

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

MCDR INSPECTION REPORT

Bhubaneswar regional office

Mine file No : ORI/GRPH/NUP/MCDR-4/BBS

Mine code : 28ORI24005

- (i) Name of the Inspecting : **SRM**) **SHRI SUDIP RANJAN MAZUMDAR**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Shri Raj Nath Tiwari, Mines Manager
Official with
Designation
- (iv) Date of Inspection : 12/03/2019
- (v) Prev.inspection date : 27/06/2015

PART-I : GENERAL INFORMATION

1. (a) Mine Name : **GANDABAHALI (31-869 HA) 28.615Ha**
- (b) Registration NO. : **IBM / 4399 /2011**
- (c) Category : A Other than Fully Mech.
- (d) Type of Working : Opencast
- (e) Postal address
State : **ORISSA**
District : **NAWAPARA**
Village : **GANDABAHALI**
Taluka : **KHARIAR**
Post office : **GANDABAHALI**
Pin Code : **766118**
FAX No. : **0663-2533374**
E-mail : **pratyush_agi@hotmail.com**
Phone : **0663-2403251**
- (f) Police Station : **SINAPALI**
- (g) First opening date : **16/07/2005**
- (h) Weekly day of rest : **TUE**
2. Address for correspondence : **GANDABAHALI, SINAPALI, NUAPADA
ODISHA, 766118**
3. (a) Lease Number : **ORI0787**
- (b) Lease area : **28.61**
- (c) Period of lease : **20**
- (d) Date of Expiry : **14/02/2025**
4. Mineral worked : **GRAPHITE** Main

5. Name and Address of the

Lessee : P.C.AGARWAL
 FARM ROAD SAMBALPUR ORISSA
 SAMBALPUR ORISSA
 Phone:0663-2403251
 FAX :0663-2533374

Owner : P.C.AGARWAL
 FARM ROAD SAMBALPUR
 ORISSA
 Phone: 403651,400828
 FAX : 0663-533374

Mining Engineer

Name : CHINTAMALLA SANDEEP KUMAR, Full Time
 Qualification : B Tech Mining Engg
 Appointment/ : 28/02/2018
 Termination date

Manager

Name : R.N.TIWARI
 Qualification : Mine Foreman Certificate
 Appointment/ : 20/07/2015
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	29/03/2016
Plan/Scheme of Mining	:	MP modif under 17(3) MCR 2016	08/06/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2016-17: 6 nos. of boreholes	2016-17: Nil. Exploration could not be conducted in the lease area due to want of surface right of the proposed area.	Violation for non-compliance of exploration proposal was issued on previous inspection dated 17.05.17 which was duly complied as the lessee has modified the review of mining plan and due boreholes have been taken for further exploration.
1b	Exploration over lease area for geological axis 1 or 2	2017-18: 20 nos. of boreholes	2017-18: 03 nos. of boreholes	Violation has been issued for non-compliance of exploration proposal for 2017-18
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not Applicable	Three nos. of boreholes have been drilled by the in-house drilling facility of the lessee	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	24.115 Ha area is planned to be explored under G2 level of exploration within the plan period i.e. 2017-18 to 2020-21	Exploration proposal for 2017-18 has not been complied.	Violation has been issued for non-compliance of exploration proposal of 2017-18

1e	Balance reserve as on 01/04/20	Reserve and resources as on 29.03.2017: a. Reserve under 122 category of UNFC is 199633 tones. b. Resource under 222 category is 36657 tones and under resource under 333 category is 32935 tones.	Production during 2017-18 is 4681.60 tones Reserve and resources as on 01.04.2018: a. Reserve under 122 category of UNFC is 194951 tones. b. Resource under 222 category is 36657 tones and resource under 333 category is 32935 tones.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	No comments to offer	Exploration proposal for 2017-18 has not been complied as per proposal. Violation has been issued for non-compliance of exploration proposal.	Nil

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Quarry-1, between 70S to 250 S and 25E to 215 E, Bottom RL- 217.5m	Quarry 1, between 74S to 230 S and 38E to 198 E, Bottom RL- 217m	Less lateral development as the ROM production proposal for 2017-18 was 24364 tonnes tonnes where as the approved EC quantity was 4750 TPA. Actual ROM production during 2017-18 was 4681.60 tonnes within the approved EC quantity. Hence, the lateral development was less and also there was no generation of top soil and mineral reject.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and mineral proposed	Separate benches in OB and mineral is maintained	Nil
2c	Stripping ratio or ore to OB ratio	2017-18: 1: 4.5 (t/m3)	2017-18: 1: 20.3 (t/m3). During the course of development, the dip of the ore body encountered was 80-85 degree almost vertical whereas the prediction was between 46-49 degree. Therefore, the OB was encountered more than predicted during the development work in 2017-18.	Nil

2d	Quantity of topsoil generation in m3	7080 m3	Nil. In 2017-18, the ROM production proposal was 24364 tonnes tonnes where as the approved EC quantity was 4750 TPA. Actual ROM production during 2017-18 was 4681.60 tonnes within the approved EC quantity. Hence, the lateral development was less and also there was no generation of top soil and mineral reject.	Nil
2e	Quantity of overburden generation in m3	2017-18: 109418 m3	2017-18: 94933 m3	Nil. In 2017-18, the ROM production proposal was 24364 tonnes tonnes where as the approved EC quantity was 4750 TPA. Actual ROM production during 2017-18 was 4681.60 tonnes within the approved EC quantity. Hence, the lateral development was less and hence there was little less generation of overburden.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	No comments to offer	In 2017-18, the ROM production proposal was 24364 tonnes tonnes where as the approved EC quantity was 4750 TPA. Actual ROM production during 2017-18 was 4681.60 tonnes within the approved EC quantity. Hence, the lateral development was less and also there was no generation of top soil and mineral reject and also the generation of overburden was less.	Nil

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	One Pit, namely Quarry-1	One Pit, namely Quarry-1	Nil
3b	Quantity of ROM mineral production proposed	2017-18: 24364 MT	2017-18: 4681.60 tones. The ROM production was restricted within the approved EC quantity of 4750 TPA.	Nil
3c	Recovery of sailable/usable mineral from ROM production	2017-18: 21657 MT	2017-18: 4681.60 MT.	EC for production of graphite ore up to 4750TPA
3d	Quantity of mineral reject generation	2017-18: 2707 MT	Nil as the ROM production was restricted within approved EC quantity of 4750 TPA.	EC for production of graphite ore up to 4750TPA
3e	Grade of mineral rejects generation and threshold value declared.	Grade of Mineral Reject : 4.37 F.C; Threshold value for Graphite is 3% F.C	Nil as the ROM production was restricted within approved EC quantity of 4750 TPA.	Nil
3f	Quantity of sub grade mineral generation.	2017-18: 2707 MT	Nil as the ROM production was restricted within approved EC quantity of 4750 TPA.	Nil
3g	Grade of sub grade mineral generation	Grade of subgrade mineral : 4.37 F.C;	Nil as the ROM production was restricted within approved EC quantity of 4750 TPA.	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	Nil

31	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Graphite ore (8.41% F.C on an average) produced from the mine will be beneficiated for semi-enrichment of graphite in Lessee's captive beneficiation plant located in adjacent lease area of Shri P.K. Agrawal. Semi-enriched graphite is / will be sent to the Lessee's partnership centrally located beneficiation plant at Belpara (80 km) for final enrichment.	In 2017-18, there was no beneficiation for semi-enrichment of graphite in lessee's captive beneficiation plant in the adjacent lease area of Shri P.K.Agrawal. Entire ROM produced in the year 2017-18 was sent directly to the Lessee's partnership centrally located beneficiation plant at Belpara.	Nil
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3j	Provision of drilling and blasting in mineral benches	Graphite ore is amenable to mining without blasting. Here, wall rocks / OB is moderately soft and weathered. At places, hard rock is encountered. These hard rocks will be drilled by the DTH drill, blasted for ease in excavation and assumed to be 25% of the total excavation of OB.	Occasionally, drilling and blasting is being done upon encountering hard rock.	Nil
3k	Provision of mining machineries in mineral benches	Run-off-mine ore and overburden will be excavated & loaded in the tipper by 0.9m ³ capacity excavator	Carried out as per proposal	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height and width of the benches will be kept at 5m and 8m respectively	Height of the mining benches has not been maintained and in the eastern side of the quarry the bench height is 10-12m.	Violation has been issued for non-maintaining the bench height proposal of 5m.
3m	Total area covered under excavation/pits	Total area covered under excavation at the end of plan period will be 3.207 Ha	Area under current open cast workings at the end of 2017-18 is 1.617 Ha as the area under excavation was less as the ROM production was restricted within the approved EC quantity of 4750 TPA.	Data as per annual return submitted for 2017-18

3n	Ore to OB ratio for the pit/mine during the year.	2017-18: 1: 4.5 (t/m3)	2017-18: 1: 20.3 (t/m3) .The ROM production in 2017-18 was 4681.60 tonnes against proposal of 24364 tonnes as production was restricted with approved EC quantity of 4750 TPA.	The ROM production in 2017-18 was 4681.60 tonnes against proposal of 24364 tonnes as production was restricted with approved EC quantity of 4750 TPA.
3o	Total area put in use under different heads at the end of year	Total area put in use under different heads at the end of plan period will be 9.677 Ha	Total area put in use under different heads at the end of 2017-18 is 4.744 Ha.	Data as per annual return submitted for 2017-18
3p	Production of ROM mineral during the last five year period as applicable	Production proposals in financial year 2013-14: 7854 MT 2014-15: 7854 MT 2015-16: 7854 MT 2016-17: 19562 MT 2017-18: 24364 MT	Actual Production in financial year 2013-14: Nil 2014-15: Nil 2015-16: 1295.50 MT 2016-17: 4684.20 MT 2017-18 : 4681.60 MT	Nil
3q	General remarks of inspecting officers on method of mining etc.	No comments to offer	Quarry-1 was under operation as per proposal. The ROM production in 2017-18 was 4681.60 tonnes against proposal of 24364 tonnes as production was restricted with approved EC quantity of 4750 TPA. Because of less ROM production than proposed, the generation of mineral reject and top soil was nil as the development was less due to less ROM production.	Nil

Solid Waste Management - Dumping:

Sl.No.	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping of top soil, OB and mineral reject has been proposed.	There was no generation of top soil and mineral reject as the lateral development was less than proposal as the ROM production was restricted within the approved EC quantity. OB generated during the year has been dumped separately.	ROM production proposal for 2017-18 was 24364 tonnes tonnes where as the approved EC quantity was 4750 TPA. Actual ROM production during 2017-18 was 4681.60 tonnes within the approved EC quantity. Hence, the lateral development was less and also there was no generation of top soil and mineral reject.

4b	Location of topsoil, OB and mineral reject dumps	<p>(1). Top soil will be scrapped off separately & stacked initially and reused / spread concurrently over the waste dump for plantation/rehabilitation. An area of 1250m² has been earmarked for storage of 5000m³ at a time.</p> <p>(2). Waste to be dumped in Dump-1 (in Northern Side and in Southern side in single terrace).</p> <p>(3). There exist one mineral rejects stack at the south of Dump-1 in the M.L area which will be re-handled & re-stacked in 2017-18 along with the sub-grade ore / mineral rejects generated</p>	<p>(1). No top soil has been generated in 2017-18 and hence there was no stacking of top soil in 2017-18.</p> <p>(2). Waste generated in 2017-18 has been dumped in Dump-1 in the northern and southern side in single terrace.</p> <p>(3). There was no generation of mineral reject in 2017-18.</p>	<p>ROM production proposal for 2017-18 was 24364 tonnes tonnes where as the approved EC quantity was 4750 TPA. Actual ROM production during 2017-18 was 4681.60 tonnes within the approved EC quantity. Hence, the lateral development was less and also there was no generation of top soil and mineral reject.</p>
4c	Number of dumps within lease area and outside of lease area	<p>There were four (04) dumps within lease area. It was proposed to re-handle & re-dump no 3 and 4.</p>	<p>Three nos. of dump exists within lease area. Dump-4 has not been rehandled.</p>	<p>Violation has been issued for not re-handling of dump no 04 as per proposal for 2017-18.</p>

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dump-1 & 2 outside the UPL whereas Dump-3 and 4 within UPL.	Dump 1 & 2 outside the UPL. Dump-3 has been re-handled whereas Dump-4 has not been re-handled and is within UPL.	Violation has been issued for not re-handling of dump no 04 as per proposal for 2017-18.
4e	Number of active and alive dumps.	In 2017-18, two nos. of dumps namely Dump-1 and Dump-2	In 2017-18, three nos. of dumps, namely dump-1, Dump-2 and Dump-4. Dump-4 has not been rehandled as per proposal for 2017-18.	Violation has been issued for not re-handling of dump no 04 as per proposal for 2017-18.
4f	Number of dead dumps.	Nil	Nil	Nil
4g	Number of dumps established.	In 2017-18, two nos. of dumps namely Dump-1 and Dump-2	In 2017-18, three nos. of dumps, namely dump-1, Dump-2 and Dump-4. Dump-4 has not been rehandled as per proposal for 2017-18.	Violation has been issued for not re-handling of dump no 04 as per proposal for 2017-18.
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall of 370m length in waste Dump-1 has been proposed in the year 2017-18. Retaining wall of 200m length has been proposed in mineral rejects in 2017-18	Retaining wall of 170m length has been constructed around Dump-1. Since mineral reject generation was nil there was no construction of retaining wall around mineral reject.	Violation has been issued for not completing construction of retaining wall around dump-1
4i	Length of Retaining wall or garland drain all along dumps	Around dump-1: Length of retaining wall: 370m, Length of Garland drain: 380m Around Mineral Rejects: Length of retaining wall: 200m Around Top soil: Length of retaining wall: 130m	Around dump-1: Length of retaining wall: 170m and Length of Garland drain: 170m Around Mineral Rejects: -Nil, No mineral reject was generated and stacked. Around Top soil: -Nil, No top soil was generated and stacked.	Violation has been issued for not completing construction of retaining wall around dump-1

4j	Number of settling ponds	Around Dump-1, Not constructed Settling tank : 20m*10m*3m		Violation has been issued for not constructing settling tank as per proposal.
4k	Specific comments of inspecting officer on waste dump management	No comments to offer	Dump No 04 has not been rehandled and redumped as per proposal. Retaining wall has not been constructed as per proposal. Violation has been issued for not rehandling dump-4 and for not constructing retaining wall and garland drain as per proposal.	Nil

Solid Waste Management - Backfilling:

Sl.No.	Item	Proposals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No Proposal in 2017-18	Nil	Nil
5b	Area under backfilling of mined out area	No Proposal in 2017-18	Nil	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No Proposal in 2017-18	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	No Proposal in 2017-18	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.	No comments to offer	There was no proposal for backfilling as the area has not been matured for reclamation.	Nil

Progressive Mine Closure Plan:

Sl.No.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	As per Rule 26(2) of MCDR 2017, The holder of mining lease shall submit to the competent authority a yearly report as per the format specified by the Indian Bureau of Mines, before 1st day of July every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plan, and if there is any deviation, reasons thereof	Annual report on PMCP for the year 2017-18 has been submitted timely.	Nil
6b	Area available for rehabilitation (ha) .	0.285 Ha	0.285 Ha	Nil
6c	afforestation done (ha).	0.285 ha	0.285 ha	Nil
6d	No. of saplings planted during the year	713 nos	720 nos.	Nil
6e	Cumulative no .of plants	713 nos.	720 nos.	Nil
6f	Any other method of rehabilitation	Not Proposed	Not Applicable	Nil
6g	Cost incurred on watch and care during the year	Rs 28500.00	Rs 35250.00	Nil

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Not Proposed	Not Applicable	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not Proposed	Not Applicable	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	Not Proposed	Not Applicable	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not Proposed	Not Applicable	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Not Proposed	Not Applicable	Nil
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	250 nos	268 nos	Nil
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	0.2 Ha	0.2 Ha	Nil

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation	Plantation	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Air, water and noise quality be monitored as per norms	Complied as per proposal	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No comments to offer	Proposal for PMCP have been carried out as per proposal for 2017-18	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Graphite ore (8.41% F.C on an average) produced from the mine will be beneficiated for semi-enrichment of graphite in Lessee's captive beneficiation plant located in adjacent lease area of Shri. P.K. Agrawal.	In 2017-18, there was no beneficiation for semi-enrichment of graphite in lessee's captive beneficiation plant in the adjacent lease area of Shri P.K.Agrawal. Entire ROM produced in the year 2017-18 was sent directly to the Lessee's partnership centrally located beneficiation plant at Belpara.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual processing of ROM ore such as sorting, sizing etc.	Manual processing of ROM ore such as sorting, sizing etc.	Nil
7c	Different grade of mineral sorted out at mines.	ROM with average grade of 8.41 % F.C	ROM with average grade of 8.41 % F.C	Nil

7d	Any beneficiation process at mines .	In 2017-18, there was no proposal for beneficiation in mines.	Nil	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No comments to offer	No beneficiation process at mines. In 2017-18, there was no beneficiation for semi-enrichment of graphite in lessee's captive beneficiation plant in the adjacent lease area of Shri P.K.Agrawal. Entire ROM produced in the year 2017-18 was sent directly to the Lessee's partnership centrally located beneficiation plant at Belpara.	Nil

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Topsoil is fertile in nature which will be scrapped off separately & stacked initially and reused / spread concurrently over the waste dump for plantation/ rehabilitation	There was no generation of top soil in 2017-18.	Nil

8b	Concurrent use or storage of topsoil	Topsoil is fertile in nature which will be scrapped off separately & stacked initially and reused / spread concurrently over the waste dump for plantation/ rehabilitation . An area of 1250m2 has been earmarked for storage of 5000m3 at a time.	There was no generation of top soil in 2017-18.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping of OB has been proposed	Separate dumping of OB has been done.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not Proposed	Nil	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not proposed	Nil	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Number of saplings proposed to be planted over dump in 2017-18 was 713 nos.	Number of saplings proposed to be planted over dump in 2017-18 was 720 nos.	Nil

8g	Survival rate	Not Proposed	70%	Data as furnished in annual return for 2017-18
8h	Water sprinkling on roads to control airborne dust	Water will be sprinkled for dust suppression	Complied as per proposal	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No comments to offer	Aesthetic beauty in and around mines is maintained.	Nil

Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly return and Annual return for 2017-18 has been submitted	Monthly return and Annual return for 2017-18 has been submitted	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer-01 Manager-01	Graduate Mining Engineer-01, Manager-01	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under open cast workings:1.617 Ha Area used for waste disposal: 2.248 Ha Area occupied by plant, buildings, residential, welfare buildings & roads: 0.879 Ha	Area under open cast workings:1.617 Ha Area used for waste disposal: 2.248 Ha. Area occupied by plant, buildings, residential, welfare buildings & roads: 0.879 Ha	Data as furnished in Annual return 2017-18

9d	Scrutiny of Annual return on afforestation	Number of trees planted during the year within the lease area is 988 numbers.	Number of trees planted during the year within the lease area is 988 numbers	Data as furnished in Annual return 2017-18
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Nil	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Closing Stock of ROM ore at mine head - 1334.439 tones	Closing Stock of ROM ore at mine head - 1334.439 tones Closing stock of processed ore is Nil	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine price of grade less than 40% fixed carbon is Rs 375 per tonne. Cost of Production: Rs 375 per tonne	Ex mine price of grade less than 40% fixed carbon is Rs 375 per tonne. Cost of Production: Rs 375 per tonne	Nil
9h	Scrutiny of Annual return on fixed assets	Value of fixed assets furnished in annual return for 2017-18 is Nil	Value of fixed assets furnished in annual return for 2017-18 is Nil	Nil
9k	Scrutiny of Annual return on mining machineries	Tipper (0.0 cum): 3 units. Other HEM Machinery: 1 unit	Tipper (0.0 cum): 3 units. Other HEM Machinery: 1 unit	Nil

Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed		Show cause position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

Date :

Sudip Ranjan Mazumdar
(SHRI SUDIP RANJAN MAZUMDAR) 01/04/19

Indian Bureau of Mines