


## I. ANNEX

# ISA Contract for Exploration – Public Information Template

 <b>中国五矿</b> <b>MINMETALS</b>	Type of resource: Polymetallic nodules
	Name of Contractor: China Minmetals Corporation
Sponsoring State: China	Contract Start: 12 May 2017
	Contract End: 11 May 2032
	Location: Clarion-Clipperton Fracture Zone (reserved area)

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## Introduction

The information contained in this ISA Contract for Exploration – Public Information Template is made available to the public in response to the request by the Council of the ISA to make contracts publicly available, subject to restrictions on confidential information, industrial secrets and proprietary data.

The content of the present template is in accordance with the Regulations on Prospecting and Exploration for [*Polymetallic Nodules in the Area*] [*ISBA/19/C/17*] (the “Regulations”).

## 1. Contract Information

Annex III of the Regulations.

<b>Type of resource</b>	Polymetallic nodules
<b>Name of Contractor</b>	China Minmetals Corporation
<b>Contract Start</b>	12 May 2017
<b>Contract End</b>	11 May 2032
<b>Location</b>	Clarion-Clipperton Fracture Zone (reserved area)
<b>Contract Area (km<sup>2</sup>)</b>	72,745

## 2. Coordinates and Illustrative Chart of the Exploration Area

Schedule 1 of Annex III of the Regulations.

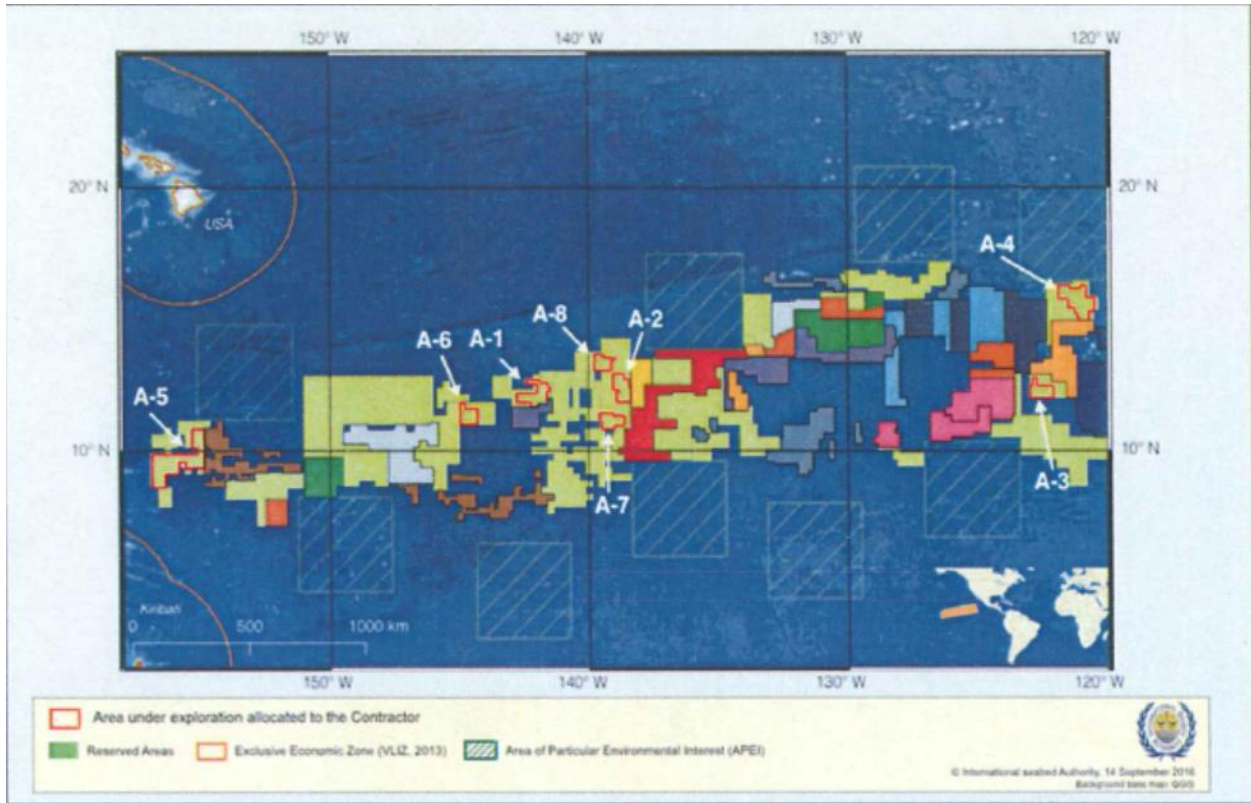
Exploration area located between [coordinates]

Block Number	Turning point	Longitude West			Latitude North		
		(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
A-1	1	141	55	0.12	12	35	27.96
	2	141	37	49.44	12	35	27.96
	3	141	37	49.44	12	25	35.40
	4	141	30	59.76	12	25	35.40
	5	141	30	59.76	12	16	33.60
	6	141	40	27.12	12	16	33.60
	7	141	40	27.12	11	58	32.88
	8	141	37	21.72	11	58	32.88
	9	141	37	21.72	11	47	22.56
	10	142	0	20.52	11	47	22.56
	11	142	0	20.52	11	40	58.44
	12	142	16	35.40	11	40	58.44
	13	142	16	35.40	11	51	42.84
	14	142	50	17.88	11	51	42.84
	15	142	50	17.88	12	11	37.32
	16	142	2	6.00	12	11	37.32
	17	142	2	6.00	12	32	36.96
	18	142	26	5.28	12	32	36.96
	19	142	26	5.28	12	42	10.44
	20	141	55	0.12	12	42	10.44
A-2	1	138	38	43.08	12	44	9.24
	2	138	27	51.84	12	44	7.80
	3	138	27	51.84	12	26	22.56
	4	138	22	26.40	12	26	22.56
	5	138	22	26.40	11	51	57.24
	6	138	56	29.04	11	51	57.24
	7	138	56	29.04	12	13	41.88
	8	138	50	42.36	12	13	41.88
	9	138	50	42.36	12	19	51.60
	10	139	5	4.20	12	19	51.60
	11	139	5	4.20	12	52	30.90
	12	138	38	43.08	12	52	30.90
A-3	1	122	44	20.04	12	28	22.08
	2	122	5	45.60	12	28	22.08
	3	122	5	45.60	12	0	0.00

Block Number	Turning point	Longitude West			Latitude North		
		(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
	4	123	0	0.00	12	0	0.00
	5	123	0	0.00	12	28	13.80
	6	122	54	11.16	12	28	13.80
	7	122	54	11.16	12	46	57.00
	8	122	44	20.04	12	46	57.00
	1	121	28	28.20	16	9	18.00
	2	121	2	29.76	16	9	18.00
	3	121	2	29.76	16	16	42.60
	4	120	49	51.96	16	16	42.60
	5	120	49	51.96	15	49	50.88
	6	120	30	8.28	15	49	50.88
	7	120	30	8.28	15	18	10.80
	8	120	42	53.28	15	18	10.80
	9	120	42	53.28	14	56	6.00
A-4	10	121	5	51.36	14	56	6.00
	11	121	5	51.36	15	5	9.96
	12	121	10	24.24	15	5	9.96
	13	121	10	24.24	15	16	11.28
	14	121	16	32.52	15	16	11.28
	15	121	16	32.52	15	26	18.24
	16	121	30	55.44	15	26	18.24
	17	121	30	55.44	15	46	56.64
	18	121	53	52.80	15	46	56.64
	19	121	53	52.80	16	16	49.44
	20	121	28	28.20	16	16	49.44
	1	154	52	30.00	9	21	30.96
	2	155	7	30.00	9	21	30.96
	3	155	7	30.00	9	22	30.00
	4	155	22	30.00	9	22	30.00
	5	155	22	30.00	9	20	45.60
	6	155	37	6.60	9	20	29.76
	7	155	37	6.60	9	35	28.68
A-5	8	155	52	30.00	9	35	28.68
	9	155	52	30.00	9	7	30.00
	10	156	22	30.00	9	7	30.00
	11	156	22	30.00	9	37	30.00
	12	156	52	30.00	9	37	30.00
	13	156	52	30.00	9	52	30.00
	14	155	7	30.00	9	52	30.00

Block Number	Turning point	Longitude West			Latitude North		
		(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
	15	155	7	30.00	10	7	30.00
	16	155	22	28.20	10	7	30.00
	17	155	22	28.20	10	50	20.40
	18	154	52	30.00	10	50	20.40
A-6	1	144	49	6.60	11	36	24.48
	2	144	20	19.32	11	36	24.48
	3	144	20	19.32	11	0	0.00
	4	145	0	0.00	11	0	0.00
	5	145	0	0.00	11	49	59.88
	6	144	49	6.60	11	49	59.88
A-7	1	139	5	20.40	11	20	36.24
	2	138	38	2.04	11	20	36.24
	3	138	38	2.04	10	58	25.68
	4	139	1	32.88	10	58	25.68
	5	139	1	32.88	10	49	59.52
	6	139	30	0.00	10	49	59.52
	7	139	30	0.00	11	7	30.00
	8	139	35	60.00	11	7	30.00
	9	139	35	60.00	11	26	21.84
	10	139	5	20.40	11	26	21.84
A-8	1	139	26	0.24	13	32	33.72
	2	138	58	48.00	13	32	33.72
	3	138	58	48.00	13	26	52.80
	4	139	8	24.00	13	26	52.80
	5	139	8	24.00	13	3	28.80
	6	139	48	0.00	13	3	28.80
	7	139	48	0.00	13	40	8.76
	8	139	26	0.24	13	40	8.76

[insert shapefile format]



(shapefile format as shown in the ISA <https://www.isa.org.jm/maps>)

### 3. Plan of Work

Summary of Plan of Work for Exploration including the Programme of Activities for the first and/or the current 5-year period (Regulation 18).

CMC is currently in its second 5-year period of exploration. In this period CMC plans to:

- Continue the exploration activities and resources evaluation work, complete estimation of indicated resources, and delineate mining sites available for commercial exploitation;
- Carry out environmental baseline surveys within the area under exploration and its adjacent areas, and establish impact reference zones;
- Prepare a programme for polymetallic nodules mining test system based on the engineering implementation, complete the development of the key subsystems such as underwater production system, surface production system and central control system, and organize the implementation of subsystem test at sea as can be facilitated by the exploration cruise;
- Conduct an expanded test for the new smelting method of polymetallic nodules, improve and optimize the relative process techniques, as well as deal with key technical issues.
- Carry out research on the comprehensive utilization of resources associated with polymetallic nodules; and
- Conduct a scoping study and a pre-feasibility study if market situations allow.

## 4. Programme of Activities

Section 4.1 of Annex IV of the Regulations and Schedule 2 of Annex III of the Regulations.

### I. Agreed 5-year Programme of Activities

5-year Programme of Activities	Second 5-year Programme	
General Objectives	Objective	Description
	Resources exploration and assessment	to carry out exploration of polymetallic nodule resources in key exploration areas of the Contract Area and find out the types of polymetallic nodule deposits and the continuity characteristics of ore bodies; to estimate the indicated resources and measured resources; to put forward a mine site of polymetallic nodules and a scheme for trial mining site; to evaluate the resources in the polymetallic nodules mine site, as well as to evaluate polymetallic nodules reserves if appropriate, and finally submit a report about the resources exploration in the Contract Area.
	Environmental baseline survey and assessment	to carry out environmental baseline survey in the key exploration areas and their adjacent areas, an understand the characteristics and natural changes of environmental baseline, as well as participate in international cooperation of regional survey of environmental baselines; also to delineate environmental impact reference zones and preservation reference zones; and to carry out EIA based on mining technology tests, and finally submit an environmental impact report and an EIA report.
	R&D of mining technologies	to develop a long-term monitoring platform for near-bottom ecological environment, to upgrade and test exploration and mining equipment, including in-situ geotechnical tester for seabed sediment, polymetallic nodules concentrating device, an evaluation system for polymetallic nodules abundance; as well as to carry out R&D and testing of key technologies for mining tests and EIA.
	Testing of metallurgical technologies	to carry out tests for metallurgical process of reduction smelting of polymetallic nodules, optimize the separating technique, and finally complete the expanding testing of the reduction smelting process.
	Comprehensive assessment of development	to continuously track changes in the international metal markets, and carry out research on comprehensive utilization of deep sea polymetallic



	and utilization of resources	nodule resources, as well as to participate in the formulation of relevant ISA regulations.
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**II. Results achieved during reported year [#]: [year]**

<b>Annual objectives and activities</b>			
<b>Year</b>	<b>No.</b>	<b>Agreed Objectives</b>	<b>Objective: Completed, Modified, Postponed or Replaced</b>
Year 1	2022	Resources exploration and assessment Environmental baseline survey and assessment R&D of mining technologies Testing of metallurgical technologies Comprehensive assessment of development and utilization of resources	Completed Completed Completed Completed Completed
Year 2	2023	Resources exploration and assessment Environmental baseline survey and assessment R&D of mining technologies Testing of metallurgical technologies Comprehensive assessment of development and utilization of resources	Completed Completed Completed Completed Completed

## 5. Training Programme

Schedule 3 of Annex III of the Regulations.

### I. Training Programme

Type of training	at-sea exploration training programme	fellowship programme	engineering training programme
<b>Institutions</b>	China Minmetals Corporation	China Minmetals Corporation	China Minmetals Corporation
<b>Duration</b>	one leg of a cruise, approximately 40 days	approximately three months	approximately one month
<b>Scope</b>	The training will be conducted on environmental and geological survey methods, sample processing technology, and geophysical survey methods on board the research vessels.	This training will be carried out on basic knowledge of marine geology, biology and environment.	The training will be conducted on mining and metallurgical processing technology of polymetallic nodules.
<b>Fields</b>	Research Vessel.	Central South University (Changsha)/Zhejiang University (Hangzhou) or other universities in China.	Changsha Research Institute of Mining and Metallurgy (Changsha) or Central South University (Changsha).
<b>Qualification required</b>	Candidates for the at-sea exploration training programme should hold either a bachelor's or master's degree in geology, geophysics, marine environment (including biology or ecology), or have similar educational background. Young and experienced researchers and/or marine science and technology managers will enjoy priority in this regard.	The candidates for the fellowship programme should hold a bachelor's degree in geology, geophysics, biology or environment, or have a similar educational background.	Candidates for the engineering training programme shall hold either a bachelor's or master's degree in metallurgical processing or mining engineering.

<b>Financing</b>	The Contractor will cover all relevant costs associated with the training of the trainees. This will include medical insurance, meals, accommodation and living allowance, and travel costs for transportation to and within China.	The Contractor will cover the trainee's tuition fees, the costs of travel to and from the institution, as well as accommodation while they are being trained.	The Contractor will cover the trainee's tuition fees. the costs of travel to and from the institution, as well as accommodation while they are being trained.
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## II. Trainings conducted up to reported year [#]: [year]

Start year	End Year	Name of Trainee	Nationality	Gender	Type of Programme	Details	Duration

## III. Completed Trainings per Year

	at-sea exploration training programme	fellowship programme	engineering training programme
Year 1 (2022)	/	/	/
Year 2 (2023)	/	/	/
Year 3 (2024)	3 trainees	/	/
Year 4 (2025)	/	3 trainees	/
Year 5 (2026)			4 trainees

## **6. Standard clauses**

Annex IV of the Regulations.