

**MCDR INSPECTION REPORT**

Date of Inspection: 18/10/2024

**General**

S N	Particulars	Details
1	Name of the Mine	SARUABIL CHROMITE MINE
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	246.858 HECTARES (Forest: 241.770Ha. & Non-Forest: 5.088Ha.)
3	Mine code	11ORI19030
4	IBM Registration Number under rule 45 of MCDR, 1988	IBM/4376/2011
5	Name of the lessee, Address, phone, email and fax number	M/s Tata Steel Limited, Bombay House, 24 Homi Mody street fort, Mumbai. gm.office@tatasteel.com/ ceo&mdoffice@tatasteel.com
6	Village	Saruabil
7	Taluka/Mandal	Kaliapani
8	District	Jajpur
9	Pincode	755028
10	State	Odisha
11	Post office	Kalarangiatta
12	Nearest police station	Kaliapani
13	Nearest Railway station	Jajpur Keonjhar Road (JK Road)
14	Date of Grant of Mining Lease	26.06.2020
15	Date of Execution	26.06.2020
16	Date of opening of Mine	06.11.2020
17	Date of first Renewal, if applicable and its period & expiry	NA
18	Date of second Renewal, if applicable and its period & expiry	NA
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	NA
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Sri T. V. Narendran Bombay House, 24 Homi Mody Street Fort, Mumbai. Date of appointment-01.11.2023 ceo&mdoffice@tatasteel.com
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Sri Naveen Shrivastava Head Mining Saruabil & Kamarda Tata Steel Limited, At/P.O.: Kalarangiatta, Dist : Jajpur, Orissa – 755028, Mobile: 6287090160, Date of appointment-01.07.2023, naveen@tatasteel.com
22	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Sri Niranjana Kumar Area Manager (Mining) At/P.O.: Kalarangiatta, Dist : Jajpur, Orissa – 755028, Mobile: , Date of appointment-05.08.2024, niranjana.kumar@tatasteel.com
23	Name of the Mining Engineer & Geologist, Qualification and total experience	<b>Mining Engineer</b> Sri Niranjana Kumar

		Area Manager (Mining) At/P.O.: Kalarangiatta, Dist : Jajpur, Orissa – 755028, Mobile: , Date of appointment- 05.08.2024, <a href="mailto:nirajan.kumar@tatasteel.com">nirajan.kumar@tatasteel.com</a> <b>Geologist</b> Sri Deviprasad Jena, MSc Geology. At/P.O.: Kalarangiatta, Dist : Jajpur, Orissa – 755028, Ph no. 9031005626, Date of appointment- 16.10.2024, <a href="mailto:deviprasad.jena@tatasteel.com">deviprasad.jena@tatasteel.com</a>
24	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.	Yes
25	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: 10.11.2020 vide letter no: MP/A/17-ORI/BHU/2020-21 Modified Mining Plan: 02.04.2024 vide letter no. MCDR-MiFLOCR/10/2023-BBS-IBM_RO_BBS
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.	NA
27	Mineral(s) granted in lease and proved for mining	Chromite
28	Method of Mining (Opencast, Underground)	Opencast
29	Category (Fully Mechanized, Others or Manual)	Fully Mechanized
30	Captive/Non Captive	Non-Captive

Scientific Mining: Compliance of proposals of approved mining plan/scheme of mining. (Duplication of information in existing TMIS data sheets and draft write up has been avoided.)

### **Exploration**

S.N.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year (2021-22 to 2023-24)	5 nos., 250 m (2021-22) 12 nos., 580 m (2022-23) 0 nos., 0 m (2023-24)	2 nos., 210 m (2021-22) 17 nos., 2420 m (2022-23) 8 nos., 1080 m (2023-24)	100m X 100 m (Drilling for Quality assurance purpose)
1b	Exploration over lease area for Geological axis 1 or 2.		G1 area: 70.917 Ha G2 area: 175.941 Ha	At the end of 2023-24
1c	Exploration Agency & Expenditure in lakh Rupees during the year	NA	M/s Prime Drilling Private Limited. Expenditure: INR 70.47 Lakh	For 2023-24
1d	Balance area to be explored to	Nil	Nil	The entire

	bring Geological axis in 1 or 2			potential mineralized area is under G1
1e	Balance reserves as on 01.04.2024 (in MT)		3,239,900 tonnes	
1f	General remarks of inspecting officer on geology, exploration etc.	The lessee has carried out exploration i.e. 8 nos of boreholes, about 1080 m during the reporting year. However, there was no such proposal of exploration by means of borehole during the reporting year. As per submitted AR of 2023-24 about 3,239,900 tonnes of reserve available in the mine.		

### **Development**

S.N.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	3776882E – 377639E & 2328205N – 2329061N	3776935E – 377638E & 2328211N – 2329060N	FY 2023-24
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Yes / Separate benches proposed in OB and Mineral.	Yes / Separate benches proposed in OB and Mineral.	
2c	Stripping ratio or ore to OB ratio (Cu.m/T)	4.2	5.2	FY 2023-24
2d	Quantity of topsoil generation in m <sup>3</sup>	Nil	Nil	FY 2023-24
2e	Quantity of overburden/waste generation in m <sup>3</sup>	1698972.000	1562936.010	
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	The lessee has carried out the development proposal more or less as per the approved proposal of the reporting year. There is some variation in the stripping ratio due to the variation in production and generation of waste quantity.		

### **Exploitation**

S.N.	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	1	1	Quarry B & C
3b	Quantity of ROM production	404590	299997	FY 2023-24
3c	Recovery of salable/usable mineral from ROM production	100%	100%	
3d	Quantity of mineral reject generation	Nil	Nil	Mineral above Threshold value of 10 % Cr <sub>2</sub> O <sub>3</sub> is used.
3e	Grade of mineral reject generation and threshold value declared	NA	NA	
3f	Quantity of sub-grade mineral generation	Nil	Nil	
3g	Grade of sub-grade mineral generation	NA	NA	Mineral above Threshold value

				of 10 % Cr <sub>2</sub> O <sub>3</sub> is used.
3h	Manual / Mechanized method adopted for segregating from ROM	Nil	Nil	Mineral above Threshold value of 10 % Cr <sub>2</sub> O <sub>3</sub> is used.
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Nil	Nil	Mineral above Threshold value of 10 % Cr <sub>2</sub> O <sub>3</sub> is used.
3j	Provision of drilling & blasting in mineral benches	Nil	Nil	
3k	Provision of mining machinery in mineral benches	Yes	Yes	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height-8m Width-12m Same in Ore & OB	Height-8m Width-12m Same in Ore & OB	
3m	Total area covered under excavation/pits	58.18 Ha	57.083 Ha	
3n	Ore to OB ratio for the pit/mine during the year (Cu.m/T)	4.2	5.2	
3o	Total area put in use under different heads at the end of year	Mining-58.18Ha Dumps- 69.21Ha Mineral Storage- 9.06 Ha Infrastructure- 22.48 Ha Roads – 5.46 Ha Township- 6.44 Ha Others-76.03 Ha Total- 246.858 Ha	Mining-57.083Ha Dumps-66.144Ha Mineral Storage- 8.917Ha Infrastructure- 15.30Ha Roads – 6.995 Ha Township- 6.443 Ha Others-85.412 Ha Total- 246.858	
3p	Production of ROM mineral during last five-year period, as applicable			
	Year- 2019-20	Nil	Nil	
	Year- 2020-21	150280	149974	
	Year- 2021-22	400520	349994	
	Year- 2022-23	450500	349535	
	Year-2023-24	404590	299997	
	Total	1405890	1149500	
3q	General remarks of inspecting officer on method of mining etc.	Lessee has carried out the development and production well within the proposed area and quantity but could not achieved the proposed target during the reporting year.		

### **Solid Waste Management-Dumping**

S.N	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	Dump-6 is proposed for OB disposal.	Dump-6 is used for OB disposal.	

4b	Location of topsoil, OB & mineral reject dumps	377132E – 377918E & 2327609N – 2328552N	377132E – 377918E & 2327609N – 2328552N	
4c	Number of dumps within lease area and outside the lease area	Within lease- 6 Outside lease-0	Within lease- 6 Outside lease-0	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside the UPL	Outside the UPL	
4e	Number of active & alive dumps	1(Dump – 6)	1 (Dump – 6)	
4f	Number of dead dumps	2 (WD – 2 & WD -4)	2 (WD – 2 & WD - 4)	
4g	Number of dumps stabilized	3 (WD – 1, WD -3 & WD - 5)	3 (WD – 1, WD -3 & WD - 5)	
4h	Whether Retaining wall or garland drain all along dumps are there	Retaining wall of 797 mtr. and garland drain of 748 mtr. have been proposed.	Retaining wall of 497 mtr. and garland drain of 444 mtr. have been carried out during the reporting year.	
4i	Length of Retaining wall or garland drain all along the dump	Retaining wall of 797 mtr. and garland drain of 748 mtr. have been proposed.	Retaining wall of 497 mtr. and garland drain of 444 mtr. have been carried out during the reporting year.	
4j	Number of settling ponds	Nil	Nil	
	Specific comments of inspecting officer on waste dump management	The lessee has carried out the waste management well within the proposed area but could not achieved the proposed target as the development and production target during the reporting year have not been achieved. The lessee has constructed about 497 mtr of retaining wall and 444 mtr of garland drain during the reporting year.		

### **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	Backfilling not proposed	No Backfilling has been done	
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)	NA	NA	
5d	Total area fully reclaimed & rehabilitated	2 Ha	2.16	FY 2023-24 Cumulative: Proposed: 11 Ha. Actual: 6.16 Ha.
5e	General remarks of inspecting officer on	The mine is not mature for backfilling and there was no such proposal for back filling during the reporting year. The lessee has carried out as		

backfilling, reclamation etc.	per the proposal during the reporting year.
-------------------------------	---

### **Progressive Mine Closure Plan**

S.N	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Annual report on PMCP for FY 2023-24 has to be submitted.	Annual report on PMCP for FY 2023-24 has been submitted during the stipulated time period.	
6b	Management of worked/mined out benches i) Area available for rehabilitation (ha) ii) Afforestation done (ha) iii) No. of saplings planted during the year iv) Cumulative no. of plants v) Any other specific method of rehabilitation vi) Cost incurred on watch & care during the year	i) No such Proposal ii) No such Proposal iii) No such Proposal iv) No such Proposal v) No such Proposal vi) No such Proposal	i) Nil ii) Nil iii) Nil iv) Nil v) Nil vi) Nil	
6b	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L X B X D) ii) Void filled by waste/tailings iii) Afforestation on the backfilled area iv) Rehabilitation by making water reservoir v) Any other specific means	i) Nil ii) Nil iii) Nil iv) Nil v) Nil	i) Nil ii) Nil iii) Nil iv) Nil v) Nil	
6c	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	i) 2.0 Ha. area with 5000 nos of saplings with 95% survival rate. ii) 2.0 Ha. area with 5000 nos of saplings with 95% survival rate. iii) Plantation	i) 2.16 Ha. area with 5956 nos of saplings with 90% survival rate. ii) 2.16 Ha. area with 5956 nos of saplings with 90% survival rate. iii) Plantation	
6d	Compliance of	iv) 2.0 Ha. area with 5000	iii) 2.16 Ha. area	

	Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	nos of saplings with 95% survival rate. v) 2.0 Ha. area with 5000 nos of saplings with 95% survival rate. Plantation	with 5956 nos of saplings with 90% survival rate. iv) ii) 2.16 Ha. area with 5956 nos of saplings with 90% survival rate. iii) Plantation	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Air, Noise and Water quality monitoring will be done during the year within the lease area.	Air, Noise and Water quality monitoring will be done during the year within the lease area.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	The lessee has carried out environmental monitoring as per the proposal during the reporting year and the lessee has planted about 5956 no of saplings over 2.16 Ha. area with a survival rate of about 90% carried out within the lease area.		

### **Mineral Conservation**

S.N.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Sorting has not been proposed.	Sorting has not been carried out.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	NA	NA	
7c	Different grade of mineral sorted out at mines	Sorting has not been proposed.	Sorting has not been carried out.	
7d	Any beneficiation process at mines	Nil	Nil	No Such proposal during the reporting year.
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	The ore produced from mine is being consumed by direct selling in the local market. No sorting and sizing were proposed during the reporting year. Further no crushing and screening and any beneficiation process was proposed during the reporting year.		

### **Environment**

S.N.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Nil	Nil	No such proposal during the reporting year.
8b	Concurrent use or storage of topsoil	Nil	Nil	No such proposal during the reporting year.

8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for overburden and mineral stacks are proposed.	Separate dumps for Over-burden and mineral stacks and other waste rocks are being practiced.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No such proposal	Nil	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc.)	No such proposal	Nil	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	5000 No's of tree to be planted within the lease area over 2.00 Ha. with a survival rate of about 95% carried out within the lease area.	5956 No's of tree to be planted within the lease area over 2.16 Ha. with a survival rate of about 90% carried out within the lease area.	
8g	Survival rate	5000 No's of tree to be planted within the lease area over 2.00 Ha. with a survival rate of about 95% carried out within the lease area.	5956 No's of tree to be planted within the lease area over 2.16 Ha. with a survival rate of about 90% carried out within the lease area.	
8h	Water sprinkling on roads to control airborne dust	Regular sprinkling of water on Haul roads and transport roads using Water tanker to suppress the dust.	Regular sprinkling of water on Haul roads and transport roads using mobile water tanker to suppress the dust are in practice.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The lessee has planted 5956 no of saplings over 2.16 Ha area with a survival rate of 95% within the lease area. Water sprinkling by mobile water tanker over haul roads to control the airborne dust and to minimize the fugitive dust emission. This sustains the aesthetic beauty of the mine area.		

### **Compliance of Rule 45**

S.N.	Item	Observation of I/Officer		Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted up to September 2024. A.R. Submitted up to – 2022-23		
	Item	Information as per AR	Observation	
9b	Scrutiny of Annual return for	Mines Manager-	Mines Manager-	



	information on Mining Engineer, Geologist and Manager	Sri Niranjana Kumar, At/P.O.: Kalarangiatta, Dist : Jajpur, Orissa – 755028, Date of appointment-05.08.2024, Email: <a href="mailto:niranjana.kumar@tatasteel.com">niranjana.kumar@tatasteel.com</a> Geologist- Sri Deviprasad Jena, MSc Geology. At/P.O.: Kalarangiatta,Dist : Jajpur, Orissa – 755028,Ph no. 9031005626, Date of appointment-16.10.2024, Email: <a href="mailto:deviprasad.jena@tatasteel.com">deviprasad.jena@tatasteel.com</a> Mining Engineer- Sri Niranjana Kumar Area Manager (Mining) At/P.O.: Kalarangiatta,Dist : Jajpur, Orissa – 755028, Date of appointment-05.08.2024, Email: <a href="mailto:niranjana.kumar@tatasteel.com">niranjana.kumar@tatasteel.com</a>	Sri Niranjana Kumar, At/P.O.: Kalarangiatta, Dist : Jajpur, Orissa – 755028, Date of appointment-05.08.2024, Email: <a href="mailto:niranjana.kumar@tatasteel.com">niranjana.kumar@tatasteel.com</a> Geologist- Sri Deviprasad Jena, MSc Geology. At/P.O.: Kalarangiatta,Dist : Jajpur, Orissa – 755028,Ph no. 9031005626, Date of appointment-16.10.2024, Email: <a href="mailto:deviprasad.jena@tatasteel.com">deviprasad.jena@tatasteel.com</a> Mining Engineer- Sri Niranjana Kumar Area Manager (Mining) At/P.O.: Kalarangiatta,Dist : Jajpur, Orissa – 755028, Date of appointment-05.08.2024, Email: <a href="mailto:niranjana.kumar@tatasteel.com">niranjana.kumar@tatasteel.com</a>	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Land use Area in Ha 1. Mining-57.083Ha 2.Dumps-66.144Ha 3.Mineral Storage-8.917Ha 4.Infrastructure-15.30Ha 5. Roads- 6.995 Ha 6. Township- 6.443 Ha 7. Others-85.412 Ha Total- 246.858 Ha.	Land use Area in Ha 1. Mining-57.083Ha 2.Dumps-66.144Ha 3.Mineral Storage-8.917Ha 4.Infrastructure-15.30Ha 5. Roads- 6.995 Ha 6. Township- 6.443 Ha 7. Others-85.412 Ha Total- 246.858 Ha.	
9d	Scrutiny of Annual return on afforestation	2.16 Ha. area with 5956 nos of saplings with 90% survival rate.	2.16 Ha. area with 5956 nos of saplings with 90% survival rate.	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	Nil	Nil	Mineral above Threshold value of 10 %

				Cr2O3is entirely used.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Opening Stock: Nil Production: 299996.660 tons Closing Stock : Nil	Opening Stock: Nil Production: 299996.660 tons Closing Stock : Nil	
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Cost of production Rs. 34060.89/- furnished in submitted Annul Return for FY 2023-24.	Cost of production Rs. 34060.89/- furnished in submitted Annul Return for FY 2023-24.	
9h	Scrutiny of Annual return on fixed assets	Fixed Asset: Rs.520256512/, furnished in the annual return of the reporting year.	Fixed Asset: Rs.520256512/, furnished in the annual return of the reporting year.	
9i	Scrutiny of Annual return on mining machineries	ROCK DRILL (NON-ELEC.) 110.000 MM 1 Non Electrical Opencast SHOVEL (HYDRAULIC) 3.200 CUM 3 Non Electrical Opencast SHOVEL (HYDRAULIC) 1.330 CUM 1 Non Electrical Opencast SHOVEL (HYDRAULIC) 1.800 CUM 1 Non Electrical Opencast SHOVEL (HYDRAULIC) 0.620 CUM 1 Non Electrical Opencast WHEEL LOADER 3.200 CUM 1 Non Electrical Opencast BACK HOE 0.320 CUM 1 Non Electrical Opencast TIPPER 20.500 CUM 19 Non Electrical Opencast MOTOR GRADER 196.000 HP 1 Non Electrical Opencast WATER TANKER 5000.000 LITRE 1 Non Electrical Opencast WATER TANKER 18000.000 LITRE 2 Non	ROCK DRILL (NON-ELEC.) 110.000 MM 1 Non Electrical Opencast SHOVEL (HYDRAULIC) 3.200 CUM 3 Non Electrical Opencast SHOVEL (HYDRAULIC) 1.330 CUM 1 Non Electrical Opencast SHOVEL (HYDRAULIC) 1.800 CUM 1 Non Electrical Opencast SHOVEL (HYDRAULIC) 0.620 CUM 1 Non Electrical Opencast WHEEL LOADER 3.200 CUM 1 Non Electrical Opencast BACK HOE 0.320 CUM 1 Non Electrical Opencast TIPPER 20.500 CUM 19 Non Electrical Opencast MOTOR GRADER 196.000 HP 1 Non Electrical Opencast WATER TANKER 5000.000 LITRE 1 Non Electrical Opencast WATER TANKER 18000.000 LITRE 2 Non	

		Electrical Opencast DOZER 200.000 HP 3 Non Electrical Opencast PUMPS (ELEC.) 15333.000 L/MN 6 Electrical Opencast ELEC. MOTOR 120.000 HP 2 Electrical Opencast ELEC. MOTOR 40.000 HP 2 Electrical Opencast ELEC. MOTOR 175.000 HP 1 Electrical Opencast	Electrical Opencast DOZER 200.000 HP 3 Non Electrical Opencast PUMPS (ELEC.) 15333.000 L/MN 6 Electrical Opencast ELEC. MOTOR 120.000 HP 2 Electrical Opencast ELEC. MOTOR 40.000 HP 2 Electrical Opencast ELEC. MOTOR 175.000 HP 1 Electrical Opencast	
--	--	---	---	--