

# Iron Ore Exploration – Yumanji EL 26412

Phase 2

Ву

S Moyle

GDA94 - Zone 53

Target Commodities: Iron Ore 1:250,000 Hodgson Downs 1:100,000 St Vidgeon

November 2011

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## INTRODUCTION

## **Background**

EL26412 (Yumanji), is located in the south east corner of Sherwin Iron's Roper River tenement package. The surrounding area is being actively explored for Iron Ore by Western Desert Resources and Sandfire Resources. The tenement has not previously been explored for iron ore.

This report describes follow up reconnaissance exploration over under explored areas of the Yumanji project targeting layers of sedimentary ironstone similar to that seen at Deposits B and C within the upper Sherwin Formation.

#### **Location and Access**

The project area is located about 50km south of Ngukurr in the Roper River region of the Northern Territory.

Access to the area is by the Roper Highway from Mataranka to Roper Bar; then by the unsealed Savannah Highway for a distance of 20km to the Queensland Crossing over the Hodgson River and then by an unsealed track for a distance of approximately 30km which passes the ruins of the St Vidgeon Homestead. Field work in the area has been completed using helicopter support.

#### **Climate**

The project area has a humid monsoonal climate, with mild dry winters and hot humid summers often with heavy monsoonal rains associated with tropical cyclones. The average annual rainfall is 700 millimetres with most falls between November and April. The wet season renders portions of the area inaccessible for exploration activities.

## **EXPLORATION**

## **Reconnaissance sampling and mapping**

Follow up desk top studies identified three target areas within the EL which were thought to have been under explored in the previous sampling programme conducted in August, 2011. These were Yumanji West, Yumanji East and Yumanji South (Figure 1). Due to the poor access conditions within the eastern part of the tenement it was decided that the continued exploration of these targets would again be carried out using a helicopter. Sam Moyle and Chris Bittar carried out the follow up work.

Ground reconnaissance with helicopter support was carried out over 2.5 days in October 2011. A Robinson R44 helicopter from Flying Fox station was used during the work. Forty six rock chip samples were collected (Figure 2) and were tested with the hand held Delta XRF instrument owned by SHD. The locations, XRF readings and descriptions of these samples are shown in Tables 1 and 2. Images taken at each sample site can be found in Appendix 1. All samples were sent to NTEL Laboritories for assaying, the results are pending.

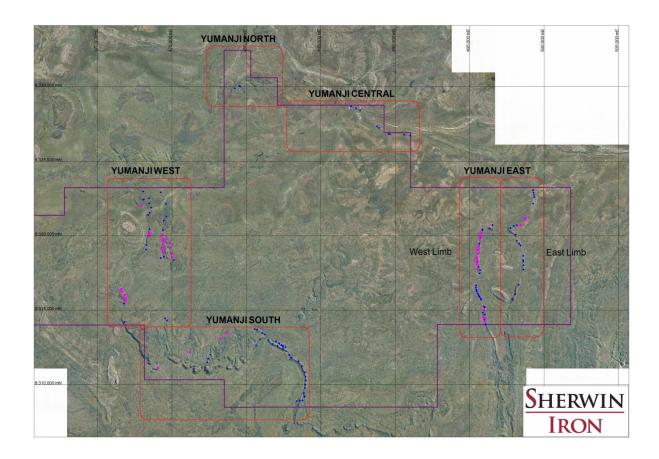


Figure 1 - Yumanji Target Areas

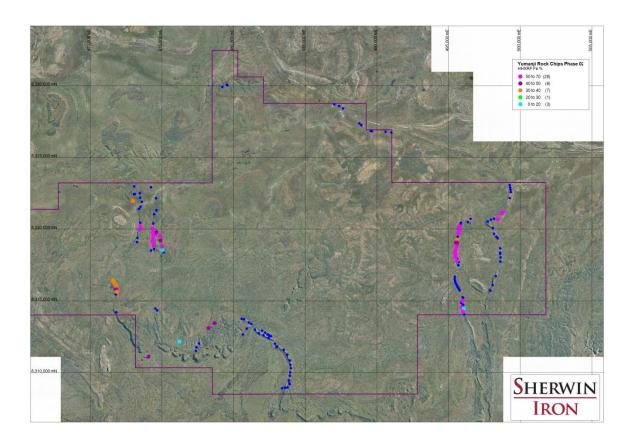


Figure 2 - Yumanji Rock Chip Locations

## a) Yumanji West

Yumanji West forms a folded sequence of Sherwin ironstones separated to the south by the intrusion of a dolerite sill disrupting the Sherwin exposure. For ease of identification Yumanji West has been broken up into five geographic zones as seen in Figure 3.

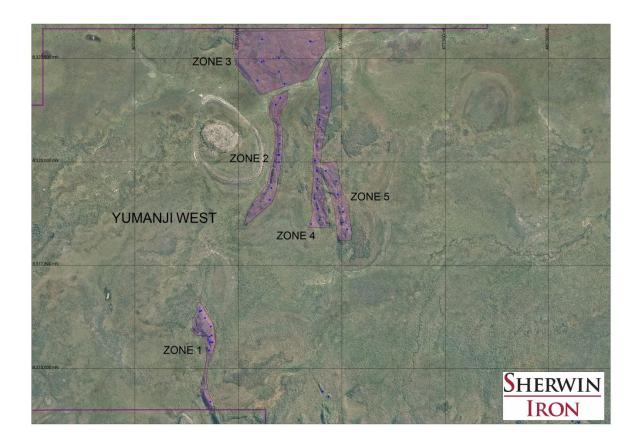


Figure 3 - Yumanji West Geographic Zonation's

Yumanji west **Zone 1** appears to have two distinct horizons of moderate to high grade ironstone approximately 50m apart. Six additional samples were taken here along with two strike and dip measurements of the ironstones confirming all exposed stratigraphy dips on average 50° to the east on a 158° strike.

Three additional samples were collected at Yumanji West **Zone 2**. As part of an aerial traverse of western Yumanji the limb was revisited. Two bands of iron rich material are exposed. The Eastern most horizon was noted as being the true ironstone whist the western band was more of a ferruginous sandstone. 11Y166 sampled the low grade first band returning 30.8% Fe whilst 11Y167 & 11Y168 both sampled the eastern horizon and returned grades of >50% Fe. Figure 4 illustrates the likely structural setting in the vicinity of zone 2 and zone 3. The darkest layer in the cartoon represents the top Ironstone bands of the Sherwin Formation evident as red bands in the aerial photography.

Sample 11Y169 falls north of Yumanji creek in Yumanji West **Zone 3** and was aimed at a prominent ridge previously un-sampled. The material was weathered ironstone returning a moderate grade of 37.3% after Niton analysis.

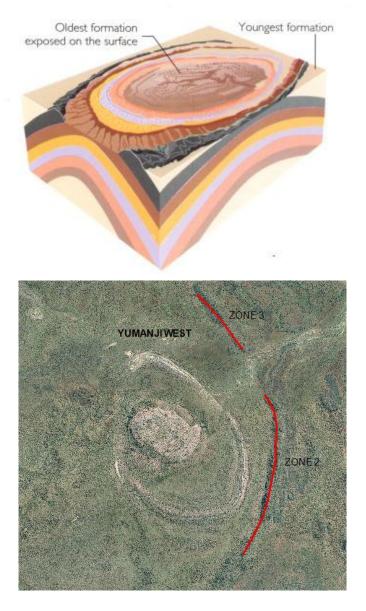


Figure 4 - Yumanji West Zone 2 and Zone 3 in Cartoon and Aerial Photography

Yumanji west **zone 4** is interpreted as the limb of a syncline dipping west. No further structural data was collected to further reinforce these findings. Six additional samples were taken of the ironstone all returning results from 52.5% - 65.6% Fe. All samples were taken

on the western side of the ridge where the ironstone appears to be most prominent and up to five meters thick in parts.

**Zone 5** represents the eastern side of the anticline, where only one sample has been taken previously. Five additional samples were taken to the north returning moderate to high grade results; with the highest result returning 67% Fe. Helicopter reconnaissance continued north towards Yumanji creek, however no sample worthy material was located. It is likely that the horizon has been faulted out to the north as there is good exposure yet no ironstone. The nature of the outcrop in this area did not allow for collection of structural data.

## b) Yumanji South

This area under investigation is in the far south of the Sherwin tenement. The area appears to be gently dipping to the north and dissected by drainage channels exposing the stratigraphy within the cliff walls. The ironstones observed were north of the main breakaway, of moderate grade and are poorly exposed. Four samples were taken and returned grades within 19.2% Fe - 49.5% Fe.

## c) Yumanji East – Eastern Limb

Yumanji East – Eastern Limb has been broken up into a series of geographic zones (Figure 5) to simplify understanding and aid in reporting.

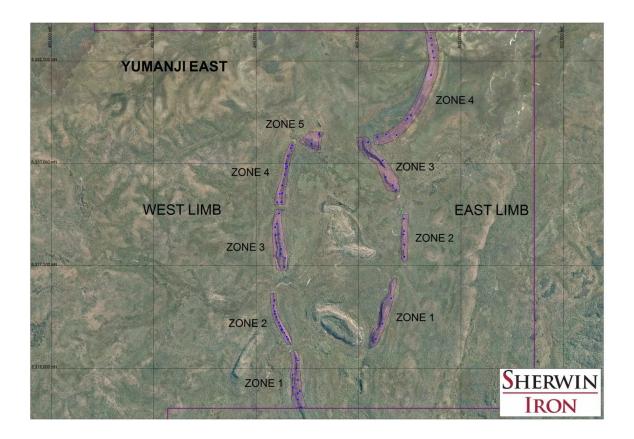


Figure 5 - Yumanji East Geographic Zones

Further work was conducted in the eastern limb **Zone 4** in order to fill a 1.5km gap in the original sampling. Traversing from the south the ironstone horizon was traced an additional 750m to the NE. Three samples were taken approximately 200m apart, all returning grades above 55% Fe after Niton analysis. The traverse continued to an existing sample site, no additional exposure was located. The ironstones appear to disappear undercover rather than being faulted out.

All existing exposures occur on the Eastern side of the ridge and dip to the NW.

## d) Yumanji East – Western Limb

The western limb of Yumanji East has been broken up into a series of geographic zones as shown on Figure 5.

The Yumanji East western limb **zone 1** hosts a single layer of high grade ironstone. A second horizon does exist in parts on the eastern side however it is of low grade and inconsistent.

Three additional samples were taken over the western ironstone. Preliminary Niton results

show the three samples all coming back above 50% Fe.

The **third zone** on the western limb has two well defined layers of ironstone. Six additional

samples were collected over both layers in order to infill existing data. A strike-slip fault in

the south appears to have disjointed both ironstone ridges to the east. Collected material

returned Niton results between 54% - 60% Fe.

The fourth zone of the western limb again has two horizons of iron rich material. The

western most horizon is the most consistent and can be traced the full length of the ridge.

The second eastern zone is inconsistent and of moderate grade. Seven samples were taken

primarily of the western horizon, these returned grades around 55% Fe. Both the upper and

the lower zones recorded a dip of 45°W along with an average strike of 180°.

**Analysis** 

In total forty six samples were collected and transported from site to NTEL Darwin:

3406 Export Drive,

Darwin Business Park

Darwin, NT

All samples submitted will be receiving Sherwin Iron Four Acid Digest (ICP-OES) which

includes analysis for Fe, Al2O3, As, Ba, CaO, Cl, Cr, K2O, MgO, Mn, Na2O, P, Pb, S, SiO2, TiO2

amd LOI.

Results

Lab Results Pending

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## **Discussion**

Sherwin Iron has completed a successful phase 2 helicopter supported reconnaissance mapping and sampling program over the Yumanji tenement as part of a broader expansion of its exploration target. The work has resulted in the identification of additional hematite mineralisation along strike, greatly increasing the prospectivity of the area.

The target mineralisation at Yumanji is hematite enriched onlitic ironstone forming 1-5 thick bands that can be continuous for up to 3km. Large parts of the area is covered by thick vegetation and therefore continuity of the Sherwin ironstone mineralisation in some parts cannot be ascertained with certainty.

<u>Yumanji West</u> **Zone 2** has two continuous layers of 2-3m thick, high grade ironstones representing a significant drill target. Additionally the previously unsampled **Zone 5** hosts high grade ironstone up to 67% Fe along 2km of strike. Together these horizons make a worthy drill target with the possibility of up to 40Mt of material.

<u>Yumanji East western limb</u> **Zone 3** and **Zone 4** both have two easily traceable layers of ironstone. Grades greater than 55% Fe have been reported within both zones. A moderate dip of 45° is likely to extend the 3km strike of the combined areas. These areas require drill testing.

Sherwin Iron will continue to plan for an initial drilling programme to test identified targets at Yumanji. The targets represent a growing exploration portfolio for Sherwin Iron over the expansive area of the Roper River Iron tenements.

## Recommendations

Additional drill ready targets:

- Yumanji West Zone 2
- Yumanji West Zone 5
- Yumanji East Western Limb Zone 3
- Yumanji East Western Limb Zone 4

## **References**

FABRAY, J.F., 2011. *Reconnaissance Iron Ore Exploration Yumanji EL26412. Sherwin Iron Ltd.*Unpublished company report

Table 1 – Sample Location, Descriptions, and Fe XRF results

Sample ID	nple ID Easting Northing Comments						
11Y123	498775	8321175	True Irs, High Grade, Eastern Scree Slope				
11Y124	498697	8321092	Irs OC, High Grade, Sandy/Soft	57.05			
11Y125	498430	8320695	Soft Irs Material, Deep ppl to red, higher grade, OC	56.31			
11Y126	495773	8320184	Strong exposure western side of ridge, moderate grade, ppl colour	58.47			
11Y127	495727	8319994	Strong exposure western side of ridge, moderate grade, ppl colour	55.51			
11Y128	495763	8319927	Traverse to east, intersect upper irs layer, appears weaker then lower irs	56.62			
11Y129	495695	8319725	Continuation of lower zone, strat dips back to West, moderate dip 5				
11Y130	495578	8319264	pper and lower exist again, mod grade material, soft purple 3				
11Y131	495511	8319055	sample of lower most zone average material low grade, 180/45W	49.69			
11Y132	495612	8319055	Upper most zone, steeply dipping low grade material, chert 182/43W	49.78			
11Y133	495555	8318779	Flat lying region, high grade irs, in situ revealed from undercover	60.2			
11Y134	495502	8318531	Upper zone extension, 2 zones of Irs	58.71			
11Y135	495467	8318445	Lower zone OC to west of prominent upper zone, patchy high grade material				
11Y136	495471	8318254	Lower zone of Irs, Med to High Grade				
11Y137	495496	8318066	Lower zone, mod to high grade, high grade scree to the west				
11Y138	495596	8317796	Upper zone prominent ridge on eastern side, mod to high grade				
11Y139	495981	8315002	Lower most zone to west, only 1 zone of fst				
11Y140	495900	8314534	western most fst unit, mod to low grade, dark ppl colour, sandy/soft				
11Y141	496069	8314450	No sample mod grade irs to the west, moving east moves into a fst ends in a Qst				
11Y142	496020	8314239	Mod to high grade irs/fst, lower most unit to west,	59.85			
11Y143	478253	8313108	Sandy Fst, mod to low grade, high chamasite	48.57			
11Y144	478682	8313443	Fresh partially ox Irs, some high grade irs throughout	49.59			
11Y145	476231	8312168	Poor grade fst, highly weathered	19.27			
11Y146	474084	8311119	Very weakly oolitic fst, low grade, chamasite, veining of hematite	48.45			
11Y147	471610	8316407	True Irs northern end of ridge, steeply dipping				
11Y148	471572	8316386	True Irs, Traversed Ridge, 2nd Band?, All dips to east, Anticline? QST/IRS 162/60E	35.59			
11Y149	471694	8316233	True Irs, Very Hard, Massive, Western Side Of ridge	39.01			
11Y150	471834	8316021	True Irs, Sparse, 2nd band weakened, sample eastern band				
11Y151	471850	8315805	Irs continues down eastern side of ridge,	57.33			
11Y152	471809	8315776	high grade true Irs, 2nd band further west, bands 50m both dipping E, 152/40E	45.44			

11Y153	471882	8315639	Hematite veining, strong true Irs, Western Most Band						
11Y154	471862	8315633	Second band 20m West, Bands of Irs merging, High Grade	34.29					
11Y155	474351	8320039	Scattered Irs, Mod Grade	58.96					
11Y156	474395	8319785	Mod grade Irs on Western Side of Ridge						
11Y157	474410	8319589	Mod grade Irs on Western Side of Ridge						
11Y158	474397	8319369	ow grade mod irs, continues along W ridge						
11Y159	474348	8319111	OC swing around back to E, Irs flat lying layer, mod grade	55.95					
11Y160	474426	8318870	Irs/ Fst, material more like a weathered IRS, 5m thick mod to high grade	65.63					
11Y161	475026	8318534	Banded shale/Irs, Cherty?, Fractures along beds, brittle, bands of pure irs within						
11Y162	475032	8318794	Mod grade Irs, bands within a banded chert, strongly metamorphed						
11Y163	474905	8319214	High grade Irs, East side of ridge	41.34					
11Y164	474862	8319535	High grade Irs, Cap above Qst, No apparent dip, Continues N-S	61.1					
11Y165	474615	8319790	Good Irs, High grade eastern side, more deformed then previous	43.37					
11Y166	473469	8320169	Fst, Mode grade irs within bands	30.8					
11Y167	473490	8320170	Massive true irs, second band strong, first band fst, bands of irs	50.58					
11Y168	473481	8319991	Massive true irs, second band strong, first band fst, bands of irs	55.28					
11Y169	472961	8321975	Irs, highly weathered	37.39					

**Table 2 - Handheld Niton Results** 

Sample ID	NAT_GRIDID	Easting	Northing	Fe	Si	Al	P	Са	К	S
11Y123	MGA94_53	498775	8321175	59.14	14.17	ND	ND	0.2872	0.0685	ND
11Y124	MGA94_53	498697	8321092	57.05	7.85	ND	ND	0.3678	0.1408	0.0452
11Y125	MGA94_53	498430	8320695	56.31	11.67	0.94	ND	0.3275	0.121	0.032
11Y126	MGA94_53	495773	8320184	58.47	10.04	0.36	ND	0.2951	0.2152	ND
11Y127	MGA94_53	495727	8319994	55.51	10.53	ND	ND	0.2442	0.129	ND
11Y128	MGA94_53	495763	8319927	56.62	10.47	0.34	ND	0.2883	0.1496	ND
11Y129	MGA94_53	495695	8319725	54.06	6.12	ND	ND	0.2402	0.121	0.0317
11Y130	MGA94_53	495578	8319264	39.38	18.99	1.11	ND	0.1086	ND	ND
11Y131	MGA94_53	495511	8319055	49.69	5.2	ND	ND	0.186	0.0666	ND
11Y132	MGA94_53	495612	8319055	49.78	18.37	1	ND	0.1378	ND	ND
11Y133	MGA94_53	495555	8318779	60.2	11.55	ND	ND	0.3048	0.148	0.0493
11Y134	MGA94_53	495502	8318531	58.71	3.93	ND	ND	0.3373	0.1768	ND
11Y135	MGA94_53	495467	8318445	54.98	8.49	0.46	ND	0.3374	0.1387	0.035
11Y136	MGA94_53	495471	8318254	60.22	5.96	ND	ND	0.3359	0.1498	ND
11Y137	MGA94_53	495496	8318066	60.03	5.72	ND	ND	0.3622	0.1593	ND
11Y137	MGA94_53	495496	8318066	48.46	8.59	0.32	ND	0.2066	0.1158	0.025
11Y138	MGA94_53	495596	8317796	54.12	9.02	ND	ND	0.2709	0.0868	0.0246
11Y139	MGA94_53	495981	8315002	53.41	6.5	ND	ND	0.2936	0.142	ND
11Y140	MGA94_53	495900	8314534	50.7	6.4	0.39	ND	0.3117	0.0759	0.0615
11Y141	MGA94_53	496069	8314450	ND	ND	ND	ND	ND	ND	ND
11Y142	MGA94_53	496020	8314239	59.85	4.62	ND	ND	0.3036	0.1133	0.031
11Y143	MGA94_53	478253	8313108	48.57	10.76	0.57	0.0466	0.2991	0.1669	0.0592
11Y144	MGA94_53	478682	8313443	49.59	9.81	ND	ND	0.2778	0.076	0.0353
11Y145	MGA94_53	476231	8312168	19.2007	32.18	2.06	ND	ND	ND	ND
11Y146	MGA94_53	474084	8311119	23.755	23.05	1.97	ND	0.139	ND	ND
11Y146	MGA94_53	474084	8311119	48.45	18.83	2.61	ND	0.1532	ND	ND
11Y147	MGA94_53	471610	8316407	27.93	23.49	1.56	ND	ND	ND	ND
11Y148	MGA94_53	471572	8316386	35.59	35.89	1.51	ND	ND	ND	ND
11Y149	MGA94_53	471694	8316233	39.01	31.94	0.94	ND	ND	ND	ND
11Y150	MGA94_53	471834	8316021	35.5	27.54	0.53	ND	ND	ND	ND

11Y151	MGA94_53	471850	8315805	57.33	8.5	ND	ND	0.3179	0.1	ND
11Y152	MGA94_53	471809	8315776	45.44	20.01	ND	ND	0.1849	ND	ND
11Y153	MGA94_53	471882	8315639	66.78	10.96	1.07	ND	0.2967	0.1183	ND
11Y154	MGA94_53	471862	8315633	34.29	25.64	6.93	ND	ND	ND	0.0654
11Y154	MGA94_53	471862	8315633	18.6503	36.83	1.25	ND	ND	ND	0.1131
11Y155	MGA94_53	474351	8320039	58.96	4.37	ND	ND	0.4295	0.1051	0.0398
11Y156	MGA94_53	474395	8319785	54.47	4.6	ND	ND	0.3781	0.1528	0.0585
11Y157	MGA94_53	474410	8319589	52.5	7.91	0.62	ND	0.2944	0.145	0.0299
11Y158	MGA94_53	474397	8319369	62.51	8.57	0.67	ND	0.2472	0.0695	ND
11Y159	MGA94_53	474348	8319111	55.95	7.92	ND	ND	0.2643	0.0939	0.0241
11Y160	MGA94_53	474426	8318870	65.63	7.8	ND	ND	0.3209	ND	0.0471
11Y161	MGA94_53	475026	8318534	15.6332	30.3	1.23	ND	ND	ND	ND
11Y162	MGA94_53	475032	8318794	67.01	5.55	ND	ND	0.3163	0.1131	ND
11Y163	MGA94_53	474905	8319214	41.34	30.78	1.14	ND	ND	ND	ND
11Y164	MGA94_53	474862	8319535	61.1	7.51	ND	ND	0.3546	0.1222	0.085
11Y165	MGA94_53	474615	8319790	43.37	9.63	0.39	ND	0.1514	0.0985	ND
11Y166	MGA94_53	473469	8320169	30.8	28.65	0.76	ND	ND	ND	ND
11Y167	MGA94_53	473490	8320170	50.58	16.78	ND	ND	0.2828	ND	0.0282
11Y168	MGA94_53	473481	8319991	55.28	11.84	ND	ND	0.3347	0.0618	ND
11Y169	MGA94_53	472961	8321975	37.39	10.84	0.86	ND	0.26	0.1046	ND

## **Appendix 1**

Images of Sample Site Locations