GDC Co-funding

Angela Seismic Reflector Drill Testing

Resourcing the Territory

GDC Co-funding

Exploration Grant: Round 18 – Brownfields Diamond Drilling

File Ref: 58-F25-2136

Elevate Uranium Ltd

EL8 Brownfields Diamond Drilling

Tenement EL25758

Authors:

Elevate Uranium (Title Holder): Mark Menzies mark.menzies@elevateuranium.com.au

Jason Triffitt Jason.Triffitt@elevateuranium.com.au

March 2026

NT Mapsheet 1:250 000: Alice Springs SF5314

NT Mapsheet 1:100 000: Alice Springs 5650

Zone 53

Abstract

Reflection seismic surveying has not been widely applied in minerals exploration owing to perceived high cost, and problems with resolving steeply dipping stratigraphy. At Angela however, the stratigraphy is gently dipping and well suited for the seismic technique. Elevate Uranium completed a 2D seismic survey at Angela in 2022 and identified a deep seismic reflector that had not been drill tested, that displayed a similar seismic signature to a reflector which corresponds with the main Angela orebody.

Acoustic impedance measurements on historic drill core demonstrated that reduced lithologies have on average a 30% higher seismic velocity that oxidised lithology. Given this information and the direct correlation between the location of seismic reflectors and downhole gamma anomalism it has been determined that the reflectors at Anglela are likely associated with a redox boundary. Redox boundary positions are one of the likely mechanisms for uranium deposition.

Two diamond holes were drilled to determine the validity of this theory. If confirmed there is potential to reveal an entirely new mineralised horizon at depth below the known Angela deposit and provide a method for targeting favourable geological positions throughout the greater region.

Table of Contents

1. Introduction

Elevate Uranium ("Elevate") is a uranium exploration company with significant resources in Namibia and Australia (NT and WA).

The Angela uranium deposit, within EL25758, is 100% owned by Elevate Uranium and is located on Owen Springs Station and situated approximately 25km south of Alice Springs in the Northern Territory of Australia (Figure 1). The tenement is accessed approximately 24 km south along the Old South Rd for Alice Springs. The drilling locations are then accessed via well-formed station tracks.

The project area is generally flat topography with small areas of outcropping sandstone.

Figure 1: Angela project location.

As part of the Northern Territory Government initiative "Resourcing the Territory", Elevate Uranium applied for and was awarded a grant under Round 18 Geophysics and Drilling Collaborations program – Brownfields Diamond Drilling to investigate a seismic reflector at depth at the Angela deposit. The reflector was identified as part of a 2D Seismic survey co-funded under the Resourcing the Territory initiative in 2022 (Round 15).

This report outlines the work carried out and findings as contribution to the co-funded Round 18 project.

2. Regional context

2.1 Regional Geology

The Angela uranium deposit is hosted within the Undandita Sandstone Member of the late-Devonian to early Carboniferous Brewer Conglomerate. The Brewer Conglomerate is the youngest geological unit within the Amadeus Basin and was deposited as a wedge-shaped, molasse deposit in a foreland basin setting in response to southwards thrusting of the Arunta Block (to the north) over the Amadeus Basin.

Continued deformation during the latter stages of the Alice Springs Orogeny subsequently deformed the Brewer Conglomerate, producing a series of broad, east-west trending, doubly plunging synclines within the Amadeus Basin.

Uplift occurred along the northern margin of the Amadeus Basin and progressed from west to east through the later stages of the Alice Springs Orogeny. The lower part of the Undandita Sandstone Member was derived from Upper Proterozoic to Lower Palaeozoic sediments of the basin. With increasing uplift in the Alice Springs Orogeny, the Lower Proterozoic granitic and gneissic Arunta Complex to the north became exposed and contributed increasingly to the upper parts of the Undandita Sandstone Member, providing a source for uranium.

The Brewer Conglomerate was deposited as a series of coalescing alluvial fans developed on the southern flanks of the proto-MacDonnell Ranges by southwards draining, braided fluvial channels fed into a large-scale, generally east-west trending, longitudinal drainage system. Depositional environments are interpreted to be environments including braided fluvial channel, abandoned channel, to overbank and possibly lacustrine settings.

Stream gradient decreases away from the ranges (southwards) and the Brewer Conglomerate inter-fingers with, and passes laterally into, the finer-grained, more distal Undandita Sandstone Member. The Brewer Conglomerate reaches a maximum thickness of 3,000 m within the Missionary Syncline, 15 km southeast of Alice Springs where the largely oxidised Undandita Sandstone Member contains a wedge of reduced sediment between regionally planar upper and lower redox boundaries. Uranium mineralisation is concentrated at these redox boundaries.

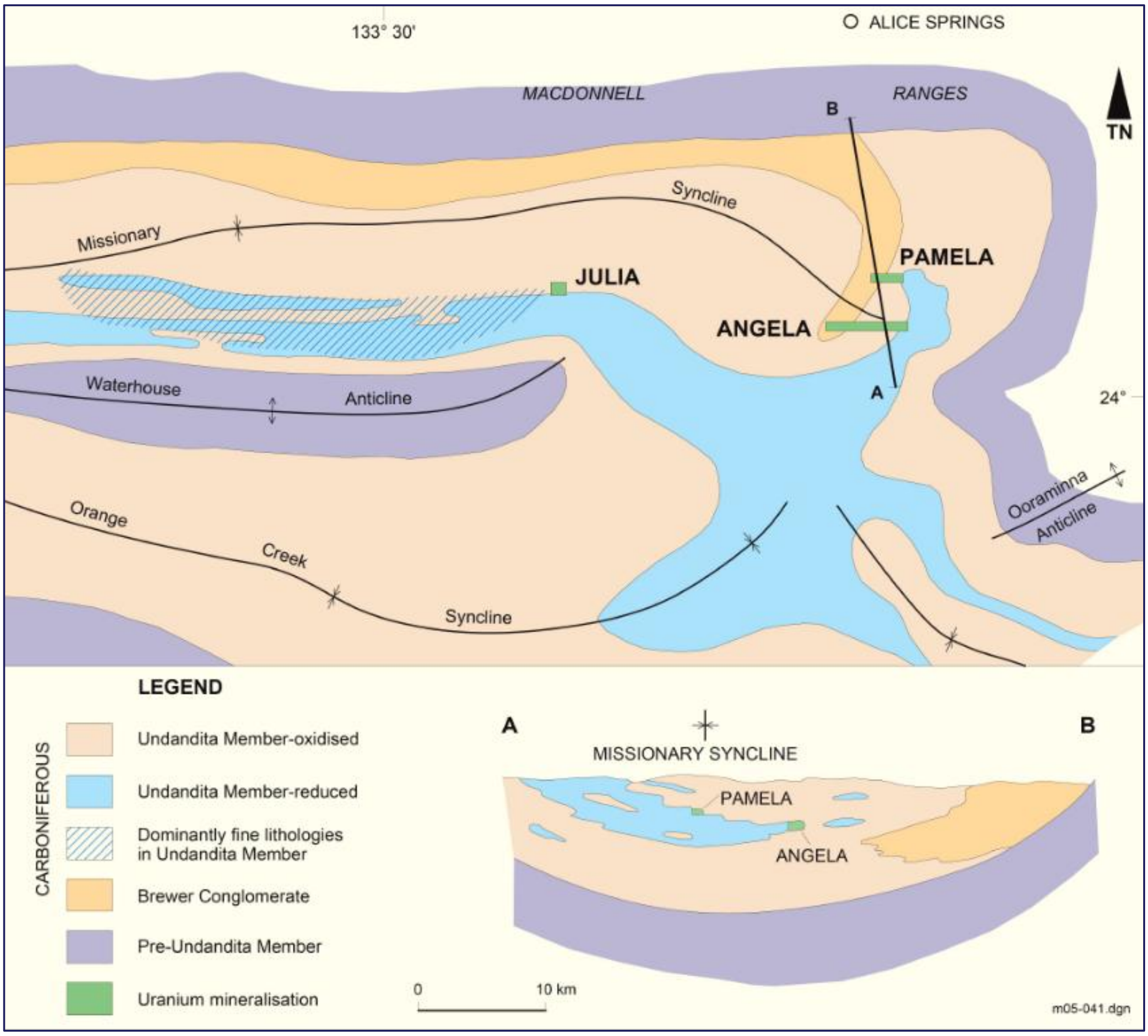

Figure 2: Regional Geology

2.2 Project Geology

Uranium mineralisation at Angela (and the nearby Pamela deposit) is hosted within the Undandita Sandstone Member which ranges from fine to coarse grained lithic arenite, and from medium to coarse grained lithic arkose, intermixed with subordinate conglomerate and pebbly sandstone horizons, and thin, poorly developed limestone and mudstone units deposited under waning flow conditions and within abandoned channels. Most of the mineralisation is hosted by medium to coarse grained feldspathic lithic arenites, which although finer, are better sorted.

Mineralisation is considered to have been emplaced during the early-Carboniferous (during diagenesis) and has been preserved by extensive calcite cementation of the host rock. Structural deformation during the Alice Springs Orogeny has subsequently folded and exposed the mineralisation at surface. The main Angela I mineralisation crops out near the eastern margin of the licence, close to the Old South Road, and dips ~9° to the west. Mineralisation is known to extend westwards for at least 5 km to depths of ~900 m.

The target in the area is sandstone hosted uranium mineralisation formed at geochemical (redox) boundaries by deposition of uranium from groundwater. Redox boundaries in the upper part of this reduced zone typically show uranium accumulations. The major accumulations are located in irregularities or steps, mainly on the upper regional redox boundary in the Missionary Syncline. These accumulations were previously identified in the Angela area (Borshoff & Faris, 1990).

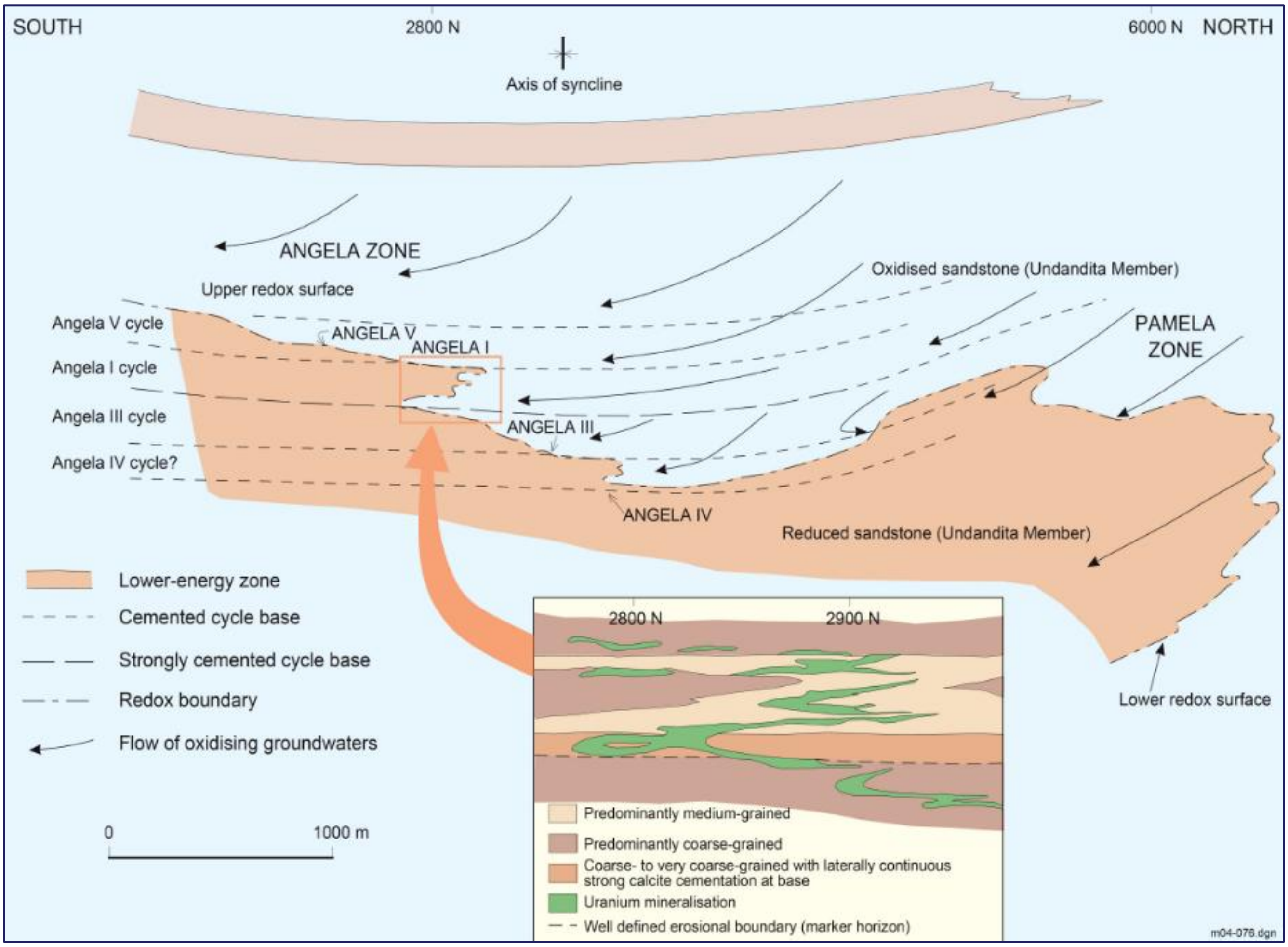

Figure 3: Deposit Schematic Cross Section

3. Previous exploration

3.1 Historical Exploration

Uranerz explored the Alice Springs Project (which extended across the current EL25758) for over 10 years from 1972 to 1983 and the tenements were held until 1990. The following summary is adapted from Uranerz reports as detailed in the Bibliography.

A detailed airborne radiometric survey over the tenements was carried out in 1973 and airborne spectrometry located three anomalies. Trenching and drilling of these anomalies in 1973-1974 led to the recognition of the Angela and Pamela prospects. In 1974, shallow vacuum drilling on a regional grid, together with reconnaissance mapping indicated that these prospects were regionally located along the boundary between oxidised and reduced sandstones.

From 1974 onwards exploration was divided into two broad phases; the first involved diamond/percussion drilling of the known mineralised bodies to test size, grade and establish mineralisation controls; the second involved regional exploration along the reduced zone and its margins. Detailed drilling at the Angela and Pamela prospects in 1974-1975 defined the main outline of the mineralisation. Ore resources for the part of the Angela I deposit that was drilled amounted to about 15,00 t U_3O_8. From 1975 to 1977 percussion drilling was carried out along strike of the upper or northern margin of the reduced zone to test the potential of mineralisation at depth in the zone between the Pamela and Angela prospects. The redox boundary was tested by holes drilled approximately 500 m apart to a maximum depth of 150 m. Drilling was continued southwest from the Angela I deposit.

In 1978 re-estimation of resources identified a resource of 1,500 t U_3O_8 using a cut-off of 500 ppm over 2 m for the Angela I deposit, and it was also concluded that considerable resources could occur further down-dip and in separate zones immediately north and south of the Angela I deposit. Detailed drilling of the Angela I deposit in 1979 indicated a 30-40 m change in the stratigraphic level of the redox boundary with which the mineralisation is associated. This “step” marks a complex zone of stacked oxidised and reduced lobes and tongues. In plan, this multi-lobed zone plots as a distinct east-west trend.

Drilling between the Angela I deposit, and the Pamela prospect delineated a group of spatially and genetically related step zones containing inter-digitated mineralisation. These are referred to as Angela II, Angela III and IV prospects. Close-spaced drilling at 10 m intervals on the 800W section over the Angela I deposit provided detailed lithology, but hole-to-hole lithological correlations could not be demonstrated.

In 1980, the Angela I deposit was confirmed over a 4,900 m strike length and remained open to the west at depth. Infill percussion and diamond drilling upgraded the integrity of defined resources. Angela II-IV satellite prospects were defined as thinner ore zones with similarities to the Angela I deposit. The Angela V satellite prospect was delineated as a new ore zone south of Angela I, similar to the Angela II and III prospects.

Angela displays potential down-dip to the west. Exploration in 1981 concentrated on establishing the style, continuity and potential of the Angela prospects, flanking the Angela I deposit. A data review was carried out, which included recalculation of all gamma log eU_3O_8 values using the high-resolution deconvolution methodology. Regional sedimentological studies established a sedimentary history for the basin, which led to improved genetic concepts for redox processes and allowed a better evaluation of prospectively.

Investigations in 1982 were confined to re-logging drill core and data studies of prospects in the East Missionary Syncline. Detailed re-logging allowed more meaningful sedimentological profiles to be constructed. Correlation of sedimentary features was achieved using downhole resistivity logs. Ore distribution profiles from deconvolved down-hole gamma logging were compiled.

Data studies showed individual lenses of ore are related to a regionally continuous 30 m stratigraphic sandstone package with a prominent coarse-grained basal unit.

In 1983, Uranerz completed a pre-feasibility study that indicated the Alice Springs Project, comprising the Angela and Pamela deposits, would not be economically viable at the prevailing and predicted short to mid-term uranium price and the project was placed on care and maintenance. In 1990, Uranerz, applied to the Northern Territory Government to have the project area converted to a Reservation from Occupation (RO) to protect the resource.

3.2 Previous Exploration

2009

Work conducted on EL25758 during the year ended 2009 included a drilling program comprising 103 diamond holes for 10,333 m with 16,684 m of RC pre-collars and 8 geotechnical holes. All holes were probed for gamma and resistivity. A total of 1,924 samples were sent for assay.

2010 – 2011

During the 2010 reporting year a total of 59 percussion pre-collared diamond holes were drilled for 5,683 m with downhole gamma and resistivity probing conducted on all holes. Geochemical analysis was conducted on a total of 1,948 samples.

Activities on the project were scaled back during the 2010 – 2011 reporting period following NT Government's announcement that it would not support the development of a mine at Angela. Work included drilling of 3 rotary mud holes for 690 m and baseline environmental studies.

2011 – 2012

Work conducted during the 2011 – 2012 reporting period was restricted to completion of the baseline studies, environmental management and rehabilitation monitoring.

2012 – 2013

Work completed during the 2012 – 2013 reporting year was limited to completion of the proposed rehabilitation program in order to obtain a Certificate of Closure in respect of Authorisation No. 0493/01. All holes from the 2009, 2010 and 2011 programs were rehabilitated, and a report was submitted to the Department of Minerals and Energy in October 2013.

2013 – 2014

During the 2013 – 2014 reporting year work completed included an audit of all drill core, completion of a comprehensive review of all technical work, re-logging of selected core, thin section preparation, creation of an updated 3D geological model and completion of rehabilitation, including work under previous tenure as requested by Mining Compliance Division.

2014 – 2015

Activities undertaken during the 2014 – 2015 tenement year were limited to off-ground studies including investigation into geochemical signatures and mineral mapping at Angela, compilation of historical optical microscopy and XRD analysis of 26 samples.

2015 – 2016

During 2015 – 2016 work included hyperspectral analysis and subsequent interpretation of 740 laboratory pulps.

2016 – 2019

Following acquisition of EL25758 by Optimal Mining in 2016 work was limited to off-ground validation of existing data until it was acquired by Elevate Uranium Ltd, formerly Marenica Energy, in 2019.

2020 – 2021

Acid consumption during processing is a major contributor to project success for many uranium deposits should they be developed. This high acid cost has historically been a serious impediment to development of the Angela project. Elevate Uranium sought to reduce the acid consumption through application of its ***U-pgrade***™ process. A proof-of-concept metallurgical program was initiated on a drill core sample used in a prior radiometric sorting test work program managed by Paladin. Mineralogical reports suggest that the acid consuming mineral was calcite. The scope was to confirm the acid consuming mineral was indeed calcite and then establish whether the bulk of the calcite could be removed prior to leaching, thus reducing the leach acid consumption and thereby the project operating costs.

A metallurgical testwork program was completed at the Australian Nuclear Science and Technology Organisation ("ANSTO"), renowned for its uranium knowledge and experience, having run testwork programs on nearly all uranium projects around the world.

Mineralogical work confirmed the acid consuming mineral was calcite, which was predominantly liberated from other minerals and hence, removal by physical beneficiation was potentially possible.

Removal of the calcite mineral was successful from the first metallurgical test. Minor changes were made to subsequent test conditions to generate sufficient product mass to complete acid leach tests on samples pre and post calcite removal, in order to confirm the expected reduction in acid consumption. The bulk of the calcite (84% of the total present in the sample) was recovered into a reject fraction grading 92% calcite and containing 9% of the feed mass, resulting in 91% of the mass and 16% of the calcite reporting to the leach stage.

Uranium extraction from the sample subjected to the ***U-pgrade***™ process increased by 2.8% after removal of the calcite compared to the untreated sample. While various mechanisms for this could be proposed, whatever the reason, removal of most of the calcite prior to acid leaching had a positive effect on the uranium extraction, in this case increasing by 2.8%.

Inevitably, when a uranium sample is beneficiated, some uranium is lost in the reject fraction. This occurred during the calcite removal stage where the post calcite removal sample was 91% of the original mass with a grade of 463 ppm. However, the increased leach uranium extraction rate partially offset this loss. On the sample tested, the net loss of uranium from the ***U-pgrade***™ calcite removal stage and subsequent leach was 23 ppm U_3O_8 more than the whole of ore leach.

There is also a significant environmental benefit from removal of the calcite, since the calcite stream could be used to neutralise the acid in the leach tailings prior to disposal. This would result in the leach residue being rendered inert as a result of all acid being destroyed and all soluble metals precipitated. This consequential benefit is a significant potential environmental result that will be assessed in future testwork programs and study phases.

This proof-of-concept program concluded that:

- removal of the bulk of the acid consuming calcite mineral could be achieved with minimal uranium losses,
- uranium extraction in the leach could be increased by removal of calcite, and
- the calcite reject could be used to render the leach tailings inert, providing significant potential environmental benefit for the project.

These results have been achieved from a limited proof of concept testwork program. Although the sample used in this program has a similar calcite content to the Angela resource, the uranium grade is lower, and although the uranium grade is not critical to the removal of calcite, it is possible that the uranium losses from a higher-grade sample could vary from what has been reported from this testwork program.

2022 - 2025

Work in the period 2022 – 2025 centred around the preparation, acquisition and interpretation of a 2D seismic survey, with 3 seismic lines completed for a total of approximately 16.7 km. The survey identified a number of reflectors, one of which appeared to correspond with the known deposit position. It was interpreted that the reflectors at Anglela are possibly associated with a redox boundary, which is one of the likely mechanisms for uranium deposition.

A "look alike" reflector below the existing deposit and extent of drilling was interpreted to be a conceptual target that warranted drill testing. Much of the work during this period involved seeking the necessary safety, environmental and heritage approvals to carry out the drilling.

4. Exploration concept

Angela is regarded as a "roll-front" type (*i.e.*, low temperature hydrothermal) sandstone-hosted uranium deposit, where uranium is richest at the boundary (redox interface) between reduced (carbon and sulphide-bearing) and oxidised (iron oxide and hydroxide-bearing) sandstone. Uranium deposition in roll-front deposits has occurred in response to topographically-driven flow of oxidised groundwater through an aquifer containing reductants such as sulphide and organic carbon. The crescentic cross section of the deposits is a result of higher fluid flow velocity in the centre of the aquifer compared to its margins.
Uranium is deposited as the result of reduction of aqueous U6+ species to form phases such as uraninite and coffinite. The process converts iron-bearing sulphides to iron oxides and hydroxides, giving the rock a rusty orange to red colour which is quite distinct from the primary sulphide and carbon-bearing sandstone which is typically greyish. This redox interface is thus quite distinct.

Historically the principal method of exploring has been to drill widely spaced holes to intersect the potential host horizon and to establish whether the sandstone is reduced or oxidised. Drillhole spacing is progressively closed up if there is a suggestion that a redox interface lies between the initial holes, until the relatively narrow and hopefully mineralised interface is intersected.

Acoustic impedance measurements of drill core from Angela have demonstrated that reduced lithologies have on average a 30% higher seismic velocity that oxidised lithology. Given this information and the direct correlation between the location of seismic reflectors and downhole gamma anomalism from historic drilling it has been determined that the reflectors at Anglela are likely associated with a redox boundary, one of the likely mechanisms for uranium deposition.
The drill program was designed to investigate interpreted Redox positions at Angela, and importantly whether seismic methods can be used as a targeting tool throughout the region.

5. Details of the collaborative program

5.1 Drillhole Details

Elevate Uranium completed 3 diamond drillholes (2 of which were co-funded) designed to investigate the source of the deep seismic reflector, interpreted to be due to a possible redox position, an important mechanism for uranium deposition. Drillholes also penetrated other reflectors, including the Angela reflector ("*Base Peak Reflector*") which correlates with the known deposit. NT Grants identified the shallowest and deepest of the three holes were preferred to be covered by the Resourcing the Territory initiative, namely ANG0001 and ANG0003.

The co-funded drill program consisted of 2 diamond drillholes with RC precollars for a total of 1,194m, with details in the table below.

Proposed Hole ID	Northing	Easting	Datum	Zone	Dip	Azimuth	EOH	Target	Pre-collar (from)	Pre-collar (to)	Diamond (from)	Diamond (to)	Core diameter
ANG0001	7352215	388076	GDA94	53	-85	088	519.12	Seismic reflector/s	0	216	216	519.12	61.1mm
ANG0003	7352495	386820	GDA94	53	-85	088	674.8	Seismic reflector/s	0	365	365	674.83	61.1mm

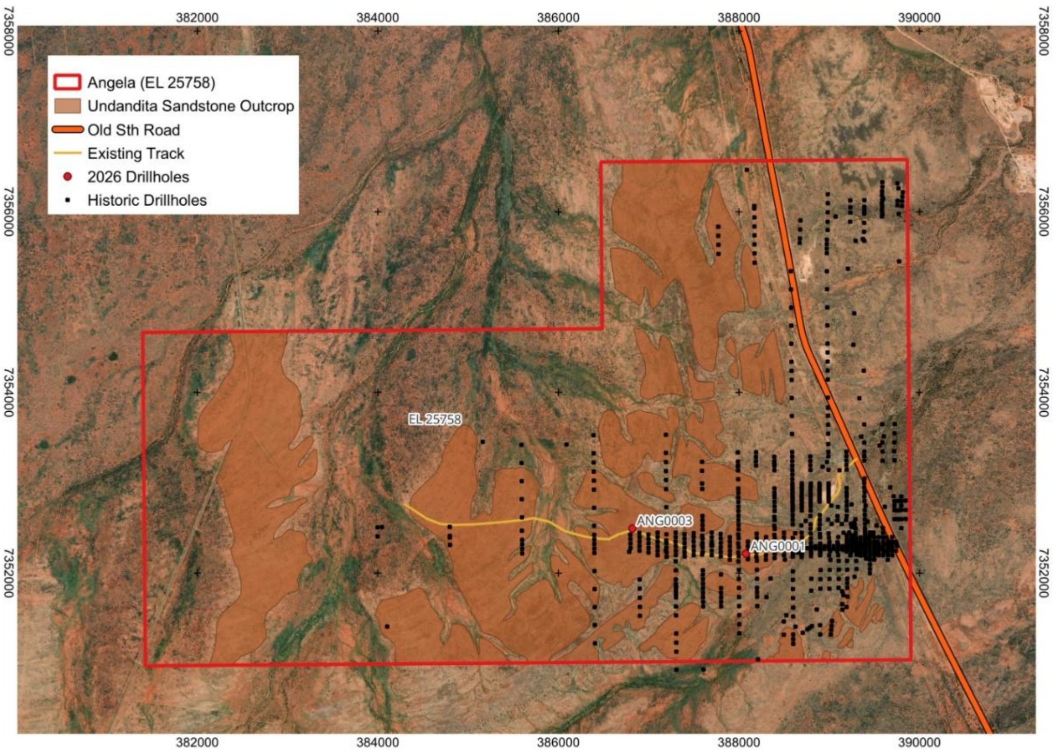

Figure 4: EL 25758 Boundary showing co-funded drillholes and historic hole locations, access track and outcrop geology.

5.2 Downhole Uranium Grade Determination

Down-hole uranium was determined by radiometric gamma logging carried out by Borehole Wireline. Data was collected with a GV Logger System, processed with WellCAD. Gamma probes provide an estimate of uranium grade in a volume extending approximately 40 cm from the hole and thus provide much greater representivity than wet chemical samples which represents a much smaller fraction of this volume. The use of gamma probes is common and well accepted for downhole uranium analysis. The probe utilised was calibrated at the Adelaide Models facility. Down-hole readings were taken at 1 cm intervals before being composited to 0.1 m intervals.

Downhole gamma data was provided as LAS files and imported into the Company's hosted Datashed 5 database. Gamma data (as counts per second) are converted into equivalent uranium values (eU_3O_8) using appropriate calibration, water and casing factors.

Given the exploratory nature of the program geochemical analysis for QAQC was not undertaken but will be incorporated into future programs.

5.3 Downhole Sonic Logging

The fullwave sonic probe measures sonic waves (via pressure pulses) between a transmitter and a series of receivers. Velocity or transit time of the sound wave is a very useful parameter for calibrating seismic surveys.

Tool setup — A monopole acoustic transmitter and multi-receiver array are lowered into a fluid-filled borehole.

Sampling — Continuous waveforms are recorded at 20–40 µs intervals with 12–16-bit resolution.

Receiver spacing — Four receivers spaced 0.6 m, 0.8 m, 1.0 m, and 1.2 m above the transmitter to allow multi-offset velocity analysis.

Waveform window — Each depth point captures a 1–5 ms record containing compressional, shear, and tube-wave arrivals.

Measurement precision — Transit-time accuracy typically ranges from 0.1–0.5 µs, depending on tool sensitivity and borehole noise.

Processing — Coherence-based methods extract P- and S-wave slowness (µs/ft or µs/m) for velocity and elastic-property calculations.

Acquisition quality — Reliable data require tool centralisation, a steady logging speed of 3–6 m/min, and waveform stacking to improve signal-to-noise ratio.

6. Results and Interpretations

6.1 Geology and Mineralisation

The drillholes intersected thick sequences of pervasively carbonate-cemented, medium-grained arenite sandstones and pebbly sandstones containing sub-rounded to rounded quartzite pebbles and cobbles. Clast abundance varies from rare occurrences to matrix-supported conglomeratic intervals. The sandstone units are interbedded with uncommon thin siltstone beds. The holes have common moderately oxidised mottled zones with more strongly oxidised sandstone associated with mineralisation zones.

Drilling intersected narrow, discrete zones of uranium mineralisation in several positions down drill holes, as per table below. Disappointingly, no elevated gamma was noted corresponding with the *Deep Reflector*, which was the principal conceptual exploration target being investigated by the program.

Hole ID	From (m)	To (m)	Interval (m)	Grade eU_3O_8 (ppm)
ANG0001	265.8	266.5	0.7	115
and	280.7	281.3	0.6	351
and	286.5	288.8	2.3	508
incl.	287.8	288.2	0.4	1,363
ANG0003	512.3	513.5	1.2	1,449
incl.	512.6	513.1	0.5	2,974
and	516.4	517.2	0.8	403

6.2 Strip Logs of Oxidation, Velocity, Gamma and S.G.

ANG0001

The interpreted seismic *Top Peak Reflector* is associated with a significant lower velocity zone (no SG data to compare). No clear cause of the velocity low in the oxidation or gamma logs but it is located in the middle of logged brown zone in the colour log indicating a zone of stronger oxidation.

The interpreted seismic *Base Peak Reflector* is associated with high to low velocity boundary and also a high to low SG boundary (from the limited SG dataset). This is the transition between moderately / weakly oxidised and fresh zones. This position corresponds with high gamma readings associated with the Angela ore body.

The interpreted seismic *Deep reflector* (the main exploration target in the drill program) is associated with a very minor low velocity zone compared to the surrounding. Possibly slightly lower SG readings in the low velocity zone, but additional SG recommended. There is no clear cause of velocity change in the oxidation, colour or gamma logs.

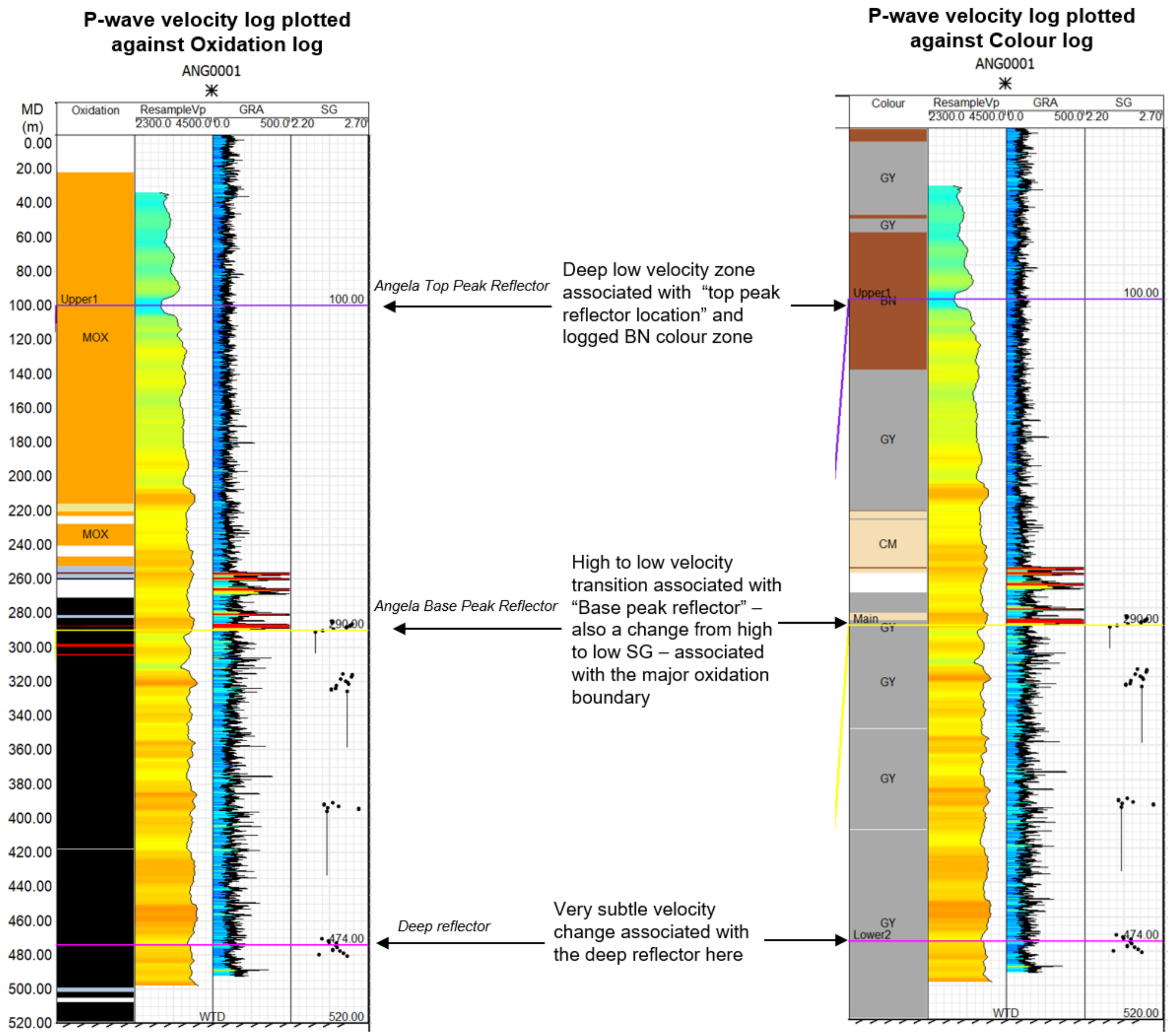

Figure 5: ANG0001 Strip Log

ANG0003

The interpreted seismic *Top Peak Reflector* is associated with a significant lower velocity zone (no SG data to compare). No variation in gamma logs apparent, but there is a strong oxidation zone (SOX) associated with the location of this reflector, and also a "red" logged colour zone.

The interpreted seismic *Base Peak Reflector* is associated with a minor high to low velocity boundary .This is coincident with the major oxidation boundary (moderately oxidised / fresh), and with the location of high gamma readings (no SG data to compare).

The interpreted seismic *Deep reflector* (the main exploration target) is associated with a minor low velocity zone compared to the surrounding rocks. In this hole there is a logged weak oxidation zone associated with the location of the reflector.

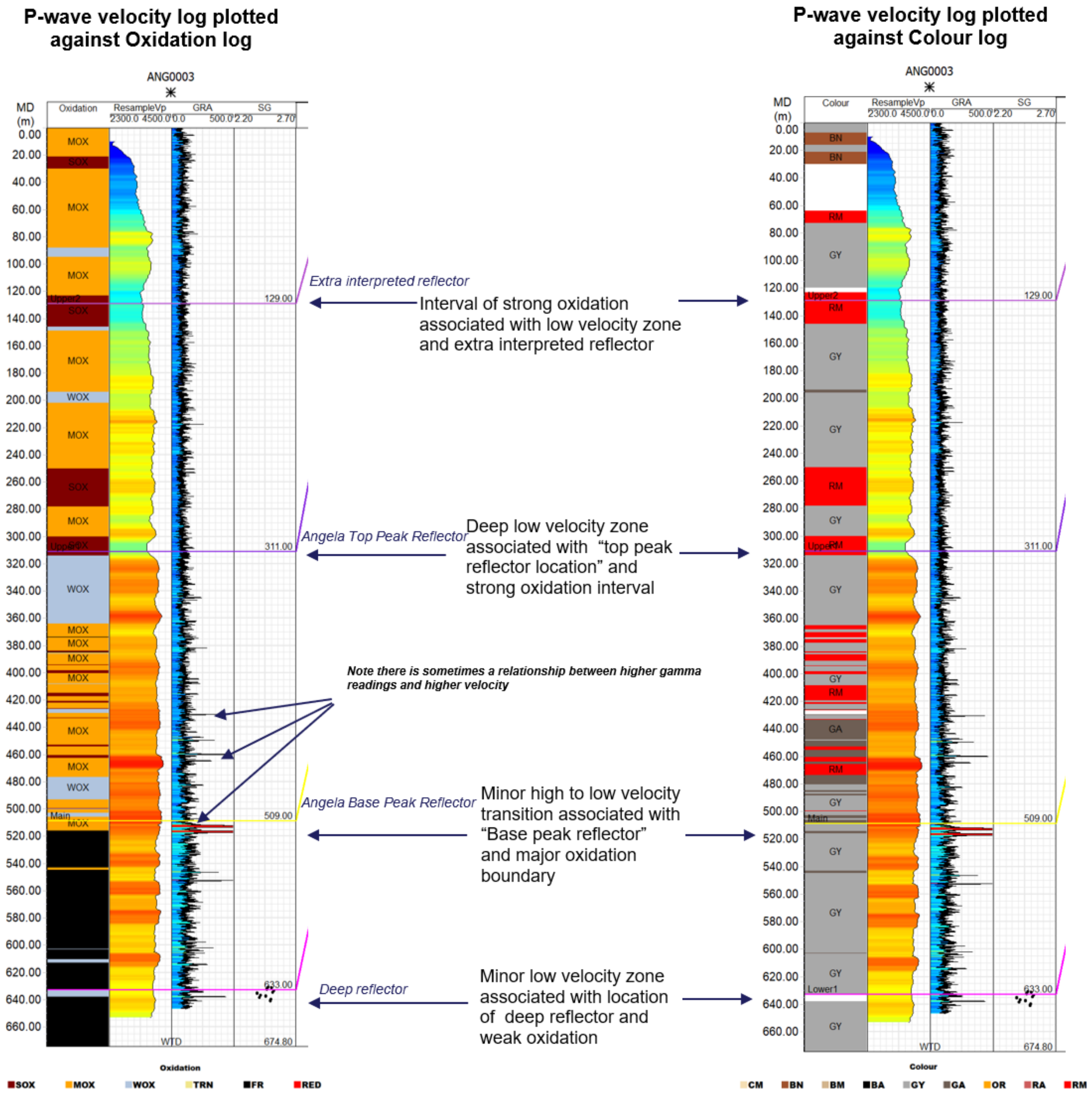

Figure 6: ANG0003 Strip Log

6.3 Reconciliation with the 2D seismic survey

6.3.1 Comparison of seismic section with oxidation

Review of results suggests good continuity in the *Angela Top Peak Reflector* and a consistent low velocity zone along the trend of the seismic reflection (see figure below), which appears to relate to logged strong oxidation zones.

The velocity is higher in the area between top and base reflectors in hole ANG003. This area is logged as a moderately to weakly oxidised with the highest velocities located at the base of the oxidation zone where there are also the highest gamma readings.

There is however only a minor high to low velocity change associated with *Angela Base Peak Reflector*. As it is such a high amplitude seismic reflector, one possibility is that specific gravity (SG) may also have an impact on the acoustic impedance contrast at this position.

There is a minor low velocity zone associated with the *Deep Reflector*, with some indication of weak oxidation in lithology log for ANG0003

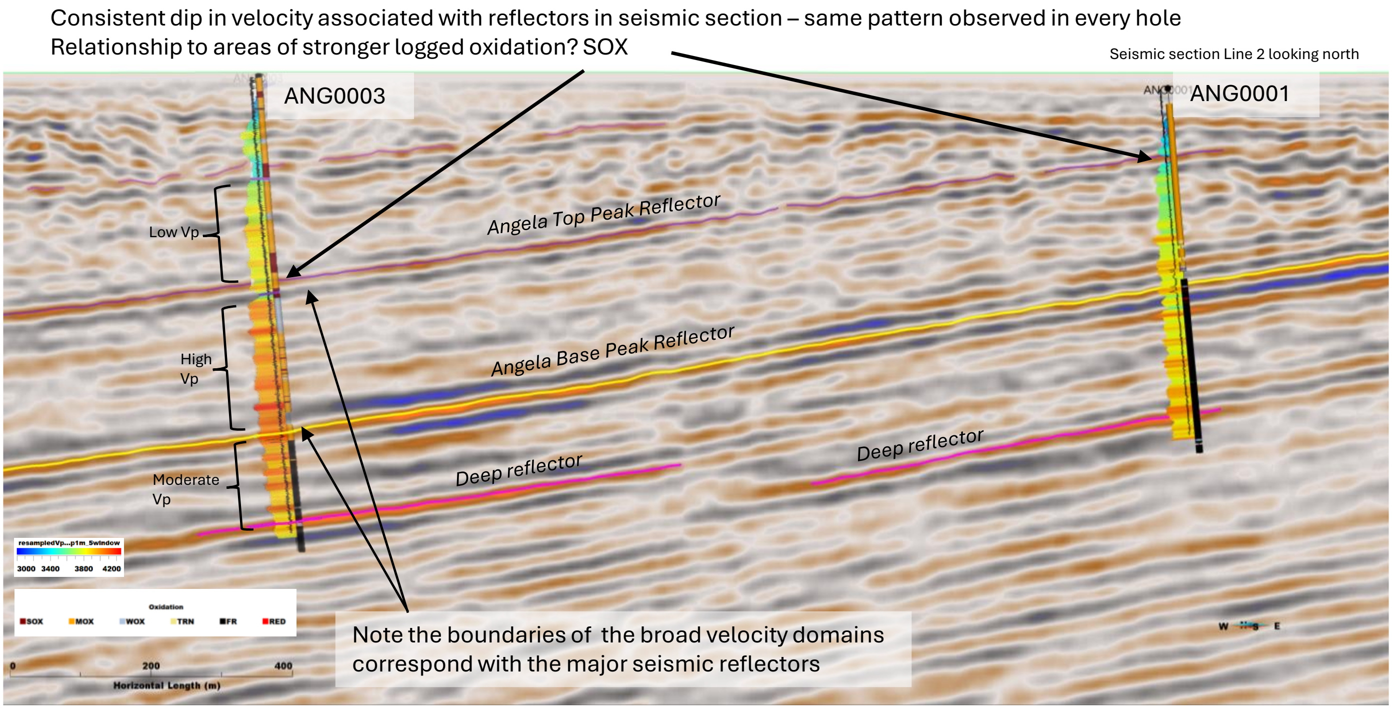

Figure 7: Seismic section with drillholes, oxidation from geological logging, and sonic velocity.

6.3.2 Comparison of seismic section with colour

Comparing the P-wave velocity logs to the colour log appears to have a better match with the identified seismic reflectors than using the oxidation log alone. Seismic reflectors appear to sit at the base of logged zones with different colours, possibly suggesting the contrast in colour corresponds with a change in oxidation state. This pattern fits for most identified reflectors except the Deep Reflector, where colour doesn't correlate. The observations in upper reflectors indicates that visual changes in the rock match with seismic interpreted horizons.

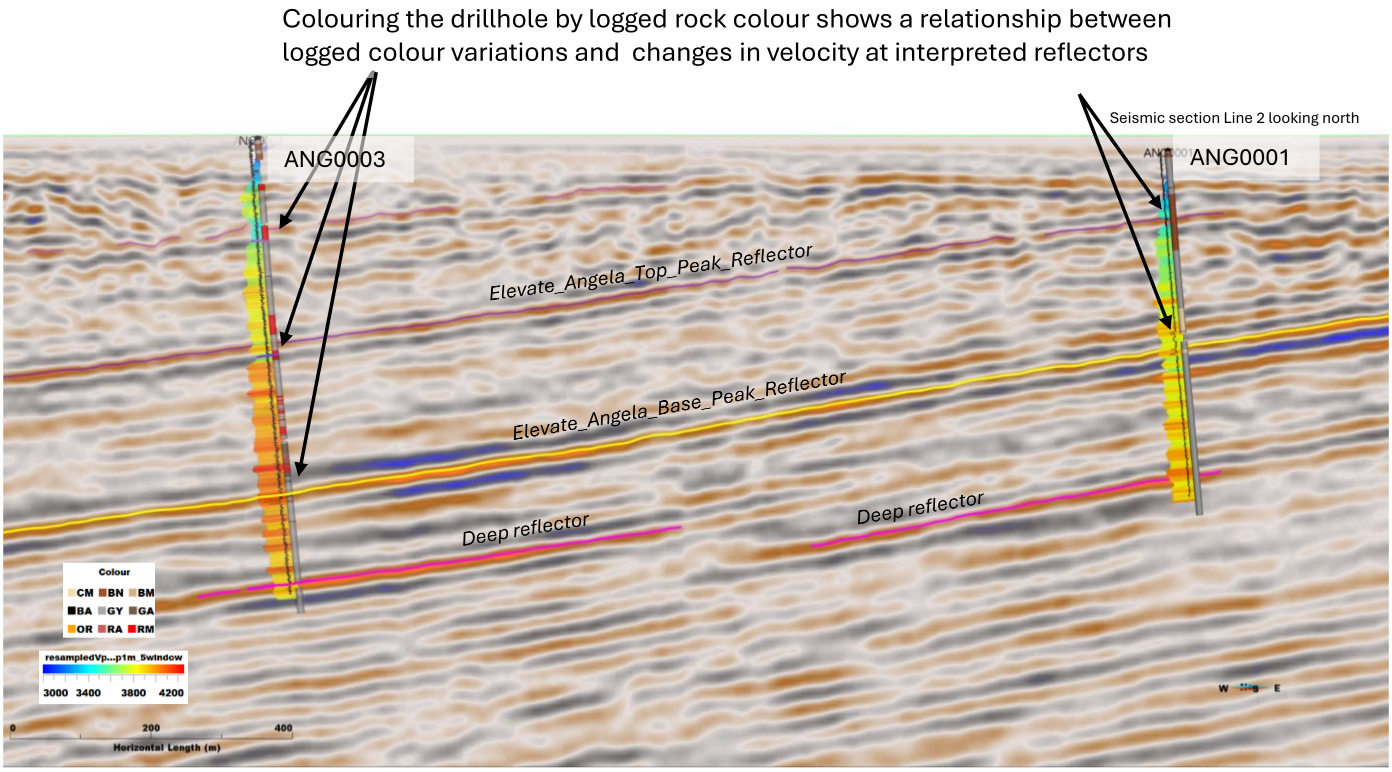

Figure 8: Seismic section with drillholes, colour from geological logging, and sonic velocity.

7. Conclusions

- The two strong continuous reflectors in the drilling area ("*Angela Top Peak Reflector*" and "*Angela Base Peak Reflector*") can be tied between seismic section, drilling lithology logs and wireline velocity data, *confirming the original seismic interpretation that reflectors appear to relate to oxidation boundaries*. The top and base reflector represent the top and base of a broad scale higher velocity domain where the base is associated with U mineralisation

- *Angela Top Peak Reflector* is related to the base of strongly oxidised zone/red colour zone and a thick fine grained rock unit in the lithology logs, is a distinct velocity low in wireline Full Wave Sonic (FWS) and correlates with a high amplitude continuous seismic reflector on the seismic section.

- *Angela Base Peak Reflector* is related to the base of the oxidation zone and the base of the high gamma domain, it has a minor change from higher velocity above the oxidation contact/within the higher gamma domain to lower velocity in the grey sandstone beneath and correlates with a high amplitude seismic reflector in the seismic section. A high amplitude seismic reflector but only minor change in FWS velocity across this interface indicates that density probably plays an important role in generating such a distinctive seismic response. More density information is required to confirm this relationship.

- The deeper "seismic target" (*Deep Reflector*) interpreted horizons have a weaker link between seismic data, geology logs and wireline velocity data. There is a minor velocity low in the FWS logs that corresponds with the location of the seismic reflector deep targets. In the lithology log this corresponds with logged weak oxidation in hole ANG0003.

- It is also important to note that the Deep Reflector is not a continuous seismic horizon. If they are a lensoid shaped with possible significant lateral variations in rock properties, they may be hard to directly target on a 2D seismic section. This is because 2D seismic data can be affected by off-plane events. Given however geological layers at Angela are shallow dipping and laterally consistent the data probably has not suffered from significant off-plane effects.

- The addition of new drilling with wireline data has confirmed that *seismic reflectivity relates to variations in oxidation of the sandstone sequence*. The two major seismic horizons interpreted previously are still valid and a link can be made between the seismic section and drilling using wireline velocity logs.

- The *Deep Reflector* may be related to thin and discontinuous weak oxidation zones, most evident in ANG0003.

- Due to limited SG data currently available comparisons between the seismic and drilling have only taken into account velocity. Density is a critical variable in understanding the link between the seismic data and geology and as such it is recommended more density measurements be collected to fully understand the relationship of seismic reflectivity to drilled geology.

- There appears to be no obvious visual change in the drill core related to the Deep Reflector. Some possible features that may not be obvious visually but could affect the velocity or density may include change in porosity, sandstone mineral grain composition, cement or presence of heavy minerals.

8. References

Jin, Ruoshi & Teng, Xueming & Li, Xiaoguang & Si, Qinghong & Wang, Wei. (2019). Genesis of sandstone-type uranium deposits along the northern margin of the Ordos Basin, China. Geoscience Frontiers. 11. 10.1016/j.gsf.2019.07.005.

UAL Report TR 230-9, https://geoscience.nt.gov.au/gemis/ntgsjspui/handle/1/74037

Alice Springs. 1983. SF53-14 1:250K Raster Geology Data. Northern Territory Geological Survey, Minerals and Energy Division, Department of Regional Development, Primary Industry, Fisheries and Resources.

Aquaterra Consulting Pty Ltd (2011). Angela Uranium Project – Surface Water and Groundwater Baseline Monitoring – Final Report.

Battey G.1984. Summary of Discussion with Uranerz Australia Pty Ltd on Methods Used to Process Borehole Gamma Ray Logs From the Angela Deposit (NT)

Borshoff J. & Faris I. 1990. Angela and Pamela uranium deposits. In: Geology of the Mineral deposits of Australia and Papua New Guinea (editor Hughes F.E.). The Australasian Institute of Mining & Metallurgy, Melbourne; p1139.1142.

Chea Y. Chew W., Zhang G. 1998. A Novel Array Laterolog Method, The Log Analyst.

Ferguson, K.M. 1975. UAL report 54: Exploration 1975 on the Ewaninga Prospect surrounding areas. Alice Springs, NT. Uranerz (Australia) Pty Ltd internal Report. NTGS Open File Report 9112-EXP-0003-V1.

Kellogg Brown & Root Pty Ltd (KBR) (2011). Summary of Baseline Data Acquisition – 2010. Radiation and meteorology at the Angela Deposit (2011). Prepared for Cameco Australia Pty Ltd

Morete S. 1983. Supplementary Information for the Bureau of Mineral Resources on the Angela I Deposit and Angela II-V Prospects, Alice Springs, Northern Territory, UEL Report TR230-29.

Paladin, 2012; Inaugural Annual Water Report Angela Project, Circa 2008 to June 2012, October 2012

Scott. 1980. Pitfalls in Determining the Dead Time of Nuclear Well-Logging Probes, SLWLA Twenty-First Annual Logging Symposium, July 8-11.

UAL Report No. 62. Exploration 1976 on the Ewaninga Prospect and surrounding areas, Alice Springs, N.T. Compiled by Dr. G. Ott. Edited by D.O. Zimmerman and S. Morete. March, 1977.