INDIAN BUREAU OF MINES MINERALS DEVELOPMENT AND REGULATION DIVISION

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/CR/JJP/MCDR-4/BBS14/03/2K Mine code : 110RI19005 (i) Name of the Inspecting : U11) DAYANAND UPADHYAY Officer and ID No. (ii) Designation : Sr. Asst. Contrl. Mines (iii) Accompaning mine : Shri A,K, Patra, Mines manager Official with Designation (iv) Date of Inspection : 25/01/2020 (v) Prev.inspection date : 14/08/2018 PART-I : GENERAL INFORMATION 1. (a) Mine Name : OSTAPAL (b) Registration NO. : IBM/173/2011 (C) Category : A Fully Mechanised (d) Type of Working : Opencast Postal address (e) : ORISSA State District : JAJPUR Village : GURUJANG Taluka : SUKINDA Post office : KALIAPANI Pin Code : : 06784 - 251782 FAX No. E-mail : facormines@facor.in Phone : 06726- 268755 (f) Police Station : Kaliapani : 01/12/1985 (g) First opening date Weekly day of rest (h) : SUN Address for : OATAPAL CHROMITE MINE, M/S FACOR LTD 2 correspondance P.O.KALIAPANI, DIST: JAJPUR ORISSA-755047 (a) Lease Number : ORI0233 3. (b) Lease area : 72.84 (c) Period of lease : 50 (d) Date of Expiry : 12/08/2035 Mineral worked : CHROMITE 4. Main

5. N	ame and Address of t Lessee	he : M/s.Ferro Alloys Corporation Limited Laxmi Bhawan,Kuans PO & Dist : Bhadrak Odisha BHADRAK ORISSA Phone:06784 - 250598 FAX :06784 - 251782	
	Owner	<pre>SHRI ROHIT SARAF M/s Ferro Alloys Corporation Ltd Laxmi Bhawan, Kuans, Bhadrak Odisha-756100 BHADRAK ORISSA Phone: 06784 - 250598 FAX : 06784 - 251782</pre>	
	Agent	<pre>: RAJESH KUMAR SINGH Gurujang, Kaliapani Sukinda, Jajpur Odisha BHADRAK ORISSA Phone: 06784 -251312 FAX : 06726-201009</pre>	
	Mining Engineen Name Qualification Appointment/ Termination dat	SARASWATA NANDA,Full TimeB.E Mining Engineering01/07/2016	
	Geologist Name Qualification Appointment/ Termination dat	: 14/12/2009	
	Manager Name Qualification Appointment/ Termination dat	: AJAYA KUMAR PATRA : AMIE Mining Engineering, FCC : 21/08/2017 e	
	ate of approval of Mining		6003/01/2005.98825/04/2011.98830/03/2016

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
la	Backlog of previous year	Bore holes not proposed.	Total lease area is explored under G1 Level of exploration.	Total lease area 72.843 Ha is explored under G1 Level of exploration by putting 223 Nos. of bore holes of total 14499.20 meterage.
1b	Exploration over lease area for geological axis 1 or 2	Bore holes not proposed.	Total lease area is explored under G1 Level of exploration.	Total lease area 72.843 Ha is explored under G1 Level of exploration by putting 223 Nos. of bore holes of total 14499.20 meterage.
lc	Exploration Agencies and Expenditure in lakh rupees during the year	Bore holes not proposed.	Total lease area is explored under G1 Level of exploration.	Total lease area 72.843 Ha is explored under G1 Level of exploration by putting 223 Nos. of bore holes of total 14499.20 meterage.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Bore holes not proposed.	Total lease area is explored under G1 Level of exploration.	Total lease area 72.843 Ha is explored under G1 Level of exploration by putting 223 Nos. of bore holes of total 14499.20 meterage.

le	Balance reserve as on 01/04/20	Balance reserve as per approved modification under of review of mining plan approved under 111 category- 7.135 Lac Tons and under 211 category- 7.698 Lac Tons	Balance reserve as on 01/04/2019 under 111 category- 6.772 Lac Tons and under 211 category- 7.698 Lac Tons	Balance reserve as on 01/04/2019 under 111 category- 6.772 Lac Tons and under 211 category- 7.698 Lac Tons
lf	General remarks of inspecting officers on geology, exploration etc	Bore holes not proposed.	Total lease area 72.843 Ha is explored under G1 Level of exploration.	Total lease area 72.843 Ha is explored under G1 Level of exploration by putting 223 Nos. of bore holes of total 14499.20 meterage.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Single pit- E 3426/W3200 and N 3350/S2950.	The development is concentrated in single pit between grid E 3426/W3200 and N 3350/S2950.	The development is concentrated in single pit between grid E 3426/W3200 and N 3350/S2950.
2b		Separate benches in OB and ore with 7-8 m height, top soil bench-nil.	Separate benches in OB and ore of 7-8 m height have been maintained.	Separate benches in OB and ore of 7-8 m height have been maintained.
2c	Stripping ratio or ore to OB ratio	1:9.08 T/cu.m	1:.8.19 T/cu.m	Average stripping ratio varies due to irregular nature of ore deposit.
2d	Quantity of topsoil generation in m3	Not proposed.	There is no top soil generation. as pit is developed in already broken up area.	There is no top soil generation.

2e	Quantity of overburden generation in m3		4.34 Lac cu.m	Quantity of OB varies due to irregular nature of ore deposit.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Single pit- E 3426/W3200 and N 3350/S2950.	The development is concentrated in single pit between grid E 3426/W3200 and N 3350/S2950.	The development is concentrated in single pit between grid E 3426/W3200 and N 3350/S2950.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Single pit	Working is concentrated in single pit as proposed.	Working is concentrated in single pit as proposed.
3b	Quantity of ROM mineral production proposed	1.06 LacT	ROM production reported in 2018-19 is 1.059 LacT	ROM Production is within the approved proposal.
3с	Recovery of sailable/usable mineral from ROM production	56627T	Saleable ore production reported in 2018-19 is 51417.62 T.	Saleable ore production reported in 2018- 19 is 51417.62 T.
3d	Quantity of mineral reject generation	49373T	54543T	Mineral reject/sub grade generated is -40%Cr2O3 grade.
3e	Grade of mineral rejects generation and threshold value declared.	+10%% to 40%Cr2O3	Grade of mineral reject generation (10-40% Cr2O3) and threshold value declared 10% Cr2O3%	Grade of mineral reject generation (10-40% Cr2O3) and threshold value declared 10% Cr2O3%
3f	Quantity of sub grade mineral generation.	49373T	54543T	Mineral reject/sub grade generated is -40%Cr2O3 grade.
3g	Grade of sub grade mineral generation	+10%% to 40%Cr2O3	Grade of mineral reject generation (10-40% Cr2O3) and threshold value declared 10% Cr2O3%	Grade of mineral reject generation (10-40% Cr2O3) and threshold value declared 10% Cr2O3%

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3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised	Mechanised
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	COB plant.	COB plant has been installed in the lease area to upgrade the mineral reject.	COB plant has been installed in the lease area to upgrade the mineral reject.
3j	Provision of drilling and blasting in mineral benches	y exlposive as	Drilling and blasting is carried out with DTH drilling of 110 mm dia. Blast hole with emulsion/slurry exlposive as coloumn charge and booster alongwith delay detonator.	Drilling and blasting is carried out with DTH drilling of 110 mm dia. Blast hole with emulsion/slurry exlposive as coloumn charge and booster alongwith delay detonator.
3k	Provision of mining machineries in mineral benches	Excavator, Loader and Dumper are proposed for excavation.	Machaniries equipped at mine sites are BACK HOE 1.5 cu.m- 3, FRONT END LOADER 1.7 cu.m-1, TRUCK 20T -4, WATER TANKER 8KL& 12KL-4, DOZER-2	Excavator, Loader and Dumper are equipped to winning out the mineral.
31	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height- 7-8 m	Bench height is suitably matched with the excavator.	Bench height is suitably matched with the excavator.
3m	Total area covered under excavation/pits	28.038 ha proposed during approved plan period	About 28.038 ha area has been covered under excavation pit.	About 28.038 ha area has been covered under excavation pit.
3n	Ore to OB ratio for the pit/mine during the year.	1:9.08 T/cu.m	1:.8.19 T/cu.m	Average stripping ratio varies due to irregular nature of ore deposit.

30	Total area put in use under different heads at the end of year	Total area proposed under different heads are Pit- 28.038 ha, waste dump- 24.550 ha, Plant, residential & building, roads- 5.739 ha & others - 10.433 ha.	Area covered under different heads are Pit- 28.038 ha, waste dump- 24.458 ha, Plant, residential & building, roads- 5.739 ha & others - 10.433 ha.	Area covered under different heads are Pit- 28.038 ha, waste dump- 24.458 ha, Plant, residential & building, roads- 5.739 ha & others - 10.433 ha.
3p	Production of ROM mineral during the last five year period as applicable		2014-15: 1.55 Lac T 2015-16: 0.79 Lac T 2016-17: 1.020 Lac T 2017-18: 1.062 Lac T 2018-19: 1.059 LacT	ROM Production is within the approved proposal.
3q	General remarks of inspecting officers on method of mining etc.	Excavation of ROM has been proposed in Single pit- E 3426/W3200 and N 3350/S2950.	The ROM production has been carried out in pit as proposed. DTH drilling of 110 mm dia. Blast hole with emulsion/ slurry explosive alongwith delay detonator is being practiced for drilling and blasting.	The ROM production has been carried out in pit as proposed. DTH drilling of 110 mm dia. Blast hole with emulsion/ slurry explosive alongwith delay detonator is being practiced for drilling and blasting.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	dumping for	Overburden and mineral reject generated during mining are dumped Separately.	There is no top soil generation.

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4b	Location of topsoil, OB and mineral reject dumps	Waste Dump-1, between 372400E to 372660E and 2330580N to 2330900N. Mineral reject dump- Nil, Top soil dump- Nil.	-	Mineral reject generated during mining is directly feed to its COB plant.
4c	Number of dumps within lease area and outside of lease area	One waste Dump.	One active waste dump within lease area.	There are two waste dumps exist within the lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Waste Dump-1, between 372400E to 372660E and 2330580N to 2330900N.	One active waste dump within lease area located outside the UPL as per proposal.	One active waste dump within lease area located outside the UPL as per proposal.
4e	Number of active and alive dumps.		There is one active waste dump in lease area.	There is one active waste dump in lease area.
4f	Number of dead dumps.	Waste dump (South).	The dead dump is stabilized by plantation.	The dead dump is stabilized by plantation.
4g	Number of dumps established.	Waste dump (South).	The dead dump is stabilized by plantation.	The dead dump is stabilized by plantation.
4h	Whether Retaining wall or garland drain all along dumps are there.	Not proposed.	Retaining wall and garland drain has been constructed by lessee around the dump.	Retaining wall and garland drain has been constructed by lessee around the dump.
4i	Length of Retaining wall or garland drain all along dumps	Not proposed.	Retaining wall and garland drain has been constructed by lessee around the dump.	Retaining wall and garland drain has been constructed by lessee around the dump.
4j	Number of settling ponds	Not proposed.	Nil.	Nil.
4k	Specific comments of inspecting officer on waste dump management	Waste Dump-1, between 372400E to 372660E and 2330580N to 2330900N.	Waste Dump-1, lies between grid 372400E to 372660E and 2330580N to 2330900N. Mineral reject generated during mining is directly feed to its COB plant.	Slope of the active dump is stabilized by plantation. The dead dump is stabilized by plantation.

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Not proposed as pit is not exhausted.	Pit is not matured for backfilling and reclamation and re- habilitation.	Pit is not matured for backfilling and reclamation and re- habilitation.
5b	Area under backfilling of mined out area	Not proposed as pit is not exhausted.	Pit is not matured for backfilling and reclamation and re- habilitation.	Pit is not matured for backfilling and reclamation and re- habilitation.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed as pit is not exhausted.	Pit is not matured for backfilling and reclamation and re- habilitation.	Pit is not matured for backfilling and reclamation and re- habilitation.
5d	Total area fully reclaimed and rehabilitated	Not proposed as pit is not exhausted.	Pit is not matured for backfilling and reclamation and re- habilitation.	Pit is not matured for backfilling and reclamation and re- habilitation.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Not proposed as pit is not exhausted.	Pit is not matured for backfilling and reclamation and re- habilitation.	Pit is not matured for backfilling and reclamation and re- habilitation.

Solid Waste Management - Backfilling:

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
ба	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	26(2) of MCDR	Annual return on PMCP has been submitted.	Annual return on PMCP has been submitted.
6b	Area available for rehabilitation (ha) .	Not proposed as pit is not exhausted.	Pit is not matured for backfilling and reclamation and re- habilitation.	Pit is not matured for backfilling and reclamation and re- habilitation.
6c	afforestation done (ha).	2.385 ha.	In 2018-19, total area cover under afforestation is about 3.069 ha.	In 2018-19, total area cover under afforestation is about 3.069 ha.

In 2018-19, 7673 nos. 6d Total 7673 nos. No. of saplings 5960 nos. of planted during saplings. of saplings has been saplings have been the year planted by lessee. planted in 2018-19. 6e Cumulative no Not specified. Cumulative nos. of Cumulative nos. of .of plants saplings planted in the saplings planted lease area is about in the lease area 149230 nos. is about 149230 nos 6f Pit is not matured Any other method Not proposed Pit is not matured for as pit is not backfilling and for backfilling of rehabilitation and reclamation exhausted. reclamation and rehabilitation. and rehabilitation. Cost incurred on Not specified. Around Rs 17.65 lakh Around Rs 17.65 бq cost incurred on watch lakh cost incurred watch and care during the year and care. on watch and care. Pit is not matured 6h Compliance on Not proposed Pit is not matured for reclamation and as pit is not backfilling and for backfilling rehabilitation exhausted. reclamation and reand reclamation by backfilling habilitation. and re-(i) Voids habilitation. available for backfilling (Lx ВхD 6i Pit is not matured for Pit is not matured Compliance on Not proposed as pit is not backfilling and reclamation and for backfilling rehabilitation exhausted. reclamation and reand reclamation by backfilling habilitation. and rehabilitation. (ii) Voids filled by waste / tailings бi Compliance on Pit is not matured for Pit is not matured Not proposed for backfilling reclamation and as pit is not backfilling and rehabilitation exhausted. reclamation and reand reclamation by backfilling habilitation. and re-(iii)Afforestati habilitation. on on backfilled area 6k Compliance on Not proposed Pit is not matured for Pit is not matured reclamation and as pit is not backfilling and for backfilling rehabilitation reclamation and reand reclamation exhausted. by backfilling habilitation. and rehabilitation. (iv) Rehabilitation by making water reservoir

61 Pit is not matured for Pit is not matured Compliance on Not proposed reclamation and as pit is not backfilling and for backfilling rehabilitation exhausted. reclamation and reand reclamation by backfilling habilitation. and rehabilitation. (v)any other specific means. бm Compliance of No waste land Not proposed. Nil. rehabilitation proposed. of waste land within lease (i)afforestation No waste land бn Compliance of Not proposed. Nil. rehabilitation proposed. of waste land within lease (ii)Area rehabilitation (ha) 60 Compliance of Not proposed. Nil. No waste land rehabilitation proposed. of waste land within lease (iii)Method of rehabilitation Compliance of Quarterly Quarterly monitoring of Quarterly бр environmental monitoring air, water and noise monitoring of air, monitoring (core level are being carried water and noise zone and buffer out. level are being zone) carried out. General remarks No proposal of Pit is not matured for Pit is not matured 6q of inspecting backfilling as backfilling and for backfilling officers on PMCP pit is not reclamation and reand reclamation compliance and exhausted. habilitation. and reprogressive habilitation. closure operations etc.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Gradewise sorting	Gradewise sorting is being practiced.	Gradewise sorting is being practiced.

7b	Method of grade- wise mineral sorting i.e. manual or mechanical.	Mechanized	Mechanized	Mechanized
7c	Different grade of mineral sorted out at mines.	Cr2O3 and +40%	Different grades of minerals sorted out at mines are +10 to 40% Cr2O3 and +40% Cr2O3.	Different grades of minerals sorted out at mines are +10 to 40% Cr2O3 and +40% Cr2O3.
7d	Any beneficiation process at mines		COB plant has been installed in the lease area to upgrade the mineral reject.	COB plant has been installed in the lease area to upgrade the mineral reject.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	to 40% Cr2O3 and +40%	Different grades of minerals sorted out at mines are -+10 to 40% Cr2O3 and +40% Cr2O3. Cut off grade of the mine is +40% Cr2O3.	Different grades of minerals sorted out at mines are - +10 to 40% Cr2O3 and +40% Cr2O3. Cut off grade of the mine is +40% Cr2O3.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not proposed.	No top top soil generation, as the working is proposed within broken up area.	No top top soil generation is proposed .
8b	Concurrent use or storage of topsoil	Not proposed.	No top top soil generation, as the working is proposed within broken up area.	No top top soil generation is proposed .
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping for overburden and mineral reject.	Overburden and mineral reject generated during mining are dumped Separately.	Overburden and mineral reject generated during mining are dumped Separately.

8d Use of No proposal as Pit is not matured for Pit is not matured overburden, pit is not backfilling and for backfilling waste rock, exhausted. reclamation and reand reclamation rejects and habilitation. and rehabilitation. fines dumps for restoring the land to its original use 8e No proposal as Pit is not matured for Pit is not matured Phased restoration, pit is not backfilling and for backfilling reclamation and exhausted. reclamation and reand reclamation rehabilitation habilitation. and reof lands habilitation. affected by mining operations (Pits, dumps etc) 8f Baseline In 2018-19, 7673 nos. 5960 nos. of Cumulative nos. of information on saplings. of saplings has been saplings planted existence of planted by lessee. in the lease area is about 149230 plantation and additional nos. plantation done (Rule 41) Survival rate Not specified. As reported survival 8q As reported rate is 85%. survival rate is 85%. 8h Water sprinkling Water Water sprinkler are used Water sprinkler on roads to sprinkler to control air borne are used to control airborne control air borne dust. dust dust. 8i General remarks 5960 nos. of In 2018-19, 7673 nos. Aesthetic beauty of inspecting saplings in of saplings has been in and around officer on 2018-19. planted by lessee. mines area is aesthetic beauty Cumulative nos. of maintained by in and around saplings planted in the plantation. mines area lease area is about 149230 nos.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	-	Monthly & Annual returns are being regularly submitted by lessee.	Monthly & Annual returns are being regularly submitted by lessee.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	The employment status of mining engineer, geologist & mine manager have been furnished in the annual return submitted for the year 2018- 19.	Mining engineer, geologist & mine managers were employed in the mine.	Mining engineer, geologist & mine managers were employed in the mine.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	different heads are Pist- 28.038	Area covered under different heads are Pist- 28.038 ha, waste dump- 24.458 ha, Plant, residential & building, roads- 5.739 ha & others - 10.433 ha.	Area covered under different heads are Pist- 28.038 ha, waste dump- 24.458 ha, Plant, residential & building, roads- 5.739 ha & others - 10.433 ha.
9d	Scrutiny of Annual return on afforestation	7673 nos. saplings has been planted in 2018-19.	7673 nos. saplings has been planted in 2018-19.	7673 nos. saplings has been planted in 2018-19.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)		Mineral reject 54543T, Fines 10% to 40 % Cr2O3.	Mineral reject 54543T, Fines 10% to 40 % Cr2O3.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	-	Closing stock: Fines , Below 40% Cr2O3- 869.125T, 40% to below 52% Cr2O3- 3574.330T	Closing stock: Fines , Below 40% Cr203- 869.125T, 40% to below 52% Cr203- 3574.330T

9g	Annual return on sale value, Ex.	Fines , Below 40% Cr2O3- Rs 2375.66, 40%	Ex mine price: Fines , Below 40% Cr2O3- Rs 2375.66, 40% to below 52% Cr2O3- Rs 10396.77	
9h	-	furnished in	Fixed asset as furnished in AR is Rs 1779948000/-	Fixed asset as furnished in AR is Rs 1779948000/-
9k	-	cu.m- 3, FRONT END		3, FRONT END

Details of violations observed during current inspection and compliance position of violation pointed out					
Viola	tion observed	Show couse position			
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on		

Date :

(DAYANAND UPADHYAY)

Indian Bureau of Mines