ASX Announcement

21 August 2023

ODESSA MINERALS

ODESSA ACCELERATES EXPLORATION AT GASCOYNE LITHIUM AND REE TARGETS

Odessa Minerals Limited (ASX:ODE) ("Odessa" or the "Company") is pleased to provide an important update on the exploration programs commencing at its Gascoyne, Lockier Range and Gascoyne East projects located in Western Australia.

Highlights:

Odessa's **Lockier Range Lithium** and **Rare Earth Element** ("REE") Project covers a **large area** of 125km^2 within its substantial **Gascoyne** tenement package of +3,000 km^2. With the recent appointment of an exploration manager, the Company has now approved and initiated an accelerated exploration program. Field crews have already been mobilised to site.

Lockier Range Pegmatite Lithium Targets – work programme underway

Previous work, as announced by the Company, has identified significant pegmatite fields and associated anomalism of lithium and lithium-pathfinder elements in a similar geological setting to nearby Jamesons and Yinnetharra Lithium discoveries by Delta Lithium (ASX:DLI). Work programmes that have commenced include:

- Infill detailed soil sampling on a 100 x 100m grid spacing at Robinson Bore and Eastern Lithium pegmatite targets
- Detailed mapping and surface rock sampling of the pegmatite fields at Robinson Bore, Eastern and Southern Pegmatite fields and,
- Finalisation of first drill locations at the Lithium Targets

Lockier Range Mt Yaragner Rare Earth Carbonatite Targets – work programme underway

Previous work by the Company has identified highly anomalous REE in surface sampling associated with thorium radiometric anomalies, and potentially comparable to the nearby Yangibana Carbonatite Field (Hastings Technology Metals ASX:HAS). The current programme includes:

- Infill detailed soil sampling on a 100m x 200m grid spacing at Mt Yaragner
- Detailed mapping and surface rock sampling of the anomalous REE areas and,
- Finalisation of first drill locations on the REE targets

Gascoyne East Regional Target area:

The +2,000 km^2 Project covers intersections of major regional structures in the Gascoyne and Glenburgh terranes, and the margin of the Capricorn Basins. To date there has been minimal previous exploration work due to extensive alluvial cover obscuring bedrock geology. The company now has a Programme of Works Permite ("PoW") approved for Aircore drilling to cover a wide area obscured by alluvial sediments.

David Lenigas, Executive Director of Odessa, said: *"We are now beginning Odessa's most intense exploration at Lockier Range since the tenement was granted. Over the coming fortnight, we anticipate collecting nearly 2,000 soil samples and hundreds of rock-chip samples over our Lithium and REE targets. Detailed surface mapping of these targets will also be undertaken."*

Lockier Range Project

Odessa's **Lockier Range Lithium** and **Rare Earth Element** ("REE") Project covers a **large area** of 125 km^2 within its substantial **Gascoyne** tenement package of +3,000 km^2; and is ideally located:

- Adjoining Minerals 260's "Aston" Lithium project with extensive anomalies
- ~8.5km southwest of Delta Lithium's "Jameson" lithium pegmatite discovery
- ~15km west of Reach Resources' "Morrissey Hill" lithium pegmatite discovery
- ~25km west of Delta Lithium's "Yinnetharra" lithium pegmatite discovery
- ~40km west of Voltaic Strategic Resources' pegmatite discovery
- ~60-70km south of Hastings Technologies' and Dreadnought Resources' rare earth projects

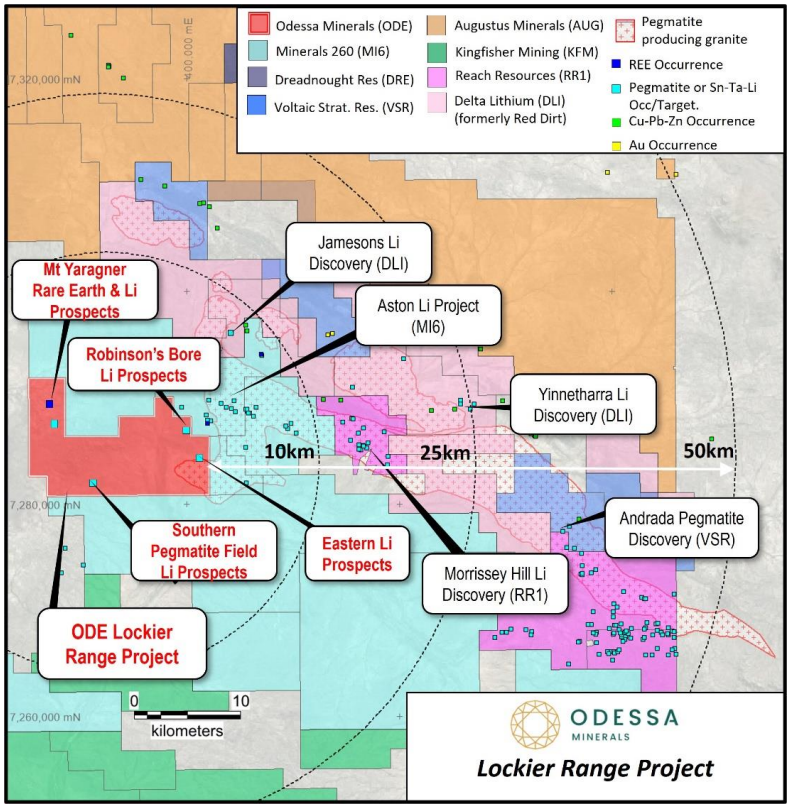

Figure 1: Lockier Range Project, proximal to the emergent Gascoyne lithium pegmatite province.

Lithium Pegmatite Targets

The Company recently announced the identification of extensive pegmatite fields with associated lithium and lithium pathfinder anomalism in soils (refer announcements dated 27 July 2023 and 14 July 2023). With the recent appointment of Jay Ward as Exploration Manager, the Board has approved an accelerated exploration program.

The exploration programs, including infill soil sampling and surface reconnaissance, are designed to finalise drill target locations. The lithium targeting work is prioritised within the Robinson Bore pegmatite field, adjoining and extensional to Minerals 260's 'Aston Project'. In addition, the Eastern Pegmatite field has emerged with strong potential of pathfinder anomalism associated directly with the Thirty-Three Supersuite granite margin.

Similarly to Robinson Bore, the area will be subjected to infill soil sampling and reconnaissance mapping and sampling.

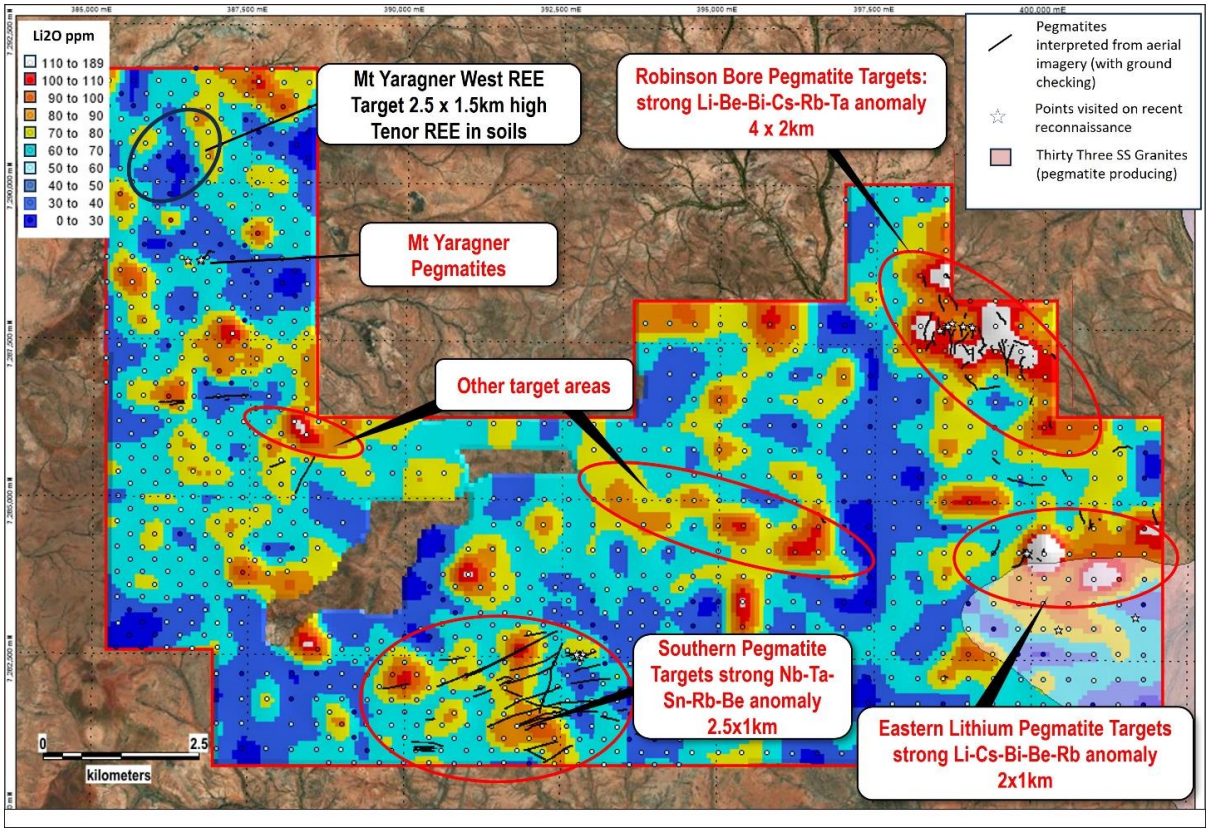

Figure 2 - Principal pegmatite target areas, Lockier Range Project on gridded soil results for Li2O ppm.

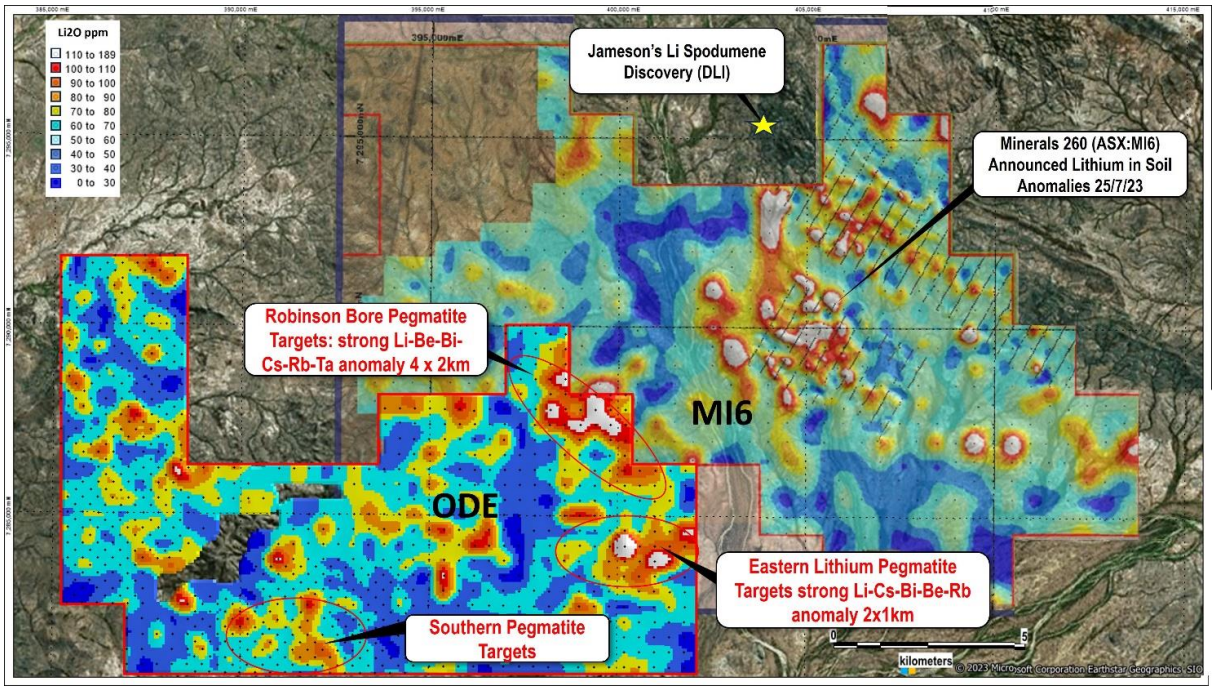

Figure 3 – Lockier Range Project Li2Oppm in soil merged with MI6's Aston Project results imagery (ASX:MI6 announcement 25/07/2023). Grid scaling for Li2O ppm in soils matched approximately.

Mt Yaragner REE Target Area

The Gascoyne Province of Western Australia is emergent with the discovery of significant critical rare earth elements resources by Hastings Technology (ASX:HAS), Dreadnought Resources (ASX:DRE) and Kingfisher Mining (ASX:KFM), along with other REE focused explorers such as Augustus Minerals (ASX:AUG) and Minerals 260 (ASX:MI6).

At the Mt Yaragner Project area, within the Lockier Range tenement, the Company recently reported strong REE in soil sampling in proximity to historic high-grade stream sediment samples of up to 14% REE (with 3.36% Nd+Pr) (refer to Company announcement 20 July 2023). The Company is embarking on infill soil sampling over a 100m x 200m grid spacing, and detailed mapping in order to finalise drill targets in the area.

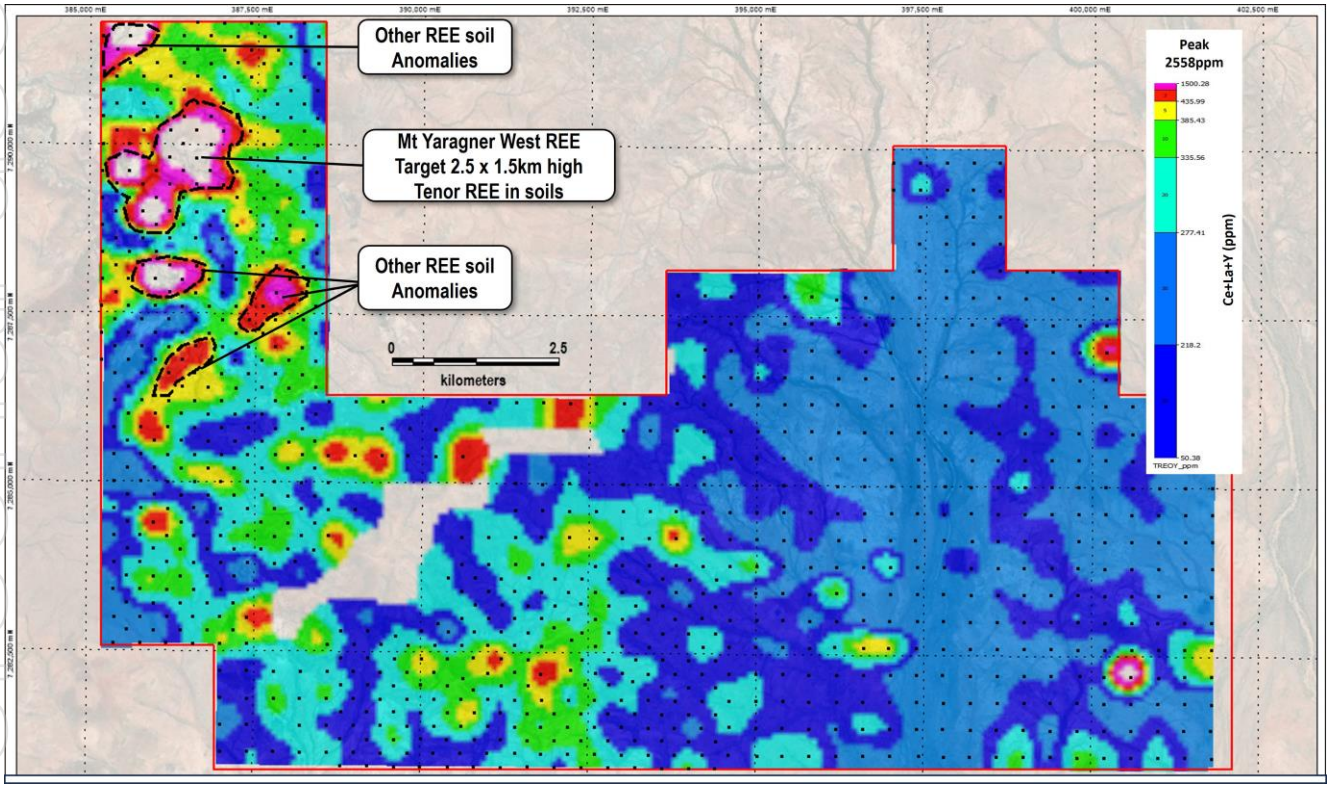

Figure 4 - Soil sampling grid by TREO (Ce+La+Y). Black dots = sample points. MGA94 Zone 50

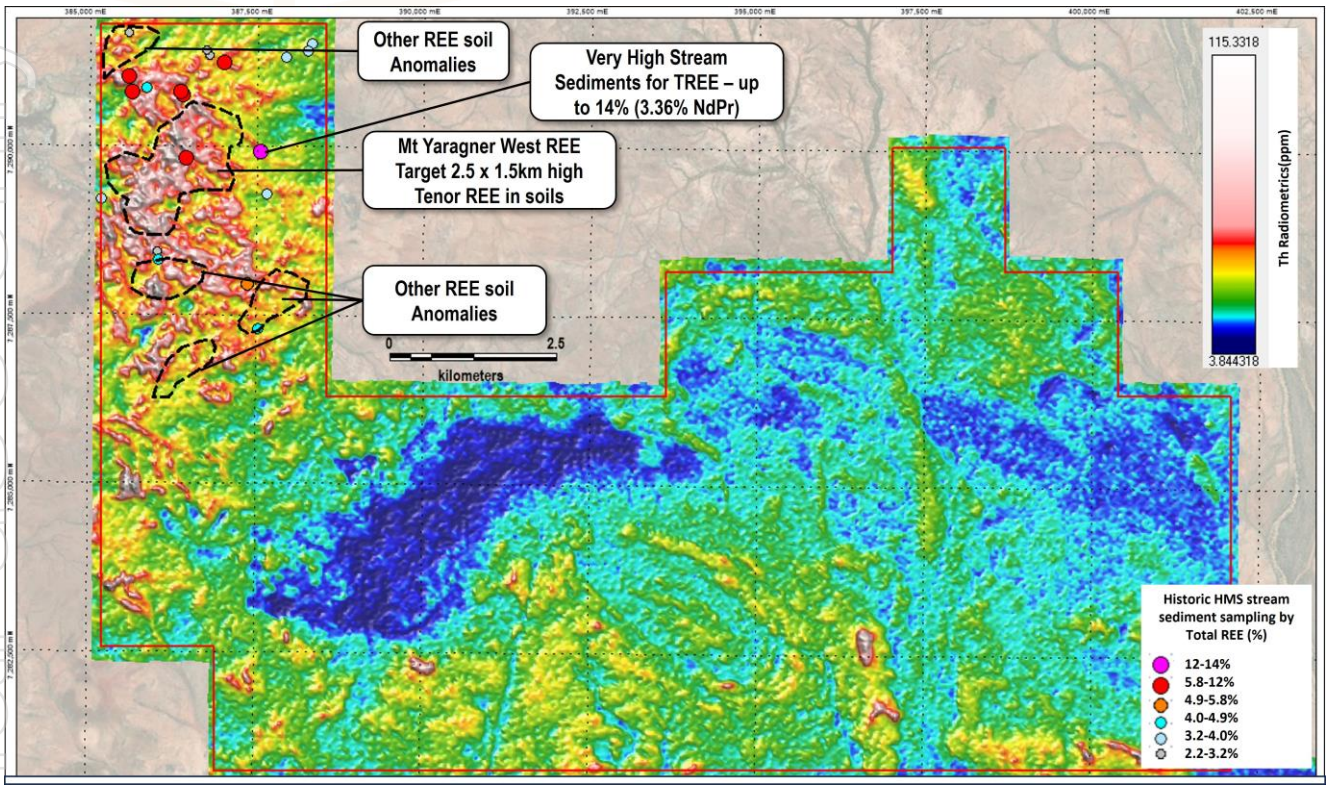

Figure 5 - Thorium radiometric with historic HMC stream sediment sampling results

Gascoyne East

The Gascoyne East Project area consists of 2,108 km^2 of exploration licenses. The project area is at the intersection of major regional fault structures. Geologically, the area is interpreted to be underlain by Gascoyne and Glenburgh meta-granitoids, with an on-lap of Edmund Basin to the north. However, the region is >90% covered by alluvial sediments, and as such, has not been subjected to detailed exploration.

The region is considered prospective for rare earth elements, lithium-bearing pegmatites, copper, gold and graphite. In order to map the bedrock between the transported cover sediments, the Company has submitted for permitting of 113 aircore holes on existing tracks. In addition, the Company is scoping a combined detailed airborne magnetic and gravity survey.

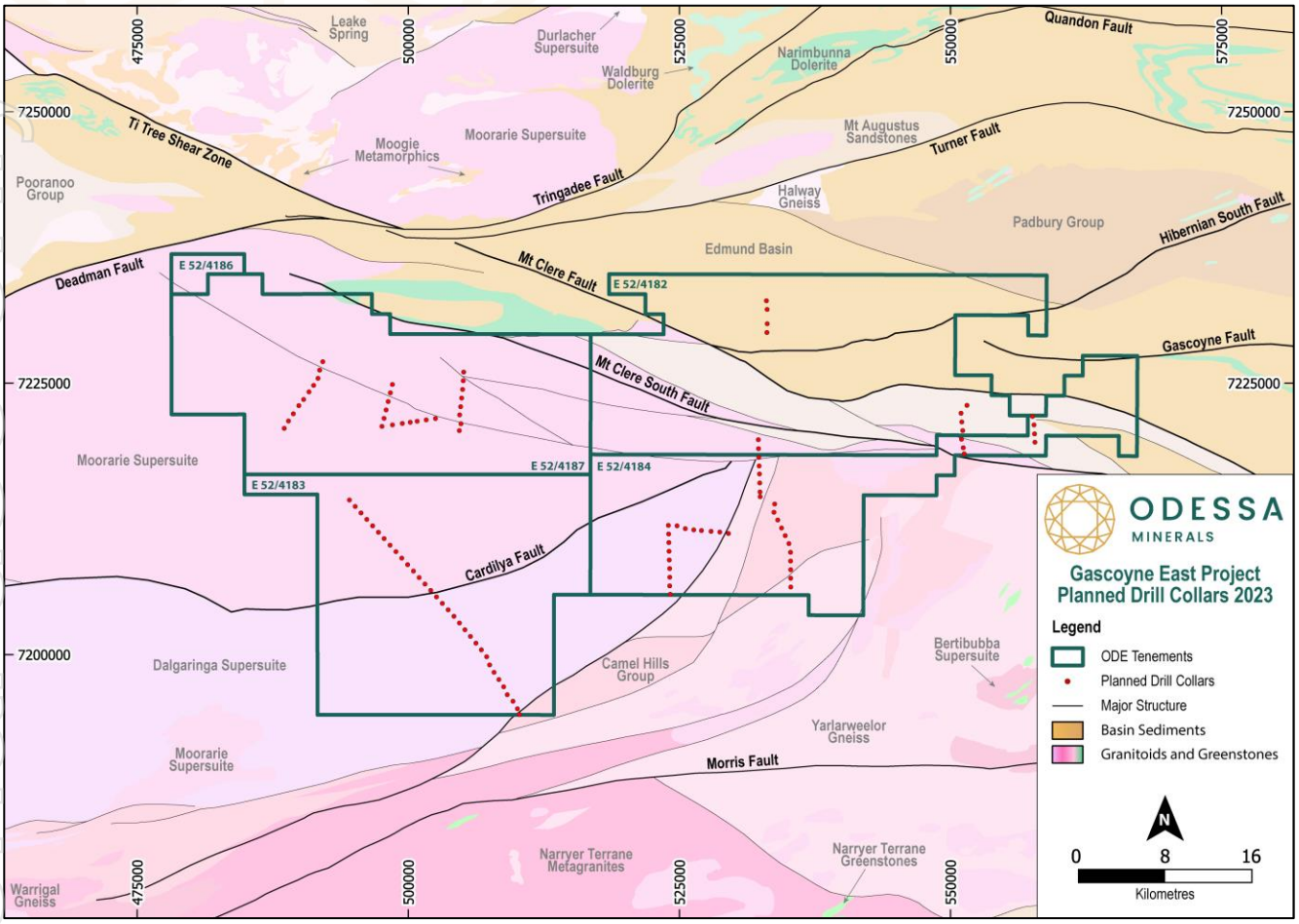

Figure 6 – Gascoyne East Project planned drilling underlain with 1:500k Bedrock geology and major structures.

Work Program Timeline

The Company anticipates that the Lockier Range on-ground work will be completed by the end of September, depending on weather conditions, and therefore expects to receive assay lab results and interpretation in mid-November.

Subject to assay results, the Company anticipates that the next steps will be the targeting and identifying drilling locations, obtaining approvals to drill, and then drilling the targets as soon as possible.

At Gascoyne East, the Company is awaiting heritage approval for the drilling program. It is estimated that drilling will commence in November, subject to receipt of heritage approvals.

About Odessa Minerals

Odessa Minerals Ltd is an ASX listed company (Ticker: ODE) that holds exploration licenses over 3,000 sq km of highly prospective ground in the highly sought-after Gascoyne region of Western Australia. Odessa's Projects are located in close proximity to significant recent lithium/pegmatite discoveries and lie in a north-south corridor of recent world class REE carbonatite discoveries.

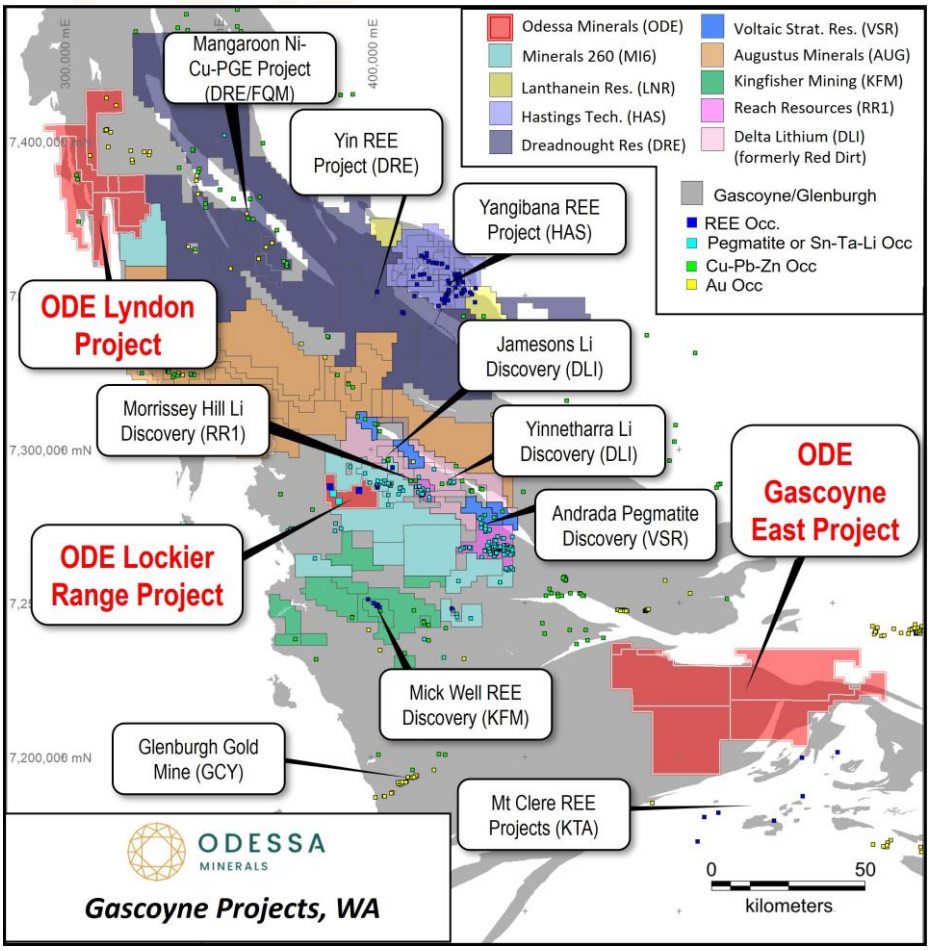

Figure 7 - Odessa Minerals regional Gascoyne Project location map with Geological Survey WA Minedex Occurrences.

ENQUIRIES

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www.odessaminerals.com.au

Competent Persons Statement

Information in this report relating to exploration information is based on data compiled by Odessa Minerals and reviewed by Peter Langworthy, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Langworthy is Managing Director (Principal Consultant) of Omni GeoX Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which he is undertaking, to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Langworthy consents to the inclusion of the data in the form and context in which it appears.

JORC CODE, 2012 EDITION – TABLE 1 REPORT

1.1 Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *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.*	• Not applicable: No new sampling or drilling reported in this release
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).*	• Not applicable: No new sampling or drilling reported in this release
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• Not applicable: No new sampling or drilling reported in this release
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate*	• Not applicable: No new sampling or drilling reported in this release

Criteria	JORC Code explanation	Commentary
	Mineral Resource estimation, mining studies and metallurgical studies. • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Not applicable: No new sampling or drilling reported in this release
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.* • *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.* • *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.*	• Not applicable: No new sampling or drilling reported in this release
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data*	• Not applicable: No new sampling or drilling reported in this release

Criteria	JORC Code explanation	Commentary
	verification, data storage (physical and electronic) protocols. • *Discuss any adjustment to assay data.*	
Location of	• *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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Not applicable: No new sampling or drilling reported in this release
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Not applicable: No new sampling or drilling reported in this release
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.* • *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.*	• Not applicable: No new sampling or drilling reported in this release
Sample security	• *The measures taken to ensure sample security.*	• Not applicable: No new sampling or drilling reported in this release

Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Not applicable: No new sampling or drilling reported in this release

1.2 Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	Lockier Range • EL09/2649 is an exploration license application in the name of OD4 Noonie Pty Ltd. • Odessa Minerals owns a 100% interest in OD4 Noonie. There is a 1% royalty payable to the original vendor of OD4 Noonie on future production. Gascoyne East • E52/4182, 4183, 4184, 4186, 4187, 4198 are under the name of Odessa Lyndon Pty Ltd, a 100% owned subsidiary of Odessa Minerals. Odessa holds 85% interest in the projects. • 15% interest in the projects is held by Odette One Pty Ltd, a private company. Odette One Pty Ltd is free-carried until decision to mine, and if it elects not to contribute at decision to mine stage, it dilutes to an uncapped 1.5% Net Return Royalty.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Lockier Range Previous geochemistry sampling is historic and compiled from third party reports as noted; and as previously reported in company release dated 25 October 2022. Refer previous reports namely WAMEX A99061 (IGO 2013) Stream Sediments; WAMEX A99061 (IGO 2013) Soil Samples; VENUS METALS PRESS RELEASE (28 Jan 2021) and A128133 (2021) Stream Sediments; WAMEX A117396 (ARROW MINERALS 2018) Stream Sediments. Gascoyne East There is minimal previous exploration work on the Gascoyne East Project area.

Geology	• *Deposit type, geological setting and style of mineralisation.*	Lockier Range • The project area is underlain by Proterozoic rocks of the Gascoyne province of Western Australia. Rock types included Durlacher Super Suite Granitoids, Moorarie Supersuite, Moogie Metamorphics (meta sediments) and Thirty-Three Supersuite leucogranites. Based on rock type, radiometrics and geochemical anomalism the tenement area is prospective for carbonatite hosted rare earth elements comparable in style to the Yangibana Deposit located to the north in a similar geological setting. • Based on the presence of Thirty-Three super suite granitoids intruding Durlacher Supersuite, the project area is prospective for lithium bearing pegmatites analogous to the nearby Yinnetharra Pegmatite field. Gascoyne East The project area is 90% covered by alluvial sediments/transported cover. The interpreted bedrock geology consists of Gascoyne and Glenburgh terrane metamorphosed intrusions and meta-sediments. The Edmund Basin sediments on-lap on the northern part of the project area. The area is considered prospective for REE carbonatite, base-metal deposits, lithium pegmatites and graphite associated with the basal sequences of the Edmund Basin sediments.

Criteria	JORC Code explanation	Commentary

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.*
	• *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.*
		• Not applicable: No new sampling or drilling reported in this release

Data aggregation methods	• *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.* • *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 reporting of metal equivalent values should be clearly stated.*	• Not applicable: No new sampling or drilling reported in this release
Relationship between	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle*	• Not applicable: No new sampling or drilling reported in this release

Criteria	JORC Code explanation	Commentary
Mineralisation n widths and intercept lengths	*is known, its nature should be reported.* • *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').*	
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.*	• Maps included in the body of this release.
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.*	• Not applicable: No new sampling or drilling reported in this release
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 geochemistry data is reported in previous releases. Pre-Odessa Minerals sampling is historic and compiled from third party reports as noted; and as previously reported in company release dated 25 October 2022.
Further work	• *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.*	• As per the body of the release, the Company is instigating surface sampling and reconnaissance mapping at Lockier Range and shallow Aircore drilling at Gascoyne East. • Geophysical surveys are planned across the Gascoyne East Project.