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**Reconnaissance sampling of the Munyi Member, Roper Group  
in EL26412 and EL29497**

**for Sherwin Iron Ltd**

**Summary**

Sherwin Iron Ltd (SHD) holds exploration licences 26412 and 28497 in the Gulf Region of the Northern Territory. The northern portions of both ELs were thought to be underlain by the Munyi Member of the Roper Group which was considered to be prospective for sedimentary oolitic iron ore.

The Munyi Member has been described as a succession of ferruginous sandstone, siltstone, mudstone, minor conglomerate and minor pisolitic ironstone. The sequence is approximately 20m thick and is overlain by siltstones of the Corcoran Formation.

Reconnaissance rock chip sampling of the Munyi Member was carried out over two days in March 2012. Sixteen rock chip samples were collected. The samples were sent to Genalysis/NTEL for analysis for an Iron Ore suite of elements by XRF.

Oolitic to pisolitic ironstone was recognized in a few of the samples. In most cases the Munyi Member consisted of ferruginous sandstone which had been laterised to a greater or lesser extent. It was difficult to gain an impression of the thickness of the iron-rich horizon due to the poor outcrop, however it did not appear to be greater than two metres thick.

The iron values in the samples ranged from 19 to 49% Fe. The better results came from laterised material which had been subject to secondary enrichment. The silica values were generally high ranging from 26 to 67% SiO<sub>2</sub>, showing that the samples were in most part ferruginous sandstones. Alumina and Phosphorus values were low.

The Munyi Member does not appear to contain economic iron ore mineralization. The full width of the Munyi Member was not exposed in the areas visited and it is possible that more prospective ironstone occurs in the upper parts which did not crop out. The formation should not be written off as a future exploration target.

Further low priority sampling should be carried out preferably in areas where the full width of the Munyi Member is exposed.

## Background

Sherwin Iron Ltd (SHD) holds exploration licences 26412 and 28497 in the Gulf Region of the Northern Territory. These tenements are mostly situated within the boundaries of the proposed Limmen National Park. The NT government had decided to promulgate the park and had asked SHD to make a submission concerning possible areas within the two ELs which could be excised from the park. The northern portions of both ELs were thought to be underlain by the Munyi Member of the Roper Group which was considered to be prospective for sedimentary oolitic iron ore. SHD requested J Fabray and Associates (JFA) to undertake helicopter supported reconnaissance sampling of the Munyi Member.

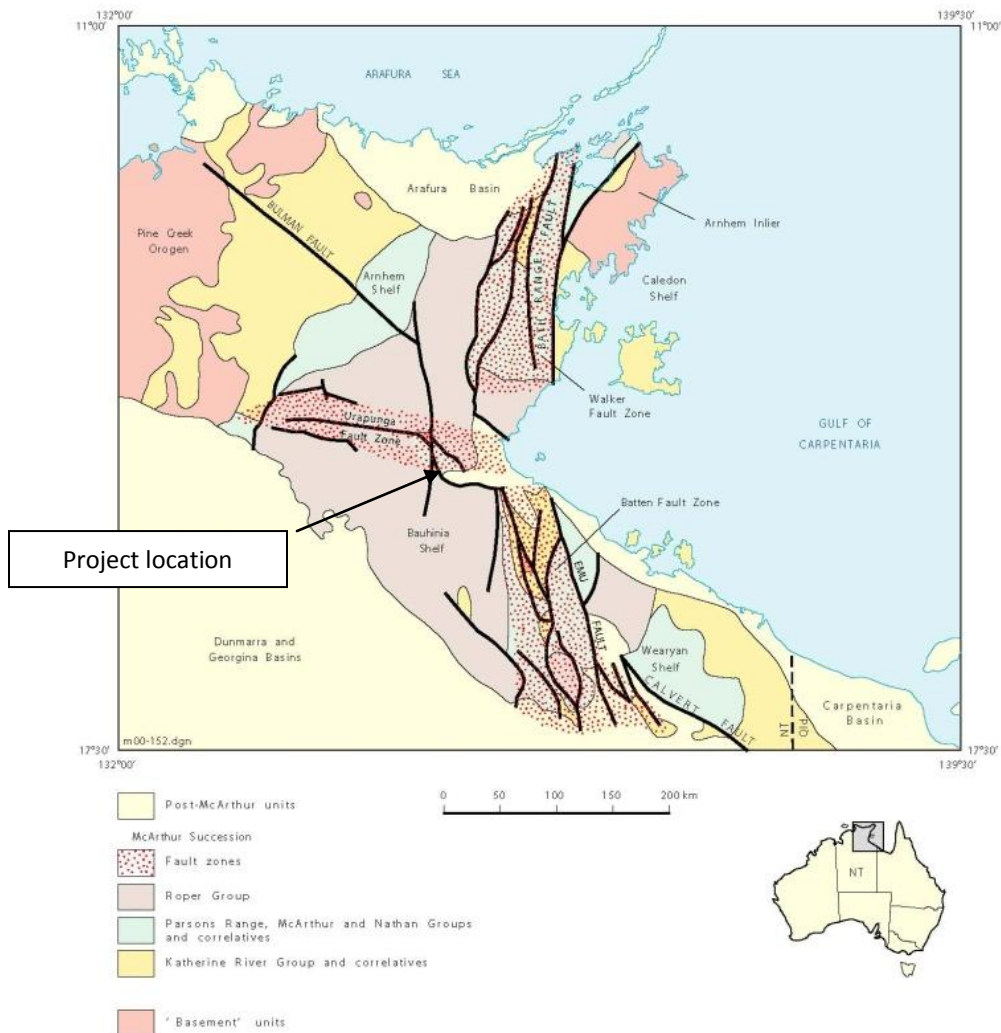
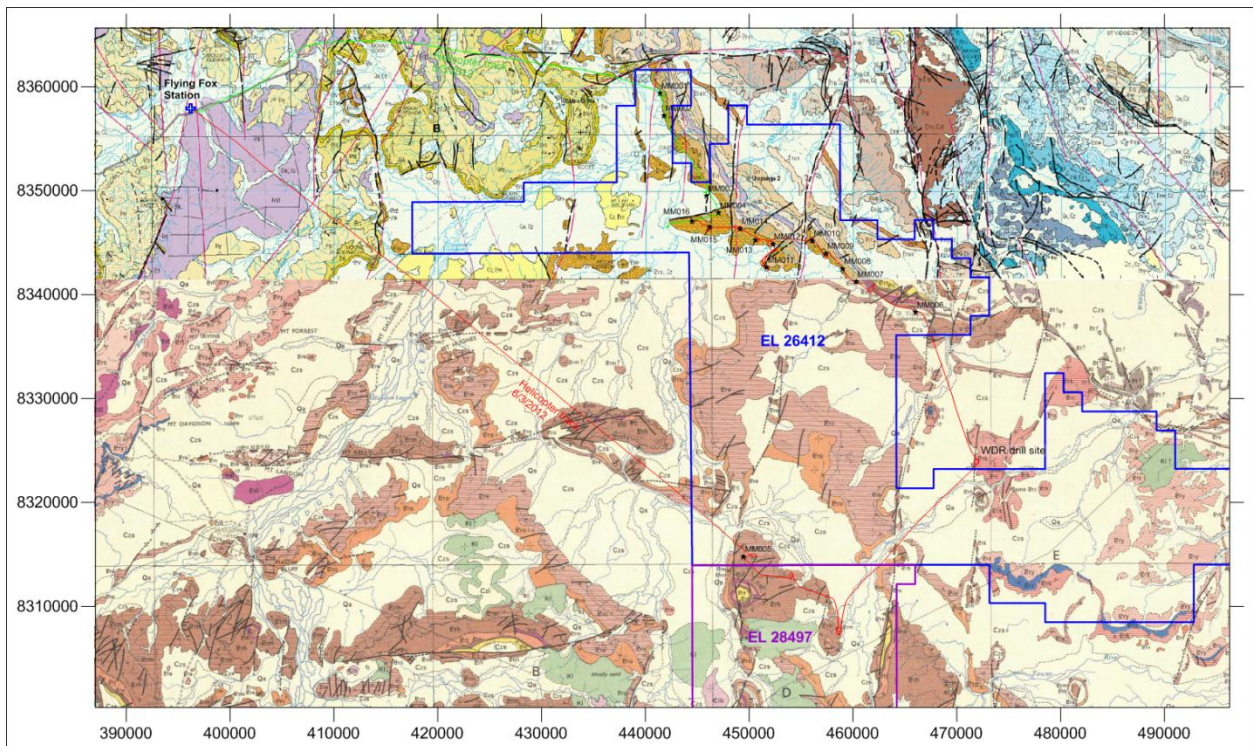


Figure 1 – Location of project within the McArthur Basin

## **Geology**

The tenements are situated within the McArthur Basin, a major Proterozoic-aged sedimentary basin. The ELs lie on the southern margin of the Urupunga Fault Zone, see Figure 1. The area forms part of the Bauhinia Shelf and is underlain by rocks of both the Collara and Maiwok Subgroups of the Mesoproterozoic Roper Group.

The geology of the portion of the tenements the subject of this report is shown in Figure 2. The area is located on the boundary between the Roper Region Special 250K geological sheet and the Hodgson Downs 250K geological sheet.



*Figure 2 – Geology from 250K sheets*

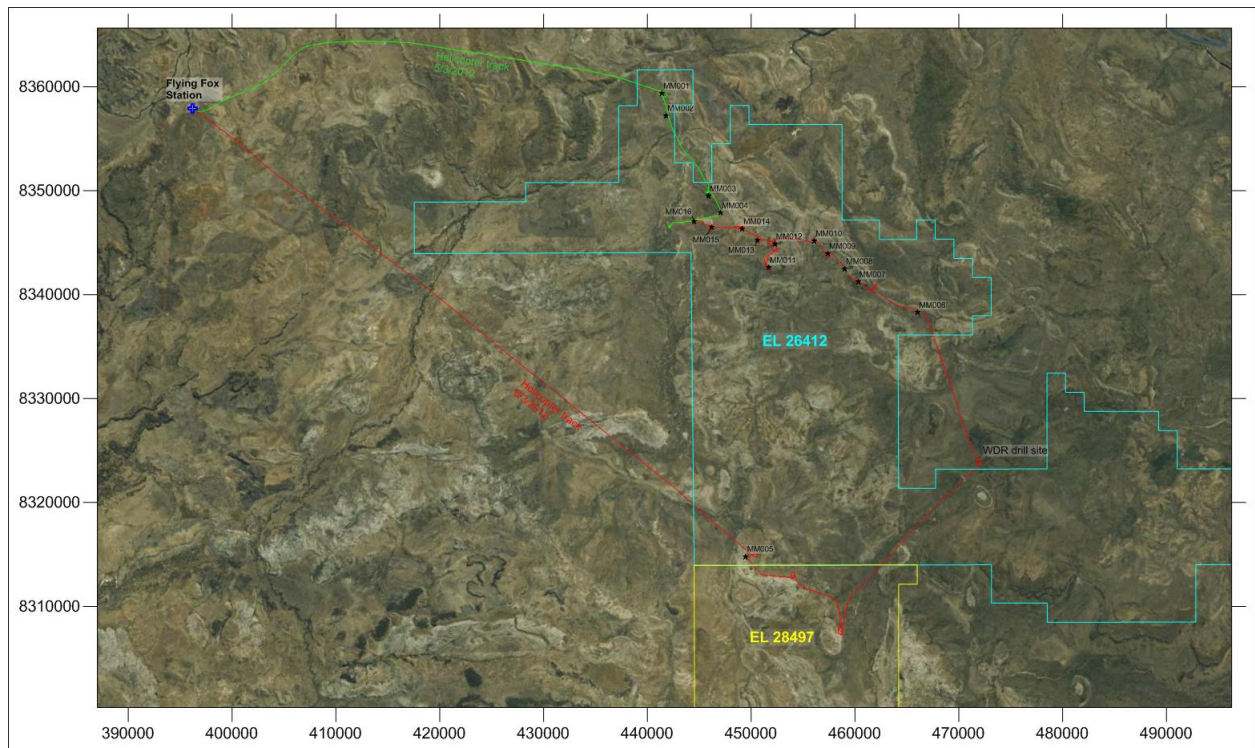
The Munyi Member (Prom, Prm) forms part of the Corcoran Formation (Pro) which lies above the Hodgson Sandstone (Prh). The Hodgson Sandstone forms prominent strike ridges in the area and the contact with the overlying Munyi Member is generally poorly exposed on the dip slope of the sandstone. The Munyi Member has been described in the explanatory notes for the Roper Region special sheet as a succession of ferruginous sandstone, siltstone, mudstone, minor conglomerate and minor pisolitic ironstone. The sequence is approximately 20m thick and is overlain by siltstones of the Corcoran Formation. The lower contact with the Hodgson Sandstone is probably an erosional disconformity. In BMR drillhole Urupunga 5 there are four

ironstone beds logged in the Munyi Member over an interval of 10 metres of which the uppermost is oolitic.

The Roper Group is folded into a broad syncline in the area of interest and has been deformed along a series of N to NNW trending faults. In the northern part the strata dip to the southwest and in the south the beds dip generally northeast to east.

### **Work completed and results**

Reconnaissance rock chip sampling of the Munyi Member was carried out over two days in March 2012. Sixteen rock chip samples were collected from the locations shown in Figure 3.



*Figure 3 – Sample locations and helicopter tracks on GE image*

The Munyi Member cropped out poorly in many of the locations visited and the samples collected were generally from laterised surficial material. A typical sample site of this type is shown in Figure 4.



Figure 4 – Sample site MM002

In other parts of the area the basal beds of the Munyi Member were more sandy and cropped out as a low ridge on the down dip slope of the Hodgson sandstone. A typical sample location of this type is shown in Figure 5.

Oolitic to pisolitic ironstone was recognized in a few of the samples. In most cases the Munyi Member consisted of ferruginous sandstone which had been laterised to a greater or lesser extent.

It was difficult to gain an impression of the thickness of the iron-rich horizon due to the poor outcrop, however it did not appear to be greater than two metres thick.



Figure 5 – Sample site MM007

The samples were sent to Genalysis/NTEL for analysis for an Iron Ore suite of elements by XRF. The results are shown in Table 1.

The iron values in the samples ranged from 19 to 49% Fe. The better results came from laterised material which had been subject to secondary enrichment. The silica values were generally high ranging from 26 to 67% SiO<sub>2</sub>, showing that the samples were in most part ferruginous sandstones. Alumina and Phosphorus values were low.

## **Conclusions and Recommendations**

The Munyi Member does not appear to contain economic iron ore mineralization. Surficial enrichment has produced iron values up to 49% in ferruginous sandstones. Minor oolitic material was recognized in a number of the samples. The full width of the Munyi Member was not exposed in the areas visited and it is possible that more prospective ironstone occurs in the upper parts of the Munyi Member which did not crop out. The Munyi Member should not be written off as a future exploration target.

Further low priority sampling should be carried out preferably in areas where the full width of the Munyi Member is exposed. It may be worthwhile to examine BMR drillhole Urapunga 5 which has the type section for this formation. Measurements could be taken of the ironstone in the core with the hand held XRF.

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*The author has over 30 year's exploration experience covering a range of commodities. He was Exploration Manager for Western Desert Resources Ltd from November 2007 to November 2010 and was in charge of the exploration team which discovered the Roper Bar Iron ore deposits.*

Table 1 – Assay results from rock chip sampling

Sample number	GDA_E	GDA_N	Field Notes	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P%	LOI%
MM001	441413	8359351	Poor rubbly outcrop of oolitic sandstone on dip slope of Hodgson Sandstone	42.2	32.8	4.3	0.027	1.67
MM002	441805	8357210	as above - very poor outcrop, lateritic in part	34.1	43.7	4.8	0.060	1.96
MM003	445881	8349485	as above - possibly secondary enrichment and laterised.	48.7	26.1	2.7	0.024	1.01
MM004	447047	8347845	Poor outcrop of oolite and and oolitic sandstone. Secondary hematite?	44.5	31.1	3.4	0.028	1.56
MM005	449479	8314787	Poor rubbly outcrop of ferruginous sandstone with minor oolite	26.9	49.4	8.3	0.031	3.26
MM006	466058	8338279	Poor rubbly outcrop of oolite, oolitic sandstone and ferruginous sandstone	32.4	46.5	4.7	0.053	1.92
MM007	460288	8341218	Good outcrop of ferruginous ?pisolitic sandstone on ridge crest	37.9	39.1	4.4	0.035	1.71
MM008	459035	8342467	as above - possibly 0.5 to 1.0m thick?	44.6	28.2	5.5	0.039	2.22
MM009	457399	8343936	Poor outcrop mostly secondary hematite at base of Munyi Member	39.1	38.3	3.8	0.070	1.53
MM010	456090	8345156	Good outcrop of mostly ferruginous sandstone	31.0	49.2	4.6	0.028	1.77
MM011	451665	8342591	Good outcrop of ?pisolitic ferruginous sandstone which dips south	32.4	50.6	1.9	0.018	0.76
MM012	452258	8344862	as above - flat lying	18.8	67.3	3.4	0.050	1.93
MM013	450624	8345216	Laterised ferruginous sandstone - possibly not Munyi Member	6.3	84.6	4.2	0.018	1.79
MM014	449137	8346321	Outcrop of ferruginous sandstone with some minor oolite	40.5	40.1	1.2	0.018	0.53
MM015	446165	8346487	Outcrop of laterised ferruginous sandstone ?Munyi Member	25.2	56.5	4.8	0.030	2.15
MM016	444499	8347006	Outcrop of ferruginous sandstone with minor oolite	33.1	46.3	4.5	0.034	1.67