

# ANGLO AUSTRALIA RESOURCES NL

NORTHERN TERRITORY

VICTORIA RIVER BASIN

GROUP REPORT - (GR08/09)

**VICTORIA RIVER DOWNS 1:250,000 Sheet**  
**LIMBUNYA 1:250,000 Sheet**  
**WAVE HILL 1:250,000 Sheet**

2012 ANNUAL REPORT

For

EL 25422

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EL 25423

&

EL 27366

For the period 7 March 2011 to 6 March 2012

**April 2012**

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## **1. INTRODUCTION**

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The Victoria River Project area is located in the Northern Territory of Australia and situated about 450 kilometres south of Darwin. The project covers six granted tenements and 8 exploration licences are under application. Half the project area is within the Gregory National Park, which is in the process of being converted to Aboriginal Freehold Land. Vehicle access to the project area is via the Victoria, Buchanan and Buntine Highways, thence station tracks.

The Proterozoic Victoria River Basin (VRB) consists of a 3.5km thick stratigraphic sequence of sandstone, shale and dolomitic sediments, covering an area of 160,000sq kms, overlying the Birrindudu Basin and has the potential for sedimentary hosted zinc dominated base metal deposits similar in style to the giant McArthur River, Cannington and Century deposits. The Bullita stratigraphic succession is considered to have potential to host stratiform sedimentary, Mississippi and Irish lead-zinc styles of mineralisation. These deposits are associated with the fine grained clastic rocks (black shales) of a sedimentary package, which contains substantial dolomites and limestones, and are located near major regional structures with a halo of lead anomalism. The target size is in the order of 50-100 million tonnes at 10% combined Pb/Zn

Age dating within these sequences suggest dates from 1,645my (Limbunya Group) to 1,610 – 1,570my (Bullita Group), which is within the age range of all major Australian SEDEX zinc deposits.

Throughout the Victoria River Basin the stratigraphy is generally flat lying or shallow dipping. However, there are a number of localised domal features adjacent to prominent faults or lineaments.

Previous base metal explorers include BHP, CRA, Rio Tinto, Anaconda, plus junior companies and diamond exploration has been undertaken by Stockdale, BHP and Ashton. These exploration programs for base metals include stream sediment sampling, Geotem and aeromagnetic surveys. Limited stratigraphic diamond drilling has been undertaken by BMR, NTGS and various exploration companies.

The stream sediment sampling determined a high level of surficial geochemical anomalism within the Victoria River Basin which may represent a halo to a large base metal mineralizing system. The geochemical anomalism combined with the age of the underlying stratigraphy, unique structural settings adjacent

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to potential growth faults highlights the potential for a significant buried SEDEX deposit within the Victoria River Basin.

Gravity data collected by Anglo Australian Resources in 2009 has assisted in interpretation of the geology and the development of targets. The most promising targets have been developed in the Mt Sanford area where a broad gravity low is highlighted, sub parallel to and east of a major NW trending fault (Pear Tree Fault). This area is interpreted to be a potential shale basin. Two areas within this gravity low have been selected as potentially to be dilational sub basins. On ground follow up of the gravity targets by geological reconnaissance, rock chip sampling and stream sediment sampling in 2010, whilst inconclusive has not devalued the targets generated from the gravity interpretation. It is recommended that at least one of these targets is tested by vertical reconnaissance drilling to a depth of 300-400m. In addition 5 discrete gravity anomalies in the Mt Sanford area have been highlighted as potential direct targets. Current gravity data density of 500x500m is still too broad to adequately model the depth of these anomalies. Gravity anomaly G1, located within the main gravity trough is also recommended for reconnaissance drilling.

The large domal structure just north of the Victoria River Downs Station centred on the Fitzgerald Range remains an area of interest due to the high Pb geochemistry in streams, rock chips and soils on the south eastern edge of the dome. However as no major faults are mapped in this area or reflected in the gravity, (despite the 1km x 1km data density) the potential for growth structures in the area are considered to be limited. A salt dome model proposed by earlier explorer BHP may still have some viability. A regional gravity low could support this theory.

The geological interpretation has highlighted at least three areas within the Gregory National Park where sub- basins may have been developed adjacent to growth structures. One of these areas has highly anomalous Zn stream sediment geochemistry while the other two areas are deficient in geochemical data. AAR applications cover these areas; however there is uncertainty about the status of tenements. It is anticipated that ownership of the park will revert to native title and that negotiations to gain access for exploration purposes could then commence.

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## 2. TENEMENTS

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**2.1. Table 1: Summary of Tenements.**

Lease	Project	Status	App Date	Grant Date	Expiry Date	Area	Area Km2	Commitment	Rent
EL2542 2	VRB	Granted	14/06/200 6	7/03/2007	6/03/2013	17 Blocks	191	\$60,000.00	\$2,720.0 0
EL2542 3	VRB	Granted	14/06/200 6	7/03/2007	6/03/2013	60 Blocks	197. 8	\$60,000.00	\$9,600.0 0
EL2736 6	VRB	Granted	27/05/200 9	11/01/201 0	10/01/201 6	47 Blocks	154. 5	\$27,500.00	\$1,880.0 0

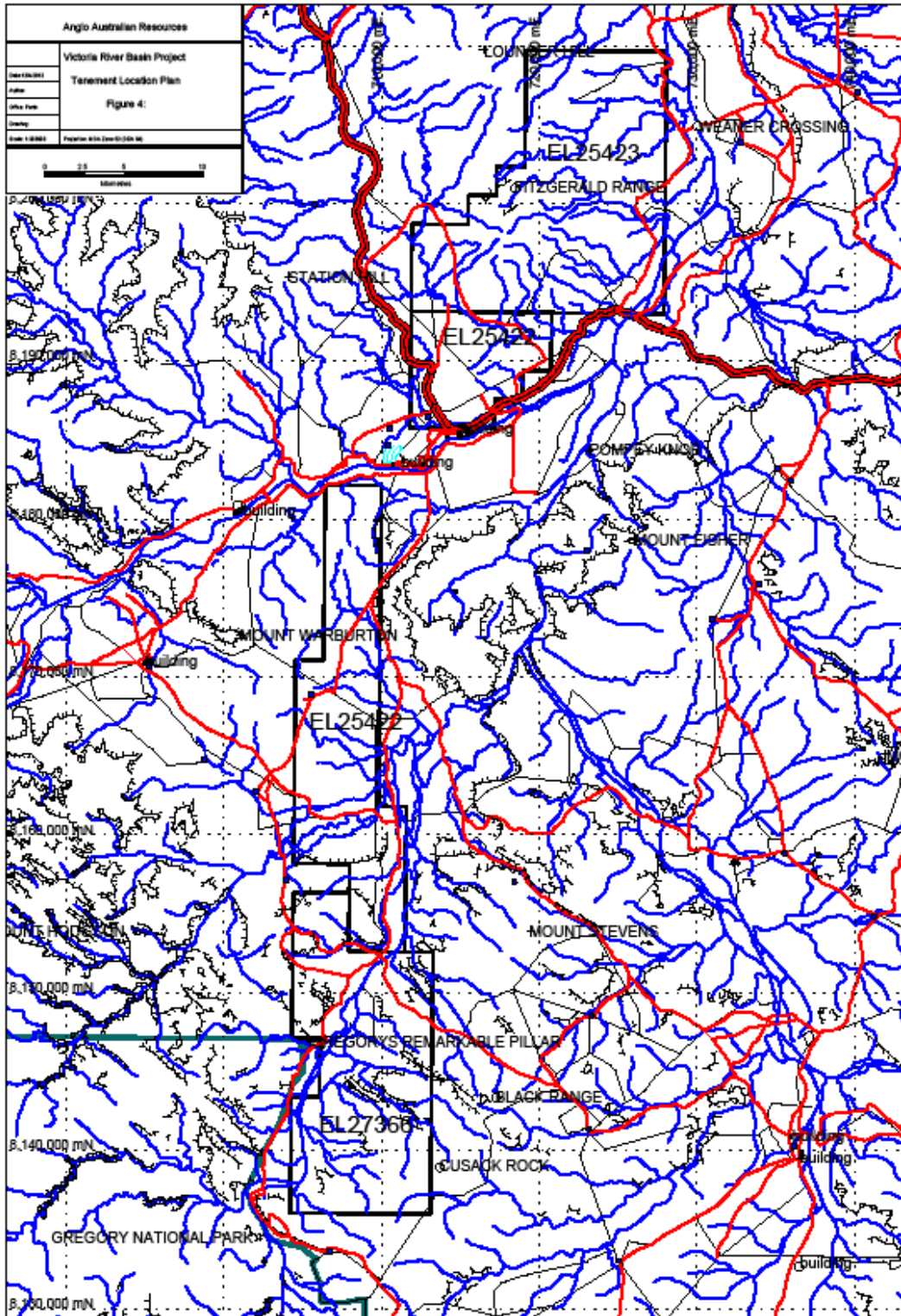


Figure 4: Tenement Location Plan:

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Exploration on the above tenements was limited during the period of this report as the company was seeking a joint venture partner to advance the project.



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### **3. REGIONAL GEOLOGY**

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#### **3.1. Introduction**

The project area is located in the Victoria River region, principally within the Victoria River Basin (VRB), which overlies the basement Sturt block and consists of a 3.5km thick sequence of little deformed sedimentary rocks that cover ~160,000sq kms.

The stratigraphic sequence from the basement Invery Metamorphics and Pine Creek volcanics upwards, consists of the Proterozoic Birrindudu and Limbunya Group sediments which form the lower Birrindudu Basin, which is overlain by the sediments of the Victoria River Basin consisting of the Wattie, Bullita, Tijnna and Avergne Groups.

The VRB is bounded to the northwest by the Fitzmaurice mobile zone, to the southwest by the Ord Basin, to the south by the Carpentarian Birrindudu Basin, and to the southeast by Paleozoic Wiso Basin, to the Northeast by the Pine Ck geosyncline.

Birrindudu Basin was accompanied by regionally extensive north-trending growth faults. Deposition in both Birrindudu and Victoria Basins includes several phases of intra-cratonic SAG. Strata dip away from the centres of depositional basins and is attributed to basement uplift.

The major structural elements are shown on the various 1:250,000 geological plans. This data has been supplemented by lineament studies completed from aeromagnetic, Geotem, gravity and Landsat data.

The imaged Geotem has enhanced the presence of a north trending 50km long by 5km wide structural corridor, which isn't evident from mapping or other geophysical surveys.

This structural corridor is truncated north and south by WNW trending regional lineaments, such as the Limbunya Fault in the south and, with sub-parallel Gill and GB faults.

Other major structural directions include the NW, NE and E-W lineaments.



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### 3.1.1. Stratigraphy

The project area is located in the Victoria River region, principally within the Victoria River Basin (VRB), which overlies the basement Sturt block and consists of a 3.5km thick sequence of little deformed sedimentary rocks that cover ~160,000sq kms.

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TABLE 2 REGIONAL STRATIGRAPHIC COLUMNS

- Top
  - Cambrian
    - Atrium Volcanics, 250m thick, tholeiitic basalt and agglomerate, with minor sandstone, chert and limestone interbeds cover the whole region. Unconformably overlies the Proterozoic sequence.
- Proterozoic
  - Wolfe Creek Basin
  - Victoria River Basin consists of the upper Auvergne, Tjunna, Bullita and lower Wattie Groups.
  - Birrindudu Basin is composed of the Limbunya Group sediments and carbonate rocks are developed on the edges of gravity highs, which represent uplifted basement blocks.
- Lower Proterozoic
  - Metamorphic basement of the Pine Creek and Halls Ck orogens

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TABLE 3 THE VICTORIA RIVER BASIN – PROTEROZOIC STRATIGRAPHIC COLUMN

Top

Auvergne Group

*Jasper Gorge Sandstone Fm* 80m thick

Unconformably overlies the Wondoan Hill Fm.

Consists of massive to blocky quartz sandstone, minor siltstone and local basal conglomerate. Generally resistant and caps plateau and mesas.

*Wondoan Hill Fm* 145m thick

Unconformably overlies the Bullita Group. Consists of quartz sandstone and glauconitic sandstone, with minor claystone and siltstone.

Bullita Group

*Battle Ck Fm* 80m thick

Conformably overlies the Weaner Sandstone.

Consists of greenish to purple siltstone with dark brown coarse-grained glauconitic dolomite. At the middle of the formation is a series of red brown stromatolitic dolomite and at the top is brown yellow sandstone.

*Weaner Sandstone* 3-15m thick

Conformably overlies the Bynoe Fm. It is a thin series of white to brown sandstone and grits that are pebbly towards the base.

*Bynoe Fm* 190-243m thick.

The basal part contains green and purplish micaceous siltstones and shales with few sandstone and dolomite interbeds. The rest of the Fm consists of thinly bedded sandstone and slightly micaceous siltstone.

*Skull Ck Fm* 162-229m thick,

Predominantly dolomitic with silty upper and lower parts. The lower contact is defined by a 3m thick stromatolitic horizon. It contains pyrobitumen and disseminated pyrite. The formation has undergone varying degrees of dolomitisation.

*Supplejack Dolomite Mb* 17-28m thick,

Massive thickly bedded dolomite and dolarenite within 60m of the top of the Skull Ck Fm. Stromatolitic near the top. Rare disseminated pyrite and galena occur. Upper and lower contacts are regionally anomalous in base metals. Epigenetic galena is commonly visible.

*Timber Ck Fm* 135-306m thick

Forms the basal unit of the Bullita Group and consists of thinly interbedded siltstone, fine sandstone and dolostone, pyrobitumen and disseminated pyrite and epigenetic

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galena. Locally stream sediments anomalous in zinc. –Prospective horizon for SEDEX style mineralisation.

The high carbonate content of the Bullita Group distinguishes it from the conformably underlying Wattie Group, dominated by sandstone stratigraphy.

Wattie Group

*Seale Sandstone*                      100m thick  
Massive fine and medium grained sandstone

*Gibbie Formation*                      25-75m thick

Micaceous siltstone, sandstone and minor shale. Argillitic phases locally ferruginous. Local abundant pyrite

*Neave Sandstone*                      < 20m thick

Lithic medium grained sandstone, minor conglomeratic sandstone

*Mount Sanford Formation*                      up to 200m thick

Chocolate and green siltstone, dolomite, interbedded fine sandstone, claystone and shale. Potential host for sediment hosted base metal deposit.

*Hughie Sandstone*                      < 100m thick

Sandstones and orthoquartzite with minor carbonate

*Burtawurta Formation*                      30m thick

Siltstone interbedded with fine sandstone

*Wickham Formation*                      175m - 315m thick

Sandstone, conglomerate and chert disconformably overlying the Limbunya group

Limbunya Group

*Killaloc Formation*                      0-60m thick

Siltstone, dolomite and minor sandstone

*Fraynes Formation*                      110m-130m thick

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Silty dolostone, dololuite, purple green micaceous siltstone, containing pseudomorphs of evaporates. The top of the formation is defined by a chert breccia. Potential host for sediment hosted base metal deposit.

*Campbell Springs Dolomite*                      160m-320m thick

Grey stromatalitic dolostone, doloarenite, dolorudite, dolosiltite, dolomitic mudstone and minor tuffite. SHRIMP date of 1638Ma.

*Lower Limbunya Group*                      480m-640m thick

Includes Blue Hole Formation, Farquarson Sandstone, Kunja Siltstone (Potential host for sediment hosted base metal deposit), Mallabah Formation, Amos Knob Formation, Pear Tree Dolomite, Magery Formation and Stirling Sandstone

*Invermay Metamorphics*

Muscovite quartz schist, acid volcanics. Basement in the Birrindudu Basin.

PERIOD	GROUP	FORMATION	HORIZON		
<b>Proterozoic</b>	<b>Cambrian</b>	Antrim Plateau Volcanics			
		Auvergne Group	Jasper Gorge Sandstone		
	Tijunna Group	Stubb Formation			
		Wondoan Hill Formation			
	Bullita Group	Banyan Formation	Battle Creek Formation		
			Mt. Gordon Sandstone	Weaner Sandstone	
		Nero Siltstone	Bynoe Formation	--- <i>Base Metal Anomalous</i>	
		Skull Creek Formation		--- <i>Disseminated Galena</i>	
		Timber Creek Formation		--- <i>Prospective Horizon</i>	
		Wattie Group	Seale Sandstone		
	Gibbie Formation				
	Neave Sandstone				
	Mount Sanford Formation			--- <i>Prospective Horizon</i>	
	Hughie Sandstone				
	Burtawurta Formation				
	Wickham Formation				
	Killaloc Formation				
	Proterozoic	Birrindudu Basin	Fraynes Formation	--- <i>Prospective Horizon</i>	
			Campbell Springs Dolostone		
			Blue Hole Formation		
Farquharson Sandstone					
Kunja Siltstone			--- <i>Base metal anomalous Prospective Horizon</i>		
Mailabah Doiostone					
Amos Knob Formation					
Pear Tree Dolostone					
Margery Formation					
Stirling Sandstone					
Birrindudu Group			Coomarie Sandstone	Hinde Dolostone	Tolmer Group
			Talbot Well Formation	Stray Creek Sandstone	
	Gardiner Sandstone	Depot Creek Sandstone			
	Inverway Metamorphics	Pine Creek Geosyncline			

Stratigraphic Column for the Victoria and Birrindudu Basins.  
Potential SEDEX Host Stratigraphy.

Figure 2. Stratigraphic column

The Company is targeting SEDEX-style zinc-lead deposits in the Victoria River Basin. The Basin has strong similarities to the Macarthur and Nicholson Basins which host the giant Macarthur River and Century SEDEX-style zinc deposits. The project, located 200 km east of Kununurra (WA) and 250 km southwest of Katherine

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(NT), covers a sequence of Proterozoic sediments dominated by dolomitic carbonates and other fine-grained sediments. The sediments are generally flat lying with an overall very shallow north-easterly dip.

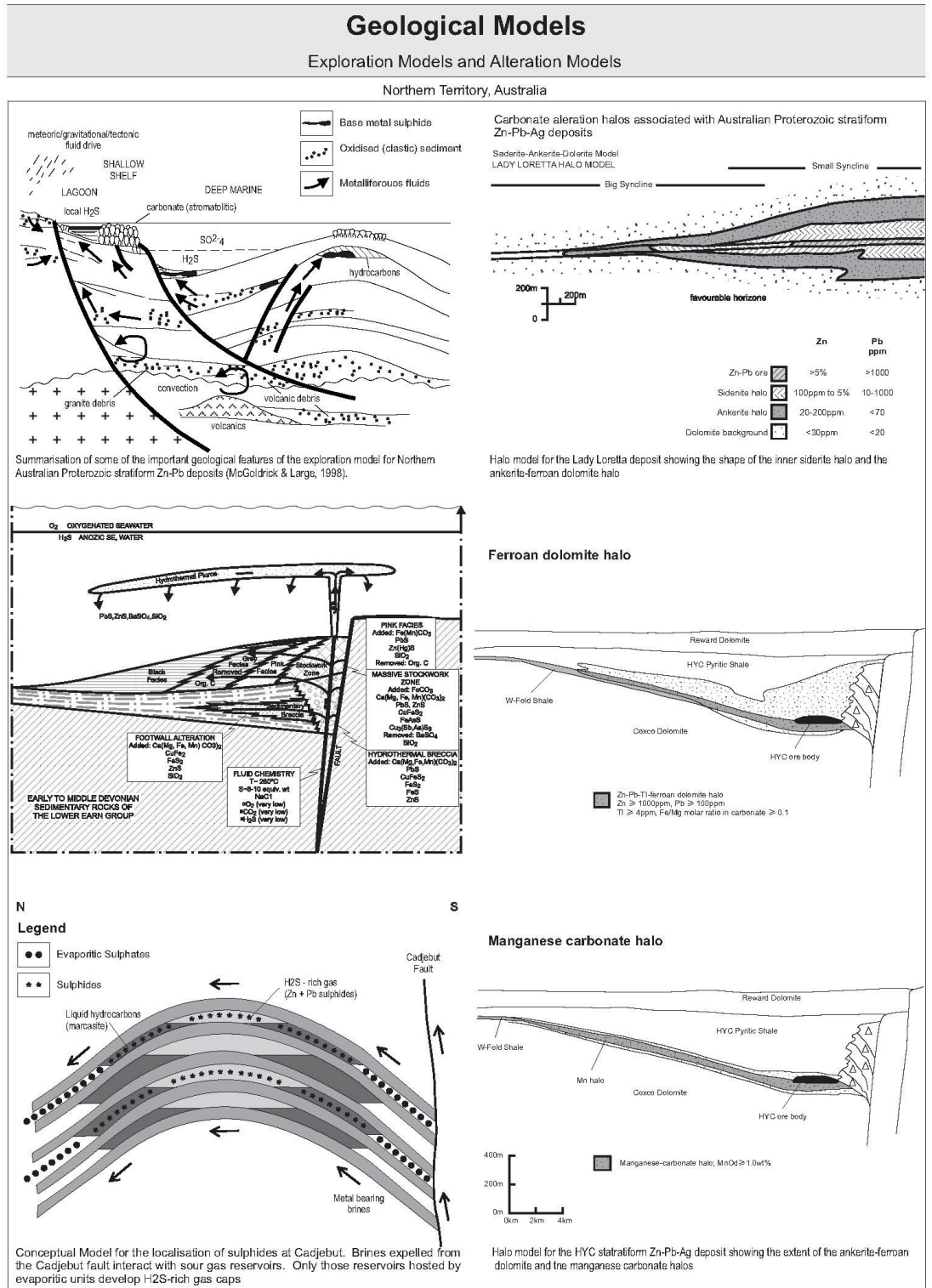
The Fraynes Formation and Kunja Siltstone (Limbunya Group), the Mount Sanford Formation (Wattie Group) and the Timber Creek Formation (Bulita Group) are considered the most prospective for SEDEX style of mineralisation targeted by Anglo Australian Resources NL, particularly adjacent to interpreted growth faults

The Victoria River Downs area contains:

- A large regional base metal geochemical halo
- A sedimentary package that can be correlated with the McArthur River Basin
- Fine grained shales and chemical sediments that could host a SEDEX deposit. Potential target horizons are shown on Figure 3
- Age dating of the same age as other Australian Proterozoic base metal deposits
- Major regional structures that may have acted as growth faults during the evolution of the basin.
- Unusual domal and monoclinal structures adjacent to major growth faults
- Evidence of local SAG basins



Figure 3: Geological Models



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#### **4. WORK COMPLETED**

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No exploration work was completed during the reporting period 07/03/2011 to 06/03/2012.

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