16 June 2021

Bulk Testwork Program Delivers Further Positive Results for Governor Broome Heavy Mineral Project

Key Highlights

- **Wet and Dry Plant test work program successfully concluded on a 2.6t bulk sample from West Deposit**
- **Sighter test work on second bulk sample taken from the East Deposit completed**
- **Heavy mineral concentrate (HMC) successfully produced in the wet concentrator using conventional mineral sands processing equipment**
- **High grade ilmenite and zircon products successfully produced from HMC using conventional dry plant mineral separation equipment**
- **TZMI of the opinion the Governor Broome ilmenite products compare favorably with other benchmark ilmenite products**
- **Governor Broome primary zircon is consistent with selected competing premium zircon products in the market place**
- **A Scoping Study incorporating the results from the metallurgical test work will now be undertaken to demonstrate the mine potential of the Governor Broome Heavy Mineral Project**

Astro Resources NL (ASX:ARO) ("**ARO**", "**Astro**" or "the **Company**") is pleased to provide the following results for the metallurgical test work carried out on bulk samples from its Governor Broome Heavy Mineral Project, located in the South West of Western Australia.

Astro's Chairman, Jacob Khouri commented "*The results from the Governor Broome metallurgical test work continue to demonstrate the strong possibility of the economic viability of the Project. Particularly pleasing is the recovery of clean, sulfate-grade ilmenite (51% TiO_2), chloride-grade ilmenite (61% TiO_2) and premium grade zircon (66% ZrO_2) products from the heavy mineral concentrate.*

Assessment of the potential products by TZMI concluded that the ilmenite and zircon products compare favourably with competing products, meaning that these products will be readily absorbed by the market."

The test work program, designed to assess the metallurgical performance of material sourced from the Governor Broome Deposit (Figure 1) comprised three key stages, the first two of which have now been successfully completed:

- Process development test work on a 2.6t bulk sample from the West Deposit;
- Sighter test work on the second bulk sample taken from the East Deposit;
- Mineralogical characterisation of twenty separate Heavy Mineral (**HM**) concentrates obtained from the drilling of the West, East, and South Deposits.

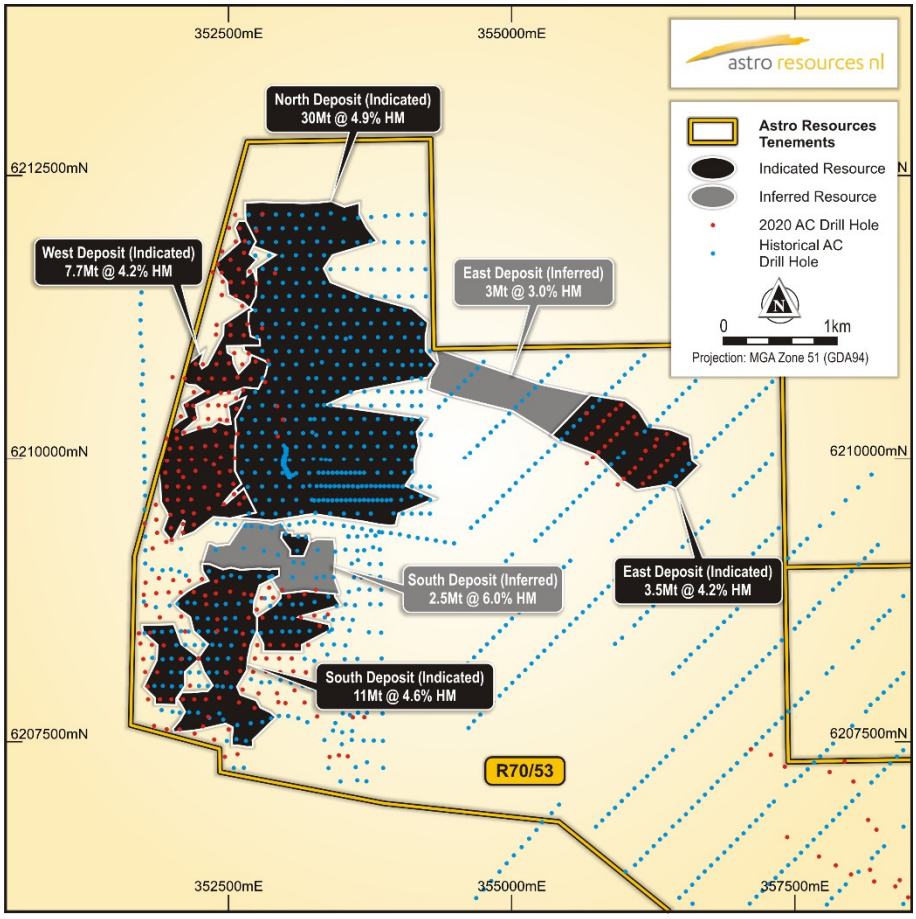

Figure 1. *Governor Broome HM Deposits and air-core drill-holes*

The test work has been carried out by Allied Mineral Laboratories Pty Ltd (Perth) (**AML**) under the supervision of TZ Minerals International Pty Ltd (**TZMI**).

The bulk samples were sourced from the full depth of the modelled HM mineralisation in all the air-core holes drilled by Astro into the West and East Deposits during early 2020 and as such, are representative of the HM mineralisation in each Deposit. Full details of the hole locations and HM intersections that provided the bulk samples are given in Appendix 2.

Feed preparation plant test-work

The first stage of processing involved feed preparation to reject the slimes (the <45µm fines fraction) and the coarse material (the >2mm material) from the sand fraction containing the valuable heavy minerals. The West Bulk Sample processing employed a trommel, screen, and desliming cyclone while for the East Sighter trial, a 40kg split was taken from the East Deposit bulk sample and processed using two-tier screening process. Table 1 shows the proportions of the size fractions recovered from the two samples.

Table 1: Size Proportions of Bulk Samples

Fraction	*West Deposit Mass %*	*East Deposit Mass %*
Coarse	2.7	0.9
Sand	85.6	89.8
Slimes	11.7	9.3

This stage of the test work successfully demonstrated the amenability of the material sourced from the Governor Broome deposit to processing, through the feed preparation circuit using conventional mineral sands processing equipment. The material was processed without difficulty, with the sand fraction containing the valuable heavy minerals readily liberated from the slimes without the need for energy intensive processing equipment.

A sample of the slimes was characterised by Outotec in Perth to evaluate settling performance. This work showed that the slimes behaved similarly to slimes found at other producing HM Deposits in Western Australia and that the slimes can be successfully thickened to high densities, resulting in maximum recovery of process water, an excellent outcome.

Wet Plant Test-work

West Deposit Bulk Sample

The metallurgical performance of the sand-fraction through the wet concentrator plant was assessed using full-scale gravity concentration spirals in a four-stage circuit followed by an attritioning/gravity upgrade stage. The processing successfully demonstrated that a heavy mineral concentrate containing valuable heavy minerals could be produced with a high recovery of valuable heavy minerals. The low-density gangue minerals were successfully rejected to tails producing a heavy mineral concentrate containing 97% heavy minerals.

A photomicrograph of the heavy mineral concentrate produced during the trial is shown in Figure 2.

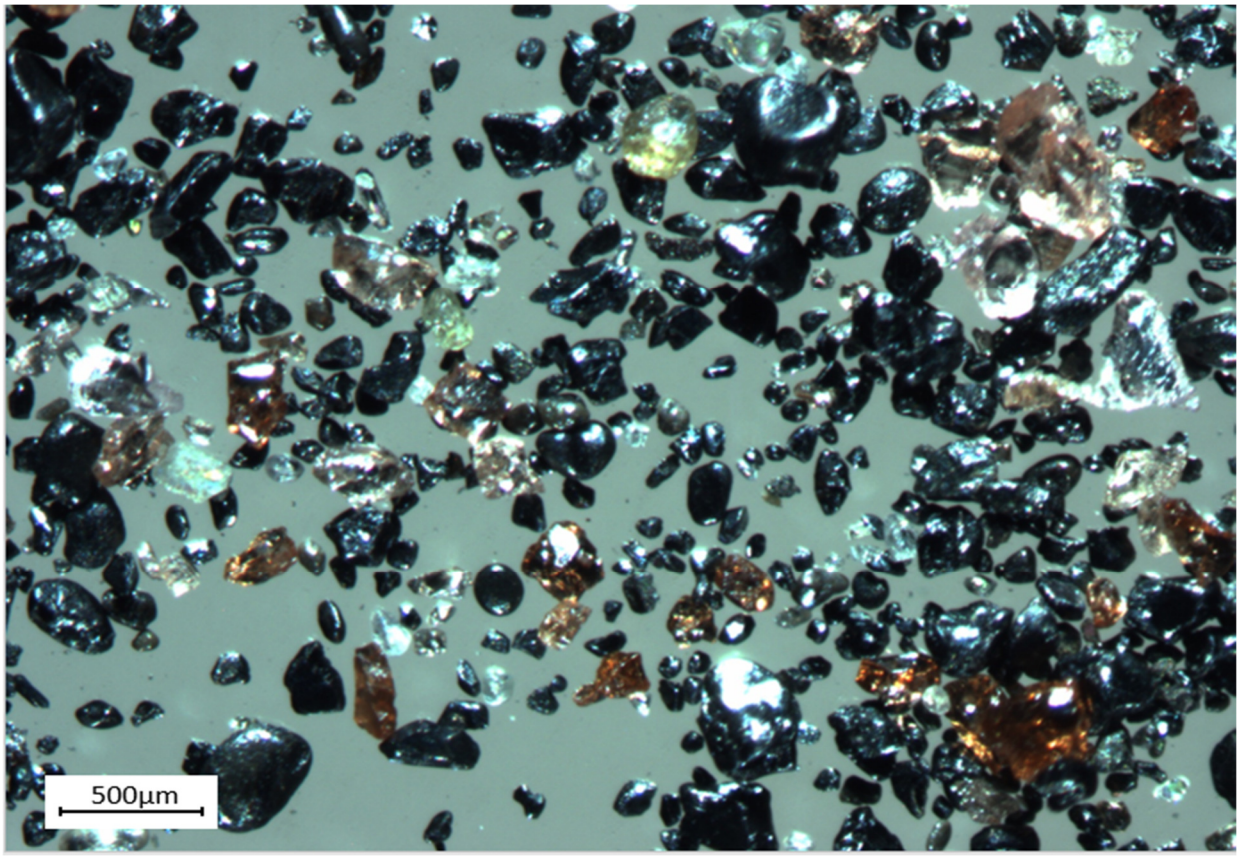

Figure 2. *Photomicrograph of heavy mineral concentrate produced during the testwork program (Scale approximate)*

Overall recovery of heavy minerals to the heavy mineral concentrate was above expectation at 78% with recovery of valuable TiO_2 (indicative of ilmenite) and ZrO_2 (indicative of zircon) minerals at 83% and 86% respectively. Opportunity exists to improve the recovery of valuable heavy minerals by targeting a lower HMC grade.

East Deposit Sighter Sample

The East Deposit sighter sample sand fraction was successfully processed through a truncated version of the flowsheet using a wet shaking table. The East sample performed well through the gravity circuit with no processing difficulties encountered. Overall recovery of heavy minerals to the heavy mineral concentrate achieved was 89%, with recovery of valuable TiO_2 (indicative of ilmenite) and ZrO_2 (indicative of zircon) minerals at 93% and 98% respectively.

Overall, the wet circuit test work demonstrated the amenability of the material sourced from the Governor Broome deposit to processing using conventional mineral sands processing equipment and that high recoveries of valuable heavy mineral to a high grade heavy mineral concentrate could be achieved.

Dry Plant Test-work

The HMC produced from the West Deposit bulk sample was processed through a drymill flowsheet, making use of conventional mineral sands processing techniques and equipment, to investigate the potential quality of final mineral products.

The dry plant process was simulated at a pilot scale by employing multiple magnetic separation stages (RED and RER) followed by electrostatic separation and a screening stage to isolate ilmenite and garnet products. The non-magnetic stream, rich in zircon, was upgraded through stages of gravity, electrostatic, and high intensity magnetic separation to isolate zircon products and produce a concentrate rich in rutile.

The smaller sample of East Deposit HMC was processed through a truncated drymill flowsheet to provide indicative data for potential products.

The test work demonstrated that samples of both West and East HMC responded well to the dry circuit processing with ilmenite, zircon and garnet minerals readily isolated into final products. The magnetic primary ilmenite, making up most of the HMC, responded particularly well to the magnetic separation process with the bulk of the HMC flowing to this product during the primary magnetic separation stage.

Mineral Products

The drymill processing of the HMC successfully demonstrated that ilmenite, zircon, and garnet products could be recovered from the HMC. Rutile was also recovered to a non-magnetic concentrate containing the pyrite.

TZMI has assessed the ilmenite products and is of the opinion that:

- The Governor Broome ilmenite products compare favorably with other benchmark ilmenite products likely to compete with Governor Broome ilmenite in the global market;
- The TiO_2 content in the primary and secondary ilmenite are within the typical range found in sulfate and chloride grade ilmenite respectively;
- The critical impurities in the Governor Broome primary ilmenite are well below the generally acceptable thresholds for sulfate pigment manufacture;
- The critical impurities in the secondary ilmenite product are sufficiently low for the ilmenite to be considered as a direct feed for chloride pigment production or as a feed for chloride slag manufacture;
- Based on the indicative specification, the Governor Broome primary ilmenite will be suitable either as a feed for sulfate pigment production or as smelter feed for chloride slag manufacture; and
- The secondary ilmenite could be targeted as a direct feed for chloride pigment production in western markets or as a feed for synthetic rutile or chloride slag manufacture.

The composition of the ilmenite products generated during the trial is given in Table 2, and a photomicrograph of a sample of the ilmenite produced is shown in Figure 3.

Table 2: Ilmenite Product Compositions

Element	Primary Ilmenite	Secondary Ilmenite
TiO_2 (%)	50.8	60.9
Fe_2O_3 (%)	47.8*	30.4*
Al_2O_3 (%)	0.38	1.6
CaO (%)	0.05	0.10
Cr_2O_3 (%)	0.03	0.30
MgO (%)	0.26	0.30
MnO (%)	1.24	0.90
Nb_2O_5 (%)	0.13	0.20
P_2O_5 (%)	0.05	0.10
SiO_2 (%)	0.52	1.0
V_2O_5 (%)	0.16	0.30
U+Th (ppm)	<20	135

*Total iron expressed as Fe_2O_3

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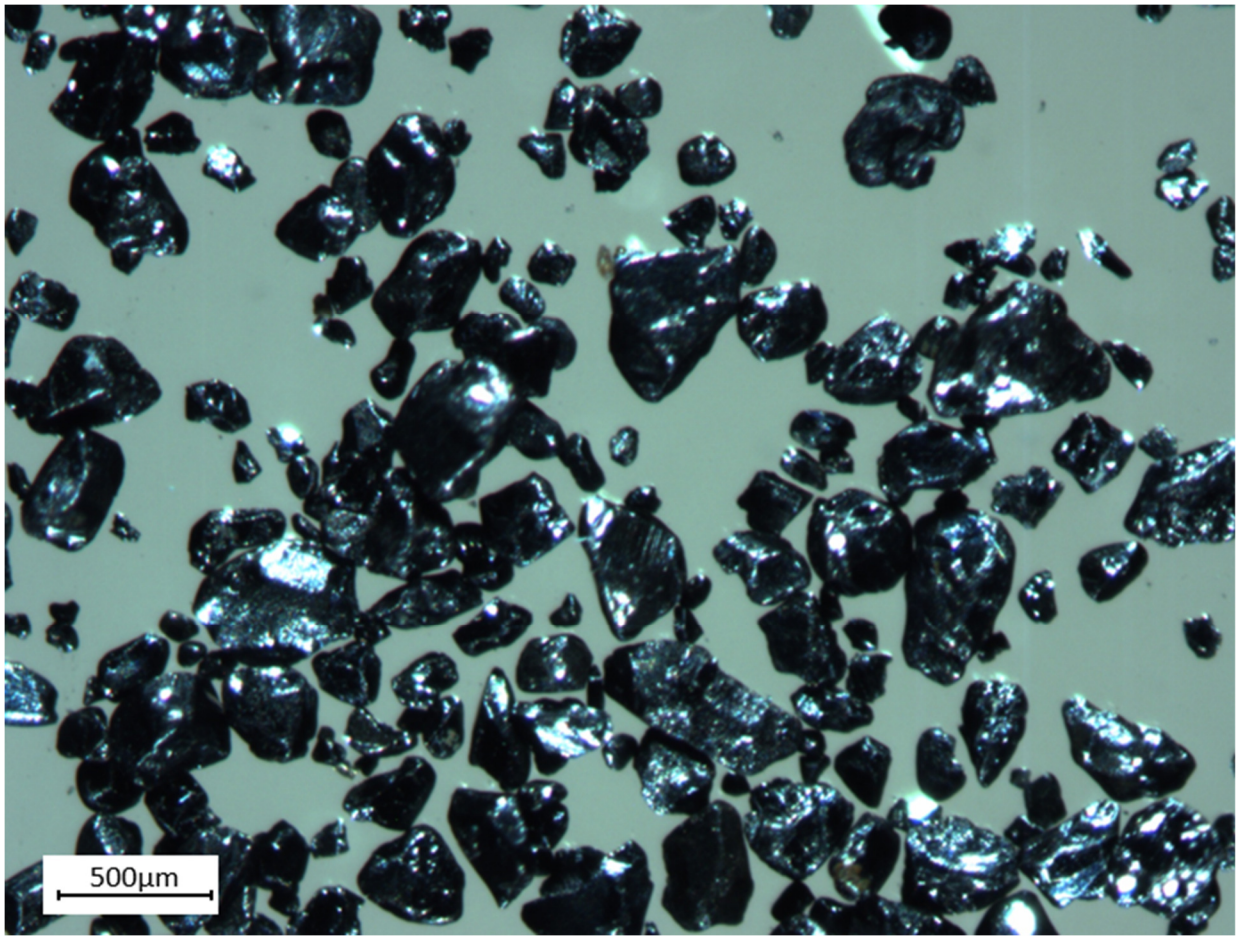

Figure 3. *Photomicrograph of primary ilmenite produced during the test work program (Scale approximate)*

TZMI has also assessed the zircon products and is of the opinion that:

- Levels of ZrO_2 (+HfO_2) of Governor Broome primary zircon are consistent with selected competing premium zircon products in the marketplace;
- Based on the indicative specification, the Governor Broome zircon product meets the requirement for premium classification; and
- The Governor Broome planned zircon product is deemed suitable as a feed for opacifier (ceramic) or investment casting end-use to achieve premium pricing.

Scoping Study

A Scoping Study will now be completed incorporating the results from this metallurgical test work. The preliminary studies (undertaken in June 2018 and October 2019) have been superseded by the increase in the Project's Indicated Resources from 30Mt @ 4.9% HM (previously only within the North Deposit) to a total of 52 Mt @ 4.6% HM.

BOARD APPROVAL

This announcement has been approved by the Board of Astro.

ENDS

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The information in this report as it relates to Mineral Resources and Exploration Results for the Governor Broome Deposit is based on information compiled by John Doepel, a Director of Continental Resource Management Pty Ltd (CRM), who is a member of the Australasian Institute of Mining and Metallurgy. Mr Doepel has sufficient experience in mineral resource estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Doepel consents to the inclusion in this announcement of the information in the form and context in which it appears.

APPENDIX 1 - JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	• Air-core drilling was used to obtain 1m samples from target horizons; • Approximately 1.25kg sub-samples were split from the rig cyclone.
Drilling techniques	• Vertical NQ Air-core.
Drill sample recovery	• Good recovery and retention of all size fractions; • Holes and cyclone cleaned at completion of each three-metre rod.
Logging	• All intervals geologically logged during drilling, recording grainsize, sorting, mineralogy, colour, and stratigraphic unit. All chip trays stored for future reference.
Sub-sampling techniques and sample preparation	• Sample preparation via drying and manual pulverisation before removal of +3.3mm material; • 100g sub- samples riffle split from remaining sample.
Quality of assay data and laboratory tests	• Analysis by Western Geolabs Pty Ltd by its standard HM analytical procedures for HM%, Slimes % (-45micron), and Oversize % (+1mm); • Repeat laboratory sub-sample splits analysed at 1:11.5 ratio.
Verification of sampling and assaying	• Sampling carried out under supervision of Competent Person; • Logging carried out by Competent Person; • Assay entry by digital capture of laboratory files, with later verification of significant intervals against geological logging; • Twinned holes drilled at 1:20 ratio.
Location of data points	• Holes located using a handheld GPS; • Grid MGA_GDA94, Zone 50; • Elevation data interpolated from DGPS survey of 2005 and 2006 drill-holes.
Data spacing and distribution	• 1m samples collected and analysed throughout mineralized horizons; • East Deposit holes drilled on 160m by 80m spacing; • West Deposit holes drilled on approximate 120m by 120m spacing; • No sample compositing applied.
Orientation of data in relation to geological structure	• Vertical drilling through horizontal stratigraphy resulted in intersected thickness equivalent to true thickness.
Sample security	• Samples transported from accommodation site to laboratory by courier.
Audits or reviews	• Sample techniques, logs, and data reviewed by Competent Person.

Section 2 Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	• The resources are within Retention Licence, R70/53 held by Governor Broome Sands Pty Ltd, a wholly owned subsidiary of Astro Resources NL. R70/53 has an expiry date of 3/07/21 and is in good standing.
Exploration done by other parties	• Preliminary air-core drilling and mineralogical work was carried out by Westralian Sands between 1996 and 1998 and mineralogical work was carried out by Iluka between 1998 and 2000; • Metals Sands Australia Ltd carried out air-core drilling campaigns between 2005 and 2007 and Astro carried out broad spaced drilling in 2012. This recent drilling infills and extends that coverage.
Geology	• The Governor Broome Heavy Mineral Deposits occur within a surficial Pleistocene sand unit, the Warren Sands, and in the immediately unconformably underlying Beenup Beds of the Cretaceous Warnbro Group; • The Warren Sands vary in thickness from 4m to 9m within the area. They contain HM mineralisation, which increases in grade in the unit's lower few metres; • The Beenup Beds sediments are of two main facies in the area: clayey sands and organic clays. The clayey sands contain medium- to coarse-grained, angular to sub-angular, unconsolidated quartz and minor feldspar grains. The clay content, which is variable, tends to increase downward. Generally, it contains between 1% and 8% of valuable HM in its top few metres; • The HM assemblage averages of the order of 53% ilmenite, 6% secondary ilmenite, 3.5% leucoxene, 1.5% Hi-Ti, and 5% zircon for a total of 69% valuable HM.
Drill hole Information	• See Appendix 2, which lists the 87 Astro air-core drill-holes drilled into the West Resource and the 87 Astro air-core drill-holes drilled into the East Resource. HM intercepts are provided for each hole.
Data aggregation methods	• No grade cutting carried out; • No metal equivalents employed.
Relationship between mineralisation widths and intercept lengths	• Vertical drilling through virtually horizontal stratigraphy resulted in intersected thickness equivalent to true thickness.
Diagrams	• See Figures.
Balanced reporting	• Report gives balanced view of the deposits.
Other substantive exploration data	• 2006: Eight composites each of 30 HM sample concentrates scanned by QEMSCAN technology averaged 72% valuable HM plus 19% garnet;

Criteria	Commentary
	• 2012: HM assemblages characterised for composite heavy mineral samples selected to represent the North and East Deposit mineralisation. The concentrates returned an average of 70% valuable HM; • 2005: Pilot testwork of 400 drill intercepts returned a concentrate containing 80% valuable HM plus 15% garnet; • 2012: A bulk sample from the North Deposit Indicated Resource was concentrated in a laboratory to simulate wet concentration followed by dry separation of the concentrate. Valuable HM constituted 82% of the concentrate. • 2021: 2.6t West Deposit bulk sample test-work completed • Entire sample processed through the feed preparation circuit with no indication of potential issues with slimes within the mineralisation • Heavy mineral concentrate successfully produced in wet concentrator using conventional mineral sands processing equipment • Ilmenite and zircon products successfully produced from HMC using conventional dry plant mineral separation equipment

APPENDIX 2 – Drill-hole Information

All holes are vertical

DEPOSIT	HOLE	EAST	NORTH	FROM	TO	INTERVAL	HM
		GDA94 Z50	GDA94 Z50	m	m	m	%
WEST	GB2060	352637	6211825	3	7	4	8.2
WEST	GB2061	352644	6211927	3	8	5	5.7
WEST	GB2062	352599	6212041	3	5	2	6.0
WEST	GB2064	352747	6212019	5	7	2	4.4
WEST	GB2065	352517	6211764	4	9	5	8.8
WEST	GB2069	352405	6211721	3	8	5	13.1
WEST	GB2070	352591	6211680	3	6	3	6.9
WEST	GB2071	352631	6211563	3	7	4	5.0
WEST	GB2072	352669	6211439	3	7	4	8.1
WEST	GB2073	352666	6211197	3	7	4	4.9
WEST	GB2074	352797	6211160	3	5	2	2.9
WEST	GB2075	352746	6211556	3	6	3	10.3
WEST	GB2078	352439	6211650	3	8	5	11.3
WEST	GB2081	352517	6211189	3	6	3	4.9
WEST	GB2083	352564	6211445	3	9	6	2.7
WEST	GB2085	352522	6211566	3	9	6	3.3
WEST	GB2086	352521	6211566	3	9	6	3.7
WEST	GB2088	352635	6211099	3	6	3	4.3
WEST	GB2089	352518	6211101	2	7	5	3.0
WEST	GB2091	352424	6210944	3	5	2	2.6
WEST	GB2092	352551	6210942	4	6	2	2.9
WEST	GB2095	352740	6210867	7	9	2	6.3
WEST	GB2097	352579	6210727	6	11	5	3.9
WEST	GB2098	352697	6210713	4	9	5	3.6
WEST	GB2100	352629	6210616	5	7.5	2.5	6.2
WEST	GB2104	352505	6210852	4	6	2	3.4
WEST	GB2105	352393	6210845	4	7	3	3.5
WEST	GB2107	352239	6210716	3	8	5	3.4
WEST	GB2108	352115	6210719	3	7	4	3.4
WEST	GB2111	352318	6210599	4	6	2	3.6
WEST	GB2112	352433	6210592	5	7.5	2.5	7.1
WEST	GB2113	352505	6210596	5	9	4	2.7
WEST	GB2116	352478	6210235	3	6	3	3.2
WEST	GB2117	352378	6210257	3	7	4	2.5
WEST	GB2122	352188	6210478	5	7	2	5.4
WEST	GB2123	352133	6210484	3	6	3	2.5
WEST	GB2124	352200	6210367	3	7	4	3.0
WEST	GB2125	352393	6210128	4	11	7	3.3
WEST	GB2126	352293	6210123	3	9	6	2.6
WEST	GB2127	352173	6210107	6	13	7	3.0
WEST	GB2128	352075	6210108	6	12	6	2.5
WEST	GB2129	352065	6209994	4	10	6	3.8

WEST	GB2130	352174	6210000	3	10	7	3.8
WEST	GB2131	352298	6209997	3	9	6	3.9
WEST	GB2132	351943	6209880	6	10	4	2.6
WEST	GB2133	351955	6209757	6	12	6	3.8
WEST	GB2134	351960	6209640	6	10	4	2.8
WEST	GB2135	351992	6209393	5	11	6	3.6
WEST	GB2136	352195	6209522	7	12	5	8.1
WEST	GB2137	352170	6209643	5	10	5	4.9
WEST	GB2138	352100	6209840	6	12	6	3.0
WEST	GB2139	352555	6210012	3	8	5	4.0
WEST	GB2141	352420	6209765	5	9	4	3.5
WEST	GB2142	352371	6209955	4	9	5	3.4
WEST	GB2144	352209	6210847	6	11	5	8.0
WEST	GB2145	352353	6210719	4	7	3	5.8
WEST	GB2146	352463	6210714	5	8	3	3.2
WEST	GB2148	352572	6210452	6	11	5	3.0
WEST	GB2149	352582	6210231	4	9	5	3.6
WEST	GB2150	352527	6210118	4	11	7	3.5
WEST	GB2151	352432	6210021	3	9	6	3.2
WEST	GB2152	352515	6209896	5	8	3	5.1
WEST	GB2153	352419	6209883	3	8	5	5.6
WEST	GB2154	352544	6209780	6	8	2	5.9
WEST	GB2155	352406	6209686	5	11.75	6.75	4.1
WEST	GB2156	352639	6209661	4	9	5	3.2
WEST	GB2157	352596	6209603	6	11	5	3.2
WEST	GB2158	352460	6209601	5	7	2	3.5
WEST	GB2159	352327	6209565	6	10	4	5.7
WEST	GB2160	352151	6209749	4	10	6	3.4
WEST	GB2161	352288	6209752	4	11	7	3.5
WEST	GB2162	352059	6209894	6	9	3	4.3
WEST	GB2163	352208	6209896	5	10	5	3.8
WEST	GB2164	351958	6209987	5	10	5	4.4
WEST	GB2165	351957	6209987	5	10	5	2.8
WEST	GB2166	352055	6209640	7	12	5	4.0
WEST	GB2168	352196	6209421	9	12	3	4.3
WEST	GB2173	351761	6209431	6	10	4	3.1
WEST	GB2177	352043	6210256	4	8	4	3.5
WEST	GB2178	351981	6210097	3	13	10	3.2
WEST	GB2179	352044	6210191	6	11	5	3.4
WEST	GB2180	351953	6210189	6	10	4	3.3
WEST	GB2182	351988	6209508	8	11	3	3.7
WEST	GB2183	351999	6209288	6	10	4	2.6
WEST	GB2184	352097	6209537	7	12	5	6.8
WEST	GB2185	352097	6209538	7	12	5	5.4
WEST	GB2187	352098	6209351	7	11	4	6.1
EAST	GB0750	356564	6209958	6	9	3	2.3
EAST	GB0751	356508	6209901	7	9	2	2.2
EAST	GB0752	356452	6209849	6	8	2	2.7

EAST	GB0753	356396	6209790	7	9	2	2.7
EAST	GB0775	355878	6209955	6	8	2	3.1
EAST	GB0777	355990	6210064	6	9	3	3.1
EAST	GB0780	356176	6210251	7	9	2	4.9
EAST	GB0798	355775	6210528	6	9	3	2.4
EAST	GB0799	355715	6210468	6	8	2	2.9
EAST	GB0800	355660	6210413	4	8	4	5.5
EAST	GB0801	355605	6210354	4	8	4	3.9
EAST	GB0802	355549	6210298	5	9	4	2.5
EAST	GB0803	355491	6210239	6	9	3	4.5
EAST	GB0804	355439	6210183	6	9	3	3.2
EAST	GB2024	355708	6210232	6	9	3	4.4
EAST	GB2025	355707	6210232	6	9	3	4.2
EAST	GB2026	355664	6210413	4	8	4	5.6
EAST	GB2027	355659	6210189	7	10	3	6.1
EAST	GB2030	355766	6210069	7	10	3	4.4
EAST	GB2031	355822	6210121	7	9	2	3.7
EAST	GB2032	355873	6210174	6	9	3	4.5
EAST	GB2033	356143	6210004	6	8	2	2.7
EAST	GB2034	356089	6209923	7	9	2	4.7
EAST	GB2035	356040	6209879	7	9	2	5.5
EAST	GB2036	355989	6209828	6	8	2	4.7
EAST	GB2038	356158	6209784	8	10	2	9.1
EAST	GB2039	356215	6209839	7	9	2	8.6
EAST	GB2040	356268	6209888		NO SIGNIFICANT INTERVAL		
EAST	GB2041	356319	6209942	7	9	2	4.0
EAST	GB2042	356371	6209992	6	9	3	2.6
EAST	GB2043	356421	6210045	5	8	3	4.0
EAST	GB2044	356474	6210101	6	10	4	4.3
EAST	GB2045	356526	6210146	6	9	3	3.7
EAST	GB2046	356368	6210230	6	9	3	3.6
EAST	GB2047	356265	6210122	4	8	4	3.8
EAST	GB2048	356280	6210184	4	8	4	3.1
EAST	GB2049	356181	6210082	5	8	3	4.1
EAST	GB2050	356182	6210082	5	8	3	5.4
EAST	GB2051	356103	6210231	7	10	3	4.3
EAST	GB2052	355764	6210291	5	8	3	5.2
EAST	GB2053	355810	6210345	4	9	5	5.6
EAST	GB2054	355863	6210399	5	8	3	5.1
EAST	GB2055	355919	6210448	5	8	3	5.0
EAST	GB2056	355966	6210485	6	10	4	4.9
EAST	GB2057	356081	6210380	4	10	6	2.8
EAST	GB2058	356028	6210331	4	10	6	5.3
EAST	GB2059	355978	6210279	4	9	5	2.9
EAST	GB2294	355927	6210228	5	10	5	5.2