ASX: AGE

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Samphire Uranium Project Community Briefing

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JANUARY 2023

Alligator Energy

Acknowledgement of Country

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We would like to acknowledge the Barngarla People as the Traditional Custodians of the lands on which we are gathered. We pay our respects to their Elders, past, present and emerging.

We look forward to continuing to build our relationship with the Barngarla Determination Aboriginal Corporation (BDAC) and the Barngarla community into the future.

Disclaimer

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Disclaimer

This presentation contains projections and forward looking information that involve various risks and uncertainties regarding future events. Such forward-looking information can include without limitation statements based on current expectations involving a number of risks and uncertainties and are not guarantees of future performance of the Company. These risks and uncertainties could cause actual results and the Company's plans and objectives to differ materially from those expressed in the forward-looking information. Actual results and future events could differ materially from anticipated in such information. These and all subsequent written and oral forward-looking information are based on estimates and opinions of management on the dates they are made and expressly qualified in their entirety by this notice. The Company assumes no obligation to update forward-looking information should circumstances or management's estimates or opinions change.

Competent Person's Statement – Uranium

Information in this report is based on current and historic Exploration and Resource Drilling Results compiled by Dr Andrea Marsland-Smith, who is a Member of the AusIMM. Dr Marsland-Smith is employed by Alligator Energy as Chief Operating Officer (COO) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity she is undertaking (including 15 years working with ISR uranium development and operations) to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Marsland-Smith consents to the inclusion in this release of the matters based on her information in the form and context in which it appears.

Competent Person's Statement – Nickel Cobalt exploration

Information in this report is based on current and historic Exploration Results compiled by Mr Andrew Vigar who is a Fellow of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Vigar is a non executive director of Alligator Energy Limited, and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Vigar consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

Working with Stakeholders

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Alligator Energy is a responsible and progressive uranium and energy metals explorer and emerging producer

We look at our business activities through the eyes of our stakeholders:

- From a shareholder viewpoint we aim to add value in all of our decision-making
- From an employee perspective we wish to provide an engaging, challenging, enjoyable and respectful workplace
- From a landowner viewpoint we respect your rights and seek to collaborate for our mutual benefit
- From a Native Title & Traditional Owner viewpoint, we respect your cultural heritage and your connection to country, and wish to create mutually beneficial opportunities
- From an environmental viewpoint we aim for a low impact through innovation, latest technology, and responsible land management techniques

Our aim is to discover, source and economically extract these needed commodities with an innovative approach, with either zero or minimal impact, and with positive value and experience for our stakeholders and communities.

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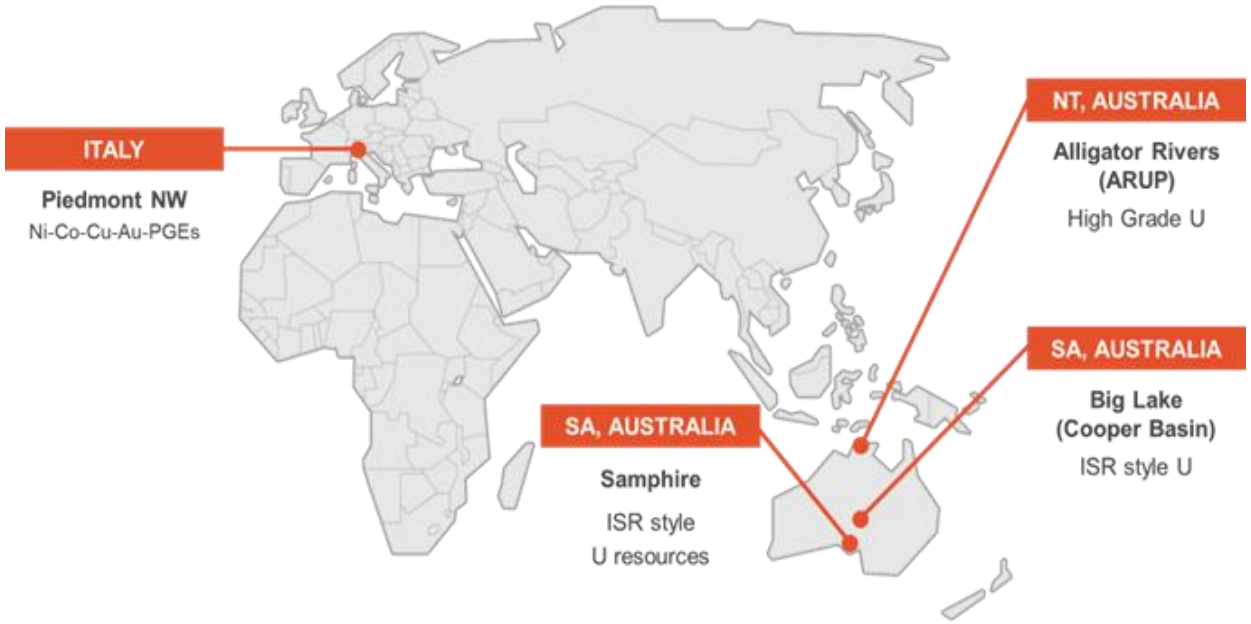
Alligator Energy – Strategy

- Active uranium explorers in the Northern Territory since 2010
- Acquired the Samphire Uranium project near Whyalla in 2020
- Uranium exploration in the Cooper Basin, SA
- Nickel-Cobalt (Cu, Au) in Piedmont, Italy
- Advancing resource and exploration targets while evaluating and acquiring further uranium or energy mineral assets in key target regions



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Uranium – The Industry and Future Outlook

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- Australia is the world's third largest uranium producer behind Kazakhstan and Canada.
- Nuclear Non-Proliferation Treaty (NPT) and bilateral treaty with the Australian Government.
- 5 approved uranium mines in South Australia - Beverley, Beverley North, Four Mile, Honeymoon (all In Situ Recovery (ISR) mines) & Olympic Dam (underground).
- Uranium provides around 10 per cent of the world's power. There are around 440 operating nuclear reactors globally.
- Impacts on uranium supply demand:
  - Global focus on reducing emissions – large emitters India, China
  - Countries re-committing to nuclear – Europe, USA, Scandinavia
  - Countries with significant nuclear amongst lowest CO_2 emitters
  - New countries – UAE, Turkey, Bangladesh, Vietnam, Poland
- Significant innovation - new, smaller and safer designs for Small Modular Reactors (SMR's) and Micro reactors.

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Samphire Uranium Project

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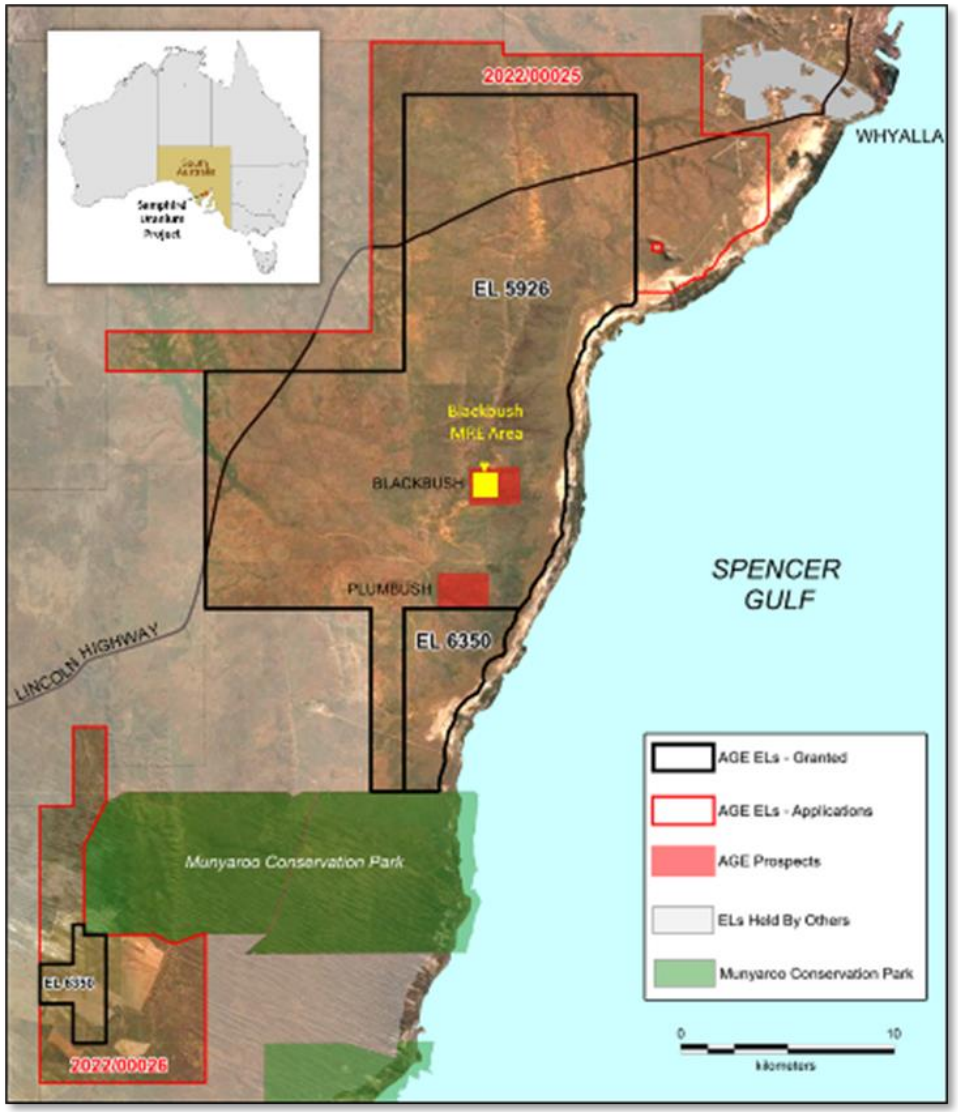
- Located around 20km south of Whyalla (Mullaquana Road area) on exploration licences (EL's) 5926 & 6350
- Two uranium prospects (Blackbush and Plumbush)
- Previously the focus of work by UraniumSA between 2009 and 2012 – drilled over 800 drillholes.
- To date AGE have completed confirmatory and extensional drilling, metallurgical test-work, geophysics and a mineral resource estimation at Blackbush.
- The resource is suitable for a small start-up in-situ recovery (ISR) operation - very low impact footprint compared to conventional open pit or underground mining.
- To progress the project, AGE is proposing a small-scale short-term Field Recovery Trial (FRT) using the ISR method in late 2023, following the receipt of all necessary approvals.
- Future steps would include further feasibility studies, additional resource drilling and full mine project approvals.



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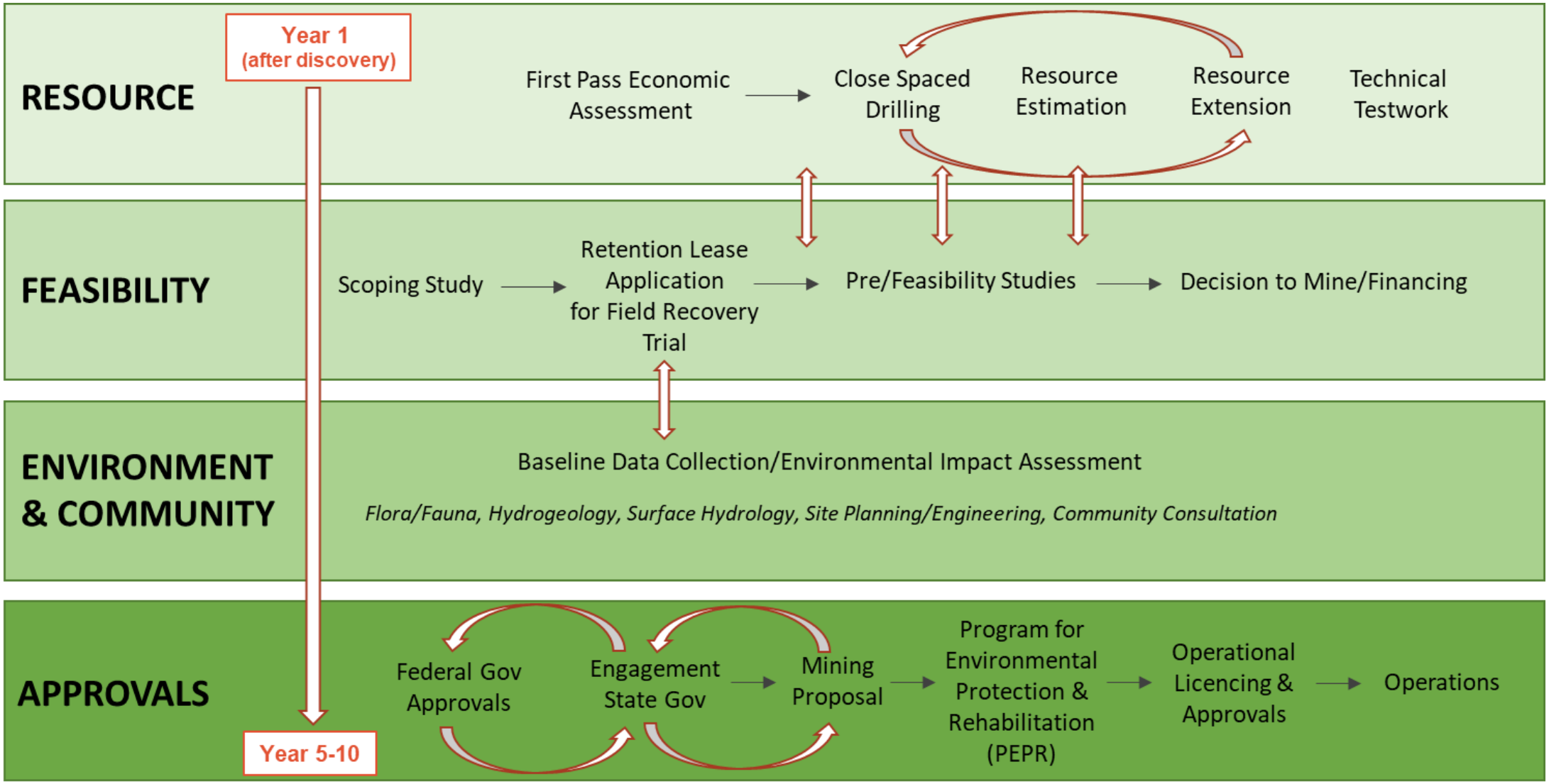
Approvals Pathway



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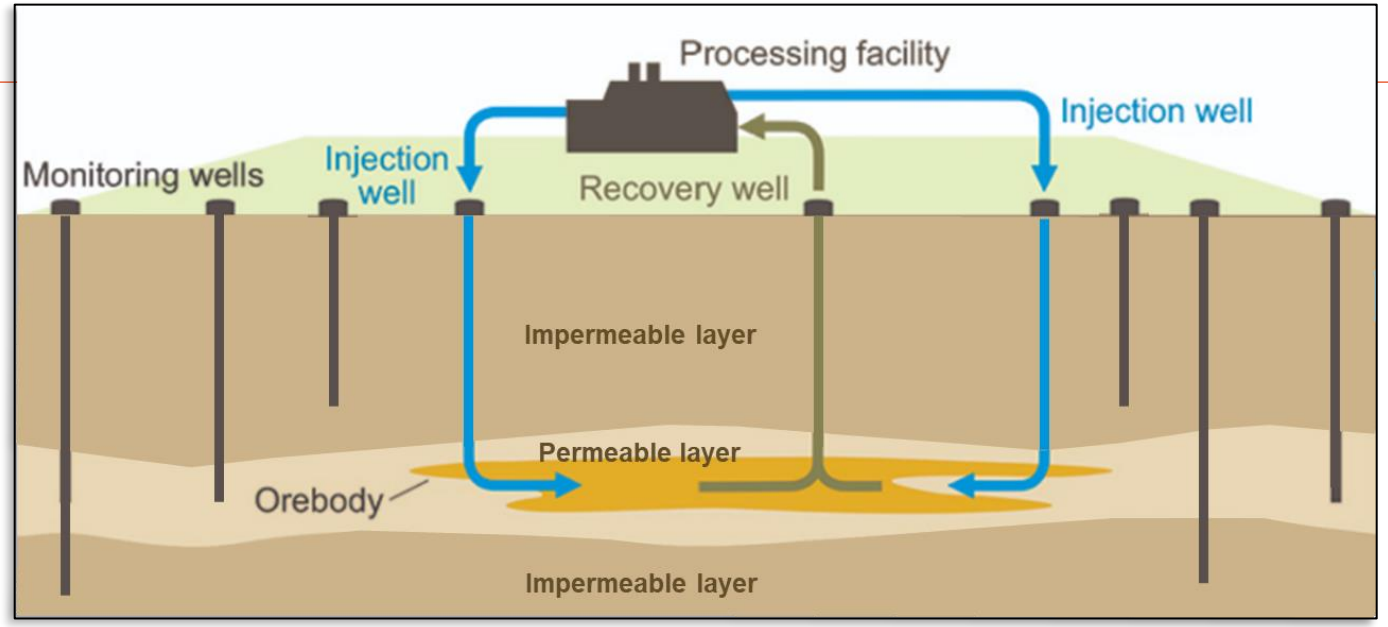
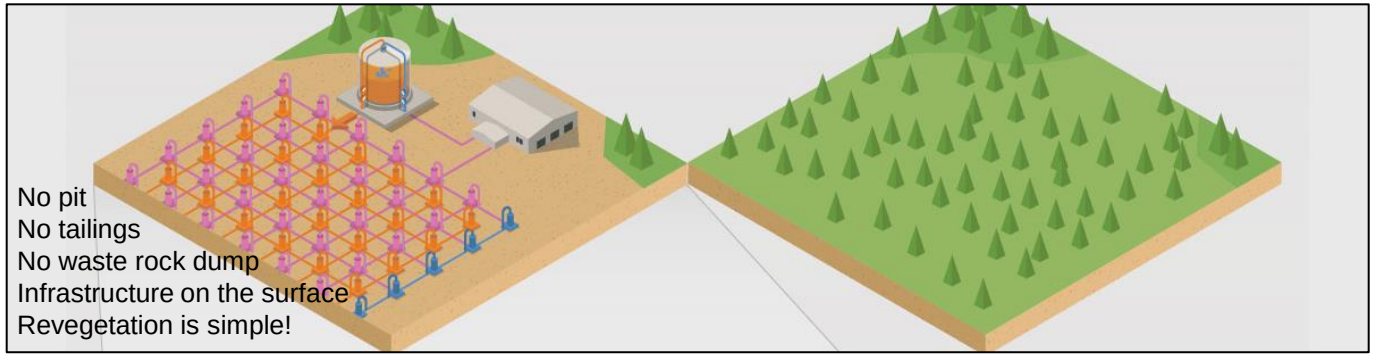
What is ISR or 'Solution Mining'?

- ISR, or In Situ Recovery, is a low cost and low impact mining method used for extracting shallow mineral deposits in permeable host rocks or sands.
- Accounts for around 60% of global uranium production and is the method used in uranium mines in the north of SA, USA & Kazakhstan.
- Preferred mining method due to low ground impacts compared to open cut mining.
- Involves dissolving the minerals within the orebody in place via injection wells and then pumping to the surface via recovery wells for the uranium to be recovered in a processing facility.
- Remaining solution is then retreated and re-circulated to recover more uranium, which continues until recovery rates reduce.
- The mine is progressively rehabilitated after each wellfield and closed in line with strict regulatory requirements at the end of mining.



Conceptual Model of ISR



Source: Infographic: Everything You Need to Know About In-Situ Mining (visualcapitalist.com)

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Field Recovery Trial (FRT)

- **The FRT <u>will not</u> produce uranium oxide final product**
- **Objective** is to develop a better understanding how well uranium is liberated from the underlying sediments (about 60 to 80 metres below the surface) via the ISR solution mining method.
- **Short-term** (approx. 3-months) FRT proposed for late 2023, following receipt of all necessary approvals.
- **Regulated** by the Department for Energy and Mining (DEM) , SafeworkSA and the Environment Protection Agency (EPA).
- **A Retention Lease (not a mining lease) is required to operate the FRT**. This is the instrument that Department of Mining (DEM) regulates FRT; it allows strong regulation and oversight of all environmental aspects, including closure and rehabilitation.
- Small-scale field trials have been undertaken previously in South Australia and around the world as a precursor to more detailed feasibility studies.
- Full-scale ISR mining requires a mining lease and uses ~40 –50 producing wells at any one time – the FRT only consists of 3 wells.
- Upon completion, well infrastructure and containerised pilot processing plant will be removed, and the site remediated to its original state
- If successful, further mining lease approvals from State and Federal Governments will be required (along with project financing etc). This takes several years.

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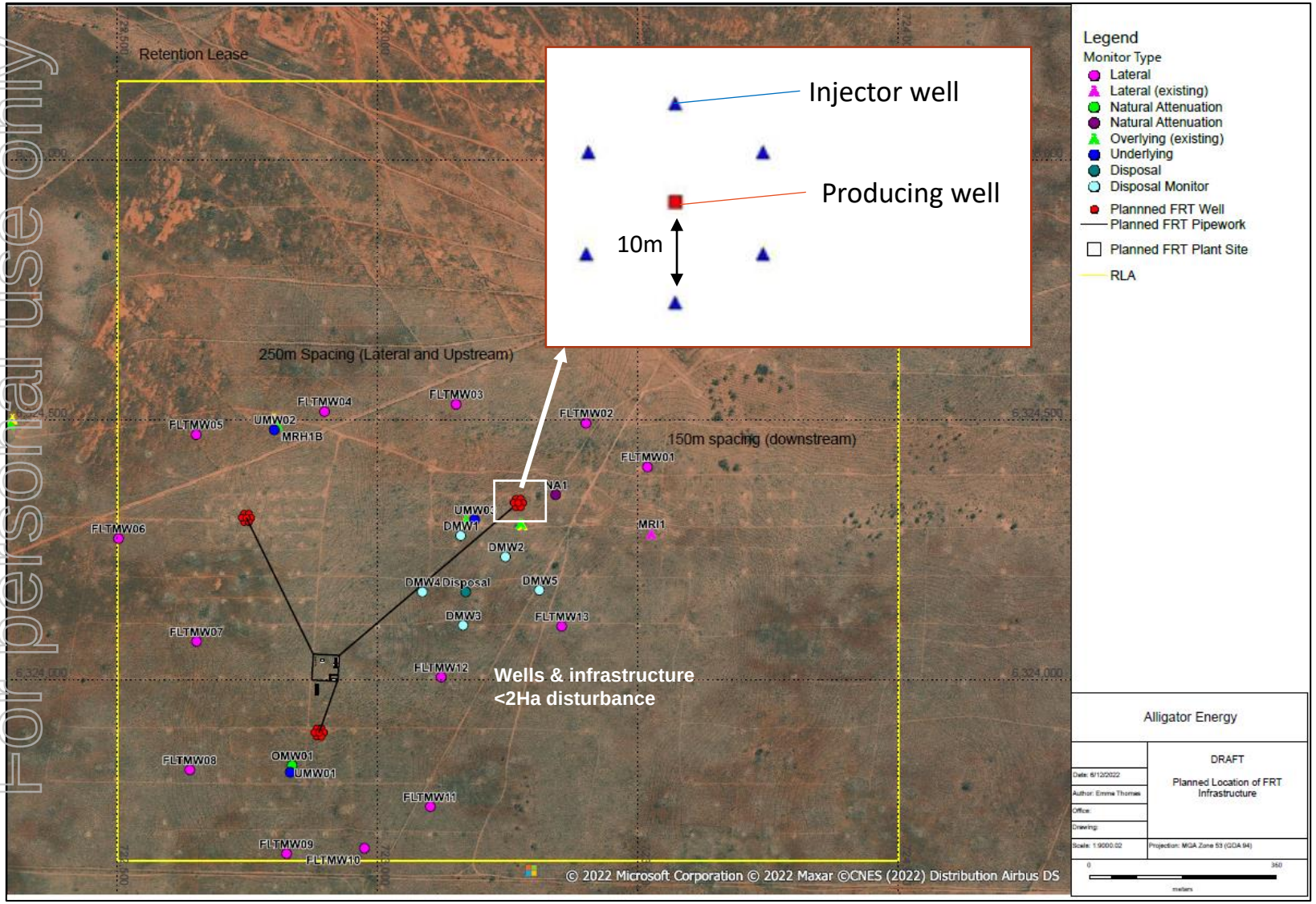
Field Recovery Trial (FRT)



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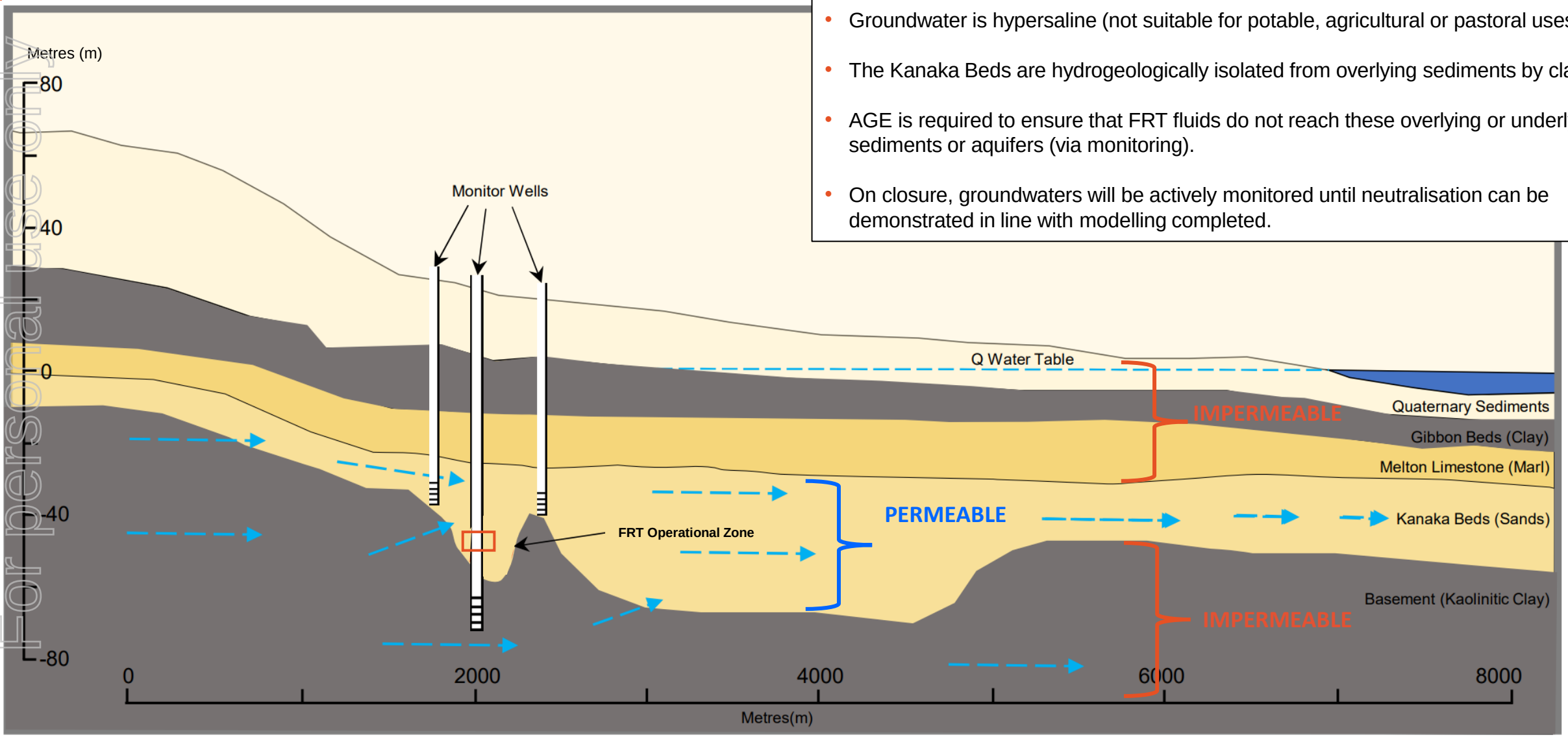
Groundwater

- Project is located ~3.5km from the coastline.
- Groundwater flow is easterly at 1metre/year.
- Groundwater is hypersaline (not suitable for potable, agricultural or pastoral uses).
- The Kanaka Beds are hydrogeologically isolated from overlying sediments by clays.
- AGE is required to ensure that FRT fluids do not reach these overlying or underlying sediments or aquifers (via monitoring).
- On closure, groundwaters will be actively monitored until neutralisation can be demonstrated in line with modelling completed.



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Groundwater- What happens to the fluid after completion of the FRT?

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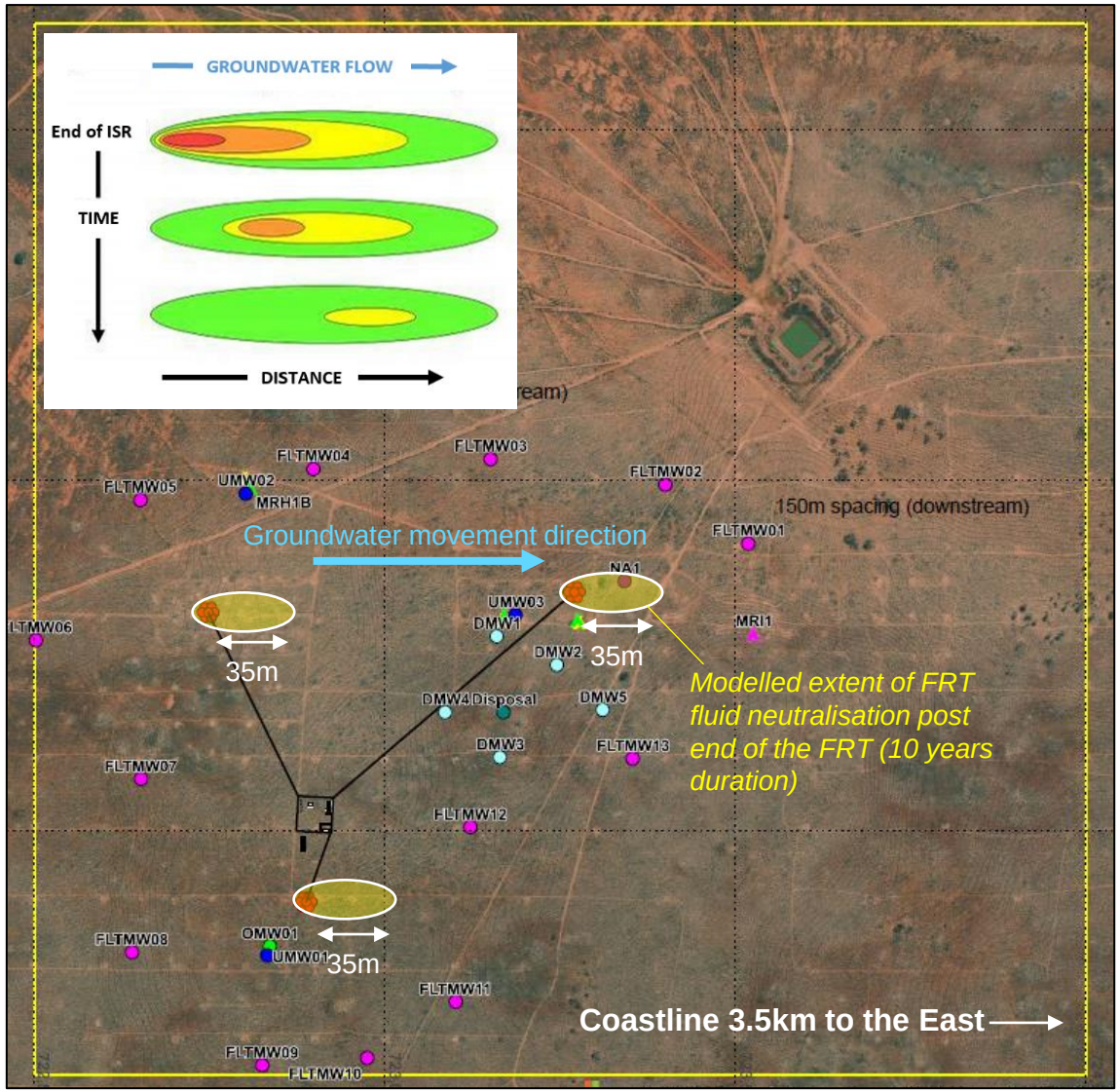

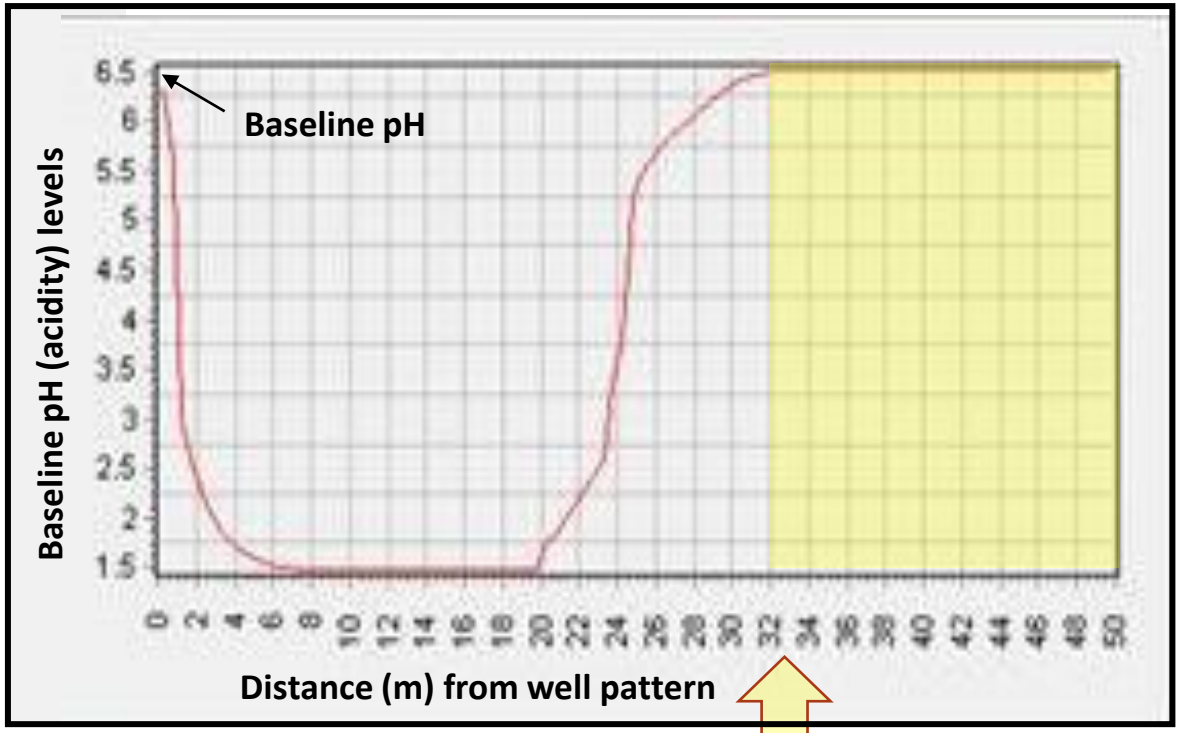

Reactive-transport chemical modelling (independent expert consultant) shows return to baseline pH (acidity level) within 32-35m from original area of FRT operation

This process is known as Natural Attenuation (Natural Neutralisation)

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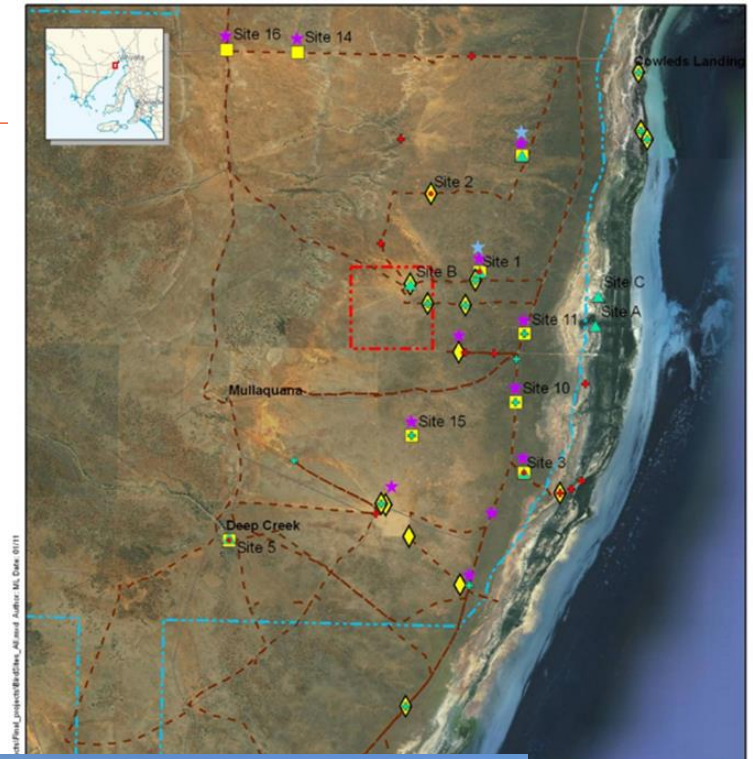
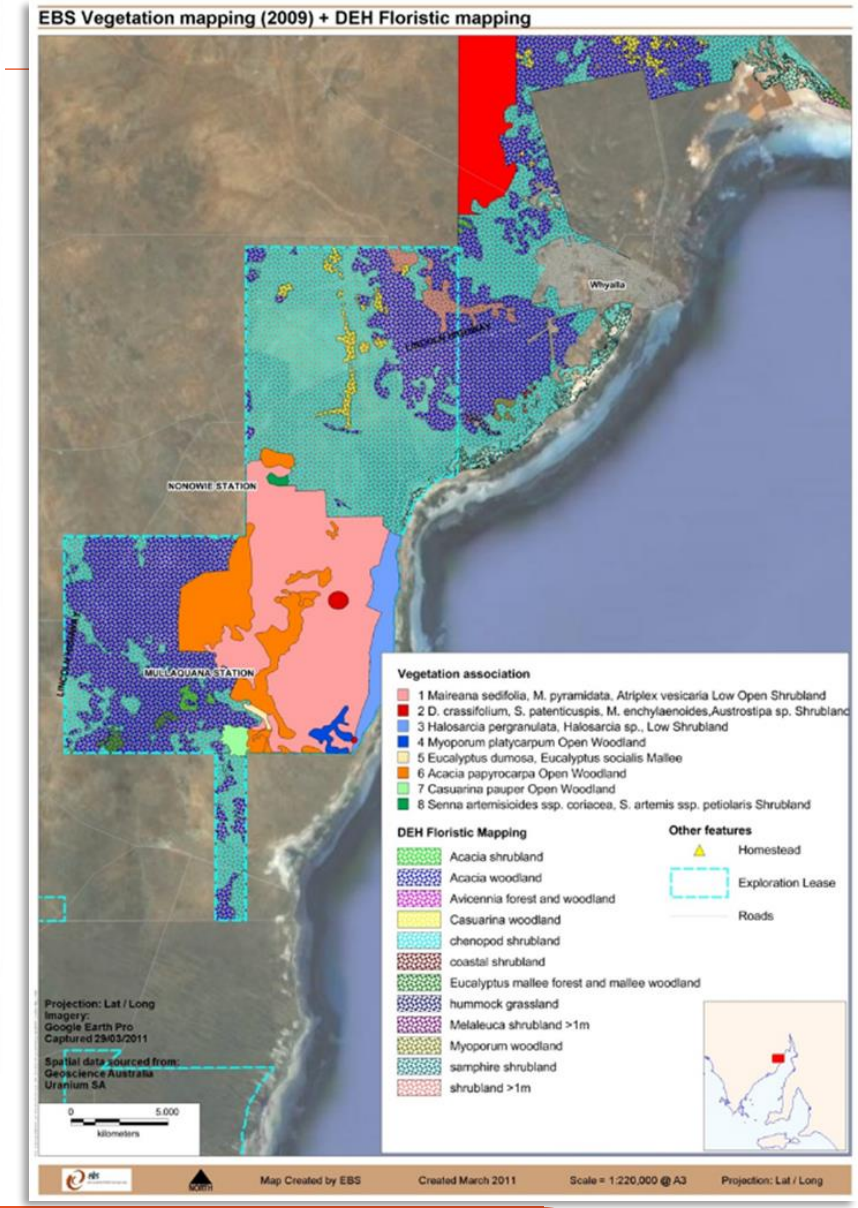
Flora & Fauna

- No endangered or rare (called 'listed') plants on the proposed Retention Lease area
- Flora and fauna studies have been completed by EBS Ecology for the Retention Lease application
- Flora is mainly Pearl Bluebush Shrubland habitat
- Within the wider area there are some habitats for 4 listed bird species
  - 2 species of Grasswrens
  - Shy Heathwren
  - Slender-billed Thornbill
  - Australian Bustard often seen on Mullaquana Road.





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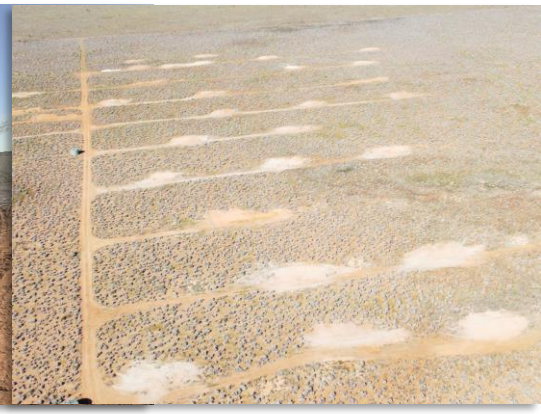
Environmental & Social Governance (ESG) in Practice

Roll bushes at drill sites, no grading or bulldozing

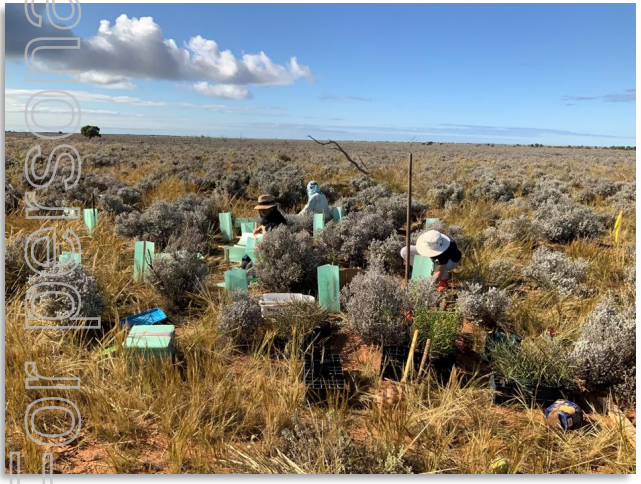
Collecting local seed each year

Seed ready for rehabilitation

Hydroseeding truck



Hydroseeded drillpads



Tube stock planting - Myall and Sandalwood

Weed spraying

Fenced off rehab areas from rabbits & sheep

All trees protected

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Retention Lease (RL) - Environmental & Community Values

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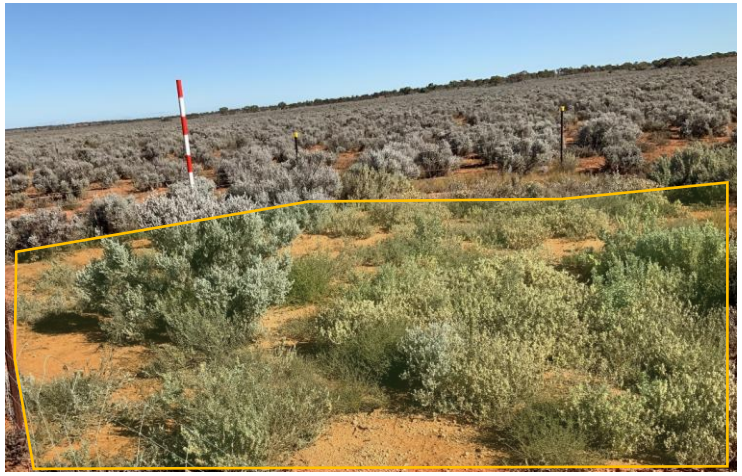
As part of our RL application to the State Government, AGE is required to have detailed operational management/monitoring plans, remediation and closure plans that meet 'Environmental Outcomes' in key identified areas.

'Environmental Outcomes' reflect how AGE will prevent and minimise impacts to the environment, people and stakeholders during the Field Recovery Trial (FRT).

Key outcome areas include:

- Soil – *Soil condition remains unchanged*
- Groundwater – *No change in nearby aquifers*
- Surface Water – *No change in environmental values*
- Flora – *No negative change in native flora populations*
- Fauna – *No native animal deaths or population decline, no increase in feral species*
- Air quality/radiation – *No change from baseline levels*
- Traffic – *Minimise impacts during FRT construction and operations*



Fenced drill site (July 2022), showing successful regeneration of vegetation

Hydroseeding holds soil and seed in place

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FRT - Environmental management approaches and targeted outcomes

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SOIL

Targeted outcome - the protection of soil quality and quantity will be managed during FRT operations and closure to enable a return of the area to pastoral use.

Management approaches:

- Minimising land disturbance/clearance - only 2 ha – minimal grading so vegetation will remain – no erosion loss.
- Any spills to soil will be prevented – pressure testing of all pipelines & vessels, leak detection systems, staff on site 24/7 during trial, bunding.
- Stockpiled soils will be monitored.
- Spill reporting and remediation system.

Topsoil separation, access track rolled not graded

Example of regeneration using rolling not grading

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FRT - Environmental management approaches and targeted outcomes

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GROUNDWATER

Targeted outcome - no compromise to the environmental value of the overlying or underlying aquifer (where present) and no compromise to the environmental value of the target (FRT test) aquifer outside the RL.

Management approaches:

- Overlying and underlying aquifers are kept isolated from FRT activities by:
  - Ensuring all wells are constructed to national standards
  - All wells pressure tested to ensure they operate only in the FRT test aquifer.
  - Managing recovery fluid pressures during operations
- On closure, groundwaters will be actively monitored until attenuation (neutralisation) rates are in line with the reactive-transport model predictions.

Groundwater monitoring bore

Groundwater sampling

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FRT – Environmental management approaches and targeted outcomes

SURFACE WATER

Targeted outcome - no impact on surface water quality as a result of FRT operations.

Management approaches:

- Preventing small spills from occurring at ground surface and ensuring appropriate bunding around operational infrastructure to contain any spill events.
- Ensuring all processing materials are fully contained.
- Bunding will be erected around all infrastructure and FRT areas to ensure no surface waters can be released from operational areas.
- Baseline monitoring at surface water collection points and post closure monitoring.

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FRT – Environmental management approaches and targeted outcomes

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FLORA

Targeted outcome - no permanent loss of native flora species abundance or richness unless approval is granted by relevant legislation

Management approaches:

- Limiting total disturbance area to approx. 2 ha.
- No tree clearance
- No grading of areas for wellfield infrastructure
- Offsetting all vegetation disturbance by protecting an area of land for conservation.
- Revegetating the site on conclusion of the FRT.
- 435 trees planted to date. Aiming to return landscape to 1 adult bush per square metre (pre-pastoral activity levels).
- Regulatory compliance assessed during FRT operation through internal audits.
- Formal surveys to assess revegetation outcomes post FRT closure.

Myall Tree

Rolled bush showing regeneration a few weeks after drilling was completed.

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FRT – Environmental management approaches and targeted outcomes

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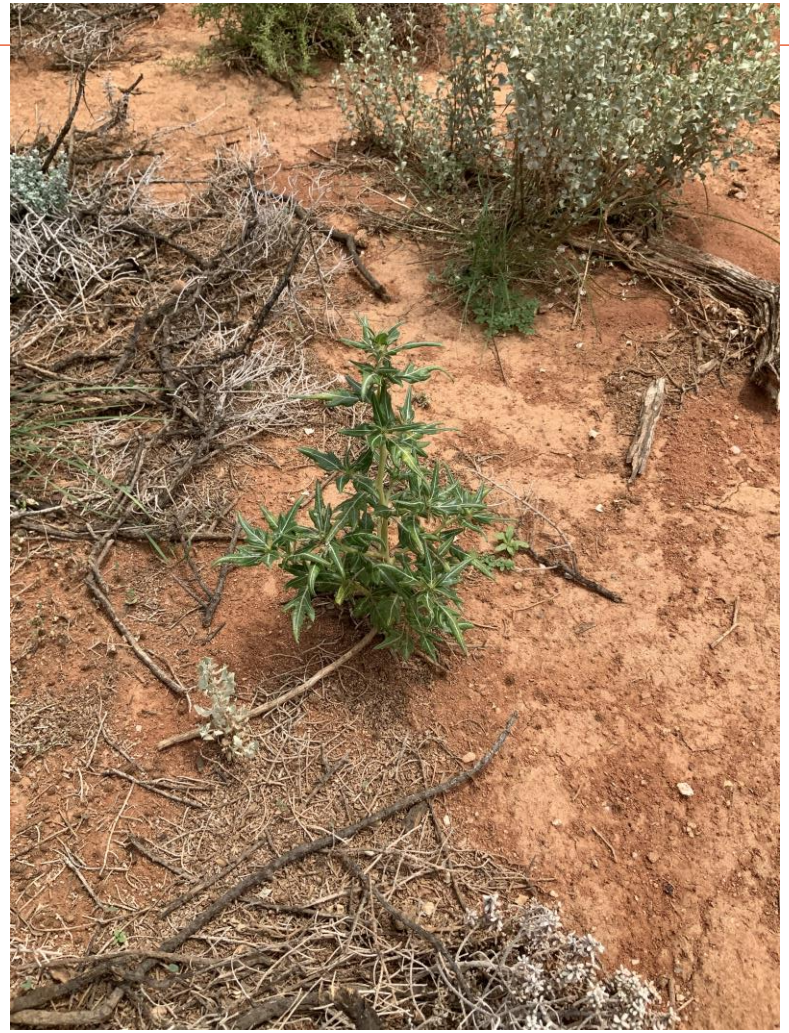
FLORA

Targeted outcome - no introduction of new declared weed species, plant pathogens and/or increase in density or distribution of existing weed species and plant pathogens.

Management approaches:

- Vehicle and equipment hygiene protocols.
- No off-track movements by plant or equipment.
- No exotic plant species permitted in the area.
- Existing declared weed species/plant pathogens managed through active on-site weed management practices.
- Regulatory compliance to be confirmed through routine weed surveys and publicly reported in compliance reports.



Bathurst Burr – an example of a destructive weed in the region

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FRT – Environmental management approaches and targeted outcomes

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FAUNA

Targeted outcome - no native fauna injuries or deaths due to project activities that could have been reasonably prevented and no introduction of new pest species or increase in abundance of existing pest species within the RL in comparison with adjoining pastoral land.

Native fauna management approaches:

- No process ponds to be used.
- All tanks and pipework are sealed.
- Mitigation of temporary entrapment risks (using ramps on drilling sumps etc).
- Traffic management protocols.
- On closure, all operational infrastructure (potentially with exception of some sealed tanks holding lixiviant) will be removed.
- Regulatory reporting of any native fauna deaths.

Pest species management approaches:

- No animals to be brought onto the RL.
- No available food sources for feral animals.
- Monitoring for feral animals and use of control measures (trapping etc).
- Surveys will be undertaken upon FRT closure to demonstrate compliance.

Splendid Fairy Wren. Race *callainus,* on site 21 Dec 2022

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FRT – Environmental management approaches and targeted outcomes

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AIR QUALITY/RADIATION

Targeted outcome - no adverse impact to the public and the environment from radon release or the dispersal of radionuclide rich particulates.

Management approaches:

- Environmental radiation levels will be monitored prior to the Retention Lease (RL) application, during the FRT construction and operations, and post FRT closure.
- All employees and contractors are required to wear radiation monitors when working on site.
- All monitoring results are provided to the Government (and is publicly available) to demonstrate compliance.

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FRT – Environmental management approaches and targeted outcomes

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TRAFFIC

Targeted outcome - minimise traffic impacts on the local community during FRT construction and operations

Traffic movements will peak during construction of the FRT, which is planned for Q3 2023. This will require the trucking of 2 shipping containers (containing the pilot plant), tanks, ATCO huts and other equipment and supplies to construct and operate the FRT.

Management approaches:

- Freight loads will be coordinated to minimise truck movements.
- Where possible, AGE employees and contractors will travel in groups to site via light vehicles to limit vehicle numbers.
- Subject to FRT operational requirements, small buses may also be used to reduce employee/contractor light vehicle movements.

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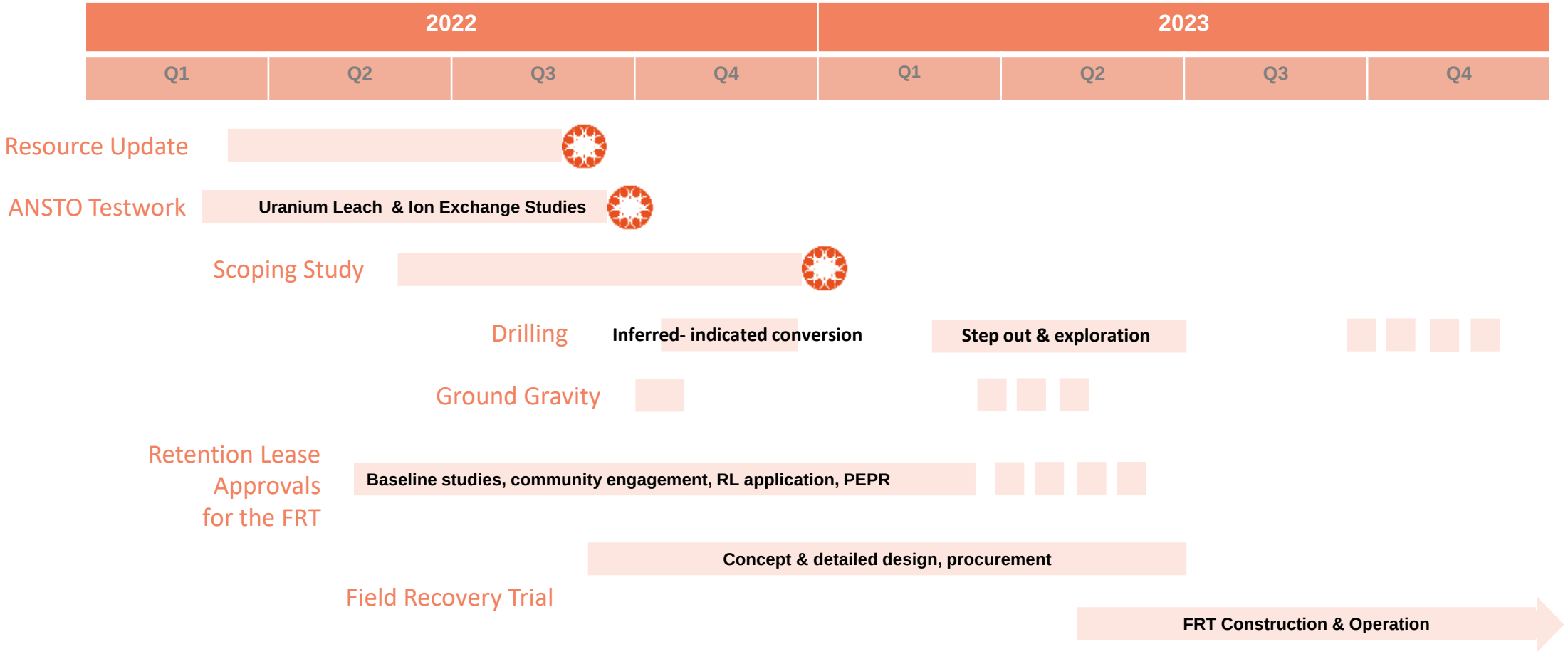
Planned Activities 2022/23



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Working with the Community

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- Over $750,000 spent (since Sept 2021) in the local community, with more than 30 businesses to date.
- Equipment hire, accommodation, fabrication services, vehicle hire, exploration consumables and others.
- Future spend to also include LV & HV maintenance, air-conditioning maintenance, cleaning, engineering and fabrication, laboratory services, medical services, Dangerous Goods Transport, general freight and borehole logging, to name just a few.
- Future labour requirements - administration, warehousing, poly-welding, electrical trades, boilermakers, mechanical fitters, operators, earthmoving (backhoe), field technicians and others.
- Being closely located to Whyalla is a significant advantage for AGE, given the city's quality workforce and extensive industrial and other business offerings.

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Contact Us and Questions

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We would greatly appreciate any questions or feedback on aspects raised today, so please contact the AGE team:

- feedback@alligatorenergy.com.au
- (07) 3839 3904
- www.alligatorenergy.com.au

Further briefings and engagement opportunities will be provided over coming months and will be promoted through local media and other sources – we look forward to seeing you again.

Questions?

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