



Cornish Lithium

Lithium in Geothermal Waters: Besore Project

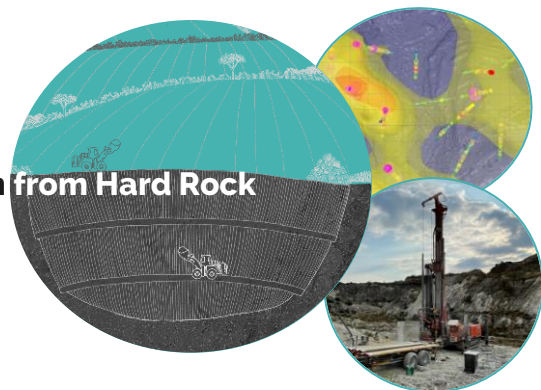
July 2024



BUILDING BRITAIN'S LITHIUM SUPPLY CHAIN

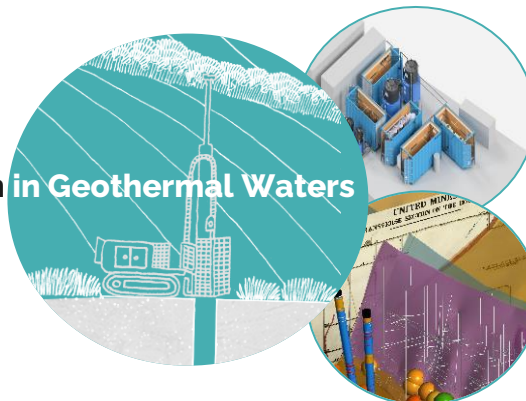
Opportunity to develop two sources of lithium to supply the UK

Lithium from Hard Rock



- One of most advanced lithium projects in Europe
- Existing china clay pit with associated infrastructure
- Innovative low carbon processing methodology
- UK's first defined lithium JORC Resource
- Demonstration plant under construction
- Commercial production expected in early 2027

Lithium in Geothermal Waters



- Opportunity to develop countywide network of modular DLE sites with a central refinery
- Two c.1,000 m-deep research boreholes complete
- Two 2,000m wells successfully drilled and tested
- UK's first DLE pilot plant established
- Demonstration scale site selected to prove commercial viability

Cornish Lithium "at a glance"

Raised through angel investors, crowdfunding and government grants

c.£20.8m

Funding received from TechMet – specialist technology metals firm

£18.0m

Employees and consultants across four sites in Cornwall

c. 100

Stable, non-seasonal jobs

Funding 2023 - received from UKIB, EMG and TechMet

c. £53.6m

A proud Cornish company



WHY LITHIUM?

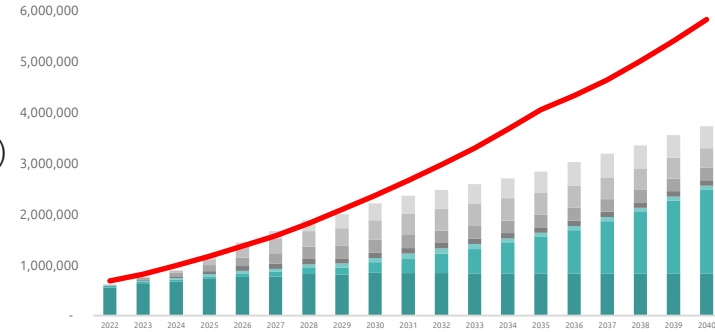
- Key component of the batteries used in Electric Vehicles and portable electronics
- “Critical Mineral” in UK Government’s first-ever critical minerals strategy (2022)
- Domestic supply of lithium a key element of UK’s Battery Strategy (2023)
- Lithium extraction identified as a “high potential opportunity” for Cornwall

How much lithium is in everyday items?



Global LCE Supply & Demand By Source (000 MT LCE)

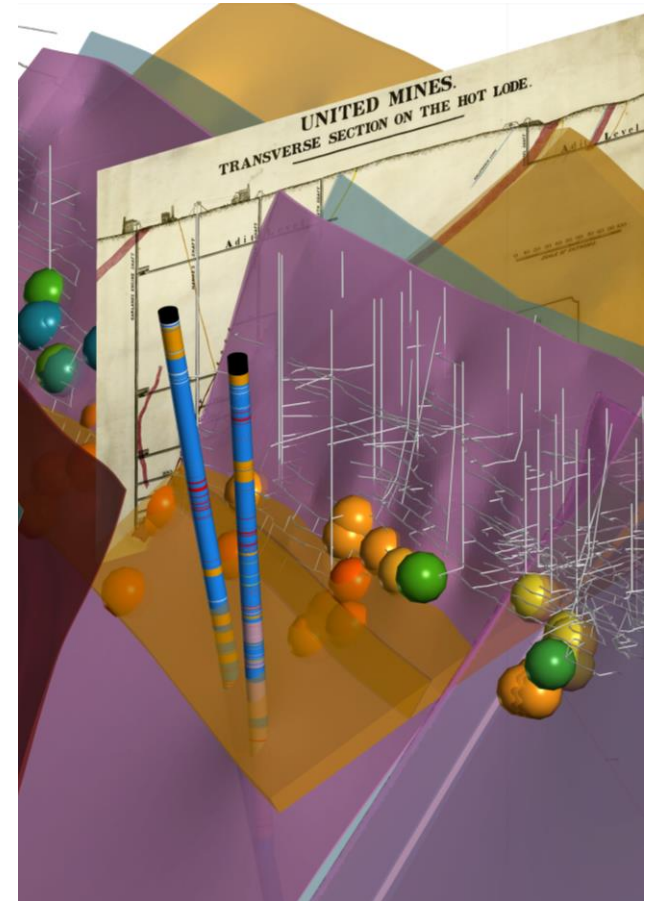
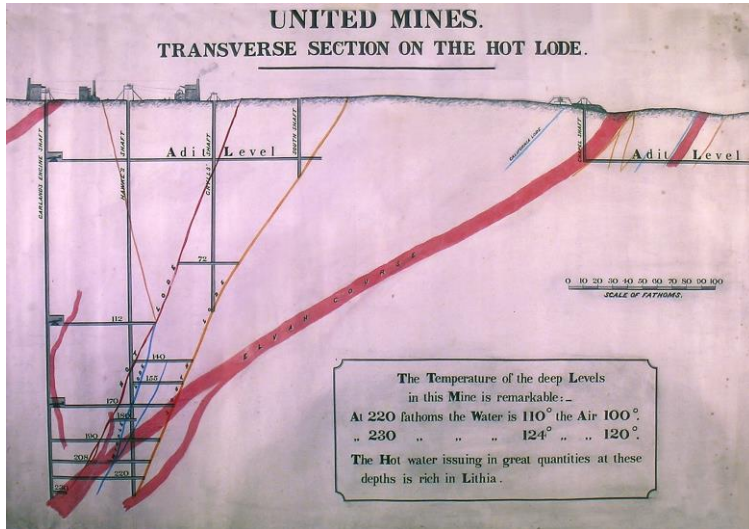
Source: Benchmark Mineral Intelligence



UK:100% EV by 2035
Norway:100%EV by 2025
EU: 100% EV by 2035
China: 100% EV by 2035
India:100% EV by 2040

LITHIUM IN CORNWALL

- Mining has long been part of Cornish culture
- Significant mining skill sets in local population
- Opportunity for stable non-seasonal jobs
- Lithium in Cornwall known about since **1864**, discovered at United Downs
- Old mining maps and data used for today's lithium exploration

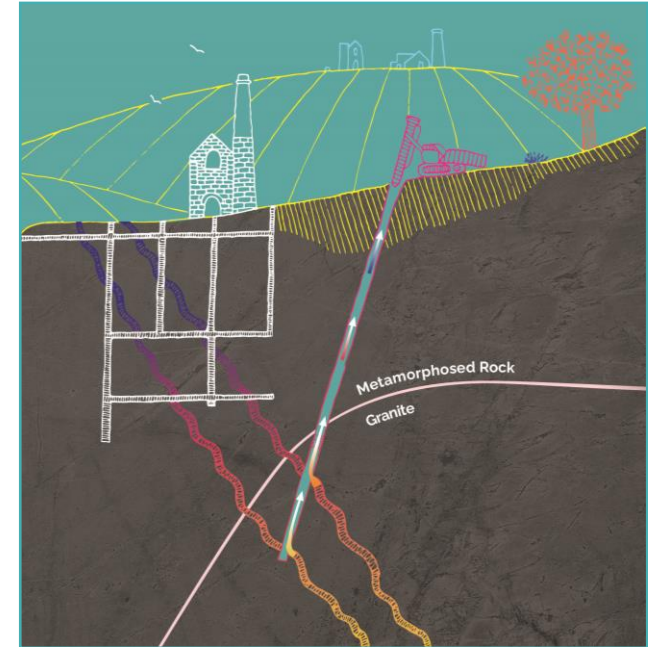
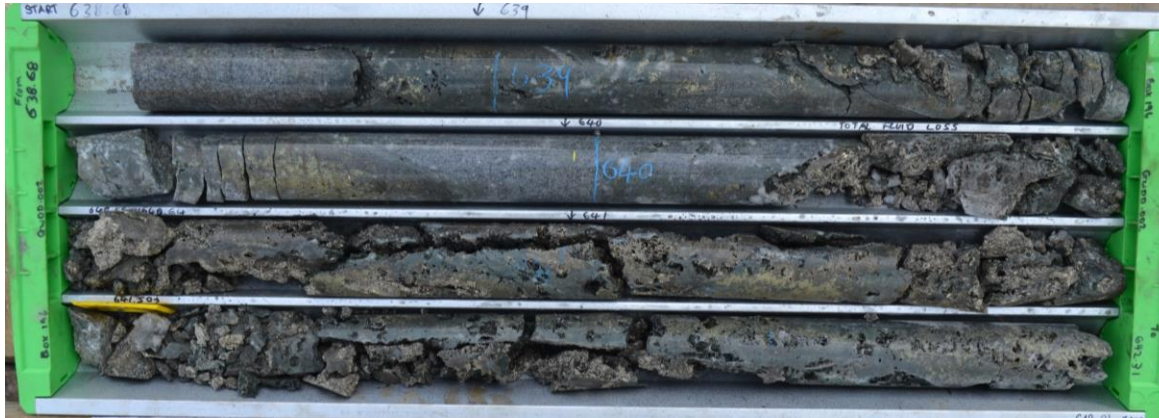


LITHIUM IN GEOTHERMAL WATERS

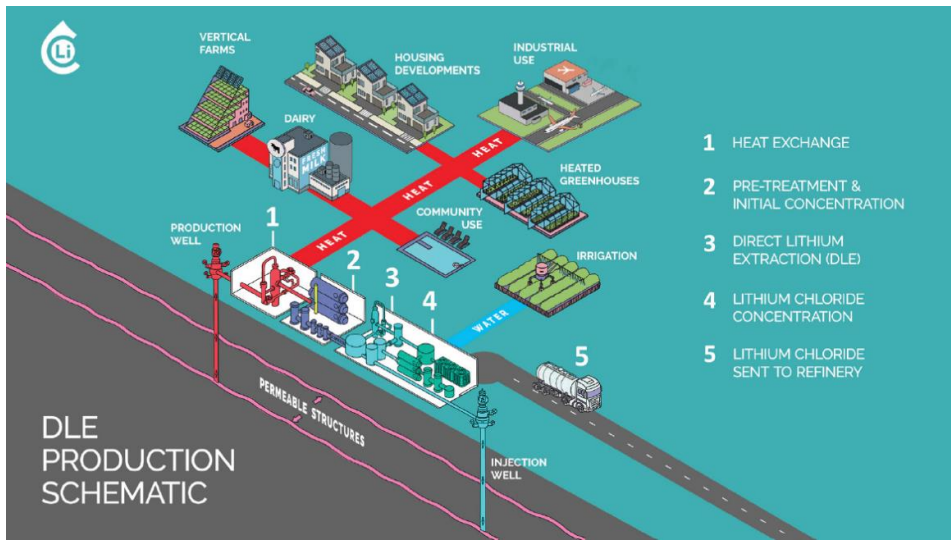


Lithium in Geothermal Waters

- Targeting water underground flowing through naturally permeable structures
- Areas are targeted after extensive modelling and data analysis of old mining data
- Rock core samples are collected to help geologists understand the structures
- Water can be taken to our test facility at United Downs to use with Direct Lithium Extraction Technology (DLE)
- At around 2,000m depth the waters are around 70-80°C
- There is the potential to use this hot water to heat local industry and businesses



DIRECT LITHIUM EXTRACTION (DLE) TECHNOLOGY



- DLE technology is low impact with a small footprint
- Tested multiple DLE technologies at United Downs
- Use of membranes or sorbents to selectively remove lithium, reverse osmosis and other technology



BESORE



BESORE EXPLORATION PROJECT

- Location chosen following extensive desk top study and subsurface modelling
- 6-month temporary exploration project
 - Targeting commencement of drilling in September
- Two boreholes will be drilled to ~ 1,000m deep on a drill pad ~ 25m³
- The drill rig will be the same as previous sites, operated by Priority Drilling Ltd.
- 24-hour drilling will be requested
- In testing phase water will be pumped to surface to sample the geochemistry and heat profile analysed
- The site will be reinstated at the end of the project
- This project is part funded by the UK Government through the UK Shared Prosperity Fund. Cornwall Council has been chosen by Government as a Lead Authority for the fund and is responsible for monitoring the progress of projects funded through the UK Shared Prosperity Fund in Cornwall and the Isles of Scilly



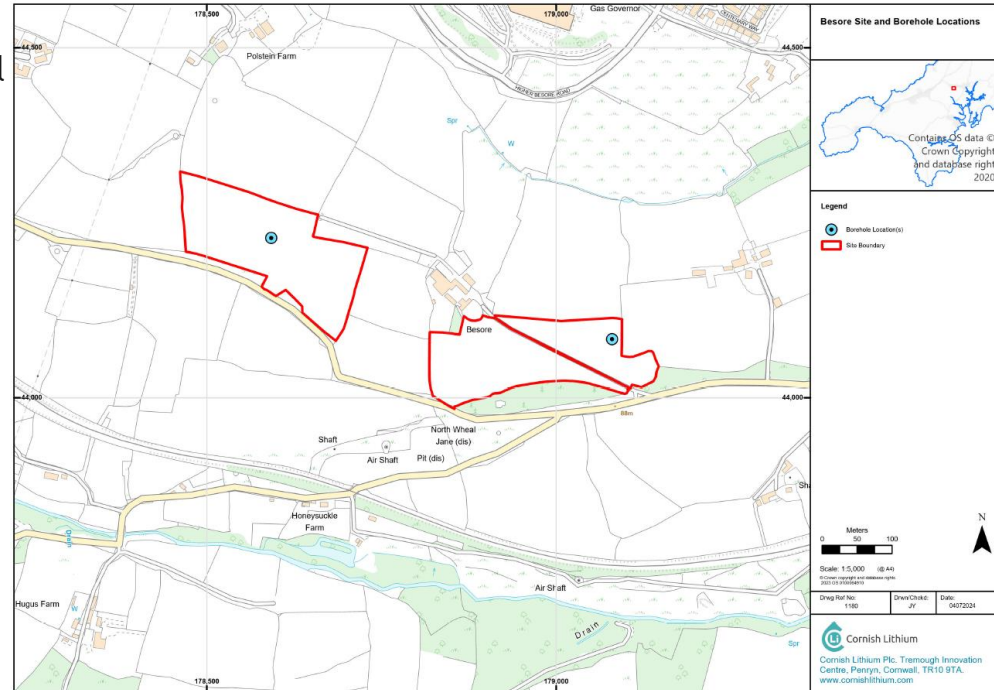
Drill rig at Blackwater with straw bale noise mitigation



Geothermal waters at Cross Lanes

PLANNING AND PERMITTING

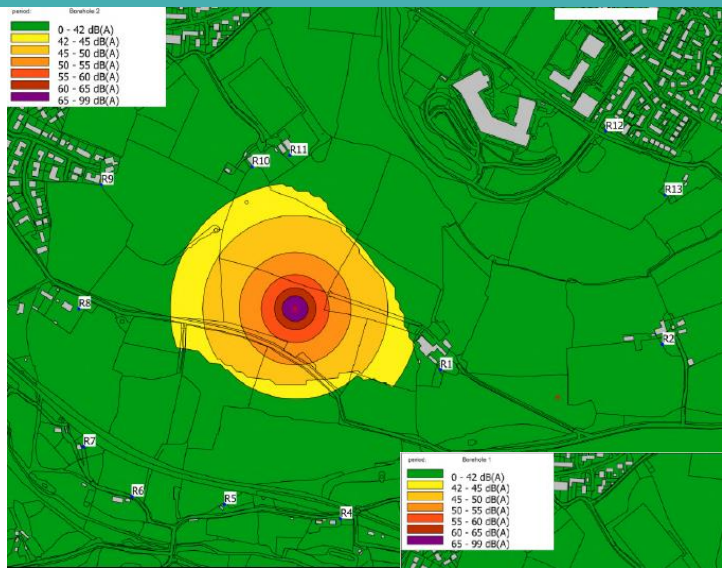
- Applying to carry out these works under a General Permitted Development Order (Temporary Planning) from Mineral Planning Authority within Cornwall Council
- The application considers community engagement, noise & light impact, ecology and traffic management
 - Agreement with landowner in place
 - Ecology surveys and noise modelling complete
 - Mitigations (noise curtains and traffic plans) to be used
- Necessary consents from the Environment Agency will also be obtained
 - Notifying them about the drilling (WR11)
 - Groundwater Investigation Consent (GIC)
- Application will be available on the council website with all the related third-party reports
 - Application is open for comments by stakeholders



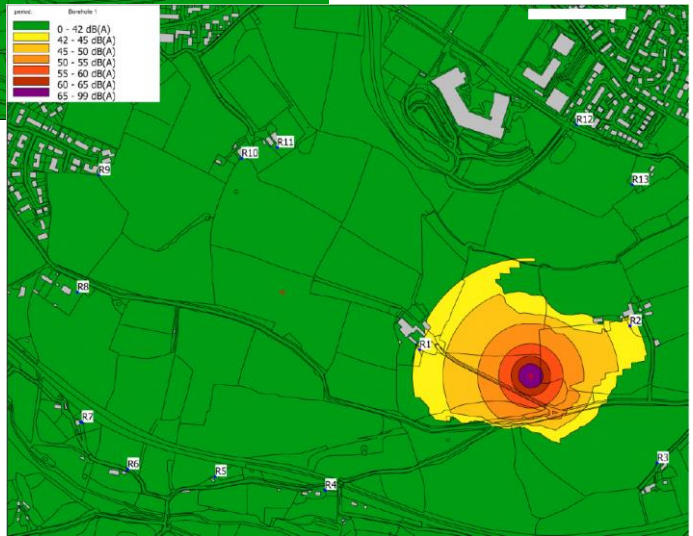
Location of Besore project showing borehole locations

WHAT TO EXPECT

- Traffic management plan in place as per GPDO reviewed by highways officer
 - Total of 4 HGVs to bring in drill rig and equipment (one day)
 - Other deliveries throughout drilling (non HGV)
 - 3-4 light vehicles a day for staff working at site
 - Same HGVs when drill rig is removed (one day)
- Noise
 - Full noise report available as part of the GPDO application
 - Noise limits set to adhere to with noise monitors in place at site
 - Noise curtains will be used
- Light
 - Low level light directed inwards

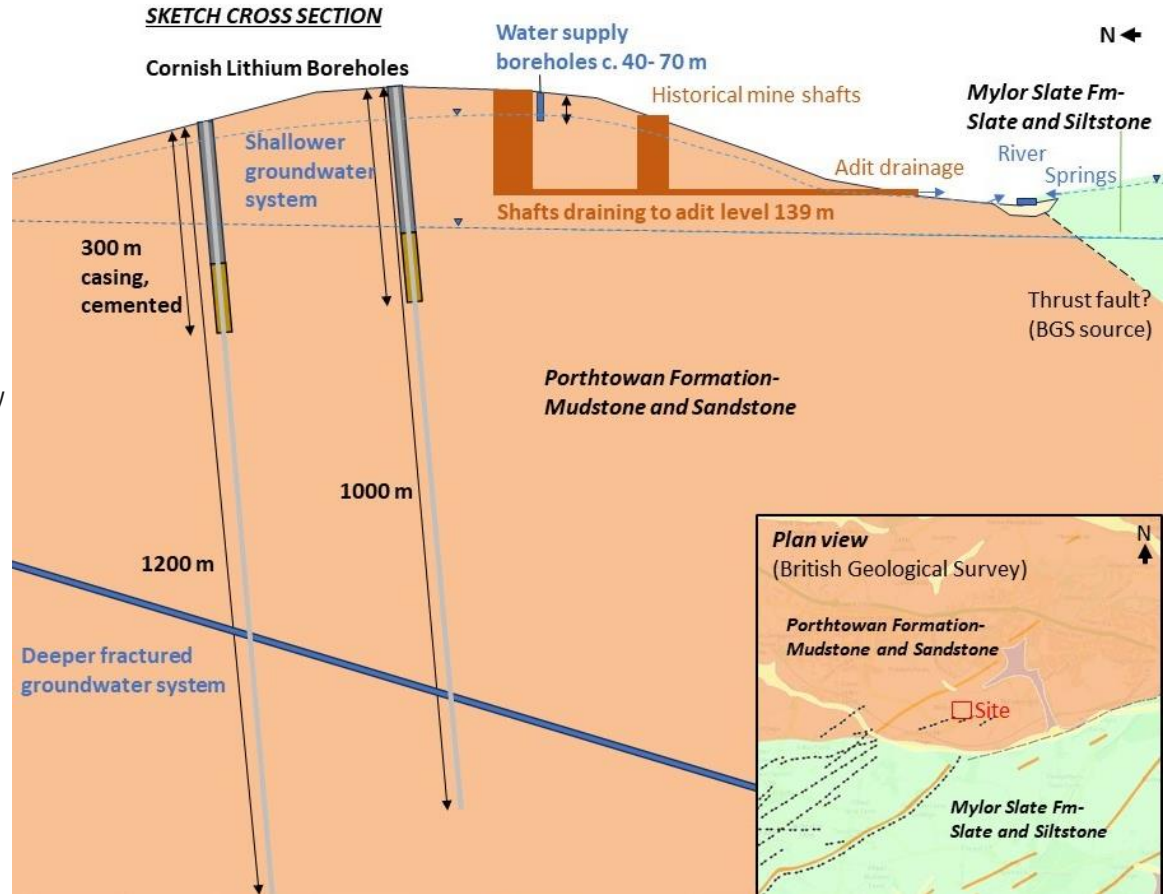


InAcoustic noise modelling for borehole 1 and 2



HYDROGEOLOGY

- Precautionary mitigation measures: Solid casing will be cemented from ground level to 300m to ensure isolation of shallow groundwater system
- Water supply borehole typically c. 40-70 m
- Environment Agency must approve 'Groundwater Investigation Consent' application incorporating private water supply information
- No negative impact observed by nearby private water supplies at previous five sites
- Tool used to isolate structures downhole during pumping
- All water abstracted during testing will be stored temporarily on site, and then returned downhole
- Monitoring water level and chemistry monitoring available- please get in touch



HYDROGEOLOGY

SKETCH CROSS SECTION

Cornish Lithium Boreholes

Water supply boreholes c. 40- 70 m

Historical mine shafts

*Mylor Slate Fm-
Slate and Siltstone*

Shallower groundwater system

Shafts draining to adit level 139 m

Adit drainage

River Springs

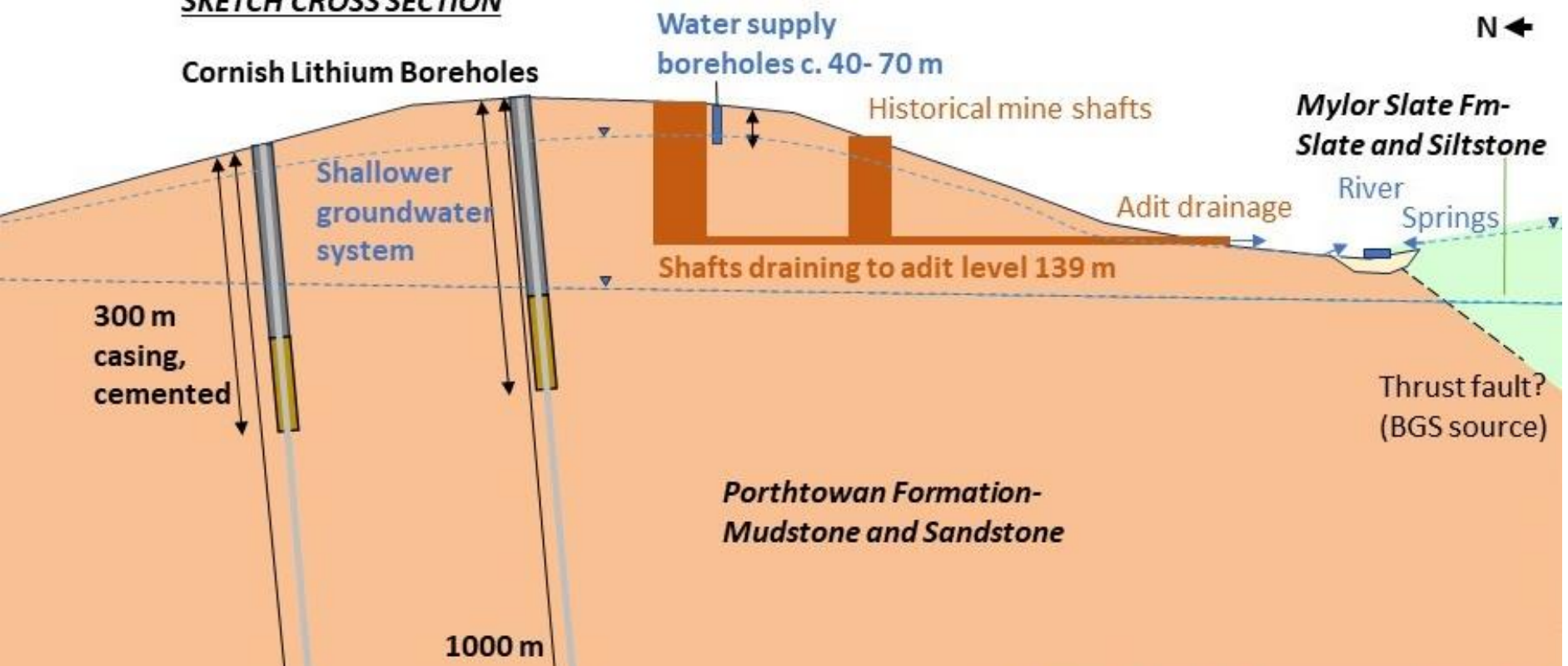
300 m casing, cemented

Thrust fault? (BGS source)

*Porthtowan Formation-
Mudstone and Sandstone*

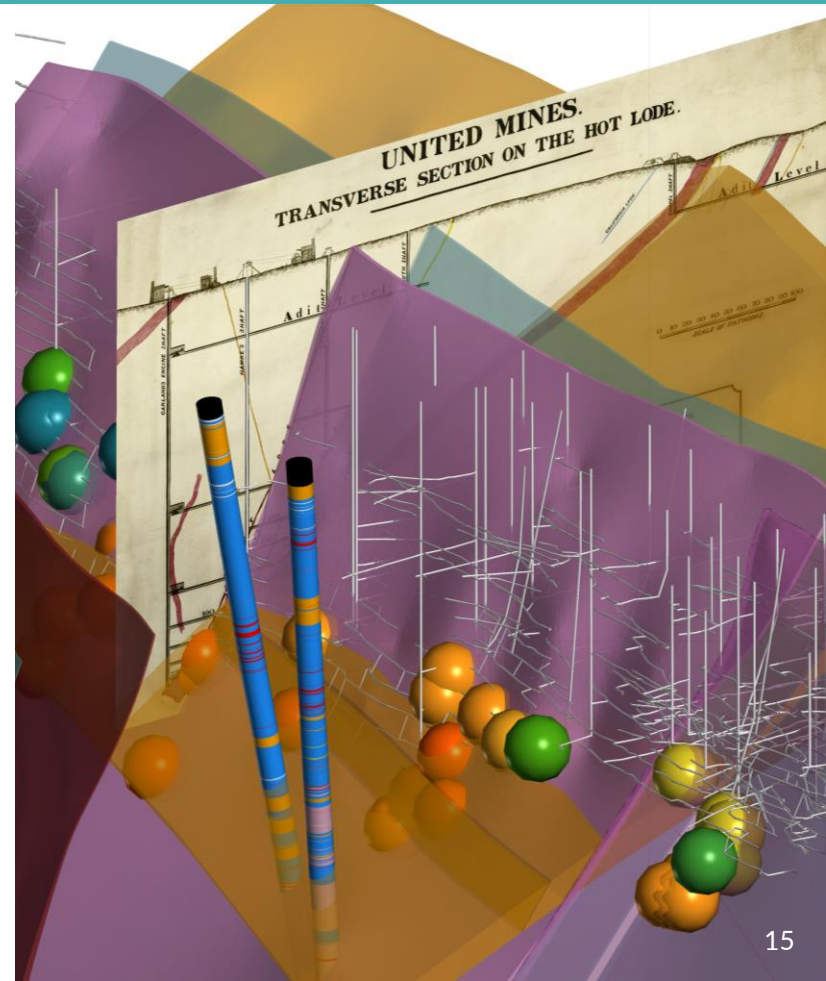
1000 m

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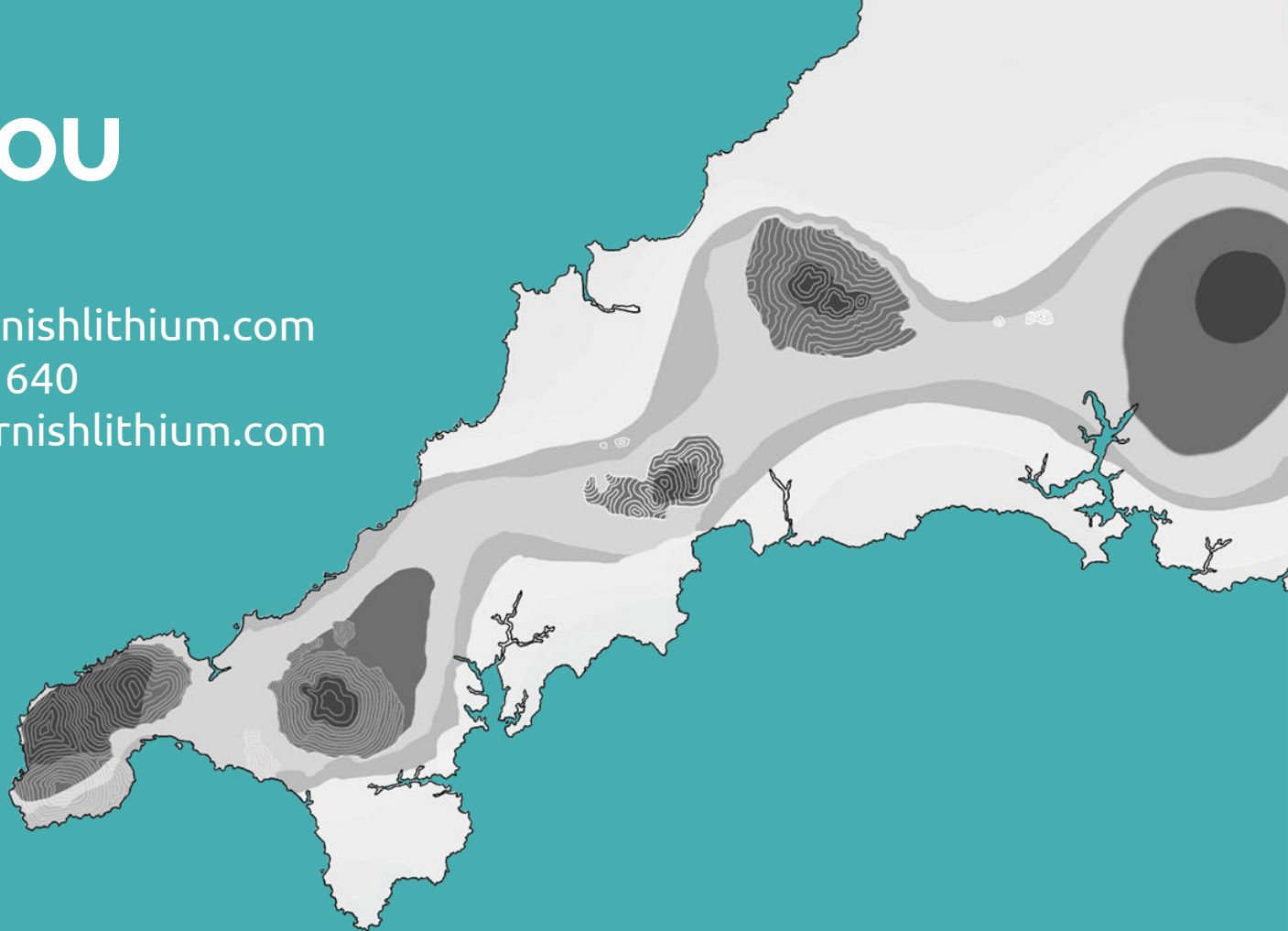
NEXT STEPS

- Further community information events to be planned
- Temporary planning application submitted to Cornwall Council in coming weeks – decision from council around 30 days post submission
 - Application open for comment from the council, stakeholders and members of the public
- Permits to be requested from Environment Agency
- Borehole monitoring to be set up with local boreholes, where agreed
- If application successful proposed drilling aiming to start in September, aiming to finish in March 2025



THANK YOU

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REINSTATED EXPLORATION SITES



Reinstated site at United Downs with buried borehole



Reinstated site at Blackwater with borehole cap