

28 February 2024

## Electromagnetic Data Indicates Uranium Exploration Potential in South Australia

- Large presence of prospective palaeochannel system identified from historical electromagnetic (EM) data
- Data covers ~1,000 sq km of Adavale's Mundowdna licences
- Location and orientation of prospective palaeochannel system correlates well with Adavale's upcoming low impact ground based exploration surveys of the Mundowdna licences
- The processing of the historical EM dataset secured a significant time and cost saving for Adavale, obviating the need to re-fly the large licence area
- Adavale is well positioned to take advantage of the uranium price tailwind

Adavale Resources Limited (ASX: ADD) ("or the Company") is pleased to advise that a significant historical electromagnetic (EM) dataset has been procured covering EL6821 and EL6957 (**Mundowdna** and **Mundowdna South**) in South Australia, where an extensive series of covered palaeochannels have been interpreted<sup>1</sup>. The EM dataset, covering most of the Mundowdna licence package, was originally flown in 2007 for the purpose of identifying palaeochannels within a large recognised alluvial fan extending north-westward out from the Flinders Ranges. Re-processing and interpretation of the EM dataset, supported by modern satellite imagery strongly indicates the presence of an extensive palaeochannel system within the Company's Mundowdna licence package.

### Adavale's Executive Director, David Riekie commented:

*"The acquisition and processing of the Mundowdna historical EM data is an important step in our first phase of exploration on this ground. The data was a significant find as EM coverage was one of the techniques that Adavale would have otherwise needed to fund as part of assessing Mundowdna. It has provided a major time and significant cost saving."*

*"The imagery from this data confirms the geological model in that there is a significant palaeochannel system within our licence package. This is timely with our upcoming works program and also means that this processed data can be used for future exploration and expansion of targets on our licence package."*

<sup>1</sup> ASX Announcement 27 November 2023 – Satellite imagery identifies paleochannels for uranium exploration

### ASX: ADD

#### DIRECTORS & OFFICERS

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#### ABOUT ADAVALE

Adavale Resources is an ASX-listed exploration company targeting projects in the 'battery materials' space. The company is currently focused on both its 100% owned Kabanga Jirani Nickel Project and 2 Farm-in 'Luhuma' licences adjacent and along strike from the world's largest undeveloped high grade NiS resource of 87.6Mt @ 2.63% Ni.

Adavale is also progressing exploration on its 100% owned uranium tenements in South Australia



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## Technical Data Details and Processing Outcomes

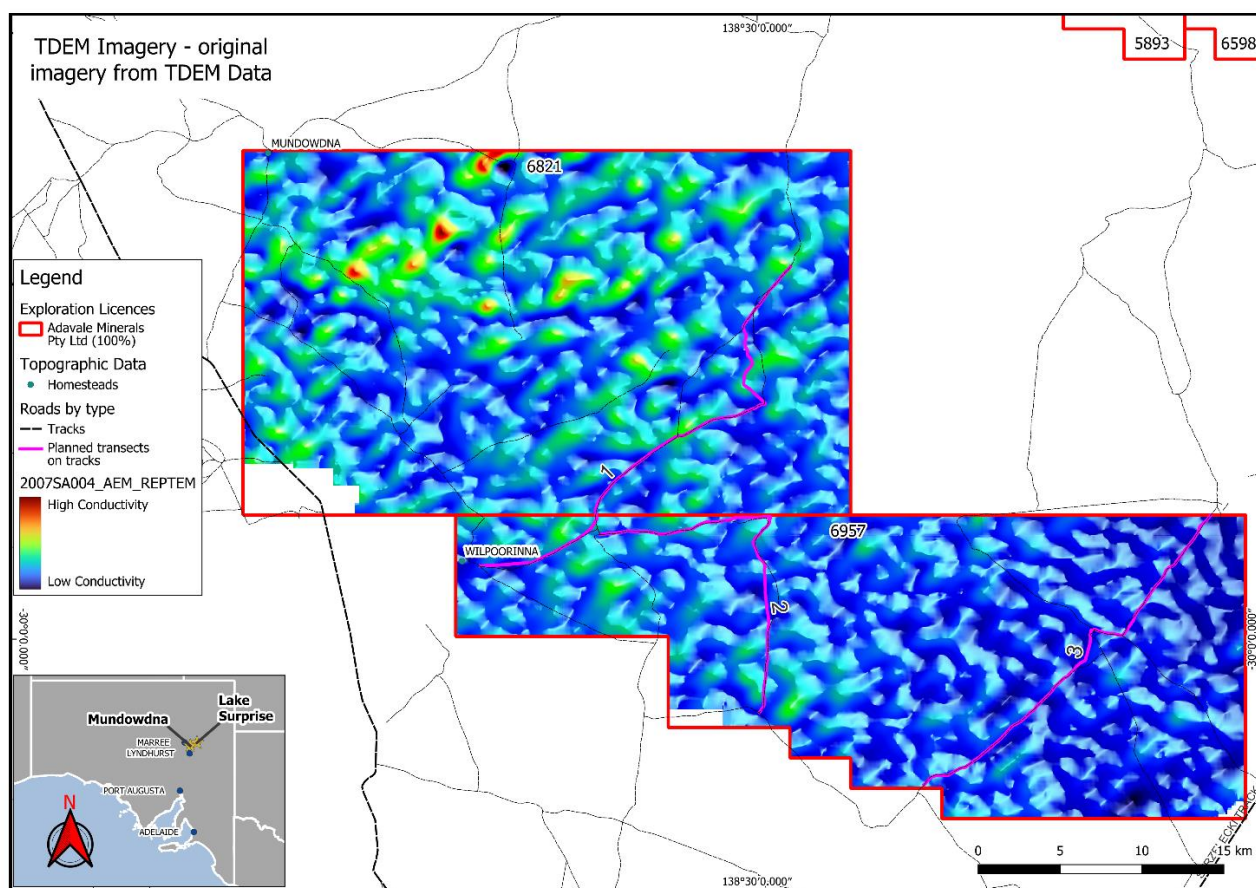
The historical Mundowdna EM dataset was downloaded from the South Australian Resources Information Gateway (**SARIG**) data portal after it was identified in a previous company's report. The original survey dataset was acquired by Geosolutions in 2007 using their REPTM system. Further information on the survey can be found in Open File ENV11479<sup>2</sup>.

The survey, flown using a Eurocopter Squirrel BA. VH-HHJ helicopter encompassed a 1km line spacing oriented at 045-225 degrees true at a height of 30m and airspeed of 55 knots. In total, approximately 400,000 survey data points were recorded.

Images produced from the processed data were then used between 2007 and 2009 to direct drilling and exploration activities over the area.

Processing software and computer limitations in the 2000s often involved processing methods that were not statistically valid for the data spacing and resulted in substandard image processing practices, especially on very large datasets. Where this occurred, a significant amount of "data noise" could be observed in the resultant imagery.

In Figure 1, presented below, the original imagery produced over the Mundowdna licence package is very noisy and difficult to interpret as no obvious continuous trends are evident. All processed images presented herein reflect the sixth Time Domain EM (**TDEM**) survey channel and have the same hill-shade and colour stretch applied.



**Figure 1:** Original imagery from 2007 REPTM survey showing the noisy nature of the data.

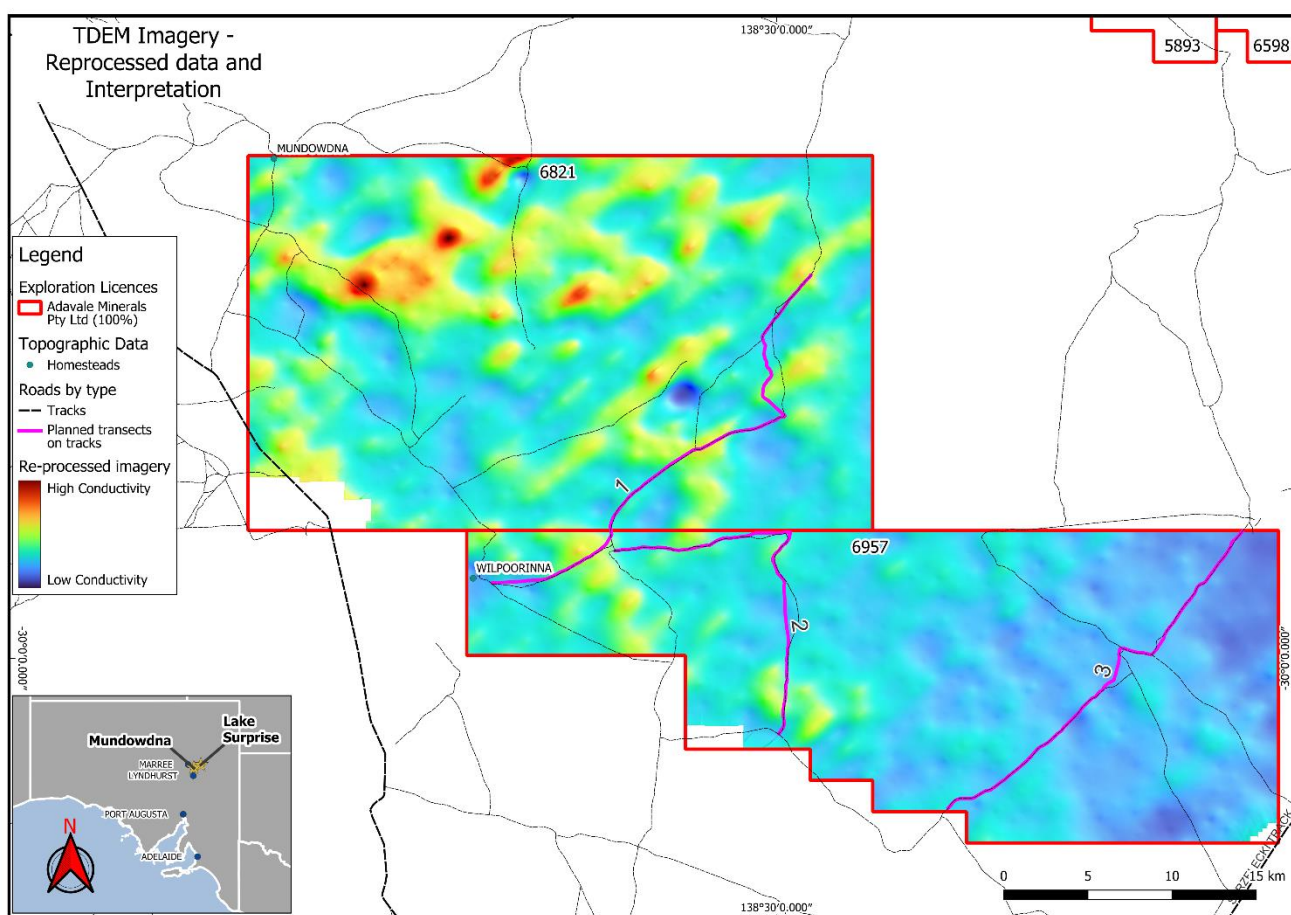
<sup>2</sup><https://sarigbasis.pir.sa.gov.au/WebtopEw/ws/samref/sarig1/wci/Record?w=NATIVE%28%27TENEMENTS%3D%22EL03578%22%27%29%3Border%3D%3B%3D1%3Bm%3D1%3Bpp%3D25&sid=6d7b2e569aea4ab882aff9169c78fc0f&set=15&m=2>

The noisy nature of Figure 1 is self-evident and is due largely to the survey line spacing in relation to the much closer data spacing along each line.

The significantly greater spacing between lines compared the data points along the lines means an adequate search distance needs to be used to interpolate between data points on adjoining lines. This significantly increases the computing power required to correctly interpolate between points as the spacing of points on the ground is quite close.

Details of the original processing method and the data interpolation search distances it employed could not be located. However, by using a Simple Kriging algorithm in the System for Automated Geoscientific Analysis (**SAGA**) GIS and a 700m search distance, Adavale was able to re-create an image that closely replicated the noisy image shown in Figure 1.

With this knowledge, Adavale determined that a search distance of at least 2km was required to provide meaningful correlation across survey lines. Figure 2 shows the re-processed image produced using the same simple kriging algorithm in the SAGA GIS package with the 2km search radius applied. This task was very computer intensive, taking days to produce each image, but the resulting imagery is much less noisy, providing strong indications for the presence of a palaeochannel system within the licence package. Reds and yellows represent high conductivity regions in the data.

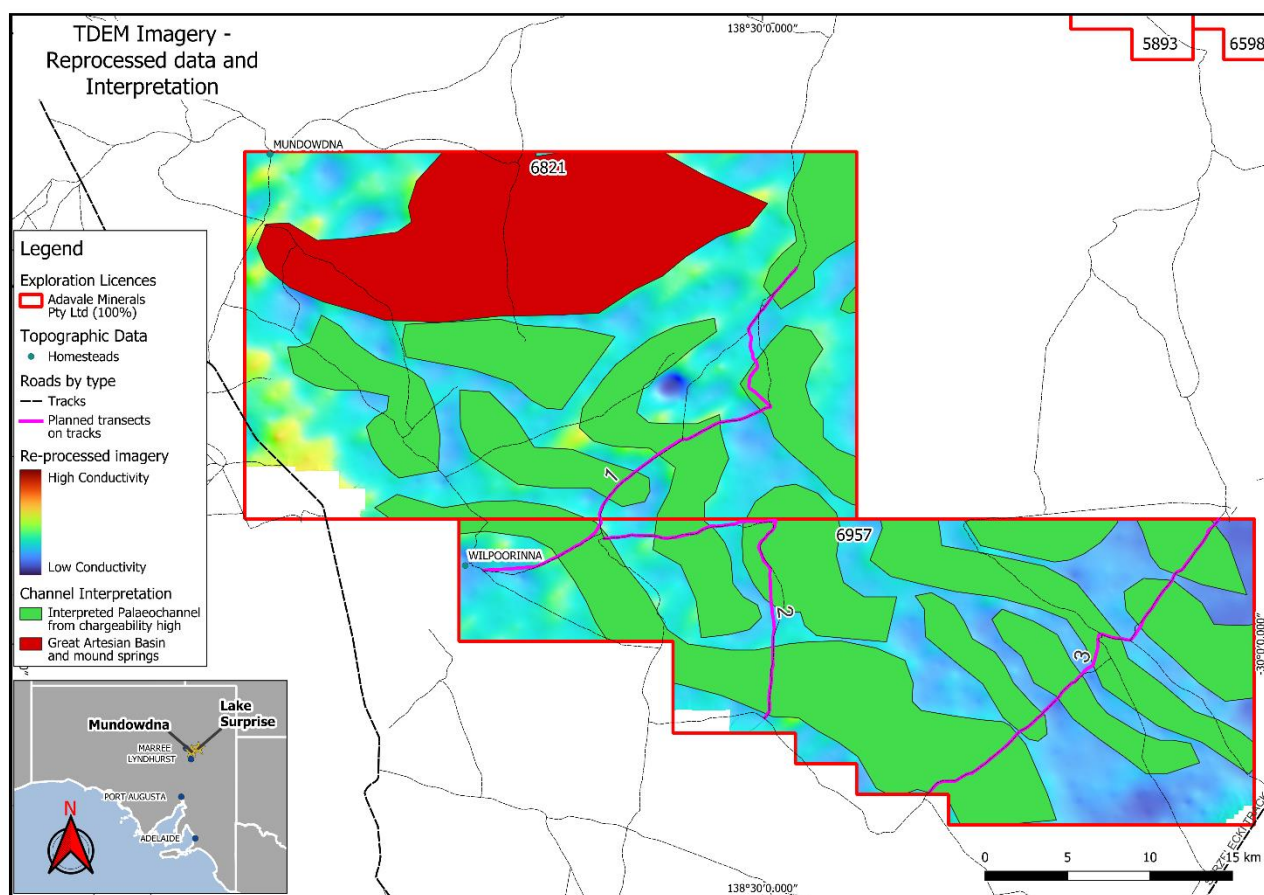


**Figure 2:** Newly processed image showing smoother, continuous nature of the data when the image is appropriately processed. Reds and yellows represent high conductivity regions in the data.

The newly processed imagery was then compared with the interpreted palaeochannel observed in the Sentinel 2 satellite imagery<sup>1</sup>. While not exact, the interpreted palaeochannel positions within the processed TDEM and Sentinel 2 satellite imagery do closely correspond.



Differences are to be expected as the TDEM data represents a depth slice of potentially deeper buried palaeochannels, while the Sentinel 2 data maps the youngest palaeochannels at surface. The high in the northwest of EL6821 is the result of groundwater related to mound springs associated with the main aquifer in the Great Artesian Basin. This is highlighted in Figure 3.



**Figure 3:** Interpreted Channels from processed data showing the channels in the alluvial fan and the area of Great Artesian Basin Influence.

Considering the newly processed image, the current planned exploration program will proceed as originally designed. The transects planned on the Sentinel 2 imagery interpretation test a number of features that are also present in the TDEM data. Figure 4 shows there are some minor changes to the location of the transects to correctly match up with the station tracks.

The ground-based exploration program is scheduled to commence in April 2024.

### Uranium Sector Commentary

The current robustness of the uranium price is largely driven by supply and demand dynamics. On the supply side, reduced production from major producers such as Cameco and Kazatomprom in 2023 caught the market by surprise. On the demand front, an increasing number of countries are seeking uranium supplies outside of Russia, adding to an already growing demand driven by China's burgeoning domestic nuclear power industry. China has announced expansion plans for three nuclear reactors, whilst Japan has also been restarting reactors that were closed post Fukushima.

The uranium market is further complicated by the involvement of financial speculators and physical uranium Exchange-Traded Funds (ETFs). As the market gains strength, these entities are accumulating physical uranium stockpiles, thereby reducing the supply available to power users and exerting upward pressure on prices.

The Sprott Physical Uranium Trust (UU.TO), established in 2021, has been purchasing uranium on the spot market, effectively removing volumes from circulation. The Trust's current value stands at US\$5.1 billion, marking a nearly 90% increase since mid-2023.



**Figure 4:** 12-month uranium price chart (source: [markets.businessinsider.com](https://markets.businessinsider.com))

Analyst commentary in 2023 highlighted that the uranium price needed to see an extended period above US\$70-80/lb to provide an incentive price for new investment. The commentary also noted that with projects such as Jabiluka in Australia unlikely to restart, the focus will be on the development of new greenfields opportunities.

The World Nuclear Association<sup>3</sup> forecasts uranium demand to climb from 162 million pounds in 2021, to 206 million pounds by 2030 and 292 million pounds by 2040. This increase in demand is expected to outpace the growth in supply, leading to a potential supply-demand imbalance in the uranium market.

Adavale is well positioned with its highly prospective uranium assets in South Australia to take advantage of this huge uranium tailwind.

This announcement is authorised for release by the Board of Adavale Resources Limited.

### Acknowledgements to traditional owners

Adavale acknowledges the Dieri and Adnyamathanha as Traditional Custodians of the land on which our current works are located. With respect to Elders past, present and emerging, Adavale is committed to conducting its activities with respect to the communities in which it operates.

<sup>3</sup> [World Nuclear Association - World Nuclear Association \(world-nuclear.org\)](https://www.world-nuclear.org)

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## Competent Persons Statement

The information in this release that relates to “exploration results” for the Project is based on information compiled or reviewed by Mr Patrick Harvey MAppSci, Australia. Mr Harvey is a consultant for Adavale Resources Limited and is a member of the AIG. Mr Harvey has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration as well as to the activity that is being undertaking to qualify as a Competent Person under the ASX Listing Rules. Mr Harvey consents to this release in the form and context in which it appears.

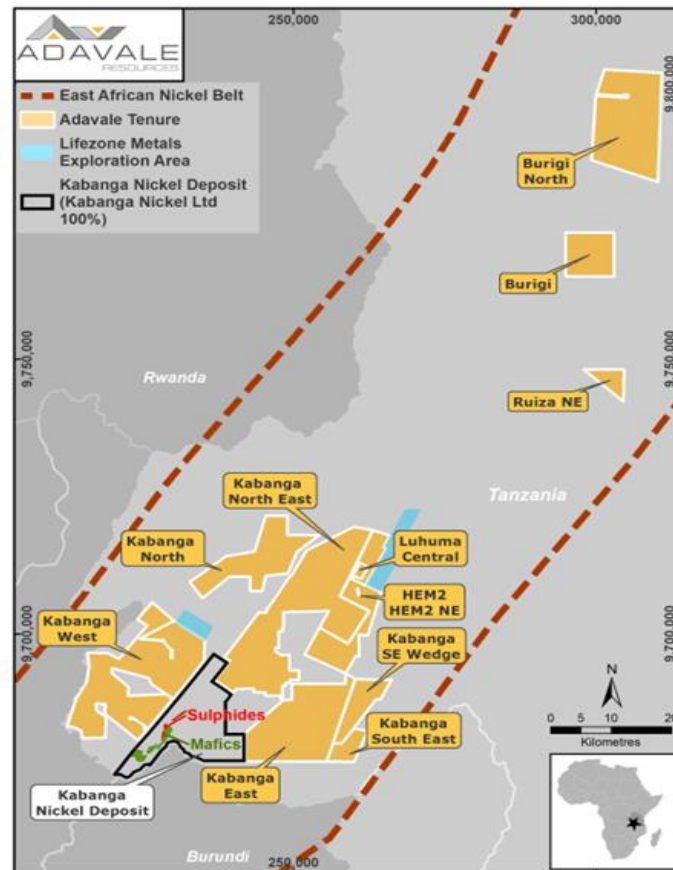
## Forward looking statements

This document contains forward-looking statements concerning Adavale. Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward-looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes. Forward looking statements in this document are based on Adavale's beliefs, opinions and estimates of Adavale as of the dates the forward-looking statements are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments. Although management believes that the assumptions made by the Company and the expectations represented by such information are reasonable, there can be no assurance that the forward-looking information will prove to be accurate. Forward-looking information involves known and unknown risks, uncertainties, and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any anticipated future results, performance or achievements expressed or implied by such forward-looking information. Such factors include, among others, the actual market price of nickel, the actual results of future exploration, changes in project parameters as plans continue to be evaluated, as well as those factors disclosed in the Company's publicly filed documents. Readers should not place undue reliance on forward-looking information. The Company does not undertake to update any forward-looking information, except in accordance with applicable securities laws. No representation, warranty or undertaking, express or implied, is given or made by the Company that the occurrence of the events expressed or implied in any forward- looking statements in this document will actually occur.

## ABOUT ADAVALE

Adavale Resources Limited (ASX:ADD) is a nickel sulphide exploration company that holds 100% of the Kabanga Jirani Nickel Project, a portfolio of 12 highly prospective granted licences covering ~1,216km<sup>2</sup> along the Karagwe-Ankolean belt in Tanzania. The six southernmost licences are proximal to the world-class Kabanga Nickel Deposit (58Mt @ 2.62% Ni). Adavale has farmed-in to two more highly prospective licences contiguous to our seven southernmost licences, adding a further 99km<sup>2</sup> to the portfolio (1,315sq km). Adavale's licences were selected based on their strong geochemical and geophysical signatures from the previous exploration undertaken by BHP.

Adavale also holds exploration licences for their sedimentary uranium potential within the northern part of the highly prospective Lake Frome Embayment in South Australia.



## Appendix 1

### Adavale Resources Limited – Lake Surprise and Mundowdna Projects, South Australia JORC Code Edition 2012: Table 1

**Section 1: Sampling Techniques and Date – Not Applicable as no sampling results were published.**

#### Section 2: Reporting of Exploration Results


*(Criteria in this section apply to all succeeding sections)*

Criteria	Explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<p>The Lake Surprise Uranium Project covers an area of 396km<sup>2</sup>. The tenement package is located in the North-East Pastoral District of South Australia. It is 100% owned and operated by Adavale Resources.</p> <p>Tenement ID's are: EL5892, EL5893 and EL6589</p> <p>The Native Title holder for the area is the Dieri People.</p> <p>The tenements cross the boundary of Clayton Station and Murnpeowie Station.</p> <p>The Mundowdna Project comprises:  EL6821 (682 km<sup>2</sup>) and ELA2023/00043 (591km<sup>2</sup>)</p> <p>These licences are centred approximately 45 km south east of Marree and are on the pastoral leases of Farina, Mundowdna, Wilpoorinna and Mount Lyndhurst.</p> <p>EL6821 is 100% owned and operated by Adavale Resources, While at the time of writing, ELA2023/00043 is still under consideration for grant by the department.</p> <p>Native Title on the licences is held by The Arabana People, The Adnyamathanha People and The Dieri People.</p>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	Not applicable, not referred to.
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	The exploration target is a sandstone hosted palaeochannel deposit of uranium within sediment outwash from the Northern Flinders Ranges.
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li><i>A summary of all information material to the understanding of the exploration results</i></li> </ul>	Not applicable as no drilling was conducted.



Criteria	Explanation	Commentary
	<p><i>including a tabulation of the following information for all Material drill holes:</i></p> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li><i>dip and azimuth of the hole</i></li> <li><i>down hole length and interception depth</i></li> <li><i>hole length.</i></li> </ul> <p><i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></p>	
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	Not applicable as no such information was referred to.
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i></li> </ul>	Not applicable as no drilling was conducted.
<i>Diagrams</i>	<ul style="list-style-type: none"> <li><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	Not applicable as no drilling was conducted.
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li> </ul>	Not applicable as no drilling was conducted.

Criteria	Explanation	Commentary
Other substantive exploration data	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<p>An historic geophysical dataset was identified in the past company reporting from one of the companies to explore the area from 2007 to 2009. The data was downloaded by Patrick Harvey and the information was recognised as a key new dataset.</p> <p>Reprocessing of the information took place as the original imagery from the data appeared noisy in nature and there are some significant anomalies and aliasing of data related to the original processing.</p> <p>The data was reprocessed into images on System for Automated Geoscientific Analysis (SAGA) using the simple kriging algorithm. The search radius was set at a distance that allowed processing over 2 lines from each data point. This meant that a search radius of 2km was used.</p> <p>This generated much clearer images that allowed interpretation of conductive units within the fluvial outwash fan from the northern Ikara/Flinders Ranges. These are interpreted as palaeochannels as they bear a resemblance to the channels seen in other areas in the Frome Basin to the east of Ikara/Flinders Ranges</p> <p>The original dataset was acquired by Geosolutions in 2007 using their REPTM system. The system samples at 50hz and windowing of data to 21-time domain channels happened as the first stage of processing, with averaging of data to 10m intervals along lines as the second stage of processing.</p> <p>Each channel represents a depth slice in the earth and additional processing and correlation with drilling is needed to make an accurate depth estimate.</p> <p>The survey was flown using a Eurocopter Squirrel BA. VH-HHJ helicopter towing the Geosolutions unit on a 1km line spacing. The survey was flown at a height of 30m with an airspeed of 55 knots oriented 045-225 degrees true. The dataset that was produced in this survey has around 400,000 data points.</p>



Criteria	Explanation	Commentary
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	Planned further work has been outlined in Adavale's previous announcements on 07/02/2024 and 18/01/2024 to the ASX that provided details of the works program, scheduled for end of March/start of April 2024 as of writing this announcement.