13 July 2023

ASTRO EXPANDS GOVERNOR BROOME MINERAL SANDS PROJECT WITH STRATEGIC ACQUISITION OF ADJOINING HIGH-GRADE HEAVY MINERAL DEPOSIT

Astro bulks up its Governor Broome Project by acquiring the neighbouring "Fouracres" property, which contains 0.9Mt of high-grade resources that will significantly enhance the Project.

Key Highlights

- **Astro acquires the Fouracres Retention Licence R70/22, which is located directly along strike from Astro's Jack Track Heavy Mineral (HM) Deposit.**
- **R70/22 contains an Indicated Resource of 0.72Mt @ 11.4% HM and an Inferred Resource of 0.22Mt @ 3.6% HM.**
- **R70/22 contains a high-value HM suite comprising 75% ilmenite, 3% secondary ilmenite, 4% leucoxene/rutile and 8% zircon for a Valuable Heavy Mineral content of 90%.**
- **Following the acquisition, total Resources at the Governor Broome Project stand at 127Mt, of which 79Mt are in the Indicated category.**
- **The acquisition price is $150,000 plus a 1% royalty on future production. The acquisition will contribute significantly to enhancing the value of the Governor Broome Project as part of the upcoming Scoping Study scheduled for delivery in Q1 2024.**

Astro Resources NL (ASX: ARO) ("**ARO**", "**Astro**" or "the **Company**") is pleased to advise that it has taken another important step towards unlocking the value of its Governor Broome Mineral Sands Project, located in the south-west of Western Australia, following the strategic acquisition of a high-grade mineral sands deposit located immediately along strike from the Project.

Astro's wholly-owned subsidiary, Governor Broome Sands Pty Ltd ("**GBS**"), has acquired the Retention Licence R70/22, otherwise known as "Fouracres", from Cable Sands (WA) Pty Ltd ("**Cable Sands**"). The Fouracres Deposit represents a significant strategic addition to Astro's existing Mineral Resource inventory at Governor Broome,

Astro's Executive Chairman, Tony Leibowitz, commented: "*The acquisition of the Fouracres property is a further strategic step in advancing the Governor Broome Project and crystallising value for our shareholders. The acquisition adds nearly 1 million tonnes of high-grade resources, which contain high-value titanium minerals and zircon.*

"This strategic acquisition adds significant value to the Project, building critical mass and enhancing the high-grade resource base that will be included in the Scoping Study due for delivery early next year."

Overview of the Fouracres Deposit

The Governor Broome Project is located approximately 135km by sealed road south of the port of Bunbury in the south-west of Western Australia. The Fouracres Deposit is located directly along strike to the south-east of Astro's Jack Track Heavy Mineral Deposit (Figure 1).

The Jack Track Deposit contains a high-value heavy mineral assemblage of approximately 66.5% primary ilmenite (58% TiO_2), 14.5% secondary ilmenite (including approximately 8.5% leucoxene), 4.5% rutile, 10.5% zircon, and 0.8% monazite – for an overall 96.5% valuable heavy mineral ("**VHM**") content. The titanium minerals have an average composition of 63% TiO_2.

The Fouracres Deposit has an Indicated Resource with a very high grade of 11.4% heavy minerals ("**HM**"). Cross-sections through the mineralisation are shown as Figures 3 to 5.

The heavy mineral assemblage of the Fouracres Deposit is also high-value, comprising 75% ilmenite, 3% secondary ilmenite, 4% leucoxene/rutile, and 8% zircon for a 90% VHM content. The ilmenite has a high TiO_2 content of 60%.

The Fouracres Deposit was explored using air-core drilling by Cable Sands during 1991. Cable Sands carried out a resource estimation and mineralogical studies.

The Fouracres Resources were re-estimated in 2011 to comply with the reporting standards of the JORC code, using the results of the drilling and mineralogical studies that had been previously reported to the Department of Mines and Petroleum.

Details of the drilling and resource assessment are set out in JORC Code Table 1 detail in Appendix 1 to this announcement.

Below is a map showing the expanded Governor Broome Project area, including the Fouracres Deposit, which now forms part of the expanded Governor Broome Project:

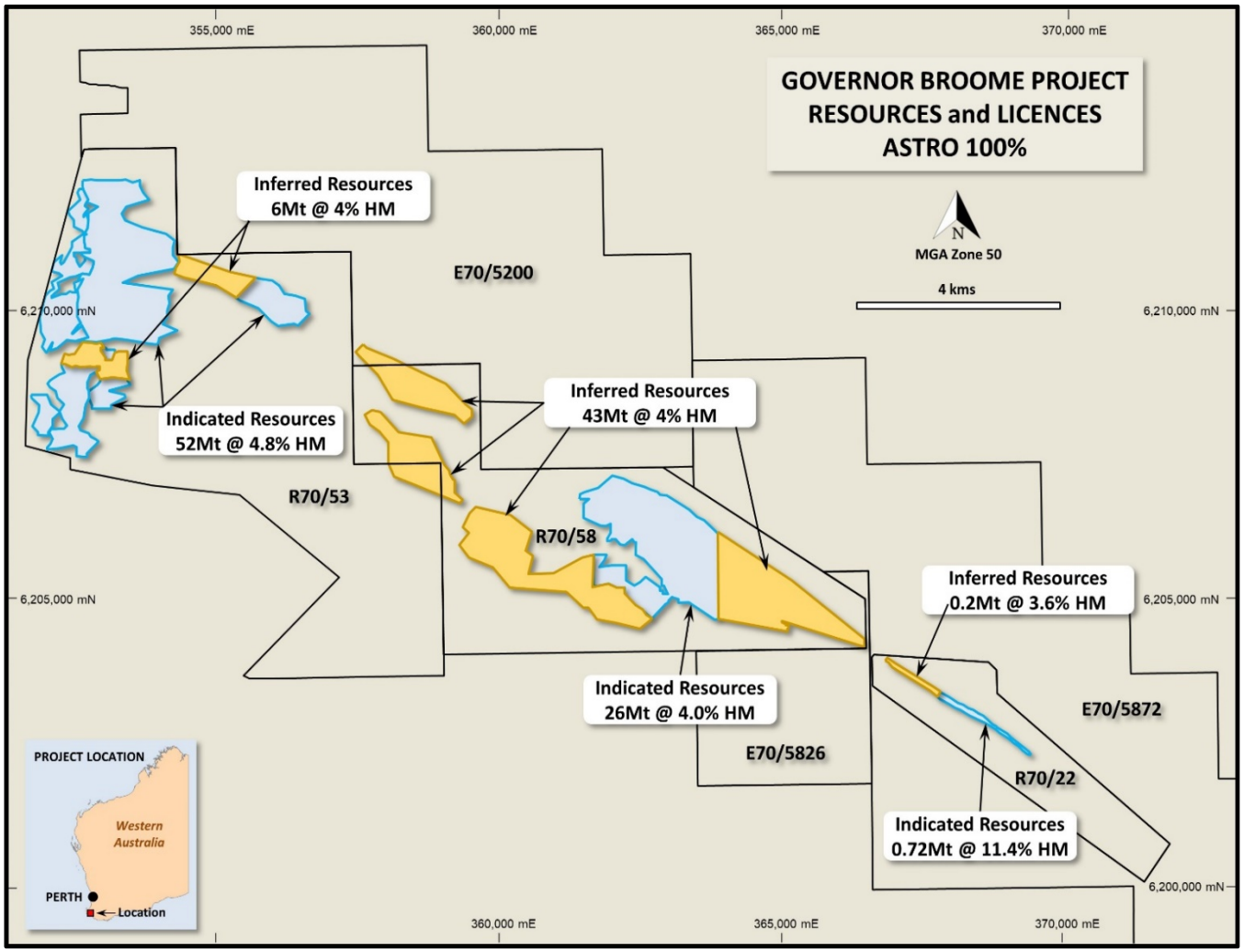

Figure 1 Governor Broome Project – Resources and Licences, including Fouracres

Geology of the Fouracres Deposit

The Fouracres HM deposit is situated on a palaeo-shoreline within the Scott Coastal Plain, which is the southernmost part of the on-shore Perth Basin. The deposit consists of HM strands within sediments of the Yoganup Formation. The deposit is considered to be an extension of a previously mined mineralised strand at Jangardup, 6km to the southeast. The deposit outline is shown on Figure 2. Figures 3 to 5 are cross sections through the deposit showing the locations of the mineralised strand within fences of vertical drill-holes.

The mineralisation is made up of three overlapping strands that define a zone about 1.8km long by about 100 m wide. Strands are 2-4 m thick. They dip at a shallow angle to the southwest. They are at surface in places and covered by up to 10m of overburden in other parts of the deposit.

Drilling, Sampling, and Analysis of the Fouracres Deposit

The deposit was explored by BQ air-core drilling by Cable Sands during 1995. A total of 201 vertical holes were drilled. The majority of the holes were drilled on 20m spacings along 100m spaced lines and there locations are shown on Figure 2. Holes were terminated at the base of the sands, when a Beenup Bed unit was intersected.

Samples were collected over 1m intervals directly into calico bags. The entire 3-5kg samples were assayed at the Cable Sands Exploration Laboratory by its standard HM procedure. Dried samples are manually pulverized prior to sub-sampling.

Bench riffle split sub-samples of 400g are screened at 2mm to determine 'oversize' fraction. The undersize is further split using a hand splitter to gain a 40–60g sub-sample which is screened at 45µm to determine 'slime' fraction. Following drying and weighing the de-slimed residue is treated in Lithium Polytungstate Solution (LST) to determine the HM fraction. Further details are provided in the JORC Table 1 Report at the end of this announcement.

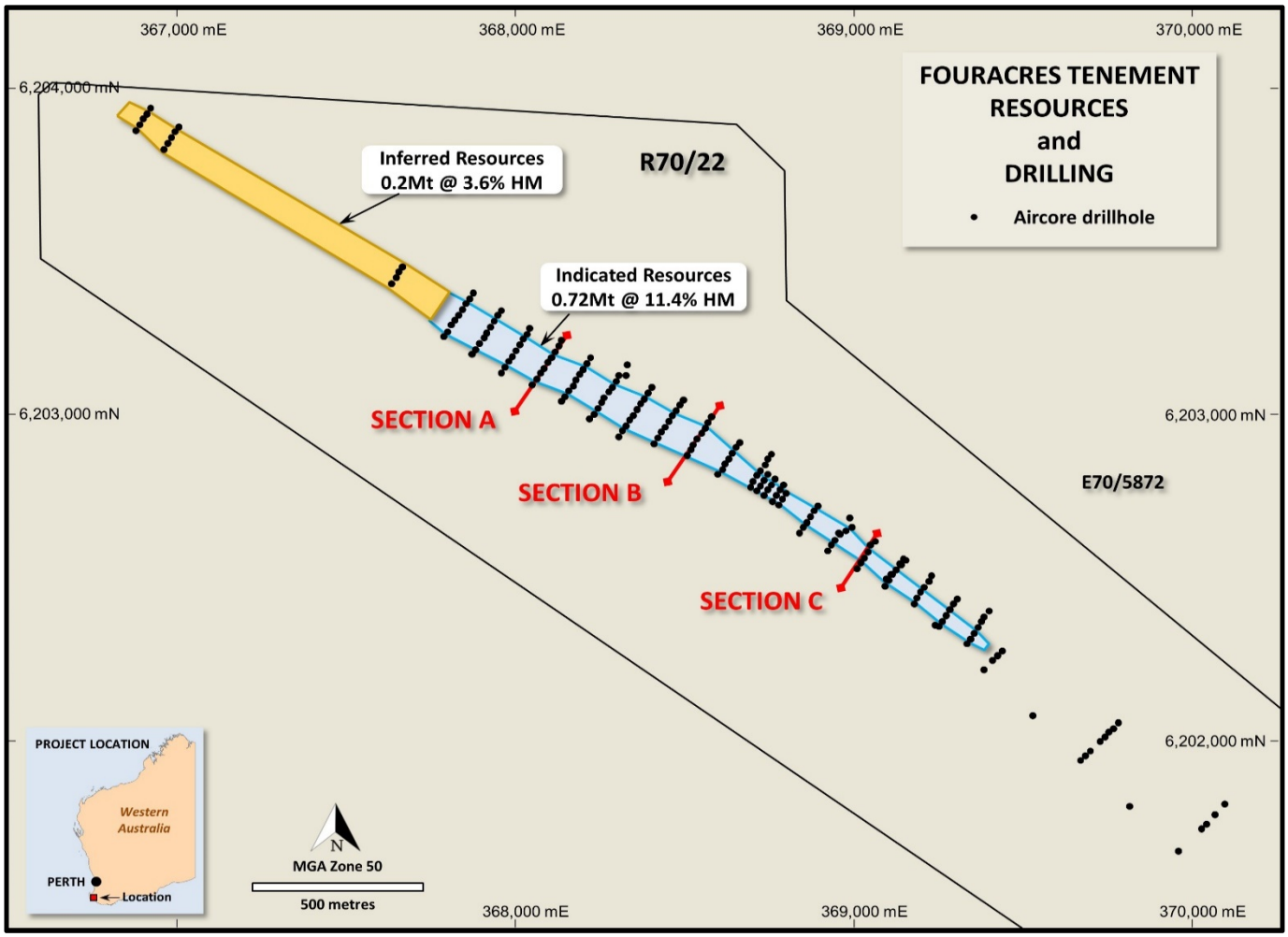

Figure 2 Fouracres Drillholes, Resources, and Section Lines

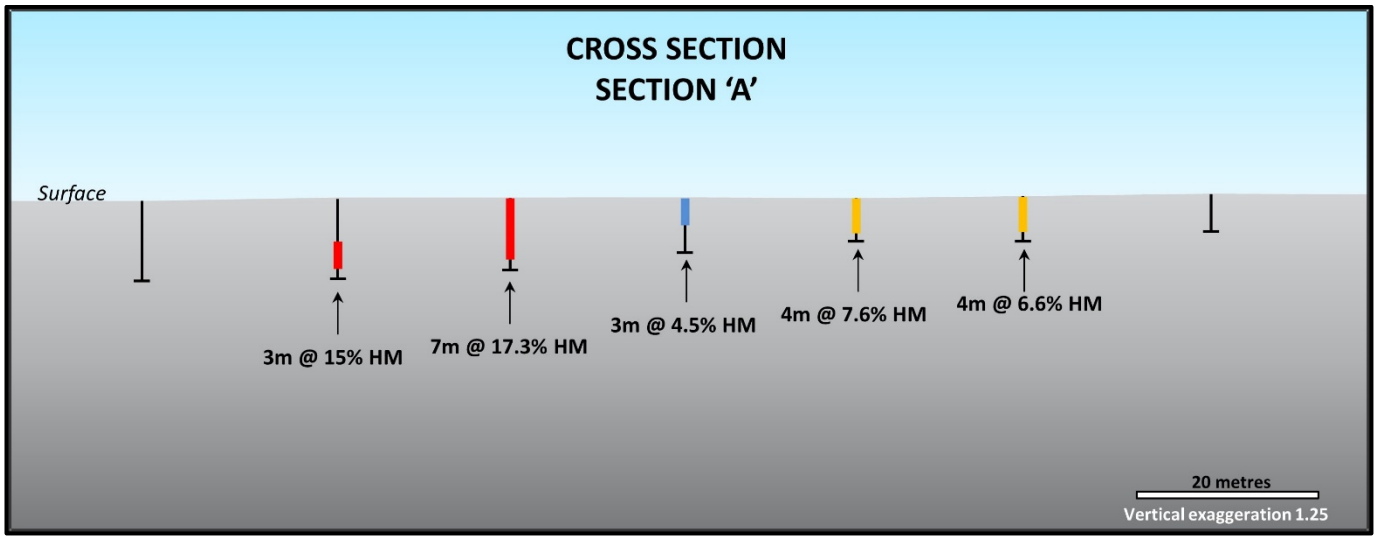

Figure 3 Cross Section A

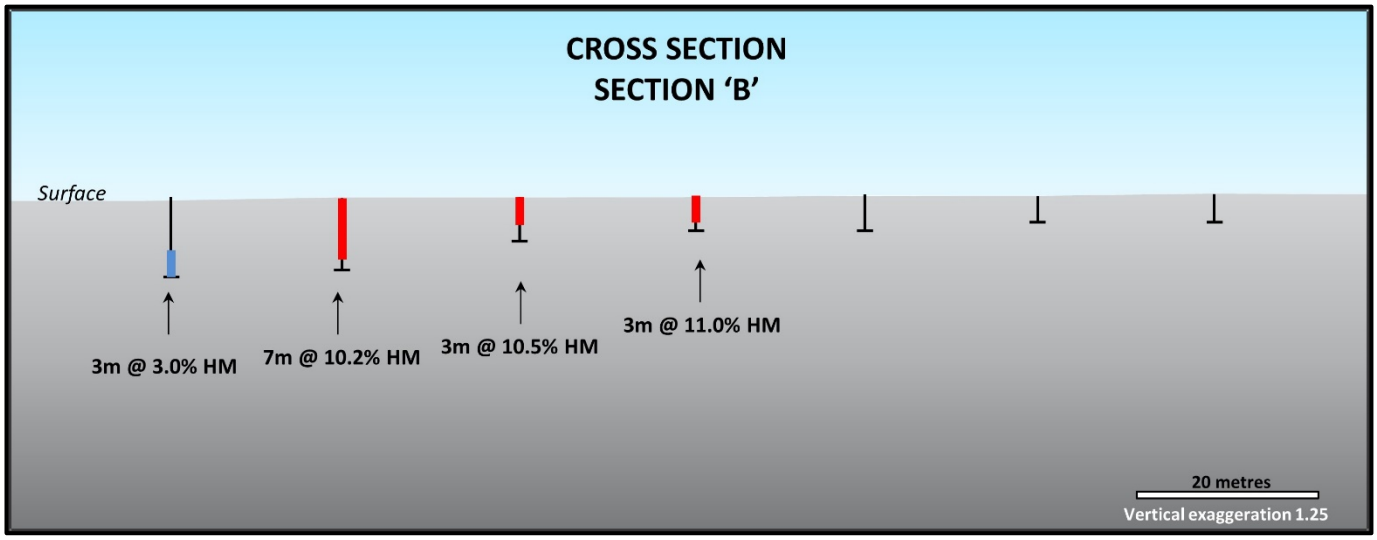

Figure 4 Cross Section B

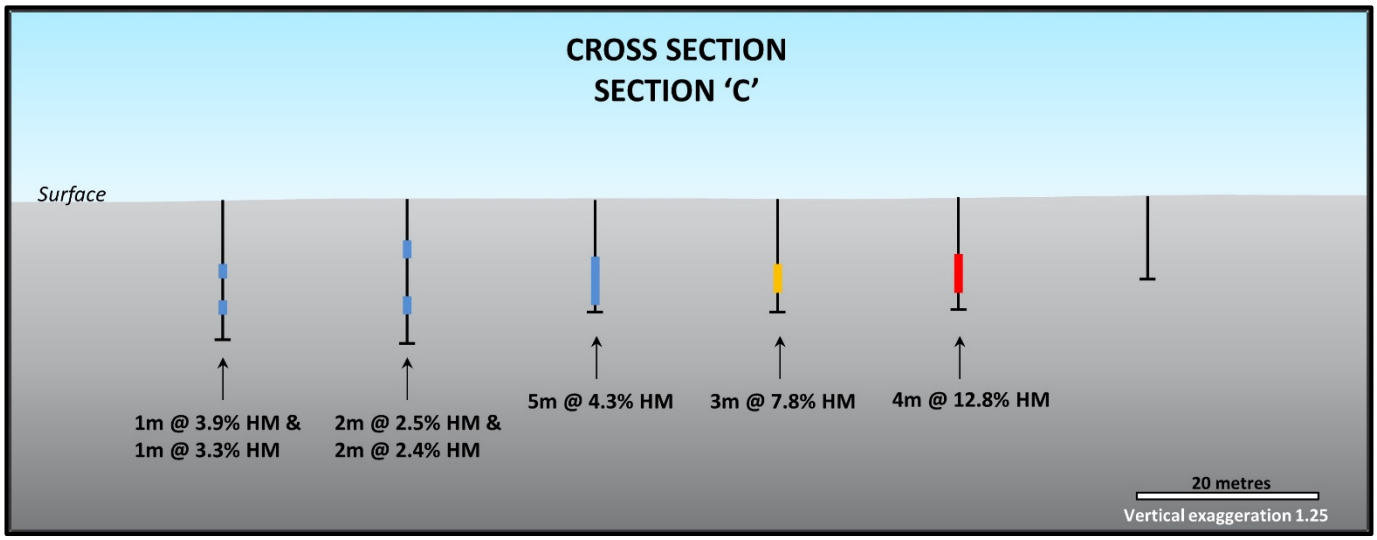

Figure 5 Cross Section C

Fouracres Deposit Resource Estimation Methodology

Geological interpretation was undertaken on drill sections using a > 3 % HM, <30% Slimes; and <20% Oversize cut-off grade for samples. All assays were interpolated using Inverse Distance Squared Nearest Neighbour methodology. Each interpolation was constrained within one of three separate domains, using only composited data that fell inside that domain. Block dimensions of 20m x 10m x 1m were used in the modelling and ID[2] search parameters of 200m x 40m x 2m were used, which is appropriate for the drilling and sampling density.

Fouracres Deposit Mining and Metallurgical Methods

Mining of the deposit would probably be by standard Southwest WA HM dry mining techniques. The mined mineralisation would be pumped as a slurry to a standard wet separation plant to produce a heavy mineral concentrate.

Governor Broome Project Updated Resources

The Governor Broome Project's updated Mineral Resources are summarised in Table 1. Based on the previously announced resource table[1], set out below are the updated resources inclusive of the Fouracres Deposit.

Table 1. Governor Broome Project Resources – at 2% HM lower block-cut-off grade[1]

Tenement	Category	Tonnage (Mt)	HM (%)	Slimes (%)	Oversize (%)
R70/58 - Jack Track	Indicated	26	4	8.6	7.1
	Inferred	43	4	9	3
R70/53 - Governor Broome	Indicated	52	4.8	13	8.5
	Inferred	6	4	15	6
R70/22 – Fouracres[1]	Indicated	0.72	11.4	6.5	1.7
	Inferred	0.2	4	9	0.8
Project	Indicated	79	4.5	11	8
	Inferred	48	4	10	4
	Total Resources	**127**	**4.3**	**11**	**6.5**

Notes: 1. The Fouracres resources were estimated at a 3% HM lower block-cut-off grade
2. The values in the table have been appropriately rounded

Acquisition Terms

The terms of the acquisition with Cable Sands are as follows:

- a cash payment on settlement of $150,000; and
- A 1% gross royalty on all future product arising from the Fouracres Deposit.

The transaction is subject to Ministerial consent for the transfer of the Retention Licence and there are no other material conditions precedent to the transaction.

[1] ASX announcement dated19th September 2022

Further Work

Details of the Fouracres Resources will be supplied to TZMI to be incorporated in the Scoping Study for the development of the Governor Broome Project. The study is expected to be completed in Q1 2024.

This announcement has been authorised for release by the board.

More Information

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Competent Person

The information in this report as it relates to Mineral Resources and Exploration Results for the Governor Broome Project including the Indicated and Inferred Mineral Resources within the Fouracres 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.

JORC Code, 2012 Edition – Table 1 report: Fouracres Project

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Wet samples generally in the range of 3 – 5kg in weight were taken from the RC/Aircore drilling rig. • Samples were collected in 1 m intervals. • Whole 1m samples were collected directly into calico bags using a pull through rack and pot system which allows each sample to be directly deposited into the sample bag. The entire sample was delivered to the laboratory for drying and assaying.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Drilling was carried out using Cable Sands owned and operated Mantis 75 aircore/RC Landcruiser-mounted drilling rigs. Drilling was done using a 3m BQ rod string.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Sample quality was observed at time of drilling and efforts were made to maximize recovery. It is often noted that the first sample in each hole has poor recovery due to loss of air. Different materials have noticeably different recoveries i.e. free flowing sands recover better than some clay rich material. There is no known relationship between grade and recovery.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• A geologist was assigned to the rig during all drilling to log chip samples. For each metre the geologist panned and recorded lithology, colour, hardness, type and amount of induration and an estimate of HM. The data is recorded onto

Criteria	JORC Code explanation	Commentary
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	duplicate paper log sheets. Logging standards are considered to be of a high industry standard.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Samples collected by Cable Sands were dried to improve representative sub-sampling of clay rich samples. Dried samples are manually pulverized (wooden mallet) to reduce particle size prior to sub-sampling. Bench riffle split sub-samples of 400 g are screened at 2 mm to determine 'oversize' fraction. The undersize is further split using a hand splitter to gain a 40–60g sub-sample which is screened at 45μm to determine 'slime' fraction. Following drying and weighing the de-slimed residue is treated in Lithium Polytungstate Solution (LST) to determine the heavy mineral fraction of the raw sample. • Sub-sample sizes are considered appropriate for Perth Basin resources.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Samples were assayed at Cable Sands Exploration Laboratory using the standard Cable Sands' HM assay procedure. Sink float used LST to determine the HM proportion of the samples. • The Cable Sands' assay procedure specifies that all sample numbers that end in 20 or 70 are assayed as a duplicate sample. This equates to 2% of samples delivered to the laboratory. The results of these duplicates are graphed and statistically analysed on a regular basis and are used to make adjustments in the laboratory if a bias is noticed towards one particular person or type of material. • LST density determined daily.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• All exploration samples are estimated for HM content during drillhole logging using a range of HM % criteria. Visual estimates are compared with the resultant HM assays during the data validation process. Any major discrepancies are visually checked against retained samples and re-assayed if deemed necessary. Slimes and oversize assays are also compared broadly against the logged lithology i.e. clay would be expected to be high in slimes and rock high in oversize.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All drillholes were pegged by a company surveyor using total station theodolite. All holes were levelled to the Australian Height Datum with an accuracy of +/- 0.1m. Hole positions have an accuracy of +/- 1.0m. Any holes drilled more than 1m from the pegged position were recorded and re-surveyed.

Criteria	JORC Code explanation	Commentary
		• All holes are assumed vertical and random checks of rig inclination are undertaken during the drilling process. Downhole surveys are not undertaken as few holes exceed 30m and deviation is not seen as a concern. • All drillholes are surveyed in a local grid specific to the project being drilled.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Drill holes were spaced at 20m apart along lines 100 m apart except around the margins of the deposit where spacing is greater. • The Indicated Resource component of the estimation has been defined as that part of the deposit where drillhole density is 100m x 20m spaced or closer. The Inferred Resource is defined as that part of the deposit where drillhole spacing is greater than 100m x 20m, this occurs mainly on the peripheries of the deposit. • No sample compositing has been applied.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Drill lines are perpendicular to the strike of the deposit. • Vertical drilling in a horizontal to shallow dipping resource introduces minimal bias to the resource estimation.
Sample security	• *The measures taken to ensure sample security.*	• Samples collected from the drill site were delivered to the company's Northshore laboratory as soon as practicable. No samples were left in the field.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews have been undertaken

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The project lies wholly within R70/22, and was held 100% by Cable Sands (WA) Pty Ltd, until its recent transfer to Governor Broome Sands Pty Ltd. • The tenement covers a private land holding and vacant Crown Land. No access agreements are in place. DMP approvals will be required prior to conducting further exploration on this tenement. • R70/22 is held in 'good standing' with regards to expenditure commitments.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• All exploration was completed by Cable Sands.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The deposit is a typical strandline-hosted mineral sand deposit.

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• All drilling and assay results were lodged with the Department of Mines and Petroleum (DMP) in 1995.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No HM% upper cut-off grade was used, as SW WA HM strands typically contain very high-grade lenses. Oversize interval upper cut-off grade 20%; Slimes interval upper cut-off grade 30%. • Minimum intersection widths of 2m @ 3% HM.
Relationship between mineralisation widths and	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with*	• Mineralisation is generally shallow dipping towards the current coastline. Vertical drilling is considered to be best practice in relation to maintaining data integrity and minimising

Criteria	JORC Code explanation	Commentary
intercept lengths	*respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	overstating mineralisation thickness.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Plans of drill hole collar locations were lodged with the DMP in 1995 and 2012. • Sections through the deposit were included in the 2012 annual report lodged with the DMP.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Intersections used for resource estimation given in the Appendix to this announcement.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• 6 HM sink composites were used in the block model.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• No further work will be considered until after the results of the planned Scoping Study of Astro's Governor Broome Project have been obtained.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Data was verified prior to importation to the MS Access database. • The geological log forms are manually entered into an Access database specifically devoted to the individual project. Raw assay weights are manually entered from laboratory output sheets. A standard set of macros are run to calculate the HM, Slimes and oversize assays. The database was validated for missing intervals, duplicate samples, missing coordinates, hole name mismatches etc. The HM from assaying is also compared against the estimated HM from logging.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person has not visited the deposit, but has in 2023 drilled the northwesterly extension of the mineralisation within R70/58.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• All geological interpretations were manually done on A0 paper cross sections and transferred into Surpac Mining Software. Mineralisation interpretations are based on the RL and continuity of mineralisation. Where practicable discrete geological domains were created. The quality of the data affords a high degree of confidence in the geological interpretation.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The mineralisation is made up of three overlapping strands that define a zone about 1.8 km long by about 100 m wide. Strands are 2-4 m thick and are at surface in places and covered by about 10 overburden in other parts of the deposit.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other*	• All assays including HM%, Slimes% and Oversize% were interpolated using the Inverse Distance Squared (ID^2) method. Mineralogy was interpolated using Nearest Neighbour. Each interpolation was constrained within a specified domain using only composited data that fell inside that particular zone. Block dimensions of 20m x 10m x 1m were used in the modelling. ID^2 search parameters of 200m x 40m x 2m were used for all domains which is considered appropriate for the drilling density. Each drill section was reviewed against the corresponding block model slice and coloured up appropriately. Block grades were checked against drillhole grades to ascertain the accuracy of the interpolation parameters. All block grades and

Criteria	JORC Code explanation	Commentary
	non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	drillholes grades compared favourably.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are based on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• All mineralised wireframes have been defined using cut-off grades of >3%HM, <30% Slimes and <20% Oversize. Rock and waste domains have been designated by a combination of assay cut-off grades and geological observation.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The deposit will most likely be dry mined using standard Cristal Mining dry mining procedures. A minimum ore thickness of 1m was included in the geological interpretation to define the Resource domains.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• All mineralogical work was carried out using standard XRF and Permroll techniques. Results are in line with historic mineral sands deposits of the Southern Perth Basin. There is nothing to indicate that the deposit cannot be processed by traditional mineral sands techniques i.e spirals.

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Conventional procedures for waste and process residue disposal will be used. This procedure is summarised below. ○ Topsoil and subsoil is stripped and stockpiled separately for eventual rehabilitation purposes. Overburden is initially stockpiled outside the mining void. Once sufficient voids are established, overburden and waste products from ore processing including oversize and sand tailings produced in the WCP following removal of Heavy Mineral Concentrate (HMC) are returned to the mining void as part of the rehabilitation process. ○ In addition, mill tailings from Cristal Mining's dry separation plant at North Shore, Bunbury are periodically returned to the mining void. This material typically consists of silica sand that was unable to be removed from the HMC stream during initial processing at the WCP, with the remainder consisting of small amounts of HMC that cannot be separated into saleable mineral, fly-ash, collected dust, oversize material and fines. Mill tailings from previous mine sites have typically contained less than 100 parts per million (ppm) of radioactive elements. ○ Slime is pumped to Solar Evaporation Ponds (SEPs) that are constructed initially on unmined sites then later on areas backfilled with tailings as they become available. Clean water is decanted from the SEPs and recycled for reuse in the mining process. Once the slimes have dried to a manageable state, they are incorporated into tails during landform redevelopment. ○ Water from the wet screening and separation processes is treated for re-use using a gravity thickener tank to settle clays and other fine particles from the process water. Settling is facilitated by the addition of non-toxic flocculants and coagulants. Clean water from the top of the thickener tank is pumped to the process water pond for storage. A thickened slurry of settled fines is pumped back to the SEPs for drying. ○ Overburden, ore zones and basement immediately below the ore zones are assessed for potential acid sulphate soil (ASS) conditions prior to mining. Ore mining sequencing takes into account any potentially problematic ASS areas. Ore feed and/or tails sand is treated to

Criteria	JORC Code explanation	Commentary
		neutralise pH if necessary.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• A variable density formula of 1.67 + (HM x 0.01) calculated on a dry basis is used for modelling and Resource estimation purposes. • The bulk density formula took into account the fact that majority of the ore is sand sized particles with clay particle infill of void spaces.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Based on the tight drillhole density, quality of drilling, sampling and assaying and the continuity of the mineralisation, the Resource is classified as consisting of an "Indicated" and an "Inferred" Resource. • The Competent Person views the Inferred Resource to have a sufficient density, geological continuity and data integrity for that category of resource. The Competent Person also believes that the area classified as Indicated Resource has an increased level of confidence in geological continuity and data integrity (based on increased data density) when compared to Inferred Resource.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No audits or reviews have been undertaken
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The estimation procedures utilised in the Fouracres resource modelling are viewed by the Competent Person as having reasonably high accuracy. ID^2 estimation of HM, slime and oversize grades are viewed as sufficient for HM deposits within the Southern Perth Basin. Nearest neighbour estimation of mineral assemblage and ilmenite quality is considered appropriate to the data density of the relevant composite data. No areas are classified as Measured Resources at this stage due to drilling density.

APPENDIX 1

Details of aircore drill-holes

Hole ID	Northing GDA 94 Z 50 H	Easting GDA 94 Z 50 H	Elevation	Depth
840690	6203236	367790	36.6	10
840700	6203182	367873	36	9
840710	6203127	367958	35.7	7
860690	6203253	367800	36.4	9
860700	6203199	367884	36	9
860710	6203144	367969	35.8	8
860720	6203090	368050	35.9	9
860730	6203037	368137	36.2	8
860740	6202983	368221	36.4	8
860750	6202930	368305	36.8	11
880690	6203272	367809	36.2	6
880700	6203215	367895	36.1	8
880710	6203161	367980	36.1	8
880720	6203108	368063	36.2	9
880730	6203054	368148	36.3	8
880740	6203000	368232	36.4	8
880750	6202946	368316	37	11
900580	6203869	366878	35	7
900590	6203812	366962	34.8	7
900667	6203399	367635	37.6	9
900690	6203286	367821	35.7	7
900700	6203232	367905	36.1	8
900710	6203178	367990	36.3	7
900720	6203125	368073	36.2	8
900730	6203071	368158	36.2	9
900740	6203017	368242	36.5	9
900750	6202963	368327	36.8	10
900760	6202909	368411	37	9
920580	6203887	366889	34.5	6
920590	6203829	366973	35	7
920667	6203416	367645	37.6	9
920690	6203304	367831	35.8	4.5
920700	6203249	367916	36.2	6
920710	6203195	368001	36.4	6
920720	6203141	368085	36.2	6
920730	6203087	368169	36.4	6
920740	6203034	368254	36.6	8
920750	6202980	368337	36.8	6
920760	6202926	368421	37	8
920770	6202872	368506	37	9
920780	6202814	368599	36.9	10
940580	6203904	366900	34.8	7

940590	6203846	366984	35.1	7
940667	6203433	367656	37.8	8
940690	6203320	367842	35.7	6
940700	6203266	367927	36.3	5
940710	6203212	368011	36.5	5
940720	6203158	368095	36.3	5
940730	6203104	368180	36.7	7
940740	6203050	368264	36.9	6
940750	6202997	368348	36.8	5
940760	6202942	368432	37.2	6
940770	6202889	368516	36.8	8
940780	6202830	368610	37	9
940790	6202776	368693	37	9.5
940792	6202763	368714	37.2	9
940795	6202749	368735	37	9.2
940797	6202734	368760	37	10
940800	6202722	368777	36.9	10
960580	6203921	366910	35	5
960590	6203864	366994	35.1	6
960667	6203451	367667	37.7	6
960690	6203337	367854	36	5
960700	6203283	367938	36.3	6
960710	6203229	368022	36.7	5
960720	6203174	368105	36.4	5
960730	6203121	368190	36.6	6
960740	6203067	368275	36.9	5
960750	6203013	368359	36.9	5
960760	6202959	368443	37.3	5
960770	6202906	368527	37	5
960780	6202847	368620	37	5
960790	6202793	368704	37.2	9
960792	6202780	368723	37.2	9
960795	6202766	368745	37	9
960797	6202751	368771	36.9	9
960800	6202738	368788	36.9	9
980580	6203939	366921	35.1	4
980590	6203881	367005	35.2	6
980690	6203353	367864	36.1	4
980700	6203300	367948	36.4	6
980710	6203246	368033	36.9	5
980720	6203192	368117	36.6	4
980730	6203138	368201	36.7	6
980740	6203084	368285	37.1	5
980750	6203030	368370	36.9	5
980760	6202976	368454	37.1	5
980770	6202923	368538	37.1	4
980780	6202863	368630	37.2	5
980790	6202809	368715	37.3	6
980792	6202796	368736	37.3	5

980795	6202782	368757	37	6
980797	6202767	368781	36.9	8
980800	6202755	368799	37.1	9
1000690	6203370	367875	36.1	3
1000700	6203316	367959	36.5	5
1000710	6203262	368043	36.9	5
1000720	6203209	368128	36.7	4
1000730	6203155	368212	36.7	5
1000740	6203101	368296	37.2	5
1000750	6203047	368380	37.1	5
1000760	6202993	368465	37.3	4
1000770	6202939	368549	37.2	4
1000780	6202880	368641	37.4	3
1000790	6202827	368725	37.4	5
1000792	6202813	368747	37.4	4
1000795	6202800	368768	36.9	3
1000797	6202783	368792	36.9	3
1020720	6203226	368137	37	4
1020730	6203172	368223	36.8	6
1020740	6203116	368327	37.3	4
1020750	6203064	368391	37.3	4
1020760	6203010	368475	37.5	4
1020770	6202956	368559	37.2	3
1020780	6202897	368652	37.3	3
1020790	6202843	368736	37.4	3
1040740	6203118	368307	37.5	4
1040750	6203081	368402	37.8	4
1040760	6203027	368486	37.6	3
1040770	6202973	368570	37.3	3
1040780	6202914	368663	37.3	3
1040790	6202860	368747	37.4	3
1060740	6203151	368329	37.5	5
1060760	6203044	368497	37.5	3
1060770	6202990	368581	37.5	3
1060790	6202877	368758	37.3	3
1800120	6200680	371240	39.1	15
2600100	6201098	370530	37.8	16
2600110	6201169	370600	37.8	15
2600120	6201239	370669	37.7	15
3000100	6201379	370245	37.3	16
3400100	6201658	369958	36.9	15
3400110	6201730	370028	37.5	15
3400112	6201744	370042	37.6	15
3400116	6201773	370069	37.7	12
3400120	6201801	370097	37.8	11
3600100	6201797	369814	36.9	14
3800100	6201937	369671	36.9	12
3800102	6201950	369685	36.7	11
3800104	6201965	369699	36.7	11

3800108	6201994	369727	37.1	9.2
3800110	6202008	369741	37.2	9.2
3800112	6202023	369754	37.4	8
3800114	6202037	369768	37.4	3.2
3800116	6202051	369782	37.5	3.2
4000100	6202076	369527	36.8	12
4200100	6202215	369384	36.9	11
4200104	6202244	369412	36.8	9
4200106	6202258	369426	37	4
4200108	6202272	369439	37.2	3
4400100	6202354	369240	36.9	12
4600100	6202494	369097	36.7	12
4600102	6202509	369110	36.7	11
4600104	6202523	369125	36.9	10
4600106	6202537	369138	36.9	9
4600108	6202550	369153	37.1	6
4800100	6202633	368953	36.9	11
4300488	6202294	369335	37	11
4300490	6202311	369345	36.9	12
4300492	6202328	369356	37.1	9
4300494	6202345	369367	37.3	6
4300496	6202361	369378	37.4	4
4300498	6202380	369386	37.4	3
4300500	6202395	369399	37.5	3
4400488	6202348	369250	37	12
4400490	6202365	369261	37.2	12
4400492	6202382	369272	37.1	12
4400494	6202399	369283	37.2	9
4400496	6202415	369294	37.3	11
4400498	6202432	369304	37.4	6
4500490	6202419	369177	36.9	18
4500492	6202436	369188	36.9	16
4500494	6202452	369199	37	15
4500496	6202469	369209	37	12
4500498	6202486	369220	37.1	12
4500500	6202503	369231	37.2	9
4600490	6202473	369093	36.8	15
4600492	6202489	369104	36.8	12
4600494	6202506	369114	36.9	12
4600496	6202523	369125	37	12
4600498	6202540	369136	37	10
4600500	6202557	369147	37.3	4
4700490	6202526	369008	36.8	15
4700492	6202543	369019	36.7	15
4700494	6202560	369030	36.8	12
4700496	6202577	369041	36.9	12
4700498	6202596	369048	37.2	12
4700500	6202611	369062	37.6	9
4780500	6202654	368995	37.1	6

4790498	6202642	368976	37.2	12.5
4800490	6202580	368924	36.7	15
4800492	6202597	368935	36.6	12
4800494	6202614	368946	36.8	12
4800496	6202631	368957	37	12
4800502	6202681	368989	37.2	9
4900490	6202634	368840	36.7	14
4900492	6202651	368851	36.6	14
4900494	6202668	368862	36.8	12
4900496	6202685	368872	36.8	12
4900498	6202702	368883	37	11
4900500	6202719	368894	37	6

Details of aircore drill-holes

HOLE ID	FROM (m)	INTERVAL
860690	5	3m @ 26.2 %
860700	5	3m @ 25.1%
880690	4	2m @ 3.2%
880700	2	2m @ 4.65%
880710	4	3m @ 27.9 %
880720	6	2m @ 21.5%
880730	5	2m @ 4.6%
900720	1	6m @ 19.8%
900730	2	6m @ 11.95%
900740	7	2m @ 5.7%
900750	7	2m @ 8.05%
920690	0	2m @ 3.65%
920700	1	3m @ 6.3%
920710	2	2m @ 5.45%
920720	1	2m @ 5.4%
920730	0	3m @ 6.5%
920740	0	7m @ 12.1%
920750	3	3m @ 6.5%
920760	0	3m @ 4.8%
920760	5	2m @ 6.55%
920770	7	2m @ 3.25%
940580	1	2m @ 3.0%
940667	5	2m @ 4%
940690	3	2m @ 3.05%
940700	1	3m @ 5.2%
940710	1	3m @ 4.8%
940720	0	4m @ 7.6%
940730	0	2m @ 11.1%
940740	0	3m @ 14.2%
940750	0	2m @ 6.2%
940760	0	3m @ 8.3%
940770	0	7m @ 10.2%
940780	6	2m @ 8.05%

940790	7.5	2m @ 4.9%
940800	8	2m @ 3.5%
960700	0	3m @ 10.9%
960710	0	2m @ 5.15%
960720	0	3m @ 8.0%
960730	0	2m @ 4.55%
960740	0	3m @ 4.5%
960750	0	2m @ 5.35%
960760	0	3m @ 8.75%
960770	0	3m @ 10.5%
960780	0	4m @ 14.1%
960790	6	2m @ 32.5%
960792	6	3m @ 15.1%
960795	6	3m @ 16.4%
960797	6	3m @ 9.4%
960800	6	3m @ 3.3%
980740	0	3m @ 7.5%
980750	0	2m @ 3.9%
980760	0	3m @ 13.1%
980770	0	3m @ 11%
980780	0	3m @ 25.8%
980795	4	2m @ 39.25%
980797	3	5m @ 14.8%
980800	4	2m @ 12.65%
4300490	7	2m @ 15.2%
4300492	4	2m @ 5.1%
4400490	9	2m @ 9.3%
4400492	6	2m @ 13.35%
4400494	6	3m @ 30.3%
4400496	3	5m @ 21.7%
4500492	9	2m 2 4.7%
4500492	5	2m @ 12.8%
4500494	4	2m @ 6.65%
4500496	6	3m 2 21.4%
4600100	9	2m @ 4.2%
4600102	5	2m @ 9.55%
4600104	8	2m @ 14.25%
4600106	6	2m 2 45.4%
4600492	10	2m 2 3.75%
4600494	5	2m @ 7.45%
4600494	9	2m @ 3.5%
4600496	7	2m @ 4.8%
4600498	6	3m @ 31.7%
4700494	9	2m @ 7.5%
4700496	8	2m @ 15.4%
4700498	6	3m @ 16.2%
4780500	0	2m 2 4.1%
4790498	6	3m @ 33.1 %
4800100	7	3m @ 12.3%

4800492	2	2m @ 3.55%
4800494	9	2m @ 6.9%
4800494	5	2m @ 3.3%
4800496	8	2m @ 9.65%
4900494	9	2m @ 12.05%
4900496	7	2m 2 3.25%
4900498	6	3m @ 12.4%