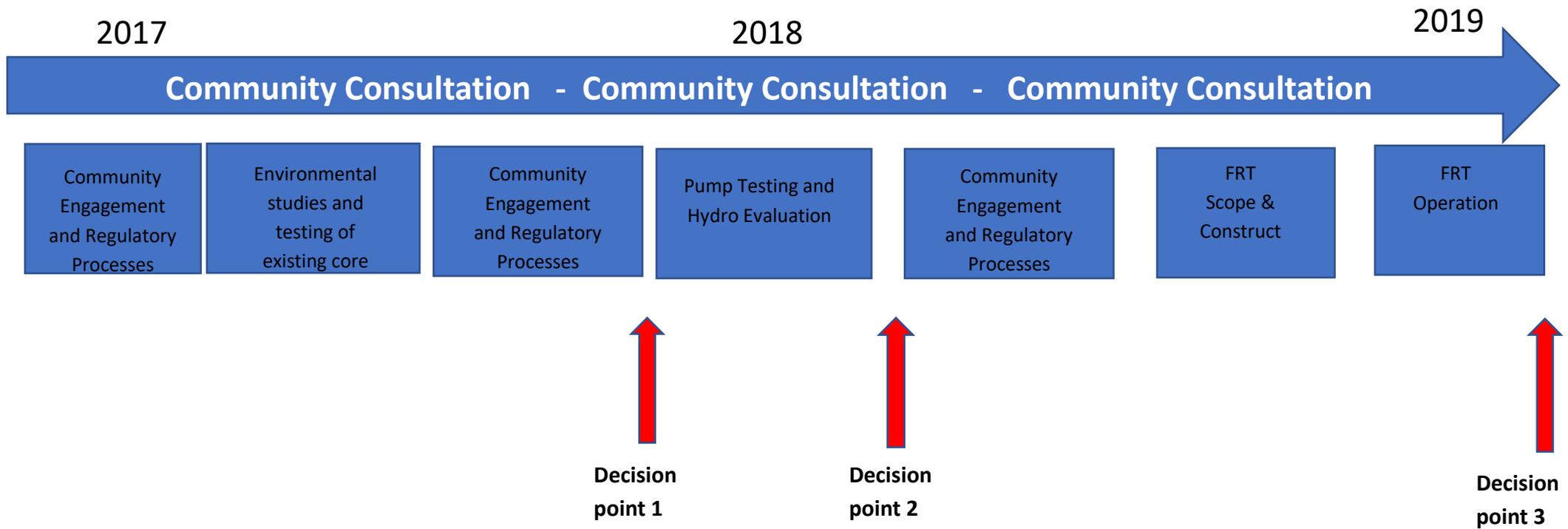


INFRASTRUCTURE - WHAT WOULD A FIELD RECOVERY TRIAL (FRT) LOOK LIKE?



This Project will be a 2-stage approach;

- 1. Research project via an Field Recovery Trial (pilot site) to determine if ISR is an economical, environmentally and socially acceptable form of extracting the remaining copper, anticipated to run until mid 2021;**
- 2. Then the second stage would be to apply to the State Government for a Mining Lease to proceed into full production for up to 7 years.**

If the second stage was successful, ECR would require a significant injection of funds which may mean listing on the ASX.

How much infrastructure will be required for an FRT?

Minimal infrastructure would be required.

All that is visible is: -

1. a series of Well Heads in patterns
2. the Well Houses and
3. a Processing Plant (industrial size shed - once an operation is to be established).

Placement of Well House and Processing Plant does not need to be in the immediate vicinity and can be decided in consultation with the council/ community.

Alternately, the infrastructure could be placed as a tourist point of interest, all up to negotiation.



An operating Field Recovery Trial FRT in South Australia during 2014-15.

Well head to the front left and Well House to the back of picture.

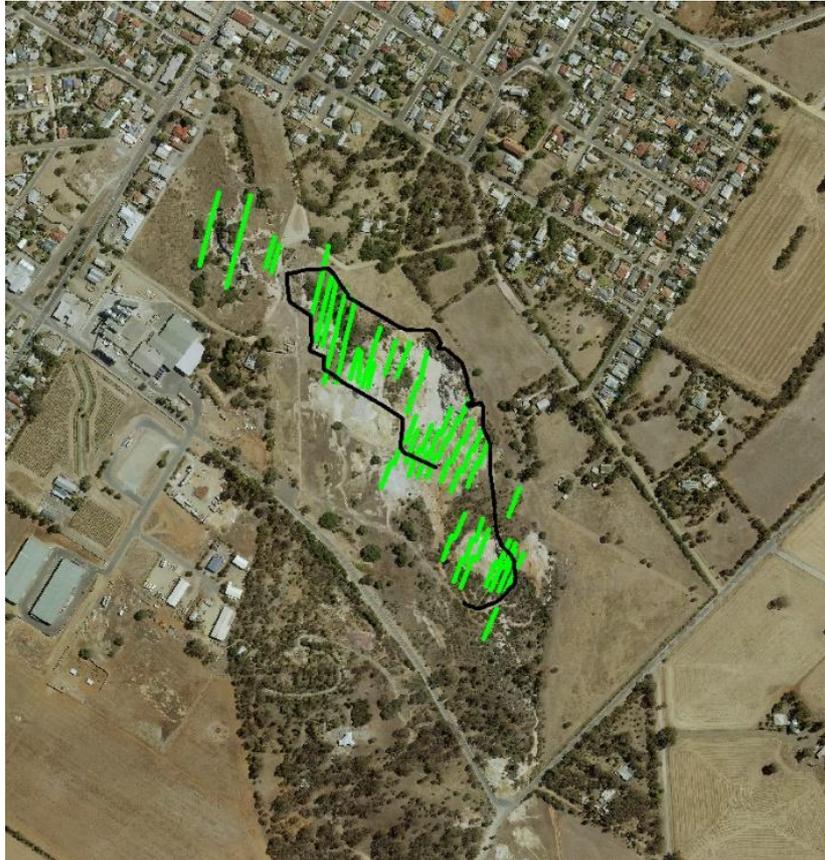
The image is an example of how well heads will look at Kapunda within the fenced off area and the well house will be centred away from immediate public access.

What is a Well Head?

This is all that is visible on the surface. The Well Head sits on top of the Bore/Well with interconnecting pipes from the Well Head to the Well House.

Where would these Well Heads most likely be placed?

Generally, in land around the open cut following the path of the orebody but most within the fenced off area.

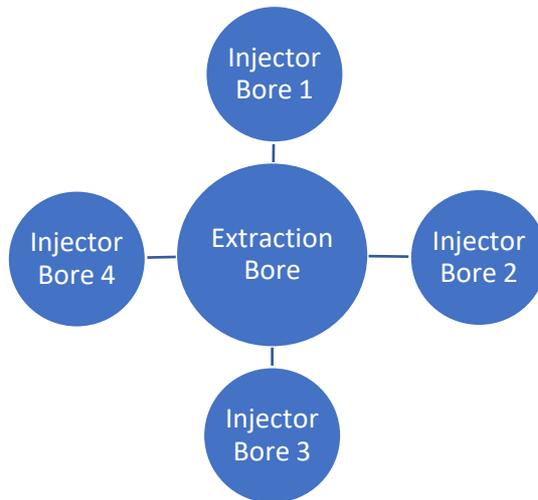


**What is the size of the interconnecting pipes between the Well Heads and containers?
How many would there be and how would you hide/disguise them if you had to?**

Lines from Well Head to Well House are 10cm in diameter, these can be placed underground if required, trunklines may be up to 50cm in diameter, placement of the trunklines can be discussed with stakeholders.

What is a Pattern?

A number of these well heads are used to make up a “pattern”.



Once in Full Production, how many Bores and their associated Well Heads would there be?

The FRT will give an indication on the flow rates (how much and how quickly copper can be extracted) and hence will dictate how many Well Heads will be needed for Full Production.

They are installed with a drill rig in square clusters or linear called patterns, that usually consist of 4 - 5 injection wells and 1 production well.

The injectors will be spaced around 20m apart, but this distance depends on the flow rate through the rock.

A number of Patterns will make up a Well Field.

As an example, an FRT of 4 to 8 wells would equal 2 patterns.

The total number installed in cycle over the life of the project could range from 50 to 500 *but importantly there will only need to be a small number installed an operating at any one time.*

Actual numbers can only be worked out after all testing is complete and would be available as part of the Mining Lease application and the operating Preparation of a Program for Environmental Protection and Rehabilitation (PEPR) under Department for Energy and Mining requirements. (DEM)

What is the actual size of the containers for the Well House and Processing Plant and how high are they? Do they emit any noise?

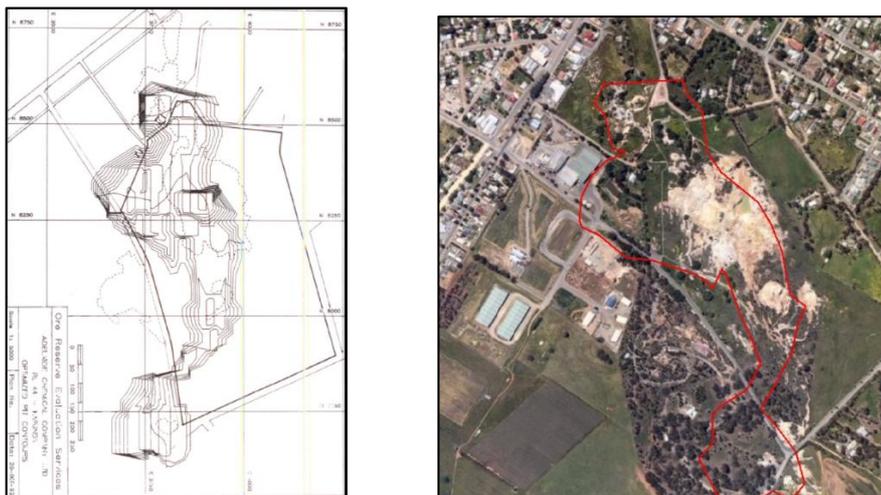
Well House is similar to a standard 12m shipping container.

The Processing Plant would fit in a large industrial size shed.

Noise levels in the Well Field are minimal, noise levels in the Processing Plant would be similar to other processing factories, approx. 50dB (or loud conversation)

Could the Kapunda Mine be developed as a conventional underground/open pit again?

In a word no. Operating Kapunda as a conventional mine was investigated as recently as 1992 by Adelaide Chemical Company. A resource of around 43,000 tonnes of copper was calculated and some preliminary design work carried out (see images below)



Images showing optimized pit contours (1992) and pit outline on Google Earth image

Technically, a small scale, single shift (day) operation could be viable at Kapunda, however, the size of the pit, the modern regulatory environment, dust and noise factors would make getting the social license to operate so close to a town a major hurdle to overcome.

But ISR could be an economic and social alternative.

How would any Bores/Wells be drilled; how would the bore material be disposed?

Each Bore/Well will be drilled by a rotary drill rig, each bore is about 150 mm in diameter and around 120m deep in accordance to DEM Statement of Environmental Objectives and Environmental Guidelines for Mineral Exploration Activities in SA.

Bores will be drilled as per the Minimum Construction Requirements for Water Bores in Australia 3rd edition Australian Government National Water Commission.

Drill cuttings will be disposed in accordance with DEM guidelines and anything toxic will be disposed of in a waste facility as per EPA guidelines.

At the completion of mining, Bores/Wells will be cemented up and the plastic collars removed.

The site will be rehabilitated as per State Govt. DEM guidelines ISM21 and MCR3RD2012B.

It is worth noting that ECR are investigating developments in **bio cement** by CSIRO (a cement like substance produced by certain strains of bacteria) that can be used to cement and stabilise ground conditions. This may be used as a barrier to contain fluid flow but may also be useful in the rehabilitation of the site after the ISR process. To stabilise existing subsidence.



Drilling on farmland with protective barriers and sheets in place.

How many truck movements per day/week would you envisage? What other vehicle access is required such as maintenance vehicles and how many movements per day/week would you envisage?

During the FRT

Minimal, as only 1-2 patterns would be operational, therefore possibly once a month.

During Full Operation

Depending on the size and scale of the operation, there may be up to 1 reagent delivery and 2-3 trucks of concentrate transport a week for a large operation, or the same number per month for a smaller scale operation. This detail would be part of the mining lease application and operating PEPR and can only be determined after all initial test/trial work is carried out.

What responsibility does the company have in rehabilitation after mining?

All rehabilitation activity will be carried out in accordance to the approved Program for Environmental Protection and Rehabilitation (PEPR) as required by the SA Mining Act 1971 and under DEM Guidelines ISM21 and MCR3RD2012B.

Due to the “remediation” effect of ISR, after the operation is finalised, ground water quality may potentially be improved. This process is often used to clean up contaminated sites, see link below:

www.envirocopper.com.au/contaminated-site-rehabilitation

What would the mine site look like after mining?

The advantages of ISR mining, also known as Invisible Mining, is that there is very little disturbance of the ground, surface or sub-surface. The injection and production wells would be cemented up and capped over, Well Houses, Production Plant and associated piping and infrastructure would be dismantled and moved to another mine site.

Due to the minimal environmental footprint, the site will be able to return to natural bushland.

Are there any other ISR mines operational in Australia/Internationally?

Yes, there are 2 Uranium ISR mine operational here in South Australia (Honeymoon west of Broken Hill, and Beverly Mine) and many operating throughout the world (Arizona, Wyoming, Texas).

There is only 1 other ISR mine for Copper extraction in Florence, Arizona USA with 2 more awaiting permitting from U.S government.

Kapunda going ahead with a Field Recovery Trial would be an Australian first for ISR Copper extraction.

Please note if “Googling” for ISR, many images will come up for Uranium mining, most of these operations are much larger than we anticipate Kapunda to potentially be as they have far more infrastructure than copper mining and should not be directly compared.

What guarantees would there be to ensure that commitments made to secure Council agreement are met?

Council would liaise with the DEM and ensure that any significant issues were incorporated into the Mining Lease proposal. Once the lease is granted and PEPR* signed off the operation is overseen by the Mining Act which contains significant penalties for noncompliance.

In the event of one or more commitments not being met, what recourse would Council have to ensure they are met?

Non-compliance issues can be raised by council and taken to the DEM Regulation and Rehabilitation department which is specifically set up to monitor and enforce mine compliance with lease conditions.

*PEPR = Preparation of a Program for Environment Protection and Rehabilitation (Part A and B)