

INDIAN BUREAU OF MINES
MINERALS DEVELOPMENT AND REGULATION DIVISION
MCDR INSPECTION REPORT
BHUBANESHWAR REGIONAL OFFICE

File No-MCDR-MiFL0GR/3/2023-BBS-IBM_RO_BBS

Mine Code- 28ORI27001

General

S N	Particulars	Details
1	Name of the Mine	Bandhamandi Graphite Mine, M/s Pradhan Industries
2	Date of Inspection	26.10.2023
3	Name of Inspecting Officer	Shri Ashok Kumar Pany, Assistant Mining Engineer
4	Name of official accompanying inspection	Shri Bhagyadhara Mahalik, Mine Manager and Shri Harihara Barik , Geologist
5	Last date of Inspection & Officer	22.06.2021, Shri S K Mahapatra, Senior Mining Geologist
6	Total Lease Area (Ha) with breakup of Non-forest and forest land	Forest Land- 3.278 ha Non Forest Land- 70.149 ha Total Lease area- 73.427 ha
7	Mine code	28ORI27001
8	IBM Registration Number under rule 45 of MCDR, 2017	IBM/4724/2011
9	Name of the lessee, Address, phone, email and fax number	M/s Pradhan Industries, At/Po - Talenga Bazar, PS- Purighat, Dist - Cuttack Odisha - 753009, Email: pradhanindustriesctc@yahoo.com
10	Village	Bandhamandi
11	Taluka/Mandal	Kashipur
12	District	Rayagada
13	Pin code	765015
14	State	Odisha
15	Post office	Godibali
16	Nearest police station	Kashipur
17	Nearest Railway station	Sikarpai
18	Date of Grant of Mining Lease	23.03.1986
19	Date of Execution	27.09.1991
20	Date of Expiry	26.09.2041
21	Date of opening of Mine	29.01.1992 and re-opening on 28.02.2018
22	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri Sundeep Pradhan, A-19, Trishna Residency, Phase-3 Patia, Bhubaneswar, Odisha-751024 Date of Appointment- 28.02.2018 Mob. No.- 7381848286

23	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri Sundeep Pradhan A-19, Trishna Residency, Phase-3 Patia, Bhubaneswar, Odisha-751024 Date of Appointment- 28.02.2018 Mob. No.- 7381848286
24	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Shri Bhagyadhara Mahalik At- Bandhamandi, Po-Godibali, PS-Kashipur, Dist Rayagada, Odisha Date of Appointment- 15.03.2019 Mob. No.- 8144035601
25	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri Satyajit Samal (10 Years of Experience) Bachelor of Technology in Mining Engineering Date of Appointment- 21.12.2022 At - Bandhamandi , Po - Godibali, Dist – Rayagada, Mob. No. - 9438524795
26	Name of the Geologist, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri. Harihara Barik, M Sc. Geology, 19 Years of Experience Date of Appointment- 28.02.2018 At- Bandhamandi, Po - Godibali, PS - Kashipur, Dist - Rayagada Ph. No.- 9437361566. E mail.- barik.harihara@gamil.com
27	Date of Approval of Review of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	Review of Mining Plan approved vide letter No. RMP/A/23-ORI/BHU/2020-21 Dated 09.11.2020 for the period 2021-22 to 2025-26
28	Mineral(s) granted in lease and proved for mining	Graphite
29	Method of Mining (Opencast, Underground)	Opencast
30	Category (Fully Mechanised, Others or Manual)	Category-A, OTFM
31	Captive/Non Captive	Non-Captive
32	Present EC Capacity	Graphite ROM- 240000 tonne

Scientific Mining: Compliance of proposals of approved Mining Plan/Review of mining for the Year 2022-23.

Exploration

S.N.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	Total 20 Nos. of bore holes proposed during the year 2021-22 & 2022-23. 15 Nos. of holes drilled during the year 2021-22.
1b	Exploration over lease area during the year for Geological axis 1 or 2.	10 Nos. of Boreholes proposed	Nil	
1c	Exploration Agency & Expenditure in lakh Rupees during the year	Nil	Nil	No exploration during the year.
1d	Balance area to be explored to bring Geological axis in 1 or 2	As per approved mining plan G1 -6.618 ha, G2-65.657 ha and G3-1.152 ha		The potential mineralized area was explored.
1e	Balance reserves/resource as on 01.04.2023	As per the approved Review of Mining Plan, the reserve/resource status as on 31.08.2020 is follows:- Reserve- : 2293489 Tonne Resource : 753656 Tonne Balance reserves/resource as on 01.04.2023 is as follows:- Reserve- : 2032100 Tonne Resource : 753656 Tonne		The average grade of Graphite ore reserve occurred in the mine is +3% FC (fixed carbon)
1f	General remarks of inspecting officer on geology, exploration etc.	It was proposed by drilling of 20 nos. of bore holes explore the entire lease area under G2 level within 2022-23. Out of this 15 nos. has been drilled. The deviation in exploration work has been pointed out to lessee through violation letter.		

Development

S.N.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	Quarry-2 within 647S-1064S and 156E-350E.	Quarry-2 within 680S-1020S and 150E-350E.	Development within proposed quarry.
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Separate Benches Proposed	Carried out	One separate top soil bench and four mineral benches in the quarry.
2c	Stripping ratio or ore to OB ratio (t/Cum)	1:0.51	1:0.45	Waste generation is not achieved.
2d	Quantity of topsoil generation in m ³	2015	2000	Nearly equal with proposal.
2e	Quantity of overburden/waste generation in m ³	72114	56962	The proposed area is not fully developed.
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	Vein type ore deposit occurs in the mine with 50 degree dipping. The mine is operated by open cast method with bench height 6m and width 9m respectively.		

Exploitation

S.N.	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	One	One	Quarry-2
3b	Quantity of ROM production proposed	142141 tonne	126740 tonne	Within mining plan proposed quantity.
3c	Recovery of saleable/usable mineral from ROM production	138873 tonne	107004 tonne	Within mining plan proposed quantity.
3d	Quantity of mineral reject generation	3268 tonne	19736 tonne	The generation of MR is proposed as 2 % of total ROM. The same may be varies with encounter of low grade patch during development.
3e	Grade of mineral reject generation and threshold value declared	Mineral reject- 2 % to 3 % F.C. Threshold Value- 2% Fixed Carbon (F.C) (Min.)	Mineral reject- 2 % to 3 % F.C. Threshold Value- 2% Fixed Carbon (F.C) (Min.)	
3f	Quantity of sub-grade mineral generation	Same as mineral reject	Same as mineral reject	
3g	Grade of sub-grade mineral generation	Same as mineral reject	Same as mineral reject	
3h	Manual / Mechanized method adopted for segregating from ROM	Mechanized	Mechanized	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No beneficiation study proposed	Nil	
3j	Provision of drilling & blasting in mineral benches	Provision of drilling & blasting not proposed in mineral benches	Nil	
3k	Provision of mining machineries in mineral benches	Excavator – 0.9 M3 Tipper – 10 tonne	Excavator – 0.9 M3 Tipper – 10 tonne	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/RMP	Bench Height: 6 m Bench Width: 9 m	Bench Height: 6 m Bench Width: in some part of quarry less than 9 m	South side bench width of quarry-2 is not as per proposal.
3m	Total area covered under excavation/pits	8.559 ha	8.016 ha	Within proposed area.

3n	Ore to OB ratio for the pit/mine during the year	1:0.51	1:0.45	Nearly equal to proposal.
3o	Total area put in use under different heads at the end of year	Area under Mining – 8.599 Storage of Top Soil – 0.423 Waste Dump – 3.137 Mineral Storage – 1.418 Infrastructure – 0.01 Roads – 1.05 Mineral Separation Plant – 0.64 Tailing Pond-5.66 Others – 2.904 Total – 23.801 ha.	Area under Mining – 8.016 Storage of Top Soil -0.369 Waste Dump – 2.25 Mineral Storage – 1.372 Infrastructure – 0.01 Roads – 1.05 Mineral Separation Plant – 0.64 Tailing Pond- 4.963 Others – 2.904 Total – 21.574 ha.	The degraded area is within area limit under different heads.
3p	Production of ROM mineral during last five-year period, as applicable	2018-19 - 245549 tonne 2019-20 – 245549 tonne 2020-21 – 245549 tonne 2021-22 - 142141 tonne 2022-23 - 142141 tonne	2018-19 - 32449 tonne 2019-20 – 49043 tonne 2020-21 – 9094 tonne 2021-22 - 125555 tonne 2022-23 - 126740 tonne	
3q	General remarks of inspecting officer on method of mining etc.	Mechanized opencast mining operation carried out with shovel-dumper combination. The south side bench width of quarry-2 is not as per proposal. The same has been pointed out to lessee through violation letter.		

Solid Waste Management-Dumping

S.N	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	Separate dumping of Topsoil, OB and mineral reject proposed	Carried out	
4b	Location of topsoil, OB & mineral reject dumps	Top soil - 9350S/980S and 360E/420E OB Dump - 360S/550S and 242E/380E Mineral reject - 290S/372S and 150E/228E	As per proposal	
4c	Number of dumps within lease area and outside lease area	within lease area – One outside lease area - Nil	within lease area – One outside lease area - Nil	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	
4e	Number of active & alive dumps	01	01	
4f	Number of dead dumps	Nil	Nil	
4g	Number of dumps stabilized	Nil	Nil	
4h	Whether Retaining wall or garland drain all along dumps are there	No	Proposed	

4i	Length of Retaining wall or garland drain all along dump	Maintenance of Retaining Wall & Garland Drain Proposed	Carried out	The retaining wall of waste dump-1 near lease boundary is not maintained.
4j	Number of settling ponds	No proposal	Nil	
4k	Specific comments of inspecting officer on waste dump management	One small waste dump and a tailing pond located within the lease area. Waste dumping has been carried out within the proposed area. The retaining wall of waste dump-1 near lease boundary is not maintained. The same has been pointed out to lessee through violation letter.		

Solid Waste Management-Backfilling

S.N.	Item	Proposals	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Nil	Nil	
5b	Area under backfilling of mined out area	Nil	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	2015	2000	2000 Cum topsoil has been generated during the year 2022-23, out of which 1123 Cum used for plantation purpose.
5d	Total area fully reclaimed & rehabilitated	No proposal	Nil	
5e	General remarks of inspecting officer on backfilling, reclamation etc.	Mineral not exhausted from quarry and no backfilling proposal during the year.		

Progressive Mine Closure Plan

S.N.	Item	Proposals (Yr.2022-23)	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26.	To be submitted before 1 st July	Submitted	
6b	Area available for rehabilitation (ha)	Nil	NIL	
6c	Afforestation done (ha)	0.25 ha	0.26 ha	
6d	No. of saplings planted during the year	625	650	
6e	Cumulative no. of plants	Total 3250 Nos. of trees planted.		-
6f	Any other specific method of rehabilitation	-	-	-
6g	Cost incurred on watch & care during the year	NA	Rs. 200000/-	-

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L X B X D).	Nil	Nil	-
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Void filled by waste/tailings.	Nil	Nil	-
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on the backfilled area.	Nil	Nil	-
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir.	Nil	Nil	-
6l	Compliance on reclamation and rehabilitation by backfilling (v) Any other specific means	Nil	Nil	-
6m	Compliance of Rehabilitation of waste land within lease (i) Afforestation	Nil	Nil	-
6n	Compliance of Rehabilitation of waste land within lease (ii) Area rehabilitated (ha) Method of rehabilitation	Nil	Nil	-
6o	Compliance of Rehabilitation of waste land within lease (iii) Method of rehabilitation	Nil	Nil	-
6p	Compliance of Environmental monitoring (core zone & buffer zone)	Quarterly monitoring of Air, Noise Level and Ground water quality proposed	Monitoring carried out quarterly.	-
6q	General remark of inspecting officer on PMCP compliance and progressive closure operation etc.	Progressive closure operation carried out as per proposal.		

Mineral Conservation

S.N.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting within lease area	Grade wise sorting within lease area	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanised	Mechanised	
7c	Different grade of mineral sorted out at mines	Below 20% FC, 20-40% FC, 40-80%	Below 20% FC, 20-40% FC, 40-80% FC, above	

		FC, above 80% FC	80% FC	
7d	Any beneficiation process at mines	Beneficiation plant exists within lease area consisting of grinding and floatation process.	Beneficiation of Graphite ROM is carried out for up-gradation of FC percentage.	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	Mechanized beneficiation of Graphite ore is carried out within the lease area in plant of capacity 142141 tonne ROM feed per year.		

Environment

S.N.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	2015	2000	
8b	Concurrent use or storage of topsoil	No proposal	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump proposed	Carried out	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	Nil	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Nil	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	625 Nos. of Plantation	650 Nos.	
8g	Survival rate	NA	51%	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads proposed to suppress the dust	Carried out	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The aesthetic beauty in & around the mine area maintained.		

Compliance of Rule 45

S.N.	Item	COMMENTS	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly Return and Annual return has been submitted within due date.	

S.N.	Item	Details Given in AR.	Observation of I/Officer	Remarks
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Mining Engineer, Geologist and Manager is furnished in the return.	Appointed and present in the field during inspection.	In annual return, exploration details and resource furnished is not matched with the mining plan. Further, the Ex-mine price of 80% or more fixed carbon grade ore is not matched with sale price. In SL No. 5, sale and dispatch IBM registration number of buyers are not furnished.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under Pit- 8.016 ha, Reclaimed area- Nil Area under waste disposal- 6.37 ha	Within the proposed land use.	
9d	Scrutiny of Annual return on afforestation	650 Nos. of plantation during the year	Plantation carried out.	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	19736 tonne, Average grade- 2.19% FC.	Stacked in the mineral reject stack.	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock- 148002 tonne and grade wise stock- 422.736 tonne	Found to be in order	
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Ex- Mine price of above 80% FC Ore is Rs. 47554/- 40% to less than 80% FC- Rs. 3200/- Cost of production - Rs. 38019.95	Ex-mine price of 80% or more fixed carbon grade ore is not matched with sale price. ASP furnished in case of 40% to less than 80% FC	
9i	Scrutiny of Annual return on fixed assets	Value of fixed asset is Rs. 78461908/-	Found to be in order	
9k	Scrutiny of Annual return on mining machineries	Excavator- 1.2 CUM (1 Nos.) Dumper- 10 tonne (8 Nos.)	Found to be in order	

Violation observed during current inspection and compliance position of earlier violation pointed out:

(a) Compliance position of earlier violation pointed out: - Violation of Rule 11(1) has been pointed out on 30.07.2021 during earlier inspection for non-compliance of production proposal and complied on 14.09.2021.

(b) Violation of provisions of Rule 11(1) & 45(7) of MCDR, 2017 is observed during current inspection and pointed out to lessee.

Ashok Kumar Pany
Assistant Mining Engineer