

## ASX ANNOUNCEMENT

Date: 27 October 2021

### **EXTENSIVE RARE EARTH ELEMENTS AND RUBIDIUM IN SOIL GEOCHEMISTRY RESULTS AT THE ARKUN PROJECT, WA**

- Numerous high priority targets for Rare Earth Elements (REE) and rubidium identified in soil geochemistry data at the 1,900 sq km Arkun Project about 150 km east of Perth.
- The soil anomalies occur over significant areas of many hundreds of metres along individual reconnaissance soil geochemistry traverses.
- The REE comprise both heavy and light rare earth elements including the valuable elements neodymium, praseodymium, dysprosium, terbium, ytterbium, cerium and lanthanum.
- No previous REE or rubidium exploration in the region.
- Arkun increasingly recognised as a highly prospective part of the emerging mineral province of SW Western Australia with the additional recent identification of significant targets for nickel-copper-PGM mineralisation and lithium-caesium-tantalum (LCT) pegmatites,
- Follow-up work including field checking and rock chip sampling is in progress. Land access negotiations to commence as soon as practicable.

A significant number of high priority targets for Rare Earth Elements (REE) and rubidium have been identified in recent soil geochemistry results from Impact Minerals Limited's (ASX:IPT) 100% owned Arkun project in the emerging mineral province of south west Western Australia (Figure 1).

Impact Minerals' Managing Director Dr Mike Jones said *"The Arkun Project continues to surprise us with the recognition of numerous target areas for rare earth elements and rubidium. Although we were not exploring for these commodities, one of Impact's key target generation philosophies is to acquire large strategic ground holdings in prospective regions and so it is not surprising that sometimes you might just find what you weren't looking for"*.

*"Although we do not yet know the true significance of the soil results, follow up work is definitely warranted and we will do that as part of the follow up work on our recently identified targets for nickel-copper-PGM's and LCT pegmatites in the same area. The extensive areas over which the REE and rubidium occur suggest that drill targets may emerge with further work"*.

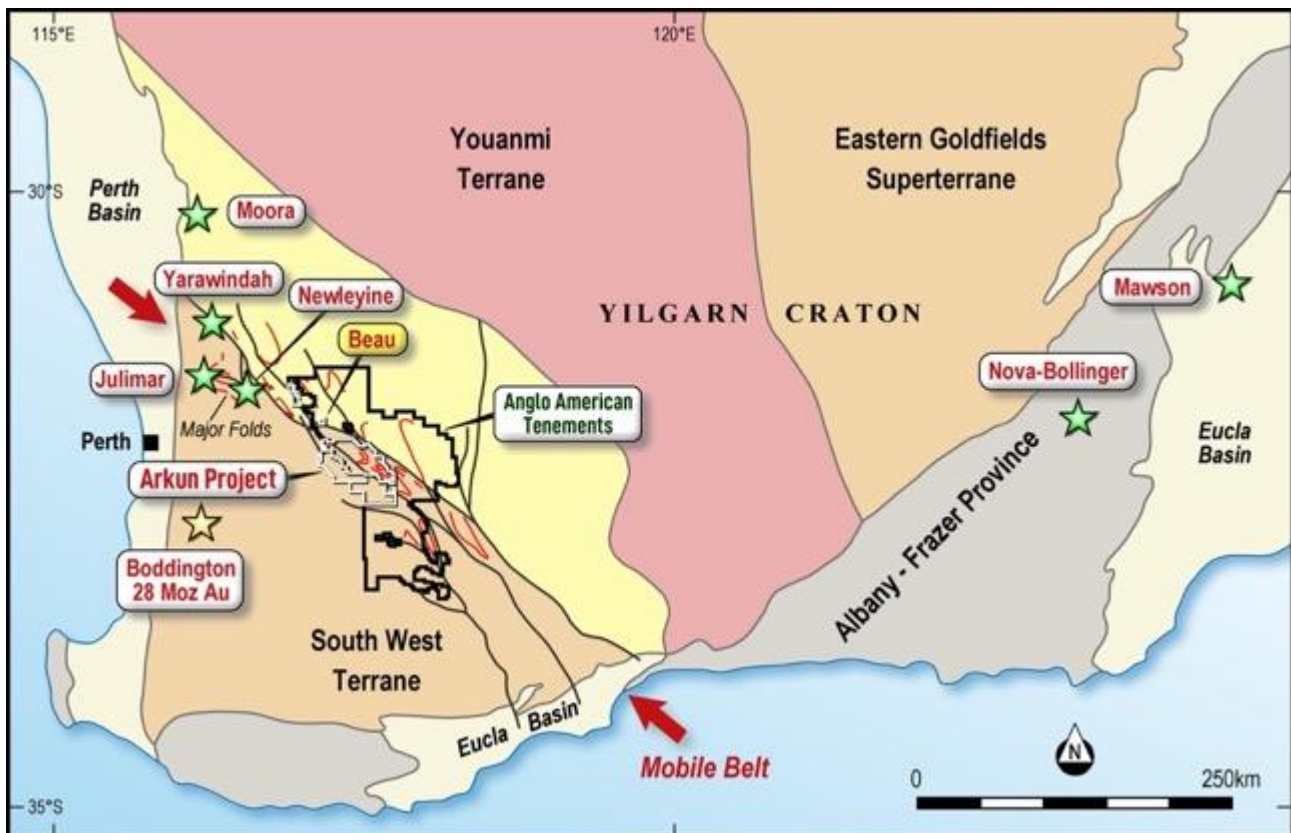
*Our work shows again how poorly explored this emerging mineral province of SW Western Australia truly is and as demonstrated by the recent Julimar Ni-Cu-PGM discovery. It should also be remembered that the province also hosts the Greenbushes lithium-tantalum mine which further attests to the potential of this part of Western Australia to host world class deposits across a wide variety of commodity metals"* Dr Jones said.

Previous work by Impact identified 17 initial targets across the Arkun project area, principally for Ni-Cu-PGM mineralisation (ASX Release 10<sup>th</sup> June 2021). Fifteen of these targets were covered by a single soil geochemistry traverse up to several kilometres long along gazetted roads and tracks with soil samples taken at 100 metre spacings along the traverses.

Each traverse was long enough to extend well away from the target area into areas of “background” in order to establish the relative anomalism of the various metals in the target above background

The soil survey identified numerous priority targets for both Ni-Cu-PGE and, also unexpectedly, lithium pegmatite mineralisation (refer to ASX Release 21<sup>st</sup> September 2021).

Further interpretation of the soil assay data has now also identified numerous target areas for REE and rubidium mineralisation that warrant follow up work. The results are described below and are presented as additive Z scores for REE in Figure 2 and as ppm values for rubidium in Figure 3. Further details on some of the priority targets identified and the sampling and analytical techniques used are presented at the end of the report, together with plots of the absolute values of some of the more valuable REE for reference.



**Figure 1.** Location and Regional Geology of the Arkun Project, showing key nickel-copper-PGE deposits and recent discoveries. Note the large tenement holdings of Anglo American Corporation who applied for the ground on the same day of Impact’s first announcement about Arkun.

## 1. RARE EARTH ELEMENT RESULTS

The results for all 15 of the REE are shown as an additive Z score in Figure 2.

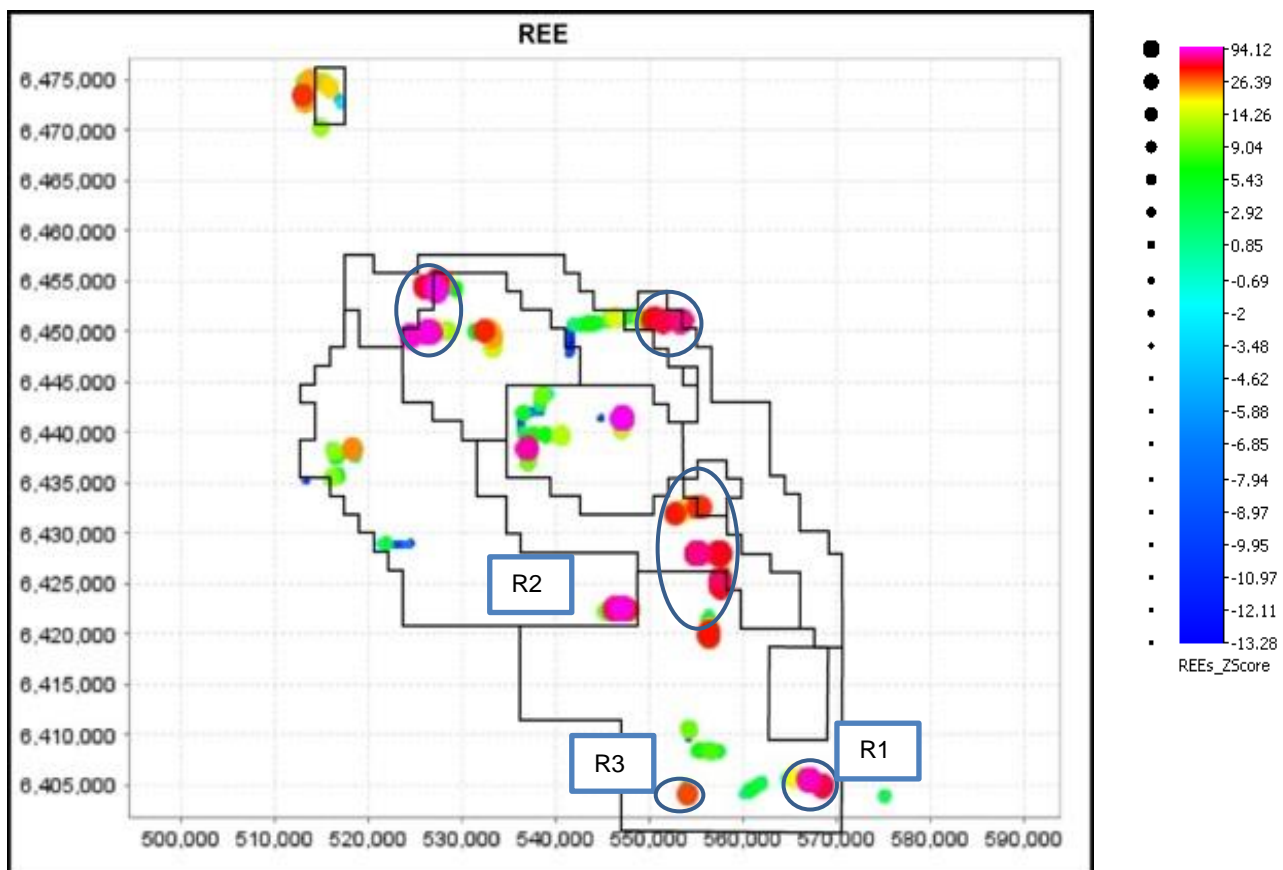
The REE comprise: lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium.

It is evident that the central part of the Arkun project area stands out as being strongly anomalous in the REE and six high priority targets and have been identified as warranting follow up work. Numerous other areas of anomalism are also present.

Of note is that the targets are generally anomalous in both the light and the more valuable heavy REE

This is a very exciting outcome for Impact and supports the Company's original contention that the Arkun area is a highly prospective part of the Yilgarn Craton (Figure 2).

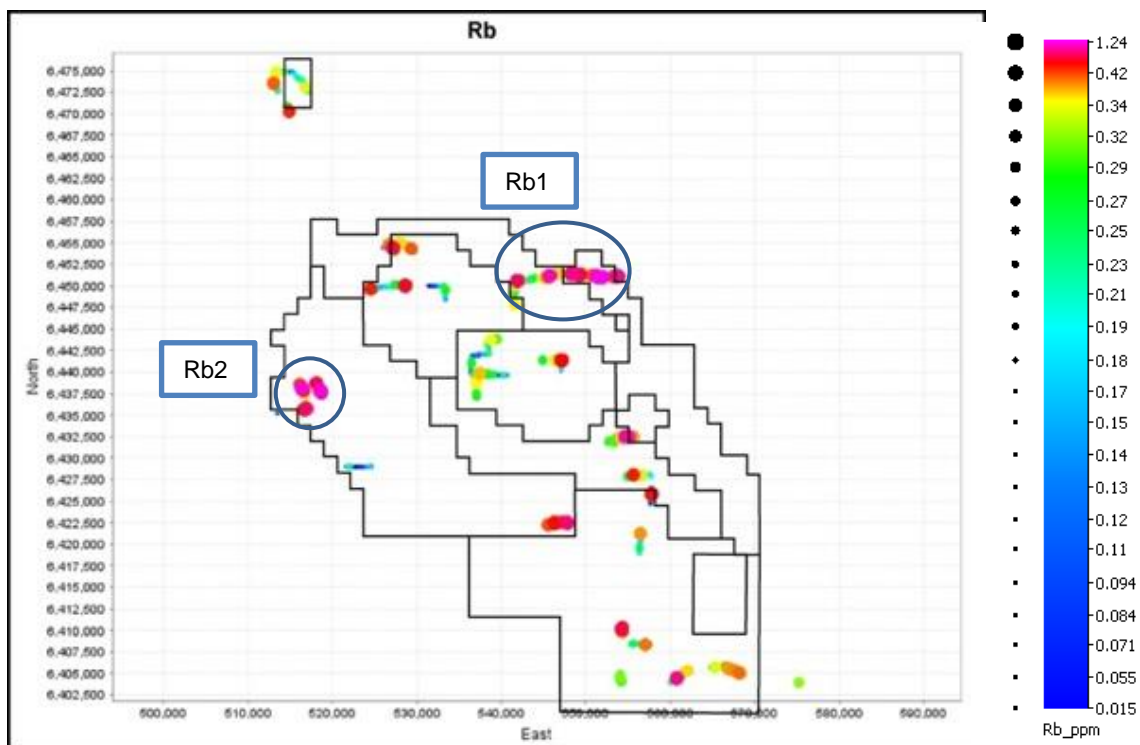
Three priority areas, R1 to R3 are shown in more detail in Figure 4 at the back of the report. The soil anomalies all cover extensive areas and occur within larger magnetic granites.



**Figure 2.** Additive Z scores for REE across the Arkun project. Note the large areas of anomalism in the central part of the project area. Seven priority areas for follow up work are highlighted. Other areas of elevated response are also evident.

## 2. RUBIDIUM

The results for rubidium are shown in Figure 3. Numerous areas stand out as being strongly anomalous and four high priority targets have been identified for follow up work. Two of these areas, Rb1 and Rb2, are shown in more detail in Figure 5 at the end of the report. Numerous other areas with anomalous rubidium results are also evident (Figure 3).



**Figure 3.** Ionic leach results for rubidium. Four priority areas for follow up work are highlighted. Other areas of elevated response are also evident. Note that the low absolute levels of rubidium are a function of the very dilute nature of the chemical digest used in the Ionic Leach assay method.

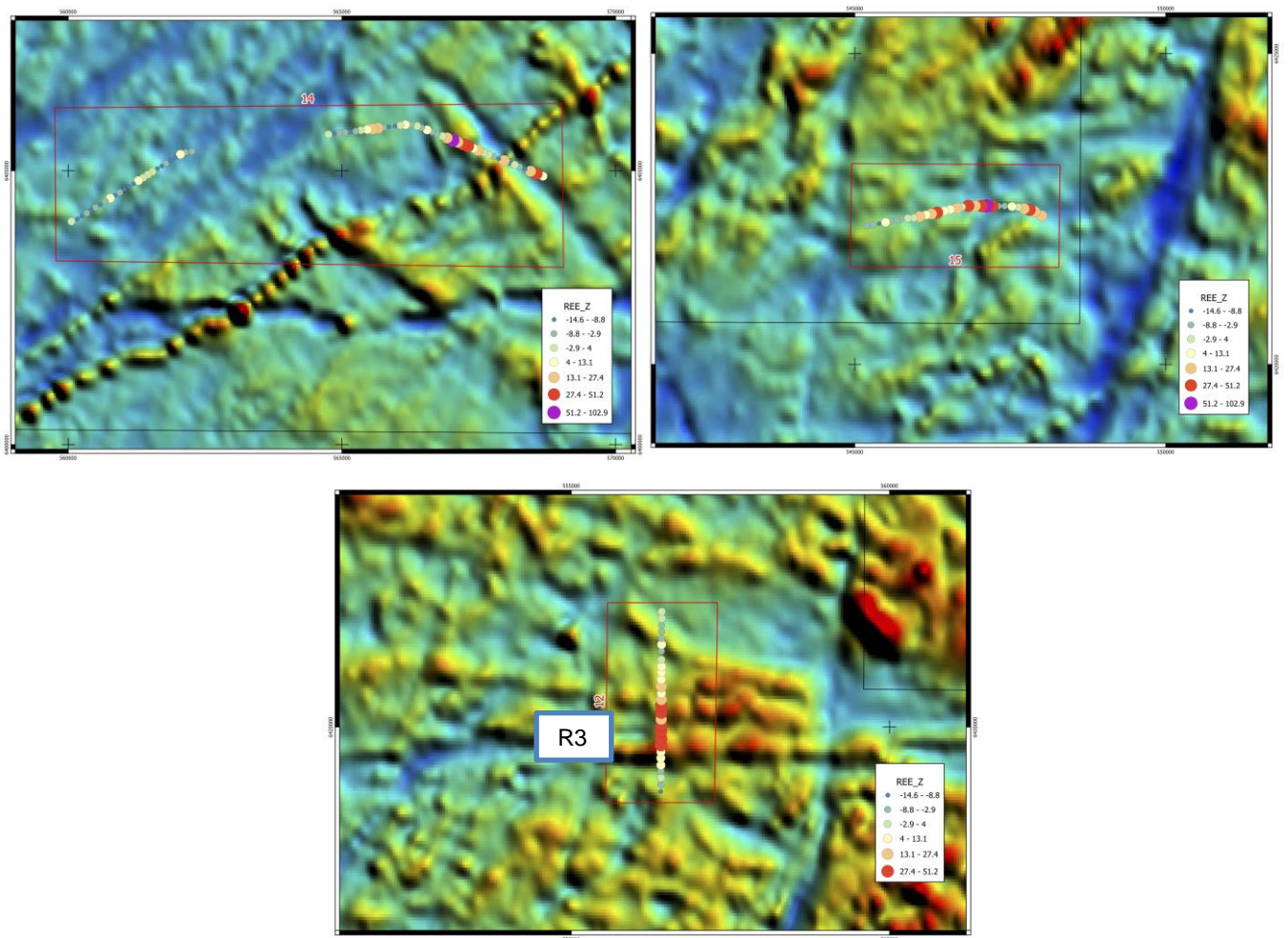
## 3. DISCUSSION AND NEXT STEPS

The results of Impact's first ever soil geochemistry programme at Arkun have outlined a significant number of areas for follow up work for a wide range of commodities: nickel-copper-PGM; lithium LCT pegmatites; REE and rubidium (ASX Release 21<sup>st</sup> September 2021).

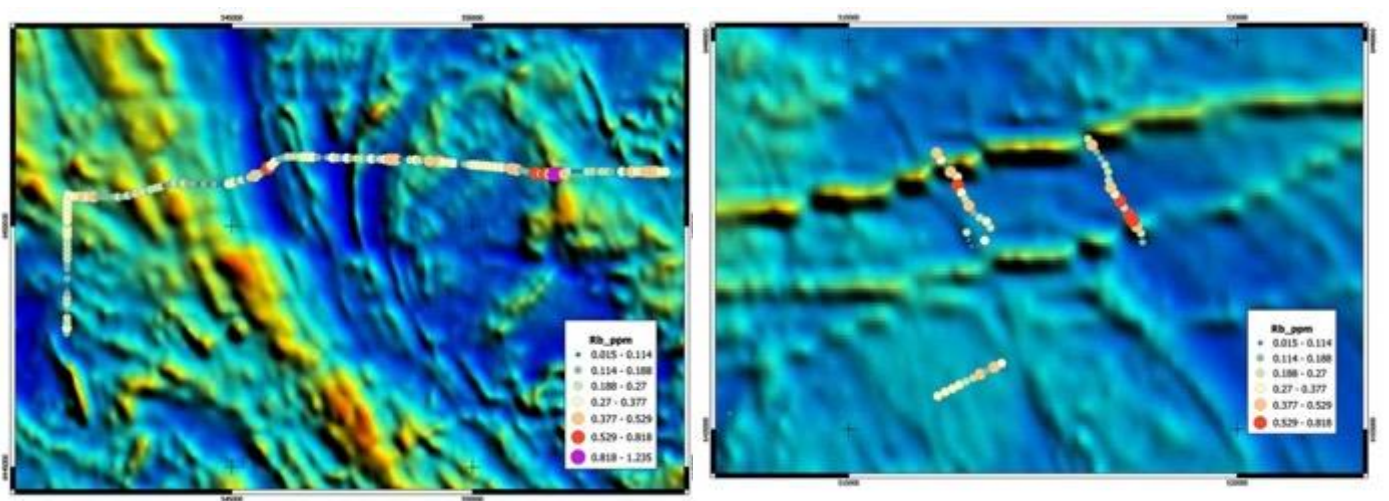
Follow-up field checking and sampling will continue with the aim of prioritising areas for more detailed soil geochemistry and ground geophysical surveys that will extend away from the roads and into the surrounding paddocks.

In order to explore in the paddocks, land access agreements will be required with the relevant land owners and this process will also be commenced. At present much of the region is under crop and access to many of the targets for detailed follow up will be limited until after the harvest period later in the year.





**Figure 4.** Priority Targets for REE shown on images of regional magnetic data. Strongly elevated soil geochemistry responses extend over distances of many hundreds of metres and are mainly associated with the magnetic units with larger granite bodies.



**Figure 5.** Priority Targets for rubidium shown on images of regional magnetic data. Numerous areas of strongly elevated values for rubidium above background are evident.

### About the Soil Geochemistry Survey

The soil samples were submitted to ALS in Perth for analysis by the Ionic Leach method. This method is a so-called “partial digest” technique that uses very dilute chemical solutions that only extract weakly bound ions from the sample for analysis.

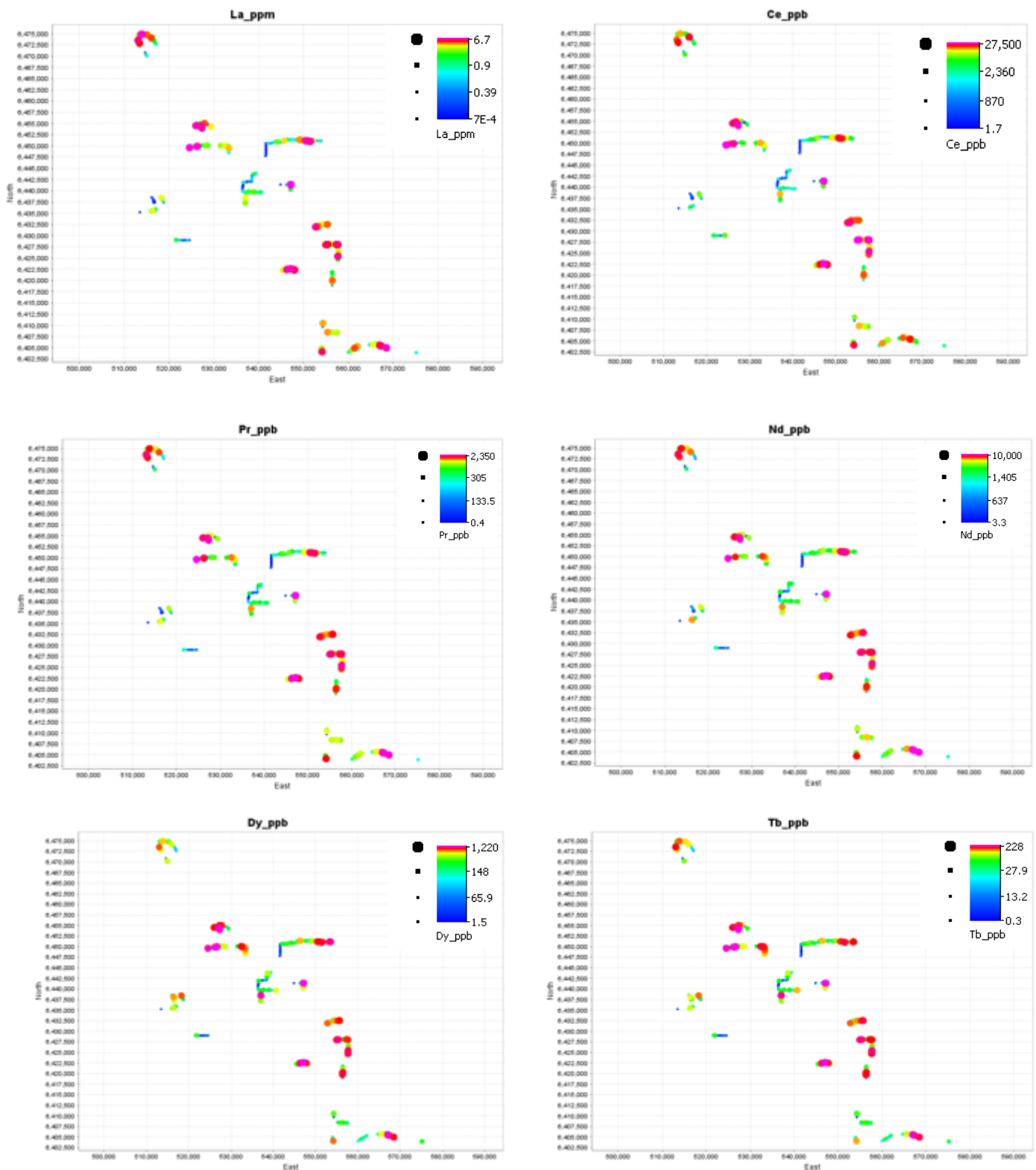
Many case studies have shown that partial digests tend to give better discrimination of soil geochemical anomalies over background values. However, the weak nature of the chemical solutions used means that the **absolute** values of metals returned in the analysis are much lower than those returned from more aggressive digestion techniques such as aqua regia and four-acid digests. It is the background-to-anomaly ratio that is the critical factor to consider.

Figure 6 shows the absolute values of the soil assays of the key REE for reference.

### About Z Scores

Z scores are a standard statistical calculation of the number of standard deviations a raw data (assay) value is from the mean of the data. For example a Z score of 2 indicates a value 2 standard deviations above the mean. The higher the Z score, the more anomalous the data point is with respect to the dataset.

Z scores are a standard method of normalising data so that statistically meaningful associations between datasets can be made. In this case the Z scores for the individual elements that comprise the REE are simply added together in order to amplify the metal associations.

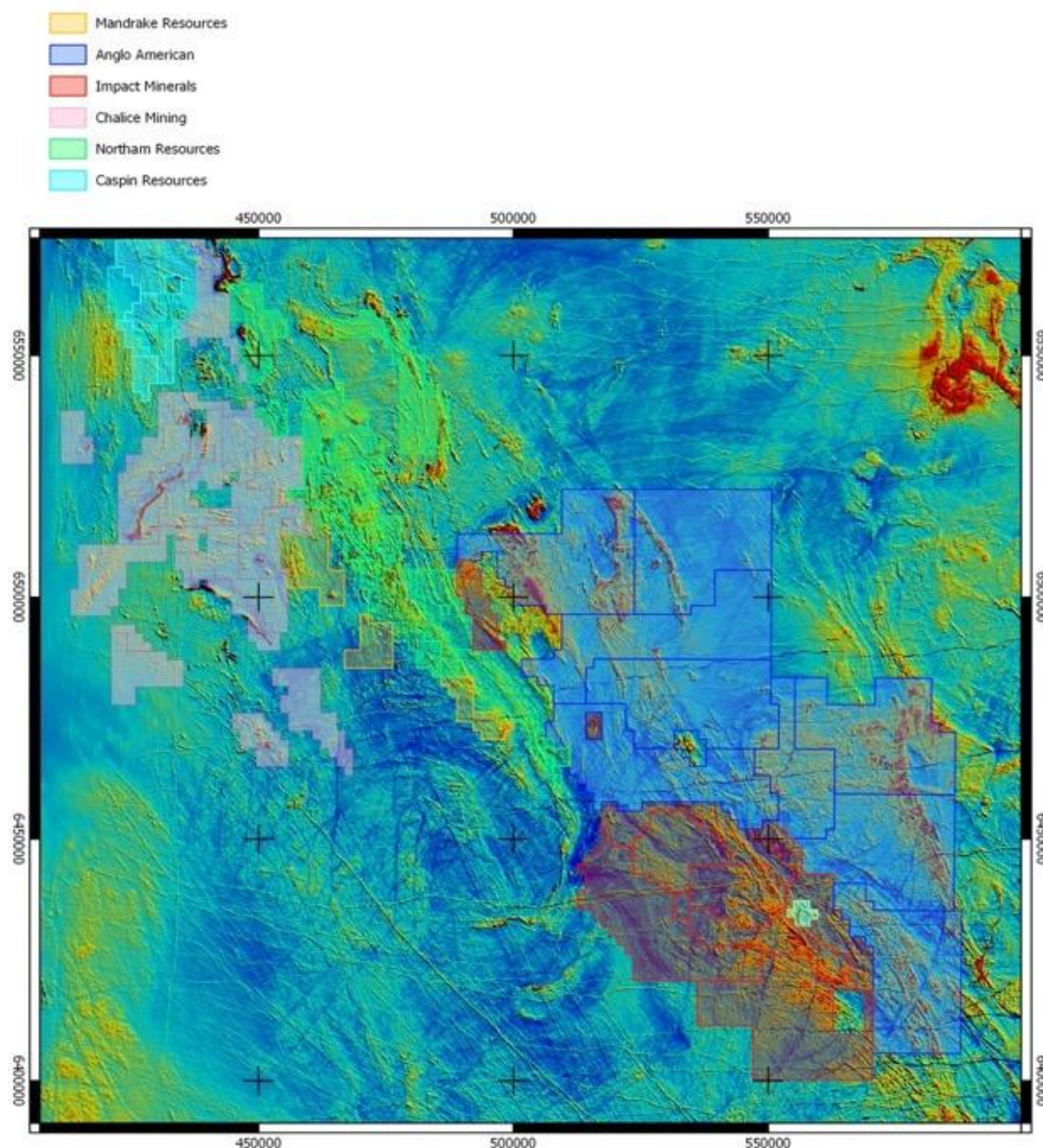


**Figure 6.** Ionic Leach assays results for selected individual REE metals with maximum and minimum values. The low values reflect the dilute nature of the digest used in the Ionic Leach method.



## About the Arkun Project

The Arkun Project, which covers about 1,900 square kilometres, is centred between York and Corrigin 130 km east of Perth and was staked following the recent significant PGE discovery at Julimar just 75 km north east of Perth by Chalice Mining NL (Figures 1 and 7). Impact is now one of the larger groundholders in the region (Figure 7).



**Figure 7.** Location of Impact's Arkun project within the emerging Ni-Cu-PGM province of WA and main tenement holders. Impact has one of the larger ground holdings in the region.



An interpretation of magnetic data by the Company identified a possible 500 km by 30 km mobile belt that cuts through the Arkun project area. The belt is of a scale that suggests it may mark an ancient terrane boundary or proto-craton margin. Such geological provinces (of varying ages) are well known around the world as prospective terranes for hosting major nickel-copper-PGE deposits with examples such as Nova-Bollinger and Mawson (Proterozoic age), the Thomson fold belt in Canada and the recent discoveries at Yarawindah and Julimar in Western Australia.

Anglo American Corporation, one of the world's leading mining companies lodged Exploration Licence applications covering some 10,130 square kilometres surrounding three sides of the Arkun project on the afternoon of 29<sup>th</sup> May 2020 a few hours after Impact made its first announcement on Arkun (Figure 1 and ASX Release 10th June 2020).

## COMPLIANCE STATEMENT

This report contains new Exploration Results for soil samples from the Arkun Project.

**Dr Mike Jones**

Managing Director

*The review of exploration activities and results contained in this report is based on information compiled by Dr Mike Jones, a Member of the Australian Institute of Geoscientists. He is a director of the company and works for Impact Minerals Limited. He has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which 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 (the JORC Code). Mike Jones has consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

## APPENDIX 1 - SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i>	Soil samples of a weight of about 250 grams were taken from a depth of about 15-20 cm below surface. They were sieved on site to -2 mm and placed in plastic snap seal bags for transport to the laboratory.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used</i>	The soil samples were taken on 100 metre spacings along gazetted roads and tracks across 15 priority targets. Although there is only one line of samples per target area enough samples were taken to establish the background values of the metals and elements that can be used to determine levels of anomalism.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information</i>	The soil samples were taken using industry standard procedures.
Drilling techniques	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i>	N/A
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed</i>	N/A
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples</i>	Standard field procedures for soil samples were used.
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	No sample bias has been established.
Logging	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	N/A

Criteria	JORC Code explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	N/A
	<i>The total length and percentage of the relevant intersections logged</i>	N/A
	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	N/A
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	N/A
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The size and distribution of the soil samples is appropriate for regional exploration.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	Laboratory QC procedures for soil samples involve the use of internal certified reference material as assay standards, along with blanks, duplicates and replicates.
	<i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i>	No field duplicates were taken as this is not warranted at this early stage of exploration.
<b>Quality of assay data and laboratory tests</b>	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Sample sizes are appropriate
	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	Samples were submitted to ALS Laboratories in Perth for analysis by the ionic leach method ME-MS23 with ICP-MS finish for 61 elements including: Ag, Au, Bi, Cd, Co, Cr, Cs, Cu, Li, Mo, Ni, Pb, Pd, Pt, Sn, Ta, W, Zn and REE Ce, La, Tb, Dy, Pm, Pr, Nd, Sm, Gd, Eu, Ho, Er, Tm, Lu, Yb and Rb. Sample preparation involved weighing out of 50 g of the soil sample and adding a fixed aliquot of the digest.
	<i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i>	N/A
<b>Verification of sampling and assaying</b>	<i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i>	Duplicate samples are not required at this early stage of exploration.
	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	The results have not been verified by independent or alternative companies. This is not required at this stage of exploration.
	<i>The use of twinned holes.</i>	N/A
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Primary assay data has been entered into standard Excel templates for plotting in QGIS and IOGAS.
	<i>Discuss any adjustment to assay data.</i>	There are no adjustments to the assay data.



Criteria	JORC Code explanation	Commentary
Location of data points	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Sample locations were located by hand held GPS.
	<i>Specification of the grid system used.</i>	The grid system for ARKUN is MGA_GDA94, Zone 50.
	<i>Quality and adequacy of topographic control.</i>	N/A
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	The samples were taken at 100 metre spacings along the traverses.
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	N/A
	<i>Whether sample compositing has been applied.</i>	N/A
Orientation of data in relation to geological structure	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	Not relevant to soil results.
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	Not relevant to soil results.
Sample security	<i>The measures taken to ensure sample security.</i>	Samples were taken by Impact contractors and delivered by them directly to the laboratory.
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	At this stage of exploration a review of the sampling techniques and data by an external party is not warranted.

## SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	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.	The Arkun Project currently comprises 7 exploration licences covering about 1,900 km <sup>2</sup> . The tenements are held 100% by Aurigen Pty Ltd a 100% owned subsidiary of Impact Minerals Limited. Impact has signed Land Access agreements in place with the various Native Title claimants that cover the area.
	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.	The tenements are in good standing with no known impediments.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	There has been no significant previous work at this project.

Criteria	JORC Code explanation	Commentary
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	Nickel-copper-PGE sulphide mineralisation associated with mafic to ultramafic intrusions and gold-copper in deformed and metamorphosed greenstone belts.
<b>Drill hole Information</b>	<p>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</p> <ul style="list-style-type: none"> <li>• easting and northing of the drill hole collar</li> <li>• elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>• dip and azimuth of the hole</li> <li>• down hole length and interception depth</li> <li>• hole length.</li> </ul>	N/A
<b>Data aggregation methods</b>	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	N/A.
	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.	N/A
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	N/A
<b>Relationship between mineralisation widths and intercept lengths</b>	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</p>	N/A
<b>Diagrams</b>	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.	Refer to Figures in body of text.
<b>Balanced reporting</b>	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.	All results reported are representative

Criteria	JORC Code explanation	Commentary
<b>Other substantive exploration data</b>	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.	Assessment of other substantive exploration data is not yet complete however considered immaterial at this stage.
<b>Further work</b>	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive	Follow-up work programmes will be subject to interpretation of results which is ongoing.