

# SUNRISE RESOURCES plc

("the Company")

AIM Announcement

4 July 2018

## CS PROJECT UPDATE

Sunrise Resources plc, the AIM-traded company focusing on the development of its CS Pozzolan-Perlite Project in Nevada, USA, is pleased to provide the following project update.

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### Permitting

- Permitting studies and regulatory process on track - season dependent baseline studies completed.
- Environmental consultants advise that the baseline studies have not identified any obstacles to the proposed mine development although the final assessment rests with the regulatory authorities.

### Pozzolan Testwork

- Strength-Activity-Index ("SAI") testing of Phase 2 priority drill samples complete.
- Main Zone:
  - SAI results for samples from infill and step out drill holes confirm thick intersections of high quality natural pozzolan ("HQNP").
  - 30m vertical thickness of HQNP from 1.5m depth to the bottom of drill hole 18CSRC31, a 300m step out from the nearest hole in the Main Zone.
- Tuff Zone:
  - SAI results from drill holes at east end of Tuff Zone confirm thick intersection of HQNP in all holes from near surface e.g. 43m from 3m depth to base of hole 18CSRC14.
  - Surface mapping samples indicate HQNP extends at least 750m along strike.
  - Three drill holes at far west end of Tuff Zone give mixed results.
- Northeast Exploration Area: 38m of HQNP intersected in hole 18CSRC32 from 1.5 m depth in first and, so far, only drill hole in this large target area.

### Perlite Testwork

- Expansion testwork complete. Application specific testing for cryogenic and horticultural applications complete. Testing for ceiling tile and plasters and mortar in progress.
- Results support multiple applications for different zones of perlite.

### Marketing

- Discussions and negotiations continuing with potential customers for HQNP and perlite. Samples provided for customer testwork.

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**Executive Chairman Patrick Cheetham commented:** "I am pleased to be reporting further progress as we advance the CS Project towards production. The favourable results from our baseline environmental studies will facilitate a smooth permitting process and the regulatory process is on track. Testwork results continue to be outstanding and will feed into our mine and process plant designs which we expect to complete within the next two months. In addition to the previously reported interest in our future perlite production, we are pleased with the high level of interest being shown by potential customers in our future HQNP production and we continue to service these enquiries and provide samples for the customers' own testwork."

## **Further information**

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### **Drill hole Location Plan**

A plan showing the location of Phase 1 and 2 drill holes is available on the CS Project page of the Company's website: <https://www.sunriseresourcesplc.com/cs-project>

### **Detailed information**

#### **Permitting**

The lead agency for permitting the CS Project is the (Federal) Bureau of Land Management ("BLM") and a reclamation permit is required from the Nevada Division of Environmental Protection.

The Company's expectation is that the CS Project will not require an extensive Environmental Impact Statement ("EIS") but rather a simpler Environmental Assessment ("EA"). This decision is made by the BLM based on an assessment of the project's potential impact on the human and natural environment. This requires that the Company carry out various baseline surveys to establish the pre-mining biological and cultural values of the land that may be disturbed in future. In this case the Company's identified "Project Area" covers 560 acres incorporating 431 acres of potential future disturbance.

The Company has now completed the season sensitive and key baseline studies over the Project Area. These included botanical surveys, which had to be completed in the peak growing season (spring or early summer) and wildlife surveys. The wildlife surveys included bird surveys and golden eagle surveys which need to be completed in the nesting season by helicopter and included a 10km buffer zone around the Project Area.

Baseline cultural surveys have also been completed over the Project Area and included assessment of archaeological and architectural values and indirect visual effects. A small number of archaeological features of significance were identified in the broader Project Area but as these are not within the proposed mine disturbance areas they can easily be avoided.

The Company's environmental consultants responsible for the biological and cultural surveys have concluded that the proposed mine development will not impact any significant biological or cultural sites, although the final assessment is made by the BLM.

The baseline survey reports will be submitted to the BLM for approval and following completion of the mine plan and preliminary process plant design a formal Plan of Operations will be submitted to the BLM. The Plan of Operations sets out the finer detail of the proposed mining and mineral processing operation and, together with the baseline studies, forms the basis on which the Environmental Assessment is made. This will be made available for public comment although the Project Area is not close to any human habitation.

#### **Pozzolan Testwork**

The testing programme for the 2018 Phase 2 drill samples is nearing completion and results for the highest priority drill samples have been received. The testwork programme has

comprised 7-day and 28-day SAI testing at Magmatics Inc's Idaho laboratory with selected samples being submitted to a third party for independent confirmation.

## **Main Zone**

In Phase 2, three drill holes were completed in the Main Zone to evaluate the extensive tephra deposits. These deposits have previously been sampled in surface outcrops and in Phase 1 drilling and, in places, are capped by perlite which is also a HQNP. The results from testing tephra samples from all three holes demonstrate thick intervals of HQNP.

Two of these holes are in the area being considered for first mine production and one hole (18CSRC31) was a 300m step out from previous drilling in the Main Zone. The step out hole was very successful with test results defining a 30m vertical thickness of HQNP from 1.5m depth to the bottom of the hole.

Thirteen drill holes tested separate areas of Perlite-HQNP in the Main Zone which have production potential for both perlite and HQNP. SAI testing of samples is continuing with excellent results to date.

## **Tuff Zone**

A second area being considered for initial mine production is the east end of the Tuff Zone where Phase 1 drilling identified thick intervals of volcanic tuff HQNP (non-perlitic).

SAI testing of samples from a further three holes completed over a strike length of 180m for mine planning purposes also demonstrate thick intervals of HQNP e.g. 43m vertical thickness from 3.0m to the end of drill hole 18CSRC14, open at depth.

These three holes are collared in outcropping tuff which has been traced continuously for several hundred metres to the east. SAI testing of samples collected during mapping of these outcrops demonstrates the tuff deposits meet the requirements for HQNP over an additional 570m strike length towards the west end of the Tuff Zone.

Samples from three drill holes at the west end of the Tuff Zone have given more mixed testing results and indicate a geologically more complex picture for this end of the Tuff Zone.

## **Northeast Exploration Area**

Drill hole 18CSRC32 is the first and, so far, only test of the Northeast Exploration Area. Although split from the Main Zone by the County Road this area is considered contiguous with it and covers a large area.

Hole 18CSRC32 intersected 38m of HQNP vertically from 1.5m to the end of the hole, open at depth.

The Northeast Exploration Area was included in the baseline surveys and will be permitted for future exploration, targeting long-term future reserves.

## **Perlite Testwork**

Drill samples and outcrop samples of perlite from the Main Zone have been tested for expandability and are now undergoing application specific testing. Testing for cryogenic and horticultural applications is complete and testing for plaster/mortars and ceiling tile applications is in progress.

Results continue to demonstrate potential for different applications for different parts of the perlite deposits. Testing of the perlite that caps the tephra deposits earmarked for first mine production test favourably against commercial reference material for horticultural applications

where the market is growing on the back of increasing demand from the marijuana industry as legalisation of marijuana spreads across North America.

Following the recent announcement of the signing of two Memoranda of Understanding (“MOU”) with two potential perlite customers a laboratory has been selected for the preparation of a crushed and size-screened 6 tonne sample for expansion testing of horticultural grade perlite on a commercial scale.

The pozzolan and perlite testwork results obtained to date will now allow for the completion of the phased mine plan and the initial process plant design.

## **Marketing**

The Company’s marketing programme for perlite is making good progress as evidenced by recent MOU announcements. As additional application testing data becomes available the Company is reaching out to additional perlite customers.

The Company is actively engaged in discussions and negotiations with potential offtake customers for the Company’s future production of HQNP and is very pleased with the level of interest being shown as the supplies of traditional fly ash pozzolan continues to tighten. HQNP samples are being provided for customer’s own internal test work.

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## **About Natural Pozzolan**

Pozzolan is a cementitious material that can partially replace ordinary Portland cement in cement and concrete mixes in amounts up to 35%. Natural pozzolans, therefore, have strong “green” credentials as the production of Portland cement is responsible for 5% of the global man-made carbon dioxide emissions with nearly one tonne of carbon dioxide (CO<sub>2</sub>) generated for each tonne of cement produced. Natural pozzolans can also improve the strength and chemical resistance of concrete. Natural pozzolans can also replace industrial by-product pozzolans in cement such as coal fly ash. The availability and quality of fly ash is under threat as coal-fired power stations are phased out in favour of natural gas plants and fly ash quality becomes more variable due to increased emission control legislation.

## **About Perlite**

Perlite is a glassy raw material which, when heated in a furnace, pops like popcorn and expands by up to 20 times in volume into a white or pale coloured, low density material. Expanded perlite is used in various industrial and household applications such as insulation, paint texturing, building materials, filter aids, insulating industrial cryogenic storage vessels and as a potting medium in gardening and horticulture to aid water retention and aeration of the soil. Some perlites can also be used as a natural pozzolan.

## **Note:**

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Website: <https://www.sunriseresourcesplc.com>