

# SUNRISE

RESOURCES plc



**Company Presentation**  
**June 2022**

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# Directors & Company Secretary



**Patrick Cheetham**  
**Executive Chairman**

A geologist with 40 years in exploration management and 35 years as executive director of publicly traded companies. Currently Executive Chairman Tertiary Minerals plc.



**James Cole**  
**Non-Executive Director**

Chartered Accountant. Director of Goal Group, Formerly CFO for Cominco Resources Ltd, AIM/TSX traded European Minerals Corporation plc and TSX/OSE traded Crew Gold Corporation.



**Roger Murphy**  
**Non-Executive Director**

Formerly CEO Power Metal Resources plc and MD Investment Banking, Dundee Securities Europe Ltd. Worked as a geologist for various companies, including Anglovaal Mining and British Petroleum.



**Rod Venables**  
**Company Secretary**

A qualified solicitor with extensive experience in corporate finance and broking with Greig Middleton, Old Mutual Securities, Allenby Capital and Northland Capital Partners Limited.

# Strategy & Business Model

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The **Principal Activity** of the Company is the acquisition, exploration and development of mineral projects, primarily in Nevada and the western USA.

Our **Strategy** is to develop the CS Pozzolan-Perlite Project as a supplier to the construction industries in Nevada & California and the horticultural agricultural sectors nationally in the US; to become self-funding and to unlock the value inherent in its portfolio of mineral projects through sale, joint venture or other arrangements.

The Company's **Business Model** is to acquire 100% ownership of mineral assets at minimal expense. This usually involves staking claims or applying for exploration licences from the relevant authority. In some cases, rights are negotiated with existing project owners for initially low periodic payments that rise over time as confidence in the project value increases.

# The Investment Case

# AIM: “SRES”

- Shares trade on AIM under the symbol “SRES”.
- Operating in safe mining jurisdictions – Nevada & Australia.
- Well defined strategy to develop the CS Natural Pozzolan-Perlite Project in Nevada.
- CS & Hazen - key projects contribute to sustainability and net zero-targets in the construction industry.
- World leading producer of sepiolite clay, Tolsa S.P.A., recently partnered to evaluate the Company’s Pioche Sepiolite Clay Project.
- Strong portfolio of precious metal, industrial minerals & royalty projects.
- Experienced Board of Directors.

## Management shareholdings aligned with investors interests

Directors Shareholdings		
Patrick Cheetham	236,820,232	6.38
Roger Murphy	58,972,756	1.59
James Cole	2,224,937	0.06

Share Structure	
Listing	AIM: SRES
Shares on issue	3,711,086,466
Warrants (0.11-0.195p)	47,000,000
Market Capitalisation (undiluted)	£4.6 million
Market Cap 12 month range	£4.6-9.6 million

# Overview - Company Assets

Focus is on development of the CS Project. The Company also has a large portfolio of industrial mineral and precious metal projects:

## Industrial Minerals Projects (Nevada)

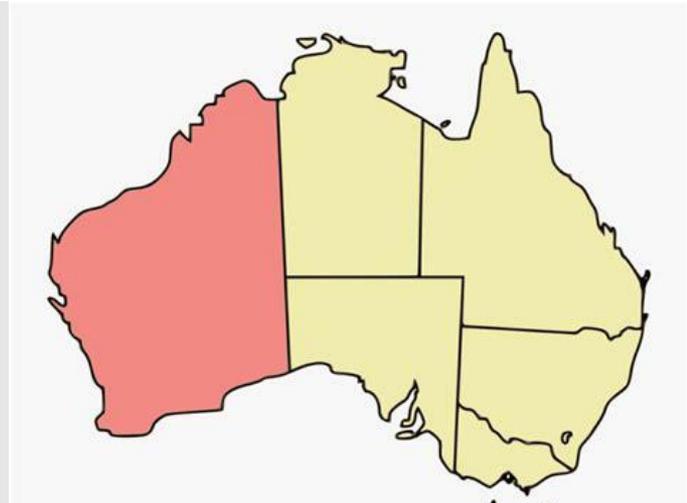
- **CS Pozzolan Perlite Project**
- Hazen pozzolan project
- NewPerl Perlite Project
- Jacksons Wash Perlite Project (under option to Kinross)
- Pioche Sepiolite Project (under Option to Tolsa)
- County Line Diatomite Project

## Precious Metal Projects (Nevada)

- Clayton Silver Project
- Bay State Silver Project
- Myrtle Gold-Silver project
- Newark Gold Project

## Australia

- Baker's Gold project



# Overview - Royalty Interests

As a result of the ongoing divestment of non-core assets the Company holds royalty interest in a number of projects in Nevada:



## Royalties:

### **3% Net Smelter Royalty - Junction Cu-Ag-Au Project**

(Project operated by TSX:V listed VR Resources Ltd (“VR”). VR can purchase half of 3% royalty for US\$500,000 per 0.5%).

### **2% Net Smelter Royalty - Garfield Cu-Ag-Au Project**

(Project operated by Golden Metal Resources LLC (“GMR”), a subsidiary of AIM-traded Power Metal Resources plc. GMR can purchase half of 2% royalty for US\$1,000,000).

### **2% Net Smelter Royalty - Stonewall Epithermal Au Project**

(Project operated by Golden Metal Resources LLC (“GMR”), a subsidiary of AIM-traded Power Metal Resources plc. GMR can purchase half of 2% royalty for US\$1,000,000).

# Focus - Nevada, USA

## Why Nevada?

- Consistently voted amongst the top jurisdictions in the world for investment based on the Frazer Institute's "Investment Attractiveness Index" (Annual Survey of Mining Companies).
- One of the top gold producing jurisdictions in the world.
- Is a significant producer of copper and industrial minerals.
- 63% of land area is public land (forty-eight million acres) where mineral rights can be "claimed" by staking under the Mining Law of 1872.
- Has a robust and transparent mine permitting process.



# Natural Pozzolan

## A valuable construction industry raw material for a greener future

A **Pozzolan** is a silica or silica and aluminium rich material which will, in the presence of moisture, chemically react with lime at ordinary temperatures to form compounds possessing cement-like properties.

Pozzolans can be:

- **Industrial by-products** e.g. coal-fired power station fly ash, blast furnace slag, etc.
- **Natural** – various glassy volcanic materials such as tuff, tephra, pumice & perlite (e.g. **CS Project deposits**)

Pozzolans are part of a group of materials called **Supplementary Cementitious Materials (SCMs)** which:

- improve the strength and durability of concrete structures
- significantly reduce the impact of concrete cancer.



# Natural Pozzolan

Cement production is currently responsible for 7-8% of global carbon emissions from:

- Burning coal & natural gas
- Burning limestone to produce cement clinker<sup>1</sup>  
( $\text{CaCO}_3 \Rightarrow \text{CaO} + \text{CO}_2$ )

(<sup>1</sup>Cement clinker is an intermediate product that is ground with additives to produce ordinary Portland Cement).

The cement and concrete industries are committed to net zero emissions by 2050.

This is an enormous undertaking for the cement industry, requiring structural change and alternative raw materials.



# Natural Pozzolan - Towards Sustainability & Net Zero

Natural pozzolan contributes to sustainability in the cement and concrete industries through:

- Stronger & longer lasting structures
- Greener cement/concrete



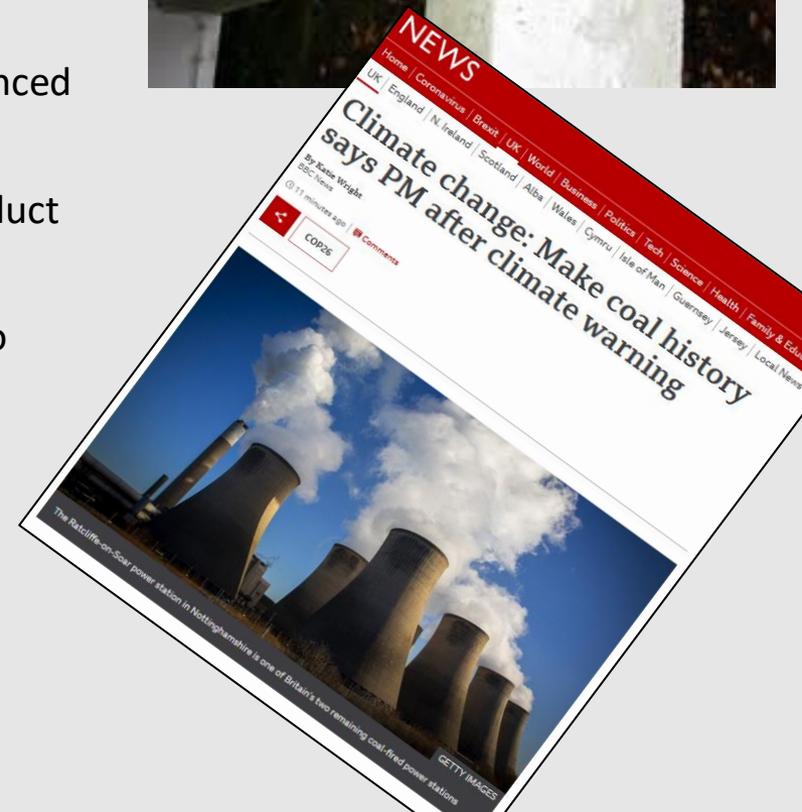
# Natural Pozzolan

## Stronger and more durable concrete structures.

- Concrete cancer is common in many modern concrete structures.
- Replacing 20-30% of cement in concrete with SCMs like natural pozzolan make stronger and more durable concrete structures that last longer, and require less frequent maintenance & replacement.
- Use of SCMs is now increasingly mandated in US State financed infrastructure projects.
- Most commonly used SCM is fly ash pozzolan, a waste product from burning coal in power stations.
- However - supply of fly ash now in structural decline due to the closure of coal-fired power plants in the western World and the rise of renewables.

**Natural pozzolan SCM can fill the gap being left by fly-ash.**

Concrete cancer



# Natural Pozzolan in Roman Structures

The Romans were the first to use natural pozzolan as a cementitious material on a large scale and many ancient structures built with natural pozzolan survive today



The Pantheon Dome (above)  
*43.4 m span 2,000 years old and still the world's largest concrete dome suspended without reinforcement.*

“Made entirely out of concrete, without the reinforcing support of structural steel, no modern engineer would dare attempt such a feat.” Nor would modern building engineering codes allow it - today's Portland cement concrete simply isn't good enough” (David Moore, *The Roman Pantheon: The Triumph of Concrete*)



# Natural Pozzolan – Green Cement

Natural pozzolan can play a part in decarbonizing the cement and concrete industries by:

- Replacing a portion of ordinary cement in concrete.
- Substituting for cement clinker in making different types of cement (e.g. so-called 1P cements).
- As a raw material in a new generation of so-called “geopolymer” cements that do not evolve CO<sub>2</sub> during manufacture.

Rizal Portland Super Type 1P cement is specially formulated and manufactured with natural minerals to provide additional properties not found in ordinary Portland cement. The natural mineral component (Philippine Tuff) ensures increased strength and durability over time.



3D printing using geopolymer concrete

# The move to net Zero - Developments in 2021

Use of natural pozzolan in green cement is being stimulated by Climate change agenda:

- COP 26 Climate Change Conference:
  - Most countries agree to **phase out** coal power generation.
  - China & India agree to **phase down** coal power generation.

& the “greening” of the cement & concrete industries:

- California introduced “Cement Decarbonization Legislation” requiring zero carbon emissions from cement production by 2045. Similar Federal legislation is expected to follow.
- US Portland Cement Association publishes “Roadmap to Carbon Neutrality” where one key strategy is increasing substitution of cement with SCMs like natural pozzolan.
- Concrete producers under increasing pressure from specifiers to produce concrete with less “embodied” carbon.
- US State Departments of Transport set to mandate use of SCMs in State infrastructure projects.

& US Government economic stimulus:

- US Congress approved \$1trillion infrastructure bill should increase concrete demand and prioritises projects with a green advantage.



# Perlite - Uses and Markets

Perlite is a glassy volcanic raw material which, when heated in a furnace, pops like popcorn and expands up to 20 times in volume into a white or pale coloured, low density material used in various household and industrial applications such as:

Horticulture (Coarse perlite - 16% of total usage)

- A potting medium in gardening and horticulture to aid water retention and aeration and a favoured growing medium for cannabis.

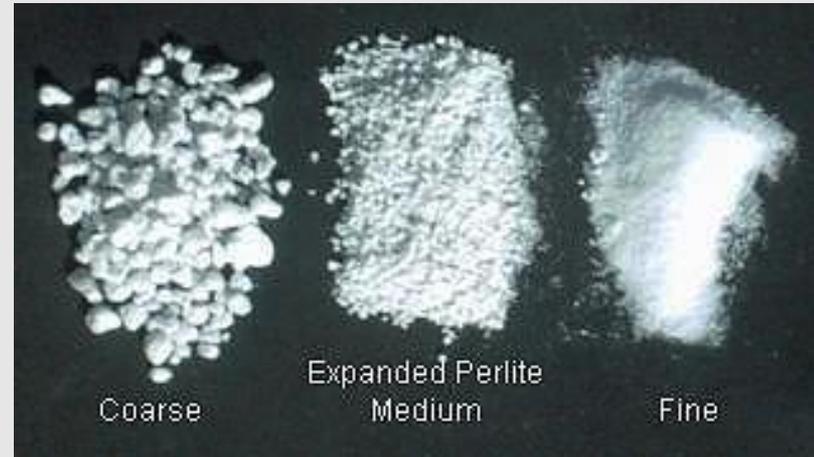
Construction uses medium and fine perlite (84% of total usage)

- Insulation.
- Paint texturing, plaster and concrete fillers.
- Ceiling tiles and wallboard jointing compounds.
- Fire proofing.
- Industrial cryogenic storage vessels (e.g. LNG Tankers).

Demand linked to construction industry demand.

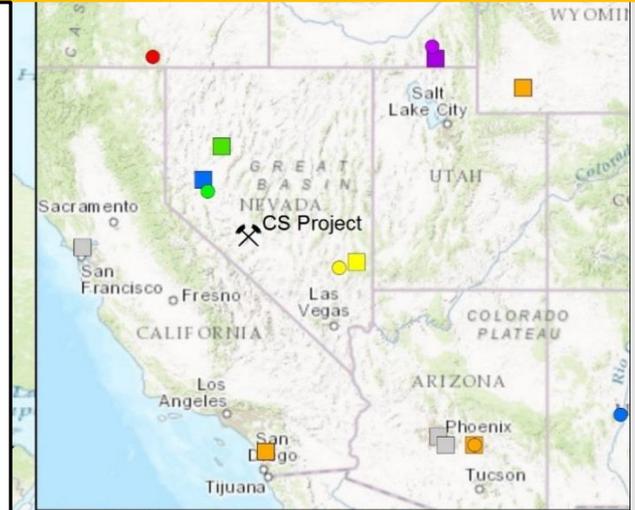
Other major use of fine perlite is in beer and wine filtration.

**Perlite is also a natural pozzolan.**



# CS Perlite - Markets

- World production 3.4 million tonnes (USGS2020) : China 38%, Turkey 19%, Greece 21%, USA 15%
- US Consumption 610,000 tons consumed, 31% imported (USGS 2020)
- Only three large perlite mines – all now downstream integrated with their own expansion plants
- Numerous expansion plants in 27 states. Many are independent with no captive mine supply
- Last independent mining company now taken over by multinational and moving down stream to compete with its customers
- Opportunity to supply raw perlite to independent expanders
- Raw perlite (horticultural grade) : c \$90-100/ton ex-mine
- Expanded Perlite average \$350/t >\$850/t for filter grade



**Imports into eastern states from Greece**

# Perlite Market Developments 2021

## US supplies of horticultural grade raw perlite to independent perlite expanders severely curtailed in 2021:

- Largest US raw perlite supplier, Cornerstone Minerals, taken over by multinational downstream integrated industrial minerals company Imerys. Raw perlite now reserved for own downstream consumption.
- Second major raw material supplier, Dicaperl, ceased supplying independent expanders.

Good opportunity for new suppliers of raw perlite to supply to independent expanders.

## & demand at record highs:

- Demand for raw perlite has been at record highs and independent expanders have been reluctant to take commercial furnaces offline to test new sources, filling their supply gap with inferior imported perlite at higher cost to their business.



# CS POZZOLAN-PERLITE PROJECT

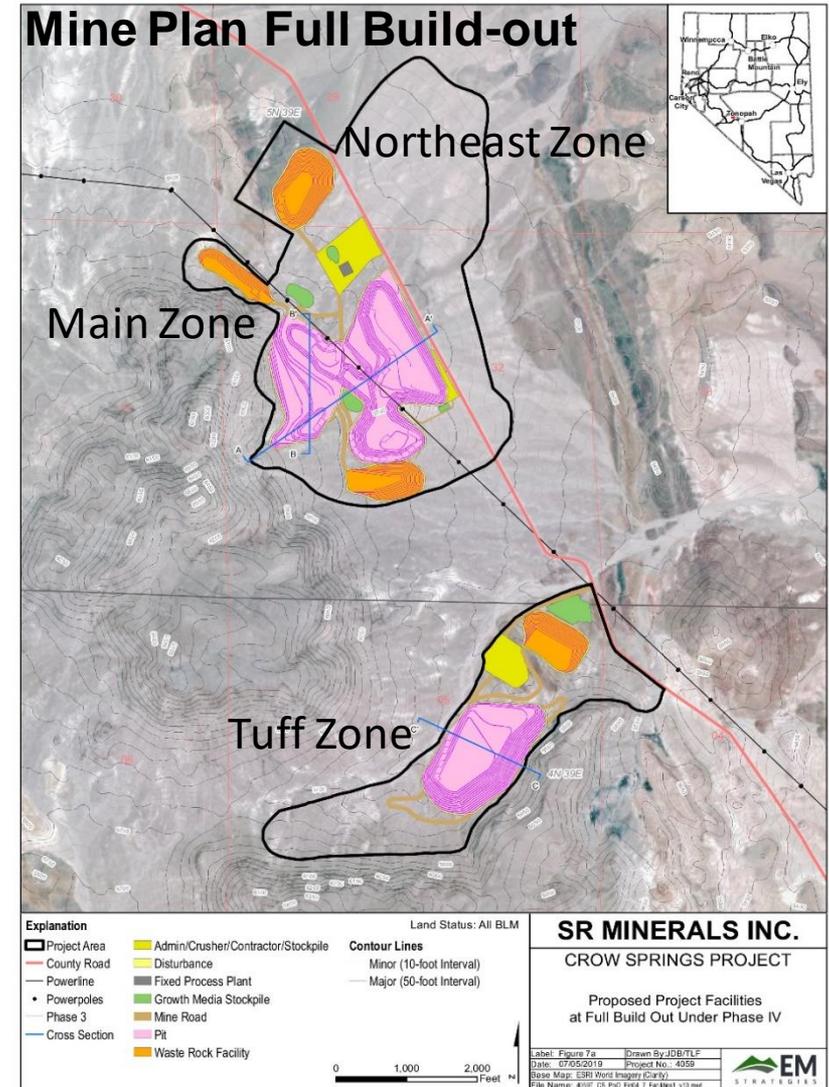
A “mine-ready” project



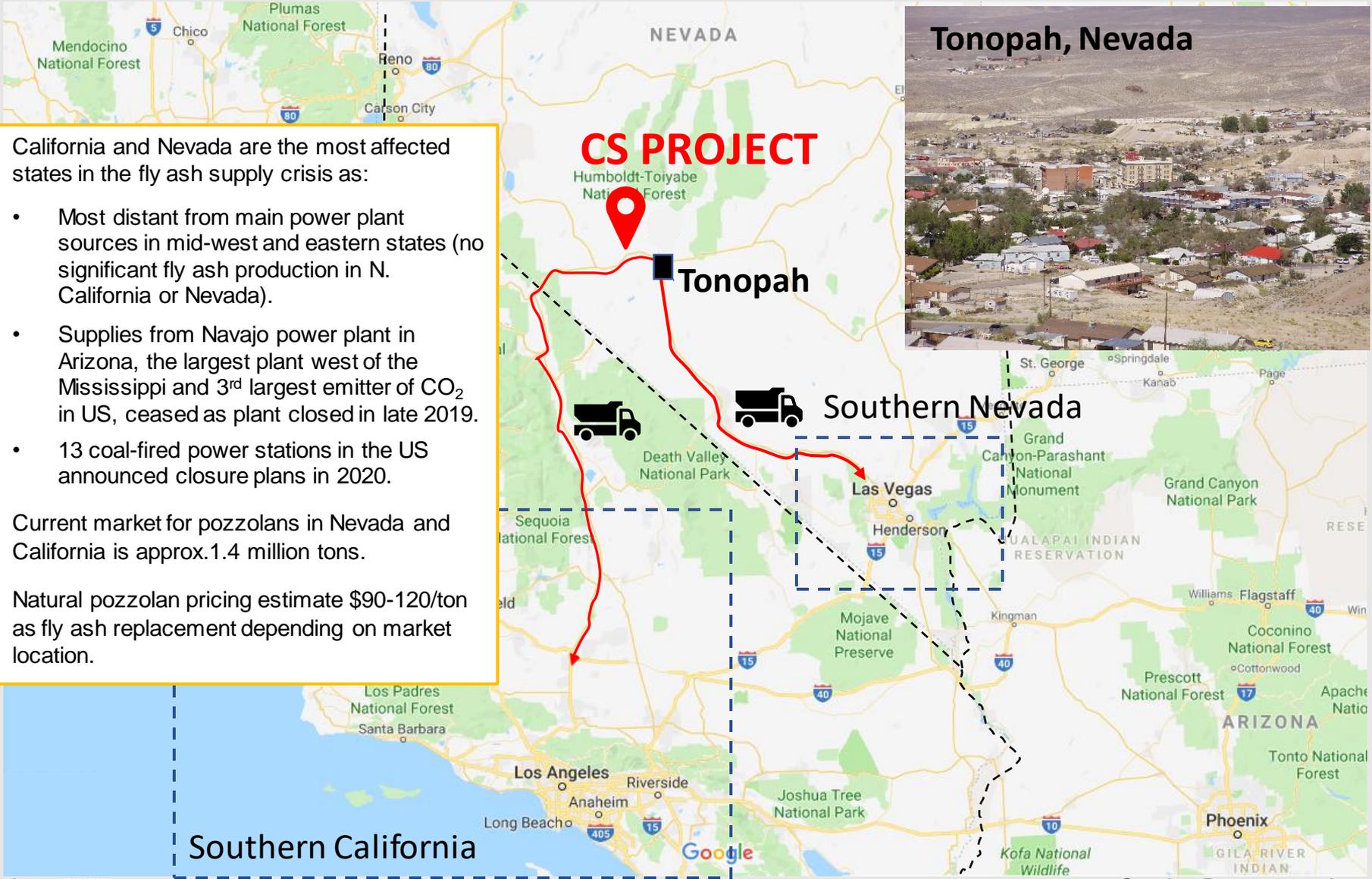
Extracting 500t bulk sample of natural pozzolan for CRMC

# CS Project - Mine Ready

- Permitted for production – first drill hole to issue of mine permit just 4 years.
- Long-life project – 27-year mine plan targeting production of:
  - 14.5 million tons of pozzolan at starting rate of 100,000t per year climbing up to 500,000t per year.
  - 1.3 million tons perlite starting at minimum rate of 20,000t per year climbing up to 100,000t per year (for 15 years).
- Large unexplored areas potentially increase mine life.
- Open pit operation with low strip ratios: 0.25 tons waste per ton ore in Main Zone, 0.16 in Tuff Zone, most waste mined after Year 8.
- Adjacent to County maintained road, 120KV power line and 9 miles off Highway 6.
- 20 minutes from Tonopah (regional town).
- Targeting pozzolan markets in southern California and Nevada, and raw perlite markets throughout the USA.



# CS Pozzolan - Target Markets



Tonopah, Nevada

California and Nevada are the most affected states in the fly ash supply crisis as:

- Most distant from main power plant sources in mid-west and eastern states (no significant fly ash production in N. California or Nevada).
- Supplies from Navajo power plant in Arizona, the largest plant west of the Mississippi and 3<sup>rd</sup> largest emitter of CO<sub>2</sub> in US, ceased as plant closed in late 2019.
- 13 coal-fired power stations in the US announced closure plans in 2020.

Current market for pozzolans in Nevada and California is approx. 1.4 million tons.

Natural pozzolan pricing estimate \$90-120/ton as fly ash replacement depending on market location.

Southern California

# CS Project - Production Options

## Pozzolan:

**Low Capital Cost Start up Option (c. \$1m)** – Sell run of mine ore to cement companies.

- Low risk, lower cost but lower value product.

**Investment Option (c.\$30m)** – Build a grinding facility (off site) to produce a fine ground pozzolan for sale to the cement *and* ready-mix concrete markets.

- Requires capital investment - higher value product with larger market.



# CS Project - Production Options

## Perlite:

### Low Capital Cost Start up Option (c.\$2-3m)

Produce only coarse horticultural grade raw perlite using contract mobile crushing and screening operation.

- Low risk, lower cost single perlite product with by-product pozzolan for sale to cement companies.

**Investment Option (c. \$10 million)** - Build a fixed perlite processing plant to produce a range of perlite products for horticulture and industrial applications. Preliminary plant design completed.

- Require higher capital investment but achieves higher utilisation of the perlite resource for perlite markets.

Mobile crushing & screening plant



Perlite screening plant Milos, Greece

# Looking to the future.....

- Building on the Company's experience with industrial minerals and the CS Project.
- Applying the business model to other region centres of cement and concrete consumption in the Western States.
- First new project acquired - Hazen Pozzolan Project.

# Hazen Pozzolan Deposit

## Second pozzolan project for the Company.

- Complementary to CS Project.
- Targeting northern Nevada and northern California pozzolan (CS project targeting southern California and southern Nevada markets).
- Preliminary test sample results suggest Hazen pumice is high quality natural pozzolan.
- ASTM C618 strength testing equal to CS natural pozzolan and other commercial natural pozzolans.
- Material now being tested by a number of cement companies.



# Hazen Pozzolan - Markets



# Pioche Sepiolite Project

## Option Agreement signed with Tolsa, world's largest producer of sepiolite.

**Sepiolite** is a non-swelling, lightweight, porous hydrous magnesium silicate clay

- High surface area and porosity account for sepiolite's outstanding sorption capacity.
- Largest market globally is for use in light-weight non-clumping pet litters where it has superior properties compared to other clays used in this application.
- Sepiolite is also used extensively in agriculture as a slow-release absorbent and adsorbent carrier for chemicals and pesticides, and in animal feeds as a binder and carrier for nutrients and growth promoter
- Colloidal properties make it useful as a suspending agent in paints, medicines, pharmaceuticals and cosmetics.
- Sepiolite, unlike other clays, is not affected by salt water and so sepiolite drilling muds are used in oil field wells where brine formations are a problem.
- It is also the only clay that is stable at high temperatures and so is used in drilling muds for geothermal wells.
- Prices for sepiolite products depend on percentage sepiolite content and the degree of processing which affects the applications and can reach over US \$1,800/t for specialist sepiolite products.

**Sepiolite is a very uncommon clay because of both its unique characteristics and scarce occurrence. There are very few commercial deposits in the world.**

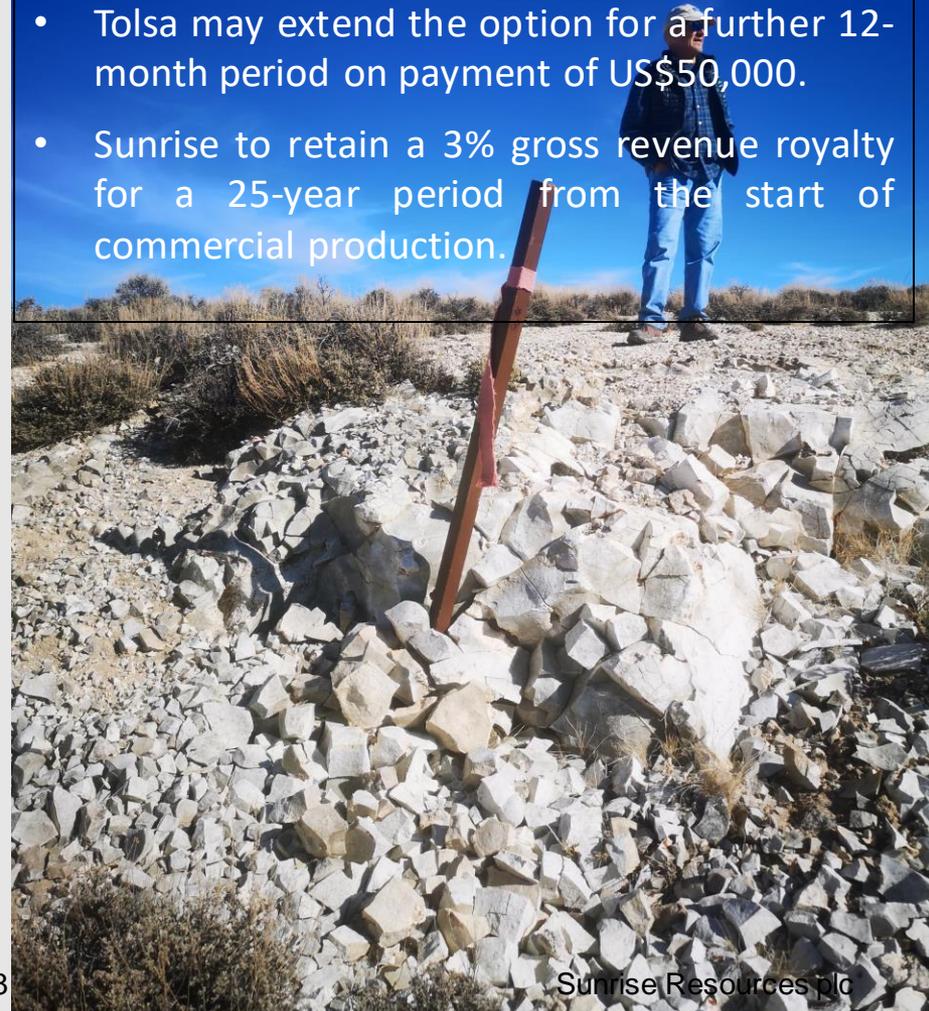


# Pioche Sepiolite -Tolsa Option



- Privately owned, Spanish specialist clay mining and processing company.
- Operates in 95 countries including the USA (bentonite mining operations in Wyoming and processing facilities in Nevada).
- Largest producer of sepiolite in the world, mainly from its mining operations near Madrid.
- Turnover of Euros 91 million in 2020.
- Clay processing capacity of 1.2 million tons/year, annual production of over 1 million tons of clay products.

- Sunrise has granted (June 2022) Tolsa an exclusive 6-month Option to Purchase the Pioche Project claims for US\$1.25 million.
- Tolsa may extend the option for a further 12-month period on payment of US\$50,000.
- Sunrise to retain a 3% gross revenue royalty for a 25-year period from the start of commercial production.



# Precious Metal Exploration

Drilling at the Clayton Silver-Gold Project



# Clayton Silver-Gold Project, Nevada

- Drill Hole results from first drill hole completed to twin historical hole CL-15.
- Massive quartz vein and quartz breccia intersected in target zone between 83.52m and 91.44m downhole (true thickness unknown) containing fine grained disseminated sulphides including mineral logged as the silver sulphide mineral acanthite.
- Recovered core from a **7.92m mineralised interval graded 303 g/t (8.84 ounces/ton) silver** and 0.2 g/t gold (from 82.30m down hole, 1.98m of no core recovery in this interval).
- Includes **4.27m interval grading 408 g/t (11.89 ounces/ton) silver** and 0.23 g/t gold from 83.82m depth.
- **84% higher silver grade in hole 20CLDD001** compared to twinned 1980s-hole CL-15 which reported 7.62m grading 165 g/t silver (4.8 ounces/ton) and 0.4 g/t gold.

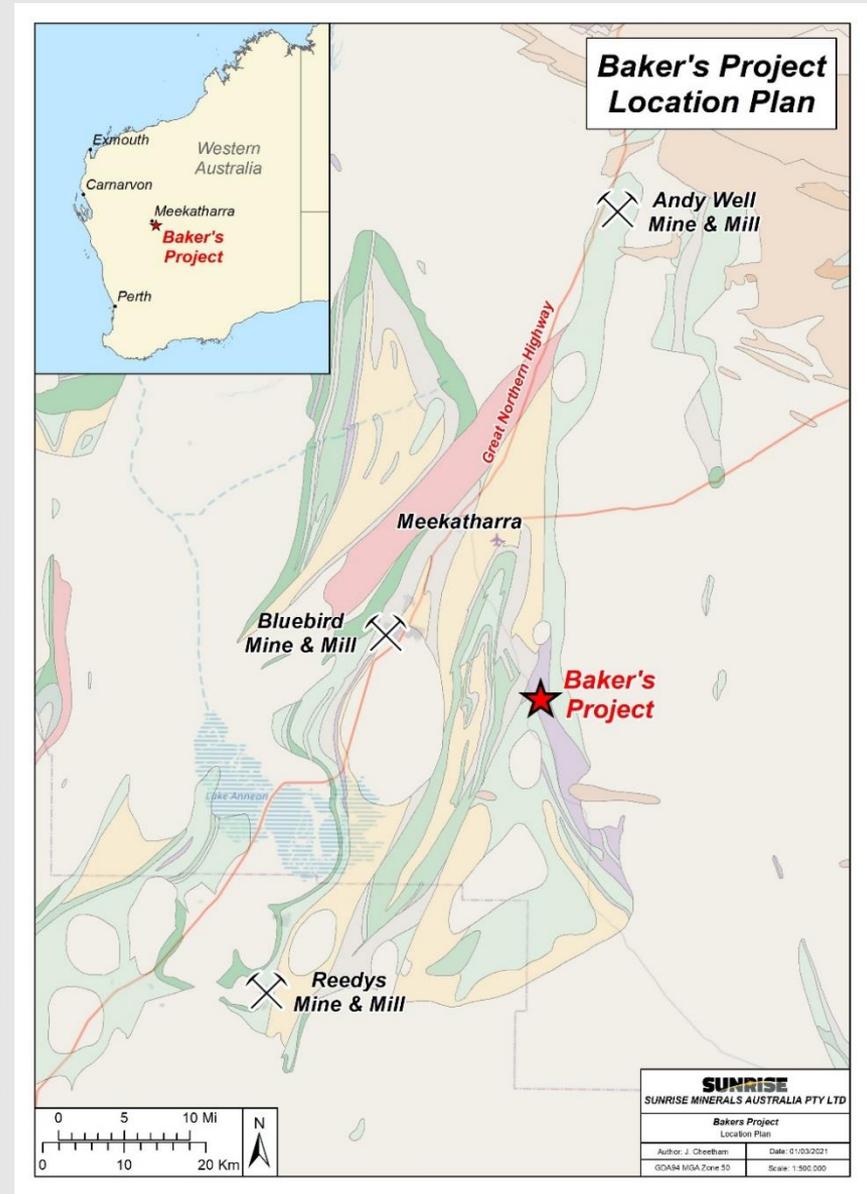
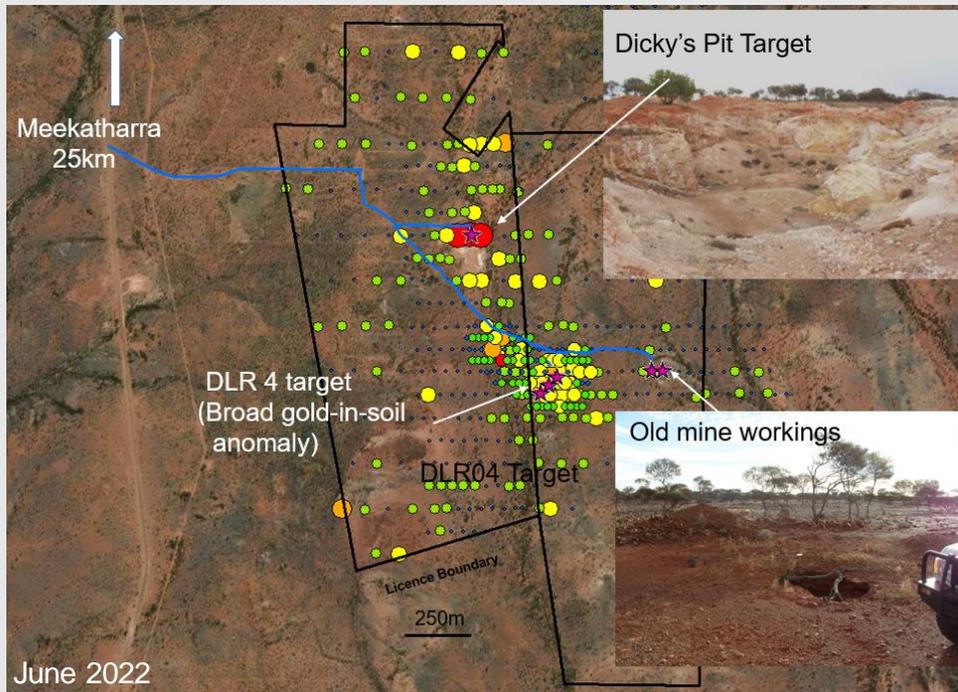


# Baker's Gold Project - Australia

The Project is located:

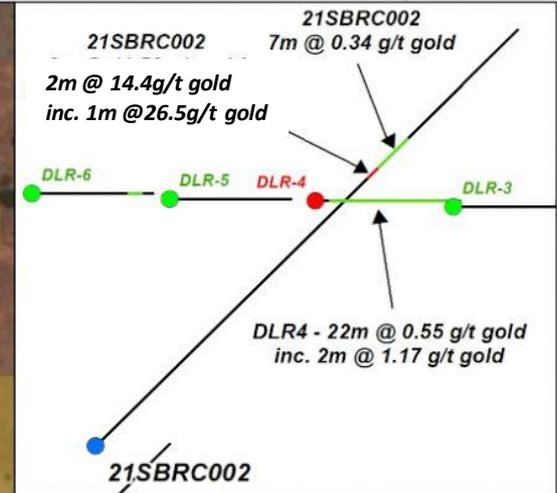
- 25 kilometres south-east of Meekatharra in the Murchison Goldfield of Western Australia.
- on the eastern limb of the Meekatharra Greenstone Belt which has yielded several million ounces of gold from present and past producing gold mines.

Sunrise has carried out mapping, soil sampling and a first round of drilling.



# Baker's Gold Project - High Grade Gold

- Significant gold mineralisation encountered at DLR-4 Target and Dicky Lee pit including:
- **Hole 21SBRC002 on DLR4 Target intersected 2m grading 14.4 g/t gold from 64m downhole: includes 1m grading 26.5g/t gold from 64m.**
- Mining lease applied for. Follow up drilling now required.



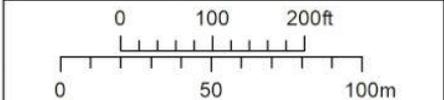
21SBRC002  
2m @ 14.4 g/t gold  
inc. 1m @ 20.40 g/t gold  
and 7m @ 0.34 g/t gold

DLR4 - 22m @ 0.55 g/t gold  
inc. 2m @ 1.17 g/t gold

DLR 4 target  
(Broad gold-in-soil  
anomaly)

7035200

7035200



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**Baker's Project  
Drill Plan - DLR4 Target**

Author: J. Cheetham	Date: 28th June 2021
GDA84 MGA Zone 50	Scale: 1:2,000

659800



THANK YOU FOR YOUR ATTENTION

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