (1995). It is not know how the difference in estimates have arisen but it is suspected some units may have been overestimated by Le Messurier et al (1990).

Several intrusive phases have occurred in the Proterozoic affecting the stratigraphic succession in the Tennant Creek district. Early - mid Proterozoic granite intrusive (Tennant Creek Granite, Cabbage Gum Granite, Hill of Leaders Granite, unnamed granite); felspar quartz - felspar porphpy intrusive; and dolerite dykes intrude the basement and lower half of the Waramunga Group. A mid Proterozoic phase of felsic and mafic sills are intruded into the lower Tomkinson Creek Beds. Middle - late Proterozoic granitoid intrusive (Elkedra Granite, Devil's Marbles Granite, Warrego Granite) and minor lamprophyre dykes also occur. The Warrego Granite outcrops 800m west of Warrego.

In the Tennant creek district the Waramunga Group dominate the stratigraphic succession. Within the Waramunga Formation a 2,500m thick sequence of haematite shale, quartz feldspar prophying lenses and broad disseminated zones of magnetite is named Black Eye member (Le Messurier et al (1990) and containing most of the ironstone's and mineralisation in the SW sector of the Tennant Creek Goldfield.

The Warrego West Project (EL8247) lies along the north wester margin of the Tennant Creek Inlier containing an early Proterozoic intractratonic basin which has been subject to poly deformation. Various authors concede the Waramunga Group was laid down in an unstable deep water marine environment due to down warping of a pull apart basin or ensialic basin. The sediments were deposited in proximal to distal fan settings (Sakalidis and Romanoff (1994)). The Waramunga sediments was folded about east-west axes with a strongly developed, steeply northerly dipping axial plane slatey cleavage (Goulevitch (1993)). Folds plunge shallowly east and west (Le Messurier et al (1990)).

Faulting is ubiquitous throughout the Tennant Creek Inlier. In the Warrego district a N-S trending 20km wide mega kink zone with an eastern boundary 3km west of Warrego (Willliams (1987)) has rotated the Waramunga Group/Formation structures to a NW trend but not affecting the overlying Tomkinson Creek . Significant faulting affecting the Waramunga Group occurs as :-

A. *Quartz filled NW trending sinistral faults with displacements up to 4kms with branching common.*

B. *Narrow (50m wide) high angel sinistral thrust fault/shears trending WNW. These faults are believed to be the oldest and the only fault sets mineralised to any extent.*

Minor NE and NW faults also occur and may be responsible for local modification of geology and structure.

The mineralisation characteristics of the Tennant creek Inlier - in particular in the Tennant Creek district have a distinct spatial relationship to lithology, stratigraphy and structure. Large (1975) and Large and Wedekind (1987) attribute the following elements as being critical in the formation of economic mineralisation.

A. *Development of "ironstones" as lenticular, ellipsoidal or pipelike bodies composed of magnetite - haematite cutting across sedimentary structures. Approximately 650 ironstone bodies occur within the Waramunga Group sediments, over 100 of which have been mined for gold (Williams (1987)). Most ironstone's do not occur beneath the base of oxidation (100m) and <20m thick and are a few hundred metres in strike, comprised of haematite (martite) and quartz with minor jasper, magnetite, goethite and clay minerals. Mineralised ironstones generally occur below the base of oxidation composed of magnetite, chlorite and lesser quartz, haematite, pyrite, talc, dolomite, calcite, muscovite and jasper.*

B. *Ironstone mineral zonation is common to many mineralised ironstones. Essentially the core is comprised of massive magnetite with chlorite and/or minor quartz. Enveloping zones include the following (after Large and Wedekind(1987)):*

I	*Quartz - Magnetite*
II	*Haematite - Magnetite*
III	*Quartz - Haematite*
IV	*Talc - Magnetite*
V	*Dolomite - Jasper*
VI	*Dolomite - Calcite*
VII	*Dolomite - Talc - Chlorite*
VIII	*Chlorite - Haematite*

C. *Metal zonation has been recognised in many mineralised ironstones with vertical and limited horizontal zonation patterns. Gold zones occur at the base of the magnetite body followed above by bismuth and then copper. Overlapping patters are common. Gold is generally associated with the magnetite - chlorite core (with the exception of the Gecko K44 pod) and is concentrated toward the footwall of the ironstone or at its margins in distinct pods associated with chlorite and muscovite (Wedekind et al (1989)) Not all ironstones have complete zonation patters due to various factors including erosion*

D *The mineralised magnetite-haematite bodies are located*

I *Close to thin beds of argillaceous banded iron formation and haematite rich shales (Nobles Nob, Juno, Eldorado, TC8).*

II *within the sediments adjacent to contacts of rhyolitic porphyries (Peko, Warrego, Golden Forty).*

III *Within soft sediment slump structures (mudflow conglomerates, breccia conglomerates) (Gecko and Orlando).*

E. *Linear structural control is evident throughout the Tennant Creek Goldfield delineating specific corridors of ironstone formation. These corridors represent the location of deep seated structures that may have controlled the regional movement of hydrothermal fluids at the time of mineralisation. The major structural corridors are:-*

I *The Juno Line (290° strike) includes Nobles Nob, Juno, Eldorado, and Mt. Samuel.*

II *The Peko Line (285° strike) includes Golden Forty, Peko, Argo and TC8.*

III *The Lone Star Line (250° strike - curving) includes Gigantic, Lone Star, Burnt Shirt, TC8 and Explorer 50.*

IV *Warrego Line (295° strike) includes Warrego, White Devil, Red Bluff and Ivanhoe.*

V *Gecko Line (285° strike) includes Orlando and Gecko. The Lone Star corridor may be a major fault zone (Large and Wedekind (1987)) offsetting the Peko and Juno Lines from the Warrego Line.*

F. *Ironstone bodies within regional linear zones are aligned 270° - 280° parallel to the dominant cleavage and associated fold axes (usually in the domal position of second order anticlinal folds).*

G. *Some mineralised ironstones are located within E - W faults/shear zones (Ivanhoe, Argo, White Devil).*

The above listed characteristics of the mineralised ironstones has led most workers to postulate a replacement process to explain the formation of the mineralised ironstones during D2 deformation. An alternate model is formations (bif) which were laid down as an integral part of sedimentary sequence and then subsequency modified and deformed. The mineralisation is associated with the syngenetic deposition of the bif from hydrotheral fluids.

Regardless of the acceptance of either model there appears to be distinct stratigraphic control as follows (Large and Wedekind (1987)):

I *Haematite - Shale horizon*

II *Pyroclastic/sediment contacts*

III *Intraformatoinal sediment breccia conglomerate horizons.*

The Warrego ore body some 5.3kms NE of the T1 anomaly on the Warrego West Project was first identified a 2,200nT magnetic anomaly on the BMR 1956 aeromagnetic survey of the Tennant Creek region (Wedekind and Love (1990)). The Warrego ore body consists of two major and several smaller lenses of massive magnetite ± quartz ± chlorite plunging 47° towards 125° and dipping 70° NE.

Mineralisation extends from 140m to 735m below the surface within a stacked series of coalesced encephalon lenses of massive magnetite. The most significant structural feature is a major NNW trending fault (the "footwall" fault) related to the Navigator fault system post dating mineralisation The fault shows movement of several kilometres with E side up and located in the footwall sediments. The hanging wall and probably hosting the Warrego ore body is a 30-50m thick quartz-chloritised porphyry Footwall and hanging wall sediments include a chloritised quartz-muscovite schist, meta quartzite and chlorite spotted slate with disseminated magnetite. West of the footwall fault are chloritised haematitic sandstone and shales.

Reclined folding plunging 43° towards 109° and well developed axial plane slatey cleavage has been recognised by Goulevitch (1975) west of the footwall fault being an overprint of the original folding (Wedekind, et el (1989) and Williams (1989)) and possibly related to the Warrego Granite or Navigator fault system (Wedekind and Love (1990)).

Copper mineralisation averages 2% as chalcopyrite filling fractures in the magnetite. Bisimuth mineralisation is contained in chalcopyrite as bismuthinite-guanajuatite inclusions. Gold mineralisation averages 1-2gAu/t throughout but in the two high grade pods averages 20gAu/t with an associated 2% Bismuth. The gold ore pods have a distinctive mineralogy in which bladed chlorite-muscovite may be upto 40% by volume (Wedekind and Love (1990)).

The White Devil or body is situated on the hinge of an open high order anticline plunging 52° towards 253° whereas the Black Angel zone to the west is centred on an anticline-plunging 50° towards 275° (Edwards et al (1990)). Mineralisation and alteration is related to the D1 and D2 deformation periods. The D1 deformation produced open folding and E-W slaty cleavage subparallel to F1 between 60-80° (White Devil) and 80-110° (Black Angel) and the formation of the ironstones and associated alteration. The D2 deformation was progressive with the intrusion of the porphyries and the progressive brittle to ductile shearing of the ironstones and the localisation and concentration of Ag-Bi-Cu mineralisation. Edwards et el (1990) believe the magnetite was precipitating into a D1 dilatational jog/shear zone during the N-S shortening of the Waramunga sediments.

The style of structure and mineralisation in the Warrego and White Devil ore bodies is typical of what can be expected on EL8247".

5. EXPLORATION ON EL8247 DURING THE LIFE OF THE LICENCE 23rd NOVEMBER 1993 - 4th OCTOBER 1996

5.1 North Star Resources N.L. 1993-1994

North Star has carried our a thorough review of past geophysical surveys as well as undertaking extensive ground magnetic surveys. Exploration activities are reported Sakalidis and Romanoff (1994) and include the following :-

A. Historical research and appraisal of previous exploration data.

B. Reprocessing of AGSO aeromagnetic digital and digitised contour data, and reprocessing of detailed digitised contour data.

C. Analysis of reprocessed aeromagnetic imagery. Selection of 17 exploration targets on structural interpretation and identification of specific anomalous magnetic features.

D. Field follow up comprising detailed ground magnetic surveying of 13 of the targets selected above. The ground magnetic survey involved the clearing of some 40kms of access tracks linking the target areas to existing tracks. At each target site E-W cleared base lines were placed in by GPS. Local grids were constructed over the target areas using the last 4 or 5 digits of the AMG co-ordinate system. North-south lines were run from the base lines by pace (topofil controlled) and compass traversing.

Two Geometric G-856AX proton procession magnetometers were used. One magnetometer was used as a base station to calculate diurnal drift. The other magnetometer was used for taking readings at 10m intervals. All data was processed by Magdata Consultants. The results of the ground magnetic survey identified 10 discrete magnetic bulls eyes and dipole like anomalies as worthy of follow up. These targets are labelled T1 - T5, T7, T8, T11, T12, T15 remain unexplained by previous geological interpretations. The anomalies require drill testing.

5.2 Nexus Minerals N.L. 1994-1996

Nexus Minerals conducted a thorough review of all exploration data formulating a RAB drilling programme to test the magnetic targets T1-T5-T7 defined by North Star Resources N.L. The programme is reported by Rafty and Hemming (1996) and included the following activities:

5.2.1 Gridding and Line Clearing

A total of 2.74 km upgrading and line clearing was undertaken in May/June 1996 and a further 2.53 km undertaken in June/July using a small front end loader. The gridding and line clearing was required to control RAB drilling.

5.2.2 RAB Drilling

Two RAB programmers were conducted on E8247 drawings 1995. Details of these programmes are as follows:-

A. May/June 1995

A total of 1499m of drilling was expended in 39 holes (WWR1-6ABC, 7A, 7-36) with 220 composite (2-4m) samples being dispatched to Amdel Laboratories Ltd in Darwin. The samples were assayed by AAS methods for Au (1ppb detection limit), Cu, Pb, Zn, Bi (all 1ppm detection limit) and Ag (0.1ppm detection limit). The holes were all drill to grid North (AMG) at 60° declination testing the T1-T5, T7 anomalies.

B. June/July 1995

A total of 1970m was expended in 53 holes (WWR 37-89) and 221 composite (2-4m) samples being dispatched to Amtel Laboratories Ltd in Darwin. The samples were assayed by AAS methods for Au, Cu, Ab, Zn, Bi and Ag. The holes were all drilled to grid North (AMG) at 60° declination testing the T1, T2, T4, T5, T7 anomalies.

5.2.3 Geophysics

Magnetic susceptibility readings were obtained of all drill cuttings.

5.2.4 Resampling of RAB drill holes

Amdel Laboratories reported contamination problems for the June/July RAB program requiring a resampling of the following holes;

WWR73	0-40m)	
WWR74	0-33m)	T4 Anomaly
WWR75	0-36m)	

WWR76	0-27m)	T5 Anomaly
WWR77	0-40m)	

A total of 45x4m composites were taken and assayed for Au, Cu, Pb, Zn, Ag and Bi by AAS methods.

The results of these programmes are outlined in Rafty and Hemming (1996) as well as a detailed interpretation of the results. A succinct summary of the drilling and interpretation is presented in section 1 of this report.

5.3 Nexus Minerals N.L./North Star Resources 1995-1996

The joint venture partners have undertaken a thorough review of exploration results returned from their respective exploration activities concluding the next stage of exploration requires a large injection of monies to finance deep drilling of the most prospective targets. To this end both partners have sought another joint venture partner with the ability to finance a sustained deep drilling programme. At the time of writing a third party had not been secured to explore the Warrego West Project.

6. CONCLUSION

The shallow nature (<50m vertical) of the RAB drilling of anomalies T1-T5, T7 on EL8247 (now covered by E9567) producing low level subtle geochemical anomalies in Au, Cu, Pb, Zn and Bi has given encouragement that highly anomalous zones may exist at depth in the order of 100m vertical. Deep RC drill testing is required to delineate any anomalies at these depths.

The following conclusions from Rafty and Hemming (1996) outline the characteristics of mineralisation and the potential for economic mineralisation at depth.

"A collation of all exploration data together with published data on the regional controls of gold mineralisation in the Tenant Creek Goldfield has identified the Warrego West Project to over lap in the Warrego structural corridor containing the Warrego and White Devil Copper - Gold - Bismuth Mines. The known interpreted structural corridor is 5kms wide and trends 295° and extending over 50kms from Tennant Creek to Warrego.

The style of mineralisation is either the result of epigenetic replacement of BIF units or syngenetic alteration of BIF units in conjunction with structural deformation producing a related zonation in minerals and metals. The zonation of metals is ubiquitous throughout the Tennant Creek Goldfield. Gold is associated with magnetite-chlorite zones (generally fractured) and is enveloped by bismuth which is enveloped by copper in magnetite-sulphide and magnetite-quartz zones. The structural control is either fault or anticline related and lesser syncline related to the D1 deformation phase. Mineralisation appears to be related to the D2 deformation phase.

Recent significant exploration by North Star Resources N.L. (1993/1994) and Nexus Minerals (1994/1995) has been the only detailed evaluation of the project's potential for gold mineralisation. Nexus Minerals N.L. has undertaken a thorough review of all exploration data and has indicated the magnetic anomalies (T1 - 17) identified by North Star Resources N.L. may indicate ironstone bodies akin to the Warrego and White Devil Mines. Shallow RAB drilling to 50m vertical depth testing anomalies T1 - 5, 7 in the eastern sector of the Warrego West Project has defined significant but low level anomalous Au (≤ 8ppb), Cu (≤ 410ppm), Pb (585ppm), Zn (≤ 125ppm) and Bi (≤ 9ppm) in highly weathered Proterozoic psammitic and tuffaceous sediments intruded by granite and pegmatite. An associated metal zoning is demonstrated in these elements in both weathered Proterozoic and Cainozoic sediments. Significant economic mineralisation in the Tennant Creek Goldfield is generally recorded in fresh rock at depths below 100m vertical. Consequently the exploration to date by Nexus minerals N.L. has only been oriented at defining subtle shallow anomalous zones which may been indicative of deeper significant mineralisation. Only the T7 anomaly has shown a significant magnetite-chlorite intersection associated with anomalous Cu (20ppm) and Zn (110ppm) in sheared psammitic/tuffaceous sediments in contact with granite at 45 - 48m vertical just above the water table.

Detailed sub surface exploration of the most prospective targets has indicated some encouragement that significant mineralisation may exist in the fresh rock through detailed logging, sampling and interpretation to delineate subtle anomalies. Geophysics particularly magnetics has been extremely useful in defining structural and lithological associations"

Nexus Minerals N.L. (25%) and North Star Resources (75%) have concluded the best option for further exploration is to seek a joint venture partner to fund the deep RC direct testing on EL 9567

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NEXUS MINERALS NL
TENNANT CREEK PROJECT
REGIONAL GEOLOGY
AND TENEMENTS

NORTH

0 10 20 km

E9006
E8247
Warrego West
E8246
Murchison Range 2
E8816
Forkyard
E8461
Murchison Range 2A
E8388
Epenarra
ELA9261
ELA9259
Tennant Creek
ELA9260
Rover
Kovacs
Priesters
Kurundi
Kurinelli

REFERENCE
Hatches Creek Group
Black Eye Member
Interpreted Black Eye Member
Warramunga Group
Old gold mine
Nexus tenement
Geological Structure / Shear
T25 Magnetic Target

FIGURE

360 000mE
370 000mE
380 000mE
390 000mE
134°00'
N
7 850 000mN
7 840 000mN
19° 30'
WARREGO
Warrego - Tennant Creek Road
'NAVIGATOR'
CRUSADER
WHITE DEVIL
BLACK ANGEL
PREMIER
RED BLUFF
T12 M
T11 H
T10 M
T9 M
T8 M
T13 H
T14 H
T1 H
T2 M
T3 H
T4 H
T5 H
T15 H
T16 H
T17 M
T7 M
T6 M
300
280
Clays on granites
Anomalous Cu in siltstones
Siltstones
Siltstones
EL 8247
BOUNDARY OF ABORIGINAL FREEHOLD
RELINQUISHED 23-11-95
SCALE 1:100 000
0 1 2 3 4 5 6km

LEGEND

T14	Target number
	Regional Aeromagnetic Targets defined.
	Regional Aeromagnetic Targets less defined.
	Detailed Aeromagnetic Targets.
	Structures.
H	High priority.
M	Medium priority.
	Mining Leases.

NEXUS MINERALS NL

TENNANT CREEK REGION

WARREGO WEST AEROMAGNETIC TARGETS AND LOCATION

January 1996

FIGURE 2