# MAYDENA SANDS PTY LTD

ACN 111 938 428 ABN 65 111 938 428

**RETENTION LICENCE NO. 2/2003**

**MAYDENA, TASMANIA**

# ANNUAL REPORT

# TO

# 09 January 2011

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**DECEMBER 2010**

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# ABSTRACT

In the wake of the GFC, demand for display panels continued to grow at a moderate pace through 2010 which, by implication, created increased demand for high purity silica flour. This trend was reflected in the increased number of enquiries received and the number of test samples provided to potential customers. Several test samples of processed silica sand were also provided to potential customers to determine the suitability of the material for optical glass.

The solar photovoltaic industry, user of various grades of polysilicon, exhibited growth in 2010 which is likely to continue through 2011.

Unfortunately, Maydena Sands will not be able to participate in this trend in any significant way, as this year's drilling gave no indications of substantial resources of high purity silica rock at depth in the Eastern Quarry area as possible feed-stock for polysilicon production.

Offsetting this disappointment were positive preliminary results of bench-scale tests using electrostatic methods to separate out rutile and carbon particles from samples of silica sand, thereby improving the quality of the end product.

After some further, very limited investigations, Macquarie Harbour Mines relinquished its option over the Western Quarry silica rock deposit.

**Keywords:**

Maydena; Silica flour;
Silica sand; Polysilicon;
Optical Glass;

## C O N T E N T S



## APPENDICES



## ILLUSTRATIONS

## 1. INTRODUCTION

This report outlines activities by Maydena Sands Pty. Ltd. during its seventh year of tenure of Retention Licence 2/2003, granted for a four year period to 9.01.2008 and then renewed annually to 09.01.2011.

This tenement has its origins in EL 17/1998 previously held and operated by J.J. McDonald &Sons Mining Pty. Ltd. The tenement is located just south of the sealed Gordon River road approximately 4 km west south west of Maydena (pop. 250 approx.) and about 90 km by road from Hobart (Fig.1). There is good access to and within the prospect area. Power, water, housing and basic facilities are readily available from within a short radius of the prospect. The last few years saw the progressive upgrade of the narrow gauge New Norfolk-Maydena rail line to passenger standard only as far as the entrance to the Mt Field National Park from New Norfolk. Plans for a further upgrade to freight standard of the entire stretch have recently been deferred indefinitely and may not eventuate. An alternative rail loading facility is being built as part of a major freight hub at Brighton, approx. 65km by road east of Maydena.

A 700m long gravel airstrip is located 3 km north west of the silica sand deposit.

The primary target for investigation, assessment and eventual exploitation remains the deposit of silica sand and its silica flour matrix located largely to the west of the Eastern Quarry, about 1 km south east of Pine Hill (Fig.2).

The overall aim of the investigations is to determine if a commercially viable operation can be established, based on products derived from the silica sand and silica rock resource in the tenement.

In view of the upsurge of interest in the use of solar power locally and overseas, further attention was also directed at the high quality silica rock potential of the tenement. The latter raw material is used in the production of high purity silicon metal which is an essential component of photovoltaic solar cells. Also of potential interest is the coarser, higher purity sand fraction for use in the manufacture of optical glass and solar cell cover glass with high light transmissivity characteristics.

## 2. PREVIOUS WORK

Exploration by Pioneer Silicon Industries Pty. Ltd. in 1988/89 identified a lag deposit of hard silica rock at the Western Quarry containing a small resource of material deemed suitable for the manufacture of silicon. (Fig.2). From this, approximately 19,000 tonnes of crushed, screened silica rock was produced in 1991 and 1992 for shipment, of which 10,000 tonnes were consigned to Pioneer's silicon smelter at Electrona and about 9,500 tonnes went to Temco's Bell Bay ferrosilicon plant. Extraction, by Duggans Pty. Ltd. under M.L.1396 P/M, virtually ceased upon closure of the Electrona smelter in 1992, although a small parcel of 850 tonnes of silica rock is reported to have been mined in 1995. At the end of the earlier exploration work, an occurrence of white silica sand was located between Pine Hill and the Styx Road in an area now known as the Eastern Quarry Area. Pioneer investigated this deposit in the vicinity of the Eastern Quarry by 23 shallow RC drill holes. Preliminary estimates suggested a resource in the order of some 0.75 – 1.5 million cu. m. of mostly low iron silica sand containing about 10% of high grade lump silica. Pioneer ceased operations at Electrona before any of this latter material could be used for silicon production.

Assay results from a number of subsequent, excavator generated pit samples by the North West Bay Co. Pty. Ltd. supported the high quality of the resource and, together with sizing determinations on a bulk sample, indicated that the sand might be suitable for the manufacture of table ware glass.

During its tenure of EL 17/1998, which contained these deposits, J.J. McDonald & Sons Pty. Ltd., using the air core drill sampling method, completed 43 drill holes totalling 553 m which outlined a raw material resource of about 6 million tonnes of loose silica ranging in size from very coarse to very fine.

The drilling also demonstrated that the deposit is more variable, complex and higher in iron oxides and other impurities than previous data suggested.

Laboratory sizing determinations indicated that the deposit is a possible source of silica flour as well as glass sand, while geological mapping and interpretation pointed to a small resource potential for hard rock silica as well.

Bench scale beneficiation tests and bulk sample processing tests, including acid wash tests on samples of the glass size fraction sand, showed that the -250 micron fraction could be upgraded to a high quality product containing only about 50ppm Fe2O3 without major environmental impact, with levels of iron as low as 10ppm a possibility.

Sources of good quality limestone and dolomite were identified in relative proximity to the silica sand deposit for eventual acid neutralization uses.

The company's activities in the marketplace identified the natural silica flour as potentially the deposit's most important component economically. This material provided the major focus for ongoing geological, processing and marketing activities, though the coarser size sand fractions and the hard-rock silica potential remain of interest for future attention under the appropriate market conditions.

In early 2004, EL tenure over the area was converted to a Retention Licence

In late 2004, J.J. McDonald & Sons Mining Pty. Ltd. formed a new holding and operating company, Maydena Sands Pty. Ltd., to which the Retention Licence and all of the former company's interests in the Maydena area were transferred in April 2005.

Since then, all activities are being conducted under the new Company name.

Details of past activities and outcomes are provided in reports listed in the Sections 7 and 8 below.

## 3. ACTIVITIES FOR PERIOD

These included:

### 3.1 Work Done

- RC drilling – 4 holes
- RC drill hole collars surveyed
- Geology: logging, sampling RC drill cuttings, data plotting and assessment
- Mineralogical study – in progress
- Dating, using pollens in palaeosoils – in progress

- Beneficiation:

  Investigation of ERIEZ HIMF method of Fe removal on a 1 X 25 kg test sample generated and submitted – in progress

  Preliminary tests for applicability of electrostatics for the removal of TiO2 completed at CSIRO. (3 X 1Kg test samples)

  Methods to remove organic particles from sand/flour under preliminary investigation by CSIRO

- Market related activities:

  Established company website

  Ongoing market research and monitoring

  Attendance at China Glass 2010 – Beijing

  Attendance at Glasstec 2010 - Dusseldorf

  Contacts or meetings with:

  - Downer EDI – Silica sand, Silica rock
  - Stratum Resources – Sydney – Silica flour, Silica rock
  - Sunday Solar Technologies – Penrith – Silica rock
  - Macquarie Harbour Resources – Silica rock, Silica sand
  - Citadel Resources – Melbourne – Silica sand
  - OHC – Berlin - Silica flour
  - Itochu - Japan - Silica flour
  - KORES - South Korea - Silica sand, Silica flour, Silica rock
  - Ssang Yong - South Korea - Silica sand, Silica flour, Silica rock
  - Representatives of –
    - Indian interests – Silica flour, Silica rock
    - Chinese interests – Silica flour, Silica rock
    - South Korean interests (OCI) – Silica flour, Silica rock

Test samples generated at Burnie Research Laboratory for:

- MHM – 3 X 1Kg & 49Kg
- Ssang Yong/KORES – 2 X 10Kg – 1 X 6Kg

- Project Planning:

  Road transport cost estimates to Boyer and Brighton Freight Hub by Lloyds North in progress

  Monitoring construction progress at Brighton Freight Hub

  Monitoring status of rail system in Tasmania

  Monitoring developments in the downturn in the Tasmanian forestry industry and its impacts

  Entered discussions with CSIRO re processing 1-2t bulk sample

  Ongoing search for alternative processing site

- Community relations:

  Contacts with Maydena Development Association maintained

- Environmental

  Cleaned, rehabilitated and re-seeded drill sites

  Re-capped several old drill hole standpipes

## 3.2 Statistical Summary

| | | |
|---|---|---|
| No. of RC Drill Holes | : | 4 |
| Total meters drilled | : | 177 |
| Tasmanian Drilling Services Pty Ltd., New Norfolk | : | Drilling Company |
| Edson 3000 | : | Drill Rig – RC Hammer |
| Atlas Copco – 350cfm 150psi | : | Compressor |

Test Samples generated:

| | | |
|---|---|---|
| MHM - Glass Sand | : | 3 X 1Kg<br>1 X 49Kg |
| Ssang Yong/KORES - Silica Flour | : | 1 X 10Kg |
| Ssang Yeng/KORES - Silica Sand | : | 1 X 6Kg |
| Ssang Yeng/KORES) Silica Rock | : | 1 X 10Kg |
| Eriez - HIMF tests – Silica Flour | : | 1 X 25Kg |
| CSIRO – TiO2 + Carbon tests – flour and sand | : | 3 X 1Kg |

| | | |
|---|---|---|
| No. of Samples Analysed | : | 404 |
| No. of Analyses | : | 2,239 |

### 3.3 Expenditure

| | | |
|---|---|---|
| To Dec 2009 (RL Tenure only) | : | $438,148.00 |
| Period Jan – Sep 2010 | : | $111,918.00 |
| Estimate Oct – Dec 2010 | : | $ 27,104.00 (approx.) |
| Estimated Cumulative Total for period of RL Tenure | : | $577,170.00 (approx.) |

## 4. RESULTS

### 4.1 Drilling

The main objective of this year's RC drilling programme in the Eastern Quarry Area was to obtain indications of depth to silica bedrock and its quality. Subsidiary information gained was the quality and depth extent of the superposed overburden of silica flour, sand and boulders. Four test sites were selected near the western edge of the deposit where scattered, large boulders of

silica rock on the surface or hard rock encountered at shallow depths in earlier drilling suggested near-surface bedrock. (See Fig. 3)

The drilling results are somewhat ambiguous and difficult to interpret accurately. They suggest bedrock at depths between 34-50m overlain by 16-35m of heavily ironstained, in parts somewhat clayey, sand and boulders, topped by 12-22m of leached, mainly white silica sand flour and boulders (See Appendix 2 and Figs 5,6,7).

A general summary of the main zones intersected, representing mainly the chemical character of the silica material is provided in the table below:

| Hole | White Leached Zone m | Ironstained Oxidised Zone m | Bedrock |
|---|---|---|---|
| 131 | 0 – 12 | 12 – 47 | ? 50+m |
| 132 | 0 – 22 | 22 – 41 | ? 41m |
| 133 | 0 – 16 | 16 – 32 | 34m |
| 134 | 0 – 15 | 15 – 50 | ?+50m |

Only Hole 133 provided clear indications of dolomitic bedrock at 33m-34m immediately overlain by a 1m (approx) of dark brown clay containing a layer of black carbonaceous material, interpreted as the basal part of a 3m palaeosoil unit. A sample of the latter was collected for pollen dating which might help constrain the age of formation of the silica deposit. If correct, this interpretation would indicate a substantial volume of overburden to be removed and stored, with associated cost imposts, in the event of a mining operation focused on silica bedrock.

In the first instance, samples were collected over 1m intervals over the entire hole length. But analyses were undertaken only on samples from the upper, white, leached zone. The material from the lower, heavily iron-stained zone was not assayed due to the obviously high iron content indicated by its colour. It appeared too heavily contaminated to be of interest as high purity silica sand or silica rock. Analytical results for this group of samples assayed were poor right

across the suite of elements tested (See Appendix 3). An unexpected outcome was the unusually high level of Cr2O3 encountered throughout, particularly in holes 131 and 132, where values of up to 53ppm Cr2O3 were reported against expectations of 1ppm or less, possibly reflecting contamination from the drilling equipment used.

All drill cuttings were then cleaned by washing and screened at 5mm approx, with the +5mm fraction retained for examination and assay. This further emphasised the colour differences between the leached and oxidised zones and pointed to lower oxidation levels at the base of holes 132, 133 and 134 indicated by lesser iron staining. The improvement in sample colour obtained in the leached zones suggested the possibility of better assay results for the silica rock chips cleaned of drill dust contamination A range of samples, not necessarily sequential, mostly from the white, leached zone were analysed, as were samples from near, or at the bottom of, each hole (Appendix 4). Also analysed for reference and comparison were a few small fragments of silicified dolomite intersected at the base of former diamond drill hole Styx4 (Appendix 3). Results from this suite of samples, though no better than 85 ppm Fe2O3 over 3m in hole 133, were significantly better than those from the earlier group. However, impurity levels, in addition to iron, reported in the washed samples overall still exceeded significantly those required in silica rock feed for the manufacture of high purity polysilicon. In the light of these disappointing outcomes, further investigations into the hard rock silica resource potential in the Eastern Quarry area as feed for the manufacture of high purity polysilicon will be scaled back.

## 4.2 Supplementary Assays

### 4.2.1 Phosphorus

Recent enquiries indicated the need for low phosphorus and in some cases, lithium in the silica material for specialist applications. In this context, previously tested material from drill holes 111-130 were re-analysed for P2O5 (Appendix 5). The highest levels of P2O5 were recorded in holes 112 and 113, spiking at 6.70% and 0.401% P2O5 respectively. Lesser concentrations of 0.215% and 0.130% were recorded from 15-17m in hole 114 and 0.079% from 17-18m in hole 123 with occasional spikes of up to 320 ppm P2O5 noted in several of the

other holes. These high values were often associated with elevated Al2O3. In the remaining samples, P2O5 levels commonly lay in the range of <10ppm to around 60ppm, averaging about 30-40 ppm. Even at these reduced levels, P2O5 content may be too high for some specialist applications of the silica product and processing options to reduce these amounts further need investigation. The source of the phosphorus is currently unknown, but mineralogical studies completed to date suggest it may, in part, be apatite.

### 4.2.2 Lithium

Also in recent enquiries low levels of lithium, preferably below 1ppm were indicated as a requirement for optical glass manufacture. So far, only a limited number of samples have been analysed for this element ( See Appendix 6 & 7). Results show lithium mostly at <1ppm, though levels of 2 and 3ppm have been recorded. From customer tests it is apparent that these levels may be reduced further by acid leaching to a point where lithium presents no further problems.

## 4.3 Mineralogical Investigations

These studies are in progress, but have been held up by the consultant's commitments overseas and sample contamination originating from the sample preparation equipment. They are aimed at identifying mineral species hosting phosphorus, boron, lithium and other contaminants and their location within the sand grains or silica crystal structure.

Methods used initially will be classical microscope work, as well as SEM, EMP,and possibly cathodoluminescence. The ultimate objective of the project is to provide information to help improve the beneficiation process.

## 4.4 Palaeodating

One of the unresolved questions regarding the silica sand deposit is the age of its formation. Pollen in the organic and clay layers encountered towards the base of the RC drill holes completed this year, as well as in some of the prior drill holes, including DDH Styx 4, could yield useful data. Several samples were selected for investigation by a University of Melbourne pollen expert in association with facilities in Canada. This is a work in progress.

## 4.5 Other

After further site visits and minor surface rock sampling, Macquarie Harbour Mining relinquished its option over the Western Quarry silica rock resource.

## 4.6 Beneficiation

Most beneficiation activities this year were tied to test sample preparation for marketing purposes. This work was undertaken by Burnie Research Laboratory and consisted of standard procedures variously involving desliming, sample washing, drying, screening and magnetic separation. Furthermore, after discussion with ERIEZ EUROPE in Wales, 1X25Kg sample of silica flour in the +40-250 micron size band (Sample 101B-1) was screened out, washed, dried and forwarded to Eriez for preliminary tests as to the applicability of the High Intensity Magnetic Filter (HIMF) method for the removal of mainly iron and ilmenite contamination. It is claimed that this method offers a number of advantages over the Wet High Intensity Magnetic Separation technique, among them its portability, low operating costs, minimal maintenance and better iron removal capacity for equivalent gauss field strengths. Preliminary results are expected in Q1 of 2011.

Removal of non-magnetic rutile, a source of TiO2 contamination in the silica flour and sand, presents a processing problem which, if solved, would enhance end product quality of both the silica flour and silica sand as well as upgrade currently sub-economic material to commercial resource levels. After discussions with CSIRO, Melbourne, 3X1Kg samples of material consisting of the -75 micron, 75-200 micron and +200-500 micron size bands of sample 90B-2 were submitted for bench scale tests using electrostatic separation. The results are encouraging, particularly for the coarser size bands (See Appendix 7). The raw material feed contained TiO2 values of around 1000ppm which were reduced to 480ppm in the -75 micron, non-conducting (NC) fraction. The non-conducting +75-200 micron fraction reduced to 250ppm TiO2 and the non-conducting +200-500 micron fraction showed the best improvement with only 100ppm TiO2. There were

corresponding improvements in the levels of Fe2O3, reducing to only 10ppm in the 200-500 micron band. A matter to be followed up are the surprisingly high Cr2O3 values between 3-6ppm in the non-conducting fraction. The original feed indicated only 1ppm or less. This may be the result of cross contamination from the electrostatic equipment used.

Similar reductions of TiO2 from 40ppm to 20ppm were achieved in the non-conducting fraction of sample B101-3. However, the latter sample also contained an unusually high proportion of black organic specks of ?carbon ranging in size from ca.600 microns downwards. Contrary to expectations, electrostatic separation removed only a proportion of this contaminant (visual estimate only). Discussions are in progress with CSIRO to see if investigations into alternative, more effective methods for the removal of the carbon are feasible.

## 4.7 Project Planning

As freight logistics and transport costs play an important part in the commercial viability of this project, the status of the rail system in Tasmania, construction progress at the Brighton Freight Hub as well as developments in the downturn in the Tasmanian forestry industry and its impact on rail policy were monitored on a continuing basis.

Previous project planning envisaged the use of rail transport to bring product from Maydena to port at Bell Bay. This approach relied on the upgrade to freight standard of the Derwent Valley Railway line, the latter being dependent to a large extent in recent years on projected timber freight volumes sourced from a major timber company's concessions south of Hobart via loading facilities to be established at either Westerway or Karanja, approx. 15 and 20 Km east of Maydena by road respectively. In view of the current turmoil in the Tasmanian timber industry and its re-orientation towards plantation timber, this rail line upgrade is now deemed highly unlikely in the foreseeable future. In this context, railing of product via the Brighton Freight Hub may provide a viable alternative to road freight, provided the rail line from Western Junction to Bell Bay remains open. Freight costs utilizing the Hub cannot as yet be estimated. In the

meantime, indicative road freight costs from quarry site to Bell Bay port were obtained from LloydsNorth. These estimates suggest costs of $750 to $975 per 20 tonne container, i.e. $37.50 to $48.75 per tonne of product. Transport costings from quarry site to Boyer and Brighton Transport Hub for possible product transfer to rail are awaited.

Further discussions with CSIRO, Melbourne, re processing 1-2t bulk samples, as an alternative to a pilot plant, were deferred until later in 2011 when that organisation plans to acquire a WHIMS unit – an essential component of the processing flow sheet. Successful tests with the HIMF unit (See Section 4.6 above) may prompt modification of this approach.

The search continues for a more suitable processing site as an alternative to a previously selected area adjacent to the Gordon River Road – new possibility emerging.

## 4.8 Marketing

### 4.8.1 Overview

After a significant downturn and stagnation in 2008/2009, silica flour demand for TFT-LCD applications began to pick up in Q4/2009 and continued to improve through to end Q2/2010. Thereafter, reports suggest that LCD TV producers were trimming production targets, leading to lower glass volumes used and an inventory glut Nonetheless, Corning, a global leader in the production of display glass, estimated that global demand for display glass for 2010 could peak at between 2.9 – 3.1 billion square feet. Despite the reported glass inventory overhang, Corning is cautiously optimistic, expecting low to modest growth in the global display glass business for 2011.

In contrast to display glass, the global polysilicon industry continued to grow rapidly in 2010, in line with the growth of the global solar PV market. Market researcher Globaldata reports year on year increases in global silicon production capacity from 32,500 metric tonnes in 2004 to 232,697 metric tonnes in 2010.

After plunging to a low of US$45-50/Kg, PV polysilicon prices have stabilised in the more realistic range of US$60-70/Kg in the latter half of 2010. Even these price levels are considered high by industry users, some of whom are investigating new and cheaper methods of producing high purity polysilicon.

New capacity, brought on stream in 2009 and 2010 in response to growing demand, resulted in a glut of PV polysilicon which some market analysts claim will take several years to work through and act as a brake on major price rises.

Among factors driving growth in PV cell uptake are increasing efficiencies of traditional monocrystalline and polycrystalline silicon solar panels, currently between 15 and 23%, compared to thin film amorphous silicon of 6.7% and CdTe technology of around 10%.

The major sources of polysilicon are the US and China which, in 2009 – 2010, produced in excess of 50% of global output between them.

Europe, with a 71% share of globally installed capacity of PV cells is the leading solar PV market, where the major participants are Germany, Spain, Italy, France and the Czech Republic.

The Asia-Pacific region follows with a 14.9% share, where Japan and increasingly, China, are the main participants.

Market share in the US is increasing and legislation, along with government structure packages are likely to encourage further growth.

Overall, the market outlook for PV polysilicon and, therefore, high purity silica, remains positive despite moves of a number of market participant countries to reduce subsidies for the installation of PV units.

### 4.8.2 Marketing Activities

Marketing activities continued throughout the year with emphasis on silica flour and silica sand at the expense of silica rock, whose potential at the prospect was significantly diminished in the light of the disappointing drilling results this year (See Section 4.1). The creation and launch of a basic company website mid-year already generated several enquiries, in addition to establishing contact with

several overseas sand producers. To year-end 2010, the site registered, on average, between 30-40 visits per month, about 10% of which were of 15 minutes duration or more. In addition, the markets for TFT-LCD panels and PV polysilicon, proxies for silica sand/flour and high purity silica rock respectively were monitored throughout the year to identify consumer trends and to identify potential new customers. Allied to this were successful visits to China Glass 2010 in Beijing and Glasstec 2010, Dusseldorf to broaden industry contacts.

There were contacts and/or meetings with the following:

**Downer EDI**

The Hobart Branch, Road Construction Division, of this large conglomerate was negatively impacted by the downturn in demand for forestry road maintenance and construction, due to uncertainties associated with the re-orientation of the Tasmanian forestry industry. Consequently, the company no longer sees immediate demand for this company's lower quality sand and rock. The matter is on hold.

**Sunday Solar Technologies**

This Penrith, NSW-based research company was visited to showcase Maydena's potential products, particularly silica rock. The company is involved with the photovoltaic industry and the production of polysilicon. No further immediate action.

**Macquarie Harbour Resources**

At its request, this Tasmanian company was provided with several small samples of processed silica sand for testing by its Asian clients for optical glass applications. Following generally acceptable test results, (similar to those achieved by Maydena Sands) a larger sample of 49Kg of processed silica sand was provided for more detailed investigations. Tests are on-going, but recent responses are said to have been "reasonably positive".

**KORES/Ssang Yong**

KORES is a public corporation, owned by the South Korean government, specializing in resource development. It is acting to source supplies of silica flour, sand and rock for Ssang Yong, a large South Korean corporation with primary interests in the car industry. They requested, and were supplied with, 10Kg each of silica rock and processed silica flour, and 6Kg of processed silica sand to be tested for unspecified applications. Tests are to be completed in January 2011 and, if successful, would be followed by a familiarisation site visit.

**OCI – South Korea**

This large South Korean multinational with plans to diversify into production of high purity PV silicon is seeking large quantities of high purity quartz or silica rock smelter feed. After protracted discussions through an intermediary, the company decided in favour of sourcing smelter feed from Kazakhstan.

**FESIL**

This Norwegian silicon producer is a member of a consortium investigating the use of high purity silica flour and carbon black as a cheaper alternative to the Siemens-based processes for the production of high purity PV poly- and mono-silicon. The company was contacted to see if the Maydena Sands' silica flour or sand would be a suitable component for this process. Although FESIL's size specs could be achieved, its chemical specs could not be met at this stage. Further action deferred.

**Citadel Resources**

Contact with this company concerning silica sand continued early into 2010, but is interests waned. Recently, this company was subject to a successful takeover. Further interest in silica sand is not expected from the new owners.

**Other Contacts**

Ongoing contact was also maintained with Stratum Resources – Sydney, OHC – Berlin, Itochu – Japan and Melbourne.

Enquiries re silica flour and silica sand from representatives of some Chinese, Indian and other South Korean interests led to no further developments at this stage.

**Competitors**

Several new, supply-side competitors have emerged in the market place for both high purity silica sands/flour and silica rock. Those in Turkey, Tunisia and Niger appear to focus primarily on markets in Europe, North America and the Middle East and, to a lesser extent, on China and the rest of East Asia. On the other hand, two of the new, potential Australian competitors place emphasis mainly on markets in East Asia.

## 4.9 Environmental

This year's drilling programme had minimal environmental impact. No new access tracks were needed as drilling was undertaken from pre-existing drill pads. Three were widened slightly to accommodate the larger RC drill rig used.

## 4.10 Rehabilitation

Drill sites 117, 131, 132, 133 and 134 were cleaned up, holes capped, rehabilitated with top soil returned and re-seeded using seeds provided by Forestry Tasmania. In addition, several old drill holes were also re-capped. Re-seeding only was also undertaken in areas around previously drilled holes 109, 112, 113, 120, 121 and 122. Drainage grips were cleaned and enlarged on the upper part of the access track to hole 133, as well as the upper part of the fire track leading to holes 126 and 127. A drainage channel on the side of the main haulage track near drill site 134 was re-established.

## 5. CONCLUSIONS AND RECOMMENDATIONS

- There appears to have been moderate growth in the demand for display panels during the year, particularly in China, during 2010. Further low to moderate growth is predicted for 2011. This trend should maintain demand for high purity silica flour, especially in East Asia.

- Strong growth for the photovoltaic industry is again predicted for 2011, offering market potential for both high purity silica sand for PV cell cover glass and high purity silica rock for PV polysilicon production.

- Due to the disappointing results of this year's drilling, the capability of Maydena Sands to contribute major quantities of high purity silica rock from the Eastern Quarry area for PV polysilicon production has been severely reduced.

- This outcome does not warrant any further major effort or expenditure to delineate high purity silica rock resources at the prospect.

- Preliminary tests using electrostatics to reduce levels of TiO2 (as rutile) and carbon particles yielded positive results. Further trials, including use of heavy media separation and air current electrostatics for carbon, warrant pursuing.

- Promotional and marketing activities in Europe and particularly in the East Asia region were this year again successful in generating a number of enquiries about this company and its products as well as providing contacts with several sand producers.

- The increase in enquiries received about potential silica flour and sand products, particularly in H2/2010, is encouraging, as is the generally positive response on test sample results submitted for investigation. Clearly, marketing and promotional efforts need to continue.

- A possible alternative processing plant site remains of interest and should be pursued further as appropriate.

- Project capex/opex should be reviewed and updated regularly in the light of changing business conditions in Tasmania.

## 5. PROPOSED FUTURE ACTIVITIES

- Complete mineralogical and palaeodating investigations currently in progress.
- Complete preliminary HIMF separation test with ERIEZ and follow up if warranted.
- Continue with investigations to remove rutile and carbon from the silica flour and sand end products.
- Continue with product development and promotion and identify further sales opportunities.
- Continue with product marketing and follow up on contacts made at China Glass 2010 and Glasstec 2010.
- Continue with efforts to identify flat land sites for the location of process plant, quarry infrastructure, dams, etc.
- Continue with process plant design, sand extraction concepts and capex/opex reviews.
- Maintain contact with state and local regulatory authorities, as well as local civic associations and groups, on project related matters and activities.

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# APPENDIX 1

# RC DRILL HOLE CO-ORDINATES

## DRILL HOLE CO-ORDINATES

## (AGD 1966)

| Point | Easting | Northing | Height | Hole |
|---|---|---|---|---|
| 354 | 465984.89 | 5263902.07 | 420.69 | DH131 |
| 352 | 465902.87 | 5263947.63 | 418.83 | DH132 |
| 365 | 465666.03 | 5263933.18 | 400.49 | DH133 |
| 351 | 465798.55 | 5263969.92 | 426.73 | DH134 |

# APPENDIX 2

# RC DRILL HOLE LOGS

# MAYDENA SANDS PTY. LTD

## DRILL HOLE LOG

| | | | |
|---|---|---|---|
| **AREA:** | Eastern Quarry Area, Pine Hill, Maydena | **MAP SHEET:** | 4626 Maydena |
| **DRILLER:** | Diamond Drilling Tasmania Pty Ltd | **DRILL HOLE:** | **131** |
| | | **AMG** | 5263902mN |
| **METHOD:** | RC | **CO-ORDS:** | 465985mE |
| **DATE:** | 04.03.2010 | **ANGLE:** | Vertical |
| **LOGGED BY:** | GK | **FINAL DEPTH:** | 50m |

| FROM | TO | DESCRIPTION | SAMPLE NO. |
|---|---|---|---|
| 0 | 1 | Fine buff/pale br. sand, sp. Silica rock fragments | 70636 |
| 1 | 2 | Fine buff/pale br. sand, sp. Silica rock fragments | 70637 |
| 2 | 3 | Fine buff/pale br. sand, with silica rock chips (s.r.c) ,abund.limonite stain | 70638 |
| 3 | 4 | Fine grey-white, then orange-br, sand with abund. white sil.rock chips with lim.stain and crust | 70639 |
| 4 | 5 | Fine white, then more or.-br.sand; lesser white, more or.-br. lim.stained chips | 70640 |
| 5 | 6 | Fine white,then or.-br sand,abund. white and br.-stained s.r.c: ?ferrug. | 70641 |
| 6 | 7 | Fine grey-white sand with chips of white and lim.stained silica rock | 70641A |
| 7 | 8 | Fine grey-white sand with chips of abund.white, less lim.stained silica rock | 70642 |
| 8 | 9 | Fine grey-white sand with chips of abund.white, less lim.stained silica rock - cavity,(small sample return) | 70643 |
| 9 | 10 | Fine pale or.-br sand; abund.white rd.-br. Fe stained chips of silica rock | 70644 |
| 10 | 11 | White sand to 10.5m then reddish stain,white and Fe-stained silica rock chips | 70645 |
| 11 | 12 | Dark red-br.sand then white-grey to 12m., white and Fe-stained silica rock chips; Fe crusts | 70646 |
| 12 | 13 | Pale yel., yel., dk.or-br.sand with abund. Fe-st, dk.or., abd white s.r.c. | 70647 |
| 13 | 14 | Or.sand, mostly Fe stained, or.and br.silica rock; some grey silica | 70648 |
| 14 | 15 | Pale or-br.sand, Fe stained or.br.and reddish sil rock. Some grey quartz chips | 70649 |
| 15 | 16 | Fine buff and or.sand; grey, or., red-br. Fe stained silica rock frags. | 70650 |
| 16 | 17 | Fine buff and or.sand; grey, or., red-br. Fe stained silica rock frags. | 70651 |
| 17 | 18 | Dark or-br.sand; grey and pale or., red-br. Fe stained silica rock chips; sp.dk. Fe -ox fragments | 70652 |
| 18 | 19 | Dark or-br.sand; grey and pale or., red-br.silica rock chips; | 70653 |
| 19 | 20 | Or.-br.sand; grey and pale or., red-br. Fe stained silica rock chips | 70654 |
| 20 | 21 | Or.-br.sand; grey and or., Fe stained silica rock chips. Minor buff clay | 70655 |
| 21 | 22 | Bright or.-brown sand and grey Fe stained silica chips | 70656 |
| 22 | 23 | Or.-br sand, somewhat clayey; grey and Fe stained sil.rock chips | 70657 |
| 23 | 24 | Light or.and dk.or.br.sand; grey and Fe stained sil.rock chips | 70657A |
| 24 | 25 | Or.and lt.br.sand, minor clay; white-grey and Fe stain smear on sil.rock chips | 70658 |
| 25 | 26 | Dk.or.-br.sand, slightly clayey; abund.grey,or.and Fe stained sil.rock chips | 70659 |
| 26 | 27 | Dk.or.-br and dk.red br.sand, slightly clayey; abund.grey,or.and Fe stained silica rock chips (s.r.c.) | 70660 |
| 27 | 28 | Or.br.and cream sand, slightly clayey; less grey, or.,and Fe stained s.r.c. | 70661 |
| 28 | 29 | Dk.or.br.sand; somewhat clayey; frags of white and Fe stained s.r.c. | 70662 |
| 29 | 30 | Or.br.sand; slightly clayey; frags of white and grey Fe stained s.r.c. | 70663 |
| 30 | 31 | Dk.br.sand; slightly clayey; frags of white and grey Fe stained s.r.c. | 70664 |
| 31 | 32 | Dk.br.sand; slightly clayey; frags of white and grey Fe stained s.r.c. | 70665 |
| 32 | 33 | Layered dk.or.br., buff and lt.br.sand; slightly clayey. Fe stained s.r.c. | 70666 |
| 33 | 34 | Dk.or.br.sand; slightly clayey; frags of white and Fe stained s.r.c. | 70667 |
| 34 | 35 | Dk.or.br.sand; slightly clayey; abund.frags of white and Fe stained s.r.c. | 70668 |
| 35 | 36 | Or.and or.br.sand; slightly clayey; abund. Fe-st. grey and white s.r.c. | 70669 |
| 36 | 37 | Or.yell.sand; slightly clayey; abund. Fe-st. grey and white s.r.c. | 70670 |
| 37 | 38 | Or.yell.sand; slightly clayey; damp; abund. Fe-st. grey and white s.r.c. | 70671 |
| 38 | 39 | Or.br.sand; clayey; damp; abund. white and grey Fe stained s.r.c. | 70672 |
| 39 | 40 | Or.br.sand; abund. white s.r.c.; Wet sample. | 70674 |

| FROM | TO | DESCRIPTION | SAMPLE NO. |
|---|---|---|---|
| 40 | 41 | Or.red br.mud; abund.chips (large) white,grey and Fe stained sil.rock; frags. of Fe ox.; Very wet sample. | 70675 |
| 41 | 42 | Mostly dk.br., chocolatey sand; slightly clayey; abund.grey and Fe stn.s.r.c. | 70676 |
| 42 | 43 | Dk.br.clayey sand; abund.grey and Fe stained s.r.c.; abund frags of Fe ox. | 70677 |
| 43 | 44 | Dk.br.clayey sand; lesser amount of s.r.c.; black Fe ox.and ?organic coatings | 70678 |
| 44 | 45 | Dk.br.clayey sand; clay damp, tends to ball; Fe ox.-?organic coatings on s.r.c | 70679 |
| 45 | 46 | Dk.br.and creamy clay, gritty; damp balling; white s.r.c. | 70680 |
| 46 | 47 | Dk.br.then mostly creamy clay and sand; dk.br.clay balling; white s.r.c. | 70681 |
| 47 | 48 | Cream sand and dk.br.clay, balling; white s.r.c. | 70682 |
| 48 | 49 | Cream sand and dk.br.clay, balling; sparse white s.r.c.; top wet | 70683 |
| 49 | 50 | Dk.br.mud with s.r.c.; wet sample | 70684 |
| | | End of Hole at 50m. | |
| | | Note: Sample Nos. 70647 to 70683 not analysed. | |

# MAYDENA SANDS PTY. LTD

## DRILL HOLE LOG

| | | | |
|---|---|---|---|
| **AREA:** | Eastern Quarry Area, Pine Hill, Maydena | **MAP SHEET:** | 4626 Maydena |
| **DRILLER:** | Diamond Drilling Tasmania Pty Ltd | **DRILL HOLE:** | **132** |
| | | **AMG** | 5263988mN |
| **METHOD:** | RC | **CO-ORDS:** | 465903mE |
| **DATE:** | 04.03.2010 | **ANGLE:** | Vertical |
| **LOGGED BY:** | GK | **FINAL DEPTH:** | 42m |

| FROM | TO | DESCRIPTION | SAMPLE NO. |
|---|---|---|---|
| 0 | 1 | Off white/buff silica flour; white grey and buff s.r.c.; Coarse fraction (cf)5-10% | 70685 |
| 1 | 2 | As above; cf ca 30%. | 70686 |
| 2 | 3 | Buff coloured silica flour; White,grey and buff s.r.c.; cf ca 30%. | 70687 |
| 3 | 4 | As above; | 70688 |
| 4 | 5 | As above; cf ca 5%. | 70689 |
| 5 | 6 | As above: cf ca 10%. | 70690 |
| 6 | 7 | As above; | 70691 |
| 7 | 8 | No sample return. | 70692 |
| 8 | 9 | Buff coloured silica flour; White and grey s.r.c.; cf ca 20-25%. | 70693 |
| 9 | 10 | As above: cf ca 20%. | 70694 |
| 10 | 11 | As above; cf ca 10% | 70695 |
| 11 | 12 | As above; cf ca 5-10%. | 70696 |
| 12 | 13 | Off white,pale cream silica flour; white and grey s.r.c.; cf ca 5%. | 70697 |
| 13 | 14 | As above; cf ca 1-2%. | 70698 |
| 14 | 15 | Beige/buff silica flour; tinge lt.brown; white, grey s.r.c.; cf ca 1-2%. | 70699 |
| 15 | 16 | Lt.grey silica flour; then off white-creamy; white,grey s.r.c.; cf ca 1-2% | 70700 |
| 16 | 17 | White silica flour; white grey s.r.c.; cf ca 1-2%. | 70701 |
| 17 | 18 | Off white-creamy silica flour; white, grey, some black s.r.c.; cf ca 5%. | 70702 |
| 18 | 19 | As above; cf ca 5-10%. | 70703 |
| 19 | 20 | Grey white silica flour; white,grey s.r.c.; cf ca 2-3%. | 70704 |
| 20 | 21 | As above; cf ca 10-15%. | 70705 |
| 21 | 22 | Off white,slightly greyish sil.flour;white,grey s.r.c; trace lim.spotting;cf ca 20% | 70706 |
| 22 | 23 | Off white, slightly greyish, then 0.5m or.br.silica flour; white, grey s.r.c.; sparse lim.staining;cf ca 5-10% | 70707 |
| 23 | 24 | Orange sand and gravel; or.br.stained limonitic white s.r.c.; cf ca 40%. | 70708 |
| 24 | 25 | Bright orange sand and gravel; s.r.c. as above; cf ca +40% | 70709 |
| 25 | 26 | Pale orange sand and gravel; s.r.c. as above; some large frags.; cf ca 30%. | 70710 |
| 26 | 27 | Pale yell.br.sand,slightly clayey; s.r.c. as above; some large frags;cf ca 30%. | 70711 |
| 27 | 28 | Pale yell.br.sand; bouldery ground; s.r.c. as above but no Fe ox.; cf ca +40% | 70712 |
| 28 | 29 | Pale yell.and orange sand; bouldery ground; s.r.c. as above; cf ca +40% | 70713 |
| 29 | 30 | Dk.or.br.sand, slightly clayey; bouldery ground; s.r.c. as above; cf ca 40% | 70714 |
| 30 | 31 | As above; s.r.c. as above; cf ca +30% | 70715 |
| 31 | 32 | Orange mud; s.r.c. as above; cf ca + 30%. | 70716 |
| 32 | 33 | Orange sand; s.r.c. as above with abundant Fe ox. crusts; cf ca 20%. | 70717 |
| 33 | 34 | As above; s.r.c. as above, less Fe ox. Crust; cf ca 40% | 70718 |
| 34 | 35 | Orange sand, coarse, gravelly; white, grey s.r.c.; or.br.stain, minor black Fe ox. frags; cf ca 60%. | 70719 |
| 35 | 36 | Lt.or.br.sand, coarse, gravelly; s.r.c. as above; cf ca +40%. | 70720 |
| 36 | 37 | As above; slightly clayey; s.r.c. with dk.br.coatings. | 70721 |
| 37 | 38 | Lt.br.coarse sand, gritty, gravelly then br.clay; ? Soil; damp sample. | 70722 |
| 38 | 39 | Lt.br.sand, gritty, coarse; br.clay; Fe ox. On some frags; wet sample. | 70723 |
| 39 | 40 | Dk.choc.br.clay, slightly sandy; white,grey s.r.c. | 70724 |
| 40 | 41 | Br.gritty sand and silica gravel, sparse choc.clay; coarse s.r.c.; damp. | 70725 |
| 41 | 42 | Choc.br.clay, sparse, coarse s.r.c.; ? Soil. | 70726 |

End of hole at 42m.

Note: Sample Nos. 70710 to 70726 not analysed.

# MAYDENA SANDS PTY. LTD

## DRILL HOLE LOG

| | | | |
|---|---|---|---|
| **AREA:** | Eastern Quarry Area, Pine Hill, Maydena | **MAP SHEET:** | 4626 Maydena |
| **DRILLER:** | Diamond Drilling Tasmania Pty Ltd | **DRILL HOLE:** | **133** |
| | | **AMG** | 5263933mN |
| **METHOD:** | RC | **CO-ORDS:** | 465666mE |
| **DATE:** | 05.03.2010 | **ANGLE:** | Vertical |
| **LOGGED BY:** | GK | **FINAL DEPTH:** | 35m |

| FROM | TO | DESCRIPTION | SAMPLE NO. |
|---|---|---|---|
| 0 | 1 | Grey-white gravelly sand; silica rock chips (s.r.c.), grey | 70727 |
| 1 | 2 | Silica flour, off-white/pale buff; minor s.r.c. white, trace black Fe ox. | 70728 |
| 2 | 3 | Silica flour, pale buff; s.r.c. grey/white, cf ca 2-3%. | 70729 |
| 3 | 4 | Silica flour, pale buff; s.r.c. white-grey/white, cf ca 3-5%. | 70730 |
| 4 | 5 | Silica flour, off-white; s.r.c. as above; cf ca 5%. | 70731 |
| 5 | 6 | Silica flour, off-white, gravelly; s.r.c. as above; cf ca 10-15%. | 70732 |
| 6 | 7 | Silica flour, off-white; s.r.c. as above; cf ca +15%. | 70733 |
| 7 | 8 | Silica flour, minor streaks, pale buff flour; s.r.c. as above; cf ca 20%. | 70734 |
| 8 | 9 | Silica flour, pale buff; s.r.c. as above, trace rd.br. Fe; cf ca 5-10%. | 70735 |
| 9 | 10 | Silica flour, pale buff; s.r.c. as above; cf ca 10%. | 70736 |
| 10 | 11 | Silica flour, white; s.r.c. as above; cf ca 3-5%. | 70737 |
| 11 | 12 | Silica flour, white; s.r.c. as above; cf ca 3-5%. | 70738 |
| 12 | 13 | Silica flour, off-white; s.r.c. as above; cf ca 3-5%. | 70739 |
| 13 | 14 | Silica flour, pale buff, then lt.br.; s.r.c. as above; cf ca 3-5%. | 70740 |
| 14 | 15 | Silica flour, pale br., cream streaks; s.r.c. as above: cf ca 2%. | 70741 |
| 15 | 16 | Silica flour, off-white, then pale br.,then dk.br.,clayey,damp; minor s.r.c.; cavity | |
| . | . | @ 15.5m. | 70742 |
| 16 | 17 | Grit, gravelly, pale buff and coarse sand; s.r.c. white and grey. | 70743 |
| 17 | 18 | Clay, br., streaks of cream clay; sandy, minor s.r.c., black Fe ox. | 70744 |
| 18 | 19 | Clay, dk.br.; grit pale buff; s.r.c. with black Fe ox. stain. | 70745 |
| 19 | 20 | Clayey sand and grit, dk.br.; s.r.c. dirty, Fe ox.coating; wet sample. | 70746 |
| 20 | 21 | Dk.br.sandy clay, fine sand; s.r.c. Fe stained, black Fe ox.frags. | 70747 |
| 21 | 22 | As above, with clay balling; s.r.c. as above. | 70748 |
| 22 | 23 | As above; more clay; s.r.c. as above. | 70749 |
| 23 | 24 | As above; clay balling; s.r.c. as above. | 70750 |
| 24 | 25 | Dk.br. ?palaeosoil. | 70751 |
| 25 | 26 | As above, tendency to balling; s.r.c. white,grey,buff,rd.br. | 70752 |
| 26 | 27 | Sandy gravel, brownish, minor clay; abundant s.r.c. as above. | 70753 |
| 27 | 28 | Brown clay-?soil, very minor s.r.c. as above. | 70754 |
| 28 | 29 | Brown ?soil, clayey, sandy, some balling; s.r.c. as above; some large frags. | 70754A |
| 29 | 30 | Lt.br., loamy,sandy clay, some balling; some large s.r.c. | 70755 |
| 30 | 31 | As above, then orange clay, sticky, balling; minor streaks of white sil.flour. | 70756 |
| 31 | 32 | Dk.br.and orange clay with white sil.flour specks and sil.rock frags. | 70757 |
| 32 | 33 | Dk.br.?soil, then carbonaceous layer(black), then fine buff sil.flour. | 70758 |
| 33 | 34 | Beige/lt.br.sandy clay with frags. of lt.grey/khaki ?dolomite. | 70759 |
| 34 | 35 | Beige to buff very fine sand and frags. of grey/pale buff ?dolomite. | 70760 |

End of Hole at 35m.

Note: Sample Nos. 70744 to 70758 and 70760 not analysed.

# MAYDENA SANDS PTY. LTD

## DRILL HOLE LOG

| | | | |
|---|---|---|---|
| **AREA:** | Eastern Quarry Area, Pine Hill, Maydena | **MAP SHEET:** | 4626 Maydena |
| **DRILLER:** | Diamond Drilling Tasmania Pty Ltd | **DRILL HOLE:** | **134** |
| | | **AMG CO-ORDS:** | 5263970mN 465799mE |
| **METHOD:** | RC | **ANGLE:** | Vertical |
| **DATE:** | 05.03.2010 | **FINAL DEPTH:** | 50m |
| **LOGGED BY:** | GK | | |

| FROM | TO | DESCRIPTION | SAMPLE NO. |
|---|---|---|---|
| 0 | 1 | Lt.creamy sand; silica rock chips (s.r.c.) white,milky,grey; cf ca 10% | 70761 |
| 1 | 2 | Dk.br.sandy soil; s.r.c. white, brown; some large frags; cf ca 25%. | 70762 |
| 2 | 3 | Buff sand; s.r.c. white, milky, grey; some large frags.; cf ca 40%. | 70763 |
| 3 | 4 | Cream sand; s.r.c. as above; some large frags; cf ca 20%. | 70764 |
| 4 | 5 | Off-white-cream sand; s.r.c. as above; some large frags.; cf ca 20%. | 70765 |
| 5 | 6 | As above. | 70766 |
| 6 | 7 | Off-white/creamy-grey sand; s.r.c. as above, sparse Fe ox.; cf ca 30%. | 70767 |
| 7 | 8 | Lt.grey sil.flour and fine sand; s.r.c. as above; cf ca 25%. | 70768 |
| 8 | 9 | White sil.flour,fine sand; s.r.c. as above; cf ca 20%. Hammer from 8.5m. | 70769 |
| 9 | 10 | Cream/pale yell.sil.flour and fine sand; s.r.c.as above; cf ca10%; 0.5m cavity. | 70770 |
| 10 | 11 | Lt.grey-white sil.flour,streaks of buff sil.fl; s.r.c.white,grey,milky;cf ca 5-10%. | 70771 |
| 11 | 12 | As above. | 70772 |
| 12 | 13 | As above. Sparse pinkish frags. | 70773 |
| 13 | 14 | White sil.flour; s.r.c. white, milky, rare Fe ox. | 70774 |
| 14 | 15 | As above; s.r.c. as above; cf ca 10-15%; colour change to br./or.br. at base. | 70775 |
| 15 | 16 | Orange sil.flour; s.r.c. white, br., rd.br.; cf ca 10%. | 70776 |
| 16 | 17 | Pale orange sil.flour; s.r.c. white,grey,pale brown; cf ca 10%. | 70777 |
| 17 | 18 | As above; s.r.c. as above; cf ca 10-15%. | 70778 |
| 18 | 19 | As above, slightly lighter colour; s.r.c. white,grey, trace lim spots; cf ca 10%. | 70779 |
| 19 | 20 | As above; s.r.c. as above; cf ca 10%. | 70780 |
| 20 | 21 | Most as above,then orange at base; s.r.c. as above; cf ca 5-10%. | 70781 |
| 21 | 22 | Bright or.,some pale or.sil.flr; s.r.c. Fe stained, sparse white frags; cf ca 5%. | 70782 |
| 22 | 23 | Bright or.and br.sil.flr; s.r.c. or.br. lim.stained, some white,milky; cf ca 5-10%. | 70783 |
| 23 | 24 | As above; s.r.c. as above; cf ca 3-5%. | 70784 |
| 24 | 25 | As above; s.r.c. as above, sparse frags of black Fe ox.; cf ca 3-5%. | 70785 |
| 25 | 26 | Light or.br.sil.sand; s.r.c. as above: cf ca 3-5%. | 70786 |
| 26 | 27 | Dk.or.br.fine sil sand; s.r.c. as above; cf ca 5-10%. | 70787 |
| 27 | 28 | Or.br.fine sil.sand; s.r.c. as above; cf ca 5-10%. | 70788 |
| 28 | 29 | Or.fine sil.sand; s.r.c. as above; cf ca 5-10%. | 70789 |
| 29 | 30 | Or.fine sil.sand and flour; s.r.c. as above; cf ca 2-3%. | 70790 |
| 30 | 31 | As above; s.r.c. as above, "dirtier"; cf ca 5-10%. | 70791 |
| 31 | 32 | Light or.fine sil.sand and flour; s.r.c. as above; cf ca 2-3%. | 70792 |
| 32 | 33 | As above; s.r.c. as above; cf ca 2-3%. | 70793 |
| 33 | 34 | Or.br.fine sil.sand and flour; s.r.c. as above; cf ca 2-3%. | 70794 |
| 34 | 35 | Dk.or.br.fine sil.sand and flour; s.r.c. as above; cf ca 5%. | 70795 |
| 35 | 36 | Or.br.fine sil.sand and flour; s.r.c. as above, lim.crusts on frags; cf ca 5-10%. | 70796 |
| 36 | 37 | Dk.or.br.fine sil.sand and flour; s.r.c. as above; cf ca 5-10%. | 70797 |
| 37 | 38 | Or.fine sil.sand and flour; s.r.c. as above; cf ca 5%. | 70798 |
| 38 | 39 | As above; s.r.c. as above; cf ca 5%. | 70799 |
| 39 | 40 | Or.br.fine silica sand; s.r.c. as above; cf ca 3-5%. | 70800 |

| FROM | TO | DESCRIPTION | SAMPLE NO. |
|---|---|---|---|
| 40 | 41 | Orange fine sil.sand and flour; s.r.c. as above; cf ca 2-3%. | 70801 |
| 41 | 42 | As above; s.r.c. as above; cf ca 3-5%. | 70802 |
| 42 | 43 | Or.fine sil.flour; poor sample return; cf ca 1%. | 70803 |
| 43 | 44 | Or.fine sil.flour and sand; poor sample return; cf ca -1%. | 70804 |
| 44 | 45 | As above. | 70805 |
| 45 | 46 | As above. | 70806 |
| 46 | 47 | Or.fine sil.flour-powder; poor sample return; cf ca -1%. | 70807 |
| 47 | 48 | As above. | 70808 |
| 48 | 49 | Or.br.fine sil.sand and flour; s.r.c.white,grey,or.br.; cf ca 3%. | 70809 |
| 49 | 50 | Lt.br.sand; s.r.c. as above; cf ca 5-10%. | 70810 |

End of Hole at 50m.

Note: Sample Nos. 70784 to 70810 not analysed.

# APPENDIX 3

# ASSAY RESULTS

# RC DRILL HOLE SAMPLES

# ALS Chemex

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## CERTIFICATE OF ANALYSIS BR10030535

| Sample Description | Method Analyte Units LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70636 DH131 | 0 - 1m | 0.624 | 0.058 | 12 | 0.488 | 0.043 | 0.003 | 0.053 | 0.001 | 0.016 | 0.045 | 0.007 | |
| 70637 | 1 - 2 | 0.057 | 0.018 | 7 | 0.104 | 0.012 | 0.001 | 0.023 | <0.001 | 0.003 | 0.004 | 0.002 | |
| 70638 | 2 - 3 | 0.520 | 0.074 | 20 | 0.609 | 0.036 | 0.004 | 0.037 | 0.001 | 0.019 | 0.041 | 0.028 | |
| 70639 | 3 - 4 | 0.042 | 0.030 | 10 | 0.768 | 0.010 | 0.001 | 0.012 | <0.001 | <0.001 | 0.002 | 0.041 | |
| 70640 | 4 - 5 | 0.043 | 0.028 | 12 | 1.030 | 0.010 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.063 | |
| 70641 | 5 - 6 | 0.030 | 0.242 | 9 | 0.515 | 0.151 | 0.001 | 0.002 | 0.001 | 0.001 | 0.002 | 0.020 | |
| 70641A | 6 - 7 | 0.021 | 0.025 | 12 | 0.173 | 0.008 | 0.001 | <0.001 | <0.001 | <0.001 | 0.001 | 0.008 | |
| 70642 | 7 - 8 | 0.015 | 0.039 | 13 | 0.146 | 0.013 | 0.001 | <0.001 | <0.001 | 0.001 | 0.001 | 0.016 | |
| 70643 | 8 - 9 | 0.049 | 0.102 | 19 | 0.395 | 0.053 | 0.002 | 0.002 | <0.001 | 0.003 | 0.003 | 0.038 | |
| 70644 | 9 - 10 | 0.066 | 0.039 | 10 | 0.400 | 0.008 | 0.001 | 0.002 | <0.001 | 0.001 | 0.003 | 0.059 | |
| 70645 | 10 - 11 | 0.036 | 0.046 | 16 | 0.240 | 0.007 | 0.001 | <0.001 | <0.001 | 0.001 | 0.001 | 0.038 | |
| 70646 | 11 - 12 | 0.200 | 0.076 | 12 | 0.866 | 0.010 | 0.001 | 0.032 | 0.001 | 0.001 | 0.004 | 0.122 | |
| 70685 DH 132 | 0 - 1 | 0.025 | 0.033 | 10 | 0.102 | 0.017 | 0.001 | 0.097 | <0.001 | 0.001 | 0.002 | 0.005 | |
| 70686 | 1 - 2 | 0.026 | 0.039 | 6 | 0.073 | 0.022 | <0.001 | 0.234 | <0.001 | 0.003 | 0.002 | 0.005 | |
| 70687 | 2 - 3 | 0.017 | 0.029 | 9 | 0.117 | 0.013 | 0.001 | 0.065 | <0.001 | 0.001 | 0.001 | 0.004 | |
| 70688 | 3 - 4 | 0.013 | 0.025 | 10 | 0.104 | 0.010 | 0.001 | 0.065 | <0.001 | 0.001 | 0.001 | 0.004 | |
| 70689 | 4 - 5 | 0.015 | 0.021 | 18 | 0.170 | 0.010 | 0.001 | 0.063 | <0.001 | 0.001 | 0.002 | 0.003 | |
| 70690 | 5 - 6 | 0.017 | 0.024 | 19 | 0.189 | 0.012 | 0.001 | 0.070 | <0.001 | 0.001 | 0.001 | 0.004 | |
| 70691 | 6 - 7 | 0.013 | 0.015 | 15 | 0.099 | 0.007 | 0.001 | 0.112 | <0.001 | <0.001 | 0.002 | 0.003 | |
| 70692 | 7 - 8 | | | | | | | | | | | | NO RETURN |
| 70693 | 8 - 9 | 0.021 | 0.015 | 12 | 0.126 | 0.007 | 0.001 | 0.152 | <0.001 | 0.001 | 0.001 | 0.004 | |
| 70694 | 9 - 10 | 0.013 | 0.017 | 22 | 0.256 | 0.008 | 0.002 | 0.224 | 0.001 | <0.001 | <0.001 | 0.003 | |
| 70695 | 10 - 11 | 0.009 | 0.014 | 15 | 0.150 | 0.005 | 0.001 | 0.175 | 0.001 | 0.001 | <0.001 | 0.003 | |
| 70696 | 11 - 12 | 0.013 | 0.011 | 15 | 0.153 | 0.005 | 0.001 | 0.158 | <0.001 | 0.001 | 0.001 | 0.003 | |
| 70697 | 12 - 13 | 0.008 | 0.033 | 10 | 0.102 | 0.012 | 0.001 | 0.043 | <0.001 | <0.001 | 0.001 | 0.006 | |
| 70698 | 13 - 14 | 0.006 | 0.031 | 7 | 0.056 | 0.008 | <0.001 | 0.028 | <0.001 | <0.001 | 0.001 | 0.007 | |
| 70699 | 14 - 15 | 0.025 | 0.021 | 26 | 0.270 | 0.008 | 0.002 | 0.052 | <0.001 | <0.001 | 0.002 | 0.006 | |
| 70700 | 15 - 16 | 0.008 | 0.033 | 22 | 0.176 | 0.012 | 0.001 | 0.062 | <0.001 | <0.001 | 0.002 | 0.006 | |
| 70701 | 16 - 17 | 0.006 | 0.043 | 10 | 0.067 | 0.012 | <0.001 | 0.052 | <0.001 | <0.001 | 0.002 | 0.010 | |
| 70702 | 17 - 18 | 0.015 | 0.018 | 20 | 0.186 | 0.007 | 0.001 | 0.105 | <0.001 | 0.001 | 0.001 | 0.003 | |
| 70703 | 18 - 19 | 0.011 | 0.022 | 28 | 0.192 | 0.008 | 0.001 | 0.097 | <0.001 | 0.001 | 0.001 | 0.005 | |
| 70704 | 19 - 20 | 0.009 | 0.022 | 18 | 0.167 | 0.007 | 0.001 | 0.028 | <0.001 | 0.001 | <0.001 | 0.005 | |
| 70705 | 20 - 21 | 0.017 | 0.024 | 41 | 0.370 | 0.010 | 0.003 | 0.060 | <0.001 | 0.001 | 0.002 | 0.005 | |
| 70706 | 21 - 22 | 0.011 | 0.025 | 20 | 0.162 | 0.012 | 0.001 | 0.028 | <0.001 | 0.003 | 0.002 | 0.003 | |
| 70707 | 22 - 23 | 0.013 | 0.029 | 12 | 0.110 | 0.013 | 0.001 | 0.023 | <0.001 | 0.003 | 0.002 | 0.004 | |
| 70708 | 23 - 24 | 0.104 | 0.348 | 48 | 1.450 | 0.217 | 0.010 | 0.057 | 0.002 | 0.003 | 0.006 | 0.070 | |
| 70709 | 24 - 25m | 0.101 | 0.041 | 53 | 1.330 | 0.018 | 0.006 | 0.068 | 0.002 | 0.003 | 0.004 | 0.085 | |
| 70727 DH 133 | 0 - 1m | 0.036 | 0.032 | 6 | 0.063 | 0.020 | <0.001 | 0.058 | <0.001 | 0.004 | 0.001 | 0.008 | |
| 70728 | 1 - 2 | 0.017 | 0.036 | 6 | 0.037 | 0.012 | <0.001 | 0.012 | <0.001 | 0.001 | 0.001 | 0.010 | |
| 70729 | 2 - 3m | 0.038 | 0.050 | 4 | 0.060 | 0.025 | <0.001 | 0.015 | <0.001 | 0.001 | <0.001 | 0.011 | |

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## CERTIFICATE OF ANALYSIS BR10030535

| Sample Description | Method Analyte Units LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70730 DH 133 | 3-4m | 0.023 | 0.038 | 6 | 0.056 | 0.017 | <0.001 | 0.012 | <0.001 | 0.001 | 0.001 | 0.007 | |
| 70731 | 4-5 | 0.024 | 0.071 | 6 | 0.041 | 0.036 | <0.001 | 0.012 | <0.001 | 0.001 | <0.001 | 0.006 | |
| 70732 | 5-6 | 0.021 | 0.081 | 4 | 0.050 | 0.045 | <0.001 | 0.022 | <0.001 | 0.001 | <0.001 | 0.005 | |
| 70733 | 6-7 | 0.023 | 0.066 | 6 | 0.063 | 0.028 | <0.001 | 0.027 | <0.001 | 0.001 | 0.001 | 0.012 | |
| 70734 | 7-8 | 0.025 | 0.056 | 6 | 0.057 | 0.017 | <0.001 | 0.022 | <0.001 | 0.003 | <0.001 | 0.017 | |
| 70735 | 8-9 | 0.038 | 0.045 | 7 | 0.104 | 0.020 | 0.001 | 0.017 | <0.001 | 0.001 | 0.002 | 0.008 | |
| 70736 | 9-10 | 0.036 | 0.050 | 7 | 0.086 | 0.023 | <0.001 | 0.017 | <0.001 | 0.001 | 0.001 | 0.007 | |
| 70737 | 10-11 | 0.042 | 0.055 | 3 | 0.014 | 0.027 | <0.001 | 0.030 | <0.001 | 0.003 | 0.001 | 0.005 | |
| 70738 | 11-12 | 0.031 | 0.063 | 3 | 0.016 | 0.033 | <0.001 | 0.040 | <0.001 | 0.003 | 0.001 | 0.005 | |
| 70739 | 12-13 | 0.080 | 0.077 | 3 | 0.026 | 0.038 | <0.001 | 0.035 | <0.001 | 0.003 | 0.003 | 0.009 | |
| 70740 | 13-14 | 0.092 | 0.049 | 3 | 0.020 | 0.023 | <0.001 | 0.043 | <0.001 | 0.003 | 0.004 | 0.006 | |
| 70741 | 14-15 | 0.083 | 0.034 | 3 | 0.021 | 0.015 | <0.001 | 0.037 | <0.001 | 0.003 | 0.005 | 0.004 | |
| 70742 | 15-16 | 0.283 | 0.077 | 4 | 0.026 | 0.035 | <0.001 | 0.072 | <0.001 | 0.004 | 0.017 | 0.010 | |
| 70743 | 16-17m | 0.094 | 0.046 | 1 | 0.010 | 0.022 | <0.001 | 0.057 | <0.001 | 0.003 | 0.005 | 0.007 | |
| 70759 | 33-34m | 0.047 | 7.47 | 4 | 0.194 | 2.78 | 0.006 | 0.018 | 0.002 | 0.020 | 0.037 | 0.269 | |
| 70760 | 34-35m | 0.003 | 2.00 | <1 | 0.040 | 1.225 | 0.008 | 0.015 | <0.001 | 0.043 | 0.045 | 0.482 | |
| 70761 DH 134 | 0-1m | 0.022 | 0.050 | 1 | 0.023 | 0.023 | <0.001 | 0.037 | <0.001 | 0.003 | 0.001 | 0.004 | |
| 70762 | 1-2 | 0.040 | 0.133 | 4 | 0.089 | 0.081 | 0.001 | 0.057 | <0.001 | 0.007 | 0.003 | 0.012 | |
| 70763 | 2-3 | 0.032 | 0.132 | 6 | 0.083 | 0.070 | <0.001 | 0.035 | <0.001 | 0.004 | 0.002 | 0.009 | |
| 70764 | 3-4 | 0.022 | 0.085 | 6 | 0.063 | 0.045 | <0.001 | 0.018 | <0.001 | 0.003 | <0.001 | 0.006 | |
| 70765 | 4-5 | 0.018 | 0.057 | 9 | 0.054 | 0.028 | <0.001 | 0.022 | <0.001 | 0.003 | 0.001 | 0.005 | |
| 70766 | 5-6 | 0.015 | 0.067 | 7 | 0.076 | 0.027 | <0.001 | 0.015 | <0.001 | 0.001 | <0.001 | 0.007 | |
| 70767 | 6-7 | 0.020 | 0.066 | 25 | 0.246 | 0.028 | 0.001 | 0.007 | <0.001 | 0.004 | 0.001 | 0.006 | |
| 70768 | 7-8 | 0.028 | 0.088 | 23 | 0.247 | 0.045 | 0.001 | 0.017 | <0.001 | 0.004 | 0.001 | 0.006 | |
| 70769 | 8-9 | 0.010 | 0.038 | 4 | 0.040 | 0.012 | <0.001 | 0.003 | <0.001 | 0.004 | 0.001 | 0.006 | |
| 70770 | 9-10 | 0.016 | 0.094 | 3 | 0.056 | 0.045 | <0.001 | 0.003 | <0.001 | 0.004 | <0.001 | 0.006 | |
| 70771 | 10-11 | 0.013 | 0.028 | 13 | 0.061 | 0.008 | <0.001 | 0.005 | <0.001 | 0.004 | <0.001 | 0.004 | |
| 70772 | 11-12 | 0.012 | 0.031 | 7 | 0.060 | 0.008 | <0.001 | 0.002 | <0.001 | 0.003 | 0.001 | 0.005 | |
| 70773 | 12-13 | 0.010 | 0.036 | 4 | 0.041 | 0.012 | <0.001 | 0.003 | <0.001 | 0.004 | 0.001 | 0.004 | |
| 70774 | 13-14 | 0.010 | 0.045 | 3 | 0.031 | 0.018 | <0.001 | 0.002 | <0.001 | 0.003 | 0.001 | 0.007 | |
| 70775 | 14-15 | 0.013 | 0.031 | 6 | 0.074 | 0.012 | <0.001 | 0.002 | <0.001 | 0.003 | 0.001 | 0.004 | |
| 70776 | 15-16 | 0.045 | 0.043 | 12 | 0.975 | 0.022 | 0.004 | 0.013 | 0.002 | 0.003 | <0.001 | 0.028 | |
| 70777 | 16-17 | 0.017 | 0.036 | 9 | 0.305 | 0.015 | 0.001 | 0.005 | <0.001 | 0.001 | 0.001 | 0.009 | |
| 70778 | 17-18 | 0.020 | 0.062 | 12 | 0.272 | 0.035 | 0.001 | 0.005 | <0.001 | 0.001 | 0.002 | 0.008 | |
| 70779 | 18-19 | 0.025 | 0.050 | 13 | 0.240 | 0.030 | 0.001 | 0.003 | <0.001 | 0.003 | 0.001 | 0.007 | |
| 70780 | 19-20 | 0.014 | 0.029 | 4 | 0.081 | 0.013 | <0.001 | 0.002 | <0.001 | 0.003 | <0.001 | 0.003 | |
| 70781 | 20-21 | 0.012 | 0.027 | 4 | 0.169 | 0.012 | <0.001 | 0.002 | <0.001 | 0.003 | <0.001 | 0.010 | |
| 70782 | 21-22 | 0.047 | 0.043 | 9 | 0.859 | 0.022 | 0.006 | 0.015 | 0.002 | 0.004 | 0.001 | 0.049 | |
| 70783 | 22-23m | 0.175 | 0.078 | 7 | 1.300 | 0.041 | 0.036 | 0.027 | 0.002 | 0.003 | 0.001 | 0.079 | |
| 70811 STYX 4 | @54m | 0.001 | 1.160 | <1 | 0.006 | 0.640 | 0.003 | 0.005 | <0.001 | 0.026 | 0.022 | 0.790 | Bedrock - silicified dolomite |

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## QC CERTIFICATE OF ANALYSIS BR10030535

| Sample Description / Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATES** | | | | | | | | | | | |
| 70734 | 0.025 | 0.056 | 6 | 0.057 | 0.017 | <0.001 | 0.022 | <0.001 | 0.003 | <0.001 | 0.017 |
| DUP | 0.024 | 0.057 | 6 | 0.057 | 0.018 | <0.001 | 0.023 | <0.002 | 0.003 | <0.001 | 0.017 |
| Target Range - Lower Bound | 0.023 | 0.054 | 5 | 0.054 | 0.016 | <0.001 | 0.021 | <0.001 | 0.002 | <0.001 | 0.015 |
| Upper Bound | 0.026 | 0.059 | 7 | 0.060 | 0.019 | 0.002 | 0.024 | 0.002 | 0.004 | 0.002 | 0.019 |
| 70769 | 0.010 | 0.038 | 4 | 0.040 | 0.012 | <0.001 | 0.003 | <0.001 | 0.004 | 0.001 | 0.006 |
| DUP | 0.011 | 0.039 | 4 | 0.039 | 0.010 | <0.001 | 0.003 | <0.002 | 0.003 | 0.001 | 0.006 |
| Target Range - Lower Bound | 0.009 | 0.036 | 3 | 0.037 | 0.010 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.005 |
| Upper Bound | 0.012 | 0.041 | 5 | 0.042 | 0.012 | 0.002 | 0.004 | 0.002 | 0.005 | 0.002 | 0.007 |
| 70783 | 0.175 | 0.078 | 7 | 1.300 | 0.041 | 0.036 | 0.027 | 0.002 | 0.003 | 0.001 | 0.079 |
| DUP | 0.172 | 0.078 | 7 | 1.280 | 0.043 | 0.035 | 0.028 | 0.002 | 0.003 | 0.002 | 0.078 |
| Target Range - Lower Bound | 0.166 | 0.074 | 6 | 1.245 | 0.040 | 0.033 | 0.026 | <0.001 | 0.002 | <0.001 | 0.075 |
| Upper Bound | 0.181 | 0.082 | 8 | 1.335 | 0.044 | 0.038 | 0.029 | 0.003 | 0.004 | 0.002 | 0.082 |

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## QC CERTIFICATE OF ANALYSIS BR10030535

| Sample Description | Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **STANDARDS** | | | | | | | | | | | | |
| BCS267 | | 0.846 | 1.730 | 183 | 0.796 | 0.045 | 0.157 | 0.160 | 0.002 | 0.055 | 0.125 | 0.023 |
| BCS267 | | 0.840 | 1.765 | 151 | 0.789 | 0.043 | 0.159 | 0.160 | 0.002 | 0.054 | 0.121 | 0.024 |
| BCS267 | | 0.864 | 1.800 | 127 | 0.809 | 0.045 | 0.159 | 0.165 | 0.002 | 0.055 | 0.125 | 0.023 |
| Target Range - Lower Bound | | 0.789 | 1.625 | | 0.734 | 0.054 | 0.138 | 0.157 | | 0.055 | 0.121 | |
| Upper Bound | | 0.911 | 1.875 | | 0.847 | 0.065 | 0.161 | 0.183 | | 0.066 | 0.142 | |
| BSC313-1 | | 0.038 | 0.007 | 1 | 0.013 | 0.002 | <0.001 | 0.015 | <0.001 | 0.003 | 0.007 | 0.001 |
| BSC313-1 | | 0.038 | 0.008 | <1 | 0.011 | 0.002 | <0.001 | 0.015 | <0.002 | 0.005 | 0.006 | 0.001 |
| BSC313-1 | | 0.038 | 0.008 | 18 | 0.021 | 0.002 | <0.001 | 0.015 | <0.002 | 0.004 | 0.005 | 0.002 |
| Target Range - Lower Bound | | 0.033 | 0.005 | <1 | 0.010 | <0.001 | <0.001 | 0.015 | | 0.002 | 0.003 | |
| Upper Bound | | 0.040 | 0.007 | 2 | 0.014 | 0.002 | 0.002 | 0.019 | | 0.004 | 0.006 | |
| **BLANKS** | | | | | | | | | | | | |
| BLANK | | <0.002 | 0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.001 | <0.001 | 0.001 | <0.001 |
| BLANK | | <0.002 | <0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 |
| BLANK | | <0.001 | <0.001 | 1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.002 | <0.001 | <0.001 | <0.001 |
| BLANK | | 0.001 | <0.001 | 3 | <0.001 | <0.002 | <0.001 | <0.002 | <0.002 | <0.001 | <0.001 | 0.001 |
| BLANK | | <0.001 | <0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.002 | <0.001 | <0.001 | <0.001 |
| BLANK | | <0.001 | <0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.002 | <0.001 | <0.001 | <0.001 |
| Target Range - Lower Bound | | <0.001 | <0.001 | <1 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Upper Bound | | 0.002 | 0.002 | 2 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| **DUPLICATES** | | | | | | | | | | | | |
| 70644 | | 0.066 | 0.039 | 10 | 0.400 | 0.008 | 0.001 | 0.002 | <0.001 | 0.001 | 0.003 | 0.059 |
| DUP | | 0.062 | 0.037 | 10 | 0.382 | 0.007 | 0.001 | 0.002 | <0.001 | 0.001 | <0.001 | 0.055 |
| Target Range - Lower Bound | | 0.061 | 0.036 | 9 | 0.376 | 0.006 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.054 |
| Upper Bound | | 0.067 | 0.040 | 11 | 0.406 | 0.009 | 0.002 | 0.003 | 0.002 | 0.002 | 0.003 | 0.060 |
| 70703 | | 0.011 | 0.022 | 28 | 0.192 | 0.008 | 0.001 | 0.097 | <0.001 | 0.001 | 0.001 | 0.005 |
| DUP | | 0.011 | 0.022 | 20 | 0.184 | 0.008 | 0.001 | 0.102 | <0.001 | 0.001 | 0.002 | 0.005 |
| Target Range - Lower Bound | | 0.010 | 0.020 | 22 | 0.180 | 0.007 | <0.001 | 0.095 | <0.001 | <0.001 | <0.001 | 0.004 |
| Upper Bound | | 0.012 | 0.024 | 26 | 0.196 | 0.009 | 0.002 | 0.104 | 0.002 | 0.002 | 0.002 | 0.006 |

# APPENDIX 4

# ASSAY RESULTS

# RC DRILL HOLE ROCK CHIPS

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Project: Silica Sands

## CERTIFICATE OF ANALYSIS BR10071214

| Sample Description | Method Analyte Units LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70641AR | DH 131 6 - 7m | 0.021 | 0.031 | 26 | 0.066 | 0.010 | <0.001 | <0.001 | <0.001 | 0.005 | 0.001 | 0.009 | Sil rock frags; grey+white; minor or-yell Fe stain |
| 70642R | 7 - 8 | 0.017 | 0.042 | 3 | 0.053 | 0.015 | <0.001 | <0.001 | <0.001 | 0.008 | <0.001 | 0.015 | Sil. rock frags; White; minor or-yell. stain |
| 70647R | 12 - 13 | 0.023 | 0.031 | 6 | 0.079 | 0.010 | <0.001 | 0.007 | <0.001 | 0.023 | 0.001 | 0.015 | " " " ; mostly or-yell stain; some white |
| 70657R | 22 - 23 | 0.125 | 0.024 | 12 | 0.074 | 0.008 | <0.001 | 0.012 | <0.001 | 0.016 | 0.007 | 0.013 | ——— as above ——— |
| 70660R | 26 - 27 | 0.059 | 0.025 | 4 | 0.063 | 0.007 | <0.001 | 0.002 | <0.001 | 0.018 | <0.001 | 0.020 | ——— as above ——— V. minor white |
| 70674R | 39 - 40 | 0.113 | 0.081 | 4 | 0.113 | 0.008 | <0.001 | 0.002 | <0.001 | 0.031 | 0.005 | 0.068 | Sil. rock frags; white + yell. stain; 50% sugary |
| 70678R | 41 - 42 | 0.435 | 0.006 | 6 | 0.019 | 0.002 | <0.001 | 0.002 | <0.001 | 0.116 | 0.002 | 0.042 | " " " ; dk br + red br stain (organic) |
| 70681R | 46 - 47 | 0.043 | 0.053 | 3 | 0.007 | 0.003 | <0.001 | 0.012 | <0.001 | 0.038 | 0.001 | 0.008 | " " " ; grey; occ white; rare Fe stain |
| 70686R | DH 132 1 - 2m | 0.006 | 0.015 | 6 | 0.011 | 0.005 | <0.001 | 0.105 | <0.001 | 0.005 | <0.001 | 0.005 | Sil. rock frags; white + grey |
| 70688R | 3 - 4m | 0.006 | 0.015 | 6 | 0.009 | 0.005 | <0.001 | 0.123 | <0.001 | 0.005 | <0.001 | 0.004 | ——— as above ——— |
| 70693R | 8 - 9m | 0.006 | 0.010 | 7 | 0.007 | 0.002 | <0.001 | 0.092 | <0.001 | 0.004 | <0.001 | 0.002 | Sil. rock frags; white; sparse grey |
| 70694R | 9 - 10 | 0.006 | 0.006 | 3 | 0.009 | 0.002 | <0.001 | 0.115 | <0.001 | 0.004 | <0.001 | 0.002 | ——— as above ——— |
| 70696R | 11 - 12 | 0.006 | 0.013 | 10 | 0.013 | 0.003 | <0.001 | 0.070 | <0.001 | 0.004 | 0.001 | 0.005 | ——— as above ——— |
| 70702R | 17 - 18 | 0.006 | 0.011 | 6 | 0.013 | 0.003 | <0.001 | 0.070 | <0.001 | 0.005 | 0.001 | 0.003 | ——— as above ——— |
| 70704R | 19 - 20 | 0.006 | 0.010 | 12 | 0.164 | 0.005 | 0.001 | 0.028 | <0.001 | 0.005 | 0.001 | 0.002 | Silica rock frags; white, some grey |
| 70706R | 21 - 22 | 0.008 | 0.013 | 3 | 0.010 | 0.005 | <0.001 | 0.062 | <0.001 | 0.008 | <0.001 | 0.003 | ——— as above ——— |
| 70707R | 22 - 23 | 0.013 | 0.014 | 6 | 0.081 | 0.007 | <0.001 | 0.052 | <0.001 | 0.009 | <0.001 | 0.004 | Sil. rock frags; White, buff + pale red br. |
| 70711R | 26 - 27 | 0.421 | 0.027 | 12 | 0.224 | 0.008 | 0.004 | 0.003 | 0.001 | 0.018 | 0.004 | 0.079 | ——— as above ——— mixed |
| 70719R | 34 - 35 | 0.703 | 0.025 | 4 | 0.162 | 0.008 | <0.001 | <0.001 | 0.001 | 0.019 | 0.001 | 0.062 | ——— as above ——— yellow stain |
| 70723R | 38 - 39 | 0.098 | 0.028 | 4 | 0.010 | 0.010 | <0.001 | <0.001 | <0.001 | 0.009 | 0.001 | 0.018 | Sil. rock frags; white+ gray; |
| 70724R | 39 - 40 | 0.094 | 0.024 | 3 | 0.014 | 0.008 | <0.001 | <0.001 | <0.001 | 0.018 | <0.001 | 0.010 | ——— as above ——— "dirty" asect |
| 70725R | 40 - 41 | 0.153 | 0.034 | 4 | 0.020 | 0.003 | <0.001 | <0.001 | <0.001 | 0.013 | <0.001 | 0.008 | ——— as above ——— trace Fe ox. |
| 70732R | DH 133 5 - 6m | 0.019 | 0.053 | 4 | 0.009 | 0.027 | <0.001 | 0.110 | <0.001 | 0.054 | <0.001 | 0.008 | Sil. rock frags; white to pale grey |
| 70733R | 6 - 7 | 0.017 | 0.049 | 1 | 0.007 | 0.023 | <0.001 | 0.042 | <0.001 | 0.028 | <0.001 | 0.007 | " " " ; white |
| 70734R | 7 - 8 | 0.009 | 0.011 | 4 | 0.009 | 0.005 | <0.001 | 0.085 | <0.001 | 0.018 | <0.001 | 0.001 | " " " ; white + grey |
| 70749R | 22 - 23 | 0.051 | 0.154 | 7 | 0.030 | 0.060 | <0.001 | 0.010 | <0.001 | 0.026 | 0.004 | 0.032 | " " " ; brown (org + Fe) stained; minor white + grey |
| 70750R | 23 - 24 | 0.180 | 0.118 | 4 | 0.089 | 0.055 | <0.001 | 0.003 | <0.001 | 0.035 | 0.002 | 0.050 | " " " ; Red or-br stain; minor white; ?org. stain |
| 70760R | 34 - 35 | 0.009 | 9.77 | 3 | 0.086 | 3.96 | 0.013 | 0.012 | <0.001 | 0.032 | 0.039 | 0.183 | " " " ; ?dolomite, grey; sil. rock frags, white; sparse |
| 70761R | DH 134 0 - 1m | 0.011 | 0.027 | 3 | 0.010 | 0.008 | <0.001 | 0.048 | <0.001 | 0.007 | <0.001 | 0.005 | Sil. rock frags; white, grey; sl yellow stain. |
| 70763R | 2 - 3 | 0.009 | 0.038 | 15 | 0.017 | 0.007 | <0.001 | 0.063 | <0.001 | 0.008 | 0.001 | 0.007 | " " " ; white + some grey |
| 70765R | 4 - 5 | 0.009 | 0.021 | 1 | 0.007 | 0.008 | <0.001 | 0.030 | <0.001 | 0.008 | <0.001 | 0.002 | ——— as above ——— |
| 70767R | 6 - 7 | 0.009 | 0.169 | 4 | 0.014 | 0.007 | <0.001 | 0.005 | <0.001 | 0.007 | 0.001 | 0.094 | ——— as above ——— |
| 70769R | 8 - 9 | 0.008 | 0.045 | 4 | 0.013 | 0.003 | <0.001 | 0.005 | <0.001 | 0.007 | 0.001 | 0.020 | ——— as above ——— |
| 70771R | 10 - 11 | 0.008 | 0.032 | 3 | 0.010 | 0.005 | <0.001 | 0.003 | <0.001 | 0.007 | 0.001 | 0.012 | sil rock frags; White, some grey |
| 70772R | 11 - 12 | 0.008 | 0.021 | 3 | 0.007 | 0.005 | <0.001 | 0.002 | <0.001 | 0.007 | <0.001 | 0.006 | " " " ; mostly White; trace Fe ox. specs |
| 70774R | 13 - 14 | 0.008 | 0.042 | 1 | 0.007 | 0.005 | <0.001 | 0.002 | <0.001 | 0.007 | 0.001 | 0.015 | " " " ; " " " ; minor grey frags |
| 70775R | 14 - 15 | 0.011 | 0.014 | 1 | 0.040 | 0.005 | <0.001 | 0.002 | <0.001 | 0.005 | 0.001 | 0.002 | " " " ; mixed white, grey + or-br stained |
| 70777R | 16 - 17 | 0.009 | 0.014 | 3 | 0.099 | 0.005 | <0.001 | 0.003 | <0.001 | 0.007 | <0.001 | 0.004 | ——— as above ——— |
| 70779R | 18 - 19 | 0.009 | 0.010 | <1 | 0.014 | 0.005 | <0.001 | 0.002 | <0.001 | 0.007 | 0.001 | 0.001 | Sil. rock frags; mixed white, grey; V. minor lim. stain |
| 70780R | 19 - 20 | 0.008 | 0.018 | <1 | 0.017 | 0.008 | <0.001 | 0.002 | <0.001 | 0.005 | <0.001 | 0.002 | ——— as above ——— minor pale yell |

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Project: Silica Sands

## CERTIFICATE OF ANALYSIS BR10071214

| Sample Description | Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70793R | DH 134 32 - 33 | 0.032 | 0.104 | 1 | 0.134 | 0.056 | 0.001 | 0.008 | <0.001 | 0.009 | 0.004 | 0.011 | sil. rock; or-brstained. minor white frags |
| 70797R | 36 - 37 | 0.130 | 0.038 | 6 | 0.275 | 0.017 | 0.004 | 0.008 | 0.001 | 0.026 | 0.002 | 0.042 | " |
| 70809R | 48 - 49 | 0.030 | 0.042 | 1 | 0.081 | 0.008 | <0.001 | 0.003 | <0.001 | 0.009 | 0.002 | 0.012 | sil. rock; Lt or-stain crust; some grey silica rock |
| 70810R | 49 - 50 | 0.015 | 0.021 | 1 | 0.009 | 0.003 | <0.001 | 0.013 | <0.001 | 0.008 | 0.001 | 0.005 | sil. rock frags; mixed white + grey; occ. dark specs |

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Project: Silica Sands

## QC CERTIFICATE OF ANALYSIS BR10071214

| Sample Description | Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **STANDARDS** | | | | | | | | | | | | |
| BCS267 | | 0.667 | 1.610 | 186 | 0.781 | 0.036 | 0.146 | 0.155 | 0.001 | 0.054 | 0.122 | 0.021 |
| BCS267 | | 0.805 | 1.765 | 167 | 0.813 | 0.043 | 0.172 | 0.158 | 0.001 | 0.055 | 0.125 | 0.022 |
| Target Range - Lower Bound | | 0.789 | 1.625 | | 0.734 | 0.054 | 0.138 | 0.157 | | 0.055 | 0.121 | |
| Upper Bound | | 0.911 | 1.875 | | 0.847 | 0.065 | 0.161 | 0.183 | | 0.066 | 0.142 | |
| BSC313-1 | | 0.038 | 0.017 | 3 | 0.017 | 0.008 | <0.001 | 0.013 | <0.001 | 0.005 | 0.006 | 0.001 |
| BSC313-1 | | 0.036 | 0.007 | 1 | 0.016 | 0.002 | <0.001 | 0.013 | <0.001 | 0.005 | 0.005 | 0.001 |
| Target Range - Lower Bound | | 0.033 | 0.005 | <1 | 0.010 | <0.001 | <0.001 | 0.015 | | 0.002 | 0.003 | |
| Upper Bound | | 0.040 | 0.007 | 2 | 0.014 | 0.002 | 0.002 | 0.019 | | 0.004 | 0.006 | |
| **BLANKS** | | | | | | | | | | | | |
| BLANK | | <0.002 | <0.001 | 1 | 0.003 | <0.002 | <0.001 | <0.002 | <0.001 | <0.001 | 0.001 | <0.001 |
| BLANK | | <0.002 | <0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 |
| Target Range - Lower Bound | | <0.001 | <0.001 | <1 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Upper Bound | | 0.002 | 0.002 | 2 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| **DUPLICATES** | | | | | | | | | | | | |
| 70688R | | 0.006 | 0.015 | 6 | 0.009 | 0.005 | <0.001 | 0.123 | <0.001 | 0.005 | <0.001 | 0.004 |
| DUP | | 0.006 | 0.018 | 3 | 0.007 | 0.005 | <0.001 | 0.132 | <0.001 | 0.005 | 0.001 | 0.005 |
| Target Range - Lower Bound | | 0.005 | 0.015 | 3 | 0.007 | 0.004 | <0.001 | 0.122 | <0.001 | 0.004 | <0.001 | 0.003 |
| Upper Bound | | 0.007 | 0.018 | 6 | 0.009 | 0.006 | 0.002 | 0.133 | 0.002 | 0.006 | 0.002 | 0.006 |
| 70783R | | 0.009 | 0.038 | 15 | 0.017 | 0.007 | <0.001 | 0.063 | <0.001 | 0.008 | 0.001 | 0.007 |
| DUP | | 0.009 | 0.036 | 3 | 0.010 | 0.007 | <0.001 | 0.065 | <0.001 | 0.008 | 0.001 | 0.007 |
| Target Range - Lower Bound | | 0.008 | 0.035 | 8 | 0.012 | 0.006 | <0.001 | 0.061 | <0.001 | 0.007 | <0.001 | 0.006 |
| Upper Bound | | 0.010 | 0.039 | 10 | 0.015 | 0.008 | 0.002 | 0.067 | 0.002 | 0.009 | 0.002 | 0.008 |
| 70810R | | 0.015 | 0.021 | 1 | 0.009 | 0.003 | <0.001 | 0.013 | <0.001 | 0.008 | 0.001 | 0.005 |
| DUP | | 0.013 | 0.021 | <1 | 0.010 | 0.005 | <0.001 | 0.013 | <0.001 | 0.008 | 0.001 | 0.005 |
| Target Range - Lower Bound | | 0.013 | 0.019 | <1 | 0.008 | 0.003 | <0.001 | 0.012 | <0.001 | 0.007 | <0.001 | 0.004 |
| Upper Bound | | 0.015 | 0.023 | 2 | 0.011 | 0.005 | 0.002 | 0.014 | 0.002 | 0.009 | 0.002 | 0.006 |



# APPENDIX 5

# SUPPLEMENTARY ASSAYS – P2O5

# DRILL HOLES 111 - 130

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## CERTIFICATE OF ANALYSIS BR06053089

| Sample Description | Method Analyte Units LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 170400 | | 0.010 | 0.008 | 5 | 0.005 | 0.001 | 0.003 | <0.001 | 0.002 | 0.001 | <0.001 | <0.001 |
| 170401 | DH 111 0-1m | 0.121 | 0.035 | 3 | 0.386 | 0.014 | 0.024 | 0.002 | 0.015 | 0.051 | 0.001 | <0.001 |
| 170402 | 1-2 | 0.055 | 0.021 | 4 | 0.139 | 0.007 | 0.011 | 0.001 | 0.003 | 0.029 | <0.001 | 0.001 |
| 170403 | 2-3 | 0.030 | 0.017 | 3 | 0.042 | 0.002 | 0.006 | <0.001 | 0.002 | 0.008 | <0.001 | <0.001 |
| 170404 | 3-4 | 0.035 | 0.016 | 3 | 0.057 | 0.002 | 0.006 | <0.001 | 0.002 | 0.019 | <0.001 | <0.001 |
| 170405 | 4-5 | 0.022 | 0.015 | 1 | 0.031 | 0.001 | 0.004 | <0.001 | 0.002 | 0.008 | <0.001 | <0.001 |
| 170406 | 5-6 | 0.014 | 0.026 | 4 | 0.019 | 0.001 | 0.005 | <0.001 | 0.002 | 0.012 | <0.001 | 0.001 |
| 170407 | 6-7 | 0.011 | 0.006 | 3 | 0.011 | 0.001 | 0.003 | <0.001 | 0.003 | 0.008 | <0.001 | 0.001 |
| 170408 | 7-8 | 0.023 | 0.015 | 2 | 0.042 | 0.003 | 0.006 | <0.001 | 0.002 | 0.013 | <0.001 | <0.001 |
| 170409 | 8-9 | 0.041 | 0.031 | 4 | 0.059 | 0.006 | 0.013 | 0.001 | 0.003 | 0.017 | <0.001 | 0.002 |
| 170410 | 9-10 | 0.017 | 0.035 | 6 | 0.023 | 0.003 | 0.008 | <0.001 | 0.002 | 0.009 | <0.001 | 0.002 |
| 170411 | 10-11 | 0.029 | 0.007 | 5 | 0.022 | <0.001 | 0.004 | <0.001 | 0.002 | 0.057 | <0.001 | <0.001 |
| 170412 | 11-12 | 0.064 | 0.046 | 6 | 0.094 | 0.002 | 0.023 | 0.001 | 0.003 | 0.065 | <0.001 | 0.003 |
| 170413 | 12-13 | 0.045 | 0.036 | 6 | 0.088 | 0.002 | 0.014 | 0.001 | 0.002 | 0.061 | <0.001 | 0.001 |
| 170414 | 13-14 | 0.010 | 0.015 | 3 | 0.026 | 0.001 | 0.007 | <0.001 | 0.002 | 0.039 | <0.001 | <0.001 |
| 170415 | 14-15 | 0.025 | 0.011 | 4 | 0.023 | 0.002 | 0.006 | <0.001 | 0.002 | 0.100 | <0.001 | <0.001 |
| 170416 | 15-16 | 0.273 | 0.026 | 8 | 0.037 | 0.002 | 0.014 | <0.001 | 0.002 | 0.068 | <0.001 | 0.068 |
| 170417 | DH 112 0-1m | 0.205 | 0.015 | 5 | 0.160 | 0.013 | 0.011 | <0.001 | 0.004 | 0.082 | 0.001 | 0.033 |
| 170418 | 1-2 | 1.190 | 0.029 | 9 | 0.057 | 0.101 | 0.031 | <0.001 | 0.005 | 0.245 | 0.001 | 0.012 |
| 170419 | 2-3 | 0.402 | 0.024 | 3 | 0.016 | 0.017 | 0.010 | <0.001 | 0.003 | 0.072 | <0.001 | 0.004 |
| 170420 | 3-4 | 0.087 | 0.018 | 4 | 0.013 | 0.002 | 0.007 | <0.001 | 0.003 | 0.049 | <0.001 | 0.003 |
| 170421 | 4-5 | 0.616 | 0.034 | 10 | 0.021 | 0.025 | 0.012 | <0.001 | 0.003 | 0.101 | <0.001 | 0.011 |
| 170422 | 5-6 | 0.066 | 0.012 | 3 | 0.009 | 0.001 | 0.005 | <0.001 | 0.003 | 0.067 | <0.001 | 0.002 |
| 170423 | 6-7 | 0.305 | 0.028 | 2 | 0.012 | 0.009 | 0.011 | <0.001 | 0.003 | 0.067 | <0.001 | 0.005 |
| 170424 | 7-8 | 0.117 | 0.021 | 1 | 0.036 | 0.003 | 0.011 | <0.001 | 0.002 | 0.064 | <0.001 | 0.002 |
| 170425 | 8-9 | 0.038 | 0.014 | <1 | 0.013 | 0.002 | 0.008 | <0.001 | 0.002 | 0.076 | <0.001 | 0.001 |
| 170426 | 9-10 | 1.090 | 0.040 | 13 | 0.055 | 0.175 | 0.047 | <0.001 | 0.005 | 0.242 | 0.002 | 0.115 |
| 170427 | 10-11 | 3.65 | 0.800 | 126 | 1.225 | 0.292 | 0.097 | 0.001 | 0.006 | 0.148 | 0.011 | 6.70 |
| 170428 | DH 113 0-1m | 0.116 | 0.021 | 2 | 0.021 | 0.004 | 0.007 | <0.001 | 0.003 | 0.073 | <0.001 | 0.033 |
| 170429 | 1-2 | 0.299 | 0.029 | 3 | 0.024 | 0.014 | 0.009 | <0.001 | 0.003 | 0.071 | <0.001 | 0.083 |
| 170430 | 2-3 | 0.389 | 0.052 | 4 | 0.041 | 0.014 | 0.013 | <0.001 | 0.003 | 0.056 | <0.001 | 0.104 |
| 170431 | 3-4 | 1.155 | 0.110 | 11 | 0.070 | 0.054 | 0.021 | <0.001 | 0.004 | 0.091 | 0.001 | 0.401 |
| 170432 | 4-5 | 0.385 | 0.036 | 3 | 0.018 | 0.020 | 0.012 | <0.001 | 0.002 | 0.040 | <0.001 | 0.103 |
| 170433 | DH 114 0-1m | 0.020 | 0.008 | <1 | 0.009 | 0.001 | 0.004 | <0.001 | 0.003 | 0.012 | <0.001 | 0.001 |
| 170434 | 1-2 | 0.026 | 0.021 | <1 | 0.011 | 0.001 | 0.010 | <0.001 | 0.003 | 0.013 | <0.001 | 0.003 |
| 170435 | 2-3 | 0.035 | 0.017 | 1 | 0.036 | 0.003 | 0.009 | <0.001 | 0.003 | 0.024 | <0.001 | 0.003 |
| 170436 | 3-4 | 0.069 | 0.011 | 1 | 0.029 | 0.003 | 0.005 | <0.001 | 0.003 | 0.020 | <0.001 | 0.012 |
| 170437 | 4-5 | 0.095 | 0.012 | 1 | 0.063 | 0.002 | 0.007 | <0.001 | 0.003 | 0.022 | <0.001 | 0.009 |
| 170438 | 5-6 | 0.072 | 0.014 | 1 | 0.060 | 0.004 | 0.006 | <0.001 | 0.003 | 0.009 | <0.001 | 0.018 |
| 170439 | 6-7 | 0.061 | 0.014 | 2 | 0.075 | 0.003 | 0.007 | <0.001 | 0.003 | 0.007 | <0.001 | 0.012 |

Eastern Quarry: Ceramic Sample -250µ

Comments: This is an amended report. Note addition of P2O5 results as subsequently requested.

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## CERTIFICATE OF ANALYSIS BR06053089

| Sample Description | Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 170440 | DH 114 7-8m | 0.022 | 0.019 | 3 | 0.110 | 0.001 | 0.010 | 0.001 | 0.003 | 0.005 | <0.001 | 0.002 |
| 170441 | 8-9 | 0.020 | 0.025 | 5 | 0.087 | <0.001 | 0.010 | 0.001 | 0.003 | 0.005 | <0.001 | 0.005 |
| 170442 | 9-10 | 0.009 | 0.020 | 1 | 0.025 | <0.001 | 0.009 | <0.001 | 0.003 | 0.002 | <0.001 | 0.002 |
| 170443 | 10-11 | 0.009 | 0.017 | 4 | 0.084 | <0.001 | 0.008 | 0.001 | 0.003 | 0.002 | <0.001 | 0.001 |
| 170444 | 11-12 | 0.007 | 0.008 | 4 | 0.080 | 0.001 | 0.005 | 0.001 | 0.003 | 0.004 | <0.001 | <0.001 |
| 170445 | 12-13 | 0.006 | 0.015 | 2 | 0.050 | <0.001 | 0.008 | <0.001 | 0.003 | 0.012 | <0.001 | <0.001 |
| 170446 | 13-14 | 0.010 | 0.021 | 1 | 0.019 | 0.001 | 0.010 | <0.001 | 0.003 | 0.016 | <0.001 | 0.001 |
| 170447 | 14-15 | 0.015 | 0.020 | 1 | 0.038 | <0.001 | 0.009 | <0.001 | 0.003 | 0.016 | <0.001 | 0.004 |
| 170448 | 15-16 | 0.511 | 0.032 | 7 | 0.056 | 0.002 | 0.008 | <0.001 | 0.004 | 0.056 | <0.001 | 0.215 |
| 170449 | 16-17 | 0.360 | 0.022 | 4 | 0.041 | 0.001 | 0.007 | <0.001 | 0.003 | 0.065 | <0.001 | 0.130 |
| 170450 | DH 115 0-1m | 0.018 | 0.010 | 1 | 0.016 | 0.001 | 0.005 | <0.001 | 0.003 | 0.035 | <0.001 | 0.002 |
| 170451 | 1-2 | 0.017 | 0.017 | 2 | 0.016 | 0.001 | 0.008 | <0.001 | 0.003 | 0.069 | <0.001 | 0.001 |
| 170452 | 2-3 | 0.014 | 0.019 | 1 | 0.016 | 0.001 | 0.010 | <0.001 | 0.003 | 0.061 | <0.001 | 0.001 |
| 170453 | 3-4 | 0.025 | 0.039 | 3 | 0.042 | 0.003 | 0.021 | 0.001 | 0.004 | 0.079 | <0.001 | 0.002 |
| 170454 | 4-5 | 0.012 | 0.014 | 1 | 0.009 | <0.001 | 0.007 | <0.001 | 0.003 | 0.035 | <0.001 | <0.001 |
| 170455 | 5-6 | 0.012 | 0.018 | 2 | 0.010 | <0.001 | 0.009 | <0.001 | 0.003 | 0.032 | <0.001 | <0.001 |
| 170456 | 6-7 | 0.013 | 0.021 | 1 | 0.010 | <0.001 | 0.011 | <0.001 | 0.003 | 0.045 | <0.001 | <0.001 |
| 170457 | 7-8 | 0.024 | 0.039 | 1 | 0.025 | 0.001 | 0.020 | <0.001 | 0.003 | 0.096 | <0.001 | 0.003 |
| 170458 | 8-9 | 0.027 | 0.054 | 1 | 0.025 | 0.003 | 0.027 | <0.001 | 0.003 | 0.080 | <0.001 | 0.003 |
| 170459 | 9-10 | 0.023 | 0.042 | 1 | 0.021 | 0.001 | 0.021 | <0.001 | 0.003 | 0.059 | <0.001 | 0.003 |
| 170460 | 10-11 | 0.021 | 0.043 | 1 | 0.020 | 0.001 | 0.022 | <0.001 | 0.003 | 0.057 | <0.001 | 0.001 |
| 170461 | Collar sample | 0.058 | 0.028 | 4 | 0.101 | 0.007 | 0.015 | 0.001 | 0.007 | 0.074 | <0.001 | 0.004 |
| 170462 | DH 116 0-1m | 0.024 | 0.015 | 1 | 0.018 | 0.001 | 0.007 | <0.001 | 0.003 | 0.054 | <0.001 | <0.001 |
| 170463 | 1-2 | 0.025 | 0.017 | 1 | 0.024 | 0.002 | 0.007 | <0.001 | 0.003 | 0.048 | <0.001 | 0.001 |
| 170464 | 2-3 | 0.027 | 0.017 | 1 | 0.023 | 0.001 | 0.007 | <0.001 | 0.003 | 0.046 | <0.001 | 0.003 |
| 170465 | 3-4 | 0.019 | 0.013 | <1 | 0.016 | 0.001 | 0.005 | <0.001 | 0.003 | 0.030 | <0.001 | 0.001 |
| 170466 | 4-5 | 0.017 | 0.015 | <1 | 0.012 | 0.001 | 0.006 | <0.001 | 0.003 | 0.059 | <0.001 | 0.002 |
| 170467 | 5-6 | 0.020 | 0.015 | 1 | 0.024 | <0.001 | 0.007 | <0.001 | 0.003 | 0.047 | <0.001 | 0.003 |
| 170468 | 6-7 | 0.022 | 0.014 | <1 | 0.010 | 0.001 | 0.006 | <0.001 | 0.003 | 0.038 | <0.001 | <0.001 |
| 170469 | Collar sample | 0.044 | 0.023 | 2 | 0.069 | 0.004 | 0.010 | 0.001 | 0.005 | 0.039 | <0.001 | 0.003 |
| 170470 | DH 117 1-2m | 0.023 | 0.025 | 1 | 0.009 | 0.001 | 0.011 | <0.001 | 0.003 | 0.081 | <0.001 | 0.002 |
| 170471 | 3-4m | 0.099 | 0.023 | 2 | 0.010 | 0.004 | 0.010 | <0.001 | 0.002 | 0.111 | <0.001 | 0.018 |
| 170472 | DH 118 0-1m | 0.036 | 0.022 | 2 | 0.026 | 0.001 | 0.010 | <0.001 | 0.004 | 0.098 | <0.001 | 0.005 |
| 170473 | 1-2 | 0.038 | 0.020 | 2 | 0.021 | 0.002 | 0.009 | <0.001 | 0.004 | 0.102 | <0.001 | 0.004 |
| 170474 | 2-3 | 0.031 | 0.013 | 1 | 0.014 | 0.001 | 0.006 | <0.001 | 0.003 | 0.107 | <0.001 | 0.004 |
| 170475 | 3-4 | 0.025 | 0.015 | 1 | 0.011 | 0.001 | 0.007 | <0.001 | 0.003 | 0.078 | <0.001 | 0.002 |
| 170476 | 4-5 | 0.052 | 0.016 | 1 | 0.013 | 0.001 | 0.007 | <0.001 | 0.003 | 0.073 | <0.001 | 0.013 |
| 170477 | 5-6 | 0.025 | 0.012 | <1 | 0.010 | 0.002 | 0.005 | <0.001 | 0.002 | 0.066 | <0.001 | 0.002 |
| 170478 | 6-7 | 0.016 | 0.012 | <1 | 0.005 | <0.001 | 0.005 | <0.001 | 0.002 | 0.066 | <0.001 | 0.002 |
| 170479 | 7-8 | 0.047 | 0.031 | 2 | 0.024 | 0.001 | 0.014 | <0.001 | 0.003 | 0.114 | <0.001 | 0.007 |

Comments: This is an amended report. Note addition of P2O5 results as subsequently requested.

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## CERTIFICATE OF ANALYSIS BR06053089

| Sample Description | Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 170480 | DH 118 8-9m | 0.019 | 0.018 | <1 | 0.009 | <0.001 | 0.008 | <0.001 | 0.002 | 0.074 | <0.001 | 0.002 |
| 170481 | 9-10 | 0.037 | 0.028 | <1 | 0.008 | 0.001 | 0.017 | <0.001 | 0.002 | 0.049 | <0.001 | 0.004 |
| 170482 | 10-11 | 0.024 | 0.028 | <1 | 0.009 | <0.001 | 0.012 | <0.001 | 0.001 | 0.015 | <0.001 | 0.006 |
| 170483 | 11-12 | 0.026 | 0.049 | 1 | 0.043 | 0.001 | 0.024 | <0.001 | 0.002 | 0.030 | <0.001 | 0.007 |
| 170484 | 12-13 | 0.021 | 0.050 | <1 | 0.031 | <0.001 | 0.022 | <0.001 | 0.002 | 0.021 | <0.001 | 0.006 |
| 170485 | 13-14 | 0.020 | 0.039 | <1 | 0.013 | 0.001 | 0.018 | <0.001 | 0.002 | 0.036 | <0.001 | 0.004 |
| 170486 | 14-15 | 0.025 | 0.062 | <1 | 0.032 | 0.001 | 0.026 | <0.001 | 0.002 | 0.013 | <0.001 | 0.009 |
| 70487 | DH 119 0-1m | 0.028 | 0.038 | <1 | 0.038 | 0.002 | 0.021 | <0.001 | 0.004 | 0.038 | <0.001 | 0.005 |
| 70488 | 1-2 | 0.024 | 0.037 | <1 | 0.014 | 0.001 | 0.015 | <0.001 | 0.002 | 0.029 | <0.001 | 0.007 |
| 70489 | 2-3 | 0.018 | 0.031 | <1 | 0.017 | <0.001 | 0.012 | <0.001 | 0.001 | 0.014 | <0.001 | 0.005 |
| 70490 | 3-4 | 0.014 | 0.036 | <1 | 0.013 | 0.001 | 0.014 | <0.001 | 0.002 | 0.007 | <0.001 | 0.003 |
| 70491 | 4-5 | 0.019 | 0.045 | <1 | 0.025 | <0.001 | 0.020 | <0.001 | 0.002 | 0.022 | <0.001 | 0.003 |
| 70492 | 5-6 | 0.030 | 0.054 | 2 | 0.104 | 0.001 | 0.021 | 0.001 | 0.002 | 0.052 | <0.001 | 0.011 |
| 70493 | DH 119A 0-1m | 0.024 | 0.027 | <1 | 0.014 | 0.001 | 0.012 | <0.001 | 0.002 | 0.030 | <0.001 | 0.002 |
| 70494 | 1-2 | 0.022 | 0.031 | <1 | 0.008 | <0.001 | 0.013 | <0.001 | 0.001 | 0.014 | <0.001 | 0.005 |
| 70495 | 2-3 | 0.015 | 0.033 | <1 | 0.009 | 0.001 | 0.015 | <0.001 | 0.002 | 0.015 | <0.001 | 0.004 |
| 70496 | 3-4 | 0.019 | 0.038 | <1 | 0.006 | <0.001 | 0.017 | <0.001 | 0.001 | 0.012 | <0.001 | 0.003 |
| 70497 | 4-5 | 0.019 | 0.059 | <1 | 0.008 | 0.001 | 0.028 | <0.001 | 0.002 | 0.012 | <0.001 | 0.004 |
| 70498 | 5-6 | 0.027 | 0.106 | <1 | 0.013 | <0.001 | 0.053 | <0.001 | 0.002 | 0.015 | <0.001 | 0.008 |
| 70499 | 6-7 | 0.023 | 0.064 | <1 | 0.012 | 0.001 | 0.029 | <0.001 | 0.002 | 0.018 | <0.001 | 0.007 |
| 70500 | 7-8 | 0.028 | 0.070 | <1 | 0.014 | 0.001 | 0.036 | <0.001 | 0.002 | 0.040 | <0.001 | 0.004 |
| 70501 | 8-9 | 0.030 | 0.046 | <1 | 0.018 | 0.001 | 0.023 | <0.001 | 0.002 | 0.027 | <0.001 | 0.004 |
| 70502 | 9-10 | 0.024 | 0.033 | <1 | 0.012 | 0.001 | 0.014 | <0.001 | 0.002 | 0.025 | <0.001 | 0.005 |
| 70503 | 10-11 | 0.026 | 0.063 | 1 | 0.025 | 0.001 | 0.029 | <0.001 | 0.002 | 0.041 | <0.001 | 0.004 |
| 70504 | DH 120 0-1m | 0.022 | 0.018 | 1 | 0.022 | 0.002 | 0.008 | <0.001 | 0.004 | 0.142 | <0.001 | 0.003 |
| 70505 | 1-2 | 0.020 | 0.020 | 1 | 0.017 | 0.001 | 0.008 | <0.001 | 0.003 | 0.094 | <0.001 | <0.001 |
| 70506 | 2-3 | 0.014 | 0.015 | 1 | 0.013 | <0.001 | 0.006 | <0.001 | 0.003 | 0.064 | <0.001 | 0.001 |
| 70507 | 3-4 | 0.015 | 0.013 | 1 | 0.014 | 0.001 | 0.005 | <0.001 | 0.003 | 0.070 | <0.001 | <0.001 |
| 70508 | 4-5 | 0.010 | 0.010 | 1 | 0.010 | 0.001 | 0.005 | <0.001 | 0.003 | 0.060 | <0.001 | <0.001 |
| 70509 | 5-6 | 0.017 | 0.015 | 1 | 0.016 | 0.001 | 0.007 | <0.001 | 0.003 | 0.060 | <0.001 | 0.002 |
| 70510 | 6-7 | 0.012 | 0.020 | 1 | 0.012 | 0.001 | 0.009 | <0.001 | 0.003 | 0.047 | <0.001 | <0.001 |
| 70511 | 7-8 | 0.010 | 0.011 | <1 | 0.009 | 0.001 | 0.005 | <0.001 | 0.003 | 0.028 | <0.001 | 0.001 |
| 70512 | 8-9 | 0.019 | 0.032 | 2 | 0.019 | 0.001 | 0.015 | <0.001 | 0.003 | 0.093 | <0.001 | 0.002 |
| 70513 | 9-10 | 0.021 | 0.037 | 1 | 0.014 | <0.001 | 0.019 | <0.001 | 0.003 | 0.081 | <0.001 | 0.002 |
| 70514 | DH 121 1-2m | 0.018 | 0.017 | 1 | 0.013 | 0.002 | 0.007 | <0.001 | 0.003 | 0.081 | <0.001 | 0.002 |
| 70515 | 2-3 | 0.016 | 0.025 | 2 | 0.012 | 0.001 | 0.012 | <0.001 | 0.003 | 0.053 | <0.001 | 0.002 |
| 70516 | 3-4 | 0.017 | 0.022 | 1 | 0.012 | <0.001 | 0.010 | <0.001 | 0.003 | 0.062 | <0.001 | 0.002 |
| 70517 | 4-5 | 0.013 | 0.012 | 1 | 0.010 | <0.001 | 0.006 | <0.001 | 0.003 | 0.046 | <0.001 | <0.001 |
| 70518 | DH 122 1-2 | 0.010 | 0.009 | 1 | 0.014 | <0.001 | 0.003 | <0.001 | 0.003 | 0.063 | <0.001 | <0.001 |
| 70519 | 2-3 | 0.013 | 0.011 | 1 | 0.017 | <0.001 | 0.004 | <0.001 | 0.003 | 0.072 | <0.001 | 0.002 |

Comments: This is an amended report. Note addition of P2O5 results as subsequently requested.

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## CERTIFICATE OF ANALYSIS BR06053089

| Sample Description | Method Analyte Units LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70520 | DH122 3-4m | 0.015 | 0.012 | 2 | 0.020 | <0.001 | 0.005 | <0.001 | 0.003 | 0.157 | <0.001 | 0.002 |
| 70521 | 4-5 | 0.023 | 0.025 | 2 | 0.035 | 0.002 | 0.008 | <0.001 | 0.003 | 0.203 | <0.001 | 0.004 |
| 70522 | DH123 1-2m | 0.028 | 0.012 | 1 | 0.008 | <0.001 | 0.005 | <0.001 | 0.002 | 0.041 | <0.001 | 0.001 |
| 70523 | 2-3 | 0.013 | 0.020 | <1 | 0.012 | <0.001 | 0.005 | <0.001 | 0.001 | 0.014 | <0.001 | 0.003 |
| 70524 | 3-4 | 0.011 | 0.022 | <1 | 0.019 | <0.001 | 0.003 | <0.001 | 0.001 | 0.016 | <0.001 | 0.002 |
| 70525 | 4-5 | 0.007 | 0.026 | <1 | 0.010 | <0.001 | 0.009 | <0.001 | 0.002 | 0.015 | <0.001 | 0.002 |
| 70526 | 5-6 | 0.008 | 0.021 | <1 | 0.012 | <0.001 | 0.008 | <0.001 | 0.002 | 0.021 | <0.001 | 0.002 |
| 70527 | 6-7 | 0.007 | 0.021 | <1 | 0.011 | 0.001 | 0.004 | <0.001 | 0.002 | 0.018 | <0.001 | 0.004 |
| 70528 | 7-8 | 0.012 | 0.021 | <1 | 0.010 | <0.001 | 0.005 | <0.001 | 0.001 | 0.033 | <0.001 | 0.003 |
| 70529 | 8-9 | 0.010 | 0.006 | 1 | 0.016 | <0.001 | 0.003 | <0.001 | 0.002 | 0.057 | <0.001 | <0.001 |
| 70530 | 9-10 | 0.014 | 0.013 | 2 | 0.009 | <0.001 | 0.005 | <0.001 | 0.002 | 0.060 | <0.001 | <0.001 |
| 70531 | 10-11 | 0.007 | 0.017 | <1 | 0.012 | <0.001 | 0.007 | <0.001 | 0.001 | 0.035 | <0.001 | 0.001 |
| 70532 | 11-12 | 0.010 | 0.022 | 2 | 0.026 | 0.001 | 0.008 | <0.001 | 0.002 | 0.029 | <0.001 | 0.001 |
| 70533 | 12-13 | 0.012 | 0.017 | 2 | 0.077 | 0.001 | 0.006 | 0.001 | 0.002 | 0.048 | <0.001 | 0.001 |
| 70534 | 13-14 | 0.010 | 0.033 | <1 | 0.022 | 0.001 | 0.009 | <0.001 | 0.002 | 0.031 | <0.001 | 0.006 |
| 70535 | 14-15 | 0.007 | 0.034 | <1 | 0.009 | <0.001 | 0.007 | <0.001 | 0.001 | 0.016 | <0.001 | 0.005 |
| 70536 | 15-16 | 0.087 | 0.024 | 2 | 0.031 | 0.001 | 0.006 | <0.001 | 0.002 | 0.042 | <0.001 | 0.032 |
| 70537 | 16-17 | 1.005 | 0.022 | 7 | 0.720 | 0.123 | 0.048 | <0.001 | 0.004 | 0.190 | 0.003 | 0.022 |
| 70538 | 17-18 | 3.18 | 0.023 | 25 | 1.585 | 0.331 | 0.114 | 0.001 | 0.008 | 0.338 | 0.006 | 0.079 |
| 70539 | 18-19 | 1.345 | 0.022 | 9 | 0.490 | 0.136 | 0.052 | <0.001 | 0.004 | 0.116 | 0.002 | 0.018 |
| 70540 | 19-20 | 0.488 | 0.021 | 3 | 0.187 | 0.040 | 0.018 | <0.001 | 0.003 | 0.041 | 0.001 | 0.008 |
| 70541 | Collar sample | 0.036 | 0.030 | 3 | 0.108 | 0.001 | 0.010 | 0.002 | 0.003 | 0.041 | <0.001 | 0.003 |
| 70542 | DH124 0-1m | 0.060 | 0.019 | 1 | 0.035 | 0.004 | 0.010 | <0.001 | 0.003 | 0.041 | <0.001 | 0.003 |
| 70543 | 1-2 | 0.040 | 0.014 | 1 | 0.031 | 0.003 | 0.007 | <0.001 | 0.002 | 0.046 | <0.001 | 0.001 |
| 70544 | DH122 Collar Sample | 0.018 | 0.020 | 2 | 0.044 | <0.001 | 0.008 | <0.001 | 0.003 | 0.119 | <0.001 | 0.001 |
| EXTRA 70470 A | DH117 2-3m | 0.027 | 0.021 | 1 | 0.014 | 0.002 | 0.009 | <0.001 | 0.004 | 0.086 | <0.001 | 0.002 |

Comments: This is an amended report. Note addition of P2O5 results as subsequently requested.

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## CERTIFICATE OF ANALYSIS BR07025438

| Sample Description | Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70546 | DH 125 1-2m | 0.057 | 0.017 | 3 | 0.073 | 0.005 | 0.001 | 0.045 | <0.001 | 0.004 | 0.002 | 0.003 |
| 70547 | 2-3 | 0.119 | 0.057 | 3 | 0.112 | 0.040 | 0.001 | 0.043 | <0.001 | 0.013 | 0.007 | 0.006 |
| 70548 | 3-4 | 0.059 | 0.029 | 1 | 0.051 | 0.013 | <0.001 | 0.037 | <0.001 | 0.005 | 0.002 | 0.004 |
| 70549 | 4-5 | 0.125 | 0.035 | 1 | 0.054 | 0.017 | <0.001 | 0.043 | <0.001 | 0.007 | 0.005 | 0.002 |
| 70550 | 5-6 | 0.123 | 0.046 | 4 | 0.132 | 0.030 | 0.001 | 0.035 | <0.001 | 0.011 | 0.008 | 0.004 |
| 70551 | 6-7 | 0.085 | 0.102 | 3 | 0.064 | 0.051 | <0.001 | 0.062 | <0.001 | 0.004 | 0.002 | 0.004 |
| 70552 | 7-8 | 0.151 | 0.056 | 4 | 0.136 | 0.028 | 0.001 | 0.097 | <0.001 | 0.005 | 0.004 | 0.005 |
| 70553 | 8-9 | 0.066 | 0.035 | 3 | 0.079 | 0.013 | <0.001 | 0.133 | <0.001 | 0.003 | 0.001 | 0.005 |
| 70554 | 9-10 | 0.066 | 0.035 | 3 | 0.106 | 0.012 | <0.001 | 0.082 | <0.001 | 0.003 | 0.002 | 0.006 |
| 70555 | 10-11 | 0.025 | 0.024 | 3 | 0.079 | 0.005 | <0.001 | 0.088 | <0.001 | 0.001 | <0.001 | 0.006 |
| 70556 | 11-12 | 0.042 | 0.052 | 6 | 0.103 | 0.020 | 0.001 | 0.150 | 0.001 | 0.003 | 0.001 | 0.009 |
| 70557 | 12-13 | 0.042 | 0.046 | 6 | 0.169 | 0.017 | 0.001 | 0.118 | 0.001 | 0.003 | 0.001 | 0.012 |
| 70558 | 13-14 | 0.042 | 0.042 | 4 | 0.159 | 0.017 | 0.001 | 0.058 | <0.001 | 0.003 | 0.002 | 0.008 |
| 70559 | 14-15 | 0.556 | 0.042 | 10 | 0.656 | 0.028 | 0.001 | 0.117 | 0.003 | 0.005 | 0.088 | 0.025 |
| 70564 | DH 126 0-1m | 0.028 | 0.017 | 1 | 0.043 | 0.005 | <0.001 | 0.028 | <0.001 | 0.003 | 0.001 | 0.002 |
| 70565 | 1-2 | 0.019 | 0.017 | 1 | 0.036 | 0.002 | <0.001 | 0.015 | <0.001 | 0.003 | 0.001 | 0.001 |
| 70566 | 2-3 | 0.015 | 0.014 | <1 | 0.031 | 0.002 | <0.001 | 0.013 | <0.001 | 0.001 | <0.001 | 0.002 |
| 70567 | 3-4 | 0.013 | 0.013 | 1 | 0.034 | 0.003 | <0.001 | 0.010 | <0.001 | 0.001 | 0.001 | 0.002 |
| 70568 | 4-5 | 0.015 | 0.009 | 1 | 0.056 | 0.002 | <0.001 | 0.025 | <0.001 | 0.001 | 0.001 | 0.002 |
| 70569 | 5-6 | 0.017 | 0.010 | 1 | 0.049 | 0.002 | <0.001 | 0.012 | <0.001 | 0.001 | 0.001 | 0.002 |
| 70570 | 6-7 | 0.023 | 0.011 | 1 | 0.023 | 0.002 | <0.001 | 0.025 | <0.001 | 0.001 | 0.001 | 0.001 |
| 70571 | 7-8 | 0.017 | 0.014 | 1 | 0.050 | 0.002 | <0.001 | 0.018 | <0.001 | 0.001 | 0.001 | 0.002 |
| 70572 | 8-9 | 0.017 | 0.011 | 1 | 0.033 | 0.002 | <0.001 | 0.017 | <0.001 | 0.001 | 0.001 | 0.001 |
| 70573 | 9-10 | 0.009 | 0.009 | 1 | 0.024 | 0.002 | <0.001 | 0.010 | <0.001 | 0.001 | 0.001 | <0.001 |
| 70574 | 10-11 | 0.015 | 0.009 | 1 | 0.046 | 0.003 | <0.001 | 0.015 | <0.001 | 0.003 | 0.001 | 0.001 |
| 70575 | 11-12 | 0.019 | 0.015 | 1 | 0.252 | 0.005 | <0.001 | 0.013 | <0.001 | 0.001 | <0.001 | 0.002 |
| 70576 | 12-13 | 0.015 | 0.013 | 1 | 0.126 | 0.003 | <0.001 | 0.013 | <0.001 | 0.003 | <0.001 | 0.003 |
| 70577 | 13-14 | 0.011 | 0.018 | 1 | 0.046 | 0.003 | <0.001 | 0.018 | <0.001 | 0.003 | <0.001 | 0.003 |
| 70578 | 14-15 | 0.009 | 0.020 | 1 | 0.048 | 0.003 | <0.001 | 0.015 | <0.001 | 0.003 | 0.001 | 0.003 |
| 70579 | 15-16 | 0.015 | 0.021 | 1 | 0.073 | 0.003 | <0.001 | 0.038 | <0.001 | 0.001 | 0.001 | 0.004 |
| 70580 | 16-17 | 0.015 | 0.042 | 1 | 0.054 | 0.003 | <0.001 | 0.013 | <0.001 | 0.001 | 0.001 | 0.004 |
| 70581 | 17-18 | 0.015 | 0.030 | 1 | 0.069 | 0.005 | <0.001 | 0.010 | <0.001 | 0.004 | 0.002 | 0.005 |
| 70582 | 18-19 | 0.013 | 0.020 | 3 | 0.080 | 0.002 | <0.001 | 0.040 | <0.001 | 0.003 | 0.002 | 0.003 |
| 70583 | 19-20 | 0.013 | 0.050 | 4 | 0.073 | 0.003 | <0.001 | 0.025 | <0.001 | 0.001 | 0.001 | 0.005 |
| 70584 | DH 127 0-1m | 0.026 | 0.023 | 3 | 0.034 | 0.010 | <0.001 | 0.020 | <0.001 | 0.003 | 0.002 | 0.005 |
| 70585 | 1-2 | 0.023 | 0.020 | 3 | 0.021 | 0.007 | <0.001 | 0.013 | <0.001 | 0.003 | 0.001 | 0.003 |
| 70586 | 2-3 | 0.015 | 0.015 | 1 | 0.030 | 0.003 | <0.001 | 0.010 | <0.001 | 0.003 | <0.001 | 0.003 |
| 70587 | 3-4 | 0.025 | 0.020 | 3 | 0.039 | 0.005 | <0.001 | 0.013 | <0.001 | 0.001 | 0.001 | 0.004 |
| 70588 | 4-5 | 0.023 | 0.023 | 3 | 0.044 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.004 |
| 70589 | 5-6 | 0.021 | 0.018 | <1 | 0.024 | 0.003 | <0.001 | 0.010 | <0.001 | 0.001 | 0.001 | 0.004 |

Comments: This is an amended report. Note addition of P2O5 results as subsequently requested.

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## CERTIFICATE OF ANALYSIS BR07025438

| Sample Description | Method Analyte Units LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70590 | DH 127 6-7m | 0.021 | 0.024 | 1 | 0.029 | 0.005 | <0.001 | 0.010 | <0.001 | 0.001 | 0.001 | 0.006 |
| 70591 | 7-8 | 0.021 | 0.021 | 1 | 0.049 | 0.005 | <0.001 | 0.013 | <0.001 | 0.001 | 0.001 | 0.004 |
| 70592 | 8-9 | 0.025 | 0.021 | 3 | 0.067 | 0.005 | <0.001 | 0.012 | <0.001 | 0.001 | 0.001 | 0.003 |
| 70593 | 9-10 | 0.023 | 0.016 | 1 | 0.074 | 0.005 | <0.001 | 0.017 | <0.001 | 0.001 | 0.001 | 0.003 |
| 70594 | 10-11 | 0.013 | 0.017 | 1 | 0.029 | 0.007 | <0.001 | 0.015 | <0.001 | 0.001 | 0.001 | 0.004 |
| 70595 | 11-12 | 0.009 | 0.016 | 1 | 0.073 | 0.005 | <0.001 | 0.018 | <0.001 | 0.001 | 0.001 | 0.002 |
| 70596 | 12-13 | 0.011 | 0.022 | 1 | 0.027 | 0.005 | <0.001 | 0.017 | <0.001 | 0.003 | 0.001 | 0.005 |
| 70597 | 13-14 | 0.019 | 0.015 | 1 | 0.021 | 0.005 | <0.001 | 0.018 | <0.001 | 0.001 | 0.001 | 0.002 |
| 70598 | 14-15 | 0.013 | 0.015 | 1 | 0.026 | 0.003 | <0.001 | 0.013 | <0.001 | 0.001 | <0.001 | 0.003 |
| 70599 | 15-16 | 0.013 | 0.013 | 1 | 0.019 | 0.003 | <0.001 | 0.012 | <0.001 | 0.001 | <0.001 | 0.002 |
| 70600 | 16-17 | 0.009 | 0.011 | 1 | 0.040 | 0.003 | <0.001 | 0.015 | <0.001 | 0.003 | <0.001 | 0.002 |
| 70601 | 17-18 | 0.008 | 0.014 | 1 | 0.047 | 0.003 | <0.001 | 0.013 | <0.001 | 0.001 | 0.001 | 0.003 |
| 70602 | 18-19 | 0.015 | 0.009 | 1 | 0.041 | 0.003 | <0.001 | 0.015 | <0.001 | 0.001 | <0.001 | 0.003 |
| 70603 | 19-20 | 0.015 | 0.011 | 3 | 0.164 | 0.003 | 0.001 | 0.013 | <0.001 | 0.001 | <0.001 | 0.002 |
| 70605 | DH 128 1-2m | 0.028 | 0.018 | 6 | 0.087 | 0.007 | 0.001 | 0.082 | <0.001 | 0.003 | 0.001 | 0.002 |
| 70606 | 2-3 | 0.015 | 0.021 | 4 | 0.046 | 0.007 | <0.001 | 0.055 | <0.001 | 0.001 | 0.001 | 0.004 |
| 70607 | 3-4 | 0.008 | 0.025 | 1 | 0.031 | 0.005 | <0.001 | 0.022 | <0.001 | 0.001 | 0.001 | 0.006 |
| 70608 | 4-5 | 0.009 | 0.024 | 3 | 0.059 | 0.007 | <0.001 | 0.038 | <0.001 | 0.003 | <0.001 | 0.003 |
| 70609 | 5-6 | 0.004 | 0.023 | 3 | 0.031 | 0.003 | <0.001 | 0.038 | <0.001 | 0.001 | <0.001 | 0.007 |
| 70610 | 6-7 | 0.042 | 0.024 | 4 | 0.383 | 0.007 | 0.002 | 0.050 | 0.001 | 0.003 | 0.001 | 0.008 |
| 70614 | 10-11 | 0.009 | 0.025 | 4 | 0.096 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.002 |
| 70615 | 11-12 | 0.011 | 0.021 | 12 | 0.219 | 0.005 | 0.002 | 0.007 | <0.001 | 0.003 | <0.001 | 0.003 |
| 70616 | DH 129 0-1m | 0.023 | 0.013 | 3 | 0.041 | 0.005 | <0.001 | 0.052 | <0.001 | 0.004 | 0.004 | 0.003 |
| 70617 | 1-2 | 0.015 | 0.011 | 3 | 0.034 | 0.003 | <0.001 | 0.033 | <0.001 | 0.004 | 0.001 | 0.003 |
| 70618 | 2-3 | 0.013 | 0.011 | 3 | 0.020 | 0.003 | <0.001 | 0.025 | <0.001 | 0.004 | 0.001 | 0.004 |
| 70622 | DH 130 0-1m | 0.060 | 0.020 | 6 | 0.024 | 0.007 | <0.001 | 0.033 | <0.001 | 0.004 | 0.005 | 0.004 |
| 70623 | 1-2 | 0.025 | 0.014 | 1 | 0.009 | 0.007 | <0.001 | 0.008 | <0.001 | 0.003 | 0.001 | 0.003 |
| 70624 | 2-3 | 0.019 | 0.020 | 1 | 0.010 | 0.008 | <0.001 | 0.007 | <0.001 | 0.003 | 0.001 | 0.003 |
| 70625 | 3-4 | 0.015 | 0.026 | 1 | 0.016 | 0.010 | <0.001 | 0.005 | <0.001 | 0.003 | <0.001 | 0.004 |
| 70626 | 4-5 | 0.009 | 0.017 | 1 | 0.011 | 0.007 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| 70627 | 5-6 | 0.009 | 0.014 | 1 | 0.007 | 0.007 | <0.001 | 0.002 | <0.001 | 0.003 | <0.001 | 0.002 |
| 70628 | 6-7 | 0.011 | 0.019 | <1 | 0.009 | 0.010 | <0.001 | 0.005 | <0.001 | 0.004 | 0.001 | 0.002 |
| 70629 | 7-8 | 0.011 | 0.016 | 1 | 0.016 | 0.008 | <0.001 | 0.007 | <0.001 | 0.003 | 0.001 | 0.002 |
| 70630 | 8-9 | 0.013 | 0.014 | 4 | 0.013 | 0.007 | <0.001 | 0.007 | <0.001 | 0.004 | 0.001 | 0.003 |
| 70631 | 9-10 | 0.011 | 0.019 | 3 | 0.010 | 0.008 | <0.001 | 0.005 | <0.001 | 0.003 | 0.001 | 0.004 |
| 70632 | 10-11 | 0.015 | 0.030 | 1 | 0.010 | 0.015 | <0.001 | 0.010 | <0.001 | 0.004 | 0.001 | 0.004 |
| 70633 | 11-12 | 0.011 | 0.031 | 1 | 0.016 | 0.017 | <0.001 | 0.013 | <0.001 | 0.003 | 0.001 | 0.002 |
| 70634 | 12-13 | 0.011 | 0.022 | 1 | 0.031 | 0.010 | <0.001 | 0.023 | <0.001 | 0.003 | 0.001 | 0.002 |
| 70635 | 13-14 | 0.015 | 0.033 | 1 | 0.031 | 0.017 | <0.001 | 0.018 | <0.001 | 0.003 | 0.001 | 0.004 |

Comments: This is an amended report. Note addition of P2O5 results as subsequently requested.

# APPENDIX 6

# SUPPLEMENTARY ASSAYS – Li

# SAND SAMPLES

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Project: Silica sands + Li

## CERTIFICATE OF ANALYSIS BR10090544

| Sample Description | Method | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-CON02 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Al2O3 | CaO | Cr2O3 | Fe2O3 | MgO | MnO | TiO2 | V2O5 | Na2O | K2O | P2O5 | Li |
| | Units | % | % | ppm | % | % | % | % | % | % | % | % | ppm |
| | LOR | 0.001 | 0.001 | 1 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 1 |
| MHM001 | | 0.009 | 0.006 | 1 | 0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.001 | <0.001 | <0.001 | 2 |
| MHM002 | | 0.011 | 0.006 | <1 | 0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.001 | <0.001 | 0.001 | 2 |
| MHM003 | | 0.010 | 0.006 | 4 | 0.004 | 0.003 | <0.001 | 0.003 | <0.001 | 0.001 | <0.001 | 0.001 | 2 |
| MHM006 | | 0.013 | 0.010 | <1 | 0.001 | 0.005 | <0.001 | 0.005 | <0.001 | 0.003 | <0.001 | 0.001 | 3 |
| 101B401 | | 0.012 | 0.027 | <1 | 0.004 | 0.007 | <0.001 | 0.008 | <0.001 | 0.003 | <0.001 | 0.006 | <1 |
| 101B402 | | 0.008 | 0.027 | <1 | 0.003 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B403 | | 0.009 | 0.026 | <1 | 0.004 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.006 | <1 |
| 101B404 | | 0.004 | 0.027 | <1 | 0.001 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.006 | <1 |
| 101B405 | | 0.006 | 0.026 | <1 | 0.004 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B406 | | 0.006 | 0.024 | <1 | 0.004 | 0.005 | <0.001 | 0.008 | <0.001 | 0.001 | 0.001 | 0.004 | <1 |
| 101B407 | | 0.005 | 0.026 | <1 | 0.004 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.006 | <1 |
| 101B408 | | 0.007 | 0.024 | <1 | 0.003 | 0.005 | <0.001 | 0.008 | <0.001 | 0.001 | <0.001 | 0.004 | <1 |
| 101B409 | | 0.004 | 0.023 | <1 | 0.003 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B410 | | 0.004 | 0.022 | <1 | 0.006 | 0.005 | <0.001 | 0.008 | <0.001 | 0.001 | <0.001 | 0.004 | <1 |
| 101B411 | | 0.008 | 0.024 | <1 | 0.006 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B412 | | 0.009 | 0.024 | <1 | 0.003 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B413 | | 0.004 | 0.025 | <1 | 0.001 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B414 | | 0.005 | 0.025 | <1 | 0.003 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B415 | | 0.008 | 0.025 | <1 | 0.001 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.006 | <1 |
| 101B416 | | 0.005 | 0.024 | <1 | 0.003 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B417 | | 0.003 | 0.024 | <1 | 0.001 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B418 | | 0.005 | 0.023 | <1 | 0.001 | 0.005 | <0.001 | 0.008 | <0.001 | 0.001 | <0.001 | 0.004 | <1 |
| 101B419 | | 0.005 | 0.024 | <1 | 0.001 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.005 | <1 |
| 101B420 | | 0.006 | 0.022 | <1 | 0.001 | 0.005 | <0.001 | 0.007 | <0.001 | 0.001 | <0.001 | 0.004 | <1 |

Comments: Li by ME-CON02 on ICPMS added.

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Project: Silica sands + Li

## QC CERTIFICATE OF ANALYSIS BR10090544

| Sample Description | Method / Analyte / Units / LOR | ME-ICP64 Al2O3 % 0.001 | ME-ICP64 CaO % 0.001 | ME-ICP64 Cr2O3 ppm 1 | ME-ICP64 Fe2O3 % 0.001 | ME-ICP64 MgO % 0.001 | ME-ICP64 MnO % 0.001 | ME-ICP64 TiO2 % 0.001 | ME-ICP64 V2O5 % 0.001 | ME-ICP64 Na2O % 0.001 | ME-ICP64 K2O % 0.001 | ME-ICP64 P2O5 % 0.001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **STANDARDS** | | | | | | | | | | | | |
| BCS267 | | 0.714 | 1.525 | 130 | 0.762 | 0.038 | 0.152 | 0.148 | 0.001 | 0.049 | 0.110 | 0.021 |
| Target Range - Lower Bound | | 0.789 | 1.625 | | 0.734 | 0.054 | 0.138 | 0.157 | | 0.055 | 0.121 | |
| Upper Bound | | 0.911 | 1.875 | | 0.847 | 0.065 | 0.161 | 0.183 | | 0.066 | 0.142 | |
| BSC313-1 | | 0.037 | 0.007 | <1 | 0.011 | 0.002 | <0.001 | 0.013 | <0.001 | 0.004 | 0.005 | <0.001 |
| Target Range - Lower Bound | | 0.033 | 0.005 | <1 | 0.010 | <0.001 | <0.001 | 0.015 | | 0.002 | 0.003 | |
| Upper Bound | | 0.040 | 0.007 | 2 | 0.014 | 0.002 | 0.002 | 0.019 | | 0.004 | 0.006 | |
| **BLANKS** | | | | | | | | | | | | |
| BLANK | | <0.001 | <0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.001 | <0.001 | <0.001 | 0.001 |
| Target Range - Lower Bound | | <0.001 | <0.001 | <1 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Upper Bound | | 0.002 | 0.002 | 2 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| **DUPLICATES** | | | | | | | | | | | | |
| 101B406 | | 0.006 | 0.024 | <1 | 0.004 | 0.005 | <0.001 | 0.008 | <0.001 | 0.001 | 0.001 | 0.004 |
| DUP | | 0.007 | 0.025 | <1 | 0.001 | 0.005 | <0.001 | 0.008 | <0.001 | 0.001 | <0.001 | 0.005 |
| Target Range - Lower Bound | | 0.005 | 0.023 | <1 | <0.001 | 0.004 | <0.001 | 0.007 | <0.001 | <0.001 | <0.001 | 0.003 |
| Upper Bound | | 0.008 | 0.026 | 2 | 0.004 | 0.006 | 0.002 | 0.009 | 0.002 | 0.002 | 0.002 | 0.006 |

Comments: Li by ME-CON02 on ICPMS added.

# APPENDIX 7

# END PRODUCT ASSAYS

# ELECTROSTATIC SEPARATION

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Project: Silica Sands + Li

# CERTIFICATE OF ANALYSIS BR10185066

| Sample Description | Method | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- ICP64 | ME- CON02 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Al2O3 | CaO | Cr2O3 | Fe2O3 | MgO | MnO | TiO2 | V2O5 | Na2O | K2O | P2O5 | Li |
| | Units | % | % | ppm | % | % | % | % | % | % | % | % | ppm |
| | LOR | 0.001 | 0.001 | 1 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 1 |
| 90B- 2- 75NC | | 0.027 | 0.029 | 6 | 0.014 | 0.010 | <0.001 | 0.048 | <0.001 | 0.003 | 0.002 | 0.004 | <1 |
| 90B- 2- 75C | | 0.038 | 0.035 | 10 | 0.009 | 0.010 | <0.001 | 0.047 | <0.001 | 0.005 | 0.002 | 0.004 | <1 |
| 90B- 2- 75200NC | | 0.023 | 0.021 | 3 | 0.014 | 0.007 | <0.001 | 0.025 | <0.001 | 0.003 | 0.001 | 0.003 | <1 |
| 90B- 2- 75200C | | 0.033 | 0.029 | 7 | 0.023 | 0.010 | <0.001 | 0.058 | <0.001 | 0.004 | 0.001 | 0.004 | <1 |
| 90B- 2- 200500NC | | 0.011 | 0.007 | 3 | 0.001 | 0.003 | <0.001 | 0.010 | <0.001 | 0.001 | <0.001 | 0.001 | <1 |
| 90B- 2- 200500M12 | | 0.034 | 0.018 | 12 | 0.096 | 0.008 | 0.002 | 0.143 | <0.001 | 0.004 | <0.001 | 0.002 | <1 |
| 90B- 2- 200500C | | 0.029 | 0.014 | 9 | 0.037 | 0.005 | 0.001 | 0.075 | <0.001 | 0.004 | <0.001 | 0.001 | <1 |
| 101B- 3- 200600NM | | 0.007 | 0.008 | 7 | 0.019 | 0.003 | <0.001 | 0.002 | <0.001 | 0.003 | <0.001 | 0.001 | <1 |
| 101B- 3- 75250NM | | 0.007 | 0.038 | 9 | 0.007 | 0.008 | <0.001 | 0.002 | <0.001 | 0.001 | <0.001 | 0.006 | <1 |
| 101B- 3- 200600NMNC | | 0.004 | 0.008 | 10 | 0.006 | 0.003 | <0.001 | 0.002 | <0.001 | 0.003 | <0.001 | <0.001 | <1 |
| 101B- 3- 200600NMC | | 0.046 | 0.011 | 41 | 0.109 | 0.010 | 0.002 | 0.158 | <0.001 | 0.001 | 0.001 | <0.001 | <1 |

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Project: Silica Sands + Li

# QC CERTIFICATE OF ANALYSIS BR10185066

| Sample Description | Method | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Al2O3 | CaO | Cr2O3 | Fe2O3 | MgO | MnO | TiO2 | V2O5 | Na2O | K2O | P2O5 |
| | Units | % | % | ppm | % | % | % | % | % | % | % | % |
| | LOR | 0.001 | 0.001 | 1 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| **STANDARDS** | | | | | | | | | | | | |
| BCS267 | | 0.887 | 1.785 | 137 | 0.846 | 0.048 | 0.171 | 0.168 | 0.002 | 0.054 | 0.128 | 0.024 |
| Target Range - Lower Bound | | 0.789 | 1.625 | | 0.734 | 0.054 | 0.138 | 0.157 | | 0.055 | 0.121 | |
| Upper Bound | | 0.911 | 1.875 | | 0.847 | 0.065 | 0.161 | 0.183 | | 0.066 | 0.142 | |
| BSC313-1 | | 0.034 | 0.006 | 7 | 0.011 | 0.002 | <0.001 | 0.013 | <0.002 | 0.003 | 0.002 | 0.001 |
| Target Range - Lower Bound | | 0.033 | 0.005 | <1 | 0.010 | <0.001 | <0.001 | 0.015 | | 0.002 | 0.003 | |
| Upper Bound | | 0.040 | 0.007 | 2 | 0.014 | 0.002 | 0.002 | 0.019 | | 0.004 | 0.006 | |
| **BLANKS** | | | | | | | | | | | | |
| BLANK | | <0.001 | <0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.002 | <0.001 | <0.001 | <0.001 |
| Target Range - Lower Bound | | <0.001 | <0.001 | <1 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Upper Bound | | 0.002 | 0.002 | 2 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| **DUPLICATES** | | | | | | | | | | | | |
| 101B-3-200600NMNC | | 0.004 | 0.008 | 10 | 0.006 | 0.003 | <0.001 | 0.002 | <0.001 | 0.003 | <0.001 | <0.001 |
| DUP | | 0.007 | 0.008 | 12 | 0.007 | 0.003 | <0.001 | 0.002 | <0.002 | 0.001 | <0.001 | <0.001 |
| Target Range - Lower Bound | | 0.004 | 0.007 | 10 | 0.005 | 0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Upper Bound | | 0.007 | 0.009 | 12 | 0.008 | 0.004 | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.002 |

# APPENDIX 8

# TEST SAMPLE ASSAYS

# OPTICAL GLASS

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Project: Silica sands + Li

# CERTIFICATE OF ANALYSIS BR10108360

| Sample Description | Method | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-CON02 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Al2O3 | CaO | Cr2O3 | Fe2O3 | MgO | MnO | TiO2 | V2O5 | Na2O | K2O | P2O5 | Li |
| | Units | % | % | ppm | % | % | % | % | % | % | % | % | ppm |
| | LOR | 0.001 | 0.001 | 1 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 1 |
| MHM75200 1 | | 0.013 | 0.007 | <1 | 0.004 | 0.003 | <0.001 | <0.001 | <0.001 | 0.003 | 0.001 | 0.001 | 1 |
| MHM75200 2 | | 0.011 | 0.007 | <1 | 0.004 | 0.003 | <0.001 | <0.001 | <0.001 | 0.003 | 0.002 | 0.001 | 1 |
| MHM75200 NM | | 0.008 | 0.007 | <1 | 0.003 | 0.003 | <0.001 | <0.001 | <0.001 | 0.003 | 0.001 | <0.001 | 1 |
| MHM75200 NM20 | | 0.009 | 0.007 | <1 | 0.007 | 0.003 | <0.001 | <0.001 | <0.001 | 0.003 | 0.002 | 0.001 | 1 |
| MHM200600 | | 0.011 | 0.007 | <1 | 0.003 | 0.003 | <0.001 | 0.002 | <0.001 | 0.003 | <0.001 | <0.001 | 1 |
| MHM200600 NM | | 0.013 | 0.007 | 4 | 0.003 | 0.003 | <0.001 | <0.001 | <0.001 | 0.003 | 0.002 | <0.001 | 1 |
| MHM200600 NM20 | | 0.013 | 0.008 | <1 | 0.004 | 0.003 | <0.001 | <0.001 | <0.001 | 0.003 | 0.001 | 0.001 | 1 |

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# QC CERTIFICATE OF ANALYSIS BR10108360

| Sample Description | Method | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 | ME-ICP64 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Al2O3 | CaO | Cr2O3 | Fe2O3 | MgO | MnO | TiO2 | V2O5 | Na2O | K2O | P2O5 |
| | Units | % | % | ppm | % | % | % | % | % | % | % | % |
| | LOR | 0.001 | 0.001 | 1 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| **STANDARDS** | | | | | | | | | | | | |
| BCS267 | | 0.712 | 1.560 | 146 | 0.772 | 0.036 | 0.173 | 0.155 | 0.002 | 0.051 | 0.118 | 0.023 |
| Target Range - Lower Bound | | 0.789 | 1.625 | | 0.734 | 0.054 | 0.138 | 0.157 | | 0.055 | 0.121 | |
| Upper Bound | | 0.911 | 1.875 | | 0.847 | 0.065 | 0.161 | 0.183 | | 0.066 | 0.142 | |
| BSC313-1 | | 0.036 | 0.007 | 1 | 0.013 | 0.002 | <0.001 | 0.013 | <0.001 | 0.004 | 0.005 | 0.001 |
| Target Range - Lower Bound | | 0.033 | 0.005 | <1 | 0.010 | <0.001 | <0.001 | 0.015 | | 0.002 | 0.003 | |
| Upper Bound | | 0.040 | 0.007 | 2 | 0.014 | 0.002 | 0.002 | 0.019 | | 0.004 | 0.006 | |
| **BLANKS** | | | | | | | | | | | | |
| BLANK | | <0.002 | <0.001 | <1 | <0.001 | <0.002 | <0.001 | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 |
| Target Range - Lower Bound | | <0.001 | <0.001 | <1 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Upper Bound | | 0.002 | 0.002 | 2 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| **DUPLICATES** | | | | | | | | | | | | |
| 9183- 100NM20 | | 0.021 | 0.034 | <1 | 0.007 | 0.008 | <0.001 | 0.017 | <0.001 | 0.004 | 0.002 | 0.004 |
| DUP | | 0.021 | 0.035 | 1 | 0.007 | 0.008 | <0.001 | 0.017 | <0.001 | 0.004 | 0.001 | 0.004 |
| Target Range - Lower Bound | | 0.019 | 0.032 | <1 | 0.006 | 0.007 | <0.001 | 0.015 | <0.001 | 0.003 | <0.001 | 0.003 |
| Upper Bound | | 0.023 | 0.037 | 2 | 0.008 | 0.009 | 0.002 | 0.019 | 0.002 | 0.005 | 0.002 | 0.005 |

# ILLUSTRATIONS