ASX and Media Release

19 July 2013

MAJOR NEW POTASH DISCOVERY IN WA'S MID-WEST

KEY POINTS

- **Thick, high grade potash intersections from maiden RC drilling programme at Oxley**
- **Mineralised intervals average 8.4% K_2O over 36m width (up to 75m), with high grade zones averaging 9.9% K_2O over 15m width (up to 39m)**
- **New potash province established, Sheffield holds entire 32km strike length of host unit**
- **Next step to include preliminary metallurgical testwork**
- **Success aided by State Government's EIS Co-Funded Exploration Drilling programme**

Sheffield Resources ("Sheffield") (ASX:SFX) today announced assay results from RC drilling at its Oxley Project near Three Springs in Western Australia's Mid-west region (Figure 4).

The maiden 17-hole 1,704m RC drilling programme returned thick, high grade potash intervals including:

- **75m @ 8.38% K_2O from 7 to 82m** (OXRC012), *including* **17m @ 10.1% K_2O from 50m**
- **72m @ 8.53% K_2O from 35 to 107m** (OXRC002), *including* **11m @ 10.1% K_2O from 40m**
- **48m @ 9.84% K_2O from 3 to 51m** (OXRC015), *including* **39m @ 10.4% K_2O from 6m**

(See Table 2 for full results listing).

The drilling tested an 8km strike length of the target microsyenite unit, obtaining mineralised widths up to 75m (average 36m) and K_2O grades up to 9.8% (average 8.4%) at a 6% K_2O cut-off (Figures 1 & 2). Coherent higher grade zones occurs within these intervals with widths up to 39m (average 15m) and K_2O grades up to 10.4% (average 9.9%) at a 9% K_2O cut-off.

Sheffield also completed 3 diamond drill holes at Oxley. Drill core from these holes is currently being processed with results expected during Q3, 2013. The drilling programme was co-funded by the State Government under its Exploration Incentive Scheme (EIS).

Oxley potash is an unconventional, hard rock style of potash mineralisation, hosted by a series of ultrapotassic microsyenite lavas, which typically contain over 90% sanidine (potash) feldspar. These host rocks are exposed at surface and dip gently under cover in a series of open folds (Figures 1 & 2). Sheffield has pegged the entire 32km strike extent of the units within the northern part of the Moora Basin (Figure 4).

Sheffield's Managing Director, Bruce McQuitty said the results exceeded expectations, particularly in terms of the thickness and continuity of the mineralised horizon.

"Our Oxley potash project appears to have all the hallmarks of Sheffield's target strategy; large-scale bulk mineral deposits within areas of established infrastructure. Additionally, the project is well located with respect to the high growth Australian and Asian fertiliser markets."

"The low-cost, staged approach to evaluating Oxley has proven successful to date and we will now progress to preliminary metallurgical testwork."

"Our work thus far has concentrated on only one quarter of the total strike length of the host unit and we hope to fully realise the ultimate potential at Oxley as further results become available."

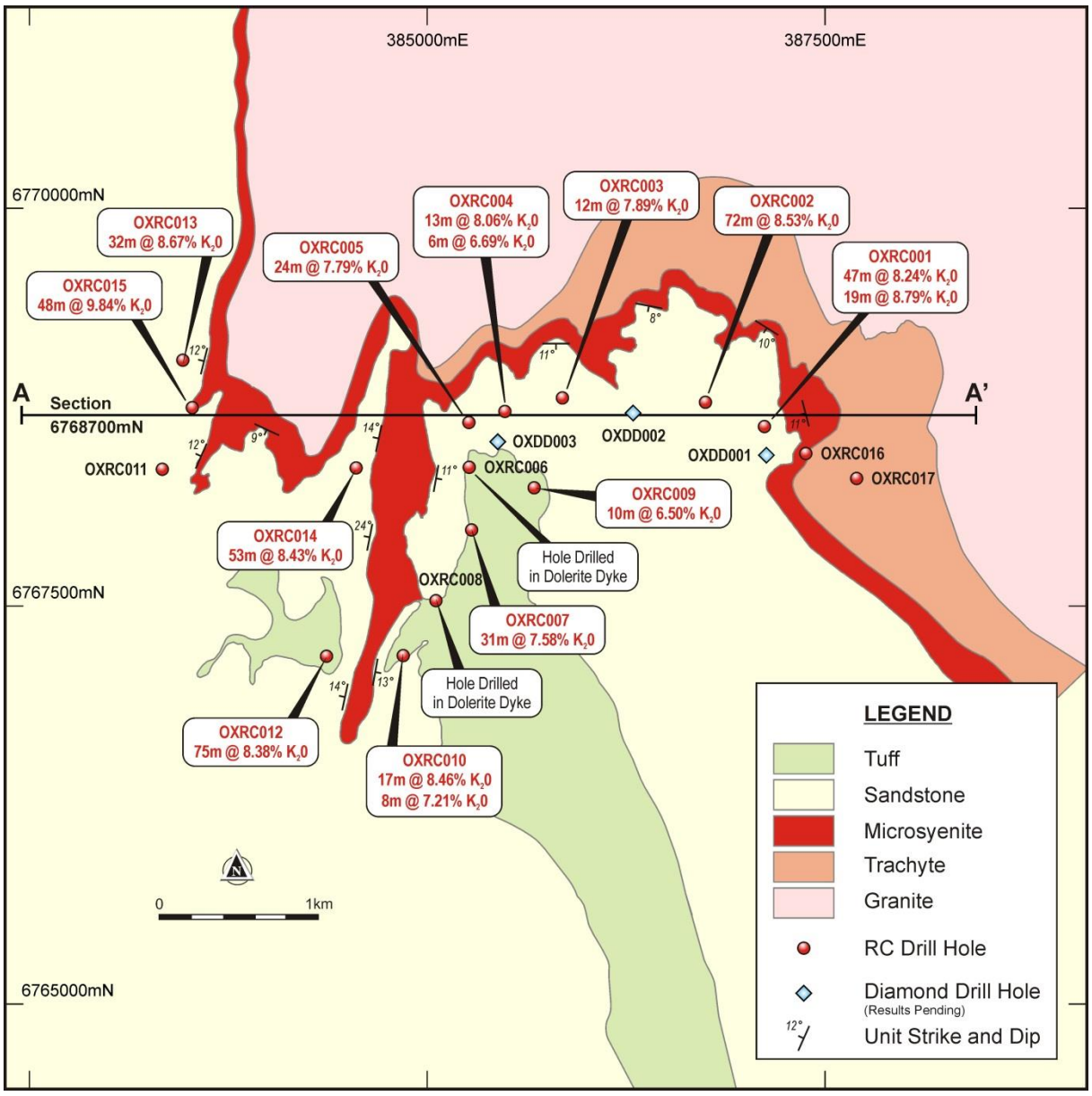

Figure 1: Oxley Project drill hole plan with surface geology

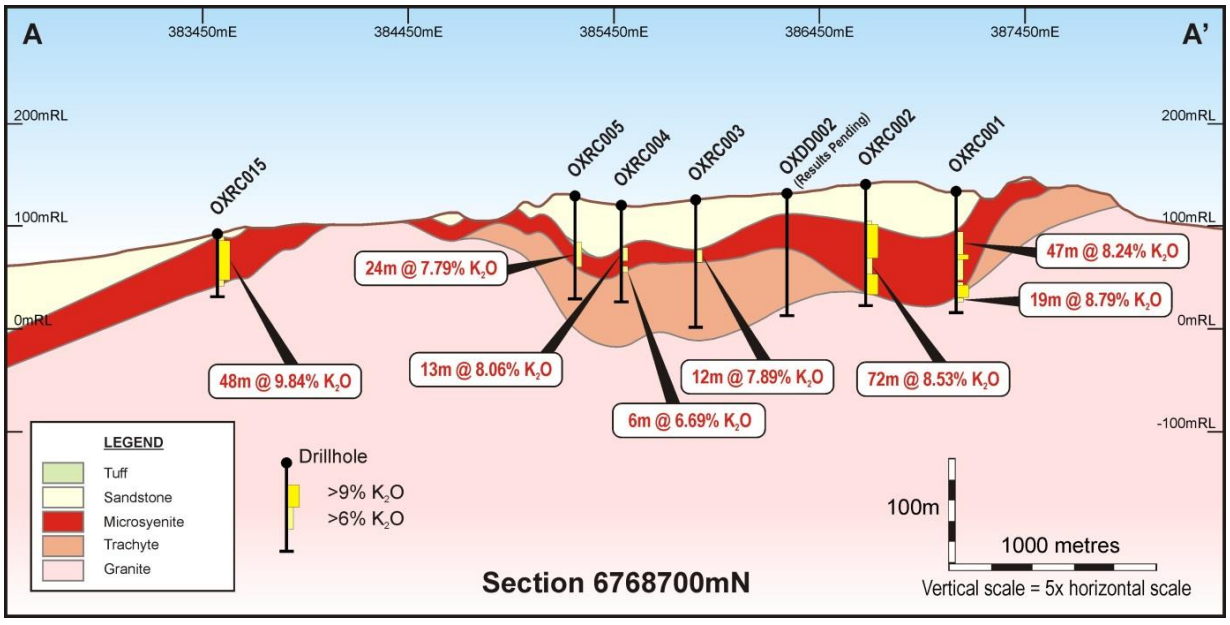

Figure 2: Cross-section A-A' (5x vertical exaggeration)

The potash mineralisation is hosted by a thick sequence of ultrapotassic microsyenite lava flows, and potassium-rich tuffaceous units. The high K_2O content ranging from 6% to 13% is due to the dominant presence of sanidine feldspar which comprises up to 90% of the rock. The potash feldspar occurs partly as fresh coarse euhedral phenocrysts to 5mm lengths, in a dominant groundmass of potash feldspar that is heavily impregnated by iron and titanium oxides.

Petrology indicates that iron and titanium oxides which comprise up to 10% of the modal abundance, occur in the form of titano-magnetite, titanite and hematite. Chalcopyrite is sporadically present as fines within the silicate matrix and associated with the oxides. Potassic alteration, evident in the footwall sequences, may have upgraded the mineralised horizon in places. Gangue minerals, including calcite, quartz and chlorite, occur within vesicles, as veinlets and occasionally as blebs.

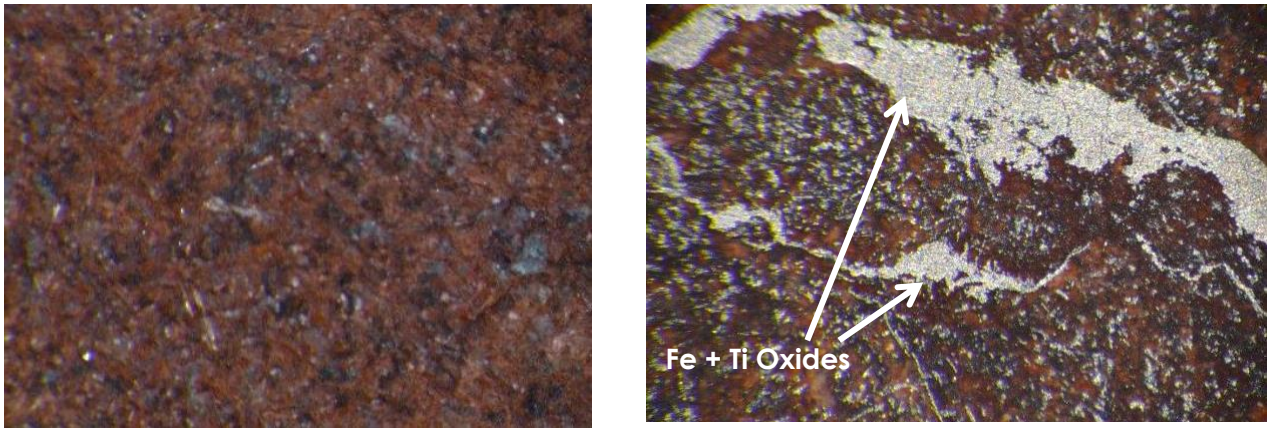

Figure 3: Photograph through microscope of microsyenite, dominated by pink sanidine laths (left) and microsyenite with abundant iron and titanium oxides (right)

Drilling intersections of the mineralised horizon averaged 8.4% K_2O, 12.4% Fe_2O_3, 14.3% Al_2O_3 and 1.65% TiO_2 (at a 6% K_2O cut off, Table 1). The potential to produce co-products of iron, titanium and aluminium will be investigate in the next phase of metallurgical testwork.

Table 1: RC drilling results, weighted average (all intersections at a 6% K_2O lower cut-off).

Weighted Average						
MINERALISATION				GANGUE		
K_2O (%)	Fe_2O_3 (%)	Al_2O_3 (%)	TiO_2 (%)	LOI (%)	MgO (%)	CaO (%)
8.43	**12.43**	**14.26**	**1.65**	4.4	3.4	2.2

Further Work

Diamond drill core from holes OXDD001 to 003 is currently being processed, with results expected during Q3, 2013. Once this work is complete, Sheffield will begin preliminary metallurgical testwork to evaluate the process required to extract potassium from the sanidine feldspar to produce muriate of potash (MOP, KCl), or sulphate of potash (SOP, K_2SO_4) products. The test work will also explore the potential to produce secondary products including iron, titanium and aluminium compounds. Diamond drill core and RC samples have been retained for ongoing metallurgical testwork.

About Oxley

The Oxley Project is located in the northern part of the Proterozoic Moora Basin, approximately 38km northeast of Three Springs (Figure 4). Regional exploration by Sheffield has identified a series of unique ultrapotassic lava flows located at the top of the "Morawa Lavas" – a unit which was previously mapped as a sequence of basalts and trachytes. These lavas dip shallowly into the basin at between 5° and 25°.

Sheffield has secured tenure over the full strike extent of the target horizon. The initial drilling programme has established substantial near surface thicknesses of mineralisation over an eight kilometre strike length (Figure 4). Regional exploration has identified several other target zones which will become the focus of more detailed exploration. Sheffield will adopt a basin wide exploration approach to fully evaluate the potential of this new potash province.

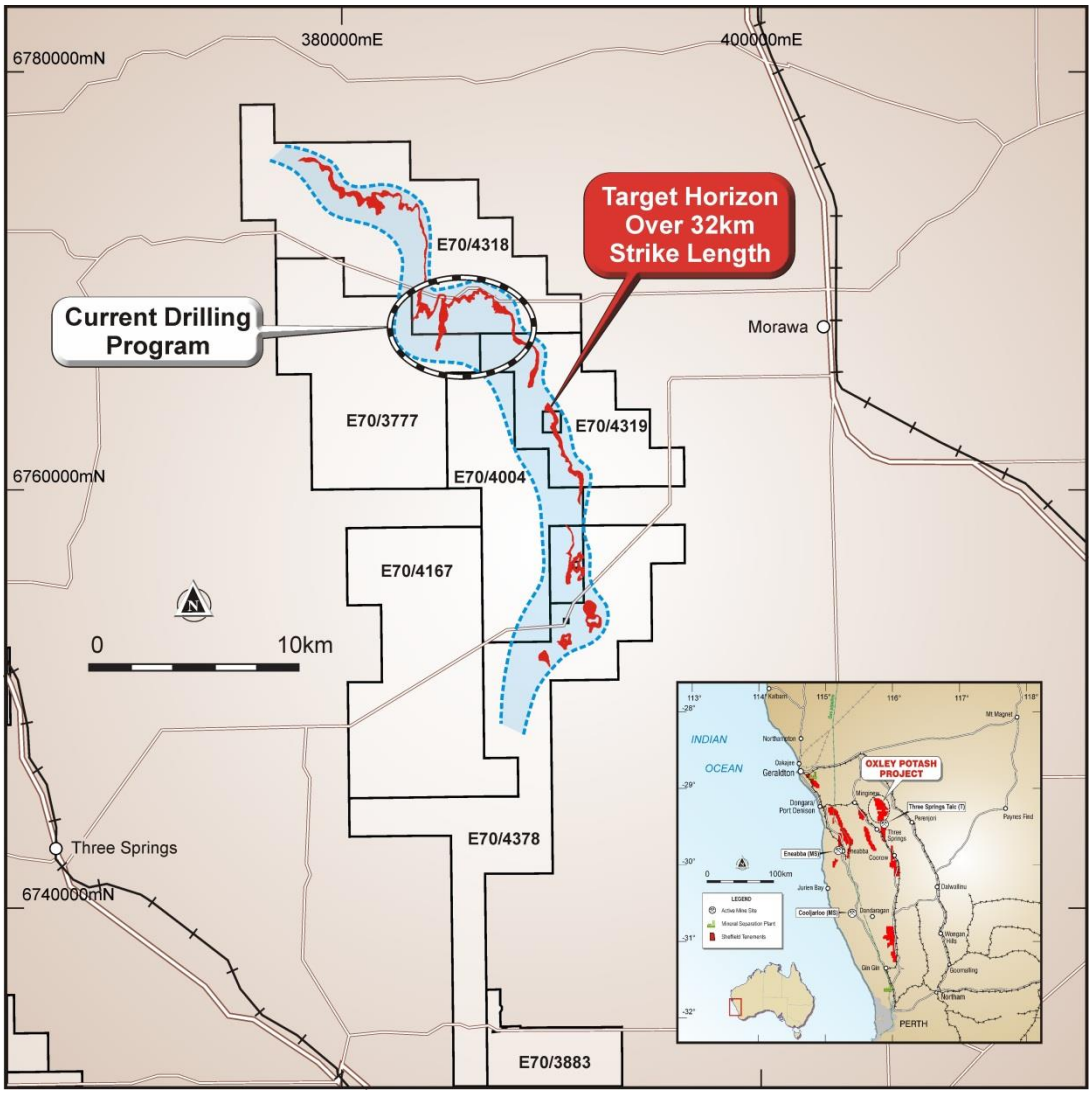

Figure 4: Oxley potash project location plan

Sheffield is evaluating the Oxley Project for its potential to produce muriate of potash (MOP, KCl), or sulphate of potash (SOP, K_2SO_4), products for use in the fertiliser market. Due to the unique composition of the microsyenite host rock at Oxley, new metallurgical processes may need to be developed to produce these target commodities and possible co-products of iron, aluminium and titanium.

The Oxley project has many similarities to Verde Potash's (TSX: NPK) Cerrado Verde hard rock potash project located in Brazil, which has a current NI43-101 mineral resource estimate[1] comprising 71Mt @ 9.22% K_2O (Indicated) and 2,763Mt @ 8.91% K_2O (Inferred). The potash mineralisation at Cerrado Verde is associated with metamorphosed sedimentary rocks composed of quartz, chlorite, muscovite, and microcline feldspar.

ENDS

For further information please contact:

Bruce McQuitty
Managing Director
Tel: 08 6424 8440
bmcquitty@sheffieldresources.com.au
Website: www.sheffieldresources.com.au

Media: Greg Galton
Cannings Purple
Tel: 08 6314 6300
ggalton@canningspurple.com.au

COMPETENT PERSONS' STATEMENT

The information in this announcement that relates to exploration results is based on information compiled by David Archer. Mr Archer is a full time employee of the Company. Mr Archer is a Member of the Australasian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity to which they are undertaking to qualify as Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code")'. Mr Archer consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

FORWARD LOOKING STATEMENTS

Some statements in this announcement regarding estimates or future events are forward-looking statements. They involve risk and uncertainties that could cause actual results to differ from estimated results. Forward-looking statements include, but are not limited to, statements concerning the Company's exploration programme, outlook, target sizes and mineralised material estimates. They include statements preceded by words such as "expected", "planned", "target", "scheduled", "intends", "potential", "prospective", "strategy" and similar expressions.

[1] Cerrado Verde NI 43-101 Preliminary Economic Assessment

Table 2: Oxley Project RC drilling assay results, listed by host lithology

Hole ID	Easting	Northing	Depth From (m)	Depth To (m)	Interval (m)	K_2O (%)	Fe_2O_3 (%)	Al_2O_3 (%)	TiO_2 (%)	LOI (1000°)	MgO (%)	CaO (%)	Lithology
OXRC001	**387119**	**6768628**	39	86	47	8.24	11.73	13.39	1.67	6.38	5.71	3.31	Microsyenite
		including	*61*	*66*	*5*	*9.51*	*9.58*	*13.96*	*1.76*	*8.21*	*5.06*	*5.52*	
		and	88	107	19	8.79	8.05	13.74	1.49	9.02	6.33	5.45	
		including	*91*	*103*	*12*	*9.26*	*7.88*	*13.91*	*1.54*	*8.6*	*6.19*	*5.18*	
OXRC002	**386749**	**6768782**	35	107	72	8.53	12.9	14.01	1.81	5.4	4.58	2.9	Microsyenite
		including	*40*	*51*	*11*	*10.1*	*13.96*	*15.05*	*1.76*	*1.2*	*1.44*	*0.34*	
		including	*54*	*64*	*10*	*9.74*	*11.58*	*13.59*	*1.79*	*6.84*	*4*	*4.59*	
OXRC003	**385851**	**6768809**	48	60	12	7.89	14.06	13.37	1.61	2.19	3.45	3.75	Microsyenite
OXRC004	**385490**	**6768724**	41	54	13	8.06	14.83	13.74	1.66	3.82	2.19	2.01	Microsyenite
		and	59	65	6	6.69	12.29	12.89	1.67	4.34	6.97	2.71	
OXRC005	**385263**	**6768654**	45	69	24	7.79	12.27	13	1.44	3.24	3.17	3.44	
OXRC006	**385264**	**6768373**	No significant Interval- Intersected dolerite dyke										Dolerite
OXRC007	**385280**	**6767978**	77	108	31	7.58	12.6	13.37	1.71	5.41	4.6	4.83	Microsyenite
OXRC008	**385055**	**6767534**	No significant Interval- Intersected dolerite dyke										Dolerite
OXRC009	**385673**	**6768243**	3	13	10	6.5	6.61	19.31	0.84	3.17	1.01	0.01	Tuff
OXRC010	**384851**	**6767189**	34	51	17	8.46	13.55	13.16	1.74	5.33	3.67	3.27	Microsyenite
		including	*34*	*45*	*11*	*9.75*	*13.8*	*13.47*	*1.78*	*4.54*	*2.69*	*2.76*	
		and	84	92	8	7.21	11.17	12.81	1.55	7.22	6.85	4.72	
OXRC011	**383334**	**6768361**	No significant Interval- Fault offset thick sediments										Sediment
OXRC012	**384368**	**6767186**	7	82	75	8.38	11.14	15.08	1.39	2.51	1.36	0.15	Tuff (7-37m) & Microsyenite
		including	*50*	*67*	*17*	*10.1*	*16.05*	*14.71*	*2.11*	*2.09*	*1.21*	*0.23*	
		including	*69*	*79*	*10*	*9.98*	*14.09*	*16.3*	*1.43*	*3.54*	*2.02*	*0.21*	
OXRC013	**383464**	**6769044**	50	82	32	8.67	11.13	14.88	1.84	3.9	4.22	1.01	Microsyenite
		including	*56*	*74*	*18*	*9.84*	*11.04*	*15.11*	*2*	*2.61*	*3.52*	*0.53*	

Hole ID	Easting	Northing	Depth From (m)	Depth To (m)	Interval (m)	K_2O (%)	Fe_2O_3 (%)	Al_2O_3 (%)	TiO_2 (%)	LOI (1000°)	MgO (%)	CaO (%)	Lithology
OXRC014	**384554**	**6768369**	74	127	53	8.43	13.48	13.44	1.7	7.23	4.38	3.82	Microsyenite
		including	*79*	*92*	*13*	*9.5*	*14.98*	*14.34*	*1.85*	*6.03*	*3.1*	*2.89*	
OXRC015	**383523**	**6768747**	3	51	48	9.84	13.86	15.56	1.87	2.08	0.99	0.11	Microsyenite
		including	*6*	*45*	*39*	*10.4*	*14.36*	*15.67*	*2.03*	*1.92*	*0.76*	*0.1*	
OXRC016	**387380**	**6768460**	No significant Interval										Trachyte
OXRC017	**387700**	**6768304**	No significant Interval										Trachyte

All holes drilled vertically, MGA Zone 50 GDA94 coordinates, XRF analysis by Genalysis, Perth. Intervals calculated using the following criteria: 1m sample intervals using a K_2O cut-off of 6% and 3m internal dilution with a minimum reported width of 10m, "*including*" 1m sample intervals using a K_2O cut-off of 9% and 3m internal dilution with a minimum reported width of 5m.

ABOUT SHEFFIELD RESOURCES

Sheffield Resources Limited (**Sheffield**) is a rapidly emerging heavy mineral sands (HMS) company.

ASX Code – SFX	Market Cap @ 26.5cps - $31.4m
Issued shares – 118.3m	Cash - $8.5m (approx.)

The Company has over 6,000km^2 of highly prospective tenure, all situated within the state of Western Australia.

HEAVY MINERAL SANDS

The Dampier project, located near Derby in WA's Canning Basin region, contains the large, high grade zircon-rich Thunderbird HMS deposit.

The Eneabba project comprises multiple HMS deposits and is located near Eneabba approximately 140km south of the port of Geraldton in WA's Mid-West region.

Sheffield is also evaluating the large McCalls chloride ilmenite project, located 110km to the north of Perth.

NICKEL-COPPER

Sheffield's Red Bull project is located in the highly prospective Fraser Complex within 20km of Sirius Resources NL's (ASX:SIR) Nova Ni-Cu discovery.

IRON

Sheffield holds four exploration licences prospective for iron in the North Pilbara region, all near existing iron ore mine sites or major development projects and within potential trucking distance of Port Hedland. Following its recent sale of the South Pilbara Iron tenements, Sheffield continues to seek to unlock value on its remaining Pilbara iron tenements through consolidation and/or further exploration.

POTASH

The Oxley potash project is located in the northern part of the Proterozoic Moora Basin, approximately 38km northeast of Three Springs. Sheffield is exploring the Oxley Potash project for unconventional hard rock potash mineralisation suitable for open pit mining.