

("Sunrise" or the Company")

#### **AIM Announcement**

16 October 2017

# FURTHER POSITIVE TESTWORK & NEW DISCOVERY CS POZZOLAN-PERLITE PROJECT, NEVADA

Sunrise Resources plc, the AIM-traded company focusing on the development of its CS Pozzolan-Perlite Project in Nevada, USA, is pleased to provide this positive update on testing of samples from its recently completed trenching and drill programmes and to announce the discovery and staking of a new perlite (pozzolan) occurrence in Nevada.

#### **HIGHLIGHTS:**

- Additional pozzolan Strength Against Index ("SAI") test results received for drill and trench samples:
- 28 day SAI results for all Tuff Zone drill samples show increased strengths from the previously reported 7 day results, consistent with the performance of high quality natural pozzolan.
- 7 day SAI results for all Main Zone drill samples exceed the 28 day strength requirements of ASTM C618 after only 7 days curing. 28 day strengths, available for the majority of samples, also positive.
- Four surface samples from NE Zone return 7 and 28 day SAI results consistent with high quality natural pozzolan.
- 7 day SAI results complete for all trenches but one. All samples tested exceed the 28 day strength requirements of ASTM C618 at 7 days. Where available, 28 day results also positive.
- Perlite expansion testing results now available for all drill samples from the Main Zone perlite/pozzolan deposit.

Results support those previously reported for a smaller number of duplicate samples.

Application-specific expansion testing now underway.

• In-house exploration techniques result in discovery of new perlite/pozzolan deposit in Nevada.

Commenting today, Executive Chairman Patrick Cheetham said: "I am delighted to be reporting further good news from our CS Pozzolan-Perlite Project with positive implications for the production of both perlite and pozzolan. To date virtually every sample we have tested across a very wide area has met the key 'ASTM requirements for pozzolanic activity (chemical composition) and strength. We are now moving to a more advanced stage of pozzolan and perlite testing which we expect will help us narrow down the initial mining areas. I am also pleased to be announcing a new perlite discovery made as a result of inhouse proprietary exploration techniques which, I believe, give us a competitive edge in exploration for these types of deposit."

AIM: SRES | www.sunriseresourcesplc.com

## **Further information**

Sunrise Resources plc Patrick Cheetham, Executive Chairman	Tel: +44 (0)1625 838 884
Northland Capital Partners Limited Nominated Adviser and Broker Edward Hutton/David Hignell John Howes/Rob Rees	Tel: +44 (0)203 861 6625
Beaufort Securities Limited Joint Broker Jon Belliss	Tel: +44 (0)207 382 8300

## **Detailed Information.**

## **Pozzolan Testing**

The Company's pozzolan testing to date has focused on the key strength parameters required by ASTM standard C618 which applies to both natural pozzolans and coal fly ash.

In this test mortar cubes are made with partial substitution of Portland Cement by CS natural pozzolan and the strength of the mortar is compared to an "index" mortar produced using only Portland Cement. The strength of the mortars are measured after 7 days and 28 days curing (aging) to generate 7 day and 28 day measures of Strength Against Index ("SAI") for the mortar containing natural pozzolan.

# **Drill samples - Tuff Zone**

On 4 September 2017 the Company announced interim 7 day SAI results for drill samples from the Tuff Zone which showed that, in all cases, the pozzolan strength requirements of ASTM C618 required after 28 days curing had been exceeded after only 7 days curing.

28 day SAI results are now available and demonstrate that the mortars made using Tuff Zone drill samples show good continuing strength gain consistent with the performance of a high quality natural pozzolan.

#### **Drill samples - Main Zone**

7 day SAI results are now available for all composite drill samples of perlite and tephra from the five holes drilled in the Main Zone, and 28 day results are available for the majority.

As with the Tuff Zone, in all cases the 28 day strength requirements of ASTM C618 were exceeded after only 7 days curing and the available 28 day SAI results also demonstrate continued strength gain consistent with the performance of a high quality natural pozzolan.

#### **Surface samples - NE Zone**

In July 2017 four surface samples were collected from the NE Zone, a more recent discovery of tephra north-east of the Main Zone. (For a discussion of geology see release of 4 September 2017).

Both 7 and 28 day SAI results have been received and are consistent with the positive results from the Tuff Zone and Main Zone.

AIM: SRES | www.sunriseresourcesplc.com

## **Trench samples**

The trenching programme carried out in July tested more speculative areas peripheral and to the east and north of the Main Zone for occurrences of perlite and pozzolan. Eleven trenches were completed mainly in the transition zone from perlite to tephra and in the tephra/silty tuff zones.

Preliminary trenching results were reported in the news release of 4 September 2017. Since then 7 day SAI results have been received for all but one trench sample and some 28 day SAI results have also been received. All 7 day results exceed the 28 day strength required by ASTM C618 and available 28 day results show the continuing strength gains with time required of a high quality pozzolan.

The trenching results, taken together with results from outcrop samples, demonstrate that all of the perlite, tuff and tephra samples tested to date can be considered to be natural pozzolans meeting the strength requirements of ASTM C618. They also confirm that the Main Zone remains open to the south, extends further north and east than previously defined and that the Main Zone and NE Zone are part of a continuous sequence of adjacent and overlapping zones of pozzolanic perlite and tephra.

Pozzolan testing of drill and trench samples is now progressing to include ASTM certification and testing of a wider range of properties that can improve the performance of concretes through partial substitution of Portland Cement. This includes water demand, mitigation of the deleterious alkali-silica reaction that affects concretes made using only Portland cement, resisting sulphate attack and improving long term strength and durability.

# **Perlite Testing**

Results are now available for expansion testing of the twenty-nine composite drill samples submitted to independent laboratory In-Mat-Lab in Greece.

These results support the very positive conclusions drawn from the results reported on 4 September for a more limited number of duplicate samples tested at the New Mexico Bureau of Geology and Mineral Resources laboratory.

Testing to date has been conducted on raw material sized in the range +0.075-0.3mm – a size range typical for raw material expanded commercially for use in various construction industry applications which account for the bulk of raw perlite demand. In commercial practice perlite raw material is produced in a range of size fractions for a wider range of applications, including horticulture where a particularly coarse raw material is required.

In-Mat-Lab has made recommendations for application-specific testing and a further testwork programme has been agreed. This work has now started and results are expected within the coming months.

The more advanced stages of pozzolan and perlite testing will allow the Company to better define the target markets for its pozzolan and perlite, provide further information for potential customers, and allow the development of a mine plan based on the best performing materials.

# **New Discovery**

The Company's original discovery of the CS Project was made through the application of a specific proprietary exploration technique.

As part of its regional Pozz Project, the Company has refined the technique and is now applying it over other geologically prospective areas in Nevada to identify targets of interest.

Over the past few months a number of targets were selected for follow-up sampling and as a result of that work a new perlite/pozzolan occurrence has been discovered.

The occurrence comprises a conical outcrop of glassy volcanic rock having a base diameter of approximately 400m and a height of up to 45m above the surrounding plain, suggesting good tonnage potential.

A sample from the deposit has been tested by In-Mat-Lab for its perlitic expansion properties with very good results showing potential for a range of perlite applications. Its pozzolanic properties are now being tested, and a sample will be included in the application-specific perlite testing programme now underway on CS Project drill samples.

A group of Mining Claims has been staked to secure this new prospect which has been named the "NewPerl Prospect."

#### **ENDS**

#### **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.

## Notes:

- 1. ASTM International is a globally recognized leader in the development and delivery of voluntary consensus standards. ASTM C618 is the standard for natural pozzolan.
- 2. The news release may contain certain statements and expressions of belief, expectation or opinion which are forward-looking statements, and which relate, inter alia, to the Company's proposed strategy, plans and objectives or to the expectations or intentions of the Company's directors. Such forward-looking statements involve known and unknown risks, uncertainties and other important factors beyond the control of the Company that could cause the actual performance or achievements of the Company to be materially different from such forward-looking statements. Accordingly, you should not rely unduly on any forward-looking statements and save as required

by the AIM Rules for Companies or by law, the Company does not accept any obligation to disseminate any updates or revisions to such forward-looking statements.

- 3. This announcement contains inside information.
- 4. The information in this release has been compiled and reviewed by Mr. Patrick Cheetham (MIMMM, MAusIMM) who is a qualified person for the purposes of the AIM Note for Mining and Oil & Gas Companies. Mr. Cheetham is a Member of the Institute of Materials, Minerals & Mining and also a member of the Australasian Institute of Mining & Metallurgy.

Shares in the Company trade on AIM. EPIC: "SRES". Website: www.sunriseresourcesplc.com