



CARMU Inspection Report 03/2023

Contractor: UK Seabed Resources II

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Acronyms

AUV	Autonomous underwater vehicle
BMS	Business management system
CARMU	Compliance assurance and regulatory management unit
EOSG	Executive office of the Secretary-General
ISA	International Seabed Authority
LTC	Legal and Technical Commission
OEMMR	Office of environmental management and mineral resources
OLA	Office of legal affairs
PMN	Polymetallic nodules
PMN Regulations	Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area
ROV	Remotely operated vehicle
SOPs	Standard Operating Procedures
UNCLOS	United Nations Convention on the Law of the Sea
UKSR	UK Seabed Resources Ltd.

I. Introduction

1. The UK Seabed Resources Ltd. (UKSR) holds two 15-year contracts for exploration of polymetallic nodules in the Clarion-Clipperton Fracture Zone, which were concluded in accordance with the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (PMN Regulations) respectively on 8 February 2013 and 29 March 2016. The contract signed on 29 March 2016, which is the subject of this report, covers an area defined in Schedule 1 of the contract. For the avoidance of any doubt, this report does not purport to assess UKSR's performance of its contract dated 8 February 2013.

2. The Secretariat of the International Seabed Authority (ISA), through its Compliance and Assurance Regulatory Management Unit (CARMU), undertook a supervisory inspection of the Contractor's planned activities following the acquisition of UKSR by Loke Marine Minerals from Lockheed Martin (hereinafter referred to as the acquisition). The inspection aimed at obtaining information on the implications for the current five-year contract period, which expires on 28 March 2026, and verifying compliance of planned exploration activities with the Contractor's regulatory requirements and contractual obligations.

II. Legal and policy context

3. Under article 162(2)(1) of the United Nations Convention on the Law of the Sea (UNCLOS), the Council shall exercise control over activities in the Area in accordance with article 153(4) of UNCLOS and the rules, regulations, and procedures of ISA. Under this article, ISA is required to exercise such control over activities in the Area as is necessary for the purpose of securing compliance with the relevant provisions of Part XI of UNCLOS and the annexes relating thereto, and the rules, regulations and procedures of ISA, and approved plans of work for exploration.¹ Consistent with the Decision of the Council of 11 November 2023 (ISBA/28/C/27), the Secretary-General is to report to the Council on an annual basis in respect of alleged instances of non-compliance. Accordingly, the Secretariat is required to monitor Contractor's compliance with its plans of work.

4. The plan of work for exploration is the fundamental document by which a Contractor sets out the objectives and activities of its proposed exploration programme. It is approved for the entire lifespan of the contract which spreads over a period of 15 years. Once approved by the Council, the plan of work represents the core of the contract and the fundamental element against which the Contractor's performance and compliance are assessed.

5. The 15-year period of each contract is generally divided in three 5-year periods. Each of them sets out the different activities that the Contractor has committed to undertaking and normally covers mineral exploration, environmental baseline studies, resource assessment, mining technology and ore processing technology development, and economic evaluation. The first period of five years is usually used to enable the Contractor to focus its exploration activities on gathering basic information on geology, geomorphology, mineral resources and collecting environmental baseline data. The data and information collected normally inform the identification of priority areas for advanced exploration activities.

¹ See ISBA/24/C/4.

6. Progress is reported by the Contractor to the Secretary-General via the submission of annual reports (Standard Clause 10.1). Additionally, the Contractor and the Secretary-General jointly undertake a periodic review every five years, at the junction of each 5-year period, to assess the results and review the implementation of the plan of work for exploration (Standard Clause 4.4).

7. The primary responsibility of the Contractor is to comply with the terms of the contract signed with ISA. In so doing, it must also implement, as far as reasonably practicable, any recommendations for guidance that may be issued from time to time by the Legal and Technical Commission (LTC). The Contractor also has the responsibility to report promptly any incident arising from its activities which “have caused, are causing or pose a threat of serious harm to the marine environment” (Regulation 33 of the Regulations on prospecting and exploration for polymetallic nodules in the Area).²

8. Monitoring of compliance with plans of work for exploration approved in the form of contracts is also one of the functions of ISA pursuant to section 1(5)(c) of the annex to the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (the 1994 Agreement). Until recently, the primary monitoring mechanisms used by ISA were the annual reports submitted by Contractors pursuant to Standard Clause 10 of the standard clauses for exploration contracts, and the periodic reviews of the plans of work for exploration required under Standard Clause 4.4. The various organs of ISA have specific and clearly defined roles and responsibilities in that regard.

9. The responsibilities of the Secretary-General in relation to monitoring compliance with plans of work for exploration, as set out in UNCLOS, the 1994 Agreement, the regulations, and the standard clauses for exploration contracts, include inspecting vessels and installations (Standard Clauses 14.2 and 14.3), and providing relevant information to the Contractor and sponsoring State(s) arising from the inspection reports (Standard Clause 14.7). The operational unit of the Secretariat that is responsible for the implementation of the Secretary-General’s responsibilities with respect to monitoring and reporting on the activities of Contractors is CARMU.³

10. In due time, the Council will be required to establish an appropriate inspection mechanism pursuant to article 162(2)(z) of UNCLOS. Although such an inspection mechanism does not exist at present, it is expected that the establishment thereof will be addressed in the context of the exploitation regulations.

² See ISBA/16/A/12/Rev.1

³ See ISBA/ST/SGB/2022/2.

III. Objective, Scope, and Methodology

3.1. Objective and scope of the inspection

11. On 30 November 2023, the Secretary-General notified UKSR the intention of CARMU to conduct an online inspection on 4 and 5 December 2023. In the lead-up to the inspection, the agenda was discussed and agreed upon between the Secretariat and UKSR (see annex 3).

12. The overall objective of the inspection was to review UKSR's programme of activities for 2025 and 2026 (i.e., the remaining two years of the current five-year programme), and also to ascertain, based on the Contractor's reports to be provided during the inspection, whether the Contractor had addressed the recommendations and comments of the LTC following the review of the Contractor's annual work plan for 2021 and 2022.

3.2 Methodology

13. The inspection was conducted by the ISA Secretariat, with the involvement of subject matter experts from the Office of Environmental Management and Mineral Resources (OEMMR), the Executive Office of the Secretary General (EOSG) and the Office of Legal Affairs (OLA) during online meetings with the Contractor on 4 and 5 December 2023.

14. The inspection included the presentation of the work and plans of UKSR to address the recommendations of the LTC and the completion of its contractual obligations, followed by a Q&A session with the ISA Secretariat. The intended technology development was presented.

15. In the course of the inspection, UKSR provided representatives of ISA Secretariat with an oral account of its recent steps, as well as online presentation slides.

16. The purpose of the meeting of 4 and 5 December was, in general terms, twofold. First, the meeting provided the opportunity to engage in discussions, facilitating the evaluation of UKSR's account of its recent and planned activities against regulatory requirements as well as milestones enshrined in UKSR's plan of work.

17. Second, the meeting also provided the opportunity to address the position of UKSR on the recommendation of the LTC. The report addressed the Contractor's planning processes, research objectives and planned cruises.

IV. Information review

18. In the course of the inspection, the Contractor provided information on a number of particular areas.

19. First, the Contractor addressed its organization performance improvements and the implications to deliver the programme of activities. In particular, the Contractor outlined the changes in management following the acquisition, including adjustments of its risk management framework, and the development of risk registers with a view to ensuring a smooth transition process. According to the explanations provided, the changes implemented to ensure the delivery of the programme of activities comprised adjustments of internal policies, operating procedures and position descriptions, among other issues.

20. Second, addressing the comments of the LTC on technology development, UKSR has reported that it remains engaged in the ongoing development of mining technology, with its engineering development accelerated since the acquisition. UKSR provided an update on the status of the collector system development, and the status of conceptualizing the collector vehicle prototype system.

21. Third, addressing comments of the LTC, UKSR has further undertaken to ensure that, for the purposes of future reports, its activities under its two different contracts with ISA will be clearly distinguished. UKSR has acknowledged the fact of a significant under-expenditure on training, and reported to ISA that UKSR will support its full compliance with the relevant contractual obligations going forward. UKSR reported to fulfil its training obligation and has developed an online training platform in conjunction with the National Oceanography Centre in Southampton, UK.

22. Fourth, UKSR has provided an update on the implementation of its programme of activities, including planned workshops in support of cruises and future collaboration with other contractors. UKSR has indicated its intention to establish a plan for collecting environmental data, taking into consideration the distinct environmental characteristics of the UKSR II contract area. Planned exploration cruises, with subsea verification experiments to be conducted for the newly designed ROV-based box corer, a robotic sampling device for high-resolution, well positioned core sampling for resource assessment and environmental baseline surveys (2025), and the collector system (2027).

VI. Conclusions and recommendations

23. Based on the review of the information supplied by UKSR, the organizational performance improvements following the acquisition have been comprehensive, with reassurance on the part of the new parent company of UKSR to advancing exploration activities and meeting contractual obligations for the UKSR contract area.

24. The information provided by UKSR indicates that UKSR is in the process of addressing the issues highlighted in the Report and Recommendations of the LTC in respect of UKSR's 2022

Annual Report, with further details expected to be presented in UKSR's forthcoming annual report. From the review of the information supplied, it can be ascertained that UKSR and its parent entity remains committed to carrying out exploration, environmental baseline data collection and technology development, as well as training activities. In this respect, UKSR is expected to provide specific details as to the exact dates, geographical locations and respective expected expenditures associated with the particular activities, in its forthcoming annual report.

25. In respect of environmental baseline data sampling, UKSR is suggested to develop a plan for the collection of environmental baseline data, which could build on existing collaboration with research projects and other contractors but should also reflect the environmental and habitat characteristics of the contract area. Further communications from and consultations with UKSR are expected on this point and additional information to be provided in its forthcoming annual report.

26. We note that the exploration programme of UKSR is centred on the identified and partially mapped areas in its contract area, with reported high nodule densities. This data is to be supplemented by the planned use of modern autonomous underwater vehicle (AUV) systems and their multibeam echo sounding and video systems for refined resource assessments. It is recommended that the mapping of the remaining unmapped parts of the contract area is completed.

27. The planned exploration cruises with allocated 100 working days. The cruise plans were not provided at this stage, but the Contractor plans to survey the two UKSR contract areas over time. It is recommended that UKSR either concentrate the effort on selected areas or increase the working days.

28. Forming conclusive views on the status on the development of the collector system is premature at this stage, since a concept selection is yet to occur. The presentation of the technology development offered insights in the review and selection process. Following a sound testing in laboratories, a low-impact harvesting technology is further developed.

29. The digital ROV-based box-corer system concept aimed at re-designing the nodule abundance mapping process addresses the need for high-resolution sampling and resource and environmental data collection. The concept is convincing, but it bears noting that its implementation may increase time requirements and may be affected by surface weather and sea-state conditions.

30. The Subsea Verification Experiments in 2025 and 2027 are considered a necessary requirement to follow up with required data acquisition for the resource assessment and environmental baseline surveys and to prove the technological concepts for the digital box corer as well as the collector system with new approaches for the collecting mechanism. It is recommended to follow up tests in UKSR's lab facilities to best prepare the sea verification experiments.

31. Lastly, UKSR is reminded that it is required to obtain consent from ISA for the changes to the programme it has proposed by writing to the Secretary-General in accordance with its obligations under the PMN Regulations and the Contract.

VII. References and resources

International Seabed Authority

- Inspection Notification Letter (Annex 1)
- Annual Report Letter to UK Seabed Resources (Annex 2)
- Inspection Agenda-UK Seabed Resources (Annex 3)

Annex 1: Inspection Notification Letter



Reference: PMN/15.5/2013/GBR.2

Dear Mr. Sognnes,

I wish to refer to the contract for the exploration for polymetallic nodules between UK Seabed Resources Ltd. (UKSR II) and the International Seabed Authority that was signed on 29 March 2016.

The International Seabed Authority (ISA) hereby notifies UK Seabed Resources Ltd. (UKSR) of its intention to conduct an online inspection on 4 and 5 December 2023 as previously agreed with Loke Marine Mineral's (LMM) Chief Operating Officer at the meeting in November 2023.

The inspection will focus on the review of the UKSRL II programme of activities planned for the next two years.

Yours sincerely,

Michael W. Lodge

Mr. Walter Sognnes
Chief Executive Officer
Loke Marine Minerals
Søregata 4,
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Norway

Annex 2: Annual Report Letter to UK Seabed Resources



Reference: PMN/15.5/2013/GBR.2

Dear Mr. Sognnes,

I refer to my letter of 9 August 2023 in which I communicated feedback of the Commission relating to its evaluation of annual report for 2022 activities submitted by between UK Seabed Resources Ltd. (UKSR II).

Pursuant to the decision of the Council of 8 November 2023 (paragraph 4, ISBA/28/C/27), and in line with its previous decision ISBA/27/C/44 (paragraph 7) as well as the Report of the Chair of the Legal and Technical Commission on the work of the Commission at the second part of the twenty-eighth session (paragraphs 26 and 29, ISBA/28/C/5/Add.I), the Secretariat is requested to monitoring and tracking the progress made by each Contractor in addressing specific matters relating to its annual reporting.

Although in most cases contractors respond to the Commission's evaluation in the next annual report, I wish to kindly request that you provide your responses or intermediate responses no later than 17 December 2023 to enable the Secretariat to consolidate the feedback received for consideration by the Commission at its next meetings to be held in March 2024.

For this purpose and for your convenience please find attached a copy of the specific evaluation of the annual report by UKSR, including questions and comments from the Commission to UKSR.

Yours sincerely,

Michael W. Lodge

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Annex 3: Inspection Agenda-UK Seabed Resources

AGENDA

ISA Inspection of UK Seabed Resources (UKSR)

4-5 December 2023

Monday, 4 December 2023	
7:00 – 7:15	Opening of the Meeting and Introduction
7:15 – 8:15	Organization Performance Improvements <ul style="list-style-type: none">• Management of Change (MoC) after Loke/Lockheed Martin Acquisition• Risk Management• Business Development System (Work Processes and SOPs).
8:15 – 9:15	UK2 – Plan of Work <ul style="list-style-type: none">• Feedback to LTC comments from Annual Report review• Status update to UK2 programme of activity<ul style="list-style-type: none">○ Environmental○ Resource○ Cruise planning
9:15 – 9:30	Summary of Day 1

Tuesday, 5 December 2023	
9:00 – 9:15	Opening of the Meeting and Introduction
9:15 – 10:30	Technology Development <ul style="list-style-type: none">• Status on Collector System development• Concept Selection• 2025 Subsea Verification Experiment
10:30 – 11:00	Summary of Day 2 and Close-Out