

**MCDR INSPECTION REPORT****General**

<b>S N</b>	<b>Particulars</b>	<b>Details</b>
1	File no	
2	Name of the Inspecting Officer	Sri.Vikram Prakash Deshpande, ACOM, BBSR
3	Name of the Mine	Kalarangiatta Chromite Mine
4	Total Lease Area (Ha) with breakup of Non-forest and forest land	23.800 Ha, Non Forest: -NIL- Ha, Forest: 23.800 Ha.
5	Mine code	11ORI19022
6	Date of Inspection	26.12.2023
7	Name of official accompanying inspection	Sri. Muthumari M(Agent & Head O & M )  Sri.Saraswata Nanda,Manager(Mines)  Sri.Avijit Bhunia,(Head-Geotech & Technical Services)  Sri.S.K.Biswal(Geologist),  Sri P.K.Nayak , Surveyor
8	IBM Registration Number under rule 45 of MCDR, 1988	IBM/173/2011
9	Name of the lessee, Address, phone, email and fax number	M/s. Ferro Alloys Corporation Ltd., Kalarangiatta Chromite Mines.
10	Village	Kalarangiatta
11	Taluka/Mandal	Sukinda
12	District	Jajpur
13	Pin code	755028
14	State	Odisha
15	Post office	Kaliapani
16	Nearest police station	Kaliapani
17	Nearest Railway station	Jajpur- Keonjhar Road.
18	Date of Grant of Mining Lease	03.11.2001
19	Date of Execution	18.04.2008
20	Date of opening of Mine	03.08.2009
21	Date of first Renewal, if applicable and its period & expiry	Not Applicable
22	Date of second Renewal, if applicable and its period & expiry	No Applicable
23	Date of submission of renewal application if Mining Operations are continuing under deemed extension	Not Applicable
24	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Sri Pankaj Kumar Sharma (Nominated Owner & Director) M/s FACOR LTD Chrome Ore Mining Division, D.P.Nagar,Bhadrak-756135(ODISHA) 06784-242170
25	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Sri. Muthumari M Agent & Head O & M (Mines) Ferro Alloys Corporation Ltd D.P Nagar, Randia Post: Bhadrak, Odisha Mail id:facor.mines@vedanta.co.in

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26	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines		Sri. Saraswata Nanda(B.E) Mining 16 years experience Kalarangiatta Chromite Mines, M/s.Facor Ltd Post: Kalarangiatta, Dist: Jajpur-755028 Ph.no. 9437494538 Email: <a href="mailto:Saraswata.Nanda@vedanta.co.in">Saraswata.Nanda@vedanta.co.in</a> Date of Appointment: 03.06.2022
27	Name of the Mining Engineer & Geologist, Qualification and total experience	Mining engineer Qualification Date of appointment Address phone/email	Sri. Saraswata Nanda(B.E) Mining 16 years experience Kalarangiatta Chromite Mines, M/s.Facor Ltd Post: Kalarangiatta, Dist: Jajpur-755028 Ph.no. 9437494538 Email: <a href="mailto:Saraswata.Nanda@vedanta.co.in">Saraswata.Nanda@vedanta.co.in</a> Date of Appointment: 03.06.2022
		Geologist Qualification Date of appointment Address phone/email	Sri S.K.Biswal,(Geologist) 17 Years Experience. Kalarangiatta Chromite Mines, M/s.Facor Ltd Post: Kalarangiatta, Dist: Jajpur-755028 Ph.no.943796738 Date of Appointment. 25.04.2015 Email: <a href="mailto:Susanta.Biswal@vedanta.co.in">Susanta.Biswal@vedanta.co.in</a>
28	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.		Sri S.K.Biswal,(Geologist) 17 Years Experience. Kalarangiatta Chromite Mines, M/s.Facor Ltd Post: Kalarangiatta, Dist: Jajpur-755028 Ph.no.943796738 Date of Appointment. 25.04.2015 Email: <a href="mailto:Susanta.Biswal@vedanta.co.in">Susanta.Biswal@vedanta.co.in</a>
29	Date of Approval of Review of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.		314(3)/2005-MCCM©/MP-11,dtd. 06.10.2005
30	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.		Modification of Review of Mining Plan Vide Letter No.MRMP/A/09-ORI/BHU/ 2021-22/665, dtd. 29.07.2021
31	Mineral(s) granted in lease and proved for mining		Chromite
32	Method of Mining(Open cast, Underground)		Open cast
33	Category (Fully Mechanized, Others or Manual)		'A' Fully Mechanized
34	Captive/Non Captive		Captive
35	Environment Clearance grant date & limit of EC		13.05.209, 50000 MT
36	CTO		17.03.2022, validity upto 31.03.2023, 50000 MT

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**Exploration**

S.N	Item	Proposals(2022-23)	Actual work	Remarks
1a	Backlog of previous year	5Nos/1023Mtrs	-NIL-/-NIL-	G1: 9.60 Ha mineralized G1: 14.20 Ha non-mineralized Total: 23.800 Ha under G1 level.
1b	Exploration over lease area for Geological axis 1 or 2.	23.800Ha	23.800Ha	
1c	Exploration Agency & Expenditure in lakh Rupees during the year	Rs- 3328464/-	-NIL-	
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	-NIL-	Total area explored under G-1 category.
1e	Balance reserves as on 01.04.2023 (in MT)		As on 01.04.2023 (111) 383703.02 Tons (121&122) 429940.80  Total : 813643.82Tons	As per the Annual Report submitted for the year 2022-23.
1f	General remarks of inspecting officer on geology, exploration etc.	The Chromite deposits of Sukinda valley ultramafic field occurs as six more or less parallel bands in Serpentinite. These Chromite bands are locally named as Band 1,2,3,4,5 & 6 and are separated from each other by Serpentinite /Pyroxenite ranging in thickness 120 M to 600 M. The Chromite bands occur in Northern limb of the fold shows the strike E – W to ESE – WNW, dipping 10 <sup>0</sup> – 60 <sup>0</sup> towards south to SSW while those of Southern limb shows the strike NE – SW to WSW dipping 45 <sup>0</sup> – 85 <sup>0</sup> towards NW to NNW. However, Band No.6 of Southern limb show steep dip towards South from the disposition and characteristic of Chromite Ore bodies, it suggests that the ore body is a stratiform type of deposit.		

**Development**

S.N.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	369085E-369427E 2324538N- 2324932N	369085E- 369427E 2324538N- 2324932N	Development done within the area as per proposal.
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Separate benches in overburden & mineral proposed	Separate benches were maintained in overburden & mineral during inspection.	Ore / Mineral 1No Waste 8 Nos.

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2c	Stripping ratio or ore to OB ratio	1:2.60(Ton/M <sup>3</sup> )	1:7.21(Ton/M <sup>3</sup> )	ROM Ore:49759Tons Waste:359000 M <sup>3</sup> Ore:OB Ratio:1:2.69(Ton/M <sup>3</sup> )
2d	Quantity of topsoil generation in m <sup>3</sup>	1800M <sup>3</sup>	1700M <sup>3</sup>	Less quantity generated
2e	Quantity of overburden/waste generation in m <sup>3</sup>	3.91Lac M <sup>3</sup>	3.59Lac M <sup>3</sup>	Less OB achieved vis-à-vis the production of ROM.
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	The mine workings have been discontinued since 26/01/2023 on the orders of Hon'ble High of Odisha. The mine workings were confined to 1 pit.		

**Exploitation**

S.N.	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	One pit was proposed for production	Actual workings were carried out in 1 pit only as per the proposal.	
3b	Quantity of ROM production	1.50 Lac MT	0.497Lac MT	Production has been within EC capacity.
3c	Recovery of salable/usable mineral from ROM production	42%	42%	
3d	Quantity of mineral reject generation	No proposal	Not Applicable	
3e	Grade of mineral reject generation and threshold value declared	No proposal	Not Applicable	
3f	Quantity of sub-grade mineral generation	No proposal	Not Applicable	
3g	Grade of sub-grade mineral generation	No proposal	Not Applicable	
3h	Manual / Mechanized method adopted for segregating from ROM	Mechanised and Manual method proposed for segregating from ROM	Mechanised and Manual method were used for segregating from ROM	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No proposal	Not applicable	

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3j	Provision of drilling & blasting in mineral benches	No Proposal	Not Applicable	
3k	Provision of mining machineries in mineral benches	Use of HEMMs was proposed in Mineral Benches.	Mechanized O/C mining was carried out engaging HEMMs in the mine before discontinuance of operation.	Mining was carried out by Shovel (2.1 m <sup>3</sup> ) Dumper (25 tonne) combination.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed Bench Height and width of 7-8 meter respectively.	The minimum bench height and width were observed to be maintained during inspection.	
3m	Total area covered under excavation/pits	7.49 Ha of area proposed at the end of reporting year.	7.142 Ha is used for mining	AS per AR for 2022-23
3n	Ore to OB ratio for the pit/mine during the year	1:3.91	1:3.59	No significant change
3o	Total area put in use under different heads at the end of year	Pit: 7.49 Ha Waste disposal: 5.804Ha Others: 10.506 Ha	Pit: 7.142 Ha Waste disposal: 5.804 Others: 10.854 Ha	As per AR 2022-23
3p	Production of ROM mineral during last five-year period, as applicable (in Lakh Tons)			
	Year- 2018-19	0.498	0.497	
	Year- 2019-20	0.495	0.489	
	Year- 2020-21	0.499	0.498	
	Year- 2021-22	0.995	0.499	
	Year-2022-23	1.500	0.497	
3q	General remarks of inspecting officer on method of mining etc.	The mine workings have been discontinued since 26/01/2023 on the orders of Hon'ble High of Odisha. Mining was earlier carried out by Shovel (2.1 m <sup>3</sup> ) Dumper (25 tonne) combination.		

**Solid Waste Management-Dumping**

S.N	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral	Separate dumping of OB proposed.	Carried out as per proposal.	

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	reject (Rule 32, 33)			
4b	Location of topsoil, OB & mineral reject dumps	OB Dump 373775E to 374581E 2329556N to 2330024N	OB Dump 373775E to 374581E 2329556Nto 2330024N	North Dump

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4c	Number of dumps within lease area and outside lease area	Within lease area: 1 No Outside Lease area: Nil	Within lease area: 1 No Outside Lease area: Nil	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Location of Dump proposed outside UPL	Actual location of dump were observed to be outside UPL.	
4e	Number of active & alive dumps	Active:01	Active:01	North Dump
4f	Number of dead dumps	NIL	NIL	
4g	Number of dumps stabilized	No Proposal	Not Applicable	
4h	Whether Retaining wall or garland drain all along dumps are there	106Mtrs	106Mtrs	
4i	Length of Retaining wall or garland drain all along dump	Retaining wall : 106 Mtrs Garland drain : 66Mtrs	Retaining wall: 106 Mtrs Garland drain :58.50Mtrs	
4j	Number of settling ponds	No Proposal	Not Applicable	
4k	Specific comments of inspecting officer on waste dump management	The mine workings have been discontinued since 26/01/2023 on the orders of Hon'ble High of Odisha. Dump Management was broadly as per the approved proposals.		

**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	No Proposal	Not Applicable	
5b	Area under backfilling of mined out area	Not Applicable	Not Applicable	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	No Proposal	Not Applicable	
5d	Total area fully reclaimed & rehabilitated	Not Applicable	Not Applicable	
5e	General remarks of inspecting officer on backfilling, reclamation etc	The area is not matured for backfilling as the mineral exists in depth. The mine workings have been discontinued since 26/01/2023 on the orders of Hon'ble High of Odisha.		

**Progressive Mine Closure Plan**

Sl.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 to be submitted on 1st July every year.	PMCP Report Submitted.	Submitted on dated 12/06/2023
6b	Area available for rehabilitation (ha).	Nil	Nil	
6c	afforestation done (ha).	0.381	1.0	
6d	No. of saplings planted during the year.	Number of plants proposed for afforestation 1960	Number of saplings planted 3520	Within Lease-2520 Outside Lease 1000
6e	Cumulative no. of plants	3810	8950	
6f	Any other method of rehabilitation	Not Proposed	Not Applicable	
6g	Cost incurred on watch and care during the year	9,80,000	17,97,133	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Nil	Nil	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil	Nil	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on 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	



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6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Nil	Nil	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Nil	Nil	
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Nil	Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental Monitoring proposed in Core and buffer zone proposed as per MOEFCC and SPCB guidelines.	Regular Environmental Monitoring was carried out for air, water, noise on qtrly basis.	Env. Monitoring was carried out by M/s Visonteck. All the parameters were observed to be within the permissible limit.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	The mine workings have been discontinued since 26/01/2023 on the orders of Hon'ble High of Odisha.		

**Mineral Conservation**

S.N.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise mineral sorting proposed within lease area.	Grade wise mineral sorting was carried out within lease area.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanical method proposed for grade-wise sorting	Mechanical method was carried out for grade-wise sorting	
7c	Different grade of mineral sorted out at mines	10% to 40% +40% above	10% to 40% +40% above	
7d	Any beneficiation process at mines	Not proposed	Not Applicable	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	The mine workings have been discontinued since 26/01/2023 on the orders of Hon'ble High of Odisha. No Beneficiation was carried out by the lessee except Grade wise sorting within lease area.		

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**Environment**

S.N	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	1800M <sup>3</sup> of Top Soil proposed to be generated	1700M <sup>3</sup> of Top Soil generated.	
8b	Concurrent use or storage of topsoil	Concurrent use proposed	Concurrent use carried out	Top soil utilized for plantation.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for overburden proposed.	Separate Dump for overburden made.	North Dump
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not Proposed	Not Applicable	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc.)	Not Proposed	Not Applicable	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)		Number of saplings planted <b>3520</b>	AR 2022-23
8g	Survival rate	85%	85%	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling proposed on haul roads to suppress the dust.	Water tankers were deployed for water sprinkling on roads to control airborne dust.	One Water tanker with capacity of 12 KLD deployed for suppressing dust.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The mine workings have been discontinued since 26/01/2023 on the orders of Hon'ble High of Odisha.		

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**Compliance of Rule 45**

S.N.	Item		Observation of I/Officer	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted upto June-2023 A.R. submitted for FY 2022-23.		AR for 2022-23 submitted on 30/06/2023.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mine Manager- Shri Saraswat Nanda Mining Engineer- Shri Saraswat Nanda Geologist-Shri Susanta Kumar Biswal	Only same Mining Geologist was present during the course of inspection. Mine Manager-Shri Vinod Saini Mining Engineer: Shri Vinod Saini	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Pit: 7.49 Ha Waste disposal: 5.804Ha Others: 10.506 Ha	Pit: 7.142 Ha Waste disposal: 5.804Ha Others: 10.506 Ha	
9d	Scrutiny of Annual return on afforestation	Within ML-2520 saplings @ 85% survival rate, Outside ML-1000 saplings @ 85% survival rate.	Appears to be correct.	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	No Mineral Reject Generation	Appears to be correct	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	5.185 Tons	Appears to be correct	
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Sale value: Nil Cost of Production = 7666.96	Appears to be correct	
9i	Scrutiny of Annual return on fixed assets	Value of Fixed asset: Rs 54256961 including land, plant, machinery and transport equipment.	Appears to be correct	
9k	Scrutiny of Annual return on mining machineries		Back Hoe-02 Front End Loader-01 Water Tanker-01 Dozer-01 Pumps-03 Dumper-5 Other HEMM-01 Others-06	