



Legal and Technical Commission

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Status of annual reports received from contractors

Prepared by the Secretariat

1. In its evaluation of the reports for 2002 (ISBA/9/LTC/2), the Legal and Technical Commission noted with appreciation that, in general, the contractors had taken note of the recommended format and structure for the annual reports suggested by the Commission at the eighth session (see ISBA/8/LTC/2, annex). It also noted that a number of elements were missing from some of the reports and therefore made specific recommendations for the submission of additional data and information by the contractors concerned in relation to those elements.

2. The Commission considered that, in the future, it would assist the subcommittee if the secretariat was able to conduct a preliminary analysis of some of the more technical data and information contained in the annual reports. It was suggested that it would be beneficial if the International Seabed Authority could have an overall summary of the status of environmental monitoring and assessment being undertaken by contractors, which would be useful for a full understanding of those activities. To accommodate these suggestions, the secretariat prepared the present document by incorporating summaries of technical data and information as well as information on the status of environmental monitoring and assessment by contractors.

I. Status of annual reports for 2002

3. As at 10 May 2004, the following contractors had submitted to the Secretary-General of the Authority additional data and information with respect to their annual reports for 2002 for evaluation by the Commission at its meeting during the tenth session of the Authority: the China Ocean Mineral Resources Research and Development Association (COMRA), the Government of the Republic of Korea and State Enterprise Yuzhmorgeologiya (Russian Federation).

4. In the case of COMRA, the Commission recommended that the contractor be requested to supply details of sample locations and analytical results, both from exploration work and environmental studies, summarized in illustrative chart or graphical form and in tables. The Commission also recommended that the contractor be asked to supply additional substantive details of the mining test initiatives,

including results. COMRA submitted to the Secretary-General on 31 March 2004 data and information additional to its annual report for 2002. These data and information include three parts, the first (exploration) containing a table showing 107 sample locations in the COMRA contract area in 2002; the second (environmental baseline survey and studies) providing a table showing the average value of marine chemistry analysed at three stations in the COMRA contract area in 2002; and the third (mining test) describing the two major tasks completed by COMRA in 2002.

5. In the case of the Government of the Republic of Korea, the Commission recommended that the contractor be requested to supply additional information regarding the mining technologies undertaken in the reporting year, with details including descriptions of equipment and operations and, where relevant, results of tests. The Government of the Republic of Korea submitted to the Secretary-General on 30 March 2004 a supplement to its 2002 report that contains information on research in mining technology. The data and information include descriptions of collector and integrated mining operation technology, a description of the development of a lifting system and results of the lifting system tests.

6. In the case of Yuzhmorgeologiya, the Commission recommended that, in accordance with its suggestions contained in the annex to ISBA/8/LTC/2, the long-, medium- and short-term objectives of the Yuzhmorgeologiya programme be stated. The Commission also recommended that a statement of the quantity of nodules recovered be obtained from the contractor. On 25 March 2004, the Director-General of Yuzhmorgeologiya sent a letter to the Secretary-General of the Authority to inform him that during the exploration activities of Yuzhmorgeologiya in 2002, no polymetallic nodules had been recovered from the seabed, and requested that the letter be considered an addendum to the annual report of Yuzhmorgeologiya on its exploration activities for 2002.

7. In the case of the Government of India, the Commission recommended that details of the samples taken and results from the 2002 survey, sampling and analysis programmes be provided in chart form as well as in tables. It also recommended that an appropriately certified financial breakdown for the activities undertaken in 2002 be provided by the Government of India. As at 10 May 2004, the Secretary-General had not received that breakdown.

8. In the case of the Institut français de recherche pour l'exploitation de la mer/Association française pour l'étude et la recherche des nodules (IFREMER/AFERNOD), the Commission recommended that the contractor submit an appropriately certified financial statement for both 2001 and 2002, taking into account the comments made in paragraph 95 of ISBA/9/LTC/2. However, as at 4 May 2003, that statement had not been received.

II. Status of annual reports for 2003

9. The third set of annual reports of contractors was due at the end of March 2004. As at 19 April 2004, annual reports had been received from all seven contractors: Deep Ocean Resources Development, Ltd. (DORD), the Government of the Republic of Korea, COMRA, Yuzhmorgeologiya, Interoceanmetal Joint Organization (IOM), IFREMER/AFERNOD, and the Government of India.

A. Deep Ocean Resources Development, Ltd.

General

10. DORD submitted its annual report for 2003 in both hard-copy and electronic format on 5 March 2004. The report was structured in line with the headings and content list recommended by the Commission. In his letter to the Secretary-General of the Authority on 5 March 2004, the President of DORD requested a postponement of the submission of the certificate of expenditure on exploration until the end of May 2004, because of a required audit on the expenditure to be conducted in mid-May.

Exploration work

11. The report of DORD was devoted mainly to a description of the activities covered in its five-year plan of work. It indicated that in 2003 the kriged maps of nodule abundance and metal grade were compiled with available information on seabed topography. A series of maps of abundance and metal grades showing the areas where the slope was greater than five degrees were provided. No explanations of methods, technical specifications or error margins were provided.

Mining test and mining technology

12. None.

Training

13. None.

Environmental monitoring and assessment

14. In accordance with the programme of activities, DORD carried out no environmental work.

B. State Enterprise Yuzhmorgeologiya

General

15. Yuzhmorgeologiya submitted its annual report for 2003 in both hard-copy and electronic format on 25 March 2004. The report, submitted in Russian, followed the structure and format recommended by the Commission under the headings and standardized content list. It also contained a certified financial statement of expenditure relating to activities in 2003. The electronic format, a compact disk attached to the hard copy submitted by the contractor, contains only the text of the report, not the charts, illustrations and maps incorporated in the hard copy.

Exploration work

16. Yuzhmorgeologiya reported that bathymetric surveys with multibeam echo sounding system, sonar side-scan surveys, continuous the television and photograph surveys and the collection of bottom sampling data were carried out in the western and eastern reference zones of the contract area. An area of 47,200 square kilometres was surveyed and a total of 61.9 kilograms of polymetallic nodules was reported to have been collected. The contractor indicated that the data acquired had

been processed and analysed during the reporting period, but that the work would be concluded and reported on in 2004. Yuzhmorgeologiya's report presented descriptions of the equipment, software and methodology used and information on the amount of data collected. A description of the results obtained was also provided in the form of illustration, graphs and tables.

Mining test and mining technology

17. None.

Training

18. None.

Environmental monitoring and assessment

19. In 2003 Yuzhmorgeologiya studied baseline conditions by carrying out meteorological observations during the cruise taken as part of its exploration work. Descriptions of the various conditions were given, along with graphical analysis.

C. China Ocean Mineral Resources Research and Development Association

General

20. COMRA submitted its annual report for 2003 on 30 March 2004 in both hard-copy and electronic format, with a certificate for the statement of actual and direct exploration expenditure in 2003. The report, submitted in both Chinese and English, was structured in line with the list of content recommended by the Commission.

Exploration work

21. During the reporting year, COMRA continued to carry out resource exploration and an evaluation of the quality and quantity of polymetallic nodules from the contract area. As a result, COMRA was able to acquire significant information on the location and evaluation of commercial mining sites and to determine initial mining test areas. COMRA also reported that, in order to meet requirements for the experiment of ore dressing and metallurgy, some nodules were collected.

22. This exploration work was reportedly carried out by the research vessel *Dayang Yihao*, which undertook a 34-day cruise to conduct a survey of an area of approximately 770 square kilometres located in the eastern COMRA contract area. COMRA provided information on exploration equipment used, the number and type of operations and the quantity and weight of samples obtained. It reported that 5,272 kilograms of wet nodules were collected. A table containing the coordinates of surveyed stations was provided. A description of the results of analysis was also provided, including a chart illustrating the relationship between the abundance and grade of nodules.

Mining test and mining technology

23. COMRA provided information on the tasks it accomplished in relation to the development of a mining system and pre-pilot tests on extractive metallurgy relating to polymetallic nodules. Tables showing the results obtained were also provided.

Training

24. None.

Environmental monitoring and assessment

25. COMRA carried out a cruise in 2002, and the annual report for 2003 gave a list of the parameters that were sampled. A study investigating the processing of waste was mentioned.

D. Government of the Republic of Korea*General*

26. The Government of the Republic of Korea submitted its annual report for 2003 in both hard-copy and electronic format on 30 March 2004. The report followed the suggested headings and content list recommended by the Commission. A certificate of expenditure was provided, as well as a summary of the report and information on other activities.

Exploration work

27. The contractor reported that a one-month geological, geophysical and nodule distribution survey was conducted. A total of 28 kilograms of nodules was collected. Samples and data acquired were analysed on board research vessel *Onnuri* and then post-processed in various geophysical laboratories of the Korea Ocean Research and Development Institute. The contractor provided a description of the equipment and methods used and results obtained.

Mining test and mining technology

28. The contractor presented a synthesis of the results obtained from the research and development work carried out on mining technologies, including collecting, lifting and processing equipment. A description of the study and its results relating to leaching, separation and recovery stems of the smelting-leaching process was also provided.

Training

29. None

Environmental monitoring and assessment

30. Two research cruises were carried out in 2003, and one of these was for environmental work. Some sediment chemical information was presented, along with an inter-annual comparison, though not in the section on environmental work. Water column characteristics were presented, along with comparisons between sediment cores at different stations.

E. Interoceanmetal Joint Organization

General

31. IOM submitted its annual report for 2003 in both hard-copy and electronic format on 31 March 2004. In his letter to the Secretary-General of the Authority on 31 March 2004, the Director-General of IOM informed the former that, due to the domestic procedures of IOM for certifying and approving the financial statement of exploration expenditures, a “statement in proper form” would be submitted prior to the tenth session of the Authority. The report was submitted in English, as previously requested by the Secretary-General of the Authority, generally structured, in line with the content list recommended by the Commission, on the basis of the following headings: introduction, contract activities, IOM exploration expenditures in 2003 under the contract with the Authority and quantities of polymetallic nodules extracted from the seabed. The report also contains two annexes. The electronic format of the report submitted by the contractor, a compact disk, does not contain the six maps of geomorphology and bottom sediments in the relevant exploration area of IOM.

Exploration work

32. In accordance with the plan of work, during the reporting period IOM carried out no geological or geophysical survey. Consequently, no data, including data on nodule samples, were collected. IOM continued to process and analyse the geomorphological and sedimentary data collected in its exploration area during the geological exploration survey carried out in 2001.

33. The report provided a description of the results obtained from the geomorphological framework analysis of a relevant part of the IOM exploration area. The description was illustrated by a 1:500,000-scale map showing the location of geomorphological, volcanic and tectonic structures and indicating areas where seafloor inclination was greater than seven degrees. The map also indicated the relationship between the seafloor relief and the polymetallic nodule abundance identified during the geological exploration survey carried out in 2001.

34. With regard to sediments, the report offered an explanation of general characteristics and distribution, and presented a description of sedimentary formation and units in the relevant part of the IOM contract area. In addition, the physico-chemical, mineralogical and geotechnical characteristics, as well as granulometry and mineralogy of the coarse sub-fraction of bottom sediments, were analysed, described and synthesized in several tables.

35. There was no description of the equipment, methodology, software or error margin of the analysis with regard to geomorphology and sediments.

Mining test and mining technology

36. With regard to mining technology, IOM reported that it had established an expert group to conduct a study on the basic requirements to be met by a polymetallic nodule collector and a nodule system. The conclusions of the study were based on the available data and the existing designs of the polymetallic nodule mining system, as well as the relevant progress in the IOM certifying States. Studies on polymetallic nodule technology were also reported to have been undertaken by various institutions from IOM certifying States.

Training

37. In accordance with the plan of work of the contractor, no work was carried out.

Proposed adjustment to the programme of activities

38. None.

Environmental monitoring and assessment

39. In 2003 IOM carried out a qualitative and quantitative analysis of digital photographs taken during a research cruise in 2001. A description of the megafauna observed on each transect was given, comparing nodule and nodule-free areas.

F. Government of India*General*

40. The Government of India submitted its annual report for 2003 in electronic format on 31 March 2004. The report was structured, in line with the list of content recommended by the Commission, on the basis of the following headings: introduction, survey and exploration, environmental impact assessment study, technology development (mining), metallurgy and expenditure. The report did not contain a breakdown of expenditures or a certificate of expenditures.

Exploration work

41. The contractor reported that one 35-day cruise was taken during the reporting period. In response to the recommendations of the Commission for more details and results of the survey, as indicated in paragraph 64 of ISBA/9/LTC/2, the contractor reported that during the cruise 44 operations with the ocean grab were undertaken to collect nodules and associated sediments from its contract area. A preliminary abundance analysis was conducted, and a location map and a table containing information on the data collected were provided. The contractor also provided three other tables in which the results of this analysis were compared with the findings obtained from previous data acquired with the free-fall grabs. The contractor also stated that during the reporting year, a systematic data archival retrieval system had been developed.

Mining test and mining technology

42. The report described the objectives and main lines of activity of the programme carried out to develop mining and metallurgy technology. With regard to mining technology, it was reported that two bathymetric surveys had been conducted during the reporting year to identify a suitable flat area about 500 metres deep to carry out the operational test of the underwater crawler. As a result, two sites were selected. The report further stated that the core samples collected from the sites were being tested to identify properties including the bearing and shear strength of the samples.

43. With reference to metallurgy technology, it was reported that during the reporting period activities were focused on the generation of experimental data and leaching process improvement. About 140 batches of nodules were processed during the year, and technical information was generated. As a result, the contractor was

able to improve some process parameters. In addition, the pilot plan operated at its rated capacity, and metal recovery showed significant improvement.

Training

44. None.

Environmental monitoring and assessment

45. The environmental work presented by the Government of India concerned the ongoing Indian Deep-Sea Environment Experiment (INDEX) project. As mentioned in previous annual reports, phases I and II have been completed, and a cruise was carried out in 2003 in relation to phase III (recolonization after disturbance). Some of the samples taken were used for the INDEX environmental database, while the remainder were used for the INDEX project. Samples were taken using the same methodology as on previous cruises and in the same locations, wherever possible, for accurate comparisons. A map of all of the sample stations was given, along with a statement of the methodology used in the taking of samples. Descriptions of each sample were given without any scientific results or analysis. The sediment plume dispersion was modelled.

**G. Institut français de recherche pour l'exploitation de la mer/
Association française pour l'étude et la recherche des nodules**

General

46. IFREMER/AFERNOD submitted its annual report for 2003 in hard copy and electronic format on 9 April 2004, in French. The report generally followed the headings and content list recommended by the Commission and devoted its first part to the subject of participation in international activities of the Authority, instead of the subject of exploration work. The report concentrated on environmental studies, describing one of the principal activities in 2003: the preparation work conducted for the Nodinaut cruise scheduled for 15 May to 28 June 2004 by the vessel *L'Atalante* with the submersible *Nautilus*. The report contains a certified financial statement of expenditures in 2003.

Exploration work

47. In accordance with the contractor's plan of work, no exploration activities were carried out during the reporting period.

Mining test and mining technology

48. No mining or metallurgical development was reported.

Training

49. None.

Environmental monitoring and assessment

50. In 2003 the environmental work of IFREMER consisted of preparing a cruise, which was discussed in the 2002 annual report. This included obtaining maps of nodule facies to select sampling positions. IFREMER also created a jointly funded 18-month research position with the Authority, effective beginning December 2003.