17 October 2016

ASX Code:
SFX

Directors:

Mr Will Burbury
Non-Executive Chairman

Mr Bruce McFadzean
Managing Director

Mr Bruce McQuitty
Non-Executive Director

Mr David Archer
Technical Director

Registered Office:

Level 2, 41-47 Colin Street
West Perth WA 6005

Share Registry:

Link Market Services
Level 4, Central Park
152 St Georges Terrace
Perth WA 6000

Capital Structure:
Ordinary Shares: 180.7M
Unlisted Options: 12.5M

Market Capitalisation:
A$103 million

Cash Reserves:
A$16.0 million

Investor Relations:

Mr Bruce McFadzean
T: +61 8 6555 8777
E: info@sheffieldresources.com.au

Mr Luke Forrestal
Cannings Purple
T: +61 8 9314 6300
E: lforrestal@canningspurple.com.au

Sheffield Resources LIMITED

QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 30 SEPTEMBER 2016

HIGHLIGHTS

Thunderbird Mineral Sands Project

- BFS metallurgical test work complete
- Confirms pre-feasibility processing flowsheet using full-scale equipment
- High grade ilmenite produced by low temperature roasting - 56.1% TiO_2
- Zircon is premium grade suited to the ceramics sector - 66.3% ZrO_2
- Marketing samples dispatched and off-take discussions commenced
- Recoveries improved for all key products
- BFS engineering design well underway
- Community and stakeholder engagement continues in Kimberley region

Corporate Activities

- Cash position of A$16.0 million as at 30 September 2016
- Completion of share placement, raising $17.1m (before costs).
- Engagement with potential customers has commenced

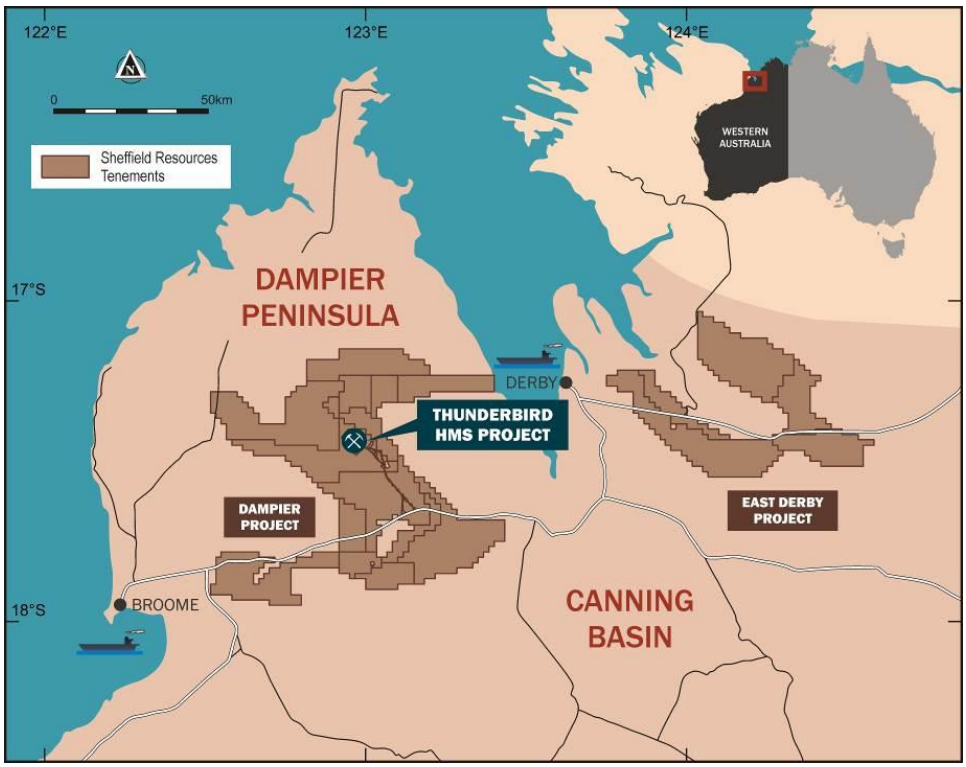

Figure 1: Location of Thunderbird Mineral Sands Project

OPERATIONAL SUMMARY

During the quarter, Sheffield Resources Limited ("Sheffield" or "the Company") continued its operational focus on its world class Thunderbird Heavy Mineral Sands Project (Thunderbird), located in the Canning Basin in northern Western Australia (Figure 1).

The Thunderbird deposit is one of the largest and highest grade zircon rich mineral sands discoveries in the past 30 years. Sheffield is currently undertaking a Bankable Feasibility Study (BFS) on Thunderbird, which is being managed by leading engineering firm Hatch. The BFS is due for release to the market in early 2017.

Metallurgical test work on a 40-tonne BFS bulk sample, representative of the initial 6-7 years of feed is complete, enabling the process flowsheet to be optimised and resulting in high quality final products. Further recovery improvements for the ilmenite and zircon products has been achieved through the optimisation of the wet concentration and concentrate upgrade stages.

Native Title and environmental approval processes continue to progress to schedule. Negotiations with representatives of the Traditional Owners are advanced with finalisation of an agreement anticipated in early 2017. The environmental approval process for Thunderbird is on track with the West Australian Environmental Protection Agency endorsing the Thunderbird Environmental Scoping Document earlier this year. This paves the way for the project Public Environmental Review process which is scheduled to conclude in Q2 2017.

Exploration and evaluation expenditure including BFS activities totalled A$3.9m for the quarter. Cash reserves of A$16.0 million (unaudited) remain as at 30 September 2016.

THUNDERBIRD MINERAL SANDS PROJECT

Located in the Canning Basin in northern Western Australia, the Thunderbird Mineral Sands Project, wholly owned by ASX-listed Sheffield Resources Limited, is situated midway between the port towns of Derby and Broome. Thunderbird, by virtue of its location, size[1] and quality of product[2] has the potential to become a globally significant mineral sands operation. The significance of the Project is supported by the "Lead Agency" project status afforded to Thunderbird by the Department of Mines and Petroleum in Western Australia.

Zircon is the key value driver of the Project making up almost 60% of forecast revenue, with the remainder generated from substantial amounts of high grade sulphate ilmenite and "HiTi" leucoxene. The high proportion of zircon sets Thunderbird apart from many of the world's operating and undeveloped mineral sands projects which are dominated by lower value ilmenite.

Current Mineral Resources at Thunderbird comprise 1.05 billion tonnes @ 12.2% heavy minerals (HM) at a 7.5%HM cut-off (Measured, Indicated and Inferred) containing 9.7Mt of zircon, 3.0Mt of high-titanium leucoxene and 35Mt of ilmenite. This places Thunderbird in the top tier of mineral sands deposits globally, including those currently in production. Current Ore Reserves, based on the July 2015 Mineral Resource and calculated in conjunction with the October 2015 Pre-Feasibility Study (PFS), comprise 683Mt @ 11.3% HM (total Proved and Probable Reserves). The PFS supported a 40-year mine life for the Project with a life-of-mine strip ratio (waste:ore) of 0.67:1 (see ASX announcements dated 5 July 2016, 22 January 2016 and 14 October 2015; and refer to Appendix 1 for

[1] The PFS was based on the Thunderbird Mineral Resource announced on 31 July 2015 comprising 3.240Bt @ 6.9% HM (at 3% HM cut off), including a coherent high grade zone of 1.09Bt @ 11.9% HM (at 7.5% cut off) (Measured, Indicated and Inferred). The high grade component contains 9.9Mt of zircon, 3.0Mt of high-titanium leucoxene, 2.8Mt of leucoxene and 36Mt of ilmenite. The Maiden Ore Reserve announced to the ASX 22 January 2016 supports 40 year mine life operation outlined in the PFS.

[2] Leading global mineral sands consulting group TZMI has confirmed that Sheffield's primary zircon and LTR ilmenite are high quality products that are likely to receive strong market support. Collectively these products represent 81% of the total projected revenue. Significant interest has been registered in these products by leading marketing specialists and industry groups.

further details). An updated Ore Reserve based on the new Mineral Resource will follow from BFS work currently underway.

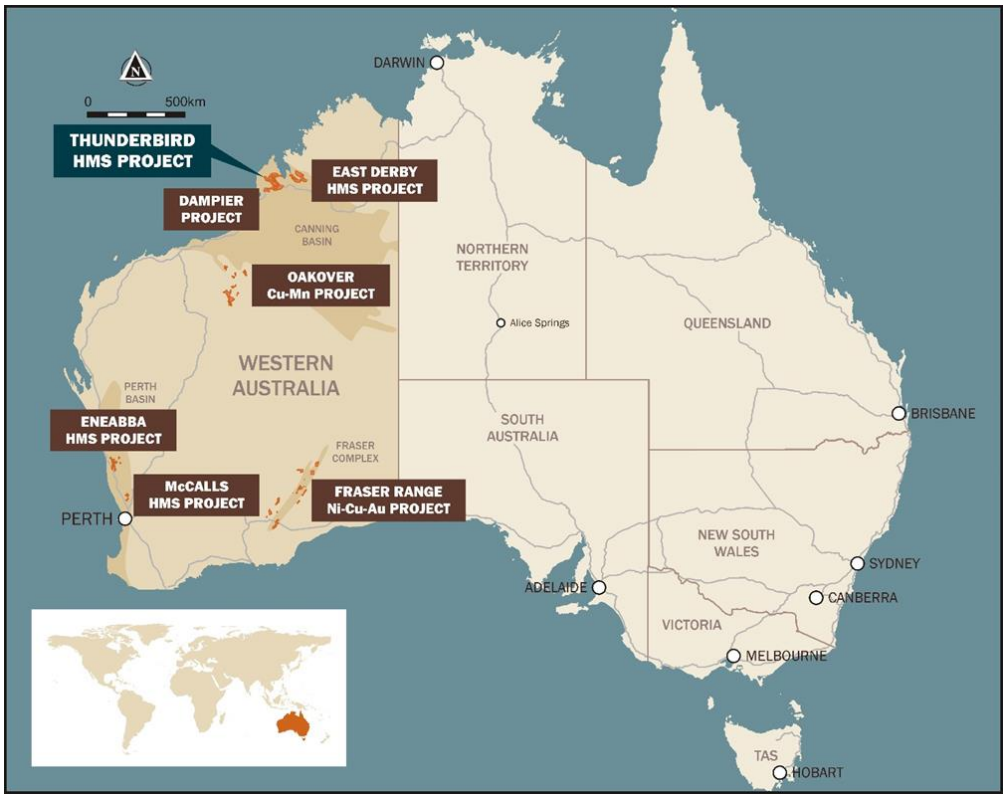

Figure 2: Location of Sheffield Resources Projects in Western Australia

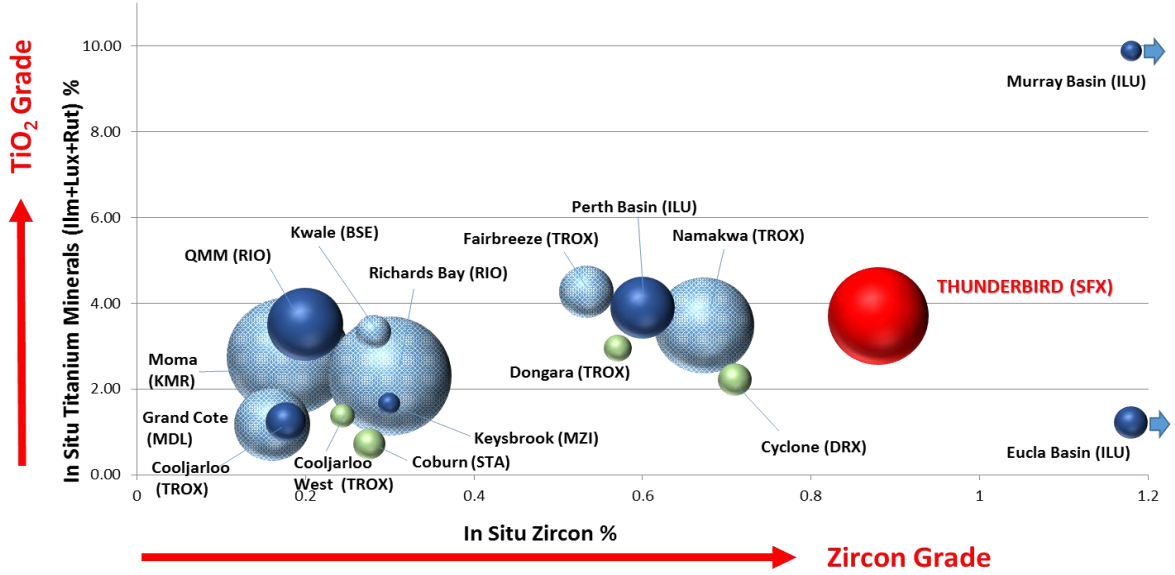

Figure 3: Thunderbird Ore Reserves ranked against Ore Reserves of current mineral sands operations and projects under investigation globally[3]

[3] Blue bubbles are operating mines, green bubbles are Ore Reserves reported but project is not operating. Blue hatched bubbles represent operating African mines' Ore Reserves. Bubble size proportional to tonnes of contained VHM. Only Ore Reserves > 4Mt contained VHM shown. Data compiled by Sheffield from public sources.

Thunderbird Bankable Feasibility Study ("BFS")

The Thunderbird BFS activity is focused on confirmatory fieldwork and metallurgical test work, preliminary engineering, supply quotation and cost estimation. The BFS is designed to deliver reliable estimates of quantities and prices of plant, equipment, buildings and civil structures. The key deliverables of the BFS are detailed estimates of capital and operating costs (generally defined as a Class 3 estimate, typically ± 10 to 15%), accompanied by related risk and opportunities associated with the project. Other deliverables include a preliminary project construction plan, legal, commercial and other factors. Subsequent to the end of the Quarter, Sheffield announced an update of BFS activities to the ASX as follows (refer to ASX announcement dated 12 October, 2016 for further detail).

Metallurgical test work on a 40-tonne BFS bulk sample, representative of the initial 6-7 years of feed is now complete. This work has enabled the process flowsheet to be optimised and has resulted in high quality final products. Optimisation of the wet concentration and concentrate upgrade stages has resulted in further improved recoveries for the ilmenite and zircon products.

The mineral separation test work utilising full-scale or scalable equipment was undertaken by IHC Robbins in Brisbane. The pilot scale test work on low temperature ilmenite roasting was completed under the supervision of Hatch and Sheffield at Hazen Laboratories in Colorado, USA.

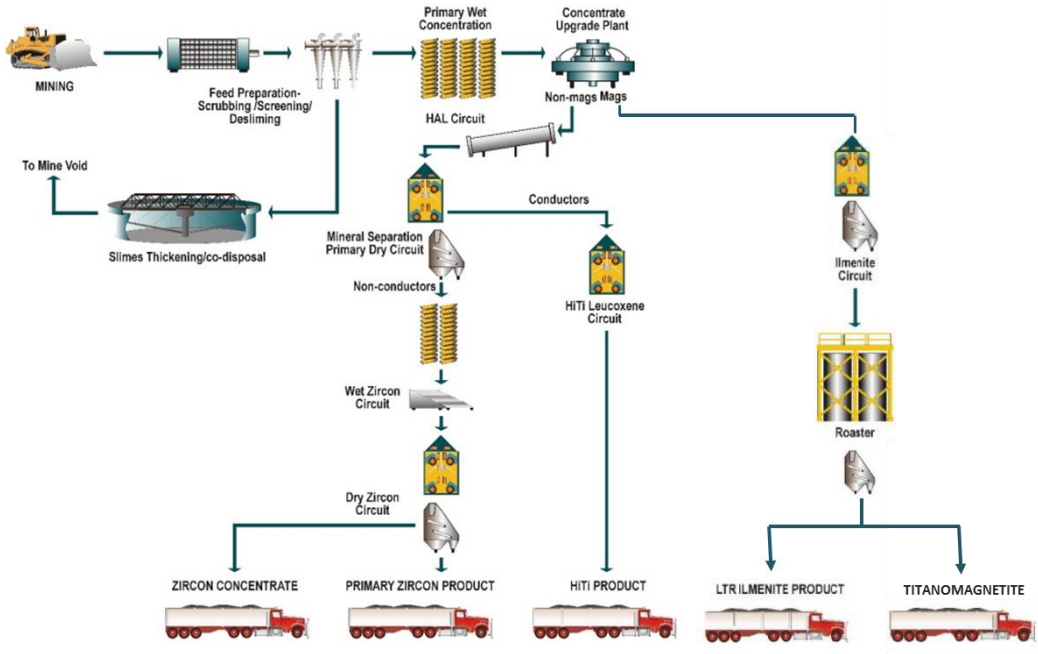

Figure 4: Schematic of Mineral separation Flowsheet - Thunderbird Project

BFS Product Specifications

High quality final product specifications have been achieved from the BFS mineral separation process flowsheet and Low Temperature Roast (LTR) test work. Final BFS product summaries and specifications are provided below with further detail in Appendix 2;

- *Premium Zircon* – high quality ceramic grade zircon, >66% ZrO_2;
- *LTR ilmenite* - high grade TiO_2 with low alkalis and chromium suitable for:
  - Feedstock for sulphate pigment plants - 56.1% TiO_2;
  - Production of chloride grade and sulphate grade slag - 88% TiO_2;

- Potential blended feedstock for chloride processing. LTR ilmenite can be produced at higher grades (57-59% TiO_2) for this potential market;
- *HiTi 88* – suited to flux cored wire welding market, production of titanium sponge, or blended material for processing via the chloride process;
- *Zircon concentrate* – zircon rich (44% ZrO_2, 20% TiO_2) suited to zirconium chemicals industry;
- *Titanomagnetite* – co-product from the LTR process suited to furnace protection in the steel feed industry. Appraisal of this co-product will be undertaken to determine its marketability and value as a contributor to the revenue stream.

Recoveries

Utilising full-scale and scalable equipment, and by optimising the primary concentration stages, improved recoveries for the ilmenite and zircon products (representing approximately 91% of projected revenue) over the PFS metallurgical test work have been achieved:

Recoveries	*PFS Test work*	*BFS Test work*
LTR Ilmenite	69.4%	71.0%
Zircon Premium	53.5%	56.1%
Zircon Concentrate	26.6%	33.0%
HiTi Leucoxene	38.6%	35.3%

Table 1: Total recovery to products from BFS metallurgical test work.

Low Temperature Roast (LTR) Test Work Results

The BFS Low Temperature Roast continuous pilot-scale test work was completed on 1.5 tonnes of ilmenite at Hazen Laboratories in Colorado, USA and was managed and supervised by Hatch and Sheffield. Continuous-flow fluid bed test work was undertaken for the purposes of engineering design and validation of final product quality. Post-roast magnetic separation stages were completed by IHC Robbins in Brisbane, Australia.

The Low Temperature Roast (LTR) stage facilitates the removal of ferric iron dominant minerals from the primary ilmenite process step. The roasting process is designed to enhance the magnetic susceptibility of the free iron minerals in the concentrate by exposing it to reducing gases (containing H_2 and CO) in a reaction vessel (fluid bed) at temperatures below 550^{o}C. The magnetic fraction is then removed through a dry magnetic separation process and the remaining ilmenite is thus upgraded to a higher TiO_2, lower ferric-iron bearing product, which is highly reactive and soluble in sulphate-route pigment production plants. This homogenising process is also designed to produce consistent and uniform product specifications.

Results from batch and continuous pilot plant test work utilising optimised roast conditions were successful in reducing the excess ferric iron in the primary ilmenite, and produced a high grade 56.1% TiO_2 LTR ilmenite, with outstanding improvements in the $FeO:Fe_2O_3$ ratio to 1.2. This endorses Thunderbird LTR ilmenite as one of the highest-grade sulphate feedstocks available globally. Solubility test work completed independently by Roundhill Engineering and Hazen Laboratories confirmed very high acid solubility and the samples exhibited excellent reactivity in sulphuric acid.

The TiO_2 solubility of the Thunderbird LTR ilmenite has been benchmarked against several known commercial ilmenites that are suitable for existing sulphate plants (Figure 5). Engineering design of the

ilmenite roaster by Hatch is well advanced. The LTR plant process flow sheet is a simple, low operating temperature process with low risk.

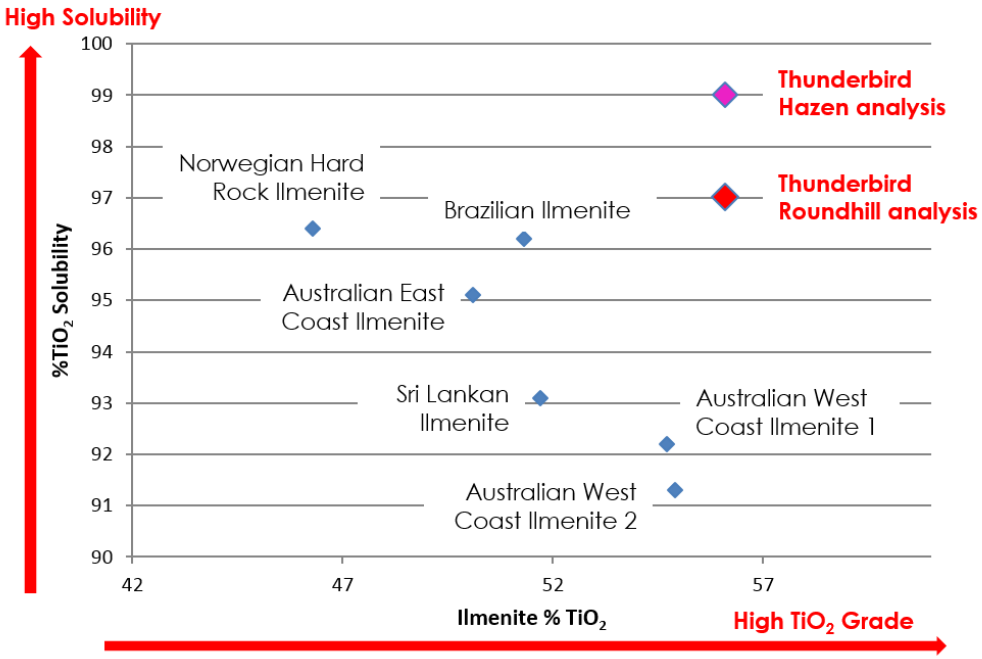

Figure 5: %TiO_2 Solubility vs Grade, Sheffield LTR Ilmenite benchmarked against known Sulphate Ilmenites (Blue), Roundhill (red) and Hazen (magenta) solubility results for Sheffield's LTR ilmenite from pilot test work.

Marketing and Off-take Status

Off-take discussions with leading global ilmenite and zircon consumers have commenced with samples dispatched for initial customer testing. In total 12 zircon samples and 8 ilmenite samples have been dispatched with additional requests for samples currently being processed. The Company will also be testing the chloride market for the LTR ilmenite due to its relatively high TiO_2 grade, low levels of alkalis and product consistency. The LTR process has the optionality of producing a higher grade ilmenite (57% - 59% TiO_2) through minor changes in the LTR process conditions. A titanomagnetite concentrate is produced as a by-product of the ilmenite roasting process. Sale of this concentrate could provide a credit to the roasting process costs.

Final products from the BFS metallurgical test work will also be independently assessed for their marketability by mineral sands consultancies TZMI & Ruidow.

Mine Planning, Optimisation and Scheduling

Enterprise Optimisation is currently being undertaken by Whittle Consulting Pty Ltd and Entech Mining Consultants utilising the current Mineral Resource (refer ASX announcement 5 July 2016). For the BFS, phase 1 mining will commence at an initial throughput of between 7.5 and 10Mt per annum with throughput fixed at a constant feed rate of approximately 750t per hour at the rougher spirals in the Wet Concentrator Plant. Phase 2 of the operation will involve a doubling of the throughput to approximately 1,500t per hour at the rougher spirals. The timing of this ramp-up will be determined during the optimisation study.

The Enterprise Optimisation will focus on maximising initial cash flow profiles and economic value for the Thunderbird project. Significant opportunity exists within such a long life project to optimise the cut-off grade strategy, process plant throughput and recovery via "process bottleneck" identification, and other key cash flow and cost drivers to ultimately maximise financial returns and minimise risk of the project. Mine planning and scheduling will follow the optimisation study and is on schedule for completion in late 2016 in line with finalisation of the BFS study.

Permitting

Native Title and environmental approval processes continue to progress to schedule. Negotiations with representatives of the Traditional Owners are advanced and finalisation of an agreement is anticipated early in 2017. The environmental approval process for Thunderbird is on track with the West Australian Environmental Protection Agency endorsing the Thunderbird Environmental Scoping Document earlier this year. This paves the way for the project Public Environmental Review process which is due to conclude in Q2 2017.

DAMPIER REGIONAL MINERAL SANDS

Regional exploration planned for the Dampier project, including proposed drilling at the Night Train prospect is planned for 2017. Sheffield is currently focussed on delivering the Thunderbird BFS and approvals as a priority.

DERBY EAST MINERAL SANDS

Exploration licence E04/2390 was granted during the period, bringing the Derby East Project tenure to a total area of 1,831km^2. These tenements cover conceptual mineral sands targets to the east of Derby (Figure 1). During the Quarter a first-pass reconnaissance drilling program commenced, and was completed subsequent to the end of the Quarter. In total 43 holes were drilled for 2,202m, Results are expected during Q4 2016.

FRASER RANGE NICKEL

Sheffield is actively seeking to extract value from its tenement holding in the Fraser Range region, whilst maintaining exposure to exploration success. Work to date at Red Bull, for example, 21km south of Independence Group's Nova nickel-copper deposit, has demonstrated the presence of host rocks and a geological setting highly prospective for the formation of magmatic-hosted nickel sulphide deposits.

OAKOVER COPPER-MANGANESE PROJECT

Sheffield has 3,159 km^2 of tenements either granted or under application for copper and manganese in the eastern Pilbara. Two tenements, E46/1044 and E46/1041 (574 km^2) were granted earlier this year. During the quarter target generation activities continued, including a reconnaissance field trip to the granted tenements.

ENEABBA & McCALLS HEAVY MINERAL SANDS

No work was completed on the Eneabba and McCalls projects during the quarter.

The DMP has granted retention status for Eneabba project exploration licences E70/3813 and E70/3762 covering the Yandanooka and Durack mineral sand deposits.

CASH POSITION AND CORPORATE ACTIVITIES

As at 30 September 2016, Sheffield had cash reserves of approximately $16.0 million (unaudited).

On 24 August 2016, the Company announced the placement of 32.9 million fully paid ordinary shares in the Company at an issue price of 52 cents per share, raising a total of $17.1 million (before costs). Significantly, the placement was underpinned by a number of new domestic and international institutional and cornerstone investors in addition to other professional and sophisticated investors.

The funds raised, together with existing cash reserves, enable Sheffield to complete the Thunderbird BFS and undertake continued exploration in the region. A small portion of the funds will be reserved for general working capital purposes.

In conjunction with the significant and positive results arising from the Thunderbird BFS process, Sheffield's corporate activities continue to focus on securing a pathway through to project development, which may include potential partnering and product off-take arrangements. Marketing activities and engagement with potential customers commenced during the September quarter, following receipt of final products for market appraisal and off-take discussions.

Mr Bruce McFadzean
Managing Director
17 October 2016

Schedule 1: Interests in Mining Tenements at the end of the quarter as required under ASX Listing Rule 5.3.3

Project	Tenement	Holder	Interest	Location[3]	Status
Mineral Sands	E04/2081	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2083	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2084	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2159	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2171	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2192	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2193	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2194	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2348	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2349	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2350	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2386	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2390	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2391	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2392	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2393	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2394	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2399	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2400	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2401	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2455	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2456	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	M04/459	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/82	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/83	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/84	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/85	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/86	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/92	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/93	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E70/3762	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3813	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3814	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3929	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3931	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3967	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4190	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4292	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4313	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4584	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/872[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/965[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/1153[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted

Project	Tenement	Holder	Interest	Location	Status
Mineral Sands	R70/35[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3859	Sheffield Resources Ltd	100%	Perth Basin	Pending
Mineral Sands	L70/150	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4719	Sheffield Resources Ltd	100%	Perth Basin	Pending
Mineral Sands	E70/4747	Sheffield Resources Ltd	100%	Perth Basin	Pending
Nickel	E69/3033	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E69/3052	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E39/1733	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2374-I	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2563	Sheffield Resources Ltd	100%	Fraser Range	Pending
Gold	E63/1696	Sheffield Resources Ltd	100%	Tropicana Belt	Granted
Nickel/Gold	E28/2481	Sheffield Resources Ltd	100%	Tropicana Belt	Granted
Copper/Manganese	E46/1041	Sheffield Resources Ltd	100%	Pilbara	Granted
Copper/Manganese	E46/1042	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1044	Sheffield Resources Ltd	100%	Pilbara	Granted
Copper/Manganese	E45/4574	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1069	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1070	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1099	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E45/4600	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1116	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1119	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E45/4717	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E45/4719	Sheffield Resources Ltd	100%	Pilbara	Pending

Notes:
[1]Iluka Resources Ltd (ASX: ILU) retains a gross sales royalty of 1.5% in respect to tenements R70/35, M70/872, M70/965 & M70/1153.
[2]All tenements are located in the state of Western Australia.

Details of tenements and/or beneficial interests acquired/disposed of during the quarter are provided in Section 6 of the Company's Appendix 5B notice for the September 2016 quarter.

COMPLIANCE STATEMENTS

PREVIOUSLY REPORTED INFORMATION

This report includes information that relates to Exploration Results, Exploration Targets, Mineral Resources, Ore Reserves, a Pre-feasibility Study and Technical Studies which were prepared and first disclosed under the JORC Code 2012. The information was extracted from the Company's previous ASX announcements as follows:

- Thunderbird BFS Update: *"OUTSTANDING IMPROVEMENTS IN RECOVERIES AND PRODUCT SPECIFICATIONS FROM THUNDERBIRD BFS"* 12 October, 2016
- Thunderbird Mineral Resource Update: *"SHEFFIELD DOUBLES MEASURED MINERAL RESOURCE AT THUNDERBIRD"* 5 July, 2016
- Thunderbird Ore Reserve: "MAIDEN ORE RESERVE – THUNDERBIRD PROJECT", 22 January, 2016
- Thunderbird Pre-feasibility Study Update: *"PRE-FEASIBILITY STUDY UPDATE CONFIRMS THUNDERBIRD AS THE WORLD'S BEST UNDEVELOPED MINERAL SANDS PROJECT,"* 14 October 2015

This report also includes information that relates to Exploration Results and Mineral Resources which were prepared and first disclosed under the JORC Code 2004. The information has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The information was extracted from the Company's previous ASX announcements as follows:

- Drummond Crossing Mineral Resource and Sampling Results from Dunal-Style HM Targets, Eneabba Project: *"1Mt HEAVY MINERAL RESOURCE ADDED TO ENEABBA PROJECT"*, 30 October 2013.
- McCalls 2012 drilling results: *"QUARTERLY REPORT FOR PERIOD ENDING 30 JUNE 2013"* 31 July, 2013.
- Yandanooka Mineral Resource: *"YANDANOOKA RESOURCE UPGRADE AND METALLURGICAL RESULTS"*, 30 January 2013.
- Durack Mineral Resource: *"ENEABBA PROJECT RESOURCE INVENTORY EXCEEDS 5MT HEAVY MINERAL"*, 28 August 2012.
- McCalls Mineral Resource (superceded): "4.4 BILLION TONNE MAIDEN RESOURCE AT MCCALLS HMS PROJECT", 20 February 2012.
- West Mine North Mineral Resource: *"WEST MINE NORTH MINERAL RESOURCE ESTIMATE EXCEEDS EXPECTATIONS"*, 7 November 2011.
- Ellengail Mineral Resource: *"1MT CONTAINED HM INFERRED RESOURCE AT ELLENGAIL"*, 25 October 2011.

These announcements are available to view on Sheffield Resources Ltd's web site www.sheffieldresources.com.au

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources, Ore Reserves, Pre-feasibility Study and Technical Study results, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

FORWARD LOOKING AND CAUTIONARY STATEMENTS

Some statements in this report 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 "anticipated", "expected", "target", "scheduled", "intends", "potential", "prospective" and similar expressions.

APPENDIX 1: Ore Reserves and Mineral Resources

Sheffield announced a maiden Ore Reserve totalling 682.7 million tonnes @ 11.3% HM for the Thunderbird heavy mineral sands deposit, in the Kimberley Region of Western Australia, on 22 January 2016, and is currently completing a Bankable Feasibility Study for development of the deposit (the Thunderbird Mineral Sands Project). The Proved and Probable Ore Reserve estimate is based on that portion of the (previous) July, 2015 Thunderbird deposit Measured and Indicated Mineral Resources within mine designs and optimisation shells that may be economically extracted, considering all "Modifying Factors" in accordance with the JORC Code 2012.

Sheffield also has a number of Mineral Resource estimates for heavy mineral sands deposits within its Eneabba and McCalls Projects located in the Mid-West Region of Western Australia.

Ore Reserves

Dampier Project Ore Reserves [1,4]

Deposit	Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Valuable HM Grade (In-situ)[2]				Slimes (%)	Osize (%)
					Zircon %	HiTi Leuc %	Leuc %	Ilmenite %		
Thunderbird	Proved	115.1	15.8	13.7	1.01	0.29	0.28	3.67	17.3	12.7
	Probable	567.6	61.9	10.9	0.85	0.27	0.29	3.03	16.1	10.2
	Total	**682.7**	77.1	**11.3**	**0.88**	**0.27**	**0.29**	**3.14**	**16.3**	**10.6**

Deposit	Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
Thunderbird	Proved	115.1	15.8	13.7	7.4	2.1	2.1	26.8	17.3	12.7
	Probable	567.6	61.9	10.9	7.8	2.5	2.6	27.9	16.1	10.2
	Total	**682.7**	77.1	**11.3**	**7.7**	**2.4**	**2.5**	**27.7**	**16.3**	**10.6**

1) Ore Reserves are presented both in terms of in-situ VHM grade, and HM assemblage. Calculations have been rounded to the nearest 100,000 t, 0.1 % grade. Differences may occur due to rounding. Ore Reserve is reported by economic cut-off with appropriate consideration of modifying factors, costs, mineral assemblage, process recoveries and product pricing.
2) The in-situ grade is determined by multiplying the HM Grade by the percentage of each valuable heavy mineral within the heavy mineral assemblage.
3) Mineral Assemblage is reported as a percentage of HM Grade, it is derived by dividing the in-situ grade by the HM grade.
4) Ore Reserves reported for the Dampier Project were prepared and first disclosed under the JORC Code 2012

Mineral Resources

Dampier Project Mineral Resources [1,2,5]

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
Thunderbird (> 3% HM)	Measured	510	45	8.9	8.0	2.3	2.2	27	18	12
	Indicated	2,120	140	6.6	8.4	2.7	3.1	28	16	9
	Inferred	600	38	6.3	8.4	2.6	3.2	28	15	8
	Total	3,230	223	6.9	8.3	2.6	2.9	28	16	9
Thunderbird (>7.5% HM)	Measured	220	32	14.5	7.4	2.1	1.9	27	16	15
	Indicated	640	76	11.8	7.6	2.4	2.1	28	14	11
	Inferred	180	20	10.8	8.0	2.5	2.4	28	13	9
	Total	1,050	127	12.2	7.6	2.3	2.1	27	15	11

Eneabba Project Mineral Resources [2,4,6]

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	Rutile (%)	Leuc (%)	Ilmenite (%)		
Yandanooka (> 0.9% HM)	Measured	3	0.1	4.1	10	1.9	2.2	72	15	14
	Indicated	90	2.1	2.3	12	3.7	3.7	69	16	15
	Inferred	3	0.03	1.2	11	3.9	4.6	68	18	21
	Total	96	2.2	2.3	12	3.6	3.7	69	16	15
Durack (>0.9% HM)	Indicated	50	1.0	2.0	14	2.8	4.6	70	15	21
	Inferred	15	0.2	1.2	14	2.4	6.7	67	14	17
	Total	65	1.2	1.8	14	2.8	4.9	70	15	20
Drummond Crossing (>1.1% HM)	Indicated	49	1.0	2.1	14	10	3.6	53	16	9
	Inferred	3	0.05	1.5	13	9.9	2.8	55	16	8
	Total	52	1.1	2.1	14	10	3.6	53	16	9
Ellengail (>0.9% HM)	Inferred	46	1.0	2.2	9	8.7	1.9	64	16	2
	Total	46	1.0	2.2	9	8.7	1.9	64	16	2
West Mine North (>0.9% HM)	Measured	6	0.4	5.6	4	9.6	9.5	54	15	1
	Indicated	36	0.8	2.3	7	9.6	5.4	60	13	3
	Total	43	1.2	2.8	6	9.6	6.6	58	13	3
All Eneabba (various)	Measured	9	0.5	5.2	6	7.7	7.7	59	15	5
	Indicated	225	5.0	2.2	12	5.8	4.2	64	15	13
	Inferred	68	1.3	1.9	10	7.7	2.7	64	15	6
	Total	**302**	6.8	**2.2**	**11**	**6.3**	**4.1**	**64**	**15**	**11**

McCalls Project Mineral Resources [2,4,6]

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	Rutile (%)	Leuc (%)	Ilmenite (%)		
McCalls (>1.1% HM)	Indicated	2,214	31.7	1.4	5.1	3.2	2.7	76.8	21.7	1.3
	Inferred	1,436	18.7	1.3	5.0	3.2	3.1	80.3	25.5	1.1
	Total	**3,650**	**50.4**	**1.4**	**5.1**	**3.2**	**2.9**	**78.5**	**23.2**	**1.2**

1) The Dampier Project Mineral Resources are reported inclusive of (not additional to) Ore Reserves. The Mineral Resource reported above 3% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 7.5% HM cut-off.
2) All tonnages and grades have been rounded to reflect the relative accuracy and confidence level of each estimate and to maintain consistency throughout the table, therefore the sum of columns may not equal.
3) The Mineral Assemblage is represented as the percentage of HM grade. For Dampier the mineral assemblage was determined by screening and magnetic separation. Magnetic fractions were analysed by QEMSCAN for mineral determination as follows: >90% liberation and; Ilmenite 40-70% TiO2; Leucoxene 70-94% TiO2; High Titanium Leucoxene (HiTi Leucoxene) >94% TiO2 and Zircon 66.7% ZrO2+HfO2. The non-magnetic fraction was analysed by XRF and minerals determined as follows: Zircon ZrO2+HfO2/0.667 and HiTi Leucoxene TiO2/0.94. For Eneabba & McCalls determination was by QEMSCAN, with TiO2 minerals defined according to the following ranges: Rutile >95% TiO2; Leucoxene 85-95% TiO2; Ilmenite <55-85% TiO2
4) West Mine North, Durack, Drummond Crossing and McCalls are reported below a 35% Slimes upper cutoff.
5) Mineral Resources for the Dampier Project were prepared and first disclosed under the JORC Code 2012.
6) Mineral Resources reported for the Eneabba Project were prepared and first disclosed under the JORC Code 2004. These have not been updated since to comply with the JORC Code 2012 on the basis that the information on which the Resource estimates are based has not materially changed since it was last reported.

The Company's Ore Reserves and Mineral Resources Statement is based on information first reported in previous ASX announcements by the Company. These announcements are listed below and are available to view on Sheffield Resources Limited's web site www.sheffieldresources.com.au . Mineral Resources and Ore Reserves reported for the Dampier Project and Mineral Resources reported for the McCalls Projects were prepared and first disclosed under the JORC Code 2012. Mineral Resources reported for the Eneabba Project were prepared and first disclosed under the JORC Code 2004, these have not been updated since to comply with the JORC Code 2012 on the basis that the information on which the Resource estimates are based has not materially changed since it was last reported.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

The Competent Persons for reporting of Mineral Resources and Ore Reserves in the original market announcements are listed below. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Item	Name	Company	Professional Affiliation
Mineral Resources Reporting	Mr Mark Teakle Mr David Boyd	Sheffield Resources Sheffield Resources	MAIG, MAusIMM MAIG
Mineral Resources Estimation	Mrs Christine Standing Mr Tim Journeaux Mr Trent Strickland	Optiro QG QG	MAusIMM MAusIMM MAusIMM
Ore Reserves	Mr Per Scrimshaw	Entech	MAusIMM

Ore Reserves and Mineral Resources prepared and first disclosed under the JORC Code 2012:

Item	Report Title	Report Date	Competent Person(s)
Thunderbird Ore Reserve	Maiden Ore Reserve – Thunderbird Project	22 January 2016	P. Scrimshaw
Thunderbird Mineral Resources	Sheffield Doubles Measured Mineral Resource At Thunderbird	5 July 2016	M. Teakle C. Standing
McCalls Mineral Resources	Quarterly Activities Report For The Period Ended 30 June 2016	20 July 2016	D. Boyd T. Journeaux

Mineral Resources prepared and first disclosed under the JORC Code 2004:

Item	Report Title	Report Date	Competent Person(s)
Ellengail Mineral Resource	1Mt Contained HM Inferred Resource at Ellengail	25 October 2011	M. Teakle T. Strickland
West Mine North Mineral Resource	West Mine North Mineral Resource Estimate Exceeds Expectations	7 November 2011	M. Teakle T. Strickland
Durack Mineral Resource	Eneabba Project Resource Inventory Exceeds 5Mt Heavy Mineral	28 August 2012	M. Teakle T. Strickland
Yandanooka Mineral Resource	Yandanooka Resource Upgrade and Metallurgical Results	30 January 2013	M. Teakle T. Strickland
Drummond Crossing Mineral Resource	1Mt Heavy Mineral Resource Added to Eneabba Project	30 October 2013	M. Teakle T. Strickland

Appendix 2: BFS Final Product Specifications
(refer to ASX announcement dated 12 October 2016 for further details)

Premium zircon

ZrO_2+HfO_2	TiO_2	Fe_2O_3	SiO_2	Al_2O_3	D_{50}
66.3%	0.14%	0.08%	32.5%	0.1%	59µm

- High grade 66.3% ZrO_2+HfO_2
- Low in key impurities iron and titanium
- Very low in aluminium impurities
- Good opacity, similar to other competing products

LTR Ilmenite

TiO_2	FeO	Fe_2O_3	$FeO:Fe_2O_3$	Cr_2O_3	CaO	MgO	D_{50}
56.1%	22.0%	18.5%	1.2	0.03%	0.01%	0.21%	67µm

- High titanium grade (56.1% TiO_2)
- Low in key contaminant Cr_2O_3
- Very low in alkalis CaO and MgO
- Consistent homogenous product
- LTR Ilmenite feedstock can produce high grade TiO_2 slag (88% TiO_2) and HPPI co-product
- Soluble in sulphuric acid, TiO_2 solubility > 95%
- Highly reactive ($FeO:Fe_2O_3$ of 1.2)

HiTi88

TiO_2	Fe_2O_3	Cr_2O_3	CaO	MgO	SiO_2	Al_2O_3	D_{50}
87.8%	2.9%	0.07%	0.04%	0.00%	3.4%	0.5%	71µm

- High titanium grade (87.8% TiO_2)
- Suitable for flux cored wire welding market or titanium sponge markets.
- Blended feedstock for processing via the chloride process.
- Low in key contaminants Cr_2O_3
- Very low in alkalis CaO and MgO

Zircon Concentrate

ZrO_2+HfO_2	TiO_2	Fe_2O_3	SiO_2	Al_2O_3	CeO_2	D_{50}
43.7%	20.1%	0.9%	23.3%	1.7%	0.2%	62µm

- Initially focussing on a ZrO_2 rich (~44%) concentrate for process upgrading by the customer.
- Target zirconium chemicals industry

Titanomagnetite

Fe	TiO_2	P	SiO_2	Al_2O_3	Cr_2O_3	MnO	D_{50}
56.2%	11.3%	0.05%	7.8%	0.9%	0.05%	0.20%	67µm

- Co-product produced as from magnetic separation post the LTR process
- Targeting steel feeds industry, protection against erosion of the blast furnace hearth