



**Template for the review of the draft standards and guidelines  
associated with the draft regulations on exploitation of mineral resources in the Area**

**I. Background**

1. The draft regulations on exploitation of mineral resources in the Area ([ISBA/25/C/WP.1](#)) require that certain issues are addressed in accordance with, or taking into account, standards and guidelines to be developed by the organs of the Authority. The standards will be adopted by the Council and will be legally binding on Contractors and the Authority, whereas the guidelines will be issued by the Legal and Technical Commission or the Secretary-General and will be recommendatory in nature.
2. Stakeholder consultation is an integral part of the process decided upon by the Commission for the development of the standards and guidelines ([ISBA/25/C/19/Add.1](#)).
3. The Legal and Technical Commission will consider the comments received through stakeholder consultation during its current session.
4. The drafts include a cover page containing background and contextual information on the approach taken by the Legal and Technical Commission in developing each standard and guidelines. Please note that stakeholder comments are not sought on this cover note.
5. Issues of format and consistency across the standards and guidelines will be reviewed by the secretariat and the Legal and Technical Commission once the content of the various standards and guidelines is finalized following stakeholder consultation.

**II. Submitting Comments**

6. To ensure that your comments are given due consideration, please send them by e-mail to [ola@isa.org.jm](mailto:ola@isa.org.jm), at your earliest convenience but **no later than the date announced on the ISA website for the relevant draft standards and guidelines.**
7. When submitting comments, please adhere to the following guidance as much as possible:
  - a. Please provide all comments in writing and in an MS Word .doc or .docx format using the table provided below.
  - b. The table format allows for an unlimited number of comments to be added. To add more comments, you may add more rows.

- c. Please provide full contact information for the individual/Government/organization submitting the comments.
- d. Please avoid commenting on issues related to format, grammar, spelling or punctuation, unless it affects the overall meaning of the text, as the document will be formatted and edited when the final draft is prepared by the Legal and Technical Commission.
- e. To facilitate the revision process please be as specific as possible in your comments. In areas where you feel additional or alternative text or information is required, please suggest what this text may look like or what information should be included.
- f. Text may be copied from the draft into the table if stakeholders wish to use "track changes" in editing text (this is encouraged to ensure accuracy and avoid numbering errors).
- g. If you refer to additional sources of information, please include these with your comments when possible or provide a complete reference or hyperlink.
- h. All review comments will be posted on the ISA website, unless otherwise requested by the submitting entity.
8. Should you have any questions regarding the review process, please contact [ola@isa.org.jm](mailto:ola@isa.org.jm).

### III. Template for Comments

9. Please use the review template below when providing comments.
10. Line and page numbers have been provided in the drafts. Please use these as a reference as illustrated in the table below.

#### TEMPLATE FOR COMMENTS

<i>Document reviewed</i>	
<b>Title of the draft being reviewed:</b>	<b>Draft Guidelines for the establishment of baseline environmental data Developed by the Legal and Technical Commission</b>
<i>Contact information</i>	
<b>Surname:</b>	Petersen / Marques
<b>Given Name:</b>	Sven / Filipa
<b>Government (if applicable):</b>	
<b>Organization (if applicable):</b>	International Marine Minerals Society (IMMS)
<b>Country:</b>	International
<b>E-mail:</b>	

<b>General Comments</b>		
<b>IMMS is pleased to provide its comments on these draft guidelines and appreciates the opportunity to do so.</b>		
A key concern is the apparent misalignment between these guidelines and the previously published baseline study recommendations (ISBA/19/LTC/8 (2013), ISBA/25/LTC/6 (2019), ISBA/25/LTC/6/Rev/1 and Corr.1 (2020)). IMMS recommends strong alignment is needed between these guidelines and ISBA/25/LTC/6/Rev.1 and Corr.1 to ensure stakeholders are not confused about the expectations and to ensure consistency of data collection between time periods (past vs present vs future) and contractors.		
Rules for the necessary metadata is needed (page 34, line 1338), otherwise there is a risk that data will not be comparable between contractors.		
Further prioritization is needed to identify those parameters that may be measured, should be measured or must be measured to ensure an adequate baseline.		
The list of required studies and parameters is huge and may be almost impossible to operationalize. Prioritization of studies and parameters is needed.		
IMMS is concerned that the level of prescription is too high in many places. The guidelines should state what needs to be measured, not necessarily how the measurements are done.		
<b>Specific Comments</b>		
<b>Page</b>	<b>Line</b>	<b>Comment</b>
4	68	What about deep-sea sediments, often seen as another possible future rare earth element resource. They are not mentioned here, but could be relevant in the future.
4	92	sediment properties are geological “characterize the physical, chemical, as well as geological properties and biological communities in the Area”
8	243	“macrofaunal” should be “macrofaunal sampling”
8	245	How is this done? Who checks for sampling and method comparability between adjacent contractors to ensure that variability of baseline data is not missed?
	427-428	It may not be necessary or advisable to deploy floats and drifters if sufficient mooring and lander data and archival floater data (e.g. Argo programme) are available. This should be re-written to “Floats and drifters may also be deployed ...”
18	653	Please replace “PANGAEA” with “PANGAEA”
	67-680	Should be “... may have a different chemical composition from the surrounding water, ...”
22	803	Please replace “shoudl” with “should”
	953-1042	The exhaustive guidelines for characterization of the carbonate system are not relevant for characterization of the benthic environment. The sites of commercially relevant deposits are all well below the carbonate

		compensation depth, and impacts on benthic fauna by mining will not be altered by the details of the carbonate system in this environment.
	1241-1286	With the exception of 210Pb measurements to estimate bioturbation rates, I do not understand the value in determining all of these radiotracers. It sounds like interesting science, but very peripheral to the objectives of environmental impact prediction.
35	1354	“(…) seafloor and subseafloor environment (bathymetry and geomorphology, geological setting, sediment and stratigraphy, diagenesis, weathering and remobilization, rock substrate geochemistry and mineralogy, mineral resource geochemistry and mineralogy) and assist (…)”
36	1410	Lithology and sediments (not lithified but eventually with lithoclasts) are mixed in these sentences, not all properties are “measured”. Lithology does not refer to physical parameters of the sediment (not yet a rock, therefore not yet a “lithos”). “To describe the sediment properties, their mineralogy and lithoclasts, particle size distribution and morphology, porosity as well as overall stratigraphy should all be studied. Lithology refers to the physical characteristics of a rock. Sedimentology refers to the origin, transport, deposition and diagenetic alterations of materials that make up sediments and sedimentary rocks. Stratigraphy investigates how sedimentary rocks are accumulated and distributed through time. “
37	1428-1445	In the CCZ, a large proportion of the sediments are composed of fecal pellets from zooplankton in surface waters. When sheared by a mining system, only a fraction of the sediments contacted by the system will be impacted enough to disturb the integrity of these pellets. Consequently, predictions of sediment disturbance and dispersion based on routine grain size analysis, which disaggregates all clumps, will be gross overestimates. Only through monitoring of test mining operations can reasonable dispersion estimates be obtained, making a comprehensive determination of sediment grain size distributions largely irrelevant to impact prediction.
37	1428	“Grain size and morphology are fundamental physical properties of sediments “ A line on methodology to characterize grain morphology should be added, shape as well and nature of the grain will influence its capacity for suspension.
37	1437	Not “lithological characterization”, this means that it's the study of the lithological components of the sediment and excludes all the other mineral components of the sediment. It is possible, and it is done frequently, thin sections of loose sediments, neutral cements are use to glue the loose sediments. Proper petrography also identifies minerals  “Sedimentological characterization of the sediments should be described by the examination under loupe (unconsolidated sediments) and petrographic microscope (smear slides, thin sections). The mineralogical composition

		should be determined qualitatively and quantitatively. There are several methodologies or combinations available including detailed mineralogy, electron microprobe mineral analyses, X-ray diffraction (...) “
38	1480	Where are those pre-ming cores stored and what happens at the end of the contract? Have contractors currently put cores aside in public sample repositories?
39	1525	The following sentence can be deleted. This statement should clearly not be the main reason to do this. They are also easier to study than any other marine vertebrates.”
42	1658	Please replace the term “CCFZ” with “CCZ”
44	1722	Replace the term “cam” with “can”
44	1755	IMMS notes the depth profiles for macrofauna studies are different in these guidelines (0-3 cm, 3-5 cm, 5-10 cm) compared to previous recommendations (0-1 cm, 1-5 cm, 5-10 cm in ISBA/25/LTC/6/Rev.1). There needs to be consistency between the recommendations and the guidelines.
46	1834	Please replace the term “CCFZ” with “CCZ”
50	1973	Please replace the term “CCFZ” with “CCZ”
54	2183	Not necessary to have a a priori knowledge of the precise mineral composition BUT it has to be pretty close, i.e., using minerals that are expected to be present in the resource. Mentioning Chalco in the text as a end member to measure toxicity is misleading and makes little sense here. I would use something like “Bulk toxicity of a resource can be established without a priori knowledge of the precise mineral composition. Using established laboratory protocols, the relative toxicity (relative to known pure mineral standards that are expected to be present at that particular resource) of the different phases of the bulk resource may be assessed”
20	15	Consider specifying suggested analytes (e.g. carbonate, bicarbonate, co2, or alkalinity & Ph)
20	20	Consider specifying suggested analytes
21	37	Include reference to methods papers or a standard protocol
25	40`	Regarding paragraphs below, a sampling density should be recommended

		(or # of samples per EL, reference area, etc.), at least as it applies to determining CCD, Lysocline, etc.; sampling is costly and the spatial variability of these factors may be quite low. If all contractors are pooling data the regional sampling density may be great enough to characterize these values in a license regime (e.g. the CCZ)
28	3	Provide a list of analytes, species, and isotopes suggested or mandatory. A protocol or specific paper(s) should be provided for physical size speciation. Furthermore, toxicity testing (e.g. ecotoxicity via shake test) requirements or procedures should be specified/described in these guidelines. Treating dissolved trace chemistry of seawater and pore water may be one of the most costly aspects of exploration. Regulators can aid the data collection/analysis process by providing as much guidance as possible in advance of empirical sampling.
35	27	And/or from towed systems, Remotely...
36	20	Spelling 'Lamarche'
40	25	Please provide references for previous studies
<i>Additional rows can be added to this table by selecting "Table" followed by "insert" and "rows below"</i>		

Comments should be sent by e-mail to [ola@isa.org.jm](mailto:ola@isa.org.jm)