

Extensive Rare Earth Element trends with potential for clay-hosted REE mineralisation identified at Byro East

Review of rare earth potential adds to Cosmos' critical minerals exploration pipeline

Highlights:

- Several multi-kilometre Rare Earth Element (TREO⁵ + Y) trends highlight significant rare earth potential at the Byro East Project in WA.
- A review of surface soil geochemistry has returned values of up to 1,283ppm from a total of five rare elements (TREO⁵) + Yttrium (Y) in clay-rich soils
- Cosmos' exploration target pipeline set to increase with the search for significant clay-hosted REE deposit style mineralisation at Byro East, in addition to nickelcopper-PGE discoveries.
- Byro East is located ~40km south of the recent clay-hosted rare earth discovery at Desert Metals' (ASX: DM1) Innounendy Project, within the Narryer Terrane.
- Review of REE potential at Byro East comes as the Australian Federal Government announces additional initiatives to unlock critical minerals in Australia.



Figure 1 – Cosmos Project Location Map



Cosmos Exploration (ASX: C1X) ("Cosmos" or "the Company") is pleased to advise that it has identified multiple kilometre-long long Rare Earth Element (REE) trends at its 100%-owned Byro East Ni-Cu-PGE Project, located in the Narryer Terrane in Western Australia, after reviewing the rare earth potential in soil data results from recently completed soil surveys.

The breakthrough has added a significant new dimension to upcoming exploration activity at Byro East, highlighting the opportunity to discover significant clay-hosted REE mineralisation in a district which is emerging as an exploration hot-spot for critical minerals following recent discoveries in the region.

Cosmos Exploration Executive Director, Jeremy Robinson, said:

"We decided to review the rare earth potential at Byro East by analysing soil geochemistry, and the initial results have been very promising. Our initial interpretation of the Byro East anomalies suggests that these anomalies potentially represent Ionic-adsorption Rare Earth Element clay-type deposits that form from the in-situ weathering of granites enriched in REE's.

"This is an exciting development for the project, particularly considering the significant clay-hosted REE discovery announced recently by Desert Metals, just to the north of Byro. Follow-up exploration is currently being planned and re-assaying of samples from priority areas to obtain the complete Rare Earth Element suite is underway. This information should help us to refine our exploration approach and potentially prioritise areas for drilling."

Background

The recent announcement by the Federal Government to accelerate the growth of the critical minerals sector and supporting clean-energy technologies through new initiatives to reach net-zero, including the \$2 billion Critical Minerals Facility¹, has prompted Cosmos to complete a preliminary review of the rare earth potential at the Byro East Project in parallel with its continued focus on exploration for magmatic Ni-Cu-PGE discoveries.

The Byro East Project hosts large areas of Archean-aged granite and granitic gneiss, with a significant portion of these weathered granites producing clay-rich (kaolinite) accumulations within laterised profiles.

Several of these kaolinite-altered granites are associated with elevated concentrations of REE's with surface soil assays up to 1,283ppm TREO⁵ + Y, extending over multiple kilometres.

The Byro East Project is located approximately 40km to south of Desert Metals Limited's (ASX: DM1) significant rare earth discovery at the Innounendy Project, where DM1 announced results from their recent drilling program which returned grades of up to 3m @ 4,104ppm Total Rare Earth Oxide (TREO) within a larger intersection of 8m @ 2,743ppm TREO from 24m².

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¹ Refer to https://www.pm.gov.au/media/support-critical-minerals-breakthroughs

² Refer to DM1 ASX announcement on 16 September 2022

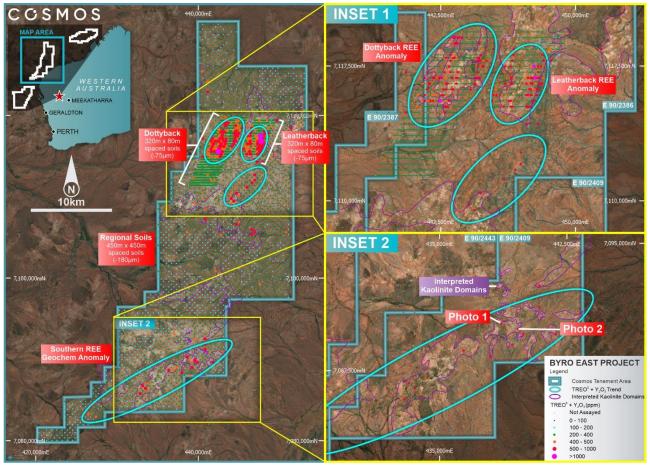


Figure 2 – Byro East TREO⁵ + Y geochemical trends and extensive interpreted kaolinite domains.

The initial interpretation of the Byro East anomalies is that they may represent Ionic-adsorption REE claytype deposits that form from the in-situ weathering of granites enriched in REE's.

Field checks of the southern REE geochemical anomaly confirm the presence of kaolinite-rich lateritic profiles ranging in height up to 15m (Figure 2 & 3). These weathered profiles are in-situ overlying granitic lithologies and appear to be spatially consistent over several kilometres.

Grab samples were collected at varying heights within the clay profile for further assessment. Due to time constraints, the exploration team did not visit the northern anomalies including Dottyback & Leatherback.

Cosmos will actively investigate the REE potential at the Byro East Project with an initial focus on the kaoliniterich weathered granites for Ionic-adsorption clay-type mineralisation. Despite their lower grades, adsorbed Ionic clay-hosted REE's are economically attractive due to their low mining and processing costs.

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Figure 3 – Photos containing examples of the kaolinite (white clay) rich lateritic profiles at the southern REE geochemical anomaly. Photo 1 (left) 2m high kaolinite profile with laterised (brown) top surface. Photo 2 (right) – top half of a 15m high outcrop with laterite scree (brown) covering the kaolinite face and sample bag locations. Refer to Figure 2 for photo locations.

 $TREO^5 + Y = CeO_2 + La_2O_3 + Eu_2O_3 + Dy_2O_3 + Er_2O_{3+} \\ Y_2O_3 + Er_2O_{3+} + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Yb_2O_3 + Lu_2O_3.$

Next Steps

- Further on-ground field checks, mapping and grab sampling to investigate the source of the northern geochemical anomalies.
- Re-assay of priority samples for the complete Rare Earth Element suite (14 elements + Y) to establish
 Total Rare Element Oxide concentrations.



Background - Byro East Project

Byro East is a greenfields mineral exploration project and one of the most extensive under-explored land-holdings not held by Chalice Mining Ltd (Chalice) (ASX: CHN) within the West Yilgarn high grade gneiss Ni-Cu-PGE province, comprising a substantial land holding of over >1,600km² prospective for intrusion-related Ni-Cu-Co-Au-PGE mineralisation and Rare Earth Elements (Figure 4).

The discovery of the Gonneville (Julimar) PGE-Ni-Cu-Co-Au deposit by Chalice in March 2020 has demonstrated that the western margin of the Yilgarn craton is highly prospective for intrusion-related Ni-Cu-PGE deposits that can host large >10 Moz (Pt+Pd+Au) Tier-1 deposits ³.

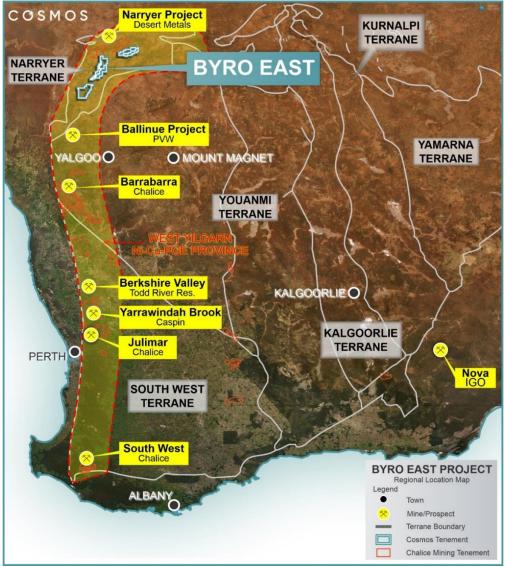


Figure 4: West Yilgarn Ni-Cu-PGE province.

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³ Refer to Chalice Mining Ltd (ASX: CHN) announcement 9 November 2021



This announcement has been authorised by the Board of Cosmos Exploration Limited.

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About Cosmos Exploration

Cosmos Exploration (ASX: C1X) is an ASX listed and Australian focussed Nickel-Copper-PGE and Gold-Copper explorer focussed on making world class discoveries at both its highly prospective Byro East Nickel-Copper-PGE Project located in Western Australia and Orange East Gold Project located in New South Wales. Byro East (100% Cosmos) was identified by RareX prior to the Julimar Discovery and has potential for maficultramafic intrusion related nickel-copper and PGE mineralisation.

Orange East (75% Cosmos) is an advanced exploration project located on the boundary between the Molong Arc and Hill End Trough within the Lachlan Fold Belt, a major mineral province, within a similar geological setting and along strike from the multi-million-ounce McPhillamys Gold Mine.

Competent Person Statement

This report's information related to Exploration Results is based on information and data compiled or reviewed by Mr Kristian Hendricksen. Mr Hendricksen is an employee and shareholder of Cosmos Exploration Limited (Cosmos) and is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM).

Mr Hendricksen has sufficient experience relevant to the style of mineralisation under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Accordingly, Mr Hendricksen consents to the inclusion of the matters based on the information compiled by him, in the form and context it appears.

Information on historical results outlined in this announcement is contained in the Independent Geologist Report within Cosmos' Prospectus dated 20 September 2021, released in an ASX announcement on 29 November 2021.

The Company confirms that it is not aware of any new information or data that materially affects the information in the relevant ASX releases. The form and context of the announcement have not materially changed. This announcement has been authorised for release by the Board of Cosmos Exploration Ltd.



JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	
	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 (eg 'reverse	Prospect soil samples were wet screened to -75 μ m, filtered, dried and rolled to remove residual lumps. Samples then were submitted for 40g Fire Assay for Au, Pt and Pd and 0.25g Mixed Acid MA101/102 (48 elements) or MA111/112 (52 elements) ICP MS/AES finish.
	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 (eg submarine nodules) may warrant disclosure of detailed information.	Regional soil samples were sieved to -180um in the field. Due to the fine nature of the sample, it was deemed an appropriate and representative sample to be analysed without further sample preparation. Samples then were submitted for 40g Fire Assay for Au, Pt and Pd and 0.25g Mixed Acid MA101/102 (48 elements) ICP MS/AES finish.
Drilling techniques	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).	N/A – No Drilling Undertaken
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	N/A – No Drilling Undertaken
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	N/A – No Drilling Undertaken

Criteria	JORC Code explanation	
	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.	N/A – No Drilling Undertaken
Logging	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.	N/A – No Drilling Undertaken
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	N/A – No Drilling Undertaken
	The total length and percentage of the relevant intersections logged.	N/A – No Drilling Undertaken
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	N/A – No Drilling Undertaken
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Prospect soil samples were sieved to 250um in the field and then wet screened to -75 μ m at the laboratory. Regional soil samples were sieved to -180um in the field, with no further sample preparation completed before analysis. All samples are considered to be dry.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample type, size, fraction and analysis methodology were determined by Cosmos Geologists based on results from an orientation soil survey and discussions with BV laboratory to determine the best sample prep and analysis suited to the project area.
	Quality control procedures adopted for all subsampling stages to maximise representivity of samples.	Cosmos QC procedures for soil sampling involve the insertion of certified reference material (CRM) on a 1:50 ratio into the sampling sequence. BV laboratories insert other CRMs, blanks and repeats as required.
	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.	No field duplicates were taken. Soil samples were either sieved to 250um or -180um to create a uniform and homogenous representative sample.

Criteria	JORC Code explanation	
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 300g are considered appropriate for this type of geochemical sampling
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Prospect soil samples were sieved in the field to -250um and submitted to BV laboratories in B38 geochem bags weighing approximately 300g. Samples were wet screened to -75 µm, filtered, dried and rolled to remove residual lumps. Samples were analysed using FA003 - 40g Lead collection Fire Assay – ICP-MS for Au (1ppb) Pt (1ppb) Pd (1ppb) & 0.25g MA111/112 ICP-AES & ICP-MS (52 elements) or .25g MA101/102 ICP-AES & ICP-MS (48 elements). The four acids digest is considered near-total for the 48-52 elements and total for Lead Fire Assay Au, Pt and Pd.
	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.	No tools of this nature were used.
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, and repeats as part of the in-house procedures. Certified reference materials, having a good range of values, are inserted blindly and randomly. A review of repeat analysis for Au-Pt-Pd-Ni-Cr-Cu has been consistent and with low error.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	No drilling results were reported
	The use of twinned holes	No drilling results were reported



Criteria	JORC Code explanation	
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Geochemical sample coordinates and geological information were recorded in field books with coordinates and track file data saved onto a Garmin 64s GPS with an accuracy +-3m. Field data is entered into Excel spreadsheets daily and sent to Cosmos Geology Manager to be verified. Once verified data is sent to an independent database geologist and entered into the Company's geochemical database.
	Discuss any adjustment to assay data.	Conversion of elemental analysis (REE parts per million) to oxide (REO parts per million) was used using IOGAS software the below element to oxide conversion factors.
		Element - Conversion Factor - Oxide Form Ce02 + La2O3 + Pr6O11 + Nd2O3 + Sm2O3 + Eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Y2O3 + Lu2O3
		Ce 1.2284 Ce02 Dy 1.1477 Dy2O3 Er 1.1435 Er2O3 Eu 1.1579 Eu2O3 Gd 1.1526 Gd2O3 Ho 1.1455 Ho2O3 La 1.1728 La2O3 Lu 1.1371 Lu2O3 Nd 1.1664 Nd2O3 Pr 1.2083 Pr6O11 Sm 1.1596 Sm2O3 Tb 1.1762 Tb4O7 Tm 1.1421 Tm2O3 Y 1.2699 Y2O3 Yb 1.1387 Yb2O3
		• Rare earth oxide is the industry-accepted form for reporting rare earth analytical results. A total of 5 Rare Earth Elements were analysed (TREO ⁵) plus Y and reported using the following calculation
		TREO ⁵ + Y = Ce02 + La2O3 + Eu2O3 + Dy2O3 + Er2O3 + Y2O3 The TREO could not be calculated due to elements that were not analysed, however, would use the following calculation
		TREO (Total Rare Earth Oxide) + Y = Ce02 + La2O3 + Pr6O11 + Nd2O3 + Sm2O3 + Eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Y2O3 + Lu2O3.
Location of data points	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.	The location of all soil samples has been recorded using Garmin 64s handheld GPS with an accuracy of +-3m

Criteria	JORC Code explanation	
	Specification of the grid system used.	MGA94 Zone 50 co-ordinate system was used for all data.
	Quality and adequacy of topographic control.	The tenement package exhibits subdued relief with undulating hills and topographic representation is sufficiently controlled using an appropriate Digital Terrane Model (DTM).
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Geochemical samples were collected on a gridded pattern, either on a 450m x 450 for regional soils or 320m x 80m or 160mx80m for prospect soils
	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.	N/A – No Resource estimation was completed
	Whether sample compositing has been applied.	N/A
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Regional geochemical samples were taken on an equal spaced grid and considered to be unbiased given the lateral extent of the survey. Prospect soils with 80m spaced samples were collected perpendicular to stratigraphy to reduce any bias. At this early stage of exploration, mineralisation thickness, orientation and geometry are not known.
	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.	N/A – No Drilling Undertaken

Criteria	JORC Code explanation	
Sample security	The measures taken to ensure sample security.	Sample chain of custody is managed by Cosmos Exploration. Samples are stored on site and transported directly to the laboratory by XM logistic staff. If stored between site and the lab, they are kept in either the XM Logistics shed or the Comos Exploration Shed which are securely locked.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Cosmos geologists undertook a review of a geochemical orientation survey to determine the most appropriate, adequate sampling and analysis methodology for the Byro East Project in conjunction with advice from BV laboratories. No further reviews have been conducted.
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 project is located approximately 300 km southeast of the township of Carnarvon in the Gascoyne region. The project comprises five granted exploration licences held by RareX Ltd("ELs") and two ungranted Exploration Licences ("ELAs") held by Cosmos Exploration Ltd. RareX has given exclusive rights for Cosmos to undertake all approved exploration on tenure held by RareX at the Byro East Project. - E09/2386 - E09/2408 - E09/2443 - EL09/2525 - ELA092527 Aboriginal Heritage Access Agreements are in place for - E09/2386 - E09/2408 - E09/2408 - E09/2408
	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.	All tenements are in good standing with three tenements having an existing Aboriginal Heritage Access Agreements in place. No Mining Agreement has been negotiated.

Criteria	JORC Code explanation	
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The Byro East Project has been explored for Ni-Cu and gold mineralisation since the discovery of outcropping Ni-Cu gossans in 1970. The project area has been subject to sporadic and fragmented exploration in the past by various explorers. Exploration work has concentrated on outcropping or subcropping areas and is predominantly restricted to rock chip, stream sediment or surface geochemical sampling. The only gridded soil survey completed prior to 2021, was completed by Jododex in 1972. A total of two reverse circulation drill holes and two ground EM surveys are known within the project area, in addition to surface geochemical sampling.
Geology	Deposit type, geological setting and style of mineralisation.	The Project is located in the Narryer Terrane which forms the north western corner of the Yilgarn Craton. Geology consists of high-grade metasedimentary rock predominately quartzo feldspathic gneisses and migmatites with amphibolite's quartzites, Banded Iron Formations (BIF), felsic volcanics and layered mafic- ultramafic intrusions. The mafic-ultramafic intrusive's vary from large well layered quartz gabbro to olivine cumulate; to lenses of amphibolite. The mafic/ultramafic lithologies that are the hosts to Ni-Cu-PGE sulphide mineralisation and have been the main targets for exploration. The Byro East project is considered prospective for accumulations of massive, matrix and disseminated Ni-Cu-PGE sulphides, both within the mafic-ultramafic complex and as remobilised bodies in the country rocks.
Drill hole Information	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: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length.	N/A – No Drilling Undertaken

Criteria	JORC Code explanation	
	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.	The full element suite up to 55 elements is not tabulated for the soil samples, some key elements are represented graphically
Data aggregation methods	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.	Assay results of REE are reported in ppm and the conversion of elemental analysis (REE parts per million) to stoichiometric oxide (REO parts per million) was undertaken using stoichiometric oxide conversion factors using IOGAS software.
	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. The assumptions used for any	No aggregated results are reported No metal equivalent values are reported.
	reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there	N/A – No Drilling results were reported

Criteria	JORC Code explanation	
	should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	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.
Balanced reporting	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 relevant exploration data is reported.
Other substantive exploration data	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.	All relevant exploration data is reported
Further work	The nature and scale of planned further work (eg 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.	Cosmos Exploration plans to conduct on ground field checks for the northern anomalies, mapping, grab sampling and geochemical analysis.