

GOVERNMENT OF ODISHA

ବନବିଭାଗୀ ତଥା ବନପ୍ରାଣୀ ବିଭାଗର ନିୟନ୍ତ୍ରଣାଳୟ, କଟକ ଜିଲ୍ଲା,

OFFICE OF THE DIVISIONAL FOREST OFFICER: CUTTACK FOREST DIVISION

AT: - GHATAKULA, NUAPADA, CUTTACK 753010

Tel: - 0671-2957611, Control Room: - 0671-2340343, Toll Free No. 18003457473

Email: - dfc.cuttack@odisha.gov.in

Memo No. 6303 / SF/ (Forest Diversion) 15/2025

Dated, Cuttack the 25 th July, 2025.

To

The Regional Chief Conservator of Forests,
Angul Circle, Angul.

Sub: -

Diversion of 23.80 ha of forest land (as per Sahik records as on 25.10.1980) including 2240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Taluqa of Jajpur District, Odisha.

Ref: -

Letter No. 5-ORC288/2016-BHU Dt. 21.03.2025 of Govt. of India, MoEF & CC.

In inviting a kind reference to the above cited subject, it is to inform you that, the point-wise compliance for the stipulated conditions in stage-I approval order accorded by Govt. of India, MoEF & CC of the above project is submitted herewith for onward transmission.

Encl: -As above.

12
25.07.25
Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 6304 dt 25.07.2025

Copy submitted to the Principal Chief Conservator of Forests, Forest Division and Nodal Officer, F.C. Act, O/o the Principal Chief Conservator of Forests & HoFF, Odisha for favour of kind information and necessary action.

12
25.07.25
Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 6305 dt 25.07.2025

Copy forwarded to the Authorized Signatory, Kalarangiatta Chromite Mines, M/s FACOR Ltd., At/Po - Kalarangiatta, Dist- Jajpur for information and necessary action with reference to his letter No. FACOR/Mines/300/2025 dt. 21.07.2025.

12
25.07.25
Divisional Forest Officer,
Cuttack Forest Division.

Compliance to the conditions stipulated in Stage-I approval order by MoEF& CC, Govt. of India vide Letter No.5-ORC288/2016-BHU, dated: 21st March, 2025 under section-2 of the Forest (Conservation) Act, 1980 for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines by M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha.

Sl.	Conditions	Compliance by User Agency
1.	Legal status of the diverted forest land shall remain unchanged;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure- 1.
2.	Compensatory Afforestation.	
a.	The User Agency shall transfer the cost of raising and maintaining the compensatory Afforestation as per the approved CA Scheme at the current wage rate in consultation with State Forest Department in the account of CAMPA of the concerned State through online portal;	In compliance to this condition, the scheme for Compensatory Afforestation has been approved by Addl. PCCF (FD& NO), FC Act, O/o the PCCF & HoFF, Odisha of Rs.50,67,000.00 as per approved cost norm. The user agency has deposited the approved amount of Rs.50,67,000.00 vide UTR No-ICICR42025051300556304 dt.13.05.2025. The copy of approved CA scheme and the copy of deposit challan are enclosed as Annexure-2.
b.	The non-forest land identified for raising compensatory Afforestation shall be transfer and mutated in favour of the State Forest Department before issue of the final approval;	In compliance to this condition, the non-forest Govt. land identified in Plot No.315, & 318, Khata No.155 of Village Kerajodi under Kankadahad Tahasil of Dhenkanal District for raising compensatory Afforestation. The said non-forest Govt. land has already been transferred and mutated in favour of State Forest Department. The RoR copy of the land is enclosed as Annexure-3.
c.	The identified non-forest land for raising Compensatory Afforestation shall be notified by the State Government as PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section (s) of the local Forest Act, as the case may be, before handing over the forest land to the user agency;	In compliance to this condition, the user agency has intimated that the collector and District Magistrate,Dhenkanal has alienated the Govt. Non Forest land identified for CA vide his letter No. -II-90/2025-10389/Rev dt 10.07.2025. The non-forest Govt. land has already been transferred and mutated in favour of State Forest Department. The collector letter and RoR are enclosed as Annexure-4.
d.	The matter regarding imposition of penal CA is under consideration for the formulation of a uniform policy guideline in the matter. Keeping this in view, the imposition of penal CA (if any) shall be as per the said guideline, if issued;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-5.
e.	The cost of survey, demarcation and erection of permanent pillars, if required on the identified CA land, shall be deposited in advance with the Forest Department by the user agency. The CA will be maintained for 10 years. The scheme may include Afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years;	In compliance to this condition, the user agency has deposited the amount of Rs.50,67,000.00 vide UTR No-ICICR42025051300556304 dt.13.05.2025 towards cost of Compensatory Afforestation to be raised over 24 ha as per one time approved cost norm identified in village Kerajodi under Kankadahada Tahasil of Dhenkanal District under Dhenkanal Forest Division and maintained thereafter as per approved plan/scheme for 10 years.

f.	The compensatory Afforestation over non-forest land, equal in extent to the forest land being diverted as identified in Plot No.315, & 318, Khata No.155 of Village Kerajodi under Kankudahad Tahasil of Dhenkanal District, and additional CA over an area of 24 ha of degraded forest land identified in Dolia RF of Mahabirod Range of Dhenkanal Forest Division shall be raised at the project cost and Afforestation works shall start within two years from the date of final approval and maintained thereafter in accordance with the approved CA scheme.	In compliance to this condition, the scheme for both Compensatory Afforestation & Addl. Compensatory Afforestation have been approved of Rs.50,67,000.00 & Rs.1,96,93,300.00 respectively. The user agency has deposited the amount of Rs.2,47,60,300.00 vide UTR No-ICICR42025051300556304 dt.13.05.2025 for raising of both CA & Addl. CA. The copy of approved ACA scheme and the copy of deposit challan are enclosed as Annexure-6 .
g.	The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo sheet of 1:50,000 scale;	In compliance to this condition, the user agency has submitted the Survey of India Topo sheet No. F 45N 12 on 1:50000 scale showing the Land identified for the purpose of CA, which is enclosed as Annexure-7 .
3.	NPV	
a.	The User Agency shall transfer the funds towards the cost of Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC (Pt.) dated 29.12.2023 through online portal of CAMPA account of the State Concerned;	In compliance to this condition, the user agency has been deposited the Net Present Value (NPV) amounting of Rs.1,73,74,000 UTR No SBIN52015062516780059 dated 25.06.2015. Further, as per Notification dt.06.01.2022 of Govt. MoEF & CC, the user agency has also deposited the differential Net Present Value (NPV) amounting of Rs.92,08,220.00 vide UTR No-ICICR42025051300556304 dt.13.05.2025. The copy of the documents in support of proof of the above payments of NPV is enclosed as Annexure-8 .
b.	At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-9 .
c.	The penalty for violation shall be equal to NPV of forest land per hectare for each year of violation w.e.f. 31.12.2016 with maximum up to five (5) times the NPV plus 12 percent simple interest from the date of raising of such demand till the deposit is made.	In compliance to this condition, the user agency has deposited the penal NPV amounting of Rs.1,55,53,510.00 vide UTR No-ICICR42025051300556304 dt.13.05.2025. The copy of the documents in support of proof of the above payments of Penal NPV is enclosed as Annexure-10 .
4.	Compensatory levies to be realized from the User Agency under the project shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (https://parivesh.nic.in/).	In compliance to this condition, all the Compensatory levies have been received from the user agency under this project in CAMPA account through e-portal (https://parivesh.nic.in/). The user agency has also submitted an undertaking to deposit all payments through e-portal

		(https://parivesh.nic.in/) which is enclosed as Annexure-11.
5.	User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease. The plan for plantation and SMC activities will be prepared and submitted to MoEF & CC before grant of final approval;	In compliance to this condition, a Scheme for gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests of an area of 2.098 ha (having crown density less than 0.40) located within 100 meters from outer perimeter of the Mining Lease has been approved by the RCCF, Angul Circle, vide his memo no. 2251, dt.16.05.2025 of Rs. 16,02,039.00. The user agency has deposited the above amount vide UTR No. ICICN42025062857260859 Dt.28.06.2025. Copy of approved Plan/scheme and payment details are enclosed as Annexure-12.
6.	The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal along with GPS Ids and all other requisite details prior to Stage-II approval;	In compliance to this condition, the KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area along with GPS Ids and all other requisite details will be uploaded on the e-Green watch portal.
7.	Following activities, as per approved plan / schemes, shall be undertaken in the lease area by the User Agency under the supervision of the State Forest Department. Approved scheme/plan shall be submitted to the Ministry along with compliance of Stage-I approval:	
a.	Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three years with effect from the issue of Stage-II clearance in accordance with the approved Plan in consultation with the State Forest Department;	In compliance to this condition, the Scheme /Plan for Mitigative measures to minimize soil erosion and choking of stream has been approved by RCCF, Angul Circle with a financial outlay of Rs. 5,60,400.00 vide memo no. 2251 dt.16.05.2025. The user agency has submitted an undertaking to implement the scheme at the approved cost. The copy of approval order and Undertaking are enclosed as Annexure-13.
b.	Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;	In compliance to this condition, the Scheme /Plan for Planting of adequate drought hardy plant species and sowing of seeds has been approved by RCCF, Angul Circle with an financial outlay of Rs.36,04,720.00 vide memo no. 2251,dt.16.05.2025. The user agency has submitted an undertaking to implement the scheme at the approved cost. The copy of approval order and Undertaking are enclosed as Annexure-14.
c.	Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;	In compliance to this condition, the Scheme /Plan for Construction of check dams, retention/toe walls to arrest sliding down of the excavated material along the contour in accordance has been approved by RCCF, Angul Circle with an financial outlay of Rs.19,80,000.00 vide memo no. 2251 dt.16.05.2025. The user agency has submitted an undertaking to implement the scheme at the approved cost. The copy of approval order and Undertaking are enclosed as Annexure-15.
d.	Stabilize the overburden dumps by	In compliance to this condition, a Scheme /Plan for

	appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28°	Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28° has been approved by RCCF, Angul Circle with an financial outlay of Rs.51,74,545.00 vide memo no. 2251 dt.16.05.2025. The user agency has submitted an undertaking to implement the scheme at the approved cost. The copy of approval order and Undertaking are enclosed as Annexure-16.
8	Safety Zone Management: Following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:	
a.	User agency shall ensure demarcation of safety zone (7.5-meter strip all along the inner boundary of the mining lease area), and its fencing, RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-17.
b.	Boundary of the safety zone of the mining lease, adjacent habitation/roads, should be properly fenced by the user agency:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-18.
c.	Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-19.
d.	The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-20.
9.	The State Govt. shall ensure that the user agency shall undertake to take up works for construction and cleaning of garland drains, stabilizing retaining walls, proper terracing of OB dumps and checking gully formation resulting in soil erosion:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-21.
10.	The State Govt. shall ensure that the user agency shall maintain that plants which are having lowest translocation factor can be preferred under Afforestation on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-22.
11.	Adequate care shall be taken to check any rolling of overburden/dumps beyond diverted area and also to check soil erosion caused due to mining activities:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-23.
12.	The State Govt. shall ensure that the user agency shall made all possible efforts to prevention of fall of wild animals into mining pit by fencing the open pit area:	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-24.
13.	No damage shall be caused to the top-soil	In compliance to this condition, the user agency has

	and the user agency will follow the top soil management plan;	submitted an undertaking which is enclosed as Annexure-25 .
14.	The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed approved plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before final approval;	In compliance to this condition, a Scheme for desilting of village tanks and other water bodies located within five km from the mine lease boundary has been approved by RCCF, Angul Circle vide memo no. 2251 dt.16.05.2025 with an amount of Rs. 77,43,085.00. The user agency has submitted an undertaking to implementation of the scheme as per approved cost. The copy of approved Plan/scheme and Undertaking are enclosed as Annexure-26 .
15.	The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-27 .
16.	Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission to concerned DFO;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-28 .
17.	The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-29 .
18.	User agency in consultation with the State Forest Department shall create and maintain alternate habitat/home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project;	In compliance to this condition, a Scheme for create and maintain alternate habitat/home for the avifauna, whose nesting trees are to be cleared in this project has been approved by RCCF, Angul Circle vide memo no. 2251 dt.16.05.2025 with an amount of Rs. 19,83,300.00. The user agency has submitted an undertaking to implementation of the scheme as per approved cost. The copy of approved Plan/scheme and Undertaking are enclosed as Annexure-30 .
19.	A site-specific Wildlife Management Plan shall be prepared by the State Government in consultation with the PCCF (Wildlife) for the protection and conservation of wildlife of the area. A copy of approved plan shall be submitted to the Ministry along with the compliance of the conditions on in principle approval. Entire cost of implementation of the provisions of the Wildlife Management Plan shall be deposited into the account of CAMPA of the State;	In compliance to this condition, a Site Specific Conservation Plan has been approved by the PCCF (Wildlife) & CWLW, Odisha vide his Memo No Letter 10180/CWLW-FD-0032-2022 dated 11.11.2022 of Rs 1,50,52,000. The user agency has deposited of Rs 1,50,52,000 vide UTR No 42025051300556304/UBIN0996335 Dated 13.05.2025. The copy of SSWLCP and payment details are enclosed as Annexure 31 .
20.	State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if	In compliance to this condition, The FRA Certificate has been issued (In Form-II) by the Collector, Jajpur District vide Letter No 1530 dated 28.07.2025 (Certificate No 1533). The FRA

	any, on the forest land proposed to be diverted as per the provisions of the Rule 11 (7) of the Van (Sanrakshan Evam Samvardhan) Rules, 2023;	Certificate along with the letter and proceedings of Gramsabha, SDLC & DLC are enclosed as Annexure-32
21.	The User Agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the concern Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed;	In compliance to this condition The User Agency has submitted an undertaking that mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year. An undertaking to this effect along with approved mining plan are enclosed as Annexure - 33.
22.	The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-34.
23.	Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended time to time and the Rules framed there-under;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-35.
24	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;	In compliance to this condition, the user agency has submitted the EC which is enclosed as Annexure-36.
25.	No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-37.
26.	The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates;	In compliance to this condition, the photographs of pillars of mining lease and safety zone is demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates are enclosed as Annexure-38.

27.	The layout plan of the proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-39.
28.	The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-40.
29.	No damage to the flora and fauna of the adjoining area shall be caused	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-41.
30.	The User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government concerned Regional Office and to this Ministry by the end of March every year regularly;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-42.
31.	Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife;	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-43.
32.	The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (S) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-44.
33.	Violation of any of these conditions will amount to violation of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and action would be taken as prescribed in para 1.16 of Chapter 1 of the Consolidated Guidelines and Clarifications on Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 as issued by this Ministry's letter dated 29.12.2023.	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-45.
34.	The compliance report shall be uploaded on e-portal (https://parivesh.nic.in/).	In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-46.


 Divisional Forest Officer,
 Cuttack Forest Division.



UNDERTAKING

(Ref: Stipulated Condition No 2.1 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that Legal status of the diverted forest land shall remain unchanged.

M. Mathur

M. Sharma, M.
Agent of Mines
M/s. Ferro-Alloys Corporation Limited
Bhilai, Dist. Jajpur
Ra. 751012

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

COUNTERSIGNED

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Divisional Forest Officer
Cuttack Forest Division

PROFORMA FOR VERIFICATION OF DEPOSITS IN COMPENSATORY AFFORESTATION FUND

1. Name of Office	Ministry of Environment, Forest and Climate Change, Govt of India, New Delhi
2. State/District/Forest Division to which the proposal relates	Odisha/Cuttack/Cuttack Forest Division
3. Name of User Agency, nature of proposal	M/s Ferro Alloys Corporation Ltd. (FACOR), Forest Clearance
4. Nature and category of proposal	Forest Clearance
5. Proposal number	FP/OR/MIN/16453/2015
6. Extent of forest area involved	23.80ha
7. Whether original or extension	Original
8. If extension of lease, please clarify if proposal involves additional forest area and if so, specify	
9. Date of 1st Stage clearance	21.03.2025
10. Extent of CAMPA charges, head wise viz.:	
(a) Compensatory Afforestation	Rs 50,67,000.00
(b) Additional Compensatory Afforestation	Rs 1,96,93,300.00
(c) Penal Compensatory Afforestation	Nil
(d) Catchment Area Treatment	Nil
(e) Wildlife Management Plan	
i) Site Specific Wildlife Conservation Plan	Rs 1,50,52,000.00
ii) Regional Wildlife Management Plan	Nil
(f) Additional charges for diversion of area falling under notified/protected area	Nil
(g) Net Present Value	Rs 2,65,82,220.00
(h) Any other charges levies (Please specify.)	
i) Penal NPV	Rs 1,55,53,510.00
ii) Safety Zone	Nil
iii) 1.5 times Safety Zone	Nil
iv) 100 Mtr perimeter of outer boundary of ML Area	Rs. 16,02,039.00
Total	Rs 8,35,30,069.00

11. Whether payment made through challan or otherwise	Payments made through Challan and Online Mode
12.Details of Deposits	

Sl. No	Type of Deposit(NPV/C A/TWMP/ Others(specify))	Whether by RTGS/DD/NEFT(Specify)	UTR/DD No	Amount Deposited	Date of deposit	Name of the bank from which amount transferred to account of CAF	Bank account of CAF managed by CAMPA in which fund deposited
1	Compensatory Afforestation	Online Payment	UTR No- ICICR42025051300556304	Rs 50,67,000.00	13.05.2025	ICICI BANK,MUMB AI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158
2	Additional Compensatory Afforestation	Online Payment	UTR No- ICICR42025051300556304	Rs1,96,93,300.00	13.05.2025	ICICI BANK,MUMB AI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158
3	NPV	Online Payment	UTR No SBIN52015062516780059	Rs.1,73,74,000.00	25.06.2015	CORPORATIO N BANK,NEW DELHI	CAMPA,STATE BANK OF INDIA,A/C NO- SB01025222
4	Differential NPV	Online Payment	UTR No- ICICR42025051300556304	Rs 92,08,220.00	13.05.2025	ICICI BANK,MUMB AI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158
5	Penal NPV	Online Payment	UTR No- ICICR42025051300556304	Rs.1,55,53,510.00	13.05.2025	ICICI BANK,MUMB AI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158

							A/C No- 150825816453158
6	Site Specific Wildlife Conservation Plan	Online Payment	UTR No- ICICR42025051 300556304	Rs1,50,52,000.00	13.05.2025	ICICI BANK,MUMB AI	ORRISA CAMPA. UNION BANK OF INDIA, A/C No- 150825816453158
7	Payment towards gap planting and SMC activities rejuvenate the degraded open forests located in the area within 100 meters from outer perimeter of the mining lease	Online Payment	UTR No. ICICN42025062 857260859	Rs. 16,02,039.00	28.06.2025	ICICI BANK,MUMB AI	ORRISA CAMPA. UNION BANK OF INDIA, A/C No- 150825816453226

Date:
Place:


25.07.2025
Divisional Forest Officer,
Cuttack Forest Division.

State Forest Conservation Officer (G-42),
Cuttack

Annexure-2

Through E-mail



STATE FOREST HEADQUARTERS, ODISHA
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS & HoFF
PLOT NO. GD-2/12, ARANYA BHAWAN, CHANDRASEKHARPUR
BHUBANESWAR-751023

E-mail:- nodal.pccfodisha@gmail.com

Memo No. **7699** MF(MG)-368/2016
Dated, Bhubaneswar the **04th** April 2025

To

The Divisional Forest Officer
Cuttack Forest Division

Sub: Proposal for seeking prior approval of the Central Government under Section 2 (1) (ii) of the Van (Sankashan Evam Samvardhan) Adhiniyam, 1980 for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha - Stage-I approval regarding.

Ref:- (i) F No.5-ORC288/2016-BHU dated 21.03.2025 of the Assistant Inspector General of Forests, FC Division, Gol. MoF & CC, New Delhi.
(ii) Memo No.7729 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FI&CC Deptt, Bhubaneswar.

Enclosed, please find herewith a copy of Stage-I/ In-principle approval accorded vide F No. 5-ORC288/2016-BHU dated 21.03.2025 of the Assistant Inspector General of Forests, FC Division, Gol. MoF & CC, New Delhi alongwith copy of Memo No. 7729 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FI&CC Deptt., Bhubaneswar which is self-explanatory, for information and necessary action.

The financial outlay for Compensatory Afforestation Scheme over an area of **24.00 ha** of **non-forest land** identified in village Kerajodi under Kankadahad Tahasil of **Dhenkanal Forest Division** in respect of the above mentioned project has been approved by Addl. PCCF (FD & Nodal Officer, FC Act) as per matrix 2025-26 of approved One-time cost norm for **Rs.50,67,000/-** (Rupees fifty lakhs and sixty seven thousand) only is enclosed.

Further, the financial outlay for Additional Compensatory Afforestation Scheme over an area of **24.0 ha** of **Degraded Forest land** identified in **Dolia R.F.** of Mahabirod Range under **Dhenkanal Forest Division** to accommodate the plantation of balance seedlings against forest land in respect of the above mentioned project has been approved by Addl. PCCF (FD & Nodal Officer, FC Act) as per matrix 2025-26 of approved One-time cost norm for **Rs.1,96,93,300/-** (Rupees one crore ninety six lakhs ninety three thousand and three hundred) only which is enclosed.

M. S. Thakur
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

In this context, I am directed to request you to raise demand on the user agency for payment of compensatory levies through web portal of MoEF & CC and submit the deposit particulars of the amount paid in prescribed CAMPA format along with the Stage-I compliance through RCCF, Angul Circle.

Encl-As above

[Signature]
Chief Conservator of Forests (Nodal)

Memo No. 7700 Dt. 04.04.2025

Copy along with its enclosures forwarded to the Principal Chief Conservator of Forests, (WL) & CWLW, Odisha for favour of kind information & necessary action with reference to Memo No. 7728 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FE&CC Deptt.

[Signature]
Chief Conservator of Forests (Nodal)

Memo No. 7701 Dt. 04.04.2025

Copy along with its enclosures forwarded to the RCCF, Angul Circle / DFO, Dhenkanal Forest Division for information & necessary action with reference to Memo No. 7729 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FE&CC Deptt.

[Signature]
Chief Conservator of Forests (Nodal)

Memo No. 7702 Dt. 04.04.2025

Copy along with its enclosures forwarded to the Steel & Mines Department / Director, Environment-cum-Special Secretary to Govt., FE&CC Department / Member Secretary, SPCB, Odisha/ Collector, Jajpur for information & necessary action with reference to Memo No. 7730 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FE&CC Deptt.

[Signature]
Chief Conservator of Forests (Nodal)

Memo No. 7703 Dt. 04.04.2025

Copy along with its enclosures forwarded to the Director (Mines), M/s FACOR Ltd, Laxmi Bhawan, Kuuns, Bhadrak-756100 for information and necessary action with reference to with reference to Memo No. 7731 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FE&CC Deptt.

[Signature]
Chief Conservator of Forests (Nodal)

[Signature]
Mukhommari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalapani, Dist- Jajpur
Pin- 755047

NORTH DIVISION FOREST OFFICE

ବିଭାଗୀୟ ଅଧିକାରୀଙ୍କ ଦଫ୍ତର, ଗହାକୂଳା, ନୁଆପାଡ଼ା, କଟକ ଜିଲ୍ଲା, ଓଡ଼ିଶା

OFFICE OF THE DIVISIONAL FOREST OFFICER: CUTTACK FOREST DIVISION

AT: - GHATAKULA, NUAPADA, CUTTACK 753010

Tel:- 0671-2957611, Control Room:- 0671-2340343, Toll Free No.18003457473

Email:- dfo.cuttack@odisha.gov.in

No. 3019/5F (Forest Diversion) 15/2025

Dated, Cuttack the 08 th April, 2025.

To

The Authorized Signatory,
M/S FACOR Ltd.,
Laxmi Bhawan, Bhadrak-756100.

Sub: -

Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **Demand of Compensatory Afforestation and Addl. Compensatory Afforestation reg.**

Ref: -

Memo No.7699 dt.04.04.2025 of Chief Conservator of Forests (Nodal) O/o the PCCF & HoF, Odisha, Bhubaneswar to your address.

Sir,

With reference to memo cited above on the captioned subject, it is to inform you that, the Compensatory Afforestation scheme over an area of **24.00** ha of non-Forest Govt. land identified in village Kerajodi under Kankadahada Tahasil of Dhenkanal District in Dhenkanal Forest Division has been approved by the Addl. Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act) with the financial out lay of **Rs.50,67,000.00** (Rupees Fifty Lakh Sixty-Seven Thousand) only for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd., as per matrix 2025-26 of approved one-time cost norm.

Further, the Additional Compensatory Afforestation scheme over an area of 24.0 ha of Degraded Forest land identified in Dolia RI under Mahabirad Range in Dhenkanal Forest Division to accommodate the plantation of balance seedling against forest land to be diverted in respect of the above mentioned project has been approved by the Addl. Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act) with the financial out lay of **Rs.1,96,93,300.00** (Rupees One Core Ninety-Six Lakh Ninety-Three Thousand Three Hundred) only as per matrix 2025-26 of approved one-time cost norm.

(P.T.O.)

M. Muthumani
Muthumani M
Agent of Mines
M/s Ferro Alloys Corporation Limited
Jajpur, Dist- Jajpur
Pin-755047

Yours faithfully,

Memo No. 3020 dt. 08-04-2025

Memo No. 3021 di. 08 04. 2025

Memo No. 3022 dt. 08.04.2025

Conservator of Forests,
Patna Forest Division.

M. Mathuraj
M. Mathuraj M.
Agent of Mines
Mrs. Ferro Alloy Corporation Limited
Kallapur Dist. Jaipur
Ph-15047

Date: 18.06.2025

FACOR / Legal / Mines / 2025 / 37

To

The Divisional Forest Officer
Cuttack Forest Division
At: Ghatikuli, Nimgada
Dist.-Cuttack, Odisha-753010.

Sub: Payment of differential amount of NPV, Penal NPV, Implementation cost to CA & Additional CA and Cost of Site-Specific Wildlife Conservation Plan ("SSWCP") in light with 'In-Principle' approval dated 21.03.2025 under section 2 for diversion for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) of Kalarangiatta Chromite Mines of Ferro Alloys Corporation Limited ("FACOR") (Online proposal no. FP/OR/MIN/16453/2015)

Reference

1. Online Challan dated 12.05.2025 issued by Nodal Officer in Parivesh Portal
2. Your demand letter dated 3571/5F dated 02.05.2025 (SSWCP)
3. Your demand letter dated 3019/5F dated 08.04.2025 (CA & Additional CA)
4. Your demand letter dated 3687/5F dated 06.05.2025 (Penal NPV)
5. Your demand letter dated 2996/5F dated 08.04.2025 (Differential NPV)
6. Our letter dated 24.03.2025 seeking issuance of demand in light with 'In-Principle' approval
7. Stage-I (In-Principle) nos. 5-ORC/288/2016-BHU dated 21.03.2025
8. Online Forest Diversion Proposal no. FP/OR/MIN/16453/2015 of Kalarangiatta Chromite Mines

Respected Sir,

With utmost respect and humbleness, we wish to bring to your kind notice that we have received various demand letters, referenced as 02 to 05, from your esteemed office concerning the payment of the differential amount for the Net Present Value (NPV), Penal NPV, Implementation Cost for Compensatory Afforestation (CA), Additional Compensatory Afforestation, and the Cost of Site-Specific Wildlife Conservation Plan (SSWCP) with respect to our Kalarangiatta Chromite Mines of M/s. FACOR Ltd.

As per the provisions related to Stage-I (In-Principle) approval (Reference No. 7, dated 21.03.2025) and provision for deposit in Orissa CAMPAA account through e-portal, we have duly collated all the aforesaid demands and uploaded the necessary details in the Parivesh Portal on 08.05.2025 for approval and generation challan by the Nodal Officer (Forest Conservation Act), Odisha.

Subsequently, we have received online challan on 12.05.2025 for payment of total amount INR 6,45,54,000/- (Six Crore Forty Five Lacs Fifty Four Thousand thirty only) against the above demands. Upon receipt of online challan, we immediately deposited the aforesaid demanded amount on 13.05.2025 against the CAMPAA account mentioned in the above challan. It is pertinent to mention that we paid amount 1,55,33,510/- against the demand for Penal NPV under protest and without accepting the liability as FACOR has not violated any provision of Forest Conservation Act while operating the mines under the High Court interim protection order. The details of amount paid are as under:

Received
Rd
20/6/2025

M. Muthumari
Muthumari M
Agent of Mines
Mis. Ferro Alloys Corporation Limited
Kallapam, Dist- Jaipur
Pin- 305047

Funds Details	Demand	Demanded Amount INR	Amount Paid by FACOR (INR)	Payment reference
Compensatory Afforestation		50,67,000	50,67,000 :-	ICICI Bank RTGS No.
Additional Compensatory Afforestation		1,96,93,300 :-	1,96,93,300 :-	ICICI 420250 51300556304
Differential NPV		92,08,220 :-	92,08,220 :-	Dated 13.05.2023
Site Specific Wild Conservation Plan		1,50,52,000 :-	1,50,52,000 :-	
Pond NPV		1,55,33,510 :-	1,55,33,510 :- (Under Protest)	
Total		6,45,54,030 :-	6,45,54,030 :-	

Copy of Payment Challan and payment status downloaded from Paribesh Portal are enclosed herewith for your kind reference.

Therefore, we humbly request your good self for processing our Forest Diversion Proposal of Kalupamata Chromite Mines at the earliest.

We are duty-bound to comply with all the applicable laws and regulations issued by the competent authorities in our endeavour to sustainable utilization of natural resources for nation's growth.

Your kind cooperation in this regard shall be highly appreciated and obliged.

Yours sincerely,

For & on behalf of Ferro Alloys Corporation Limited

Muthumari M
Authorized Signatory & Agent / Head of Mine
Encl : As above

M. Muthumari
Muthumari M
Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kalupam, Dist- Jaipur
Pin- 305047

AGENCY COPY


यूनियन बैंक ऑफ इंडिया Union Bank of India

NEFT / RTGS CHALLAN for CAMPA Funds
Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5815453158
MoEF/SG File No.	S-ORG288/2016-BHU
Location.	ORRISA
Address.	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansh, Poudist-Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jalitta Towers, Mission Road, Bengaluru-560027

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY


यूनियन बैंक ऑफ इंडिया Union Bank of India

NEFT / RTGS CHALLAN for CAMPA Funds
Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5815453158
MoEF/SG File No.	S-ORG288/2016-BHU
Location.	ORRISA
Address:	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansh, Poudist-Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jalitta Towers, Mission Road, Bengaluru-560027

• This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: fcsblr@unionbankofindia.bank, epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

Transaction/UTR No-RTGS /CICR 42025051300556304/ UBIN0996335 / Odisha CAMPA
Date:13.05.2025

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jajpur
Pin- 756047

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jajpur
Pin- 756047



PARIVESH
परिवेश

Ministry of Environment, Forest and Climate Change
Government of India



Pro Active and Responsive Solicited by Ministry of Environment, Forest and Climate Change, Government of India

My Account - My Proposals Environment Clearance - Only CRZ Clearance - My Proposals Forest Clearance - My Proposals Wildlife Clearance - Help

10:08:05 AM



Sl. No.	Proposal Detail	Application No.	Application No. (Old)	Date of CRZ Clearance	Amount to be Paid/Assessd Field (in Rs.)	Payment Status	Payment Detail	Demand Letter
1	Maharaja Pratap Singh Miner of M/s Ferro Alloy Corporation Ltd	MUMS64532015158	6016433158	21 Mar 2025	CRZ: 2000000/- FCR: 0/- Safety Zone: 0/- PPV: 4000000/- Payment towards Site Specific Work: 1500000/- Life conservation: 0/- Other Charges: 0/- Total: 8450000/-	Field	Fund Demanded Verified by: 08 May 2025 Nodal Officer On: Union Bank of India Bank Name: MUMS/MTGS (Chennai) Mode of Payment: 112 May 2025 Challan Generated On: 112 May 2025 Transaction Date: 112 May 2025	Forwarded Letter: 08 May 2025 Received Challan: 112 May 2025

M. V. Muthuraman
Muthuraman M
Agent of Mines
Agent of Mines Corporation
M/s Ferro Alloy Dist: Jaipur
Karnal - 201007

Schedule I Form No.39-A

ଖଚିୟାନ

ମୌଜା : କେରପୋଡ଼ି

ଚଉସିଲ : କେରପୋଡ଼ି

ଥାନା : ବାଲିଆନଗର

ଚଉସିଲ ନମ୍ବର : 135

ଥାନା ନମ୍ବର : 4

ବିଭାଗ : ଡେପୁଟି ମ୍ୟାଗିଷ୍ଟ୍ରେଟ୍

କ୍ଷତିଯୋଗ୍ୟ ନାମ ଓ ଖେଡ଼ାଟ ବା ଖଚିୟାନର ଦ୍ରୁମିକ ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ଖେଡ଼ାଟ ନମ୍ବର ।
୧) ଖଚିୟାନର ଦ୍ରୁମିକ ନଂ	158/1
୨) ପ୍ରକାର ନାମ, ପିତାଙ୍କ ନାମ, ଶାସ୍ତି ଓ ନାସ୍ତାସନ	କୋଇଲ ପରିବେଶ ଓ କେରପୋଡ଼ି ପରିବେଶର ବିଭାଗ ଓଡ଼ିଶା ସରକାର

କ୍ରମ	ସରକାରୀ ମାପାଳ					୪) ଦ୍ରୁମବର୍ଦ୍ଧନଶୀଳ ଖଚିୟାନ ବିବରଣୀ
	କେରପୋଡ଼ି	ଖଚିୟାନ	ସରକାର	ବିଭାଗ କେରପୋଡ଼ି ଓ ଖଚିୟାନର ସରକାରୀ ବିଶିଷ୍ଟ ଅଂଶ	ନମ୍ବର	
୪) ଖଚିୟାନ		0.00	0.00	0.00	0.00	

୩) ବିଶେଷ ଅନୁସନ୍ଧାନ ପରି ବିଶିଷ୍ଟ ଅଂଶ	Alienation କେସ ନଂ 01/2025 (LRMS କେସ ନଂ-1770/2025) ତା-18.07.2025 ରିଜିଷ୍ଟ୍ରେସନ୍ ମୁଦ୍ରାକର ପ୍ରକାଶ ନଂ-318 ଉଚ୍ଚତମ ଏବଂ 32.25 ଓ ପ୍ରକାଶ ନଂ-315 ଉଚ୍ଚତମ ଏବଂ 27.25 ଦୁ ପ୍ରକାଶନ ଖଚିୟାନ ନଂ 155 ରୁ

BLANK SPACE FOR STAMPING

ଅତିରିକ୍ତ ପ୍ରକାଶନ ଡାକ୍ତର :

ଖଚିୟାନ ଖାତା ନଂ


 Aidi Tahazudeh
 Kankadahan

ଉପରୋକ୍ତ ପ୍ରକାଶନ ମୁଦ୍ରା

25/07/2025

ଅନୁମୋଦିତ ପୂର୍ବିକ ଫର୍ମ : 158/1		ପଞ୍ଜିକରଣ : ପ୍ରକାଶନାମା			ପିନ୍ : ପ୍ରକାଶନାମା
ପ୍ରଥମ ପୂର୍ବିକ ଫର୍ମ ନମ୍ବର	ଦ୍ୱିତୀୟ ପୂର୍ବିକ ଫର୍ମ ନମ୍ବର	ପ୍ରକାଶନାମା ପ୍ରକାର/ବିବରଣୀ ଓ ଶ୍ରେଣୀ	ମୂଲ୍ୟ		
			ମୂଲ୍ୟ	ଶୁଳ୍କ	ମୋଟ
୨	୧	୧	୧୦	୧୧	୧୨
3150400	ପୂର୍ବିକ-୩୧	ପୂର୍ବିକ	27.250	11.0277	ଏହି ବିଷୟ ଉପରେ ପ୍ରକାଶନାମା ପ୍ରକାଶନାମା ଏବଂ Alienation ଟକସ ଫର୍ମ 01/2025 ରୁ-09.07.2025 ଆବେଦନ କରାଯାଇଛି
315	ପୂର୍ବିକ-୩୧	ପୂର୍ବିକ	32.250	13.0511	ପୂର୍ବିକ
2 ଓଡ଼ିଆ			39.500	24.0788	
 Kankadahan Taluk		 Record Officer Kankadahan Taluk			 Addl Tahasildar Kankadahan

କାନ୍ଥାହା ପୂର୍ବିକ ବିକାଶ କେନ୍ଦ୍ର, ଚଢ଼ିଆ

25/07/2025



(4)

OFFICE OF THE COLLECTOR & DISTRICT MAGISTRATE, DHENKANAL
(Revenue Section)

No. II-90/2025- 10389 /Rev. Dt. 10-07-2025 e-mail id- dkl.revenue@nic.in

In exercise of powers conferred upon me u/s 3 of the OGLS Act, 1962 read with Govt. in Revenue & Disaster Management Notification No. 42899/R&DM, Dated 07.11.2009, No. 22958/R&DM, Dated 04.08.2014 & No. 31312/R&DM, Dated 24.10.2014, sanction is hereby accorded for alienation of Government land measuring an area of Ac. **59.50** in village- **Kerajodi** under **Kankadahad Tahasil**, as per the land schedule given below, in favour of Forest Environment & Climate Change Department, Govt of Odisha, for the purpose of compensatory afforestation in lieu of forest land to be diverted for Kalarangiatta Chromite Mines of M/s-Ferro Alloys Corporation Limited (FACOR) under Sukinda Tahasil of Jajpur District, subject to payment of Premium amounting Rs. 1,48,75,000/-, Incidental Charges amounting Rs. 14,87,500/- and valuation of 2275 nos of trees amounting to Rs. 6,75,479/- as evaluated by the DFO, Dhenkanal, vide his Office L. No. 2643/4F/Misc/152/2025 Dated 09.04.2025, under following terms and conditions:

Terms and conditions

1. The land shall be utilized exclusively for the purpose for which it is alienated and shall not be transferred or otherwise disposed off.
2. The Forest, Environment & Climate Change Department, Govt of Odisha shall take such precautionary measures as necessary to keep the land free from encroachment. If the land or any portion of it is not utilized within 3 (three) years for the purpose for which it is alienated, shall be reverted to Govt. in Revenue & Disaster Management Department free from all encumbrances and without payment of compensation for the land or for any improvement that might have been carried out on the land.
3. The Requisitioning Authority shall take all measures as may be necessary to keep the land free from encumbrances/ liabilities/ encroachments etc. and maintain the boundary mark of the land.
4. The Requisitioning Authority shall faithfully abide by the terms and conditions of the alienation as may be decided by Government in addition to the conditions mentioned in the sanction order.
5. The Requisitioning Authority / User Agency i.e M/s FACOR Ltd. shall deposit the calculated Govt. dues with the Tahasildar, Kankadahad. Besides, the Requisitioning Authority / User Agency i.e M/s-Ferro Alloys Corporation Limited (FACOR), shall have to pay the amount over and above the premium etc. already assessed, if not calculated & demanded, for any reason in future.


Mithunant M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangi, Dist-Jajpur
Pin- 756067

Contd...p/2

6. The alienation shall be terminated in case of violation of any of the terms and conditions.
7. The Sanctioning Authority reserves the right to cancel the sanction order at any time without assigning any reason thereof.

Land Schedule

Tahasil	village	Khata No.	Plot No.	Area(in Ac)	Kissam
Kankadahad	Kerajodi	155 (AAA)	315	27.25	Parbat/1
			318	32.25	Parbat/1
			2 plots	59.50	

Asu
COLLECTOR, DHENKANAL.

Memo No. 10390/Rev. Dated 10-07-2025

Copy forwarded to the Sub-Collector, Kamakhynagar, for information and necessary action with reference to his letter No. 2406/Dated 11.06.2025

Asu
COLLECTOR, DHENKANAL.

Memo No. 10391/Rev. Dated 10-07-2025

Copy along with alienation case record No. 01/2025, forwarded to the Tahasildar, Kankadahad, for information and necessary action. She is also requested to take further action in accordance with the provisions of OGLS Act and Rules & Govt. instruction communicated from time to time.

Asu
COLLECTOR, DHENKANAL.

Memo No. 10392/Rev. Dated 10-07-2025

Copy forwarded to the Divisional Forest Officer, Dhenkanal Forest Division, Dhenkanal, for information and necessary action.

Asu
COLLECTOR, DHENKANAL.

Memo No. 10393/Rev. Dated 10-07-2025

Copy forwarded to the Deputy Secretary to Govt. Revenue & Disaster Management Department, Odisha, Bhubaneswar/ Secretary, Board of Revenue, Odisha, Cuttack/ Secretary to RDC (ND), Odisha, Sambalpur for favour of information and necessary action.

As
COLLECTOR, DHENKANAL.

M. M. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliopent Dist- Jajpur
Pin- 755067



OFFICE OF THE COLLECTOR & DISTRICT MAGISTRATE, DHENKANAL

(Revenue Section)

No. II-90/2025- 10389 /Rev, Dt. 10-07-2025 e-mail id- dkl.revenue@nic.in

In exercise of powers conferred upon me u/s 3 of the OGLS Act, 1962 read with Govt. in Revenue & Disaster Management Notification No. 42899/R&DM, Dated 07.11.2009, No. 22958/R&DM, Dated 04.08.2014 & No. 31312/R&DM, Dated 24.10.2014, sanction is hereby accorded for alienation of Government land measuring an area of Ac. 59.50 in village- **Kerajodi** under **Kankadahad Tahasil**, as per the land schedule given below, in favour of Forest Environment & Climate Change Department, Govt of Odisha, for the purpose of compensatory afforestation in lieu of forest land to be diverted for Kalarangiatta Chromite Mines of M/s-Ferro Alloys Corporation Limited (FACOR) under Sukinda Tahasil of Jajpur District, subject to payment of Premium amounting Rs. 1,48,75,000/-, Incidental Charges amounting Rs. 14,87,500/- and valuation of 2275 nos of trees amounting to Rs. 6,75,479/- as evaluated by the DFO, Dhenkanal, vide his Office L. No. 2643/4F/Misc/152/2025 Dated 09.04.2025, under following terms and conditions:

Terms and conditions

1. The land shall be utilized exclusively for the purpose for which it is alienated and shall not be transferred or otherwise disposed off.
2. The Forest, Environment & Climate Change Department, Govt of Odisha shall take such precautionary measures as necessary to keep the land free from encroachment. If the land or any portion of it is not utilized within 3 (three) years for the purpose for which it is alienated, shall be reverted to Govt. in Revenue & Disaster Management Department free from all encumbrances and without payment of compensation for the land or for any improvement that might have been carried out on the land.
3. The Requisitioning Authority shall take all measures as may be necessary to keep the land free from encumbrances/ liabilities/ encroachments etc. and maintain the boundary mark of the land.
4. The Requisitioning Authority shall faithfully abide by the terms and conditions of the alienation as may be decided by Government in addition to the conditions mentioned in the sanction order.
5. The Requisitioning Authority / User Agency i.e M/s FACOR Ltd. shall deposit the calculated Govt. dues with the Tahasildar, Kankadahad. Besides, the Requisitioning Authority / User Agency i.e M/s-Ferro Alloys Corporation Limited (FACOR), shall have to pay the amount over and above the premium etc. already assessed, if not calculated & demanded, for any reason in future.


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalkapali, Dist- Jajpur
Pin- 755047

Contd...p/2

6. The alienation shall be terminated in case of violation of any of the terms and conditions.
7. The Sanctioning Authority reserves the right to cancel the sanction order at any time without assigning any reason thereof.

Land Schedule

Tahasil	village	Khata No.	Plot No.	Area(in Ac)	Kissam
Kankadahad	Kerajodi	155 (AAA)	315	27.25	Parbat/1
			318	32.25	Parbat/1
			2 plots	59.50	

ashu
COLLECTOR, DHENKANAL.

Memo No. 10390/Rev. Dated 10-07-2025

Copy forwarded to the Sub-Collector, Kamakhynagar, for information and necessary action with reference to his letter No. 2406/Dated 11.06.2025

ashu
COLLECTOR, DHENKANAL.

Memo No. 10391/Rev. Dated 10-07-2025

Copy along with alienation case record No. 01/2025, forwarded to the Tahasildar, Kankadahad, for information and necessary action. She is also requested to take further action in accordance with the provisions of OGLS Act and Rules & Govt. instruction communicated from time to time.

ashu
COLLECTOR, DHENKANAL.

Memo No. 10392/Rev. Dated 10-07-2025

Copy forwarded to the Divisional Forest Officer, Dhenkanal Forest Division, Dhenkanal, for information and necessary action.

ashu
COLLECTOR, DHENKANAL.

Memo No. 10393/Rev. Dated 10-07-2025

Copy forwarded to the Deputy Secretary to Govt. Revenue & Disaster Management Department, Odisha, Bhubaneswar/ Secretary, Board of Revenue, Odisha, Cuttack/ Secretary to RDC (ND), Odisha, Sambalpur for favour of information and necessary action.

ashu
COLLECTOR, DHENKANAL.

H. Mallik
Mithunati M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalligant, Dist- Jajpur
Pin- 751007

Schedule I Form No.39-A

ଖଚିୟାନ

ମୌଜା : କେରାୟାଡ଼ି

ଚନ୍ଦ୍ରବିଲ : ନନ୍ଦନାହାଡ଼

ଥାନା : ବାମନାଞ୍ଜଳର

ଚନ୍ଦ୍ରବିଲ ନମ୍ବର : 135

ଥାନା ନମ୍ବର : 4

ଓଡ଼ିଶା : କେରାୟାଡ଼ି

କୌଣସି ନାମ ଓ ଖେପାଟ ବା ଖଚିୟାନର ପ୍ରମିତ ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ଖୋଜାଟ ନମ୍ବର ।
୧) ଖଚିୟାନର ପ୍ରମିତ ନଂ	158/1
୨) ପ୍ରକାର ନାମ, ପିକାର ନାମ, ଛାତି ଓ ବାସସ୍ଥାନ	ବ୍ରହ୍ମା ପରିବେଶ ଓ ନବବାସୁ ପରିବର୍ତ୍ତନ ବିଭାଗ ଓଡ଼ିଶା ସରକାର

ଆୟ	ସରକାରୀ ମାତ୍ରା				
	କଟକର	ଖଜଣା	ସେସ	ନିଷ୍କାର ସେସ ଓ ଅନ୍ୟାନ୍ୟ ସେସ ଯଦି କିଛି ଅଟେ	ମୋଟ
୪) ସେସ		0.00	0.00	0.00	0.00

୬) ବିଶେଷ ଅନୁବନ୍ଧ ଯଦି କିଛି ଅଟେ	Alienation ଡେସ ନଂ 01/2025 (LRMS ଡେସ ନଂ-1770/2025) ତା-18.07.2025 ରିଜିଷ୍ଟ୍ରି ମୁଦ୍ରା ସ୍ଥାନରେ ପୁର ନଂ-318 ରକମ ଏ 32.25 ଓ ପୁର ନଂ-315 ରକମ ଏ 27.25 କୁ ପୁରାତନ ଖାତା ନଂ 155 କୁ

BLANK SPACE FOR STAMPING

ଅନ୍ତିମ ପ୍ରକାଶନ ତାରିଖ :

ଖଜଣା ଆୟର ତାରିଖ :


 Ardi Taharudin
 Kontado-Kap

ଅନୁଷ୍ଠାନ ଦ୍ୱାରା ଦିଆଯାଇଥିବା ତାରିଖ

25/07/2023

ଅନୁବନ୍ଧନ ପ୍ରତିଷ୍ଠା : 158/1		ପଞ୍ଜିକା : ପଞ୍ଜିକା			ପିନ୍ : ପଞ୍ଜିକା
ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ରର ନାମ	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର		
			ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର
୨	F	C	୧୦	୧୧	୧୨
3150400	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	27.250	11.0277	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ରର ନାମ ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ରର ନାମ 01/2025 ଓ-09.07.2025 ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର
315	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର	32.250	13.0511	ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର
2 ଓ			39.500	24.0788	
Kankadahan Taluk		Record Officer Kankadahan Taluk			25/07/2025 Addl Tahasilkar Kankadahan

ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର, ପ୍ରାଥମିକ ଶିକ୍ଷା କେନ୍ଦ୍ର

25/07/2025



UNDERTAKING

(Ref: Stipulated Condition No 2.2.d of In- Principle Approval order dated
21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

*This is to undertake that the User Agency will abide by the decision of the
competent authority on Penal Compensatory afforestation matter.*


M. Mathur
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Balligani, Dist- Jajpur
Pin- 751007

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd


Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal
Divisional Forest Officer
Cuttack Forest Division

Annexure - 6

GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ତଥା ବନ୍ୟପ୍ରାଣୀ ବିଭାଗର ଉପାଧ୍ୟକ୍ଷଙ୍କ କାର୍ଯ୍ୟାଳୟ, କଟକ ବନଖଣ୍ଡ

OFFICE OF THE DIVISIONAL FOREST OFFICER: CUTTACK FOREST DIVISION

AT: - GHATAKULA, NUAPADA, CUTTACK 753010

Tel:- 0671-2957611, Control Room:- 0671-2340343, Toll Free No.18003457473

Email:- dfo.cuttack@odisha.gov.in

No. 3019/5F (Forest Diversion) 15-2025

Dated, Cuttack the 08 th April, 2025.

To

The Authorized Signatory,
M/S FACOR Ltd.,
Laxmi Bhawan, Bhadrak-756100.

Sub: -

Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **Demand of Compensatory Afforestation and Addl. Compensatory Afforestation reg.**

Ref: -

Memo No.7699 dt.04.04.2025 of Chief Conservator of Forests (Nodal), Oo the PCCF & HoFF, Odisha, Bhubaneswar to your address.

Sir,

With reference to memo cited above on the captioned subject, it is to inform you that, the Compensatory Afforestation scheme over an area of 24.00 ha of non-Forest Govt. land identified in village Kerajodi under Kankadahada Tahasil of Dhenkanal District in Dhenkanal Forest Division has been approved by the Addl. Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act) with the financial out lay of **Rs.50,67,000.00** (Rupees Fifty Lakh Sixty-Seven Thousand) only for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. as per matrix 2025-26 of approved one-time cost norm.

Further, the Additional Compensatory Afforestation scheme over an area of 24.0 ha of Degraded Forest land identified in Dofia RF under Mahabirud Range in Dhenkanal Forest Division to accommodate the plantation of balance seedling against forest land to be diverted in respect of the above mentioned project has been approved by the Addl. Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act) with the financial out lay of **Rs.1,96,93,300.00** (Rupees One Crore Ninety-Six Lakh Ninety-Three Thousand Three Hundred) only as per matrix 2025-26 of approved one-time cost norm.


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapara, Dist- Jajpur
Pin- 755047

(P.L.O.)

Hence, it is requested to make arrangement for payment of Rs.2,47,60,300.00 (Rupees Two Crore Forty-Seven Lakh Sixty Thousand Three Hundred) only through web portal of MoEF & CC and submit the receipt of the deposition as evidence with UTR No. & date to this office for reference and onward transmission.

Yours faithfully,

[Signature]
08/04/25

Conservator of Forests,
I/c Cuttack Forest Division.

Memo No. 3020 dt. 08.04.2025

Copy submitted to the Chief Conservator of Forests (Nodal), O/o the PCCF & HoFF, Odisha for favour of kind information and necessary action with reference to his office Memo No.7699 dt.04.04.2025.

[Signature]

Conservator of Forests,
I/c Cuttack Forest Division.

Memo No. 3021 dt. 08.04.2025

Copy submitted to the Regional Chief Conservator of Forests, Angul for favour of kind information and necessary action with reference to Memo No.7701 dt.04.04.2025 of CCF (Nodal), O/o the PCCF & HoFF, Bhubaneswar to his address.

[Signature]

Conservator of Forests,
I/c Cuttack Forest Division.

Memo No. 3022 dt. 08.04.2025

Copy submitted to the Divisional Forest Officer, Dhenkanal Forest Division for information and necessary action with reference to Memo No.7701 dt.04.04.2025 of CCF (Nodal), O/o the PCCF & HoFF, Bhubaneswar to his address.

[Signature]

Conservator of Forests,
I/c Cuttack Forest Division.

[Signature]
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Rajpur
Pin-756047

FACOR / Legal / Mines / 2025 / 37

Date: 18.06.2025

To

The Divisional Forest Officer
Cuttack Forest Division
At: Ghatakuda, Nunguda
Dist.-Cuttack, Odisha-753010,

Sub: Payment of differential amount of NPV, Penal NPV, Implementation cost to CA & Additional CA and Cost of Site-Specific Wildlife Conservation Plan ("SSWCP") in light with 'In-Principle' approval dated 21.03.2025 under section 2 for diversion for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) of Kalarangiatta Chromite Mines of Ferro Alloys Corporation Limited ("FACOR") (Online proposal no. FP/OR/MIN/16453/2015)

Reference

1. Online Challan dated 12.05.2025 issued by Nodal Officer in Parivesh Portal
2. Your demand letter dated 3571/5F dated 02.05.2025 (SSWCP)
3. Your demand letter dated 3019/5F dated 08.04.2025 (CA & Additional CA) (
4. Your demand letter dated 3687/5F dated 06.05.2025 (Penal NPV)
5. Your demand letter dated 2996/5F dated 08.04.2025 (Differential NPV)
6. Our letter dated 24.03.2025 seeking issuance of demand in light with 'In-Principle' approval
7. Stage-I (In-Principle) nos. 5-ORC288/2016-BHU dated 21.03.2025
8. Online Forest Diversion Proposal no. FP/OR/MIN/16453/2015 of Kalarangiatta Chromite Mines

Respected Sir,

With utmost respect and humbleness, we wish to bring to your kind notice that we have received various demand letters, referenced as 02 to 05, from your esteemed office concerning the payment of the differential amount for the Net Present Value (NPV), Penal NPV, Implementation Cost for Compensatory Afforestation (CA), Additional Compensatory Afforestation, and the Cost of Site-Specific Wildlife Conservation Plan (SSWCP) with respect to our Kalarangiatta Chromite Mines of M/s. FACOR Ltd.

As per the provisions related to Stage-I (In-Principle) approval (Reference No. 7, dated 21.03.2025) and provision for deposit in Orissa CAMPAA account through e-portal (<https://forest.odisha.gov.in/>) we have duly collated all the aforesaid demands and uploaded the necessary details in the Parivesh Portal on 08.05.2025 for approval and generation challan by the Nodal Officer (Forest Conservation Act), Odisha.

Subsequently, we have received online challan on 12.05.2025 for payment of total amount INR 6,45,54,030/- (Six Crore Forty Five Lacs Fifty Four Thousand thirty only) against the above demands. Upon receipt of online challan, we immediately deposited the aforesaid demanded amount on 13.05.2025 against the CAMPAA account mentioned in the above challan. It is pertinent to mention that we paid amount 1,55,33,510/- against the demand for Penal NPV under protest and without accepting the liability as FACOR has not violated any provision of Forest Conservation Act while operating the mines under the High Court interim protection order. The details of amount paid are as under:

Received
Recd
20/6/2025

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani Di. Jaipur
Pin-305047

Page 1 of 2

Funds Details	Demand	Demanded Amount INR	Amount Paid by FACOR (INR)	Payment reference
Compensatory Afforestation		50,67,000/-	50,67,000/-	ICICI Bank RTGS No.
Additional Compensatory Afforestation		1,96,93,300/-	1,96,93,300/-	ICICI 420250 513005563rd Dated 13.05.2025
Differential NPV		92,08,220/-	92,08,220/-	
Site Specific Wild Conservation Plan		1,50,52,000/-	1,50,52,000/-	
Pond NPV		1,55,33,510/-	1,55,33,510/- (Under Protest)	
Total		6,45,54,030/-	6,45,54,030/-	

Copy of Payment Challan and payment status downloaded from Paribesh Portal are enclosed herewith for your kind reference.

Therefore, we humbly request your good self for processing our Forest Diversion Proposal of Kalanigama Chromite Mines at the earliest.

We are duly bound to comply with all the applicable laws and regulations issued by the competent authorities in our endeavour to sustainable utilization of natural resources for nation's growth.

Your kind cooperation in this regard shall be highly appreciated and obliged.

Yours sincerely,

For & on behalf of Ferro Alloys Corporation Limited

Muthumari M
Authorized Signatory & Agent / Head of Mine
Encl : As above

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalanigama, Dist- Jaipur
Pin- 755047

AGENCY COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address.	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansih, Po Dist- Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details:

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150625816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jeliffa Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address:	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansih, Po Dist- Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details:

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150625816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jeliffa Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: fcsblr@unionbankofindia.bank, epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

Transaction/UTR No-RTGS /ICICR 42025051300556304/ UBIN0996335 / Odisha CAMPA

Date: 13.05.2025

M. Muthumay
Muthumay M
Agent of Mines
Ferro Alloys Corporation Limited
Kallagan, Dist- Jajpur
Pin- 756047

M. Muthumay

Muthumay M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallagan, Dist- Jajpur
Pin- 756047



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परिवेश

"Pro Active and Responsive" facilitation by Innovative, Virtuous and Environmental Single window Help

Ministry of Environment, Forest and Climate Change
Government of India



My Account - My Proposals Environment Clearance - Only CR2 Clearance - My Proposals Forest Clearance - My Proposals Wildlife Clearance - Help

10:08:05 AM



Sno.	Proposal Detail	Application No.	Application No (New)	Date of the PRINCIPLE	Amount to be Paid / Amount Paid (in Rs.)	Payment Status	Payment Detail	Payment Letter
1	PPOL/WH/104/2015 Kolarigutta Chromite Mines of M/s Ferro Alloys Corporation Ltd	MDN16AS2015158	5816453158	21 Mar 2025	CA: 5062000/- PA: 0/- Safety Zone: 0/- WH: 9206220/- Payment towards Site Specific Wild life conservation: 15000000/- Other Charges: 1/- Total: 64554230/-	Paid	Fund Demand Verified by : 20 May 2025 Nodal Officer On : Division Bank Of India Bank Name : HSBF/RTGS (Credit) Mode of Payment : 12 May 2025 Challan Generated On : 13 May 2025 Transaction Date :	Name of Letter : Recommended Dated:

M. Muthuman
Muthuman M
 Agent of Mines
 M/s. Ferro Alloys Corporation Ltd
 Kaliapani Dist: Jalpur
 pin- 755047



STATE FOREST HEADQUARTERS, ODISHA

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS & HoFF
PLOT NO. GD-2/12, ARANYA BHAWAN, CHANDRASEKHARPUR
BHUBANESWAR-751023

E-mail: nodal.pccfho@odisha.gov.in



No. _____
Dated, Bhubaneswar the _____

/ 9F (MG) – 368/2016
August 2022

The Deputy Director General of Forests (Central)
Government of India, Ministry of Environment, Forest & Climate Change
Integrated Regional Office, A/3, Chandrasekharapur
Bhubaneswar-751023

Sub: Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area for Chromite ore mining from their Kalarangiatta Chromite Mines by M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under Jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- CA & Additional CA Scheme regarding.

Ref: Letter No.5-ORC288/2016-BHU dated 18.11.2016 of the Conservator of Forests (Central), GoI, MoEF & CC, IRO, Bhubaneswar.

Sir,

In reference to GoI, MoEF & CC, IRO, Bhubaneswar letter cited above on the captioned subject, I am directed to inform that the DFO, Dhenkanal Forest Division has furnished the following CA & Additional CA Schemes as detailed below:-

- (i) CA Scheme over an area of 24.00 ha of non-forest land identified in village Kerajodi under Kankadahad Tahasil of Dhenkanal Forest Division.
- (ii) Additional CA Scheme over an area of 24.00 ha of degraded forest land identified in Dolia RF of Mahabirod Range of Dhenkanal Forest Division.

The financial outlay of CA Scheme over 24.00 ha of non-forest land identified in village Kerajodi under Kankadahad Tahasil of Dhenkanal Forest Division has been approved for Rs.43,77,100/- (Rupees forty three lakhs seventy seven thousand and one hundred) only by the Nodal Officer as per approved one-time cost norm at current wage rate with 10 years maintenance cost. The CA scheme alongwith the financial outlay is enclosed herewith as Annexure-I.

Similarly, the financial outlay over 24.00 ha of Degraded Forest Land identified in Dolia RF of Mahabirod Range of Dhenkanal Forest Division has been approved for Rs.1,06,33,700/- (Rupees one crore six lakhs thirty three thousand and seven hundred) only by the Nodal Officer as per approved one time cost norm at current wage rate with 10 years maintenance cost. The Additional CA Scheme alongwith the financial outlay is enclosed herewith as Annexure-II.

M. Mithun

Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 753047

P.T.O

OS.D. cam. 04

(12/1)

All requisites such as authenticated map of CA land, shape file of CA land, DGPS map, land suitability certificate and non-encroachment/non-encumbrance certificate by Tahasildar has also been furnished by the DFO, Dhenkanal Forest Division.

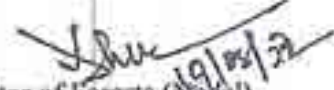
This is for favour of kind information and necessary action.

Yours faithfully


Conservator of Forests (Nodal)

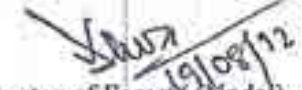
Memo No. 16104 /Dt. 19.08.2022

Copy forwarded to the OSD-cum-Special Secretary to Government, FE&CC Department, Govt. of Odisha for favour of kind information and necessary action with reference to Letter No. 5-ORC288/2016-BHU dated 18.11.2016 of the Conservator of Forests (Central), Gol, MoEF & CC, IRO, Bhubaneswar.


Conservator of Forests (Nodal)

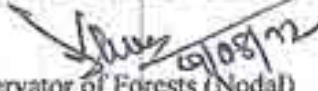
Memo No. /Dt.

Copy forwarded to the Regional Chief Conservator of Forests, Angul Circle for information and necessary action with reference to his Memo No. 3078 dated 25.07.2022.


Conservator of Forests (Nodal)

Memo No. /Dt.

Copy forwarded to the Divisional Forest Officer, Dhenkanal Forest Division for information and necessary action with reference to Memo No.3079 dated 25.07.2022 of RCCF Angul Circle.


Conservator of Forests (Nodal)

Memo No. /Dt.

Copy forwarded to the Divisional Forest Officer, Cuttack Forest Division for information and necessary action with reference to Memo No.3080 dated 25.07.2022 of RCCF Angul Circle.


Conservator of Forests (Nodal)

Memo No. /Dt.

Copy forwarded to Director (Mines), M/s FACOR Ltd., Laxmi Bhawan, Kuans, Dist-Bhadrak-756100 for information & necessary action.


Conservator of Forests (Nodal)


Muthuramy M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jajpur
Pin- 755047



270

OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS: ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-06764-296010 (O), 296011 (Res),
Email Id: rcfangu/a@gmail.com.

Memo No. 3078 /5F-FC-40/2022 dated 25-7-22

To

The Chief Conservator of Forests
(Forest Diversion & Nodal Officer, FC Act)
O/o. the Principal Chief Conservator of Forests & HoFF, Odisha.

Sub:- Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd (FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jaipur District, Odisha.

Ref:- Your Memo No.16401/9F(MG)368/2016 dated 22.09.2021.

In inviting a reference to the memo cited above on the subject, this is to intimate that the Divisional Forest Officer, Dhenkanal Division has submitted the scheme for raising Compensatory Afforestation in lieu of diversion of 23.80 ha of forest land in respect of Chromite ore of Kalarangiatta Chromite Mines by M/s- FACOR Ltd. vide his Memo No.4865 dated 11.7.2022 and 5277 dated 21.7.2022.

The non-forest land over 24 ha. Identified in village Kerajodi under Kankadahad Tahasil has been proposed to take up ANR plantation @ 200 Plants per ha. and to accommodate balance seedlings, degraded forest land identified in Dolia RF under Mahabirod range in two patches i.e. 7 ha @ 1600 seedlings /ha and 17 ha @ 500 seedlings / ha as per guidelines dated 8.11.2017 of GoI, MoEF & CC for planting of 1000 seedlings per ha. as below:-

Description of site	Area in ha.	No.of seedlings to be planted.
Non-forest land identified in village Kerajodi under Kankadahad Tahasil	24 @ 200 plants /ha	4800
Degraded Forest land identified in Dolia RF under Mahabirod Range	7 @ 1600 Plants/ha	11200
	17 @ 500 plants /ha.	8500
Total		24500 Nos.

The enclosed CA scheme in two sets along with KML File and DSS certificate is forwarded herewith for favour of information and necessary action.

Encl: As above

Regional Chief Conservator of Forests

M/s Ferro Alloys
Kaliapani, L.
Pin-755047

Memo No. 3079 /Dated- 25.7.22

Copy forwarded to the Divisional Forest Officer, Dhenkanal Division for information and necessary action with reference to his Memo No.4865 dated 11.7.2022 and 5277 dated 21.7.2022.

Regional Chief Conservator of Forests

M.C.
Angul

Memo No. 3080 /Dated- 25.7.22

Copy forwarded to the Divisional Forest Officer, Cuttack Division for information and necessary action with reference to Memo No.4866 dated 11.7.2022 of DFO, Dhenkanal Division.

Regional Chief Conservator of Forests

M.C.
Angul

Memo No. 3081 /Dated- 25.7.22

Copy forwarded to the Director (Mines), M/s-FACOR Ltd. Laxmi Bhawan, Kuans, Bhadrak, 756100, Odisha for information and necessary action.

Regional Chief Conservator of Forests

M.C.
Angul

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 305047



STATE FOREST HEADQUARTERS, ODISHA
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS & HoFF
PLOT NO. GD-2/12, ARANYA BHAWAN, CHANDRASEKHARPUR
BHUBANESWAR-751023

E-mail: nodal.pccfho@odisha.gov.in

No. 16103

/ 9F (MG) - 368/2016

Dated, Bhubaneswar the

19th August 2022

To

The Deputy Director General of Forests (Central)

Government of India, Ministry of Environment, Forest & Climate Change
Integrated Regional Office, A/3, Chandrasekharpur
Bhubaneswar-751023

Sub: Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area for Chromite ore mining from their Kalarangiatta Chromite Mines by M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- CA & Additional CA Scheme regarding.

Ref: Letter No.5-ORC288/2016-BHU dated 18.11.2016 of the Conservator of Forests (Central), GoI, MoEF & CC, IRO, Bhubaneswar.

Sir,

In reference to GoI, MoEF & CC, IRO, Bhubaneswar letter cited above on the captioned subject, I am directed to inform that the DFO, Dhenkanal Forest Division has furnished the following CA & Additional CA Schemes as detailed below:-

- (i) CA Scheme over an area of 24.00 ha of non-forest land identified in village Kerajodi under Kankadahad Tahasil of Dhenkanal Forest Division.
- (ii) Additional CA Scheme over an area of 24.00 ha of degraded forest land identified in Dolla RF of Mahabirod Range of Dhenkanal Forest Division.

The financial outlay of CA Scheme over 24.00 ha of non-forest land identified in village Kerajodi under Kankadahad Tahasil of Dhenkanal Forest Division has been approved for Rs.43,77,100/- (Rupees forty three lakhs seventy seven thousand and one hundred) only by the Nodal Officer as per approved one-time cost norm at current wage rate with 10 years maintenance cost. The CA scheme alongwith the financial outlay is enclosed herewith as Annexure-I.

Similarly, the financial outlay over 24.00 ha of Degraded Forest Land identified in Dolla RF of Mahabirod Range of Dhenkanal Forest Division has been approved for Rs.1,06,33,700/- (Rupees one crore six lakhs thirty three thousand and seven hundred) only by the Nodal Officer as per approved one time cost norm at current wage rate with 10 years maintenance cost. The Additional CA Scheme alongwith the financial outlay is enclosed herewith as Annexure-II.

P.T.O.

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalahandi, Jajpur
Pin-751047

1/2/1

All requisites such as authenticated map of CA land, shape file of CA land, DGPS map, land suitability certificate and non-encroachment/non-encumbrance certificate by Tahasildar has also been furnished by the DFO, Dhenkanal Forest Division.

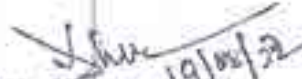
This is for favour of kind information and necessary action,

Yours faithfully


Conservator of Forests (Nodal)

Memo No. 16104 Dt. 19.08.2022

Copy forwarded to the OSD-cum-Special Secretary to Government, FE&CC Department, Govt. of Odisha for favour of kind information and necessary action with reference to Letter No. S-ORC288/2016-BHU dated 18.11.2016 of the Conservator of Forests (Central), GoI, MoEF & CC, IRO, Bhubaneswar.


Conservator of Forests (Nodal)

Memo No. 16105 Dt. 19.08.2022

Copy forwarded to the Regional Chief Conservator of Forests, Angul Circle for information and necessary action with reference to his Memo No. 3078 dated 25.07.2022.


Conservator of Forests (Nodal)

Memo No. 16106 Dt. 19.08.2022

Copy forwarded to the Divisional Forest Officer, Dhenkanal Forest Division for information and necessary action with reference to Memo No. 3079 dated 25.07.2022 of RCCF Angul Circle.


Conservator of Forests (Nodal)

Memo No. 16107 Dt. 19.08.2022

Copy forwarded to the Divisional Forest Officer, Cuttack Forest Division for information and necessary action with reference to Memo No. 3080 dated 25.07.2022 of RCCF Angul Circle.


Conservator of Forests (Nodal)

Memo No. 16108 Dt. 19.08.2022

Copy forwarded to Director (Mines), M/s FACOR Ltd., Laxmi Bhawan, Kuans, Dist-Bhadrak-756100 for information & necessary action.


Conservator of Forests (Nodal)


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapara, P.O. - Jaipur
Pin- 302047

(CCF Central)



OFFICE OF THE DIVISIONAL FOREST OFFICER, DHENKANAL FOREST DIVISION
Tele Fax No-06762226717, E-mail ld-dfo.dhenkanal@gmail.com

Letter No 4865 3F/Misc/162/2022/dt. 11-07-2022

To

The Regional Chief Conservator of Forests,
Angul.

Sub:

Proposal for diversion of 23.80 Ha. of forest land (as per Sabik records as on 25.10.1980) including 2.240 Ha. of Forest Land in safety zone area of Chromite Ore Mining of Kalarangita Chromite Mines of M/s. Ferro Alloys Corporation Ltd. (FACOR Ltd.) in Cuttack Forest Division coming under jurisdiction Sukinda Tahasil of Jajpur district, Odisha (Proposal No FP/OR/MIN/16453/2015).

Ref:

Memo No.16399 dt.22.09.2021 of Addl. Principal Chief Conservator of Forests (FD &NO, FC Act) and your Memo No.4061/5F-FC-54/2021 dt.28.09.2021

On the above mentioned subject under reference, I would submit the CA scheme along with KML file of 24Ha. Non-Forest land identified in village Kerjodi under Kankadahad Tahasil of Dhenkanal District and 24Ha. degraded Forest land identified in Dolla RF under Mahabirod Range along with KML file through CD in 03 sets are submitted herewith for favour of kind perusal and further needful action.

Encl:AS Above

Divisional Forest Officer,
Dhenkanal Division

Memo No 4866 dt. 11-07-2022

Copy along with CA Scheme forwarded to the Divisional Forest Officer, Cuttack Forest Division, Ghatakula, Nuapada, Madhupatna, Cuttack-753010 for information and necessary action. With reference to Memo No.4062 dt.28.09.2021 of the Regional Chief Conservator of Forests, Angul.

Divisional Forest Officer,
Dhenkanal Division

Memo No 4867 dt. 11-07-2022

Copy submitted to the Addl. Principal Chief Conservator of Forests (FD &NO, FC Act) O/o the Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar for favour of kind information and necessary action. With reference to his Memo No.16399 dt.22.09.2021 & Memo No.4063 dt.28.09.2021 of the Regional Chief Conservator of Forests, Angul.

Divisional Forest Officer,
Dhenkanal Division

Received Scheme
16.7.2022

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
K-3024 & Dist- Jajpur
Ph-765047

Scheme

For Compensatory Afforestation on identified Non Forest Land in Village Kerajodi under Kankadahada Tahasil of District Dhenkanal in lieu of Proposed Forest Diversion for 23.80 ha of Forest land coming within Mining Lease of Kalarangiatta Chromite Mine, At: Kalarangiatta under Sukinda Tahasil of District: Jajpur of M/s Ferro Alloys Corporation Limited.

&

For Plantation of Balance Seedlings over Degraded Forest Land in Dolia Reserved Forest in Mahabirod Range of Dhenkanal Division

By

**Divisional Forest Officer,
Dhenkanal Division**

M. Muthumari

Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kankadahada
Jajpur
Pin-751047

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13	DGPS, TOPO, Cadastral maps of CA Land	In a Folder
14	DGPS, Topo and Treatment, map of Additional CA land	
15	KML Files (Shape Files)	

M. Muthuraj

Ministry of Environment, Forest and Climate Change
Government of India

Land Suitability Certificate

This is to Certify that the land allotted for Compensatory Afforestation purpose at village Kerajodi, district Dhenkanal against diversion of 23.80 ha of forest land within Mining Lease of Kalarangiatta Chromite Mine, at Kalarangiatta under Sukinda Tahasil of District Jajpur of M/s Ferro Alloys Corporation Ltd vide letter no 153 dated 05.02.2016 of District Office, Dhenkanal measuring 24.0 ha as detailed below is free from encroachment and encumbrances. The area is suitable for plantation and management purpose.

Land Schedule:

Land Schedule of land allotted for Compensatory Afforestation							
Tahsil	Kankadahad						
Village	Khata No	Plot No	Total Area in Acre	Plot Area in Acre	Area allotted in Acre	Kisam	Remark
Kerajodi	155(AAA)	315	62.00		27.25	Parbat-I	Part
		318	56.25		32.25	Parbat-I	Part
	Total		118.25		59.50 Ac= 24.0 Ha		

Place: Dhenkanal

Date:

M. Multhumari
Multhumari M
Agent of Mines
M/s Ferro Alloys Corporation Limited
Kallapari, Dist- Jajpur
Pin- 753047

[Signature]
Divisional Forest Officer,
Dhenkanal Division

Scheme

For Compensatory Afforestation on identified Non Forest Land in Village Kerajodi under Kankadahada Tahasil of District Dhenkanal in lieu of Proposed Forest Diversion for 23.80 ha of Forest land coming within Mining Lease of Kalarangiatta Chromite Mine, At: Kalarangiatta under Sukinda Tahasil of District, Jajpur of M/s Ferro Alloys Corporation Limited.

1. **Introduction:** The Kalarangiatta Chromite Mining Lease is over an area of 23.80 ha. The entire area is non forest land as per Hal Settlement and Lease has been executed basing on Land Schedule of Hal Settlement. Subsequently, it has been found that the land involve in the Mining Lease is of Forest Kisam as on 25.10.1980 (Sabik Settlement). The User Agency M/s Ferro Alloys Corporation has filed forest Diversion Proposal Vide Proposal No FP/OR/MIN/16453/2015. On application for providing Compensatory Afforestation Land, Government Non Forest Land over an area of 24 ha has been allotted by the Collector, Dhenkanal vide Letter No153 dated 05.02.2016 at village Kerajodi under Kankadahada Tahasil of District Dhenkanal. The selected land is coming in Kamakshyanagar (West) Range of Dhenkanal Division. **(Annexure-I)**
2. The Compensatory Afforestation land so selected was examined by Regional Office, MoEF&CC, Bhubaneswar and observed that 14 ha out of 24 ha provided for Compensatory Afforestation is of Open Forest and balance 10 ha is of MDF (Medium Dense Forest) and advised to select another 10 ha of Non Forest land basing on the then Guideline for Compensatory Afforestation Land selection. (Copy of the letter No5-ORC 288/2016-BHU dated 18.11.2016 is at **Annexure-II**)
3. That in the meantime, the MoEF&CC, Government of India vide letter no F. No. 5-/2017- FC dated 28th March, 2019 has issued revised guidelines. Any Non Forest Land irrespective of its crop density is acceptable for Compensatory Afforestation. The relevant Para in the revised guide line dated 28.03.2019 reads as follows.

"Para2.4

(v) Any non-forest land for the purpose of Compensatory afforestation (CA), selected by the State Government, in lieu of forest land to be diverted may be accepted by MoEF&CC irrespective of crown density. All such lands shall be mutated in favour of State forest department and declared as protected forest prior to stage II approval."

4. That in light of the revised guidelines on FC Act, 1980 dated 28.03.2019 the land selected at village Kerajodi and allotted by Collector, Dhenkanal with the following land schedule

is accepted for "Compensatory Afforestation" purpose against proposed diversion of 23.80ha of forest land including 2.24 ha in Safety Zone.

Land Schedule of land allotted for Compensatory Afforestation by District Office, Dhenkanal.						
Tahsil	Kankadahad					
Village	Khata No	Plot No	Total Plot Area in Acre	Area allotted in Acre	Kisam	Remark
Kerajodi	155(AAA)	315	62.00	27.25	Parbat-I	Part
		318	56.25	32.25	Parbat-I	Part
	Total		118.25	59.50 Ac= 24.0 Ha		
Reference: District Office, Dhenkanal Letter No153 dated 05.02.2016						

5. DGPS Survey, Mapping & Authentication of CA Land.

As per the revised guidelines of Chief Executive, ORSAC, the User Agency has taken up DGPS Survey by empanelled vendors and the same has been authenticated by ORSAC vide his letter no ORSAC /DGPS-FD/1064/2022/2204(2) Dated 23.06.2022 and due endorsement has been furnished on DGPS surveyed Map. The DGPS Map, Corresponding Topo map (Survey of India map F 45 1:50000 Scale) are enclosed to this Scheme. The KML File of the area is submitted in a CD. (Letter of Authentication at Annexure-III)

The Latitude / Longitude of Survey Points as per DGPS authenticated Map is furnished below.

DGPS OBSERVATION CO-ORDINATES OF BOUNDARY PILLARS			
SL.NO	MAP ID	LONGITUDE	LATITUDE
1	A	85°31'40.17211"	21°06'46.03264"
2	B	85°31'58.06526"	21°06'45.98947"
3	C	85°31'58.08829"	21°06'29.79743"
4	D	85°31'44.22240"	21°06'30.00379"
5	E	85°31'44.23356"	21°06'33.84047"
6	F	85°31'40.04854"	21°06'33.81198"

6. Topography & Soil:

The identified area is partly hilly and partly rocked terrain. The soil depth is low. The soil is lateritic and gravelly.

The identified land bears dry deciduous mixed vegetation. Sal, Asan, Karada, Kendu, Jamu, Mango, Bahada, Mahula etc are observed. Thorny bushes are also observed. The crop density is less than 40% over 14 ha and >40 and <50% over balance 10 ha.

The area Selected in Village Kerajodi under Kankadahada Tahasil of Dhenkhal District. In recent past three Protected Forests have been notified comprising Non Forest Land taken for Compensatory Afforestation Purpose in the same village. The Protected Forests notified and area, Notification Number and date are furnished below.

On event of this identified area Planted up and declared as Protected Forest under Odisha Forest Act,1972, it will be a continuous patch and will be suitable and convenient for management.

Forest Administrative Jurisdiction		Civil Jurisdiction	
Beat	Kirtanpur	Village	Kerajodi
Section	Kirtanpur	Tahasil	kankadahada
Range	Kamakshyanagar (West) Range	PS:	Kankadahada
Division	Dhenkanal	Tahasil	Kankadahada
Circle	Angul	District	Dhenkanal

The land identified bears natural vegetation. Its tending operation will help maintaining a good forest cover adjacent to habitation. Considering the vegetation, terrain and soil of the area it is proposed to adopt a planting model of **ANR @200 Plants / ha with 10 year maintenance** (Ref: Annexure-6 of One time Cost norm for Compensatory Afforestation issued vide Office Order No 1109/9F-(Misc)- 387/2021).

10. Choice of Species:

Considering the soil, topography and present vegetation observed in and around, it is proposed to Plant the following species on the identified land in suitable available blanks. Species proposed for planting are

- i) *Acacia Catechew* (Khair)
 - ii) *Bombax Ceiba* (Simill)
 - iii) *Emblia officinalish* (Anla)
 - iv) *Terminalia belerica* (Bahada)
 - v) *Terminalia tomentosa* (Asana)
 - vi) *Mangifera indica* (Aamba)
 - vii) *Pterocarpus marsupium* (Bija)
 - viii) *Syzygium cumini* (Jamu)
- (NB: The area is not a bamboo Zone)

11. Silvicultural Tending & Planting Technique to be adopted:

i) *Survey, Demarcation and Pillar Posting:*

The identified area has been surveyed & pillars posted. It is to be resurveyed and missing pillars if any to be reposted as per Latitude / Longitude provided in the DGPS Map authenticated.

ii) *Preparation of Treatment map (Digital map):*

The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division / PCCF Office or through outsourcing.

iii) *Site Preparation:*

After demarcation of the area, site preparation mostly clearing of invasive weeds will be taken up at available planting sites to be identified by field staff.

iv) *Silvicultural Tending Operation:*

The selected area is having Sal shoots of promising vigour and natural regeneration. It is proposed to take up Silvicultural cleaning over the area. The activities are intended to

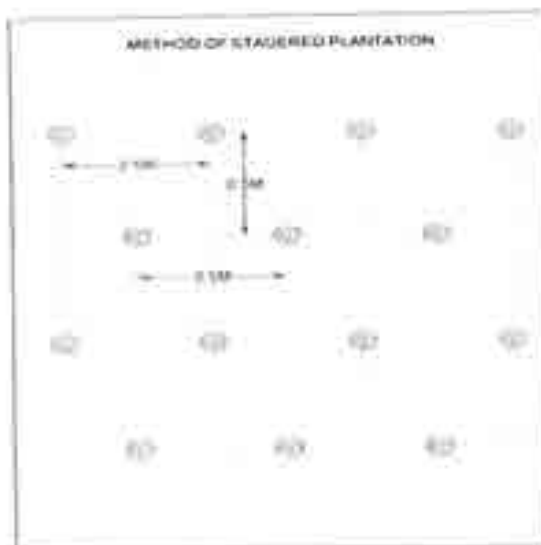
achieve healthy growth of existing seedlings / saplings / coppice shoots of favored species. The operation includes

- Cutting back of high stumps with preference to living stumps and having a good coppicing power.
- Cutting of climbers those are of annual nature and uprooting them wherever possible.
- Singling out of multiple coppice shoots and retaining most promising ones.
- Pruning of whippy plants available within the area.

The natural seedlings available in the treatment area are to be given appropriate attention to ensure its establishment.

v) Alignment & Stacking:

The plantation Model is ANR with 200 plants per ha. In available blank space alignment & stacking will be taken up at a probable spacing of 2.5mx2.5m. The alignment will be of staggered manner to check runoff in sloppy terrain. The desired model is depicted below.



vi) Digging of Pits (45cmx45cmx45cm):

It is proposed to dugout pits of size 45cmx45cmx45cm preferably in month of February / March. The dugout earth will be kept at pit head on both sides separately. The top soil will be kept on one side and bottom soil on another side. Soil within 30cm from ground level will be considered as top soil and rest as bottom soil. The pits will be left for weathering due to Sun & Rain.

vii) Refilling of Pits & application of organic Compounds / CDM/ FYM:

The pits will be refilled by altering the dugout soil of the pits i.e. top soil on bottom of the pit and bottom soil on top. Application of organic Compounds / CDM/ FYM & mixing the same properly before refilling is suggested. This will provide necessary nutrients to the plant as well as help in retaining soil moisture for a longer period.

viii) Transportation of Seedlings including short carriage & watering at Pit site.

In the approved cost norm, provisions have been made to plant 18month old. As seedlings will be above 1m height invariable, careful transportation of seedlings will be of paramount importance. In case of top breaking of seedlings, the benefit of 18month old seedlings will be reduced substantially. Transportation of seedlings from Nursery site to Planting site and then short carriage has to be taken up carefully. Wherever water is available, the plants are to be watered before short carriage to minimize the shock to plants during long carriage by tractors / vans etc.

ix) Planting of Seedlings:

After application of FYM/ CDM/ Organic manure, seedling will be planted carefully. The standard planting procedure is to be followed. As the pit size is of 45cm x 45cm x 45cm the following care will be taken during planting.

- Chemical fertilizer / insecticides applied as basal doze to be thoroughly mixed with soil.
- Seedlings collar zone will be at Ground Level or at best 2.5cm below the ground level. In no case it will not be more than 3cm below Ground Level.
- The Poly bags containing the seedlings are to be carefully removed. It is better to use a blade to cut open the bag so as to cause least disturbance to the ball of earth containing the seedlings.
- After planting the soil is to be compacted leaving 3" around the plant and the compact soil may be at Ground Level or 1" above the Ground level – allowance for soil settlement.
- In no case it should be a sunken around the plant.
- The planted plant should stand erect, if it is tilted due to speedy growth, a support with a stick collected locally to be provided.

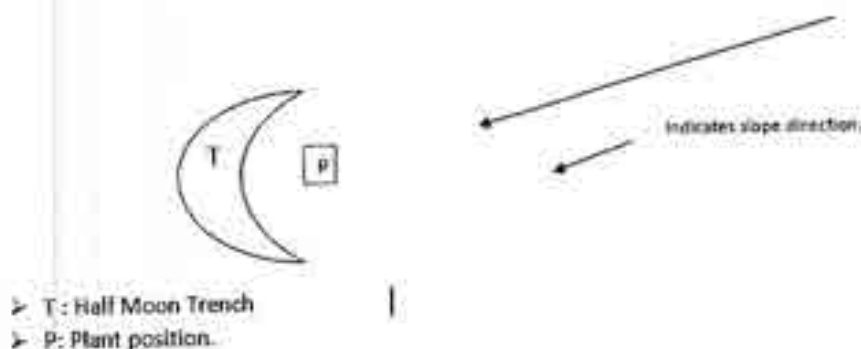
x) Casualty Replacement:

Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1st year and 10% in 2nd year operation in the approved cost norm. The same is to be carried out with good promising seedlings those can come up to a height of previous planted seedlings. During replacement in 2nd year application of fertilizers etc as in 1st year is to be followed.

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xij) Weeding & application of Fertilizer:

Two Weeding around the planted seedlings at a diameter of 1.00m has been prescribed in the approved cost norm. During 2nd weeding deep soil working around the plants at 1.00m diameter has also been prescribed. 1st weeding will be taken up just after one month of planting and 2nd weeding and soil working in month of September / October. As there is occasional rainfall in October providing half moon trench in sloppy terrain around each plant is suggested. A half moon trench model is given below.



During weeding (1st & 2nd) there is a provision of application of fertilizer to plants. Application of NPK @30gms per plant x 2 times is suggested. In no case 2nd weeding can be delayed beyond 15th of October.

xii) Fire line Tracing & Inspection Path:

Due to intensive protection grasses grow up within plantation. It is better to allow local people / VSS to cut the grasses take for stall feeding. In the present case where ANR is under implementation Grass growth is limited. Due to fallen dry leaves (Due to leaf shedding), there is possibility of fire hazards in February / March. It is suggested to have fire line at a width of minimum 3m all around the planting area, maintain inter partitioned line / both sides of foot path as a Fire line (minimum 3m wide in 1st year and 2m in subsequent year). These lines will be maintained as inspection path also. It will be maintained till completion of 10th year.

xiii) Watch & Ward

Watch and ward is essentially required against grazing in first two years and illicit felling in subsequent years. Adequate provisions has been made in the approved cost norm. Watch & ward provisions will be implemented as per provide norm. Besides watch & ward

provided it is proposed to provide Bamboo Twig & Thorns fence around the Selected / identified area.

12. Provision for watering:

The site selected is of hilly terrain. All total 4800 seedlings will be planted in small patches having 200-300 seedlings per patch. It is not convenient to have any watering provisions for this site. There is also no nearby water source to fetch water and carryout watering to plants in such a scattered manner.

13. Projected Cost for ANR @ 200 Plants per ha

a) Nursery Cost (Cost of Seedlings):

As per the guidelines 18 month old seedlings will be used for planting. The choice of species suitable for the site has been discussed at Para 10 above. The total seedlings required $24 \times 200 = 4800 + 10\%$ of 4800 for Casualty replacement in 1st Year + 10% of 4800 for 2nd year replacement. Total seedlings required; 5760 number.

The approved cost norm for raising 1000 seedling is Rs 58025/- (Projected year 2023-24). For 5760 seedlings the cost comes to Rs 3, 34,224/-

The year wise cost break up is as follows

Year	1 st FY	2 nd FY	3 rd FY	Total
For 1000 seedling	10122	34271	5917	50310
For Yr 2023-24	11160	39673	7192	58025
For 5760 seedlings	64282	228516	41426	334224

b) Cost for ANR with Gap planting @200 Plants per ha

The approved base cost norm for one ha ANR With gap planting @200 Plants per ha is at annexure V. The cost matrix for 2023-24 is furnished below.

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Matrix for ANR @200 plants per ha														
	I(21-22)	II(22-23)	III(23-24)	IV(24-25)	V(25-26)	VI(26-27)	VII(27-28)	VIII(28-29)	IX(29-30)	X(30-31)	XI(31-32)	XII(32-33)	XIII(33-34)	Total
Base norm	9400	21568	8006	6700	4800	4800	4800	4800	4800	4800	4800			
2023-24			10364	24967	9730	8551	6432	6754	7092	7447	7819	8209	8621	105986
For 24 ha			248736	599208	233520	205224	154368	162096	170208	178728	187656	197016	206904	2543664

For ANR @ 200 Plants per ha, the cost as per approved matrix is Rs 105986/- per ha (Year 2023-24). Hence for 24 ha the projected cost comes to Rs 24x105986/- = Rs 25,43,664/-

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14. Bamboo Twig & Thorn Fencing:

i) Justification for Providing Bamboo Twig Fencing:

The selected areas are moderately dense over 10 ha and open forest over 14 ha. In the nearby area tree growth are also observed. It is also adjacent to Kerajodi Protected Forest A, B and C block extending over an area of **160.8378 ha** (Para-8 of the Scheme), the area is inhabited with wild animals like Mongoose, Bear, Snakes, Lizards, Rabbits, fox, fowl etc. As this is considered as forests all around and movement of wild animals are seen, it is proposed to provide Bamboo Twigs Fencing. Only 4800 plants are being proposed for plantation @ 200 seedlings per hectare.

ii) Periphery of the identified Land:

The periphery of the identified land is 2020m (2.02km).

iii) Financial Projection for Fencing:

The cost norm matrix approved for bamboo twig fencing (Year 2023-24) is as follows.

Cost Norm Matrix approved for bamboo twig fencing (for 1 ha / 250m)									
	(21-22)	(22-23)	0 th (23-24)	1 st (24-25)	2 nd (25-26)	3 rd (26-27)	4 th (27-28)	5 th (28-29)	Total
Base norm	0	45759	7720	11895	11895	11895			89164
2023-24			0	52971	9384	15182	15940	16737	110214
For 2020 m(2.02km)				428006	75823	122671	128795	135235	890529

The cost norm for the year 2023-24 is Rs 1,10,214/- per 250 Rmt. The proposed cost per meter comes to Rs 440.85 per Rmt.

The total cost for bamboo twig & thorn fencing comes to **Rs 8,90,529/-** as calculated above (for 2.02 km).

The approved base cost norm and matrix is at **Annexure VI**.

15. Soil & Moisture Conservation:

The area taken for Compensatory Afforestation Purpose is of hilly and moderately rolling terrain. For better development of both natural and planted seedlings the Soil & Conservation of Moisture measures as prescribed under Model C is suggested. Under this model Soil Conservation Measure structures like Staggered Trench, Percolation Pit, Contour

Trench, Graded Earthen Bond, LBCD, Wire mess LBCD, Sub Surface Dyke, & WHS as per Slope will be Provided. As per the approved matrix the cost projected for the Year 2023-24 is as furnished below.

Matrix for SMC per Ha									
	(21-22)	(22-23)	0 th (23-24)	1 st (24-25)	2 nd (25-26)	3 rd (26-27)	4 th (27-28)	5 th (28-29)	Total
Base norm	0	20215	3032	3032	3032	3032			32343
2023-24			0	23401	3684	3870	4062	4267	39284
For 24 ha				561624	88416	92880	97488	102408	942816

At the present site Staggered Trench, Percolation Pit, Contour Trench, LBCD, Wire mess LBCD, Sub Surface Dyke will be taken up as per site requirement. For 24 ha the projected Cost is 24x39284/- = Rs 9,42,816/-

The approved Cost norm Matrix for SMC (Model-C) is at Annexure VII

16. Involvement of VSS & EPA

a) Demographic Profile of Village Kerajodi

Village	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT
Kerajodi	367	1708	903	805	245	677	1041
%			52.87	47.13	14.34	39.64	60.95

The demographic profile of village Kerajodi (As per Census data-2011) indicates that the male female ratio is 891 female for 1000 male. The ST population constitutes about 39.64% and SC population constitutes about 14.34%

b) Provisions for EPA

The Local Village Committee i.e. Vana Surakshy Committee (VSS), Kerajodi will be involved in all activities pertaining to Compensatory Afforestation. For fulfilling their pretty village community requirement EPA (Entry Point Activities) will be taken up. At the time of execution, the activities to be taken up will be decided after due consultation with VSS / Villagers. For this purpose 15% of Plantation cost is proposed in this Scheme. (15% of Rs 25,43,664/- = Rs 3,81,550/-). Hence a sum of Rs 3,81,550/- is proposed under EPA in this Plan.

17. Estimated Plantation Cost over 24ha of CA land at Village Kerajodi:

Sl no	Item	Base Cost per Ha	Total projected cost per ha (2023-24)	Total cost for 24 ha
1	Seedling Cost / 1000 no	50310	58025	334224
2	ANR @200 Plants	79274	105986	2543664
3#	Bamboo Twig Fencing /250rmt	89164	110214	890529
4	SMC (Model-C)	32343	39284	942816
4	EPA (15% of planting Cost)			381550
	Total			5092783

calculated over 2.02km as per actual requirement.

(Rupees Fifty Lakhs Ninety Two Thousand Seven hundred and Eighty three only)


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**Additional Compensatory Afforestation Land identified and Planting Scheme to
Plant Balance seedlings required to be planted:**

18. Introduction:

It is proposed for diversion of 23.80 ha of Forest Land including 2.24ha of Forest land in Safety Zone coming within Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation. Against this diversion Proposal 24.00 ha of Non Forest land has been identified in village Kerajodi under Kankadahad Tahasil, District- Dhenkanal. On verification of identified CA land it is observed that gap planting @200 plants could be planted over 24.0 ha against requirement of 24000 seedlings @1000 seedlings per ha. Balance seedling i.e. (24000-4800) = 19200 seedlings are required to be planted in Degraded Forest land as per Working Plan Prescription.

Description of Site	Area	Seedling required for planting	No Seedling suggested for planting	Remark
Compensatory Afforestation Identified (NFL) Land	24 ha	24000 @1000 seedlings / ha	4800 @200 plants per Ha	ANR Mode
Balance seedlings required to be accommodated / Planted		19200		To be planted at Dolia RF
Proposed site				
Dolia RF	7 ha	@1600 / ha	11200	Block Plantation @1600 plant / ha
	17 ha	@500/ ha	8500	ANR@500 plants per ha
Total seedlings to be Planted in Dolia RF			19700	Against 19200 required.

19. Degraded Forest Land Identified & Provided:

Degraded Forest Land over an area of 24.00 ha has been identified at Dolia Reserved Forests under Mahabirod Range of Dhenkanal Division. The area finds place in Survey of India Topo sheet No (1:50000 Scale)

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Agent of
Ferro Alloys
Kolar

20. DGPS Survey:

The identified area in Dolia Reserved Forests has been surveyed by DGPS. The Latitude / Longitude of survey points are furnished below.

CO-ORDINATES OF C.A LAND BOUNDARY POINTS							
Sl No	PONIT ID	LOGITUDE	LATITUDE	Sl No	PONIT ID	LOGITUDE	LATITUDE
1	PO.1	85° 26' 20.115"	21° 4' 56.385"	18	PO.18	85° 25' 56.751"	21° 5' 21.099"
2	PO.2	85° 26' 22.528"	21° 4' 57.286"	19	PO.19	85° 25' 56.147"	21° 5' 19.754"
3	PO.3	85° 26' 25.652"	21° 4' 56.928"	20	PO.20	85° 25' 55.835"	21° 5' 16.836"
4	PO.4	85° 26' 27.053"	21° 4' 58.727"	21	PO.21	85° 25' 56.089"	21° 5' 16.182"
5	PO.5	85° 26' 23.642"	21° 4' 59.672"	22	PO.22	85° 25' 56.985"	21° 5' 15.836"
6	PO.6	85° 26' 22.031"	21° 5' 0.837"	23	PO.23	85° 25' 59.556"	21° 5' 15.564"
7	PO.7	85° 26' 24.093"	21° 5' 3.656"	24	PO.24	85° 26' 0.919"	21° 5' 15.328"
8	PO.8	85° 26' 13.750"	21° 5' 20.272"	25	PO.25	85° 26' 3.705"	21° 5' 14.237"
9	PO.9	85° 26' 9.435"	21° 5' 24.817"	26	PO.26	85° 26' 4.577"	21° 5' 12.117"
10	PO.10	85° 26' 5.945"	21° 5' 23.193"	27	PO.27	85° 26' 3.551"	21° 5' 9.867"
11	PO.11	85° 26' 10.703"	21° 5' 15.773"	28	PO.28	85° 26' 6.290"	21° 5' 8.962"
12	PO.12	85° 26' 8.862"	21° 5' 14.293"	29	PO.29	85° 26' 12.987"	21° 5' 10.120"
13	PO.13	85° 26' 3.672"	21° 5' 17.429"	30	PO.30	85° 26' 16.401"	21° 5' 8.281"
14	PO.14	85° 26' 0.345"	21° 5' 19.592"	31	PO.31	85° 26' 13.839"	21° 5' 4.989"
15	PO.15	85° 26' 0.085"	21° 5' 22.536"	32	PO.32	85° 26' 13.806"	21° 5' 2.004"
16	PO.16	85° 25' 59.046"	21° 5' 23.258"	33	PO.33	85° 26' 17.271"	21° 4' 59.950"
17	PO.17	85° 25' 57.745"	21° 5' 22.687"				

The Corresponding DGPS Map on Topo sheet and KML file are enclosed (In hard & Soft Copy)

21. Present Vegetation & Significance of the Site:

The area identified is near to Hanumantia Nalla. It is also adjacent to PWD Road leading to Dolia Village junction with MDR. The nalla is flowing just at Survey Point No 1. The area is partly eroded land and mostly degraded. At present Sal and its dry deciduous forest associates are observed. Species are Sal, Arjuna, Asan, Kendu, Verru, Bahada, Mahula, Dam Kurudu. Phoenix is also seen here and there to indicate a dry tract. Arjuna trees are noticed near to Hanumantia Nala. The site is prone to encroachment by inhabitants of nearby habitation.

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The Dolia RF is close to Anantapur Reserved Forest which is habitat of Elephant. Anantapur RF is part of two important elephant corridors in the Division. The corridors are

- Kahnelijena-Anantapur INTER-DISTRICT corridor and
- Maulabhanja Jiridamali- Anantapur INTER-DISTRICT corridor.

Sino	Name of the Corridor	Extends over Districts	Name of the Divisions	Length of corridor(km)	Width of corridor(km)	Total area(Sq.km)
7	Maulabhanja Jiridamali-Anantapur INTER-DISTRICT	Dhenkanal	Dhenkanal	6.5	0.25 - 0.28	1.55
8	Kahnelijena-Anantapur INTER-DISTRICT	Angul-Dhenkanal	Angul	6.6	0.4 - 1.1	5.22

Frequent movement of Elephant from Anantapur RF to Dolia RF has been reported / observed. Hence development / increase of tree cover on identified site are desirable. The selected site is mostly barren and crop density is about 15% only.

22. Planting Model Suggested:

- Block Planting @1600 plants per ha with 10 year maintenance over 7 ha (11200 plants)
- ANR @500 plants / ha over 17 ha (8500 plants)
- Total seedlings proposed for Planting 19700 no (11200+8500)

23. Block Plantation:

a) Survey, Demarcation and Pillar Posting:

The identified area has been surveyed & pillars posted. It is to be resurveyed and missing pillars if any to be reposted as per Latitude / Longitude provided in the DGPS Map.

b) Preparation of Treatment map (Digital map):

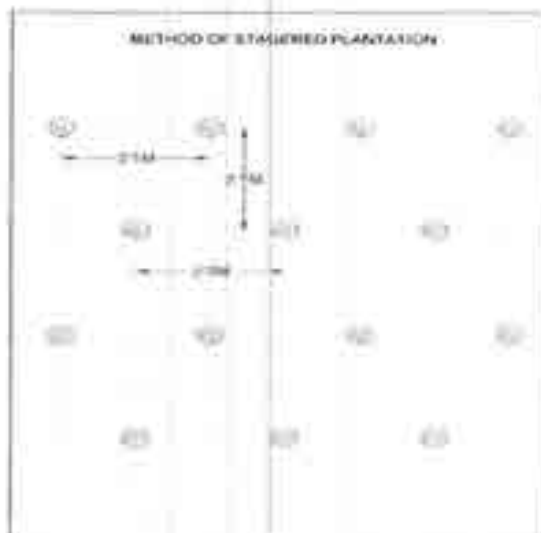
The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division / PCCF Office or through outsourcing.

c) Site Preparation:

After demarcation of the area, site preparation mostly clearing of invasive weeds / debris will be taken up as and where required.

d) Alignment & Stacking:

The plantation Model is Block Plantation @1600 Plants per ha. The area assigned for Block Plantation has been indicated in the Treatment map (1: 10000 Scale) & stacking will be taken up at a spacing of 2.5mx2.5m. The alignment will be of staggered manner to check runoff in sloppy terrain. The desired model is depicted in the right margin.



e) Digging of Pits (45cmx45cmx45cm):

It is proposed to dugout pits of size 45 cm x 45 cm x 45 cm preferably in month of February / March. The dugout earth will be kept at pit head on both sides separately. The top soil will be kept on one side and bottom soil on another side. Soil within 30cm from ground level will be considered as top soil and rest as bottom soil. The pits will be left for weathering due to Sun & Rain.

f) Refilling of Pits & application of organic Compounds / CDM/ FYM:

The pits will be refilled by altering the dugout soil of the pits i.e. top soil on bottom of the pit and bottom soil on top. Application of organic Compounds / CDM/ FYM & mixing the same properly before refilling is suggested. This will provide necessary nutrients to the plant as well as help in retaining soil moisture for a longer period.

g) Transportation of Seedlings including short carriage & watering at Pit site.

In the approved cost norm, provisions have been made to plant 18month old. As seedlings will be above 1m height invariable, careful transportation of seedlings will be of paramount importance. In case of top breaking of seedlings, the benefit of 18month old seedlings will be reduced substantially. Transportation of seedlings from Nursery site to Planting site and then short carriage has to be taken up carefully. Wherever water is available, the plants are

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to be watered before short carriage to minimize the shock to plants during long carriage by tractors / vans etc.

h) Planting of Seedlings:

After application of FYM/ CDM/ Organic manure, seedling will be planted carefully. The standard planting procedure is to be followed. As the pit size is of 45cm x 45cm x 45cm the following care will be taken during planting.

- Chemical fertilizer / insecticides applied as basal doze to be thoroughly mixed with soil.
- Seedlings collar zone will be at Ground Level or at best 2.5cm below the ground level. In no case it will not be more than 3cm below Ground Level.
- The Poly bags containing the seedlings are to be carefully removed. It is better to use a blade to cut open the bag so as to cause least disturbance to the ball of earth containing the seedlings.
- After planting the soil is to be compacted leaving 3" around the plant and the compact soil may be at Ground Level or 1" above the Ground level – allowance for soil settlement.
- In no case it should be a sunken around the plant.
- The planted plant should stand erect, if it is tilted due to speedy growth, a support with a stick collected locally to be provided.

i) Casualty Replacement:

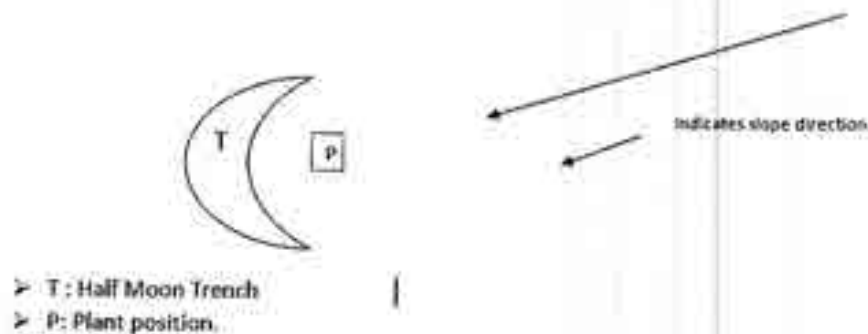
Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1st year and 10% in 2nd year operation in the approved cost norm. The same is to be carried out with good promising seedlings those can come up to a height of previous planted seedlings. During replacement in 2nd year application of fertilizers etc as in 1st year is to be followed.

j) Weeding & application of Fertilizer:

Two Weeding around the planted seedlings at a diameter of 1.00m has been prescribed in the approved cost norm. During 2nd weeding deep soil working around the plants at 1.00m diameter has also been prescribed. 1st weeding will be taken up just after one month of planting and 2nd weeding and soil working in month of September / October. As there is

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occasional rainfall in October providing half moon trench in sloppy terrain around each plant is suggested. A half moon trench model is given below.



During weeding (1st & 2nd) there is a provision of application of fertilizer to plants. Application of NPK @30gms per plant x 2 times is suggested. In no case 2nd weeding can be delayed beyond 15th of October.

There is a provision of one weeding in the 2nd year (complete weeding). Soil working and manuring at a 1m diameter around the plant, the same is to be implemented as described for 1st Year.

k) Fire line Tracing & Inspection Path:

Due to intensive protection grasses grow up within plantation. It is better to allow local people / VSS to cut the grasses take for stall feeding. Due to fallen dry leaves (Due to leaf shedding), there is possibility of fire hazards in February / March. It is suggested to have fire line at a width of minimum 3m all around the planting area, maintain inter partitioned line / both sides of foot path as a Fire line (minimum 3m wide in 1st year and 2m in subsequent year). These lines will be maintained as inspection path also. It will be maintained till completion of 10th year.

l) Watch & Ward

Watch and ward is essentially required against grazing in first two years and illicit felling in subsequent years. Adequate provisions have been made in the approved cost norm. Watch & ward provisions will be implemented as per provide norm. Besides watch & ward provided it is proposed to provide Bamboo Twig & Thorns fence around the Selected / identified area.

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24. ANR @500 seedling over 17 ha:

The silvicultural tending, planting of seedlings has been already described under Para 11. The same is to be followed.

25. Nursery & Choice of Species:

a) Seedlings required:

For required seedlings i.e. 19700 +10% casualty replacement in 1st year + 10% casualty replacement in 2nd year = 23640 seedlings will raised at nearby departmental Nursery. 18 month old seedlings will be planted as per guidelines and provisions in the cost norm

b) Choice of Species:

Considering the nature of soil and plant succession stage the following species are suggested for planting. As it is an elephant movement zone species liked by elephants will be given an edge over other species.

- i) *Acacia Catechew* (Khair)
 - ii) *Aegle marmelos*
 - iii) *Bombax Ceiba* (Simili)
 - iv) *Cassia fistula* (Sunari)
 - v) *Dillenia indica* (Ou)
 - vi) *Emblica officinalish* (Anla)
 - vii) *Limonia acidissima* (Kaintha)
 - viii) *Mangifera indica* (Aamba)
 - ix) *Pterocarpus marsupium* (Bija)
 - x) *Terminalia belerica* (Bahada)
 - xi) *Terminalia tomentosa* (Asana)
 - xii) *Syzyglum cumini* (Jamu)
- (NB: The area is not a bamboo Zone)

c) Nursery Cost :

The approved cost norm for raising 1000 seedling is Rs 58025 projected for the year 2023-24. For 23640 seedlings the cost comes to Rs 13,71,711/-

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d) The year wise cost break up is as follows

Year	1 st FY	2 nd FY	3 rd FY	Total
For 1000 seedling	11160	39673	7192	58025
For 23640 seedlings	263822	937870	170019	1371711

26. Bamboo Twig & Thorn Fencing:

Justification for Providing Bamboo Twig Fencing:

The selected area is in forest block. Elephant and other wildlife movement are observed. Animals like Elephant, Bear, Python, Jungal Cat, Hyena, Fox, Barking Deer, Mongoose, Snakes, Lizards, Rabbits, fowl etc are residing in and the nearby forests. As this is considered as forests all around and movement of wild animals are seen, it is proposed to provide Bamboo Twigs Fencing.

i) Periphery of the identified Land:

The periphery of the identified land is 3.60 km (3600 meter). For fencing of 3600 meter, the required cost is calculated to be Rs 15,87,082/- as given below.

ii) Financial Projection for Fencing:

The cost norm matrix approved for bamboo twig fencing is as follows.

Cost Norm Matrix approved for bamboo twig fencing (for 1 ha / 250m)									
	(21-22)	(22-23)	0 th (23-24)	1 st (24-25)	2 nd (25-26)	3 rd (26-27)	4 th (27-28)	5 th (28-29)	Total
Base norm	0	45759	7720	11895	11895	11895			89164
2023-24			0	52971	9384	15182	15940	16737	110214
For 3600 m				762782	135130	218621	229536	241013	1587082

The cost norm for 2023-24 is Rs 110214/- per 1ha / 250 Rmt. The proposed cost for 3600m for bamboo twig & thorn fencing comes to Rs 15,87,082/-

The approved base cost norm and matrix is at annexure-VI.

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27. Soil & Moisture Conservation:

The area taken for planting balance seedlings is of plain and slightly sloppy area. For better development of both natural and planted seedlings the Soil & Conservation of Moisture measures as prescribed under Model C is suggested. Under this model Soil Conservation measure structures like Staggered Trench, Percolation Pit, Contour Trench, Graded Earthen Bond, LBCD, Wire mesh LBCD, Sub Surface Dyke, & WHS as per Slope will be Provided. For the selected site LBCD and contour bonding will be intensively implemented under SMC. As per the approved matrix the cost projected for the Year 2022-23 is as furnished below.

Matrix for SMC per Ha									
	(21-22)	(22-23)	0 th (23-24)	1 st (24-25)	2 nd (25-26)	3 rd (26-27)	4 th (27-28)	5 th (28-29)	Total
Base norm	0	20215	3032	3032	3032	3032			32343
2023-24			0	23401	3684	3870	4062	4267	39284
For 24 ha				561624	88416	92880	97488	102408	942816

For 24 ha the cost required is $24 \times 39284 = \text{Rs } 9,42,816/-$

28. Provision for watering:

The site selected is of plain and eroded land. It is proposed to provide watering by Bore well with Diesel Generator Set over area of 7 hectares covered under AR plantation @1600 plants per ha. The cost norm for 5 ha or part thereof has been provided in approved cost norm. (Watering model-W-II)

Sl No	Commencement Year	0 th Yr	1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	Total
1	Base Norm / ha	5100	52100	78410	78410	78410	78410	370840
2	2023-24/ ha	56228	60312	95299	100076	105076	110330	527321
	For 7 ha	393596	422184	667093	700532	735532	772310	3691247

29. Planting Cost projection:

a) For Block Plantation @ 1600 plants per Ha

The approved cost norm and Matrix for 1600 plant planting in Block Plantation mode has been provided at Annexure VIII. The cost for 2023-24 year is as follows.

been provided at Annexure

Cost Norm Matrix For Block plantation (@1600 Plants per Hectare)

Sl no	Commencement of year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	Total cost
	Base norm	30500	147361	29639	19148	6857	8490	6857	6857	6857	6857	6857			276280
1	2023-24			33626	170588	36023	24438	9190	9648	12543	10637	11170	11727	12313	341903
	For 7 ha			235382	1194116	252161	171066	64330	67536	87801	74459	78190	82089	86191	2393321

The cost for Block Plantation over 7 ha @ 1600 plants per ha comes to Rs 23,93,321/-

b) For ANR @500 Plants per Ha.

The approved cost norm and Matrix for ANR @500 Plants per Ha in ANR mode has been provided at Annexure - IX. The cost for 2023-24 year is as follows.

Cost Norm Matrix For ANR plantation (@500 Seedlings per hectare)

Sl no	Commencement of year	I	II	III (0 th Yr)	IV (1 st Yr)	V (2 nd Yr)	VI (3 rd Yr)	VII (4 th Yr)	VIII (5 th Yr)	IX (6 th Yr)	X (7 th Yr)	XI (8 th Yr)	XII (9 th Yr)	XIII (10 th Yr)	Total cost
	Base norm	13400	48871	12316	8900	4800	4800	4800	4800	4800	4800	4800			117087
	2023-24			14774	56575	14969	11359	6432	6754	7092	7447	7819	8209	8621	150051
	For 17 ha			251158	961775	254473	193103	109344	114818	120564	126599	132923	139553	146557	2550867

The cost for ANR with planting @500 plants per ha comes to Rs 25,50,867/-


Muthuman N
 Agent of Mines
 Keelapatti Dist.- Jeipur
 P.O:- 755007
 M/s. Ferro Alloy Corporation Limited

30. Total Plantation Cost for Additional CA Land over 24 ha:

Sl no	Item	Base Cost per Ha	Total projected cost per ha (2023-24)	Total cost for 7ha AR+ 17 ha ANR@500/-
1	Seedling Cost / 1000 no	50310	58025	1371711
2	AR 7 ha @1600 plants / ha	276280	341903	2393321
3	ANR @500 Plants	117087	1500	2550867
4#	Bamboo Twig Fencing /250 rmt over 3600 Rmt	89164	110214	1587082
5	SMC (Model-C)	32343	39284	942816
6	Watering by Bore well with Diesel Generator Set over AR Plantation -7 ha	370840	527321	3691247
	Total			12537044

(One Crore Twenty Five Lakh Thirty Seven Thousand & Forty Four Only)

31. Total Financial Out lay for Compensatory Afforestation & for planting of balance seedlings:

Sl No	Description	Amount	Remark
1	Compensatory afforestation cost over 24 ha of NFL at village Kerajodi	5092783/-	Para 17 of the Scheme
2	Planting of balance Seedlings in Dolia RF over 24 ha DFL	12537044/-	Para 30 of the Scheme
	G. Total	1,76,29,827/-	

(Rupees One Crore Seventy Six Lakh Twenty Nine Thousand Eight Hundred & Twenty Seven Only)

NB: No cost escalation has been provided as the cost norm includes annual enhancement of 5% both labour & material component annually.

M. Muthumari
Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jaipur
 Pin- 305047

Encl:

A- Documents:

- 1) Letter No153 dated 05.02.2016 of Collector, Dhenkanal allocation of CA land. (Annexure-I)
- 2) Letter No5-ORC 288/2016-BHU dated 18.11.2016 of MoEF &CC, IRO, Bhubaneswar (Annexure-II)
- 3) Authenticating of DGPS Map of CA Land identified at village Kerajodi by ORSAC vide his letter no ORSAC /DGPS-FD/1064/2022/2204(2) Dated 23.06.2022 (Annexure-III)
- 4) Notification of Kerajodi A Protected Forests Letter No 10F(Cons)77/2020/ 19366/F&E dated 01.12.2020 (Annexure-IVA)
- 5) Notification of Kerajodi B Protected Forests Letter 10F(Cons)77/2020/ 19373/F&E dated 01.12.2020(Annexure-IVB)
- 6) Notification of Kerajodi C Protected Forests Letter10F(Cons)77/2020/ 19380/F&E dated 01.12.2020 (Annexure-IVC)
- 7) Approved cost norm for one ha ANR With gap planting @200 Plants per ha (Annexure V).
- 8) Approved Cost norm & matrix for Bamboo Twig Fencing: (Annexure-VI)
- 9) Approved Cost norm Matrix for SMC (Model-C): (Annexure VII)
- 10) Approved Cost Norm Block Plantation @1600 plants per ha model (Annexure VIII).
- 11) Approved Cost Norm for ANR @500 Plants per Ha in ANR mode(Annexure IX).

B- Maps & Plates:

- I. Cadastral Map of CA land identified at Village Kerajodi, (Plate-I)
- II. DGPS map of the CA land at Kerajodi (Authenticated by ORSAC) (Plate-II)
- III. Corresponding Topo map (1:50000 Scale) (Plate-III)
- IV. KML File in CD
- V. Add. CA land identified at Dolia RF (DGPS Map) (Plate-IV)
- VI. Treatment Map of Add. CA land Dolia RF (1:1000 Scale) (Plate-V)
- VII. KML File in CD

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani Dist. Jajpur
P.O. Talas

[Signature]
Divisional Forest Officer,
Dhenkanal Division

DISTRICT OFFICE, DHENKANAL.

No. 153 / Dt. 05/02/2016

To

Divisional Forest Officer,
Dhenkanal Division.

Sub:

Identification of suitable non-forest Govt. land for compensatory afforestation purpose for Kalarangiatta Chromite Mines of M/s. FACOR Ltd. in Jajpur District.

Ref:

Memo No.904/Dt.29.01.2016 of DFO, Cuttack Forest Division.

Sir,

With reference to the letter on the subject cited above, I am to say that the Tahasildar, Kankadahad has jointly identified an area of Ac.59.50 of Non-Forest Govt. land with the Forest Range Officer, Kamakhyanagar, East Range, for the purpose of compensatory afforestation for Forest Diversion proposal for Kalarangiatta Chromite Mines of M/s. FACOR Ltd. in Jajpur District. The Details of land schedule and land plan attached herewith for kind reference.

You are, therefore, requested to file necessary requisition in Form No.1A along with other documents required as per OGLS Act/Rules before the Tahasildar, Kankadahad, for allotment of the identified non-forest Govt. land as per the requirement of M/s. FACOR Ltd for compensatory afforestation purpose.

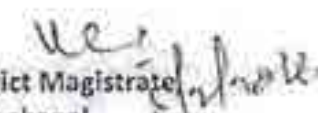
Yours faithfully,


Addl. District Magistrate,
Dhenkanal.Memo No. 154 /Rev, Dt. 05/02/2016

Copy forwarded to the General Manager, Kalarangiatta Chromite Mines of M/s. FACOR Ltd., Jajpur, for information and necessary action.


Addl. District Magistrate,
Dhenkanal.Memo No. 155 /Rev, Dt. 05/02/2016

Copy forwarded to the Divisional Forest Officer, Cuttack Forest Division, for information with reference to his letter No.903/Dt.29.01.2016.


Addl. District Magistrate,
Dhenkanal.

Muthumari M
Agent of Mines
M/s. Ferro Alk.
Kallap
Pin- 751001

OFFICE OF THE TAHASILDAR, KANKADAHAD

No. _____/dt. _____

To,

The Deputy Collector Revenue,
Collectorate, Dhenkanal.

Sub.: Identification of suitable non-forest Govt. land to the extent of 23.80 Hectares (Ac. 59.50) for compensatory afforestation purpose by Kalarangiatta Chromite Mines of M/s. FACOR Ltd. in Jajpur District.

Ref.: Letter No. 13/ Rev, Dt. 06.01.2016 of District office Dhenkanal.

Madam,

With reference to the letter on the subject cited above, I am to submit herewith the land schedule along with land plan of Ac. 59.50 of non forest Govt. land for the purpose of compensatory afforestation for M/s. FACOR Ltd. After duly identified at this level at the village- Kerajodi under this Tahasil area. The said schedule of non-forest land is free from encroachment and all encumbrances as per the report of RI. Kanakdahad.

LAND SCHEDULE

Village	Khata No.	Plot No.	Area in acre	Kisam	Remarks
Kerajodi	155(AAA)	315	Ac.27.25 out of Ac. 62.00	Parbat-I	Part
		318	Ac.32.25 out of Ac. 56.25	Parbat-I	Part
Total area in acre			Ac. 59.50		

Enclosures:- As above

Yours faithfully,

Sd/-
Tahasildar,
Kankadahad

Memo No. 210 /Date. 30.01.16

Copy forwarded to the General Manager, Kalarangiatta Chromite Mines of M/s. FACOR Ltd. For information with reference to Memo No. 14 /dt. 06.01.2016 of District Office, Dhenkanal for information and necessary action.

Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani Dist.- Jajpur
Pin- 755047

30/1/16
Tahasildar,
Kankadahad



Government of India भारत सरकार
Ministry of Environment, Forest & Climate Change: पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Eastern Regional Office: पूर्वी क्षेत्रीय कार्यालय
A-3, Chandrasekharpur ए/३, चन्द्रसेखरपुर
Bhubaneswar - 751 023 भुवनेश्वर - ७५१ ०२३



Telephone: 0674-2301213, 2301248, 2302632, 2302453, Fax: 0674-2302432, E-mail: roes.bh.mefn.in

No.5-ORC/288/2016-BHU

18th November, 2016

To

The Principal Secretary,
Forest & Environment Dept.,
Government of Odisha
Sachivalaya,
Bhubaneswar - 751 001.

Sub:

Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area for Chromite ore mining from their Kalaranglatta Chromite Mines by M/s Ferro Alloys Corporation Ltd. (FACOR Ltd.) in Cuttack Forest Division coming under jurisdiction of Sildanda Tehsil of Jajpur district, Odisha.

Ref:

- 1) This office letter of even number dated 12.08.2016.
- 2) State Govt. letter No.10F(Cons)228/2016-17975/F&E dated 28.09.2016.

Sir,

With subject and reference cited above, I am directed to inform that the shape files of proposed C.A. area submitted by State Govt. vide letter under reference-2 has been examined in the Decision Support System (DSS) of Forest Survey of India and it is observed that out of 24 ha C.A. area, 10 ha area contains MDF and balance 14 ha is open forest.

It is therefore requested to kindly identify alternate patch of non-forest land for compensatory afforestation and submit the same along with shape file to this office for further necessary action.

Yours faithfully,

(R.K. Samal)

Conservator of Forests (Central)

Copy for

1. The Addl. PCCF (Nodal), O/o the PCCF, Forest Department, Govt. of Odisha, Aranya Bhawan, Chandrasekharpur, Bhubaneswar-751 023 for kind information and necessary action.
2. The Director (Mines), M/s FACOR Limited, Laxmi Bhawan, Bhadrak - 756 100, Odisha for information and necessary action.

Conservator of Forests (Central)

M. Muthumani
Muthumani M
Agent of M/s
M/s. Ferro Alloys
Kallapur
Pir-740047



ODISHA SPACE APPLICATIONS CENTRE (ORSAC)
Department of Science & Technology, Government of Odisha

Annexure-III

ORSAC/DGPS-FD/1064/2022/ 2204/2 dt. 23.6.22

To

The D.F.O.,
Dhenkanal Forest Division,
Dhenkanal, Email: dfo.dhenkanal@gmail.com

Sub: Verification of DGPS Survey of Compensatory Afforestation land in Kerajodi village, Kankadahad Tahsil, Dhenkanal district in lieu of forest areas proposed for diversion for Kalarangiatta Chromite Mines at Kalarangiatta in Sukinda, Jajpur District of M/s FACOR.

Ref: i) Your letter no. 3945 3F/ (Misc.)/152/2022 dated 04.06.2022.
ii) M/s FACOR letter no. FACCOR/bhadrak/Legal/121/2022 Dt.11.05.2022.

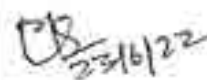
Sir,

With reference to the above it is to inform you that, the DGPS surveyed maps showing Compensatory Afforestation land in Kerajodi village, Kankadahad Tahsil, Dhenkanal district in lieu of forest areas proposed for diversion for Kalarangiatta Chromite Mines at Kalarangiatta in Sukinda, Jajpur District of M/s FACOR has been verified by ORSAC and is certified that the map is correct at a confidence level of 95%. Total Compensatory Afforestation land comes in 2 part plots in one cadastral sheet of Kerajodi Revenue villages under Kankadahad Tahsil, Dhenkanal district and works out to 24.261Ha. from the submitted .shp files against the allotted area of 24.079Ha/59.5Ac. from the submitted record. Detail plot wise comparative statistics of forest areas proposed for diversion is attached.

Thanking You.

Yours faithfully

Encl: One hard copy map


(M. K. Sanabada)
Scientist 'D'

Copy to: M/s Ferro Alloys Corporation Ltd. (Vedanta), D.P. Nagar, Randia, Bhadrak-756135, Odisha for information.


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jajpur
Pin-755047

Plot No.: 45/48, Jaydev Vihar, Near Gopabandhu Academy of Administration, Unit-16, Bhubaneswar-751023,
Odisha, India, Tel: +91 674 2303625 / 3293545, Fax: +91 674 2300681
E-mail: orsac2012@gmail.com / orsac.od@nic.in, Website: <http://orsac.gov.in>

**STATISTICS OF COMPENSATORY AFFORESTATION LAND(NFL) IDENTIFIED AT VILLAGE KERAJODI
IN KANKADAHAD TAHASIL, DHENKANAL DISTRICT IN LIEU OF FOREST AREA PROPOSED FOR
DIVERSION IN RESPECT TO KALARANGIATTA CHROMITE MINES OF M/S FERRO ALLOYS
CORPORATION LTD.**

SL. NO.	VILLAGE NAME	PLOT NO.	KISSAM	ALLOTED AREA AC.	ALLOTED AREA HA.	MAP AREA HA.
1	KERAJODI	318 PART	PARBAT-I	32.25	13.051	12.778
2	KERAJODI	315 PART	PARBAT-I	27.25	11.028	11.483
TOTAL CA LAND AREA				59.5	24.079	24.261

M. Muthumari

Muthumari
Agent of Mine
Mrs. Ferro Alloys Corporo
Kaliapani, Dist-
P.O-755047

UP 23/6/22
Shri M. K. Sanabada
Scientist, ORSAC
Bhubaneswar

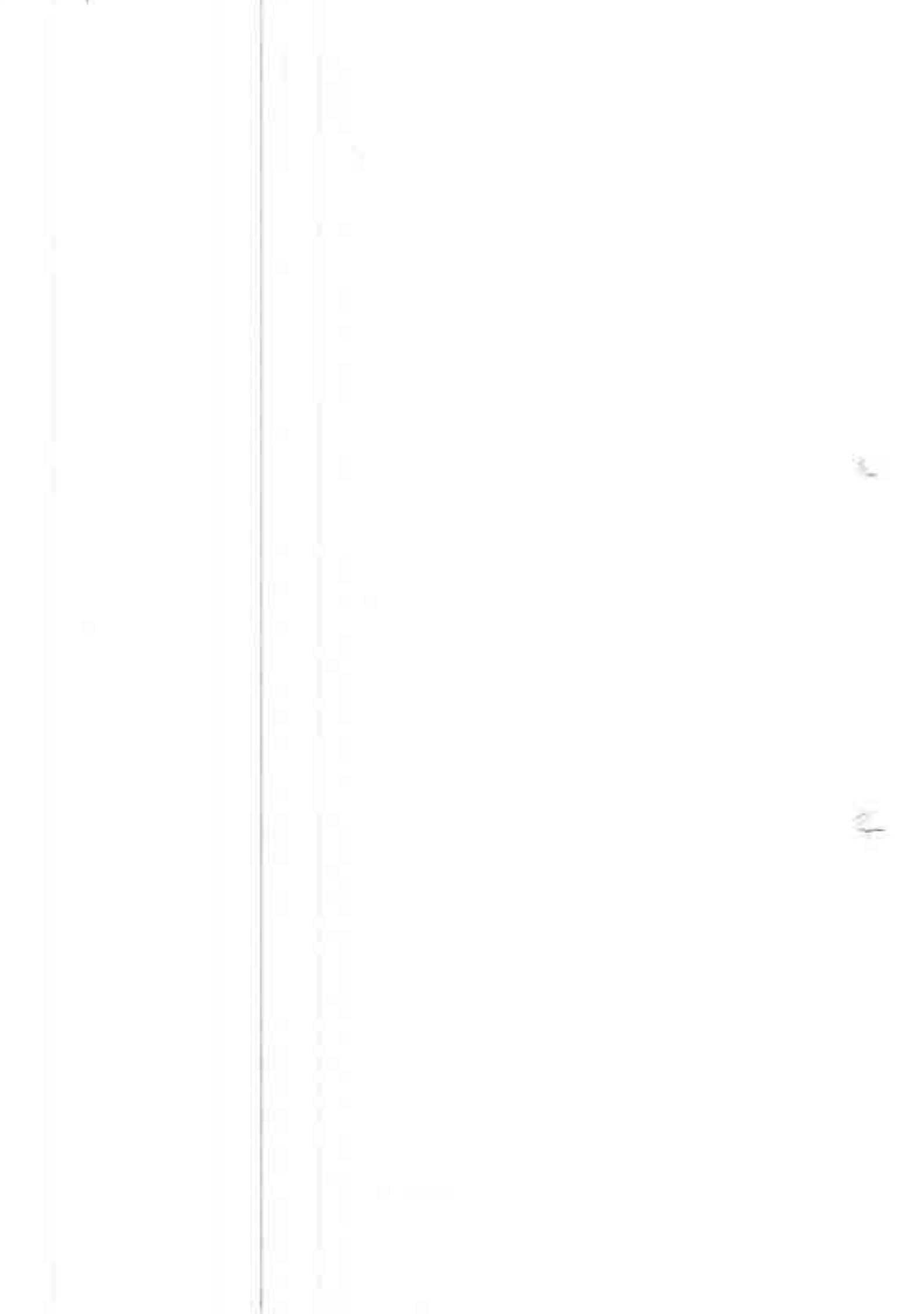
Annexure-V

Cost Norm For ANR plantation (@200 Seedlings per hectare)

For ten year maintenance.

Wage rate- @Rs311

Sl. No	Item of Work	Preferable Period of Execution	Person days	Labour cost @Rs 311/- per day	Material (Rs)	Total (Rs)
0th Year (Advance Work)						
1	Survey, Demarcation and Pillar Posting,	Nov / Dec	2	622	0	622
2	Preparation of Treatment Map(Digital Map)	Nov / Dec	1	311	100	411
3	Site Preparation	Nov / Dec	2	622	0	622
4	Silvicultural operation including clearance of weed, cutting of climber , high stump cutting , singling o shoots and removal of cut out after drying from the field to the black space.	Jan/Feb	15	4665	0	4665
5	Alignment & Stacking of pits.	Feb/Mar	0.5	155.5	0	155.5
6	Digging of pits (45cm cube)in hard and gravity soil	Feb / March	8	2488	0	2488
	G.Total		28.5	8863.5	100	8963.5
1st Year / Planting Year						
7	Refilling of pits by altering the dugout soil o the pits. Application of organic compounds /CDM/FYM & Mixing the same properly	Jun/July	1.5	466.5	1000	1466.5
8	Transportation of 18 months ol polythenes baga seedlings in hired truck/tractor from the permanent/Mega nursery to planting site including loading and unloading (Average lead of 10RKM) and stacking the seedlings @Rs 6/- per seedling (220 no)	July / Aug	0	0	1320	1320
9	Watering polyspot seedlings at planting site	July / Aug	0.5	155.5	0	155.5
10	Conveyance of polyspot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer , and painting after scooping soil with other applied material and pressing the soil perfectly around the planting seedlings	July / Aug	4.5	1399.5	0	1399.5



10	Cost of Insecticide & Fertilizer. (a) NPK/Bio fertilizer @50gm/ plant as basal dose=10kg @Rs30/- per Kg : Rs300/- (b) Urea/Vermicompost /mo khata/any other fertilizer @Rs 150/- (c) Insecticide /Bio-pesticide @5gms/plant =1kg @Rs 150/- per kg =Rs 150/-	July / Aug	0	0	600	600
	Casualty plantation @10%(20nos)	July / Aug	0.5	155.5	0	155.5
11	1 st Weeding & Manuring	Aug / Sept	2	622	0	622
13	2 nd Weeding , soil working (1m diameter around the plants) & Manuring	Oct / Nov	3	933	0	933
16	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb/ March	3	933	0	933
17	Watch & Ward including water as per requirement	Aug-Mar	8	2488	0	2488
	G.Total		23	7153.0	2920.0	10073
2nd Year Maintenance						
18	Transportation of 20 seedlings from Nursery to plantation site including loading and conveyance by Tractor @6/- per seedlings	Jul	0.0	0.0	120.0	120.0
19	Casualty Replacement (10%)	Jul	0.5	155.5	0.0	155.5
21	Cost of Insecticide & Fertilizer. (a) Cost of Insecticide /Bio-pesticide(Themet/forate) @5gms/plant =0.1kg @Rs 150/- per kg =Rs 15/- (b) Urea/NPK/Vermicompost /mo khata/any other fertilizer @Rs 560/-	Aug-Sep	0.0	0.0	575.0	575.0
20	weeding (Complete weeding), Manuring and soil working (1mt diameter around the plants)	Sep/Oct	4.0	1244.0	0.0	1244.0
25	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb/ March	3.0	933.0	0.0	933.0
26	Watch & Ward including water as per requirement	April / March	12.0	3732.0	0.0	3732.0
	G.Total		19.5	6064.5	695.0	6759.5
3rd Year maintenance						
28	Cost of fertilizer(Urea/NPK /Bio-Fertilizer/Vermicompost/Mo khata/any other fertilizer =Rs560/-	Sep/Oct	0	0	560	560

29	weeding (Complete weeding), Manuring and soil working (1mt diameter around the plants)	Aug-Sep	4	1244	0	1244
30	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
31	Watch & Ward including water as per requirement	Apr/Mar	12	3732	0	3732
	G.Total		19	5909	560	6469
4th Year maintenance						
32	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb / March	3	933	0	933
33	Watch & Ward including maintenance of vegetative fencing	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
5th Year maintenance						
34	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
35	Watch & Ward including water as per requirement	Apr/Mar	12	3732	0	3732
	Sub Total		15	4665	0	4665
6th Year maintenance						
36	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
37	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
7th Year maintenance						
38	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
39	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
8th Year maintenance						
40	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
41	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
9th Year maintenance						


M. Muthumari
 Agent of Mines
 M/s. Ferro Alloys Corporation Ltd.
 Kakkaiyur, Dist- Jey.
 Pin- 605047

42	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
43	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
10th Year maintenance						
44	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
45	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665

ABSTRACT.

Year	Person days	Labour Component	Material Component	Monitoring & Supervision charge 5% of total cost	Cost of seedlings @Rs 50.31 per seedlings	Total
0th Yr	28.5	8864	100	436.50	0	9400.00
1st yr	23	7153	2920.0	427.00	11068	21568.00
2nd Yr	19.5	6065	695.0	240.50	1006	8006.00
3rd Yr	19	5909	560	231.00	0	6700.00
4th Yr	15	4665	0	135.00	0	4800.00
5th Yr	15	4665	0	135.00	0	4800.00
6th Yr	15	4665	0	135.00	0	4800.00
7th Yr	15	4665	0	135.00	0	4800.00
8th Yr	15	4665	0	135.00	0	4800.00
9th Yr	15	4665	0	135.00	0	4800.00
10th Yr	15	4665	0	135.00	0	4800.00
Total	195	60645.0	4275	2280.00	12074	79274.00

M. Mithun
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin-755047

Annexure-VI

Fencing For Compensatory Plantation raised inside the Forest Areas using Bamboo Twigs & Thorns

Wage Rate Rs 311/- per day

Sl no	Items of work	Preferable period of Execution	Mandays	Wages	Material cost (Rs)	Total Cost (Rs per ha)
0th year Maintenance						
Nil						
1st year Maintenance						
1	Taking an average perimeter of 250Rmt/ha @ 93.85/mt (Half bundle Bamboo Twigs /mt @ 120/Bundle) Labour ,Material = 40.60(approx)	Sep/oct	30	9330	14133	23463
2	Bamboo poles of 8 height at a distance of 2mt spacing to be fixed (2" under soil & 2" above soil) $250/2=125+1=126$ Nos of Bamboo poles 1 bamboo (Aprox) 24" height =3poles $126/3=42$ Bamboos @ 200/Bamboo	Sep/oct		0	8400	8400
3	Preparation of Bamboo poles, Digging of holes of 2ft. Depth and fixing Bamboo poles @ 20 poles/MD	Sep/oct	6.5	2021.5	0	2021.5
4	Cost of Bamboo for tying the Bamboo twigs row fence with double side two Strand Bamboo batten (one 6" above ground and other one 4ft" above ground) $(250*2)/24= 21$ bamboo @ 200/Bamboo	Sep/oct		0	4200	4200
5	Making Bamboo batten, finishing the Batten and Tying the same on double strand on Coir rope etc @ Rs 11/Rmt.	Sep/oct	9	2799		2799
6	Cost of coir rope @ Rs 0.125kg /Rmt $500*0.125kg=62.5kg$ @ Rs 70/kg	Sep/oct		0	4375	4375
7	Making one Bamboo twigs gate with Bamboo frame				500.5	500.5
Total			45.5	14150.5	31608.5	45759
2nd year Maintenance						
1	Repair and Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6220	1500	7720
Rate per running mt. $7720/250= 30.88$ or say 31Rmt						
3rd year Maintenance						
1	Repair and Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6220	5675	11895
Rate per running mt. $11895/250= 47.58$ or say 48Rmt						
4th year Maintenance						
1	Repair and Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6220	5675	11895

Rate per running mt. 11895/250= 47.58or say 48Rmt						
5th year Maintenance						
1	Repair and Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6220	5675	11895
Rate per running mt. 11895/250= 47.58or say 48Rmt						

Abstract					
Sl no	year	No of Person days	Labour Cost @ Rs 311/- per day	Material cost	Total Cost (Rs)
1	0th year	0	0	0	0.00
2	1st year	45.5	14150.5	31608.5	45759.00
3	2nd year	20	6220	1500	7720.00
4	3rd year	20	6220	5675	11895.00
5	4th year	20	6220	5675	11895.00
6	5th year	20	6220	5675	11895.00
Total		125.5	39030.5	50133.5	89164.00


 Muthuramy
 Agent of Mines
 M/s Ferro Alloys Corporation Limited
 Kalapani, Dist- Jajpur
 Pin- 755047

Sl no	Commencement of year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	Total cost
	Base norm	0	45759	7720	11895	11895	11895										
1	2021-22		48047	8511	13770	14458	15181										99967
2	2022-23			50449	8937	14459	15181	15940									104966
3	2023-24				52971	9384	15182	15940	16737								110214
4	2024-25					55620	9853	15941	16737	17574							115725
5	2025-26						58401	10346	16738	17574	18453						121512
6	2026-27							61321	10863	17575	18453	19376					127588
7	2027-28								64387	11406	18454	19376	20345				133968
8	2028-29									67606	11976	19377	20345	21362			140666
9	2029-30										70986	12575	20346	21362	22430		147699
10	2030-31											74535	13204	21363	22430	23552	155084

M. M. Muthumari

Muthumari M
Agent of Mines
Kaliapani, Dist- Jaipur
Pib: 755017

Annexure-VII

Matrix for (SMC)																		
Sl No	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
Base Norm		0	20215	3032	3032	3032	3032											
1	2021-22	0	21226	3342	3510	3685	3870											35633
2	2022-23			22287	3509	3686	3869	4064										37415
3	2023-24				23401	3684	3870	4062	4267									39284
4	2024-25					24571	3868	4064	4265	4480								41248
5	2025-26						25800	4061	4267	4478	4704							43310
6	2026-27							27090	4264	4480	4702	4939						45475
7	2027-28								28445	4477	4704	4937	5186					47749
8	2028-29									29867	4701	4939	5184	5445				50136
9	2029-30										31360	4936	5186	5443	5717			52642
10	2030-31											32928	5183	5445	5715	6003		55274

M. Muthuram
Muthuram M
 Agent of Mines Corporation Limited
 P.O. No. 1047
 Kallapan, Taluk, Jeypur

Annexure-VIII

Cost Norm For Block plantation (@1600 Plants per Hectare)						
For ten year maintenance.						
Wage rate- @Rs311						
Sl. No	Item of Work	Preferable Period of Execution	Person days	Labour cost @Rs 311/- per day	Material (Rs)	Total (Rs)
0th Year (Advance Work)						
1	Survey, Demarcation and Pillar Posting,	Nov / Dec	2	622	0	622
2	Preparation of Treatment Map(Digital Map)	Nov / Dec	1	311	100	411
3	Site Preparation(Cleaning and removal of debris)	Nov / Dec	12	3732	0	3732
4	Creation of 4.00mt wide inspection path	Feb/ March	1	311	0	311
5	Alignment & Stacking of pits.	Jan / Feb	2	622	0	622
6	Digging of pits (45cm cube)in hard and gravity soil	Feb / March	64	19904	0	19904
7	Construction of Temporary Labor stand , Drinking water facility and First-Aid etc	Jan / March	0	0	3500	3500
	G.Total		82	25502	3600	29102
1st Year / Planting Year						
8	Refilling of pits by altering the dugout soil o the pits. Application of organic compounds /CDM/FYM & Mixing the same properly	Jun/July	12	3732	8000	11732
9	Transportation of 18 months old polythene seedlings in hired truck/tractor from the permanent/Mega nursery to planting site including loading and unloading (Average lead of 10RKM) and stacking the seedlings @Rs 6/- per seedling (1760 no)	July / Aug	0	0	10560	10560
10	Watering polypot seedlings at planting site	July / Aug	3	933	0	933
11	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer , and painting after scooping soil with other applied material and pressing the soil perfectly around the planting seedlings	July / Aug	36	11196	0	11196

M. Kuthumari
 M. Kuthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Jaipur, Dist. Jaipur
 Pin- 302007

12	Cost of Insecticide & Fertilizer. (a) NPK/Bio fertilizer @50gm/ plant as basal dose=80kg @Rs30/- per Kg : Rs2400/- (b) Urea/Vermicompost /mo khata/any other fertilizer in two subsequent dose @Rs 1200/- (c) Insecticide /Bio-pesticide @5gms/plant =8kg @Rs 150/- per kg =Rs 1200/-	July / Aug	0	0	4800	4800
13	Casualty plantation @10%(160nos)	July / Aug	4	1244	0	1244
14	1 st Weeding & Manuring	Aug / Sept	15	4665	0	4665
15	2 nd Weeding , soil working (1m diameter around the plants) & Manuring	Oct / Nov	20	6220	0	6220
16	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb/ March	3	933	0	933
17	Watch & Ward including water as per requirement	Aug-Mar	12	3732	0	3732
	G.Total		105	32655	23360	56015
2nd Year Maintenance						
19	Transportation of 160 seedlings from Nursery to plantation site including loading and conveyance by Tractor @6/- per seedlings	Jul	0.0	0.0	960.0	960.0
20	Casualty Replacement (10%)	Jul	4.0	1244.0	0.0	1244.0
21	Cost of Insecticide & Fertilizer. (a) Insecticide /Bio-pesticide @5gms/plant =0.8kg @Rs 150/- per kg =Rs 120/- (b) Urea/NPK/Vermicompost /mo khata/any other fertilizer @Rs 4486/-	Aug-Sep	0.0	0.0	4606.0	4606.0
22	weeding (Complete weeding), Manuring and soil working (1mt diameter around the plants)	Sep/Oct	20.0	6220.0	0.0	6220.0
23	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb/ March	3.0	933.0	0.0	933.0
24	Watch & Ward including water as per requirement	April / March	18.0	5598.0	0.0	5598.0
25	Maintenance of Temporary Labour stand , Drinking water facility and First-Aid etc	Apr-Mar		0.0	1000.0	1000.0
	G.Total		45.0	13995.0	6566.00	20561.00
3rd Year maintenance						
28	Cost of fertilizer(Urea/NPK /Bio-Fertilizer/Vermicompost/Mo khata/any other fertilizer	Sep/Oct	0	0	4486	4486
29	weeding (Complete weeding), Manuring and soil working (1mt diameter around the plants)	Sep/Oct	20	6220	0	6220

M. K. Muthuraj
Muthuraj M
K. M. Muthuraj
K. M. Muthuraj

M/s. Ferro
Kannur
Pin-690047

30	Fire line tracing(2mt wide fire line over 400m long) Including maintenance of inspection path	Feb/Mar	3	933	0	933
31	Watch & Ward including water as per requirement	Apr/Mar	18	5598	0	5598
32	Maintenance of Temporary Labour stand , Drinking water facility and First-Aid etc	Apr/Mar	0	0	1000	1000
	G.Total		41	12751	5486	18237
4th Year maintenance						
33	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb / March	3	933	0	933
34	Watch & Ward including maintenance of vegetative fencing	April / March	18	5598	0	5598
	Sub Total		21	6531	0	6531
5th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
36	Watch & Ward	Apr/Mar	18	5598	0	5598
	Sub Total		21	6531	0	6531
6th Year maintenance						
37	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
38	Punching of branches , singling out of multiple shoots	Jan/Marc	5	1555	0	1555
39	Watch & Ward	April / March	18	5598	0	5598
	Sub Total		26	8086	0	8086
7th Year maintenance						
40	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
41	Watch & Ward	April / March	18	5598	0	5598
	Sub Total		21	6531	0	6531
8th Year maintenance						
42	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
43	Watch & Ward	April / March	18	5598	0	5598
	Sub Total		21	6531	0	6531
9th Year maintenance						
44	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933


 M. M. Muthumani
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Chennai - 600 004
 Tel: 044-24454141

Matrix For Block plantation (@1600 Plants per Hectare)

Sl no	Commenced of year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total count
Base norm.		30500	147361	296379	19168	8857	8492	8857	8857	8857	8857	8857	8857									
1	2021-22	30500	154729	325378	22166	8135	8751	11177	9648	10131	20637	13169										310117
2	2022-23		325076	183466	34538	23278	8751	9189	11948	10130	20638	13169	11728									325613
3	2023-24			59878	170588	36021	24438	5196	9648	12543	20637	11170	11727	12712								341909
4	2024-25				46307	178117	87624	25660	8022	10130	18170	12588	13729	12712	12712							358098
5	2025-26					27072	188073	19715	10043	10311	20637	18829	15777	12712	12712	12712						374598
6	2026-27						188073	197477	41701	28290	10660	11609	14520	12712	12712	12712	11254					395798
7	2027-28								40871	202351	29705	11172	11727	15346	13028	13278	14253	14969				415587
8	2028-29								62918	217718	43975	11190	11771	12712	16008	13375	14252	14967	15715			436366
9	2029-30								44062	238005	48274	32790	12712	12712	12712	16808	14254	14970	15715	16501		458186
10	2030-31										67115	340015	50868	34886	22584	13375	17608	14967	15715	16501	17628	481096

N. Nuthumani
N. Nuthumani M
 Nuthumani M
 Agent of Mines
 M/s. Ferro Alloys Dist. Jaipur
 Kalapam Pin-755047

Annexure-IX

Cost Norm For ANR plantation (@500 Seedlings per hectare)						
For ten year maintenance.						
Wage rate- @Rs311						
Sl. No	Item of Work	Preferable Period of Execution	Person days	Labour cost @Rs 311/- per day	Material (Rs)	Total (Rs)
0th Year (Advance Work)						
1	Survey, Demarcation and Pillar Posting.	Nov / Dec	2	622	0	622
2	Preparation of Treatment Map(Digital Map)	Nov / Dec	1	311	100	411
3	Site Preparation	Nov / Dec	2	622	0	622
4	Silvicultural operation including clearance of weed, cutting of climber, high stump cutting, singling o shoots and removal of cut out after drying from the field to the black space.	Jan/Feb	15	4665	0	4665
5	Alignment & Stacking of pits.	Feb/Mar	1	311	0	311
6	Digging of pits (45cm cube)in hard and gravity soil	Feb/March	20	6220	0	6220
	G.Total		41	12751	100	12851
1st Year / Planting Year						
7	Refilling of pits by altering the dugout soil o the pits. Application of organic compounds /CDM/FYM & Mixing the same properly	Jun/July	4	1244	2500	3744
8	Transportation of 18 months old polythenes bag seedlings in hired truck/tractor from the permanent/Mega nursery to planting site including loading and unloading (Average lead of 10RKM) and stacking the seedlings @Rs 6/- per seedling (550 no)	July / Aug	0	0	3300	3300
9	Watering polypot seedlings at planting site	July / Aug	1	311	0	311
10	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer, and painting after scooping soil with other applied material and pressing the soil perfectly around the planting seedlings	July / Aug	11	3421	0	3421
10	Cost of Insecticide & Fertilizer. (a) NPK/Bio fertilizer @50gm/ plant as basal dose=25kg @Rs30/- per Kg : Rs750/- (b) Urea/Vermicompost /mo khata/any other fertilizer @Rs 375/- (c)Insecticide /Bio-pesticide @5gms/plant =2.5kg @Rs 150/- per kg =Rs 375/-	July / Aug	0	0	1500	1500
11	Casualty plantation @10%(20ngs)	July / Aug	1.5	466.5	0	466.5
12	1 st Weeding & Manuring	Aug / Sept	5	1555	0	1555

13	2 nd Weeding , soil working (1m diameter around the plants) & Manuring	Oct / Nov	8	2488	0	2488
14	Fire line tracing and inspection path	Feb/ March	3	933	0	933
15	Watch & Ward including water as per requirement	Aug-Mar	8	2488	0	2488
	G.Total		41.5	12906.5	7300.0	20206.5
2nd Year Maintenance						
16	Transportation of 50 seedlings from Nursery to plantation site including loading and conveyance by Tractor @6/- per seedlings	Jul	0.0	0.0	300.0	300.0
17	Casualty Replacement (10%)	Jul	1.5	466.5	0.0	466.5
18	Cost of Insecticide & Fertilizer. (a) Cost of Insecticide /Bio-pesticide(Themet/forate) @5gms/plant =0.25kg @Rs 150/- per kg =Rs37.50/- (b) Urea/NPK/Vermicompost /mo khata/any other fertilizer @Rs 1400/-	Aug-Sep	0.0	0.0	1437.5	1437.5
19	weeding (Complete weeding), Manuring and soil working (1mt diameter around the plants)	Sep/Oct	8.0	2488.0	0.0	2488.0
20	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb/ March	3.0	933.0	0.0	933.0
21	Watch & Ward including water as per requirement	April / March	12.0	3732.0	0.0	3732.0
	G.Total		24.5	7619.5	1737.5	9357.0
3rd Year maintenance						
22	Cost of fertilizer(Urea/NPK /Bio-Fertilizer/Vermicompost/Mo khata/any other fertilizer =Rs1400/-	Jul/Aug		0	1400	1400
23	weeding (Complete weeding), Manuring and soil working (1mt diameter around the plants)	Sep/Oct	8	2488	0	2488
24	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
25	Watch & Ward including water as per requirement	Apr/Mar	12	3732	0	3732
	G.Total		23	7153	1400	8553
4th Year maintenance						
26	Fire line tracing(2mt wide fire line over 400m long) including maintenance of inspection path	Feb / March	3	933	0	933
27	Watch & Ward including maintenance of vegetative fencing	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
5th Year maintenance						
28	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933

29	Watch & Ward including water as per requirement	Apr/Mar	12	3732	0	3732
	Sub Total		15	4665	0	4665
6th Year maintenance						
30	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
31	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
7th Year maintenance						
32	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
33	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
8th Year maintenance						
34	Fire line tracing (2m Wide fire line over 400m long)	Feb / March	3	933	0	933
35	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
9th Year maintenance						
36	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
37	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
10th Year maintenance						
38	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
39	Watch & Ward including water as per requirement	April / March	12	3732	0	3732
	Sub Total		15	4665	0	4665
	Grand Total		235.0	73085.0	10537.5	83622.5


 Muthumani
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kallipani, Dist- Jaipur
 Pin- 755047

ABSTRACT.						
Year	Person days	Labour Component	Material Component	Monitoring & Supervision charge 5% of total cost	Cost of seedlings @Rs 50.31 per seedlings	Total
0th Yr	41	12751	100	549.00	0	13400.00
1st yr	41.5	12907	7300.0	993.50	27671	48871.00
2nd Yr	24.5	7620	1737.5	443.00	2516	12316.00
3rd Yr	23	7153	1400	347.00	0	8900.00
4th Yr	15	4665	0	135.00	0	4800.00
5th Yr	15	4665	0	135.00	0	4800.00
6th Yr	15	4665	0	135.00	0	4800.00
7th Yr	15	4665	0	135.00	0	4800.00
8th Yr	15	4665	0	135.00	0	4800.00
9th Yr	15	4665	0	135.00	0	4800.00
10th Yr	15	4665	0	135.00	0	4800.00
Total	235	73085.0	10537.5	3277.50	30187	117087.00


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kallapara, Dist- Jalpur
 Pin- 755047

Matrix For ANR plantation (@500 Seedlings per hectare)

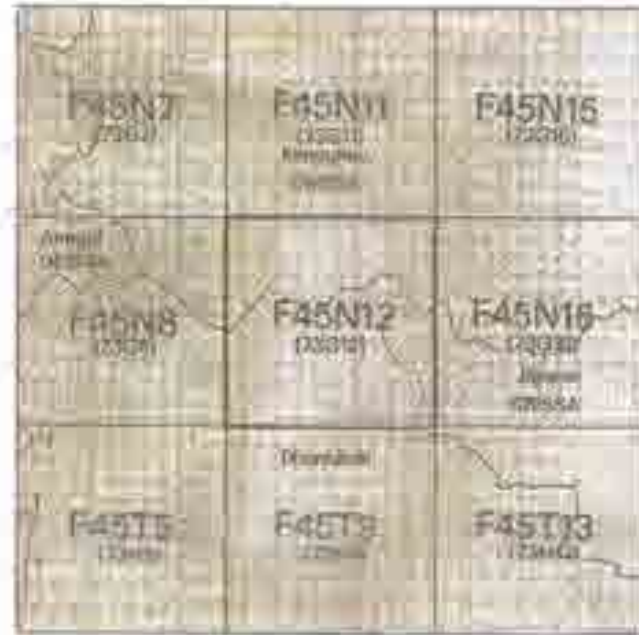
Sl. no.	Commencement of year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total cost
	Base year	13400	48871	12710	8000	4800	4800	4800	4800	4800	4800	4800	4800									
1	2021-22	13400	51315	13877	10500	5834	6126	6432	6738	7042	7346	7650	7954									136098
2	2022-23		14079	31681	16296	10818	8726	6413	6754	7092	7430	7768	8106									142904
3	2023-24			14774	55175	14888	11358	8632	6754	7092	7430	7768	8106									150051
4	2024-25				15519	51404	15717	11917	6754	7092	7430	7768	8106									157554
5	2025-26					16189	62374	16501	11523	7092	7430	7768	8106									165433
6	2026-27						17100	85481	17128	13148	9439	7819	6210									173705
7	2027-28							17928	68788	18334	13806	7819	6210									182390
8	2028-29								18856	72206	18104	14498	8210									191510
9	2029-30									19799	75816	15001	13221									201086
10	2030-31										20789	15607	11062									211141

M. N. Nataraj

Mrs. Ferro K. K.



Scale 1:50,000



SURVEY OF INDIV

Price : Rs. 70/-

[illegible]

REFERENCES

DWC - Great Writing Connections FIDO - Take Into It, Read It, Own It: Connections
200 - Multiple Intelligences

[illegible]

COMPILED BY INDEX

A. Completed Form 1, 3/26/2000 using 1070-DE. (Submitted On: 04/01/2000)
 Please close 2000-DE

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Projection -- UTM Datum -- WGS 84

Magnetic Variation from True North about $\frac{3}{4}^{\circ}$ West in 2005.

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CONTROLS INTERVIEWER: 28 MAY 1968

The Author thanks David H. King, James A. Hirsch

Director
Office of the Director, Office of the Secretary

Orissa Geo-Spatial Data Centre
Survey of India

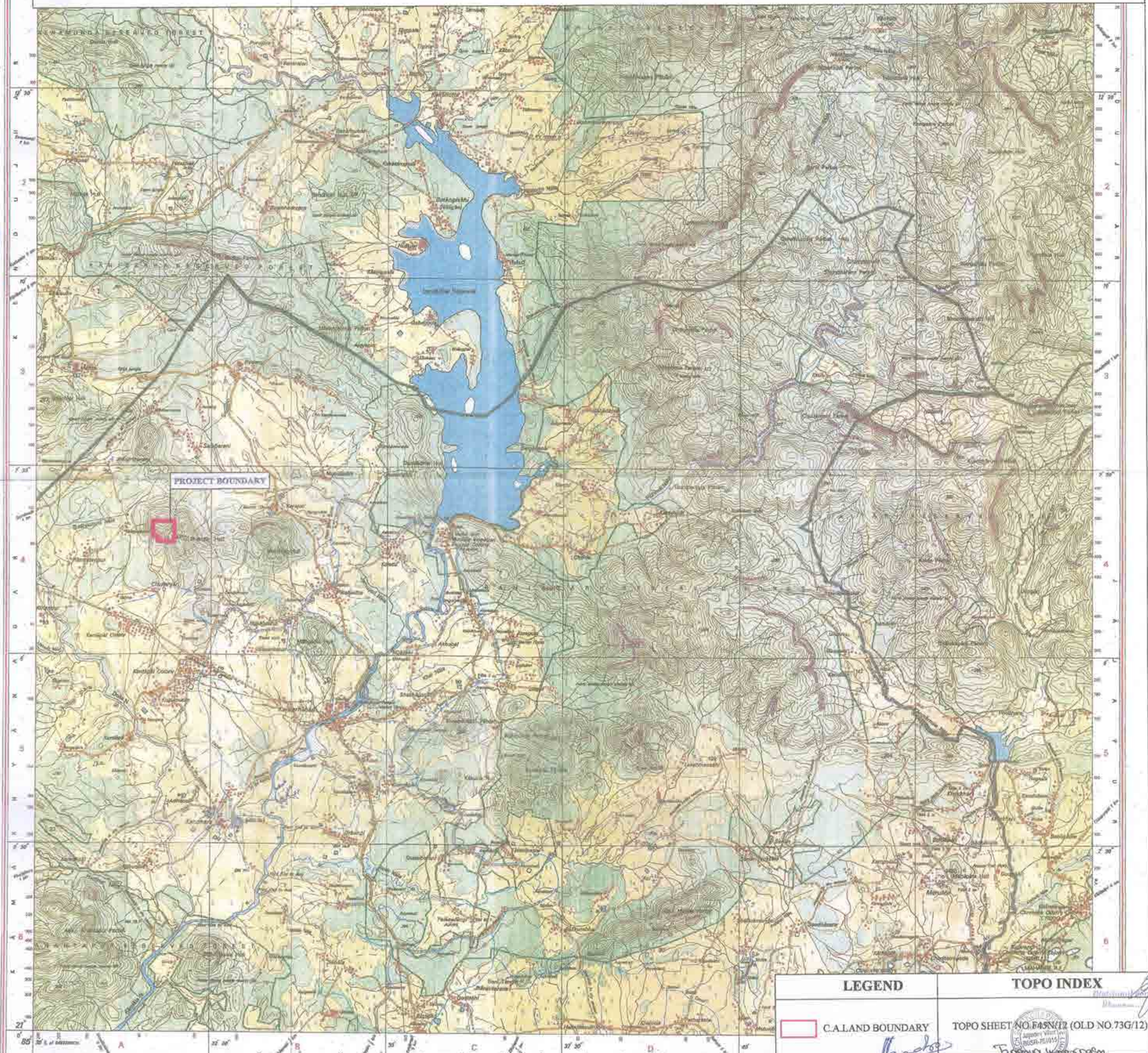
Survey Bureau, PO - 6 & Laboratory
Buckingham, 20303

Fax: 1-5874-2301010

Manuscript received 12/1/00; revised manuscript received 10/1/01; accepted manuscript received 11/1/01.

11560772 → www.datascience.pub.fr

SCALE-1:50,000



TOPO INDEX

TOPO SHEET NO. F45N/12 (OLD NO. 73G/12)

[Handwritten signature]

 Ms. P. K.

Mrs. Ferre Alloys Corporation
Kaliapani, Dist. Jharkhand
Pin- 755047

GOVERNMENT OF ODISHA

ଓଡ଼ିଶା ସରକାର

OFFICE OF THE DIVISIONAL FOREST OFFICER, CUTTACK FOREST DIVISION

VI: - GHATAKULA, SUAPADA, CUTTACK - 753010

Tel: 0671-2957611, Control Room: 0671-2340343, Toll Free No. 1800347747

Email: - dfo.cuttack@odisha.gov.in

No. 5232 SF (Forest Diversion) 15/2025Dated, Cuttack the 28th April, 2025.

To

The Authorized Signatory,
Kalarangiatta Chromite Mines of M/S FACOR Ltd.,
Laxmi Bhawan, Bhadrak-756100.

Sub: -

Diversion of 23.80 ha of forest land (as per Sabli records as on 25/11/1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s. Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukunda Tahasil of Jajpur District, Odisha. Demand of differential amount of NPV.

Ref: -

1. Letter No.5-ORC288/2016-BHI, Dt.21.05.2023 of Govt. of India, MoEF & CC.
2. Letter No. 5-3/2011-FC (Vol-I) dt. 06.01.2022 of Govt. of India, MoEF & CC.
3. This Office letter No. 4735 dt.19.05.2015.

Sir,

With reference to the letters cited above on the captioned subject, it is to inform you that, the Govt. of India, MoEF & CC vide their letter under reference (2) have revised the rates of Net Present Value (NPV) as per order dt.28.03.2008 of Hon'ble Supreme Court in Writ Petition (Civil) No.202 of 1996 in the matter of T.N. Godavarman Thirumalpad vs. Union of India.

In this connection, it is requested to pay the differential amount of Net Present Value (NPV) of Forest area proposed to be diverted under this proposal as per the orders of Hon'ble Supreme Court of India.

The NPV amount is calculated below:-

- (i) The Forest area proposed for diversion- 23.80 ha
- (ii) Eco- Value Class-I, density of vegetation below 0.4
- (iii) The NPV to be paid @ Rs. 11, 16,900.00/- per Ha. = 23.80 ha. X 11,16,900.00
= Rs.2,65,82,220.00.

(Rupees Two Crore Sixty-Five Lakh Eighty-Two Thousand Two Hundred Twenty) only.

M. M. M. M.
M/s. Ferro Alloys Corporation Limited
Agent of Mines
Kaliapani, Dist- Jajpur
Pin-755047

(P.T.O)

Considering your earlier deposit towards NPV of Amount Rs. 1,73,74,000.00 vide L/R No:SBIN52015062516780059 dt.25.06.2015. Now you are requested to make arrangement to deposit the balance amount of Rs.92,08,220.00 (Rupees Ninety-Two Lakh Eight Thousand Two Hundred Twenty) only (Rs.2,65,82,220.00 - Rs.1,73,74,000.00 paid earlier) through online portal of State Compensatory Afforestation Fund Management & Planning Authority (CAMPFA) account & submit the receipt of the deposition to this office for ready reference.

Besides, you are requested to make point wise compliance of all other conditions imposed in Stage-I approval order.

Yours faithfully,


Conservator of Forests,
S/c Cuttack Forest Division

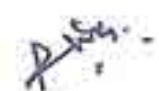
Memo No. 2997 dt. 08.04.2025

Copy submitted to the Chief Conservator of Forests (Nodal), O/o the PCCF & HoFF, Odisha for favour of kind information and necessary action.


Conservator of Forests,
S/c Cuttack Forest Division.

Memo No. 2998 dt. 08.04.2025

Copy submitted to the Regional Chief Conservator of Forests, Angul for favour of kind information and necessary action.


Conservator of Forests,
S/c Cuttack Forest Division.


Muthuram
Agent of Mines
Ferro Alloys Corporation Limited
Kajapali, Dist- Jajpur
Pin- 751047

To

The Divisional Forest Officer
Cuttack Forest Division
At: Chhatrakula, Naupada
Dist.-Cuttack, Odisha-753010.

Sub:

Payment of differential amount of NPV, Penal NPV, Implementation cost to CA & Additional CA and Cost of Site-Specific Wildlife Conservation Plan ("SSWCP") in light with 'In-Principle' approval dated 21.03.2025 under section 2 for diversion for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) of Kalarangiatta Chromite Mines of Ferro Alloy Corporation Limited ("FACOR") (Online proposal no. FP/OR/MIN/16453/2015).

Reference

1. Online Challan dated 12.05.2025 issued by Nodal Officer in Parivesh Portal
2. Your demand letter dated 3571/5F dated 02.05.2025 (SSWCP)
3. Your demand letter dated 3019/5F dated 08.04.2025 (CA & Additional CA) I
4. Your demand letter dated 3687/5F dated 06.05.2025 (Penal NPV)
5. Your demand letter dated 2996/5F dated 08.04.2025 (Differential NPV)
6. Our letter dated 21.03.2025 seeking issuance of demand in light with 'In-Principle' approval
7. Stage-I (In-Principle) nos. 5-ORC288/2016-BHU dated 21.03.2025
8. Online Forest Diversion Proposal no. FP/OR/MIN/16453/2015 of Kalarangiatta Chromite Mines

Respected Sir,

With utmost respect and humbleness, we wish to bring to your kind notice that we have received various demand letters, referenced as 02 to 05, from your esteemed office concerning the payment of the differential amount for the Net Present Value (NPV), Penal NPV, Implementation Cost for Compensatory Afforestation (CA), Additional Compensatory Afforestation, and the Cost of Site-Specific Wildlife Conservation Plan (SSWCP) with respect to our Kalarangiatta Chromite Mines of M/s. FACOR Ltd.

As per the provisions related to Stage-I (In-Principle) approval (Reference No. 7, dated 21.03.2025) and provision for deposit in Orissa CAMPA account through e-portal (<https://www.orega.org.in/>) we have duly collated all the aforesaid demands and uploaded the necessary details in the Parivesh Portal on 08.05.2025 for approval and generation challan by the Nodal Officer (Forest Conservation Act), Odisha.

Subsequently, we have received online challan on 12.05.2025 for payment of total amount INR 6,45,54,030/- (Six Crore Forty Five Lacs Fifty Four Thousand thirty only) against the above demands. Upon receipt of online challan, we immediately deposited the aforesaid demanded amount on 13.05.2025 against the CAMPA account mentioned in the above challan. It is pertinent to mention that we paid amount 1,55,13,510/- against the demand for Penal NPV under protest and without accepting the liability as FACOR has not violated any provision of Forest Conservation Act while operating the mines under the High Court interim protection order. The details of amount paid are as under:

Received
Per
20/6/2025

M. S. Kumar
Agent
M/s. Ferro Alloy Corporation Limited
Kallapara, Dist.- Jaipur
Pin-302047

Funds Demand Details	Demand	Demanded Amount INR	Amount Paid by FACOR (INR)	Payment reference
Compensatory Afforestation		50,67,000/-	50,67,000/-	ICICI Bank No.
Neoforest Compensatory Afforestation		1,96,93,300/-	1,96,93,300/-	ICICI 420250 51300556304
Differential NPV		92,08,226/-	92,08,226/-	Dated 13.05.2023
Site Specific Wild Conservation Plan		1,50,52,000/-	1,50,52,000/-	
Pond NPV		1,55,33,510/-	1,55,33,510/-	(Under Protest)
Total		6,45,54,030/-	6,45,54,030/-	

Copy of Payment Challan and payment status downloaded from Paribesh Portal are enclosed herewith for your kind reference.

Therefore, we humbly request your good self for processing our Forest Division Proposal of Kuluangpur Chromite Mines at the earliest.

We are duty bound to comply with all the applicable laws and regulations issued by the competent authorities in our endeavour to sustainable utilization of natural resources for nation's growth.

Your kind cooperation in this regard shall be highly appreciated and obliged.

Yours sincerely

For & on behalf of Ferro Alloys Corporation Limited

Mathumari M
Authorized Signatory & Agent / Head of Mine
Encl : As above

M. Mathumari
Mathumari M
Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin-755047

AGENCY COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address.	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansah, Poddist-Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address:	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansah, Poddist-Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelitta Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: fcsblr@unionbankofindia.bank, epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

Transaction/UTR No-RTGS /CICR 42025051300556304/ UBIN0996335 / Odisha CAMPA
Date 13.05.2025

M. Muthuram
M. Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin- 305007

M. Muthuram
M. Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin- 305007



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Ministry of Environment, Forest and Climate Change
Government of India



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10:08:05 AM

Sero, Proposal Detail	Application No	Application No (New)	Date of 31st PRINCIPLE	Amount to be Paid/Amount Paid (in Rs.)	Payment Status	Payment Detail	Demand Letter
1 Kallangyatha Chromite Mines of M/s Ferro Alloys Corporation Ltd	MSN164532015158	5816453158	21 Mar 2025	CAZ: 50579000/- PCN: 0/- Safety Zone: 0/- RSV: 82042200/- Payment towards Site Specific Wild 150525000/- Life conservation: 0/- Other Charges2: 0/- Other Charges3: 0/- Total: 645540304/-	Paid	Fund Demand Verified by :08 May 2025 Nodal Officer On :Union Bank Of India Bank Name :NEFT/RTGS (Challan) Mode of Payment :12 May 2025 Challan Generated On :13 May 2025 Transaction Date	Demand Letter Generated

N. Nithin

Muthumani M

Agent of Mines

Corporation Limited

Alloys Dist: Jaipur

Phone: 755047

5



1

M. Muthuraj
Muthuraj
Agent of Mines
Ferro Alloys Corporation Limited
Kurapani Dist- Jugar
Pin- 755047

[illegible][illegible]

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 National Youth Foundation of the United States
 1400 Pennsylvania Avenue, N.W.
 Washington, D.C. 20004

M. M. Mathur
Agent of M/s.
Mrs. Ferro Alloys Corporation Limited
Kaliapara, Dist- Jaipur
Pin- 755047

Office Copy

**FERRO
ALLOYS
CORPORATION
LIMITED**

Laxmi Bhawan, Kuans
Bhadrak - 756100
Dist. Bhadrak, Odisha, India
Phone : 06784 - 251312, 250598
Fax : 06784 - 251782
E-mail : facomines@facor.in
facomines@dataone.in



BHF/F-13/ 755 /2015

June 28, 2015

The Divisional Forest Officer
Cuttack Forest Division
Ghatikula, Nuapada
Cuttack-753010

Sub: Payment of NPV for the forest kissani land as on 25.10.1980 and treated as non-forest Hal
Settlement records in respect of Chromite Mines in Village - Kalarangiatta of M/s. FACOR Ltd.
Ref: Your Letter No.4735/SF (Misc)/2015 dtd. 19.05.2015.

Dear Sir,

Vide your letter under reference we have been advised to deposit a sum of Rs.1,73,74,000.00 with
CAMPA towards NPV for the forest kissani land in respect of our Kalarangiatta Chromite Mine over an
area of 23.80 Hectares.

Accordingly, we have paid a sum of Rs.1,73,74,000.00 (Rupees One Crore Seventythree Lac
Seventyfour thousand) only towards NPV in favour of Adhoc Body of Compensatory Afforestation Fund
Management and Planning Authority (CAMPA) in S.B. Account No.SB01025222 - IFSC
No.CORP000371 on 25.06.2015 through RTGS.

We are enclosing herewith the copy of receipt issued by State Bank of India, Bhadrak as a token of
evidence of above payment for your needful.

Kindly acknowledge receipt by sending your official stamped receipt for our record.

Thanking you,

Yours faithfully,
For Ferro Alloys Corporation Limited

Asst. General Manager (Admin)

Encl. ala

Cc: The Regional Chief Conservator of Forests, Angul Circle, Angul - for kind information.
Cc: The Principal Chief Conservator of Forests, Odisha, Bhubaneswar - for kind information.
Cc: Accounts, Bhadrak / Ostapal Mine.

/akp

REGD. OFFICE : D.P. NAGAR, RANDIA-756105, DIST - BHADRAK (ODISHA), PH : +91-6784- 240320, FAX : +91-6784-240626
E-mail : facorcorp@ferroalloys.in, info@ferroalloys.in, facorgroup@is. CN : L45201OR1955PLC006400

M. H. H. H.
Agent of mines
Mrs. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 756047



भारतीय स्टेट बैंक
STATE BANK OF INDIA

APPLICATION FORM : RTGS

Branch: Bhadrak
Date: 25/6/2015
Reconvert Rs. 1,73,74,000 = 00
From: FA COR. MINES
by Cheque No.
Transfer for RTGS: CHILLER
On: N. D. B. E. 15/6/2015 Muthu
Bank: Corporation Bank
Branch: Lochi Complex Branch
Favoring: C.A.M.P.A.
Account No.: SB01025222
IFSC Code: CORP0000371
Amount Rs. 1,73,74,000 = 00
Rs. + Charges Rs. 56 = 00
Total Rs. 1,73,74,056 = 00
(Rupees One crore seventy three lac seventy four
Thousand Eighty six only)

SBEN52015062516780059

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

UNDERTAKING

(Ref: Stipulated Condition No 2.3(b) of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India will be deposited in designated accounts of the Odisha CAMPA Fund.




Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 303007

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd




Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 303007



Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

Divisional Forest Officer
Cuttack Forest Division

GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ଚିଆ ବନ୍ୟପ୍ରାଣୀ ଚରାବିଧାନଙ୍କ କାର୍ଯ୍ୟାଳୟକଚ୍ଚ, କଟକ ବନଖଣ୍ଡ,
OFFICE OF THE DIVISIONAL FOREST OFFICER: CUTTACK FOREST DIVISION
 AT: - GHATAKULA, NUAPADA, CUTTACK 753010
 Tel:- 0671-2957611, Control Room:- 0671-2340343, Toll Free No.18003457473

Email: - dfo.cuttack@odisha.gov.in

No. 3687/5F/ (Forest Diversion) 15/2025Dated, Cuttack the 06 th May, 2025.

To

The Authorized Signatory,
 Kalarangiatta Chromite Mines of M/S FACOR Ltd.,
 Laxmi Bhawan, Bhadrak-756100.

Sub: -

Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **Demand of Penal NPV.**

Ref:

- (i) Letter No.5-ORC288/2016-BHU Dt.21.03.2025 of Govt. of India, MoEF & CC.
 (ii) This office letter No.3568 dt.02.05.2025.

Sir,

In continuation to this office letter cited above on the captioned subject, this is to inform you that, the revised calculation of Penal NPV in accordance with the concerned provisions made under the FC Act, 1980 on account of mining operations carried out without prior approval of Central Government.

Therefore, the detail of calculation of Penal NPV is furnished below.

Penal NPV	Description	Amount in Rs.
Penal NPV	Area of forest land utilized in violation to FC Act, 1980 over 2.754 ha out of 23.80 ha forest land proposed for diversion w.e.f. 31.12.2016 to till date. 1) Applicability of Penal NPV under FC Act, 1980 (Eco- value class-I, Canopy density of vegetation below 0.4) i.e., @ Rs.11,16,900 per Ha. (2.754 X 11,16,900 X 5 times the NPV) = Rs.1,53,79,710.00.	Rs.1,55,33,510.00

(P.T.O)

M. Muthuram
 Muthuram
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jajpur
 Pin- 755047

Penal NPV	Description	
Penal NPV	II) 12 percent simple interest on 5 times of the Penal NPV i.e., Rs.1,53,79,713.00 from dt.24.04.2025 to 23.05.2025 i.e., 1/12 year. (Rs.1,53,79,713.00 X 12/100) /12) = Rs.1,53,797.00, III) Total Penal NPV= Rs.1,53,79,713.00 + Rs.1,53,797.00 = Rs.1,55,33,510.00,	

In this connection, you are requested to deposit an amount of Rs.1,55,33,510.00 (Rupees One Crore Fifty-Five Lakh Thirty-Three Thousand Five Hundred Ten) only towards Penal NPV for non-forestry activities in violation of FC Act, 1980 involved in the aforementioned diversion proposal.

The demanded amount is to be deposited in Orissa CAMPA Account only through e-portal (<https://parivesh.nic.in>) within 30 days from the date of issue of this letter and the proof/evidence of the deposit of fund be submitted to this office for further necessary action at this end.

Yours faithfully,

[Signature]
06.05.2025
Divisional Forest Officer,
Cuttack Forest Division,

Memo No. 3688 dt. 06.05.2025

Copy submitted to the Chief Conservator of Forests (Nodal), O/o the PCCF & HoFF, Odisha for favour of kind information and necessary action.

[Signature]
06.05.2025
Divisional Forest Officer,
Cuttack Forest Division,

Memo No. 3689 dt. 06.05.2025

Copy submitted to the Regional Chief Conservator of Forests, Angul for favour of kind information and necessary action.

[Signature]
06.05.2025
Divisional Forest Officer,
Cuttack Forest Division,

[Signature]
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

FACOR / Legal / Mines / 2025 /37

Date: 18.06.2025

To

The Divisional Forest Officer
Cuttack Forest Division
At- Ghatakula, Nuapada
Dist.-Cuttack, Odisha-753010,

Sub: Payment of differential amount of NPV, Penal NPV, Implementation cost to CA & Additional CA and Cost of Site-Specific Wildlife Conservation Plan ("SSWCP") in light with 'In-Principle' approval dated 21.03.2025 under section 2 for diversion for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) of Kalarangiatta Chromite Mines of Ferro Alloys Corporation Limited ("FACOR") (Online proposal no. FP/OR/MIN/16453/2015)

Reference

1. Online Challan dated 12.05.2025 issued by Nodal Officer in Parivesh Portal
2. Your demand letter dated 3571/5F dated 02.05.2025 (SSWCP)
3. Your demand letter dated 3019/5F dated 08.04.2025 (CA & Additional CA) f
4. Your demand letter dated 3687/5F dated 06.05.2025 (Penal NPV)
5. Your demand letter dated 2996/5F dated 08.04.2025 (Differential NPV)
6. Our letter dated 24.03.2025 seeking issuance of demand in light with 'In-Principle' approval
7. Stage-I (In-Principle) nos. 5-ORC/288/2016-BHU dated 21.03.2025
8. Online Forest Diversion Proposal no. FP/OR/MIN/16453/2015 of Kalarangiatta Chromite Mines

Respected Sir,

With utmost respect and humbleness, we wish to bring to your kind notice that we have received various demand letters, referenced as 02 to 05, from your esteemed office concerning the payment of the differential amount for the Net Present Value (NPV), Penal NPV, Implementation Cost for Compensatory Afforestation (CA), Additional Compensatory Afforestation, and the Cost of Site-Specific Wildlife Conservation Plan (SSWCP) with respect to our Kalarangiatta Chromite Mines of M/s. FACOR Ltd.

As per the provisions related to Stage-I (In-Principle) approval (Reference No. 7, dated 21.03.2025) and provision for deposit in Orissa CAMPA account through e-portal (<http://portal.parivesh.gov.in>) we have duly collated all the aforesaid demands and uploaded the necessary details in the Parivesh Portal on 08.05.2025 for approval and generation challan by the Nodal Officer (Forest Conservation Act), Odisha.

Subsequently, we have received online challan on 12.05.2025 for payment of total amount INR 6,45,54,030/- (Six Crore Forty Five Lacs Fifty Four Thousand thirty only) against the above demands. Upon receipt of online challan, we immediately deposited the aforesaid demanded amount on 13.05.2025 against the CAMPA account mentioned in the above challan. It is pertinent to mention that we paid amount 1,55,33,510/- against the demand for Penal NPV under protest and without accepting the liability as FACOR has not violated any provision of Forest Conservation Act while operating the mines under the High Court interim protection order. The details of amount paid are as under:

Received
Per
20/6/2025


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin-755047

Funds Details	Demand	Demanded Amount INR	Amount Paid by FACOR (INR)	Payment reference
Compensatory Afforestation		50,67,000	50,67,000 :-	ICICI Bank RTGS Nos.
Additional Compensatory Afforestation		1,96,93,300 :-	1,96,93,300 :-	ICICI RTGS 51300556704
Deferral NPV		62,08,220 :-	62,08,220 :-	Dated 13.05.2025
Site Specific Wild Conservation Plan		1,50,52,000 :-	1,50,52,000 :-	
Post NPV		1,55,33,510 :-	1,55,33,510 :- (Under Protest)	
Total		6,45,54,030 :-	6,45,54,030 :-	

Copy of Payment Challan and payment status downloaded from Paribesh Portal are enclosed herewith for your kind reference.

Therefore, we humbly request your good self for processing our Forest Diversion Proposal of Kilaranjnagar Chromite Mines at the earliest.

We are duly bound to comply with all the applicable laws and regulations issued by the competent authorities in our endeavour to sustainable utilization of natural resources for nation's growth.

Your kind cooperation in this regard shall be highly appreciated and obliged.

Yours sincerely

For & on behalf of Ferro Alloys Corporation Limited

Muthumari M
Authorized Signatory & Agent / Head of Mine
Encl: As above

M. Muthumari
Muthumari M
Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 303047

AGENCY COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address.	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansih, P.O. Dist- Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jalitta Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address:	Ferro Alloys Corporation Ltd, Laxmibhawan, Kuansih, P.O. Dist- Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jalitta Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: fcsblr@unionbankofindia.bank, epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

Transaction/UTR No-RTGS /ICIR 42025051300556304/ UBIN0996335 / Odisha CAMPA

Date: 13.05.2025

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047



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Ministry of Environment, Forest and Climate Change
Government of India



My Account - My Proposals Environment Clearance - Only CRZ Clearance - My Proposals Forest Clearance - My Proposals Wildlife Clearance - Help

10:08:05 AM



Sl. No.	Proposal Detail	Application No.	Application No (New)	Date of 1st PRINCIPLE	Amount to be Paid/Amount Paid (in Rs.)	Payment Status	Payment Detail	Demand Letter
1	Kolarangatha Chromite Mines of M/s Ferro Alloys Corporation Ltd	MH15452015158	5816453158	21 Mar 2025	LCR: 5067000/- PCA: 0/- Safety Zone: 0/- NPV: 6203320/- Payment towards: Size Specific Wtd: 13153000/- Life Conservat: 0/- Other Charges: 0/- Other Charges: 0/- Total: 64550000/-	Paid	Fund Demand Verified by: 08 May 2025 Modal Officer On: Union Bank Of India Bank Name: SBI/RTGS (Chennai) Mode of Payment: 12 May 2025 Challan Generated On: 13 May 2025 Transaction Date:	Amount Letter Generated Number

N. Muthuman
Muthuman M
Agent of Mines Limited
M/s Ferro Alloys Corporation
Kolarangatha, Dist: Salem
Pin-76

UNDERTAKING

(Ref: Stipulated Condition No 2.4(a) of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that any future demand if so, raised will be deposited / transferred through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>);


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapan, Chik-Jagpur
Pin-755047

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapan, Chik-Jagpur
Pin-755047


Countersigned by
Divisional Forest Officer
Cuttack Forest Division
COUNTERSIGNED

D. Forest Officer
Cuttack Forest Division

GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ଚ୍ୟା ବନ୍ୟପ୍ରାଣୀ ଚରାବ୍ୟାପକଙ୍କ କାର୍ଯ୍ୟାଳୟକଟକ , କଟକ ବନଖଣ୍ଡ ,
OFFICE OF THE DIVISIONAL FOREST OFFICER: CUTTACK FOREST DIVISION

AF: - GHATAKULA, NUAPADA, CUTTACK 753010

Tel:- 0671-2957611, Control Room:- 0671-2340343, Toll Free No.18003457473

Email:- dfo.cuttack@odisha.gov.in

No 5004 / 51/ (Forest Diversion) 15/2025

Dated, Cuttack the 18 th May, 2025.

June

To

The Authorized Signatory,
Kalarangiatta Chromite Mines of M/S FACOR Ltd.,
Laxmi Bhawan, Bhadrak-756100.

Sub: -

Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- Approval of Scheme.

Ref:

Memo No.2253 dt.16.05.2025 of the RCCF, Angul Circle, Angul to your address.

Sir,

With reference to the memo cited above on the captioned subject, this is to inform you that, as per the condition No. 5 of stage-I approval order, the scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s FACOR Ltd. has been approved by the Regional Chief Conservator of Forests, Angul Circle, Angul with financial outlay for Rs.16,02,039.00 as per approved One-time Cost Norm with 10 years maintenance.

In view of above, it is requested to deposit the amount Rs.16,02,039.00 (Rupees Sixteen Lakh Two Thousand Thirty-Nine) only with the Adhoc body of Compensatory Afforestation Fund Management & Planning Authority (CAMPA) through e-payment module & submit the receipt of the deposition to this office for ready reference.

Further, you are requested to submit the point wise compliance imposed in stage-I approval order by Ministry of Environment, Forest & Climate Change, Govt. of India.

Yours faithfully,

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist. Jajpur
Pin-755047

AP
Divisional Forest Officer
Cuttack Forest Division
(P.T.O.)

Memo No. 5607 dt. 18.6.25

Copy submitted to the Regional Chief Conservator of Forests, Angul Circle, Angul for favour of kind information & necessary action with reference to his Memo No. 2251 dt. 16.05.2025.

A P
TF-0625

Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 5008 dt. 18.6.25

Copy submitted to the Principal Chief Conservator of Forests, Forest Division & Nodal Officer, FC Act, O/o the Principal Chief Conservator of Forests & HoFF, Odisha, Bhubaneswar for favour of kind information & necessary action with reference to Memo No. 2252 dt. 16.05.2025 of the RCCF, Angul Circle to his address.

A P
TF-0628

Divisional Forest Officer,
Cuttack Forest Division.

M. Muthumari

Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pn-755047

AGENCY COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 27-06-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453226
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address.	At-D.P.Nagar, Po-Randia, Dist-Bhadrak, Odisha.Bhadrak
Amount(In Rs)	1602039/-

Amount in Words : Sixteen Lakh Two Thousand and Thirty-Nine Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	160825816453226 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 27-06-2025

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- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: fcsblr@unionbankofindia.bank, epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

UTR No-ICICN42025062857260859 dated 28.06.2025

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallipani, Dist- Jajpur
Pin- 755047

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallipani, Dist- Jajpur
Pin- 755047

FACOR Legal Mines 2025 100

Date: 30.06.2025

To

The Divisional Forest Officer
Cutback Forest Division
At- Ghatakola, Nuapada
Dist - Cutback, Odisha-753010

Sub

Payment towards implementation of scheme as per the condition No. 5 of stage-1 approval order, the scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s FACOR Ltd. in light with 'In-Principle' approval dated 21.03.2025 under section 2 for diversion for diversion of 23.80 ha of forest land (as per Sabik records as on 28.10.1980) of Kalarangiatta Chromite Mines of Ferro Alloys Corporation Limited ("FACOR") (Online proposal no. FP OR MIN 16453/2015)

Reference

1. Online Challan dated 27.06.2025 issued by Nodal Officer in Parivesh Portal
2. Your demand letter dated 30.06.25 dated 18.06.2025
3. Our letter dated 24.03.2025 seeking issuance of demand in light with 'In-Principle' approval
4. Stage-1 (In-Principle) nos. S-ORC 288/2016-BH10 dated 21.03.2025
5. Online Forest Diversion Proposal no. FP OR MIN 16453/2015 of Kalarangiatta Chromite Mines

Respected Sir,

With utmost respect and humility, we wish to bring to your kind notice that we have received demand letter, referenced as 02, from your esteemed office concerning the Payment towards implementation of scheme as per the condition No. 5 of stage-1 approval order, the scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s FACOR Ltd. in light with 'In-Principle' approval dated 21.03.2025 under section 2 for diversion for diversion of 23.80 ha of forest land (as per Sabik records as on 28.10.1980) of Kalarangiatta Chromite Mines of Ferro Alloys Corporation Limited ("FACOR") (Online proposal no. FP OR MIN 16453/2015)

As per the provisions related to Stage-1 (In-Principle) approval (Reference No. 4, dated 21.03.2025) and provision for deposit in Orissa CAMPA account through e-portal (<https://parivesh.nic.in>) we have duly uploaded the necessary details in the Parivesh Portal and generation of challan by the Nodal Officer (Forest Conservation Act), Odisha.

Subsequently, we received online challan on 27.06.2025 for payment of total amount INR 1662039/- (Sixteen Lakh Two Thousand and Thirty-Nine Rupees Only) against the above demands. Upon receipt of online challan, we immediately deposited the aforesaid demanded amount on 28.06.2025 against the CAMPA account mentioned in the above challan. The details of amount paid are as under:

Section Officer,
Cutback Forest Division

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jajpur
Pin-755047

Funds Demand Details	Demanded Amount INR	Amount Paid by FACOR (INR)	Payment reference
Payment towards implementation of scheme as per the condition No. 5 of stage-I approval order, the scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s FACOR Ltd.	1602039/-	1602039/-	TTR No- ICTCN42025062857260859 Dated 28.06.2025

Copy of Payment Challan and payment status are enclosed herewith for your kind reference

Therefore, we humbly request your good self for processing our Forest Diversion Proposal of Kalarangiatta Chromite Mines at the earliest.

We are duty bound to comply with all the applicable laws and regulations issued by the competent authorities in our endeavour to sustainable utilization of natural resources for nation's growth.

Your kind cooperation in this regard shall be highly appreciated and obliged.

Yours sincerely

For & on behalf of Ferro Alloys Corporation Limited

M. Muthumari

Muthumari M
 Authorized Signatory & Agent / Head of Mine
 Encl : As above

M. Muthumari
 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Pin- 305047



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS; ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-86764-296010 (O), 296011(Res),

Email Id: rcfanganul@gmail.com.

Memo No. 2251 / 5F.FC-06/2025. Dated. 16.5.25

To

The Divisional Forest Officer,
Cuttack Forest Division.

Sub: - Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd.(FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **-Approval of schemes.**

Ref: - Your Memo No. 3960 dated 15.5.2025.

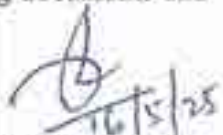
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

Sl. No.	Condition No	Name of the scheme	Financial outlay. (Rs.)
1.	5	Scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	16,02,039/-
2.	7(a)	Mitigative measures to minimize soil erosion and choking of streams .	5,60,400/-
3.	7(b)	Planting of adequate draught hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme.	36,04,720/-
4.	7 (c)	Construction of Check Dams, retention / toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.	19,80,000/-
5.	7 (d)	Stabilize the overburden dumps by appropriate grading/ benching in accordance with the approve scheme, so as to ensure that angles of repose at any given place are less than 28°.	51,74,545/-
6.	14	De-silting of village tank and other water bodies located within 5 Km. from the Mining lease boundary of Kalarangiatta Chromite Mines of FACOR	77,43,085/-
7	18	Scheme for alternate habitat / Home for the Avifauna , whose nesting trees are to be cleared in Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	19,83,300/-

M. S. Bhatnagar
Agent
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


16/5/25
Regional Chief Conservator of Forests
Angul.

Memo No. 2252 /Dated- 16.5.25

Copy along with a copy of above approved schemes forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act O/o. the Principal Chief Conservator of Forests, Odisha for favour of information and necessary action with reference to Memo No.3960 dated 15.5.2025.


16/5/25
Regional Chief Conservator of Forests,
Angul.

Memo No. 2253 /Dated- 16.5.25

Copy forwarded to the Authorised Signatory , Kalarangisutta Chromite Mines , M/s- FACOR Ltd. for information and necessary action.


16/5/25
Regional Chief Conservator of Forests,
Angul


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

SCHEME FOR
PLANTATION OVER 100 MTR AROUND THE MINING
LEASE AREA
OF
KALARANGIATA CHROMITE MINES
OF
M/s FACOR LIMITED
UNDER
CUTTACK FOREST DIVISION

*Compliance to the Condition no. 5 of the Stage-I Forest Clearance granted by MoEF & CC,
Govt. of India vide F. No. 5-ORC288/2016-BHU 1/102806/2025 Dated 21-03-2025*

M. Muthuman
Muthuman M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapara, D-11, 44901
Pin- 754047

CHAPTER-I
INTRODUCTION

Stage-I approval for diversion of Sabik forest land over 23.80 ha for non-forest purpose at Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd (FACOR) has been accorded vide letter no 5-ORC288/2016-BHU I/102806/2025 Dated 21-03-2025 of MoEF & CC subject to fulfillment of certain conditions. Condition no. 5 of the said approval is given as under:

"User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any located in the area 100m from outer perimeter of the mining lease. The plan for plantation and SMC activities will be prepared and submitted to MoEF & CC before Stage-II Clearance".

In compliance, M/s FACOR submitted that mines is located within cluster of mines such as lease of Sukinda Chromite Mines of M/s Tata Steel on the East, Kaliapani Chromite Mines of M/s OMC Ltd (BAL) on North & Non operative (Prospective) mines of M/s OMC in the west and south.

In this context, it has been explored to ensure compliance of the above stated condition along with 100 meter perimeter of the cluster of the Kalarangiatta Chromite Mines. The details are given as under:

Mines is located within cluster of mines such as lease of Sukinda Chromite Mines of M/s Tata Steel on the East, Kaliapani Chromite Mines of M/s OMC Ltd (BAL) on North & Non operative (Prospective) mines of M/s OMC in the west and south.

There is 2.098 ha has identified suitable for plantation around the periphery of the Kalarangiatta Chromite Mines of M/s FACOR Ltd.

The above land is free from encroachment and suitable for plantation. The GPS coordinates. Topo Map along with plantation scheme is submitted here with your kind information and necessary action.

1. PLANTATION MODEL:-

Plantation @ 1000 plants/ hectare will be raised with maintenance of plantation for 10 years. A site-specific cost norm for the plantation is furnished as Annexure-I.

M. Mahalingam
M/s. Ferro Alloys Corporation Ltd
Kaliapani, Dist. Jejjur
Pin-755047

2. TECHNICAL DETAILS: -

Plantation @ 1000 plants/ hectare at spacing of 2.5m x 2.5m alignment and pit marking should be done carefully in slopes so that the horizontal distance between plants in a row remains 2.5 mtrs. and not the distance measured along the slope. Size of pits will be 45 cm X 45 cm X 45 cm. 18 months old saplings will be used for plantation. All post planting measures like casualty replacement, soil working, manuring, fire protection etc. will be undertaken in time.

While taking up plantation, the following points shall be carefully followed: -

- Care to be taken to raise healthy 18 month seedlings.
- 10% extra seedlings are to be raised for replacement of casualty.
- Pitting shall invariably be done during November-February i.e., before onset of monsoon.

If possible, the soil of upper portion and lower portion of pit should be placed separately in specific direction so that while planting the pits will be filled with top-soil first.

- Planting shall be done on the onset of monsoon to get full benefit of monsoon rain and planting should never be delayed.
- Basal dose of fertilizer and insecticide should be applied at the time of planting carefully by mixing with top-soil so that the roots of seedlings do not come in direct contact with fertilizer.
- In case of any mortality of planted seedlings, it should be replaced with good seedlings as soon as possible for better success rate.
- Complete weeding in proper time will be done. Strip weeding will not be permitted.
- Soil-working and application of 2nd dose fertilizer should be done in time.
- Bamboo & Twig fencing adopted on both side of Plantation for better protection. The cost norm for the fencing is furnished as **Annexure-II**.
- Provision of watering for the better growth of plants has been provided as per cost norm given by the State Forest Department. The cost norm for the fencing is furnished as **Annexure-III**.
- Soil & moisture conservation measures to improve the moisture retention of the forest land including drainage line treatment etc. The works proposed are Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS. The cost norm for the fencing is furnished as **Annexure-IV**.


M. M. Muthuraj
Asst. M. of Mines
M/s. Ferro Alloy Corporation Limited
Kallapa, Dist. - Jajpur
Pin - 755047

Species:-

Although indigenous species are to be preferred in the plantation, considering adverse soil & moisture conditions we may go for hardy exotic species where required so that the plants are able to survive. Considering the topography, soil and moisture availability of the plantation area, the following species will be planted.

Name of species	Common	Remarks
<i>Azadirachta indica</i>	Neem	In rocky areas with low soil depth
<i>Millettia pinnata</i>	Karanja	In rocky areas with low soil depth
<i>Embllica officinalis</i>	Amla	In rocky areas with low soil depth
<i>Terminalia chebula</i>	Harida	In lower areas with good soil depth
<i>Terminalia bellirica</i>	Baheda	in lower areas with good soil depth
<i>Gmelina arborea</i>	Gambhari	In lower areas with good soil depth
<i>Dendrocalamus strictus</i>	Salia bamboo	In lower areas with good soil depth healthy seedlings from rhizomes may be
<i>Pterocarpus marsupium</i>	Piasal	In lower areas with good soil depth
<i>Tamarindus indica</i>	Tentuli	In lower areas with good soil depth
<i>Madhica indica</i>	Mahul	Only two years old seedlings may be planted
<i>Zizyphus mauritania</i>	Ber	In rocky areas with low soil depth
<i>Albizia lebeck</i>	Sirisa	In lower areas with good soil depth
<i>Schleichera oleosa</i>	Kusum	In lower areas with good soil depth

3. EXECUTING AGENCY:-

The user agency i.e., M/s FACOR Ltd. shall deposit the total cost of Scheme to the Ad-hoc CAMPA Account after its approval and the funds will be utilized for raising plantation over 2.098 ha of land by the Divisional Forest Officer, Cuttack Forest Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar..

4. REQUIREMENT OF FUNDS :-

The total cost of the implementation of the project will be Rs.16,02,039.00 (Rupees Sixteen Lakh Two Thousand Thirty-Nine) only as shown in Annexure-V. This budget will be subject to increase in amount considering the increase in materials and labour charges.

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapatti Dist. - Tirupur
Pin- 636346

AP
15.05.2025
Divisional Forest Officer,
Cuttack Forest Division.

**Total Cost of Compensatory Afforestation Scheme over
an area of 2.098 Ha around the peripheri of
Kalarangiatta Chormite Mines of M/s FACOR LTD.
under Cuttack Forest Division.**

Sl. No.	Description	Amount (Rs.)
1	Cost of Block Plantation @1000 Plants / ha. with 18 months old seedling without provision of fencing over 2.098 ha @ Rs.2,99,571/- per ha with 10 years maintenance.	Rs.6,28,499.96
2	Cost of Bamboo Twigs & Thorns over 2.098 ha with maintenance @ Rs.1,27,587/- per 250 RMT / ha with 5 years maintenance.	Rs.2,67,677.53
3	Watering by Diesel Pump set fitted with Bore well (1 Bore well for 5 ha plantation) for 1 No of Bore wells @ Rs.6,10,449/- over 2.098 ha with 5 years maintenance.	Rs.6,10,449.00
4	Cost of SMC activities like staggered trench, percolation Pits, contour trench, graded earthen bund, LBCD, Wire mesh LBCD, Sub-surface Dyke and WHS as per the slope and site requirement @ Rs.45,478/- per ha over 2.098 ha with 5 years maintenance.	Rs.95,412.84
Grand Total		Rs.16,02,039.33 Or Rs.16,02,039.00

(Rupees Sixteen Lakh Two Thousand Thirty-Nine) Only.

Approved for Rs. 16,02,039/-

**Regional Chief Conservator
of Forests, Angul Circle**

M/s. Ferro Alloys Corporation Limited
Agents of Mines
Kallapani, Dist- Jaipur
Pin- 305047

**Divisional Forest Officer,
Cuttack Forest Division.**

BASE COST NORM FOR AFFORESTATION (BLOCK PLANTATION)
@1000 PLANTS PER HECTARE(18 Months old seedling)

1. MODEL	BLOCK
2. NO. OF PLANTS PER HA.	1,000
3. TOTAL AREA TO BE PLANTED(In HA.)	1
4. SPACING TO BE ADOPTED	2.5M X 2.5M
5. TOTAL NOS. OF PLANTS TO BE PLANTED	1,000
6. Wage Rate [Per MD]	311.00

Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
Pre-Planting Operation (0th Year)						
1	Survey, Demarcation and Pillar Posting	Nov/Dec	2	622.00	0	622.00
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311.00	100	411.00
3	Site preparation (Cleaning & removal of debris)	Nov/Dec	12	3,732.00	0	3,732.00
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311.00	0	311.00
5	Alignment and stacking of pits	Feb/Mar	1	311.00	0	311.00
6	Digging of pits (45 cm x 45 cm x 45 cm) in hard & gravelly soil	Feb/Mar	40	12,440.00	0	12,440.00
7	Construction of Temporary Labour Shed, Drinking water facility and First Aid etc.	Jan/Mar	0	0.00	3500	3,500.00
Total:-			57	17,727.00	3,600.00	21,327.00
1st Year/ Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of Organic compounds/ CDM/ FYM & mixing the same properly.	Jun/July	7.5	2,332.50	5,000.00	7,332.50
2	Transportation of 18 months old polypot seedlings in hired truck/ tractor from the Permanent/ Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedlings @ Rs.6/- per Seedling. (1100 nos.)	July/Aug	0	0.00	6,600.00	6,600.00
3	Watering the polypot seedlings at planting site	July/Aug	2	622.00	0.00	622.00

M. S. Muthuraj
 Agent of M/s.
 M/s. Ferro Alloys Corporation Limited
 Kalaiappa, Dist. - Tirupur
 Pin-764042

Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
4	Conveyance of polypot seedlings on head load from the stacking site to individual dug out pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedlings.	July/Aug	22.5	6,997.50	0.00	6,997.50
5	<u>Cost of Fertilizer & Insecticide:-</u> (a) NPK / Bio-fertilizer @50 gms/ plant as basal dose = 50 kg @ Rs.30/- per kg = Rs.1500.00 (b) Urea/ Vermicompost/ Mo Khata/ any other fertilizer in two subsequent doses @ Rs.750.00 (c) Insecticide/ Bio-pesticide @ 5 gms/ plant = 5 kg @ Rs.150/- per kg = Rs.750.00	July/Aug	0	0.00	3,000.00	3,000.00
6	Casualty Replacement @ 10% (100-nos.).	July/Aug	2.5	777.50	0.00	777.50
7	1st Weeding & Manuring.	Aug/Sept	12	3,732.00	0.00	3,732.00
8	2nd Weeding, Soil working (1mt. Diameter around the plants) and Manuring.	Oct/Nov	15	4,665.00	0.00	4,665.00
9	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
10	Watch & Ward including watering as per requirement.	Aug-Mar	12	3,732.00	0.00	3,732.00
Total:-			76.5	23791.5	14600	38,391.50
2nd Year Maintenance						
1	Transportation of 100 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling.	Jul	0	0.00	600.00	600.00
2	Casualty Replacement @ 10%	Jul	2.5	777.50	0.00	777.50
3	<u>Cost of Fertilizer & Insecticide:-</u> (a) Cost of Insecticide/ Bio-pesticide @ 5 gms/ plant = 0.5 kg @ Rs.150/- per kg = Rs.75/- (b) Urea/ NPK/ Bio-fertilizer/ Vermicompost/ Mo Khata/ any other fertilizer @ Rs.2800/-	Aug/Sept	0	0.00	2,875.00	2,875.00


 Mihir M. Agasthyan
 M/s. Ferro Alloys Corporation Limited
 Kallapani, Dist- Jaipur
 Pin- 755047

Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
4	Weeding (Complete weeding), Manuring & Soil working (1m. Diameter around the plants).	Sept/Oct	15	4,665.00	0.00	4,665.00
5	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
6	Watch & Ward including watering as per requirement.	Apr-Mar	18	5,598.00	0.00	5,598.00
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.				1,000.00	1,000.00
	Total:-		38.5	11973.5	4,475.00	16448.5
3rd Year Maintenance						
1	Cost of fertilizer (Urea/ NPK/ Bio-fertilizer/ Vermicompost/ Mo Khatu/ any other fertilizer).	Sept/Oct	0	0.00	2,800.00	2,800.00
2	Weeding , Manuring & Soil working (1m. Diameter around the plants).	Sept/Oct	15	4,665.00	0.00	4,665.00
3	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
4	Watch & Ward including watering as per requirement.	Apr-Mar	18	5,598.00	0.00	5,598.00
5	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr-Mar			1,000.00	1,000.00
	Total:-		36	11,196.00	3,800.00	14,996.00
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00


 M/s. Ferro Alloy & Engineering Limited
 Kaliapani, Dist- Vajpayee
 Pin-755047

Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
2	Pruning of branches, Singling out of multiple shoots	Jan/Mar	3	933.00	0.00	933.00
3	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		24	7,464.00	0	7,464.00
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00


M. Muthumari
 Agent of Mines
 Ms. Ferrum & Co. Corporation Limited
 Karimnagar, Dist. Jalpur
 Pin-756017

TOTAL COST FOR I IIA.							
Sl. No.	Year	No. person days	Labour Cost @ Rs.311/-	Material Cost (Rs.)	Monitoring Evaluation, Learning, Documentation and other Contingency (5%) of (4+5)	Cost of Seedlings @ Rs.50,3096/- per seedlings	Total Cost (Rs.)
1	0th year	57	17727	3600	973	0	22,300.00
2	1st year	76.5	23791.5	14000	1918.5	55340.56	95,650.56
3	2nd year	38.5	11973.5	4475	821.5	5030.96	22,300.96
4	3rd year	36	11196	3800	749	0	15,745.00
5	4th year	21	6531	0	326	0	6,857.00
6	5th year	21	6531	0	326	0	6,857.00
7	6th year	24	7464	0	373	0	7,837.00
8	7th year	21	6531	0	326	0	6,857.00
9	8th year	21	6531	0	326	0	6,857.00
10	9th year	21	6531	0	326	0	6,857.00
11	10th year	21	6531	0	326	0	6,857.00
Total:-		358	1,11,338.00	26,475.00	6,791.00	60,371.52	2,04,975.52
OR							2,04,976.00
(Rupees Two Lakh Four Thousand Nine Hundred Seventy-Six) Only							


 Muthuman M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jaipur
 Pin- 755047

Matrix for Model A Conventional CA Plantation (AR) 1000 plants

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost (10 Years)
Base Norm.	22300	155551	22301	15745	6857	6857	6857	6857	6857	6857													204776
1	2021-22	22500	102433	24387	18227	8335	8751	10503	9548	10131	10637	11169											234721
2	2022-23		23415	105455	25816	19138	1751	9189	11027	10131	10637	11169	11728										246457
3	2023-24			24585	110727	27107	30095	9189	9648	11579	10637	11169	11728	12314									258780
4	2024-25				25815	110264	28462	21100	9648	10131	12158	11169	11728	12314	12930								271719
5	2025-26					27106	122077	29885	22155	10131	10637	12766	11728	12314	12930	13576							285305
6	2026-27						28461	128181	31389	23263	10637	11169	12494	12314	12930	13576	14255						299571
7	2027-28							35884	134590	35449	24426	11169	11728	14074	12930	13576	14255	14968					314559
8	2028-29								31378	141319	34598	25847	11728	12314	14778	13576	14255	14968	15716				330277
9	2029-30									27947	143385	36326	26929	12314	12930	13576	14255	14968	15716	16502			346790
10	2030-31										34595	153805	38142	28176	12930	13576	14255	14968	15716	16502	17327		364130

M. V. Muthuraj
 Muthuraj M
 Agent of Mines
 Erode Siroys Corporation Limited
 Erode, Dist. Tamil Nadu
 Pin-635007

**FENCING FOR COMPENSATORY PLANTATION RAISED INSIDE THE FOREST AREAS USING BAMBOO TWIGGS & THIRONS
(250 RMT/HA.)**

1. MODEL	ANR
2. TOTAL AREA TO BE FENCED(250 Rmt./Ha.)	1 Ha.
3. Wage Rate [Per MD]	311.00

WAGE RATE Rs.311/-PER DAY						
Sl. No.	Item of work	Preferable Period of Execution	Man days	Wages	Material cost	Total Cost (Rs./Ha.)
0th Year (PPO)						
1	MIL		0	0	0	0
1st Year Maintenance						
1	Taking an average perimeter of 250 Rmt/ Ha @ 93.85/ mt. (Half bundle Bamboo Twigs/ mt @ 120 / Bundle) Labour: material = 40: 60 (approx)	Sept/Oct.	30	9,330.00	14,133.00	23,463.00
2	Thirons or poles of 6" diameter in a distance of 2m. spacing to be fixed 2" under & 2" above soil. 250/2-125+1=126 Nos. of Bamboo Poles 1 Bamboo (approx) 24" height= 3 Poles 126/3=42 Bamboos @ 200/- Bamboo	Sept/Oct.	-	-	8,400.00	8,400.00
3	Preparation of Bamboo Poles. Digging of holes of 2 Ft. depth & fixing Bamboo poles @ 20 poles/MD	Sept/Oct.	6.5	2,021.50	-	2,021.50
4	Cost of Bamboo for tying the Bamboo twigs now fence with double side two strand Bamboo batten (One 6" above ground and other one 4 ft" above ground)(250X2/24=21 Bamboo @ 200 / Bamboo	Sept/Oct.	-	-	4,200.00	4,200.00
5	Making Bamboo batten, Finishing the Batten & Tying the same in double strand on Coir rope etc. Rs. 11/- Rmt.	Sept/Oct.	9	2,799.00	-	2,799.00
6	Cost of coir rope @ Rs.0.125 Kg/ ftm 500 X 0.125 Kg= 62.5 Kg @Rs 70/Kg	Sept/Oct.	-	-	4,375.00	4,375.00
7	Making one Bamboo Twigs gate with Bamboo frame		-	-	500.50	500.50
Total:-			45.5	14,150.50	31,608.50	45,759.00
Rate per running mt. 45759 / 250 =183/Rmt						
2nd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6,220.00	1,500.00	7,720.00
Rate per running mt. 7720 /250 =31.2/Rmt or Rs.31-Rmt						
3rd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6,220.00	5,675.00	11,895.00
Rate per running mt. 11895 /250 =47.9/Rmt or Rs.48-Rmt						
4th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6,220.00	5,675.00	11,895.00
Rate per running mt. 11895 /250 =47.9/Rmt or Rs.48-Rmt						
5th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb/Mar	20	6,220.00	5,675.00	11,895.00
Rate per running mt. 11895 /250 =47.9/Rmt or Rs.48-Rmt						

M. N. Thakur
 Mr. P. N. Thakur
 Director
 District Forest Officer
 District-Jaipur
 P.O. 755047

TOTAL COST FOR 1 HA(250Rmt.)

Year	No. of MD	Labour Cost	Material Cost	Total
0 th Year	-	-	-	0.00
1 st Year	45.50	14,150.50	31,608.50	45,759.00
2 nd Year	20	6220.00	1500.00	7,720.00
3 rd Year	20	6220.00	5675.00	11,895.00
4 th Year	20	6220.00	5675.00	11,895.00
5 th Year	20	6220.00	5675.00	11,895.00
TOTAL:-	125.5	39,030.50	50,133.50	89,164.00
OR	126	39,031.00	50,134.00	89,164.00

(Rupees Two Lakh Nine Thousand Five Hundred Eighty-Nine)Only


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kallapani, Dist- Jaipur
 Pin-755047

Matrix for Fencing Model-F-1 (Bamboo Twig)

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost (10 Years)
	Base Norm	0	45759	7720	11895	11895	11895																
1	2021-22	0	48047	8511	13770	14458	15181																99968
2	2022-23	0	0	50449	8937	14458	15181	15940															104966
3	2023-24			0	52972	9384	15181	15940	16737														110215
4	2024-25				0	55620	9853	15940	16737	17574													115725
5	2025-26					0	58401	10346	16737	17574	18453												121512
6	2026-27						0	61321	10863	17574	18453	19376											127587
7	2027-28							0	64388	11406	18453	19376	20344										133967
8	2028-29								0	67607	11976	19376	20344	21362									140665
9	2029-30									0	70987	12575	20344	21362	###								147698
10	2030-31										0	74537	13304	21362	###	21551							155083

N. Nithumf
 Nithumf M
 Agent of Nithas
 Corporation Limited
 11/5, Ferro Nithas
 Kalapatti
 Pin-7

SMC Works Model-C			
Cost Norms for creation of Afforestation with stabilization of Soil & Conservation of Moisture (1000 Plants/ Ha).			
Sl. No.	Items of work	Preferable Period of Execution	Total Cost (Rs.)
0th Year (Pre-Planting Operation)			
1	Nil		0
1st Year			
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS as per the slope & site requirement on LS.	Apr/Sept	20,215.00
2nd Year			
3	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
3rd Year			
4	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
5th Year			
6	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
Total			32,343.00

Abstract for 1 Ha.					
SL. No.	Year	No. person days	Labour Cost @ Rs.31/- per day	Material Cost	Total Cost (Rs)
1	0 th Year	0	0.00	0.00	0.00
2	1 st Year	0	0.00	20,215.00	20,215.00
3	2 nd Year	0	0.00	3,032.00	3,032.00
4	3 rd Year	0	0.00	3,032.00	3,032.00
5	4 th Year	0	0.00	3,032.00	3,032.00
6	5 th Year	0	0.00	3,032.00	3,032.00
Total		0	0.00	32,343.00	32,343.00
OR					32,343.00
(Rupees Thirty-Two Thousand Three Hundred Forty-Three) only					


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jaipur
 Pin-755047

Matrix for (SMC) over 1 Ha.

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	Total Cost (10 Years)
	Base Norm	0	20215	3032	3032	3032	3032										32343
1	2021-22	0	21226	3343	3510	3685	3870										35634
2	2022-23		0	22287	3510	3685	3870	4063									37415
3	2023-24			0	23401	3685	3870	4063	4266								39286
4	2024-25				0	24571	3870	4063	4266	4480							41250
5	2025-26					0	25800	4063	4266	4480	4704						43313
6	2026-27						0	27090	4266	4480	4704	4939					45478
7	2027-28							0	28445	4480	4704	4939	5186				47752
8	2028-29								0	29867	4704	4939	5186	5445			50140
9	2029-30									0	31360	4939	5186	5445	5717		52647
10	2030-31										0	32928	5186	5445	5717	6003	55279

M. N. N. N.

Muthuman M
Agent of Mines
NCC's Corporation Limited
Kallakurichi District
Page-7 of 30/04/2024

Water Model-W-11			
Water provision to Plantation			
Diesel Pump set with Bore well (1 pump set + Bore well for 5 ha plantation), Wage Rate @ 311/-			
Year of Installation (0 th Year)			
1	Cost of Bore well	1,50,000.00	
2	Cost of Diesel pump Set 5 HP	60,000.00	
3	Diesel pump set & accessories like	30,000.00	
4	Water Storage Tanks/ Flexible pipes	15,000.00	
	Total	2,55,000.00	
Cost of Water per Plant (2,55,000/5000) = Rs.51/-			51,000.00
Cost of Water per Ha. = Rs.51,000/-			
1 st Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00	
2	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 5 Month = 100 MDx311=	31,100.00	
	Total	52,100.00	
2 nd Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00	
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00	
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month = 160 MDx311=	49,760.00	
	Total	78,410.00	
3 rd Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00	
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00	
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month = 160 MDx311=	49,760.00	
	Total	78,410.00	
4 th Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00	
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00	
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month = 160 MDx311=	49,760.00	
	Total	78,410.00	
5 th Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00	
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00	
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month = 160 MDx311=	49,760.00	
	Total	78,410.00	


 Muthuman
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalipani, Dist. Jajpur
 Pin-755047

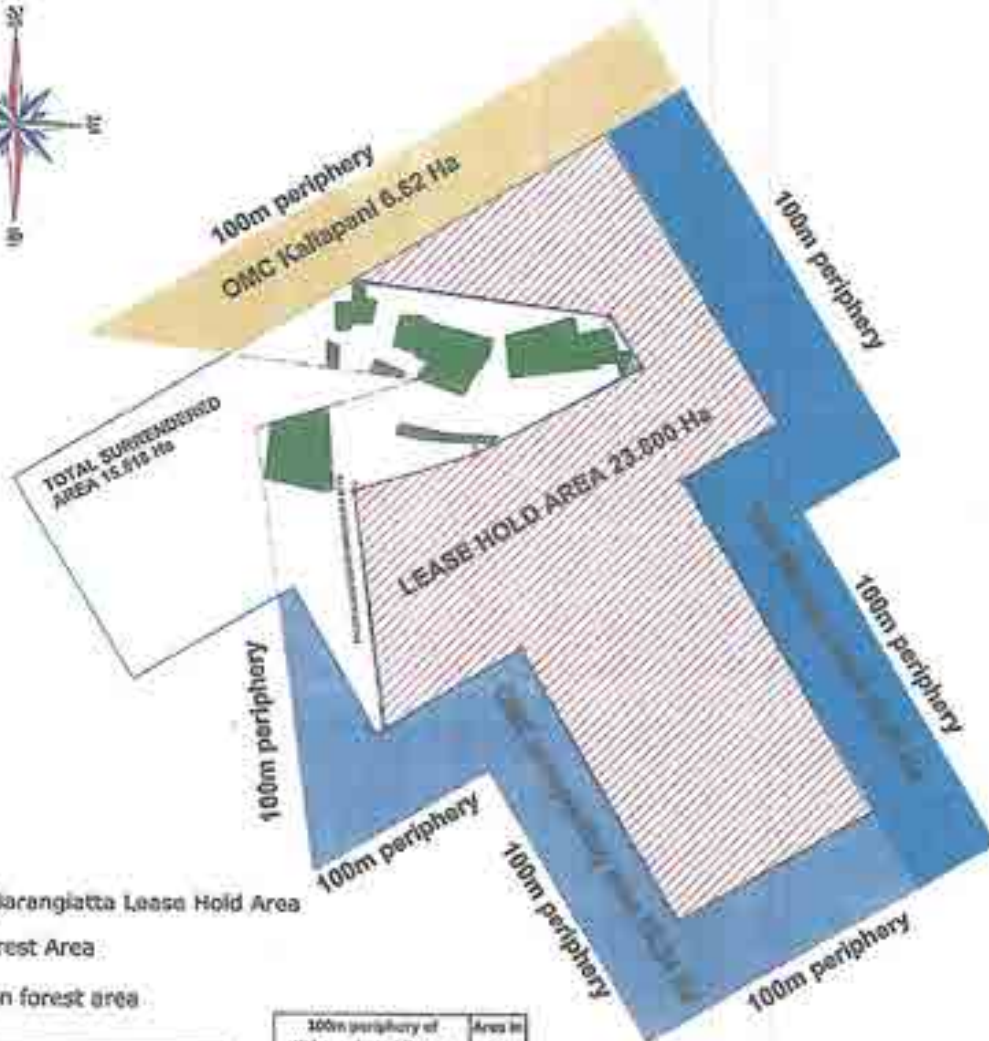
Abstract for 1 ha.					
Sl. No.	Year	No. person days	Labour cost @ Rs.311/- per day	Material Cost	Total cost (Rs.)
1	0 th Year	0	0.00	51,000.00	51,000.00
2	1 st Year	100	31,100.00	21,000.00	52,100.00
3	2 nd Year	160	49,760.00	28,650.00	78,410.00
4	3 rd Year	160	49,760.00	28,650.00	78,410.00
5	4 th Year	160	49,760.00	28,650.00	78,410.00
6	5 th Year	160	49,760.00	28,650.00	78,410.00
Total		740	2,30,140.00	1,86,600.00	4,16,740.00
OR					4,16,740.00
(Rupees Four Lakh Sixteen Thousand Seven Hundred Forty) Only					


 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Pin- 755047

Matrix for Watering Well (Diesel Pump set with Borewell) over 1 Ha.

Sl. No.	Comment	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Cost (10 Years)
Base Norm		51000	52100	78410	78410	78410	78410															
1	2021-22	51000	54705	86447	90769	95308	100073															478302
2	2022-23		53550	57440	90769	95308	100073	105077														502218
3	2023-24			36228	60312	95308	100073	105077	110331													527328
4	2024-25				59039	63328	100073	105077	110331	115847												553695
5	2025-26					61991	66494	105077	110331	115847	121640											581380
6	2026-27						69090	69819	110331	115847	121640	127722										610449
7	2027-28							68345	73310	115847	121640	127722	134108									640971
8	2028-29								71762	76975	121640	127722	134108	140813								673020
9	2029-30									75350	80824	127722	134108	140813	147854							706671
10	2030-31										79118	84665	134108	140813	147854	155246						742004

M. Mathur
 Muthumari M
 Agent of Mines
 Kaliapani, Dist- Jaipur
 P.O- 755047
 M/s. Ferro Alloys Corporation Limited



- Kalarangiatta Lease Hold Area
- Forest Area
- Non forest area

Forest Land			
Sl No	PLOT No	Area in M ²	Area in Ha
1	1658	1115	0.632
2	49	2438	0.388
3	71	1139	0.114
4	50	1140	0.114
5	54	1438	0.144
6	26	825	0.082
7	63	320	0.032
8	1685	1165	0.117
9	91	2184	0.219
10	90	1707	0.171
11	93	1706	0.171
TOTAL			2.608

100m periphery of Kalarangiatta ML area	Area in Ha
OMC Kaliapani Mining lease	6.62
OMC Prospecting	20.21
Tata Mining lease	10.38
FACOA Mining lease	8.30
TOTAL	45.51

M/s Ferro Alloys Corporation Limited

Project KALARANGIATTA CHROMITE MINE

Title PLAN SHOWING FOREST AREA WITHIN 100M PERIPHERY OF M.L. AREA.

M. Muthuman
Muthuman M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

Raj
Range Officer
Bakundi Range

5-05-25
Divisional Forest Officer
Cuttack Forest Division

M. Muthuman
Muthuman M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani Dist- Jajpur
Pin- 755047



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS; ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-06764-296010 (O), 296011 (Res),
Email Id: rcfangu@gmail.com

Memo No. 2251 /SF.FC-06/2025. Dated. 16.5.25

To

The Divisional Forest Officer,
Cuttack Forest Division.

Sub: - Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd.(FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **Approval of schemes.**

Ref: - Your Memo No. 3960 dated 15.5.2025.

The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

Sl. No.	Condition No	Name of the scheme	Financial outlay. (Rs.)
1.	5	Scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	16,02,039/-
2.	7(a)	Mitigative measures to minimize soil erosion and choking of streams.	5,60,400/-
3.	7(b)	Planting of adequate draught hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme.	36,04,720/-
4.	7(c)	Construction of Check Dams, retention / toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.	19,80,000/-
5.	7(d)	Stabilize the overburden dumps by appropriate grading/ benching in accordance with the approve scheme, so as to ensure that angles of repose at any given place are less than 28° .	51,74,545/-
6.	14	De-silting of village tank and other water bodies located within 5 Km. from the Mining lease boundary of Kalarangiatta Chromite Mines of FACOR	77,43,085/-
7.	18	Scheme for alternate habitat / Home for the Avifauna, whose nesting trees are to be cleared in Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	19,83,300/-

[Signature]
M/s. Ferro Alloys Corporation Limited
Kaliapam, Dist- Jajpur
Pin- 755047

You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


16/5/25
Regional Chief Conservator of Forests
Angul.

Memo No. 2252 /Dated- 16.5.25

Copy along with a copy of above approved schemes forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act O/o. the Principal Chief Conservator of Forests, Odisha for favour of information and necessary action with reference to Memo No.3960 dated 15.5.2025.


16/5/25
Regional Chief Conservator of Forests,
Angul.

Memo No. 2253 /Dated- 16.5.25

Copy forwarded to the Authorised Signatory, Kalarangiatta Chromite Mines, M/s- FACOR Ltd. for information and necessary action.


16/5/25
Regional Chief Conservator of Forests,
Angul


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallabari, Dist- Jaipur
Pin- 755047

SCHEME FOR
MITIGATIVE MEASURES TO MINIMIZE SOIL
EROSION AND CHOKING OF STREAM IN RESPECT
TO KALARANGIATTA CHROMITE MINES OF
M/S FERRO ALLOYS CORPORATION LIMITED,
UNDER
CUTTACK FOREST DIVISION

In compliance to Stipulated Condition (vii)(a) of In- Principle Approval Orders dated 21-03-2025 Online Proposal No FP/OR/MIN/16453/2015;

M. Muthumani
Muthumani M
Agent of Mines
M/s Ferro Alloys Corporation Limited
Koduvayal, P.O. Jajpur
Dist. - Jajpur

SCHEME FOR MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOKING OF STREAM IN RESPECT TO KALARANGIATTA CHROMITE MINES OF M/S FERRO ALLOYS CORPORATION LIMITED, UNDER CUTTACK FOREST DIVISION

(In compliance to Stipulated Condition (vii)(a) of In- Principle Approval Orders dated 21-03-2025 Online Proposal No FP/OR/MIN/16453/2015)

M/S FERRO ALLOYS CORPORATION LIMITED is a 100% subsidiary of Vedanta Limited. The company has chromite mines in the Sukinda Valley and Ferro Alloys Plant at Bhadrak. The Mining Lease area covers 23.800 hectare. This is a part of Survey of India Topo Sheet bearing No 73G/12 bounded by Latitude N21°01'01.00" to N21°01'29.29" and Longitude E85°44'17.14" to E85°44'38.02". The area is approachable from state capital through N.J.L-5, Chundikhole - Daitary Express High Way up to Duburi/Tomka and then through Duburi/Tomka-Kaliapani Road.

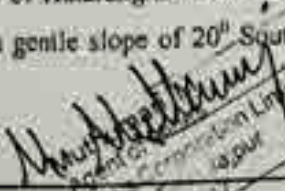
The mining Lease area of Kalarangiatta Chromite Mines of M/s FACOR is 23.80Ha. This land is considered to be of forest Kisam under Sabik Settlement.

For diversion of Forest Land for mining purpose forest diversion proposal has been filed under provisions of the Forest (conservation) Act, 1980 now renamed as "Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980) vide Online Proposal no **FP/OR/MIN/16453/2015**. After due consideration the IRO, Bhubaneswar has issued the "In- Principle Approval Order vide letter no S-ORC288/2016-BJU 1/102806/2025 Dated 21-03-2025.

As per condition No. (vii)(a) of the Stage-I approval, the User Agency shall take up "Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three years with effect from the issue of Stage-II clearance in accordance with the approved plan in consultation with the State Forest Department" at the project cost.

In compliance with the above condition, a comprehensive scheme is prepared for implementation of the same in the M.L. area of the above said Mines.

The Lease area of Kalarangiatta Chromite Mines is 23.80 Ha. The entire lease area is a flat terrain having a gentle slope of 20" South to North. The highest ground elevation in the lease


Mr. Anil Kumar
Agent of Ferro Alloys Corporation Limited
Kaliapani, Cuttack
Dist. Khurda

area is in the southern part. The altitude is 108m RL and the lowest relief is 96m RL in North side of the Lease.

Due to mining activities in the lease area the topography has been changed considerable due to quarry bottom, waste dumps and the sorting yard. At present the lowest elevation is the quarry bottom which is 47m RL and the highest elevated area is in northern part occupied by the Waste Dump / Overburden dump. The average top RL of the dump is 126m RL and Ground level is 100m RL. Due to the very gentle slope there is no perennial or seasonal nallah in the lease area. The entire area drains to Damsala nalla flowing in North-West direction.

FACTORS RESPONSIBLE FOR SOIL EROSION AND CHOKING OF STREAMS

The mining activities, sub grade dumps and overburden dumps are the major factors impacting adversely to any drainage system in the mining areas. The forms of erosion observed in this region include mainly reel and gully types of erosion. The storm water/ runoffs from the hills, mine faces, sub grade dumps and OB dumps/ slope areas carry substantial amounts of solids in the lower order streamlets generally choke the higher order streams. These lower order streamlets and gullies have prone to erosion due to steep gradient and transportation of rock fragments with high velocity of the stream and deposition of same in the connecting high order streams due to velocity drop. Streams may also erode by undercutting their banks resulting in mass-wasting processes like slumps or slides. When the undercut material falls into the stream, the fragments are transported and deposited in the stream bed. The other mode of sediment transportation is very nominal.

OBJECTIVE OF THE SCHEME:

The objectives of the proposed scheme are as follows:

- a) In compliance with the stipulated condition No. (VII) (a) of the Stage - I Forest Clearance approval issued by MoEF & CC, New Delhi, Government of India.
- b) Prevention of erosion of loose materials from OB dump may have chance to chock the natural streams.
- c) Proper Management of overburden materials so as to prevent siltation in the streams
- d) Prevention of overflow of eroded soils from the mining areas, natural streams

M. Mathur
M. Mathur & Co. Pvt. Ltd.
Agent of Mines Limited
Karnal, U.P.

Ms. Forest Dept.
Karnal, U.P.
For. Dept.

PROPOSED METHODOLOGY

To achieve the above objectives, it has been proposed to take up both biological and structural works for soil and water conservation. The vegetative measures are to be adopted mostly in the upper reaches & around O.B dump sites whereas the structural works are suggested in the lower reaches such as in the garland drain around the dumps and road sides. As per the current practice, check dams (wherever needed), are constructed across the contour of seasonal streams arising from the up-slope areas to arrest the sediment load to prevent choking of streams followed by de-silting, before monsoon.

The following activities are proposed to be taken up to mitigate soil erosion and choking of streams:

- a) There are 3 man-made drain existing in the lease hold area.
 - (i) One drain is originated from eastern side of the quarry and ends at E.T.P. at northern part of lease area. The drain is having a length of 465m
 - (ii) The 2nd Drain originated from western boundary and runs over a distance of 880m towards Northern side and ends at Settling Pond situated at North Western Corner of the Lease boundary.
 - (iii) The 3rd one is on periphery of the waste dump and finally terminated at Settling Pond situated at North Western Corner of the Lease boundary. (Length- 410m)
- b) Erosion from O.B. dump slope areas shall be controlled by providing retaining walls, garland drains, loose boulders structures, settling tanks etc along with plantation. The main purpose of the works is to control soil erosion from OB dump and minerals stock piles etc.

In addition to the engineering structures, the vegetative cover on areas susceptible to erosion proves to be very effective in preventing soil erosion.

The mining and ancillary activities will convert this area prone to intensive soil erosion by creating reefs and gullies on mined out pit benches, on the surface of O.B. dump, on the shoulder of haul roads, on the surface of the surface-soil deposit and on the bank of the natural streams. Such gullies eventually may widen and occupy large tract of the slope and cause heavy soil loss and flooding the valley bottom with heavy siltation. This results the virgin forest area prone to soil erosion. During rains, the exposed soil will not allow percolation of rainwater to charge the groundwater table. Consequently the seasonal streams will be dried up. Therefore, it is essential

Mis. Feroz Ali
Kalyani D. S. Aggarwal
Page 15/167

to treat the area with strategic soil and moisture conservation measures to mitigate the adverse impact of mining.

In addition to the engineering structures, the vegetative cover on areas susceptible to erosion proves to be very effective in preventing soil erosion.

Action will be taken to protect the sub-grade ore dumps from soil erosion. Since most of the areas will be utilized for mining and ancillary purposes, there is no scope for raising plantation in surplus area. Plantation will be taken up during reclamation of worked out areas.

Dump slope also be stabilized with plantation. Coir matting & grass turfing. Overall slope will be kept at 28°. Existing statutory provisions like retaining wall, and garland drain, check dams, terraces and settling tanks those exist at site will be modified.

Species selected for plantation shall be drought hardy, fast growing in nature. The species selected will be from among the following:

Common Name	Scientific name	Family
Neem	<i>Azadirachta indica</i>	Meliaceae
Amla	<i>Emblia officinalis</i>	Euphorbiaceae
Bela	<i>Aegle marmelos</i>	Rutaceae
Karanja	<i>Pongamia pinnata</i>	Fabaceae
Dhamana	<i>Grewia tilifolia</i>	Tiliaceae
Barskoli	<i>Zizyphus mauritania</i>	Rhamnaceae

Pre-planting, planting and post planting operations shall be carried out as per silvicultural practices enumerated in the Govt. approved cost norms. Pit size of 45 cm X 45 cm X 45 cm will be dug out to carry out plantation. Since the work will be done on the dump of a Chromite mine, the cost norm of Bald Hill plantation is provided.

Separate schemes, to plant "Drought Hardy Species" within ML area are being prepared to arrest soil erosion. For construction of Check Dam, Retention/Toe walls to arrest sliding down of excavated material, and to stabilize OB dump have been prepared.

Shri. H. H. H. H.
Agent of Mining
M/s. Ferro Alloy Corporation Limited
Kallakurichi, Dist. Saptar
Pin-755047

Soil & Moisture Conservation measures shall be done by constructing Loose Boulder Check Dams in the gullies and small streams in the mining lease area.

The Check Dams have been constructed at about every 50 Mtr. interval of garland drain.

Since Loose Boulder Check Dams may be varying in length depending upon the size of gullies, estimate has been prepared to arrive an average cost per meter of Loose Boulder Check Dam.

Estimate for Loose Boulder Check Dam is enclosed as Annexure-I.

LOOSE BOULDER CHECK DAMS IN GULLIES:

Loose Boulder Check Dams should be constructed on the following principles: -

- The height of the dam should be the height of the bank or 90 cm whichever is higher.
- A series of check dams should be constructed on the gullies. Bottom level of Check Dam situated on higher slope and top level of Check Dam located downstream should be same.
- Check Dam or any Soil Conservation Measure should start from the top where the erosion starts and move downwards.
- Check Dam should be constructed where the gullies are narrow, and the bank is suitably having strength. The tendency to construct big check dams, at wide and accessible points should be avoided.
- For construction of loose boulder check dams, as far as larger size stones to be used to fit the proposed design and small stones shall be used to fill interstices to make the structure stable.
- If possible, the construction of loose boulder check dams should be done before plantation is taken up in the area to prevent damage of planted seedlings.

The following simple design should be followed for loose boulder check dams.



- Volume of stone work, as per the Cross section of check dam is sq.mtr x length of check dam in mtr. For example, as per the drawing shown above, the volume calculation for a 2.5 mtr long check dam will be as under:

Cross section:

Foundation 4.5 Mtr X 0.25 mtr = 1.125 sq.mtr

Super structure $(3.3m + 0.6 m)/2 \times 0.9m = 1.755$ sq.mtr

1.755 mtr + 1.125 sq.mtr = 2.88 sq.mtr

M. H. Mahalingam
Agent of Mines
M.S. Ferro Alloys Corporation Limited
Kallapani, Dist. Jajpur
Pin-755047

Volume = 2.88 sq.mtr X 2.5 mtr = 7.2 cub. mtr.

Volume of stone for a 2.5 mtr long loose boulder check dam is 7.2 cub.mtr.

Volume of check dams of different lengths can be calculated accordingly.

Estimate of a standard loose boulder check dam is furnished at Annexure-I

INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above mitigative measures, adequate inspection and technical guidance should be done by the concerned technical wing of the User Agency. The work will also be inspected and evaluated by Officers of Forest Department and MoEF & CC.

EXECUTING AGENCY

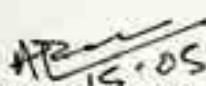
The works in the present Scheme shall be carried out by the User Agency.

FINANCIAL OUTLAY

The total cost of the implementation of mitigative measures shall be Rs. 5,60,400.00 (Rupees Five Lakh Sixty Thousand Four Hundred only) as shown in Annexure-II for implementation of the above mitigation measures.

Approved to Rs. 5,60,400/-


Regional Chief Conservator
of Forests, Angul Circle


15.05.25
Divisional Forest Officer
Cuttack Forest Division


M/s. Ferro Alloys Corporation Limited
Agent Cuttack
Kaliapani, Dist- Jaipur
Pin- 755047

Annexure-1

Estimate for Loose Boulder Check Dam of length 2.5 mtr

Foundation and apron 25 cm thick.

Top width 60 cm

Height of check dam above the foundation is 90 cm.

Uphill side width 90 cm.

Downhill side width 180 cm.

Uphill side apron 30 cm and downhill side apron 90 cm.

Analysis of Rate:

Particulars of work	No./ Quantity	Rate	Amount
Earth work in hard or gravelly soil within 50m. Initial lead and 1.5m. Initial lift including rough dressing of clods to maximum 5 cm. to 7 cm and laying in layers not exceeding 0.3 m. in depth (per 100 cum.)	43	462.00	19,866.00
Mulch			397.32
2% sundries and T & P etc.	Total		20263.32
Rough stone dry packing in aprons and revetments with hard granite stones (15 to 30 cm size) per cum			
Granite broken stone 1 cum.	1	507.96	507.96
Mason (Special)	0.17	612.00	104.04
Stone packer	0.35	512.00	179.20
Mulch	1.04	462.00	480.48
2% sundries, T & P etc.			25.43
	Total		1297.11

Estimate for construction of Loose Boulder Check Dam
Length of Loose Boulder Check Dam 2.5 Mtr

Particulars of work	Volume	Rate in Rupees	Total amount in Rupees

M. H. H.

Mrs. F. J. H.
Kalamazoo, Mich.
Feb. 25, 1907

Earth work in hard or gravelly soil within 50m. Initial lead and 1.5m Initial lift including rough dressing of clods to maximum 5 cm, to 7 cm and laying in layers not exceeding 0.3 m. in depth			
Dressing the side of banks and foundation on L.S	L.S	200.00	200.00
Rough stone dry packing in aprons and revetments with hard granite stones (15 to 30 cm size) per cum Rough stone dry packing in aprons and revetments with hard granite stones (15 to 30 cm size) per cum			
Foundation 4.5 mtr x 0.25 mtr = 1.125 sq.m			
Super structure (3.3mx0.6m)/2x 0.9m=1.755 sq.m			
1.755 sq. mtr + 1.125 sq.mtr = 2.88 sq.mtr			
Volume = 2.88 sq.mtr x 2.5 mtr = 7.2 cu.m	7.2 cu.m	1297.11	9339.19
Total			9539.19

Cost per running meter of L.B.C.D of 90 cm height = Rs.9539.12/2.5= Rs. 3735.67 or say Rs.3736/-

Annexure-II

TOTAL COST OF THE PROJECT

Description of the Work	Fund Required (in Rs.)
Loose Boulder Check Dams over 150 Running Meters in gullies and streams within the mining lease area @ Rs 3736.00 per Meter.	5,60,400.00
Total	5,60,400.00
Rupees Five Lakh Sixty Thousand Four Hundred only	


 M/s. Ferro Alloys Corporation Limited
 Kakrapar, Dist. Jalpur
 Pin-385047

UNDERTAKING

(Ref: Stipulated Condition No 2.7(a) of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the approved Scheme for Mitigative measures to minimize soil erosion and choking of stream will be implemented within 3 years of issue of final approval orders i.e. Stage-II Orders by MoEF&CC, New Delhi



Muthuman M
Authorized Signatory
M/s Ferro Alloys Corporation Limited
Bhilai, Chh. Garh
Pin- 490012

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd


Muthuman M
Authorized Signatory
M/s Ferro Alloys Corporation Limited
Bhilai, Chh. Garh
Pin- 490012

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

COUNTERSIGNED



Divisional Forest Officer
Cuttack Forest Division



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS, ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-06764-296010 (O), 296011(Res),

Email Id: rcfanganul@gmail.com

Memo No. 2251 / 5F.FC-06/2025. Dated. 16.5.25

To

The Divisional Forest Officer,
Cuttack Forest Division.

Sub: - Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd.(FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- -Approval of schemes.

Ref: - Your Memo No. 3960 dated 15.5.2025.

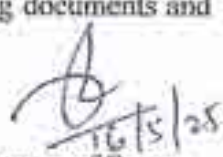
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

SL No.	Condition No	Name of the scheme	Financial outlay. (Rs.)
1.	5	Scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	16,02,039/-
2.	7(a)	Mitigative measures to minimize soil erosion and choking of streams .	5,60,400/-
3.	7(b)	Planting of adequate draught hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme.	36,04,720/-
4.	7 (c)	Construction of Check Dams, retention / toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.	19,80,000/-
5.	7 (d)	Stabilize the overburden dumps by appropriate grading/ benching in accordance with the approve scheme, so as to ensure that angles of repose at any given place are less than 28°.	51,74,545/-
6.	14	De-silting of village tank and other water bodies located within 5 Km. from the Mining lease boundary of Kalarangiatta Chromite Mines of FACOR	77,43,085/-
7	18	Scheme for alternate habitat / Home for the Avifauna , whose nesting trees are to be cleared in Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	19,83,300/-

M/s. Ferro Alloys Corporation Limited
Agent
Kaliapara, Dist- Jajpur
Pin- 755047

You are requested to do the needful as per above condition imposed in stage-1 approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


Regional Chief Conservator of Forests
Angul.

Memo No. 2252 /Dated- 16.5.25

Copy along with a copy of above approved schemes forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act O/o. the Principal Chief Conservator of Forests, Odisha for favour of information and necessary action with reference to Memo No.3960 dated 15.5.2025.


Regional Chief Conservator of Forests,
Angul.

Memo No. 2253 /Dated- 16.5.25

Copy forwarded to the Authorised Signatory, Kalarangiatta Chromite Mines, M/s- FACOR Ltd. for information and necessary action.


Regional Chief Conservator of Forests,
Angul.


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jajpur
Pin-755047

SCHEME FOR
PLANTING OF ADEQUATE DROUGHT HARDY PLANT
SPECIES AND SOWING OF SEEDS
IN THE APPROPRIATE AREA
WITHIN THE MINING LEASE TO ARREST SOIL EROSION
IN LIEU OF
KALARANGIATTA CHROMITE MINES
OF
M/S FERRO ALLOYS CORPORATION LIMITED
UNDER
CUTTACK FOREST DIVISION

In compliance to Stipulated Condition (vii)(b) of In- Principle Approval Orders dated 21-03-2025. Online Proposal No FP/OR/MIN/16453/2015;

M. Muthurani
Agent of M/s
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jajpur
Pin-755047

SCHEME FOR PLANTING OF ADEQUATE DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS IN THE APPROPRIATE AREA WITHIN THE MINING LEASE TO ARREST SOIL EROSION WITHIN ML AREA OF KALARANGIATTA CHROMITE MINES.

(Condition no (vii) (b) of In- Principle Approval Orders dated 21-03-2025 Online Proposal No FP/OR/MIN/16453/2015)

M/S FERRO ALLOYS CORPORATION LIMITED is a 100% subsidiary of Vedanta Limited. The company has Chromite mines in the Sukinda Valley and Ferro Alloys Plant at Bhadrak. The Kalarangiatta Chromite mine is situated at Village Kalarangiatta of Sukinda Tahasil of Jaipur district. The Mining Lease area covers 23,800 hectare. This is a part of Survey of India Topo Sheet bearing No 73G/12 bounded by Latitude N21°01'01.00" to N21°01'29.29" and Longitude E85°44'17.14" to E85°44'38.02". The area is approachable from state capital through N.H.-5, Chandikhole - Daitary Express High Way up to Duburi/Tomka and then through Duburi/Tomka-Kaliapani Road.

The mining Lease area of Kalarangiatta Chromite Mines of M/s FACOR is 23,801 ha. This land is considered to be of forest Kism under Sabik Settlement.

For diversion of Forest Land for mining purpose forest diversion proposal has been filed under provisions of the Forest (conservation) Act, 1980 now renamed as "Van (Sanrakshan Evam Samvardhan) Adhiniyam, 2023) vide Online Proposal no **FP/OR/MIN/16453/2015**. After due consideration the IRO, Bhubaneswar has issued the "In- Principle Approval Order vide letter no **S-ORC288/2016-BHU I/102806/2025** Dated 21-03-2025.

As per condition No Condition No - (vii)(b) of the Stage-I approval, "the User Agency shall take up "Planting of adequate drought hardy plant species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme" at the project cost.

In compliance with this condition, a comprehensive Scheme is prepared for implementation of the same over the entire area of the said mining lease.


Mr. Anil Kumar
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 355047

The Lease area of Kalarangiatta Chromite Mines is 23.80 Ha. The entire lease area is a flat terrain having a gentle slope of 20° South to North. The highest ground elevation in the lease area is in the southern part. The altitude is 108m RL and the lowest relief is 96m RL in North side of the Lease.

The Mines forms a part of Sukinda Ultramafic Complex which is the largest Chromite deposit of India. As per Para 4.7 of guidelines of F/C Act-1980, the Safety Zone of 7.5 in width all around the Lease boundaries should be maintained. At Para 4.7 (ii) " which inter alia says that in case of cluster of mines, the outer boundaries of cluster should be taken as Safety Zone & its maintenance cost has to be borne proportionately by the Lessee operating the Cluster."

The mining and ancillary activities may prone to intensive soil erosion by creating reels and gullies on mined out pit benches, on the surface of O.B. dump, on the shoulder of haul roads and on the bank of the natural streams. Such gullies may widen and occupy large tract of the slope and cause heavy soil loss and flooding the valley bottom with considerable siltation. This may result prone to soil erosion. During rains, the exposed soil may not allow percolation of rainwater to charge the groundwater table. Consequently, the seasonal may affects the perennial flow of the stream.

Therefore, it is essential to treat the area with adequate soil and moisture conservation measures to mitigate the impacts of Mining activities.

In the approved Mining Plan, the land use for mining lease area 23.80 ha has been presented / planned as follows.

Sl No	Particulars of land use	Area as on 2023-24 (in Ha)	Area as on (2027-28 (in ha)	Add. Area likely to be used
1	Area under mining	7.14	7.82	0.68
2	Top soil stack	0.00	0.00	0
3	Overburden / Waste dumping	5.80	7.74	1.94
4	Mineral storage	0.97	0.97	0
5	Infrastructure (Admn. Building / Work shop)	0.06	0.06	0
6	Road	0.56	0.56	0
7	Railway	0.00	0.00	0
8	Tailing Pond	0.00	0.00	0
9	Effluent Treatment Plant	0.26	0.26	0

M. Muthumani
 Muthumani M
 Agent of Mines
 M/s. Ferro Alloy Corporation Limited
 Kallapatti, Dist- Dindigul
 Pin- 625047

10	Mineral Separation Plant	0.00	0.00	0
11	Township area	0.00	0.00	0
12	Others to Specify (plantation in patches)	6.39	6.39	0
	Total	21.18	23.80	2.62

On examination of land use pattern, it is observed that 6.39 ha has been kept under (Others to Specify). On field verification, it is observed that this area has been utilized for Drains around Dumps, Periphery of the ML area, settling tanks, Security related infrastructure / accommodation, Scrap storage area and electric Substation for power supply. This 6.39 ha (Non-Mineralized Area) is mostly used. There is scope to plant about 500 plants.

The dump surface has been partly stabilized by Geo- Grass Matting

In addition to the engineering structures, the vegetative cover to be made on areas susceptible to erosion which is very effective in preventing soil erosion.

To augment the slope soil stabilization process, sowing seeds (Grass and other hardy species) will be fruitful.

Species selected for plantation shall be "drought hardy" and fast growing in nature.

The species selected will be from among the following:

Common Name	Scientific name	Family
Necan	<i>Azadirachta indica</i>	Meliaceae
Karanja	<i>Pongamia pinnata</i>	Fabaceae
Dhamuna	<i>Grevia tilifolia</i>	Tiliaceae
Banyan	<i>Ficus benghalensis</i>	Moraceae
Aswatha	<i>Ficus religiosa</i>	Moraceae

Pre-planting, planting and post planting operations shall be carried out as per silvicultural practices enumerated in the State Govt. approved cost norms and having Pit size of 45 cm X 45 cm X 45 cm to be dug out to carry out plantation.

Cost norm for plantation is given at Annexure-II.

Inside the mining lease area for sowing seeds about 6.39 ha for sowing of seeds.

M. Shrivastava
 Agent of Mines
 Mrs. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jajpur
 Pin- 755047

Execution of work:

Since the work will be done within the mining lease area, it will be executed by the User Agency.

Financial outlay:

The total financial outlay for proposed plantation of "drought hardy species" comes Rs. ~~35,79,159.00~~ (Rupees Thirty-Five Lakh Seventy-Nine Thousand One Hundred Fifty-Nine) Only as shown in Annexure-I.

Rs. 36,04,720/-

M. Muthumani

Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

15.05.2025

Divisional Forest Officer
Cuttack Forest Division

**Total Project Cost for Planting of Drought Hardy Plant Species & Sowing of seeds
over 6.39 ha in Kalarangiatta Chromite Mines of M/s FACOR Ltd.
under Cuttack Forest Division.**

Sl No.	Item of Work	Estimated cost in (Rs.)
1	Cost of Block Plantation @1000 Plants / ha. with 18 months old seedling without provision of fencing over 6.39 ha @ Rs.2,95,571/- per ha with 10 years maintenance. <i>2,99,871/-</i>	~~Rs.18,88,698.69~~ <i>19,14,259</i>
2	Cost of SMC activities like staggered trench, percolation Pits, contour trench, graded earthen bund, LBCD, Wire mesh LBCD, Sub-surface Dyke and WHS as per the slope and site requirement @ Rs.45,478/- per ha over 6.39 ha with 5 years maintenance.	Rs.2,90,604.42
3	Watering by Diesel Pump set fitted with Bore well (1 Bore well for 5 ha plantation) for 2 No of Bore wells @ Rs.6,10,449/- over 6.39 ha with 5 years maintenance.	Rs.12,20,898.00
4	Cost of sowing of grass seeds over 6.39 Ha @ Rs.28,006/Ha.	Rs.1,78,958.34
	Grand Total	Rs.35,79,159.45 Or ~~Rs.35,79,159.00~~

36,04,720/-

(Rupees Thirty-Five Lakh Seventy-Nine Thousand One Hundred Fifty-Nine) Only

Approved on Rs. 36,04,720/-



**Regional Chief Conservator
of Forests, Angul Circle**

15.05.25

**DIVISIONAL FOREST OFFICER,
CUTTACK FOREST DIVISION.**

M. Muthuraj
Muthuraj
Agent of M/s
M/s Ferro Alloys
Kalarangiatta
Chromite Mines
FACOR Ltd.
Jajpur

BASE COST NORM FOR AFFORESTATION (BLOCK PLANTATION)
@1000 PLANTS PER HECTARE(18 Months old seedling)

1. MODEL	BLOCK
2. NO. OF PLANTS PER HA.	1,000
3. TOTAL AREA TO BE PLANTED(In HA.)	1
4. SPACING TO BE ADOPTED	2.5M X 2.5M
5. TOTAL NOS. OF PLANTS TO BE PLANTED	1,000
6. Wage Rate [Per MD]	311.00

Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
Pre-Planting Operation (0th Year)						
1	Survey, Demarcation and Pillar Posting	Nov/Dec	2	622.00	0	622.00
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311.00	100	411.00
3	Site preparation (Cleaning & removal of debris)	Nov/Dec	12	3,732.00	0	3,732.00
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311.00	0	311.00
5	Alignment and stacking of pits	Feb/Mar	1	311.00	0	311.00
6	Digging of pits (45 cm x 45 cm x 45 cm) in hard & gravelly soil	Feb/Mar	40	12,440.00	0	12,440.00
7	Construction of Temporary Labour Shed, Drinking water facility and First Aid etc.	Jan/Mar	0	0.00	3500	3,500.00
Total:-			57	17,727.00	3,600.00	21,327.00
1st Year/ Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of Organic compounds/ CDM/ FYM & mixing the same properly.	Jun/July	7.5	2,332.50	5,000.00	7,332.50
2	Transportation of 18 months old polypot seedlings in hired truck/ tractor from the Permanent/ Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedlings @ Rs.6/- per Seedling. (1100 nos.)	July/Aug	0	0.00	6,600.00	6,600.00
3	Watering the polypot seedlings at planting site	July/Aug	2	622.00	0.00	622.00

M. M. Muthuraj
 Muthuraj & Sons
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kallapur Dist. Chik. 576
 Pin: 576 002

Sl. No.	Item of Works	Period of execution	Manlays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
4	Conveyance of polypot seedlings on head load from the stacking site to individual dig out pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedlings.	July/Aug	22.5	6,997.50	0.00	6,997.50
5	<u>Cost of Fertilizer & Insecticide:-</u> (a) NPK / Bio-fertilizer @50 gms/ plant as basal dose = 50 kg @ Rs.30/- per kg = Rs.1500.00 (b) Urea/ Vermicompost/ Mo Khata/ any other fertilizer in two subsequent doses @ Rs.750.00 (c) Insecticide/ Bio-pesticide @ 5 gms/ plant = 5 kg @ Rs.150/- per kg = Rs.750.00	July/Aug	0	0.00	3,000.00	3,000.00
6	Casualty Replacement @ 10% (100 nos.).	July/Aug	2.5	777.50	0.00	777.50
7	1st Weeding & Manuring.	Aug/Sept	12	3,732.00	0.00	3,732.00
8	2nd Weeding, Soil working (1mt. Diameter around the plants) and Manuring.	Oct/Nov	15	4,665.00	0.00	4,665.00
9	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
10	Watch & Wind including watering as per requirement.	Aug-Mar	12	3,732.00	0.00	3,732.00
	Total:-		76.5	23791.5	14600	38,391.50
2nd Year Maintenance						
1	Transportation of 100 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling.	Jul	0	0.00	600.00	600.00
2	Casualty Replacement @ 10%	Jul	2.5	777.50	0.00	777.50
3	<u>Cost of Fertilizer & Insecticide:-</u> (a) Cost of Insecticide/ Bio-pesticide @ 5 gms/ plant = 0.5 kg @ Rs.150/- per kg = Rs.75/- (b) Urea/ NPK/ Bio-fertilizer/ Vermicompost/ Mo Khata/ any other fertilizer @ Rs.2800/-	Aug/Sept	0	0.00	2,875.00	2,875.00


 Mrs. Ferro Alloys
 Kallapara, Dist- Jaipur
 Pin- 765047

Sl No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
2	Priming of branches, Singling out of multiple shoots	Jan/Mar	3	933.00	0.00	933.00
3	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		24	7,464.00	0	7,464.00
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00


 Muthuraj
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Karapani, Dist- Japur
 Pin-755047

TOTAL COST FOR I HA.							
Sl. No.	Year	No. person days	Labour Cost @ Rs.311/-	Material Cost (Rs.)	Monitoring Evaluation, Learning, Documentation and other Contingency (5%) of (4+5)	Cost of Seedlings @ Rs.50.3096/- per seedlings	Total Cost (Rs.)
1	0th year	57	17727	3600	973	0	22,300.00
2	1st year	76.5	23791.5	14600	1918.5	55340.56	95,650.56
3	2nd year	38.5	11973.5	4475	821.5	5030.96	22,300.96
4	3rd year	36	11196	3800	749	0	15,745.00
5	4th year	21	6531	0	326	0	6,857.00
6	5th year	21	6531	0	326	0	6,857.00
7	6th year	24	7464	0	373	0	7,837.00
8	7th year	21	6531	0	326	0	6,857.00
9	8th year	21	6531	0	326	0	6,857.00
10	9th year	21	6531	0	326	0	6,857.00
11	10th year	21	6531	0	326	0	6,857.00
Total:-		358	1,11,338.00	26,475.00	6,791.00	60,371.52	2,04,975.52
OR							2,04,976.00
(Rupees Two Lakh Four Thousand Nine Hundred Seventy-Six) Only							


Muthumani
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Pin- 305047

TOTAL COST FOR 1 HA.							
Sl. No.	Year	No. person days	Labour Cost @ Rs.311/-	Material Cost (Rs.)	Monitoring Evaluation, Learning, Documentation and other Contingency (5%) of (4+5)	Cost of Seedlings @ Rs.50.3096/- per seedlings	Total Cost (Rs.)
1	0th year	57	17727	3600	973	0	22,300.00
2	1st year	76.5	23791.5	14600	1918.5	55340.56	95,650.56
3	2nd year	38.5	11973.5	4475	821.5	5030.96	22,300.96
4	3rd year	36	11196	3800	749	0	15,745.00
5	4th year	21	6531	0	326	0	6,857.00
6	5th year	21	6531	0	326	0	6,857.00
7	6th year	24	7464	0	373	0	7,837.00
8	7th year	21	6531	0	326	0	6,857.00
9	8th year	21	6531	0	326	0	6,857.00
10	9th year	21	6531	0	326	0	6,857.00
11	10th year	21	6531	0	326	0	6,857.00
Total:-		358	1,11,338.00	26,475.00	6,791.00	60,371.52	2,04,975.52
OR							2,04,976.00
(Rupees Two Lakh Four Thousand Nine Hundred Seventy-Six) Only							


 Muthuman M.
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Pin- 755047

Matrix for Model A Conventional CA Plantation (AR) 1000 plants

Sl. No.	Contract Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost (10 Years)
1	2021-22	22100	194851	22301	14749	6637	6857	7827	6837	6853	6857	6857											204976
2	2022-23	22200	101433	24587	18220	8338	8751	10502	9843	10131	10637	11169											234721
3	2023-24		23417	165455	24816	19136	8751	6180	11027	10121	10637	11169	11728										246452
4	2024-25			24386	170727	27107	30296	9189	6648	81570	10637	11169	11728	12314									258780
5	2025-26				25815	110261	28462	21100	6648	10131	10637	11169	11728	12314	12930	13576							271719
6	2026-27					27106	122077	29585	27135	10121	10637	11169	11728	12314	12930	13576	14255						285305
7	2027-28						38461	128181	31290	25268	10637	11169	11728	12314	12930	13576	14255	14938					299871
8	2028-29							29884	154090	32949	24426	11169	11728	12314	12930	13576	14255	14938	15716				314549
9	2029-30								31378	143219	34996	25647	11728	12314	12930	13576	14255	14938	15716	16502			330277
10	2030-31									33941	143265	16226	26929	12314	12930	13576	14255	14938	15716	16502	17287		346750
											143265	16226	26929	12314	12930	13576	14255	14938	15716	16502	17287		361330

M. Muthumani
Muthumani M
Agent of Mines
Muthumani M
P.O. Kalapatti, Dist. Jajpur
Pin-755047

Matrix for Model-I A Conventional CA Plantation (AR) 1000 plants

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost (10 Years)
1	2001-02	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
2	2002-03	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
3	2003-04	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
4	2004-05	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
5	2005-06	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
6	2006-07	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
7	2007-08	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
8	2008-09	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
9	2009-10	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976
10	2010-11	22305	19551	22101	15748	6857	6857	7837	6837	6837	6837	4837											204976

M. M. Mahawany
 Muthuman M
 Agent of Mines
 Muthuman M Corporation Limited
 Kalapam, Dist - Rajpur
 Pin-735047

SMC Works Model-C			
Cost Norms for creation of Afforestation with stabilization of Soil & Conservation of Moisture (1000 Plants/ Ha).			
Sl. No.	Items of work	Preferable Period of Execution	Total Cost (Rs.)
0th Year (Pre-Planting Operation)			
1	Nil		0
1st Year			
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS as per the slope & site requirement on LS.	Apr/Sept	20,215.00
2nd Year			
3	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
3rd Year			
4	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
5th Year			
6	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
Total			32,343.00

Abstract for 1 ha.					
Sl. No.	Year	No. person days	Labour Cost @ Rs.311/- per day	Material Cost	Total Cost (Rs)
1	0 th Year	0	0.00	0.00	0.00
2	1 st Year	0	0.00	20,215.00	20,215.00
3	2 nd Year	0	0.00	3,032.00	3,032.00
4	3 rd Year	0	0.00	3,032.00	3,032.00
5	4 th Year	0	0.00	3,032.00	3,032.00
6	5 th Year	0	0.00	3,032.00	3,032.00
Total		0	0.00	32,343.00	32,343.00
OR					32,343.00
(Rupees Thirty-Two Thousand Three Hundred Forty-Three) only					


 Muthumani M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalanpatti, Dist- Jaipur
 Pin- 304047

SMC Works Model-C			
Cost Norms for creation of Afforestation with stabilization of Soil & Conservation of Moisture (1000 Plants/ Ha).			
Sl. No.	Items of work	Preferable Period of Execution	Total Cost (Rs.)
0th Year (Pre-Planting Operation)			
1	Nil		0
1st Year			
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS as per the slope & site requirement on LS.	Apr/Sept	20,215.00
2nd Year			
3	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
3rd Year			
4	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
5th Year			
6	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
Total			32,343.00

Abstract for 1 ha.					
Sl. No.	Year	No. person days	Labour Cost @ Rs.311/- per day	Material Cost	Total Cost (Rs)
1	0 th Year	0	0.00	0.00	0.00
2	1 st Year	0	0.00	20,215.00	20,215.00
3	2 nd Year	0	0.00	3,032.00	3,032.00
4	3 rd Year	0	0.00	3,032.00	3,032.00
5	4 th Year	0	0.00	3,032.00	3,032.00
6	5 th Year	0	0.00	3,032.00	3,032.00
Total		0	0.00	32,343.00	32,343.00
OR					32,343.00
(Rupees Thirty-Two Thousand Three Hundred Forty-Three) only					


M. Muthumani M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapara, Dist. Jaipur
 Pin-320047

Matrix for (SMC) over 1 Ha.

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	Total Cost (10 Years)
	Base Norm	0	20215	3032	3032	3032	3032										32343
1	2021-22	0	21226	3343	3510	3685	3870										35634
2	2022-23	0		22287	3510	3685	3870	4063									37415
3	2023-24		0		23401	3685	3870	4063	4266								39286
4	2024-25				0	24571	3870	4063	4266	4480							41250
5	2025-26					0	25800	4063	4266	4480	4704						43313
6	2026-27						0	27090	4266	4480	4704	4939					45478
7	2027-28							0	28445	4480	4704	4939	5186				47752
8	2028-29								0	29867	4704	4939	5186	5435			50140
9	2029-30									0	31360	4939	5186	5445	5717		52647
10	2030-31										0	32928	5186	5445	5717	6003	55279


 M. V. Muthuraman
 Muthuraman M
 Agent of Mines
 Ferro Alloys Corporation Limited
 Kalapandi, Dist - Jajpur
 Pin-755047

Matrix for (SMC) over 1 Ha.

SL No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	Total Cost (10 Years)
	Base Norm	0	20215	3032	3032	3032	3032										32343
1	2021-22	0	21226	3343	3510	3685	3870										35634
2	2022-23	0		22287	3510	3685	3870	4063									37415
3	2023-24		0		23401	3685	3870	4063	4266								39286
4	2024-25				0	24571	3870	4063	4266	4480							41250
5	2025-26					0	25800	4063	4266	4480	4704						43313
6	2026-27					0	27090	4266	4480	4480	4704	4939					45478
7	2027-28							0	28445	4480	4704	4939	5186				47752
8	2028-29								0	29867	4704	4939	5186	5415			50140
9	2029-30									0	31360	4939	5186	5415	5717		52647
10	2030-31										0	32928	5186	5415	5717	6003	55279

N. N. Khuntia

M. N. Khuntia & Co.
Agents of M. N. Khuntia & Co.
Rajapur, Dist. Rajpur
Pin-768047

Water Model-W-II			
Water provision to Plantation			
Diesel Pump set with Bore well (1 pump set + Bore well for 5 ha plantation), Wage Rate @ 311/-			
Year of Installation (0 th Year)			
1	Cost of Bore well		
2	Cost of Diesel pump Set 5 HP	1,50,000.00	
3	Diesel pump set & accessories like	60,000.00	
4	Water Storage Tanks/ Flexible pipes	30,000.00	
		15,000.00	
	Total	2,55,000.00	
Cost of Water per Plant (2,55,000/5000) = Rs. 51/-			
Cost of Water per Ha. = Rs. 51,000/-			51,000.00
1 st Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 5 Month= 100 MDx311=		31,100.00
	Total		52,100.00
2 nd Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc@15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month= 160 MDx311=		49,760.00
	Total		78,410.00
3 rd Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc@15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month= 160 MDx311=		49,760.00
	Total		78,410.00
4 th Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc@15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month= 160 MDx311=		49,760.00
	Total		78,410.00
5 th Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc@15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month= 160 MDx311=		49,760.00
	Total		78,410.00


 M/s. Ferro & Sons
 Kalyanpur, Dist. Jajpur
 Pin-755017

Water Model-W-II			
Water provision to Plantation			
Diesel Pump set with Bore well (1 pump set + Bore well for 5 ha plantation), Wage Rate @ 311/-			
Year of Installation (0 th Year)			
1	Cost of Bore well		
2	Cost of Diesel pump Set 5 HP	1,50,000.00	
3	Diesel pump set & accessories like	60,000.00	
4	Water Storage Tanks/ Flexible pipes	30,000.00	
		15,000.00	
	Total	2,55,000.00	
Cost of Water per Plant (2,55,000/5000) = Rs.51/-			
Cost of Water per Ha. = Rs.51,000/-			51,000.00
1 st Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 5 Month=100 MDx311=		31,100.00
	Total		52,100.00
2 nd Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc @15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=		49,760.00
	Total		78,410.00
3 rd Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc @15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=		49,760.00
	Total		78,410.00
4 th Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc @15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=		49,760.00
	Total		78,410.00
5 th Year Watering			
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=		21,000.00
2	Maintenance of pump set etc @15% of the installation Cost		7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=		49,760.00
	Total		78,410.00


 M/s. Ferro Alloys Corporation Limited
 Kalaperi, Dist. Japur
 Pin-766047

Abstract for 1 ha.					
Sl. No.	Year	No. person days	Labour cost @ Rs.311/- per day	Material Cost	Total cost (Rs.)
1	0 th Year	0	0.00	51,000.00	51,000.00
2	1 st Year	100	31,100.00	21,000.00	52,100.00
3	2 nd Year	160	49,760.00	28,650.00	78,410.00
4	3 rd Year	160	49,760.00	28,650.00	78,410.00
5	4 th Year	160	49,760.00	28,650.00	78,410.00
6	5 th Year	160	49,760.00	28,650.00	78,410.00
Total		740	2,30,140.00	1,86,600.00	4,16,740.00
OR					4,16,740.00
(Rupees Four Lakh Sixteen Thousand Seven Hundred Forty) Only					


 Muthumani M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jaipur
 Ptn-755047

Abstract for 1 ha.					
Sl. No.	Year	No. person days	Labour cost @ Rs.311/- per day	Material Cost	Total cost (Rs.)
1	0 th Year	0	0.00	51,000.00	51,000.00
2	1 st Year	100	31,100.00	21,000.00	52,100.00
3	2 nd Year	160	49,760.00	28,650.00	78,410.00
4	3 rd Year	160	49,760.00	28,650.00	78,410.00
5	4 th Year	160	49,760.00	28,650.00	78,410.00
6	5 th Year	160	49,760.00	28,650.00	78,410.00
Total		740	2,30,140.00	1,86,600.00	4,16,740.00
OR					4,16,740.00
(Rupees Four Lakh Sixteen Thousand Seven Hundred Forty) Only					


 Muthumani M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jajpur
 Pin- 755047

Matrix for Watering VII (Diesel Pump set with Borewell) over 1 Ha.

Sl. No.	Commen cement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Cost (10 Years)
Base Norm		51000	52100	78410	78410	78410	78410															
1	2021-22	51000	54705	80447	90769	94308	100073															478302
2	2022-23		53550	57440	70769	94308	100073	103077														502218
3	2023-24			56228	60312	94308	100073	103077	110331													527328
4	2024-25				59039	63328	100073	103077	110331	115847												553695
5	2025-26					61991	66294	103077	110331	115847	121640											581380
6	2026-27						65090	69819	110331	115847	121640	127722										610449
7	2027-28							68345	73310	115847	121640	127722	134108									640971
8	2028-29								71762	76975	121640	127722	134108	140813								673030
9	2029-30									75530	80824	127722	134108	140813	147854							706671
10	2030-31									79118	84865	127722	134108	140813	147854	155246						743004

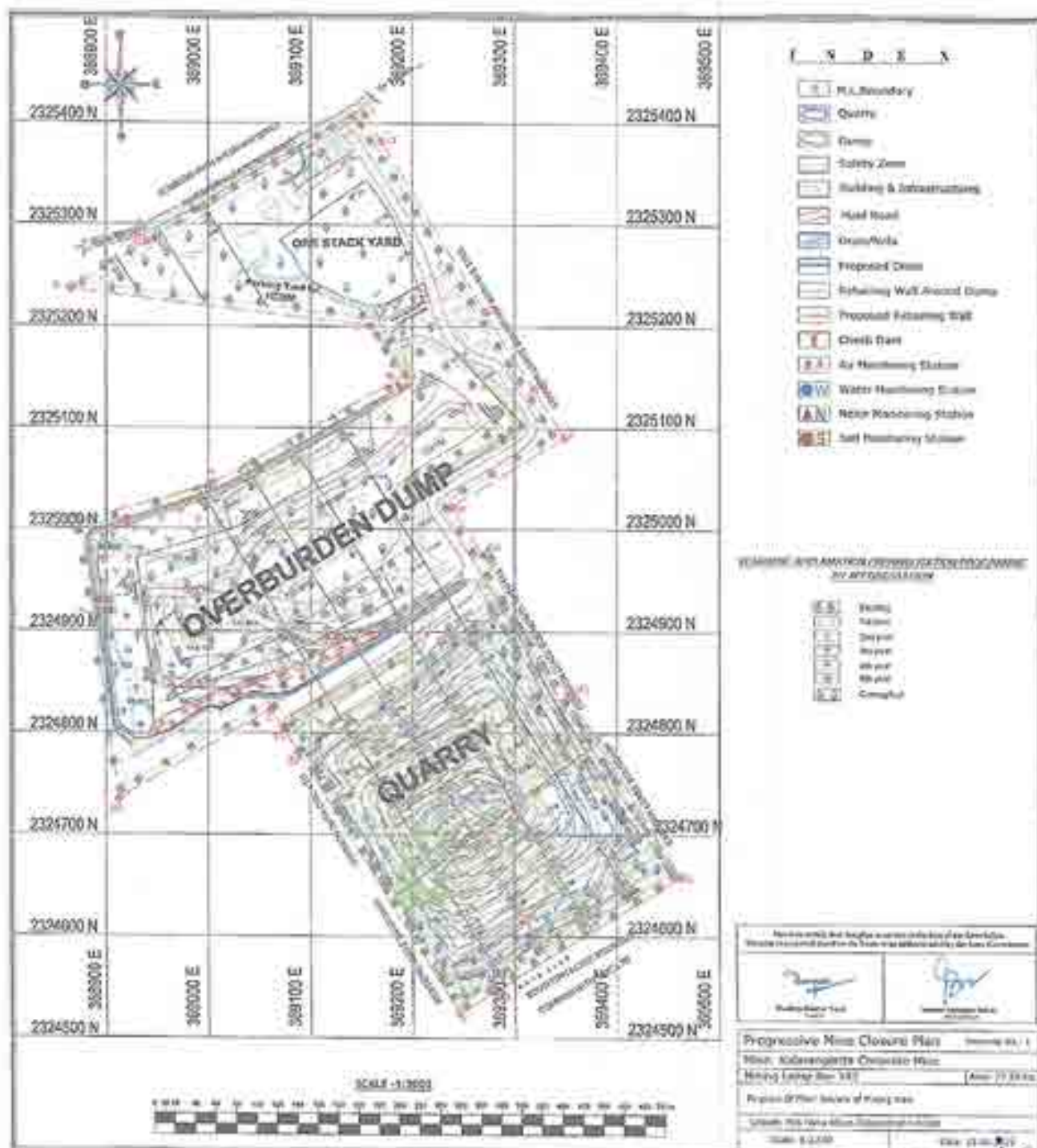
N. N. N. N. N.

Mathurani M
Agent of Mines
Karnataka, Dist. Jajpur
BPO-155047

Matrix for Watering N11 (Disel Pump set with Borewell) over 1 Ha.

SL No.	Common cement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Cost (10 Years)
Base Norm	51000	52100	78410	78410	78410	78410	78410															
1	2021-22	51000	54705	86447	90769	95308	100073															478302
2	2022-23		53550	57440	90769	95308	100073	305077														502318
3	2023-24			56228	60312	95308	100073	105077	110331													527328
4	2024-25				59639	63328	100073	105077	110331	115847												553695
5	2025-26					61991	66194	105077	110331	115847	121640											581380
6	2026-27						66690	69819	110331	115847	121640	127722										610449
7	2027-28							68345	73310	115847	121640	127722	134108									640971
8	2028-29								71762	76975	121640	127722	134108	140813								673020
9	2029-30									73350	80324	127722	134108	140813	147854							706671
10	2030-31									79118	84864	127722	134108	140813	147854	155346						742004

M. V. M. M. M. M. M.
Muthumani M
 Agent of Mines
 Kalampani Dist. Jajpur
 Reg-153347



M. Muthuramy
 Muthuramy M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalasani Dist. Jajpur
 Pin-755047

H. S. 10535
 Director Forest Office
 Odisha Forest Office

M. Muthuramy
 Muthuramy M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalasani Dist. Jajpur
 Pin-755047

UNDERTAKING

(Ref: Stipulated Condition No 2.7(b) of In- Principle Approval order dated
21.03.2025

Online Proposal No Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the approved Scheme for Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme will be implemented.


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallangudi, Dist- Japur
Pin- 755547

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallangudi, Dist- Japur
Pin- 755547

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS, ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-06764-296010 (O), 296011(Res),

Email Id: rcfanguel@gmail.com

Memo No. 2251 / 5F.FC-06/2025. Dated. 16.5.25

To

The Divisional Forest Officer,
Cuttack Forest Division.

Sub: - Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd.(FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **Approval of schemes.**

Ref: - Your Memo No. 3960 dated 15.5.2025.

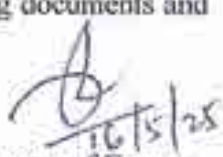
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

Sl. No.	Condition No	Name of the scheme	Financial outlay. (Rs.)
1.	5	Scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	16,02,039/-
2.	7(a)	Mitigative measures to minimize soil erosion and choking of streams.	5,60,400/-
3.	7(b)	Planting of adequate draught hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme.	36,04,720/-
4.	7 (c)	Construction of Check Dams, retention / toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.	19,80,000/-
5.	7 (d)	Stabilize the overburden dumps by appropriate grading/ benching in accordance with the approve scheme, so as to ensure that angles of repose at any given place are less than 28°.	51,74,545/-
6.	14	De-silting of village tank and other water bodies located within 5 Km. from the Mining lease boundary of Kalarangiatta Chromite Mines of FACOR	77,43,085/-
7	18	Scheme for alternate habitat / Home for the Avifauna , whose nesting trees are to be cleared in Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	19,83,300/-

M. Muthurani
M/s. Ferro Alloys Corporation Limited
Kalarangiatta Dist. Jajpur
Pin- 759142

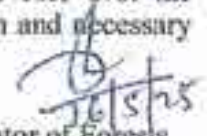
You are requested to do the needful as per above condition imposed in stage-1 approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


Regional Chief Conservator of Forests
Angul.

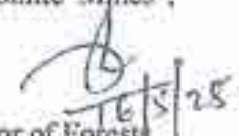
Memo No. 2252 /Dated- 16.5.25

Copy along with a copy of above approved schemes forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act O/o. the Principal Chief Conservator of Forests, Odisha for favour of information and necessary action with reference to Memo No.3960 dated 15.5.2025.


Regional Chief Conservator of Forests,
Angul.

Memo No. 2252 /Dated- 16.5.25

Copy forwarded to the Authorised Signatory, Kalarangiatta Chromite Mines, M/s- FACOR Ltd. for information and necessary action.


Regional Chief Conservator of Forests,
Angul


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin-755047

SCHEME FOR
CONSTRUCTION OF CHECK DAMS,
RETENTION /TOE WALLS TO ARREST SLIDING
DOWN OF THE EXCAVATED MATERIAL
ALONG THE CONTOUR
IN KALARANGIATTA CHROMITE MINES OF
M/S FERRO ALLOYS CORPORATION LIMITED,
UNDER
CUTTACK FOREST DIVISION

*In compliance to Stipulated Condition (vii)(c) of In- Principle Approval Orders dated
21-03-2025 Online Proposal No FP/OR/MIN/16453/2015;*

M. Muthumanj
Muthumanj
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Durgam Cheruvu
Kolar
Pin- 562147

SCHEME FOR "CONSTRUCTION OF CHECK DAMS, RETENTION /TOE WALLS TO ARREST SLIDING DOWN OF THE EXCAVATED MATERIAL ALONG THE CONTOUR OF KALARANGIATTA CHROMITE MINES OF M/S FERRO ALLOYS CORPORATION LTD (FACOR)

(In compliance to Stipulated Condition (vii)(c) of In- Principle Approval Orders dated 21-03-2025 Online Proposal No FP/OR/MIN/16453/2015)

1.0 INTRODUCTION:

M/S FERRO ALLOYS CORPORATION LIMITED is a 100% subsidiary of Vedanta Limited. The company has chromite mines in the Sukinda Valley and Ferro Alloys Plant at Bhadrak. The Mining Lease area covers 23.800 hectare. This is a part of Survey of India Topo Sheet bearing No 73G/12 bounded by Latitude N21°01'01.00" to N21°01'29.29" and Longitude E85°44'17.14" to E85°44'38.02". The area is approachable from state capital through N.H.-5, Chandikhole - Daitary Express High Way up to Duburi/Tomka and then through Duburi/Tomka-Kaliapani Road.

The mining Lease area of Kalarangiatta Chromite Mines of M/s FACOR is 23.80Ha. This land is considered to be of forest Kisam under Sabik Settlement.

For diversion of Forest Land for mining purpose forest diversion proposal has been filed under provisions of the Forest (conservation) Act, 1980 now renamed as "Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980) vide Online Proposal no FP/OR/MIN/16453/2015. After due consideration the IRO, Bhubaneswar has issued the In- Principle Approval Order vide letter no S-ORC288/2016-BHU I/102806/2025 Dated 21-03-2025.

As per condition No. vii(c) of the Stage-I F.C. approval, the User Agency shall take up "Construction of check dams, retention/toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme" at project cost.

In compliance with this condition, a comprehensive Scheme is prepared for implementation of the same in the entire area of the said mining lease.

Dumping of overburden is done in retreating method. Since the material is loose type in nature so it is susceptible to erosion. The natural slope being steep, it will contaminate the streams down

M. Mathur
M. Mathur
Agent
M/s. Ferro Alloys Corporation Limited
Kaliapani, Odisha, India
Pin-754047

the hill with sediments during the rain. In order to protect the dump, it is designed in such a manner that the wash-out should be minimum. Terrace of 20 mtr height with up to 280 slopes are effective. Garland drain and Retaining wall at the toe of the dump is planned and constructed to minimise the soil erosion. The drain is planned to be maintained in regular interval. It is planned, in addition to the engineering design, vegetative protection of the dump surface by plantation, once the dump is declared saturated. At the conceptual stage, the dump yard becomes stable with good forest growth over it which resembles like original vegetative cover.

The proposed mining method is fully mechanized open cast. A novel mining method of boundary pillar mining has also been considered from 2nd Year to extract the blocked ore at the boundary areas but all the mining activities shall be performed within the mining lease by leaving 7.5m as safety zone. In the 1st Year opencast mining method is considered for Ore and OB mining with bench dimension 8m x 8m with 700 bench angle by using shovel back ho. The Mine is being worked out by Opencast Mining method by removing the overburden and side burden by making suitable benching system. The opencast quarry is about 240m in length and 290m in width and it is of 53m depth from surface.

At present there is only One Pit / quarry existing within the lease hold area. During the coming Plan period, the quarry will be expanded in three sides for further depression up to 30mRL to meet the proposed production.

The year wise RoM Production and Waste Production is furnished below.

Year	Waste quantity (t)	ROM Quantity	RoM quantity salable (t)	Ore to OB ratio
2023-24	1156134.0	150000.0	150000.0	0.13
2024-25	63140.0	80000.0	80000.0	1.27
2025-26	43948.0	50000.0	50000.0	1.14
2026-27	26508.0	50000.0	50000.0	1.89

Waste Dumping Pattern

Year	Dump area in ha	Height of the Dump (in m)	Total dump quantity (m ³)	Remark
2023-24	7.83	40.0	578067.0	Within Existing Overburden
2024-25	7.83	43.0	31570.0	

M. S. Mahalingam
 M. S. Mahalingam & Co. Pvt. Ltd.
 M/s. Ferro Alloys, Dist. Jajpur
 Keonjhar, Pin-755047

2025-26	7.83	46.0	21974.0	dump
2026-27	7.83	48.0	13254.0	
2027-28	7.83	60.0	176400.0	

In order to prevent dump failure and checking silts / eroded materials from dump surface, retaining Wall / Toe wall is normally constructed from waste rocks. In the revised / reviewed mining plan, construction of Retaining wall has been prescribed. The year wise construction program is as given below.

Year	Proposed Wall length (in m)	Latitude	Longitude	Remark
Existing: 704 M				
2023-24 / 1 st yr of Operation	100	21°01'09.29"N to 21°01'09.29"N	85°44'18.33" E to 85°44'30.62" E	Width of Retaining wall: 1.20m, Height: 1.00m AGL;
2024-25/ 2 nd year of operation	100	21°01'13.04"N to 21°01'20.32"N	85°44'17.92" E to 85°44'28.15"E	Length 200m along the Dump periphery. (704 m already existing)

This 100m of retaining wall will be constructed after obtaining Forest clearance and Operating mines subsequently.

Cost Estimation:

For Planting of seedlings					
Sl No	Description	Rate	Quantum	Amount in Rs	Remark
01	Construction of Retaining Wall (with loose Boulder)	200m *1.20m*1.00m= 240 cum	@Rs5000/- per cum	12,00,000/-	From waste rocks of the Mine
02	Maintenance of Retaining wall for 3 years	As and where required	@1.50 Lakh for 3 years	4,50,000/-	
	Total			16,50,000/-	
	Add 20% for cost escalation			3,30,000/-	
	G. total			19,80,000/-	

(Rupees Nineteen Lakh Eighty Thousand Only)

Approved by 12. 19.80.000/-

[Signature]

Regional Chief Conservator
of Forests, Angul Circle

[Signature]
15.05.25
Divisional Forest Officer,
Angul Forest Division.

[Signature]
Mrs. Purnima Pradhan
Kalapara, Dist. Jajpur
Pin-755047

UNDERTAKING

(Ref: Stipulated Condition No 2.7(c) of In- Principle Approval order dated
21.03.2025
Online Proposal No Proposal No FP/OR/MIN/16453/2015)

*This is to undertake that the approved Scheme for Construction of check dams,
retention /toe walls to arrest sliding down of the excavated material along the contour in
accordance with the approved scheme will be implemented.*


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Dist. Jaipur
Pin-303007

Authorized Signatory,
Kalarangatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Dist. Jaipur
Pin-303007



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS; ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-86764-296010 (O), 296011(Res),

Email Id: rcfanganul@gmail.com.

Memo No. 2251 / 5F.FC-06/2025. Dated. 16.5.25

To

The Divisional Forest Officer,
Cuttack Forest Division.

Sub: - Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd.(FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- -Approval of schemes.

Ref: - Your Memo No. 3960 dated 15.5.2025.

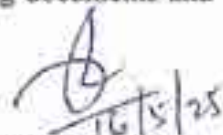
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

Sl. No.	Condition No	Name of the scheme	Financial outlay. (Rs.)
1.	5	Scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	16,02,039/-
2.	7(a)	Mitigative measures to minimize soil erosion and choking of streams.	5,60,400/-
3.	7(b)	Planting of adequate draught hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme.	36,04,720/-
4.	7 (c)	Construction of Check Dams, retention / toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.	19,80,000/-
5.	7 (d)	Stabilize the overburden dumps by appropriate grading/ benching in accordance with the approve scheme, so as to ensure that angles of repose at any given place are less than 28°.	51,74,545/-
6.	14	De-silting of village tank and other water bodies located within 5 Km. from the Mining lease boundary of Kalarangiatta Chromite Mines of FACOR	77,43,085/-
7	18	Scheme for alternate habitat / Home for the Avifauna , whose nesting trees are to be cleared in Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	19,83,300/-

M. H. Mahapatra
Agent
M/s. Ferro Alloys Corpn. Ltd.
Kaliapani, Dist- Jajpur
Pin- 755047

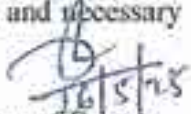
You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


16/5/25
Regional Chief Conservator of Forests
Angul.

Memo No. 2252 /Dated- 16.5.25

Copy along with a copy of above approved schemes forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act O/o. the Principal Chief Conservator of Forests, Odisha for favour of information and necessary action with reference to Memo No.3960 dated 15.5.2025.


16/5/25
Regional Chief Conservator of Forests,
Angul.

Memo No. 2253 /Dated- 16.5.25

Copy forwarded to the Authorised Signatory , Kalarangiatta Chromite Mines , M/s- FACOR Ltd. for information and necessary action.


16/5/25
Regional Chief Conservator of Forests,
Angul


Agent of
M/s. Ferro Alloys Corporation Limited
Kauapari, Dist- Jajpur
Pin- 755047

SCHEME FOR
STABILIZE THE OVERBURDEN DUMPS BY
APPROPRIATE GRADING / BENCHING IN
ACCORDANCE WITH THE APPROVED PLAN /
SCHEME SO AS TO ENSURE THAT ANGLES OF
REPOSE AT ANY GIVEN PLACE IS LESS THAN 28°
AS IT RELATES TO DIVERSION OF 23.80 HA OF
FOREST LAND COMING IN KALARANGIATTA
CHROMITE MINES UNDER CUTTACK FOREST
DIVISION OF M/S FERRO ALLOYS CORPORATION
LIMITED, SUKINDA DISTRICT: JAJAPUR.

In compliance to Stipulated Condition (vii)(d) of In- Principle Approval Orders dated 21-03-2025 Online Proposal No FP/OR/MIN/16453/2015;

M. Muthuman
Muthuman
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Koraput Dist: Jajapur
PL

Scheme for "Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd (FACOR)

(In compliance to Stipulated Condition (vii)(d) of In- Principle Approval Orders dated 21-03-2025 Online Proposal No FP/OR/MIN/16453/2015)

1.0 Introduction:

M/S FERRO ALLOYS CORPORATION LIMITED is a 100% subsidiary of Vedanta Limited. The company has chromite mines in the Sukinda Valley and Ferro Alloys Plant at Bhadrak. The Mining Lease area covers 23.800 hectare. This is a part of Survey of India Topo Sheet bearing No 73G/12 bounded by Latitude N21°01'01.00" to N21°01'29.29" and Longitude E85°44'17.14" to E85°44'38.02". The area is approachable from state capital through N.H.-5, Chandikhole - Daitary Express High Way up to Duburi/Tomka and then through Duburi/Tomka-Kaliapani Road.

The mining Lease area of Kalarangiatta Chromite Mines of M/s FACOR is 23.80Ha. This land is considered to be of forest Kisam under Sabik Settlement.

For diversion of Forest Land for mining purpose forest diversion proposal has been filed under provisions of the Forest (conservation) Act, 1980 now renamed as "Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980) vide Online Proposal no FP/OR/MIN/16453/2015. After due consideration the IRO, Bhubaneswar has issued the "In- Principle Approval Order vide letter no 5-ORC288/2016-BHU I/102806/2025 Dated 21-03-2025.

Condition No. vii (d) is as under:

"Stabilize the overburden dumps by appropriate grading / benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place are less than 28°.

In order to comply the condition, a comprehensive Scheme is prepared for implementation of the same within the M.L. Area.

2.0 Present Scenario:

The proposed mining method is fully mechanized open cast. A novel mining method of boundary pillar mining has also been considered from 2nd Year to extract the blocked ore at the boundary areas but all the mining activities shall be performed within the mining lease by


Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

leaving 7.5m as safety zone. In the 1st Year opencast mining method is considered for Ore and OB mining with bench dimension 8m x8m with 70degree bench angle by using shovel back hoe. The Mine is being worked out by Opencast Mining method by removing the overburden and side burden by making suitable benching system. The opencast quarry is about 240m in length and 290m in width and it is of 53m depth from surface.

At present there is only One Pit / quarry existing within the lease hold area. During coming Plan period, the quarry will be expanded in three sides for further depression up to 30mRL to meet the proposed production.

The year wise RoM Production and Waste Production is furnished below.

Year	Waste quantity (t)	ROM Quantity	RoM quantity salable (t)	Ore to OB ratio
2023-24	1156134.0	150000.0	150000.0	0.13
2024-25	63140.0	80000.0	80000.0	1.27
2025-26	43948.0	50000.0	50000.0	1.14
2026-27	26508.0	50000.0	50000.0	1.89

Waste Dumping Pattern

Year	Dump area in ha	Height of the Dump (in m)	Total dump quantity (m3)	Remark
2023-24	7.83	40.0	578067.0	Within Existing Overburden dump
2024-25	7.83	43.0	31570.0	
2025-26	7.83	46.0	21974.0	
2026-27	7.83	48.0	13254.0	
2027-28	7.83	60.0	176400.0	

3.0 Salient points of waste management:

- For the management of dump, it is proposed to have terrace at every 20 mtr height from the floor level.
- Ultimate height shall be 60mtr.
- Inward slope is to be provided so that rain water shall be channelized at the toe of dump slope. It will prevent the surface runoff from terrace to lower contour through the walls of the dump and forming gullies / rain cuts and rolling down of waste materials.

Ms. Feroz
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Agent of M/s. Feroz
Jaipur

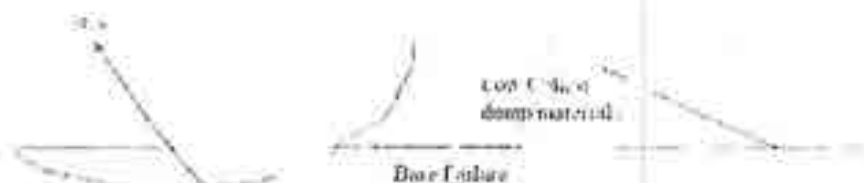
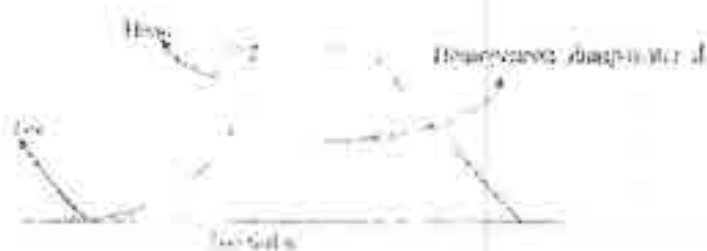
- Towards the inner side of terrace, half concrete open pipes are proposed to be installed to channelized rainwater and not allowing penetrating to inside the dump.
- Crated Boulder retaining wall of 2m height (0.5m below ground + 1.5m above the ground) X 1.0m wide shall be constructed around the dump.
- Its aim is to arrest the rolling down of the waste material from the dump.
- At regular intervals clear openings are provided at the bottom of wall to allow water to pass out the water and join the Garland drains.
- Constructed retaining wall is of loose boulders.
- Garland drains around the dump will be constructed.
- At the end of the garland drain settling tanks of 15m x 10m x 2m deep is constructed to allow settling of silts.
- Slope of each terrace to be maintained $< 37^\circ$.
- Over all slope shall be $< 28^\circ$.

Anticipated fallout.

A. Failure of Dumps:

Three types of Dump Failure may occur in the present type of dump. These are

- Slope Failure.
- Toe failure
- Base failure.



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- Presence of Clay and Soil layers and their properties.
- Angle of Repose of the broken Over burden rock material
- Cohesion of the Over burden Rock materials
- Height of OB Dump in one stretch
- Ultimate Height and Slope of Waste Dump
- Dump Stability Parameters Strip/Cut Width and Depth.

B. Dust pollution due to wind/whorl wind:

The average wind speed as noticed in post monsoon is 2.25m/s with a maximum speed of 6.13m/s. In winter the average speed is 1.31m/s with a maximum speed of 5.61m/s. This wind speed has a capacity to pick up heavy dust from dry surface of dump, ore stack & sub grade stack.

C. Loss of life & property.

Failure of dump may cause loss of life & property. May put occupational hazards to workman.

Summary of prescription on Benching & Grading:

- Bench height: 20m,
- Bench Width: 20m
- Number of Benches: 3
- Over all slope: $<28^{\circ}$.
- Slope of each terrace: $<37^{\circ}$.

4.0 Stabilization of Over Burden Dump:

After the declaration of saturation of the Over Burden dump, the same shall be covered by means of plantation in a progressive and phased manner.

4.1 By grass seeding: Grass seeding on Over Burden dump shall be carried out as per Mining plan for next Five year period. After that planting of tall trees are being carried out to stabilize the Over Burden dumping progressive and phased manner.

4.2 By Planting Tall trees: After the dump became saturated and no further dumping will be carried out, Plantation over dump will be taken up after stabilizing the surface by planting grass in progressive and phased manner, the details of the plantation are as follows:

4.2.1 Planting & post-planting operations: Block Plantation over 7.74 ha shall be carried out @ 1000 plants/Ha. All planting & post planting measures like casualty replacement, soil working,

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manuring, fire protection etc. shall be undertaken as given in Cost norm for Block plantation with 1000 seedlings / hectare as per norm furnished as Annexure-IV.

While taking up plantation, the following important points shall be taken up for consideration:

- ❖ Care to be taken to raise healthy seedlings of minimum 60 cm height, 10% extra seedlings are to be raised for casualty replacement.
- ❖ Pitting shall invariably be done during November-February i.e., before onset of monsoon. If possible the soil of upper portion and lower portion of pit should be placed separately in specific direction so that while planting the pits will be filled with top-soil first.
- ❖ Planting shall be done on the onset of monsoon to get full benefit of monsoon rain and should not be delayed.
- ❖ Basal dose of 50 grams of NPK and 5 grams of Chlorpyrifos dust per plant should be applied at the time of planting carefully by mixing with top-soil so that the roots of seedlings do not come in direct contact with fertilizer.
- ❖ In case of any mortality of planted seedlings, it should be replaced with healthy seedlings as soon as possible for better survival rate.
- ❖ Complete weeding in proper time shall be done.
- ❖ Soil-working and application of 2nd dose fertilizer of 50 gms NPK / plant should be done in time

The plantation area shall be provided with barbed wire fence and watch & ward.

4.2.2 Spacing: The spacing adopted for the plantation in gaps is 2.5 mtr X 2.5 mtr. Alignment and pit marking shall be done carefully in slopes so that the horizontal distance between plants in a row remains 2.5 mtr spacing.

4.2.3 Species: Considering the topography, soil and moisture availability of the plantation area, the following species shall be planted:

Name of species	Common name	Remarks
<i>Alstoniascholaris</i>	Chhatian	In area with good soil depth
<i>Derris indica</i>	Karanja	In area with good soil depth
<i>Bombax ceiba</i>	Simli	In area with good soil depth
<i>Ficus benghalensis</i>	Banyan	In rocky and exposed areas
<i>Dalbergia latifolia</i>	Pahadi Sisoo	In lower areas with good soil depth
<i>Gmelinaarborea</i>	Gambhari	In lower areas with good soil depth
<i>Dendrocalamusstrictus</i>	Salia bamboo	In lower areas with good soil depth healthy seedlings from rhizomes may be planted
<i>Ficus religiosa</i>	Aswatha	In rocky areas with low soil depth
<i>Azadirachta indica</i>	Neem	In area with good soil depth
<i>Albizia lebbeck</i>	Sirisa	In lower areas with good soil depth

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5.0. Monitoring & Evaluation.

The implementation & its maintenance shall be evaluated by the User Agency regularly. The Divisional Forest Officer, Cuttack Forest Division shall be informed from time to time.

6.0 Implementing Agency

This Plan is to be implemented by the user agency.

7.0 Financial Outlay.

Total Financial Outlay for proposed scheme comes to 51,43,585.00 (Rupees Fifty-One Lakh ~~Forty-Three Thousand Five Hundred Eighty-Five~~) only

51,43,585/-

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Muthuman M
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Kaliapani, Dist- Jaipur
Pin- 755047

A. Pan
15.05.25
DIVISIONAL FOREST OFFICER,
CUTTACK FOREST DIVISION.

Financial Forecast

Sl. No.	Particulars of interventions	Financial involvement (Rs)
1	For Grading and benching of Overburden dump (Annexure-I)	4,63,440.00
2	Cost for sowing of grass seeds over 7.74 ha @ Rs. 28,006/- ha (Annexure-II).	2,16,766.00
3	Maintenance of grass seed @ (3 mandays for period of six month). Total 540 mandays (180 x 3) for six months 540 x Rs. 462.00 = 2,49,480.00	2,49,480.00
	Sub-Total:	9,29,686.00
	Inspection, monitoring and evaluation @15% of the total project cost	1,39,453.00
	Sub-Total:	10,69,139.00
	Price escalation @20%	2,13,828.00
	Total	12,82,967.00
4	Cost of Block Plantation @1000 Plants / ha. with 18 months old seedling without provision of fencing over 7.74 ha @ Rs. 2,95,571/- per ha with 10 years maintenance	22,87,720.00
5	Cost of SMC activities like staggered trench, percolation Pits, contour trench, graded earthen bund, LBCD, Wire mesh LBCD, Sub-surface Dyke and WHS as per the slope and site requirement @ Rs.45,478/- per ha over 7.74 ha with 5 years maintenance.	3,52,000.00
6	Watering by Diesel Pump set fitted with Bore well (1 Bore well for 5 ha plantation) for 2 No of Bore wells @ Rs.6,10,449/- over 7.74 ha with 5 years maintenance.	12,20,898.00
	Grand Total	51,43,585.00

(Rupees Fifty-One Lakh Forty-Three Thousand Five Hundred Eighty-Five) only 51,74,545/-

Approved of Rs- 51,74,545/-

[Signature]

Regional Chief Conservator
of Forests, Angul Circle

15.05.25
DIVISIONAL FOREST OFFICER,
CUTTACK FOREST DIVISION.

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on Limited
paper

Annexure-1

For Grading & benching of Overburden dump					
Sl No	Description	Rate	Quantum	Amount in Rs	Remark
01	Transportation and dumping of Overburden	Part of Mining activities no cost estimated			
02	Providing Precast Concrete Channel over 100m	Rs200/- per m	100	20,000.00	
03	Cross covered channel (Across the bench width) 15m x 5 location= 75m	Rs500/- perm	75	34,500.00	
04	Water draining channel from top of the bench to down (Ground level) 5*25m	Rs 500/- Per m	125	62,500.00	Width 60cm and depth 30cm
05	Grass surfing including collection / transportation & surfing	Rs100/- per m	192	19,200.00	
06	Overall maintenance / unforeseen	20000/- per Yr	5 yr	1,00,000.00	
07(i)	Broadcasting of Grass seeds	10000/- per Yr	5yr	50,000.00	@5kg per year
07(ii)	Planting of Soil Binder (Vitex negundo)-500 plants	200/- per plant	500 no	1,00,000.00	@100 plants per year
	Total			3,86,200.00	
	Add 20% for cost escalation			77,240.00	
	Grand Total			4,63,440.00	


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Annexure-II

Estimate for sowing of grass seeds per ha.

Cost of broadcasting of grass seeds per ha. Labour rate Rs.462.00/- per day				
Sl. No.	Purpose	No. of Labour/quantity of materials	Rate (in Rs.)	Amount in Rs.
1	Spreading of good top soil	03 Nos	462.00/- Labour	1386.00
2	Adding FYM and good earth	2 TL FYM 2TL Good earth	500/TL FYM 500/TL Good earth	2,000.00
3	Cost of grass seed 500 Kg/per ha		40/Kg	20,000.00
4	Broad casting	10 nos	462.00/-Labour	4620.00
Total				28,006.00

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Ms. Ferro Alloys Corporation Limited
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BASE COST NORM FOR AFFORESTATION (BLOCK PLANTATION)

@1000 PLANTS PER HECTARE(18 Months old seedling)

1. MODEL	BLOCK
2. NO. OF PLANTS PER HA.	1,000
3. TOTAL AREA TO BE PLANTED(In HA.)	1
4. SPACING TO BE ADOPTED	2.5M X 2.5M
5. TOTAL NOS. OF PLANTS TO BE PLANTED	1,000
6. Wage Rate [Per MD]	311.00

Sl. No.	Item of Works	Period of execution	Maadays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
Pre-Planting Operation (0th Year)						
1	Survey, Demarcation and Pillar Posting	Nov/Dec	2	622.00	0	622.00
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311.00	100	411.00
3	Site preparation (Cleaning & removal of debris)	Nov/Dec	12	3,732.00	0	3,732.00
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311.00	0	311.00
5	Alignment and stacking of pits	Feb/Mar	1	311.00	0	311.00
6	Digging of pits (45 cm x 45 cm x 45 cm) in hard & gravelly soil	Feb/Mar	40	12,440.00	0	12,440.00
7	Construction of Temporary Labour Shed, Drinking water facility and First Aid etc.	Jan/Mar	0	0.00	3500	3,500.00
	Total:-		57	17,727.00	3,600.00	21,327.00
1st Year/ Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of Organic compounds/ CDM/ FYM & mixing the same properly.	Jun/July	7.5	2,332.50	5,000.00	7,332.50
2	Transportation of 18 months old polypot seedlings in hired truck/ tractor from the Permanent/ Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedlings @ Rs.6/- per Seedling. (1100 nos.)	July/Aug	0	0.00	6,600.00	6,600.00
3	Watering the polypot seedlings at planting site	July/Aug	2	622.00	0.00	622.00

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Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
4	Conveyance of polypot seedlings on head load from the stacking site to individual dug out pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedlings.	July/Aug	22.5	6,997.50	0.00	6,997.50
5	<u>Cost of Fertilizer & Insecticide:-</u> (a) NPK / Bio-fertilizer @50 gms/ plant as basal dose = 50 kg @ Rs.30/- per kg = Rs.1500.00 (b) Urea/ Vermicompost/ Mo Khata/ any other fertilizer in two subsequent doses @ Rs.750.00 (c) Insecticide/ Bio-pesticide @ 5 gms/ plant = 5 kg @ Rs.150/- per kg = Rs.750.00	July/Aug	0	0.00	3,000.00	3,000.00
6	Casualty Replacement @ 10% (100 nos.).	July/Aug	2.5	777.50	0.00	777.50
7	1st Weeding & Manuring.	Aug/Sept	12	3,732.00	0.00	3,732.00
8	2nd Weeding, Soil working (1mt. Diameter around the plants) and Manuring.	Oct/Nov	15	4,665.00	0.00	4,665.00
9	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
10	Watch & Ward including watering as per requirement.	Aug-Mar	12	3,732.00	0.00	3,732.00
	Total:-		76.5	23791.5	14600	38,391.50
2nd Year Maintenance						
1	Transportation of 100 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling.	Jul	0	0.00	600.00	600.00
2	Casualty Replacement @ 10%	Jul	2.5	777.50	0.00	777.50
3	<u>Cost of Fertilizer & Insecticide:-</u> (a) Cost of Insecticide/ Bio-pesticide @ 5 gms/ plant = 0.5 kg @ Rs.150/- per kg = Rs.75/- (b) Urea/ NPK/ Bio-fertilizer/ Vermicompost/ Mo Khata/ any other fertilizer @ Rs.2800/-	Aug/Sept	0	0.00	2,875.00	2,875.00


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 Pin-755047

Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
4	Weeding (Complete weeding), Manuring & Soil working (1mt. Diameter around the plants).	Sept/Oct	15	4,665.00	0.00	4,665.00
5	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
6	Watch & Ward including watering as per requirement.	Apr-Mar	18	5,598.00	0.00	5,598.00
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.				1,000.00	1,000.00
	Total:-		38.5	11973.5	4,475.00	16448.5
3rd Year Maintenance						
1	Cost of fertilizer (Urea/ NPK/ Bio-fertilizer/ Vermicompost/ Mo Khata/ any other fertilizer).	Sept/Oct	0	0.00	2,800.00	2,800.00
2	Weeding . Manuring & Soil working (1mt. Diameter around the plants).	Sept/Oct	15	4,665.00	0.00	4,665.00
3	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
4	Watch & Ward including watering as per requirement.	Apr-Mar	18	5,598.00	0.00	5,598.00
5	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr-Mar			1,000.00	1,000.00
	Total:-		36	11,196.00	3,800.00	14,996.00
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00

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Sl. No.	Item of Works	Period of execution	Mandays	Labour Cost @ Rs.311/-	Material Cost	Total in Rs.
1	2	3	4	5	6	7
2	Pruning of branches, Singling out of multiple shoots	Jan/Mar	3	933.00	0.00	933.00
3	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		24	7,464.00	0	7,464.00
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path.	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. long) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m. length) including maintenance of inspection path	Feb/Mar	3	933.00	0.00	933.00
2	Watch & Ward including maintenance of fencing.	Apr-Mar	18	5,598.00	0.00	5,598.00
	Total:-		21	6,531.00	0	6,531.00


 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
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TOTAL COST FOR 1 HA.							
Sl. No.	Year	No. person days	Labour Cost @ Rs.311/-	Material Cost (Rs.)	Monitoring Evaluation, Learning, Documentation and other Contingency (5% of (4+5))	Cost of Seedlings @ Rs.50.3096/- per seedlings	Total Cost (Rs.)
1	0th year	57	17727	3600	973	0	22,300.00
2	1st year	76.5	23791.5	14600	1918.5	55340.56	95,650.56
3	2nd year	38.5	11973.5	4475	821.5	5030.96	22,300.96
4	3rd year	36	11196	3800	749	0	15,745.00
5	4th year	21	6531	0	326	0	6,857.00
6	5th year	21	6531	0	326	0	6,857.00
7	6th year	24	7464	0	373	0	7,837.00
8	7th year	21	6531	0	326	0	6,857.00
9	8th year	21	6531	0	326	0	6,857.00
10	9th year	21	6531	0	326	0	6,857.00
11	10th year	21	6531	0	326	0	6,857.00
Total:-		358	1,11,338.00	26,475.00	6,791.00	60,371.52	2,04,975.52
OR							2,04,976.00
(Rupees Two Lakh Four Thousand Nine Hundred Seventy-Six) Only							


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SMC Works Model-C			
Cost Norms for creation of Afforestation with stabilization of Soil & Conservation of Moisture (1000 Plants/ Ha).			
Sl. No.	Items of work	Preferable Period of Execution	Total Cost (Rs.)
0th Year (Pre-Planting Operation)			
1	Nil		0
1st Year			
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen band, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS as per the slope & site requirement on LS.	Apr/Sept	20,215.00
2nd Year			
3	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
3rd Year			
4	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
5th Year			
6	Maintenance of SMC structures @ 15 % of initial year cost.	Apr/Jul	3,032.00
Total			32,343.00

Abstract for 1 ha.					
Sl. No.	Year	No. person days	Labour Cost @ Rs.311/- per day	Material Cost	Total Cost (Rs)
1	0 th Year	0	0.00	0.00	0.00
2	1 st Year	0	0.00	20,215.00	20,215.00
3	2 nd Year	0	0.00	3,032.00	3,032.00
4	3 rd Year	0	0.00	3,032.00	3,032.00
5	4 th Year	0	0.00	3,032.00	3,032.00
6	5 th Year	0	0.00	3,032.00	3,032.00
Total		0	0.00	32,343.00	32,343.00
OR					32,343.00
(Rupees Thirty-Two Thousand Three Hundred Forty-Three) only					


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Matrix for (SMC) over 1 Ha.

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	Total Cost (10 Years)
	Base Norm	0	20215	3032	3032	3032	3032										32343
1	2021-22	0	21226	3343	3510	3685	3870										35634
2	2022-23		0	22287	3510	3685	3870	4063									37415
3	2023-24			0	23401	3685	3870	4063	4266								39286
4	2024-25				0	24571	3870	4063	4266	4480							41250
5	2025-26					0	25800	4063	4266	4480	4704						43313
6	2026-27						0	27090	4266	4480	4704	4939					45478
7	2027-28							0	28445	4480	4704	4939	5186				47752
8	2028-29								0	29867	4704	4939	5186	5445			50140
9	2029-30									0	31360	4939	5186	5445	5717		52647
10	2030-31										0	32928	5186	5445	5717	6003	55279

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Water Model-W-II		
Water provision to Plantation		
Diesel Pump set with Bore well (1 pump set + Bore well for 5 ha plantation), Wage Rate @ 311/-		
Year of Installation (0 th Year)		
1	Cost of Bore well	1,50,000.00
2	Cost of Diesel pump Set 5 HP	60,000.00
3	Diesel pump set & accessories like	30,000.00
4	Water Storage Tanks/ Flexible pipes	15,000.00
	Total	2,55,000.00
Cost of Water per Plant (2,55,000/5000)=Rs.51/-		51,000.00
Cost of Water per Ha.=Rs.51,000/-		
1 st Year Watering		
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00
2	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 5 Month=100 MDx311=	31,100.00
	Total	52,100.00
2 nd Year Watering		
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=	49,760.00
	Total	78,410.00
3 rd Year Watering		
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=	49,760.00
	Total	78,410.00
4 th Year Watering		
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=	49,760.00
	Total	78,410.00
5 th Year Watering		
1	Recurring expenditure i.e. Diesel, Mobil, Engine Oil, Etc for pumping Water-21x1000=	21,000.00
2	Maintenance of pump set etc@15% of the installation Cost	7,650.00
3	Watering 1000 plants (Nov-Mar) @200plants/MD with 7 days rotation 20 MD x 8 Month=160 MDx311=	49,760.00
	Total	78,410.00


 Mrs. Ferro
 Agent
 Ferro Agro Corporation Limited
 Jaipur

Abstract For 1 ha.					
Sl. No.	Year	No. person days	Labour cost @ Rs.311/- per day	Material Cost	Total cost (Rs.)
1	0 th Year	0	0.00	51,000.00	51,000.00
2	1 st Year	100	31,100.00	21,000.00	52,100.00
3	2 nd Year	160	49,760.00	28,650.00	78,410.00
4	3 rd Year	160	49,760.00	28,650.00	78,410.00
5	4 th Year	160	49,760.00	28,650.00	78,410.00
6	5 th Year	160	49,760.00	28,650.00	78,410.00
Total		740	2,30,140.00	1,86,600.00	4,16,740.00
OR					4,16,740.00
(Rupees Four Lakh Sixteen Thousand Seven Hundred Forty) Only					


 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jajpur
 Pin- 755047

Matrix for Watering WII (Diesel Pump set with Borewell) over I Ha.

Sl. No.	Common cement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	Total Cost (10 Years)
	Bore Norm	51000	52100	78410	78410	78410	78410															
1	2021-22	51000	54705	86447	90769	95308	100073															478302
2	2022-23		53550	57440	90769	95308	100073	105077														502218
3	2023-24			56228	60312	95308	100073	105077	110331													527328
4	2024-25				59039	63328	100073	105077	110331	115847												553695
5	2025-26					61991	66494	105077	110331	115847	121640											581380
6	2026-27						65090	69819	110331	115847	121640	127722										610449
7	2027-28							68345	73310	115847	121640	127722	134108									640971
8	2028-29								71762	76975	121640	127722	134108	140813								673020
9	2029-30									75350	80824	127722	134108	140813	147854							706671
10	2030-31										79118	84863	134108	140813	147854	155246						742004

N. N. N. N. N.

Muthumari M
Agent of M/s. Corporation Limited
Kannur, Dist.: Kasaragod
P.O. 155000

UNDERTAKING

(Ref: Stipulated Condition No 2.7(d) of In- Principle Approval order dated
21.03.2025

Online Proposal No Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the approved Scheme for Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28° will be implemented.



Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Sukapada, Dist- Jajpur
Pin- 755007

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

COUNTERSIGNED



Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.8(a) of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the Safety Zone (7.5-meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing is being maintain. Sufficient number of watchers will be deployed for its protection and maintenance.

M. Muthuram
M. Muthuram
Agent of Mine
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Dist-Jajpur
Pin-755007

Authorized Signatory,
Kalarangatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED

AP
Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.8(b) of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the mining lease boundary area / Boundary of the safety zone of the mining lease, adjacent to habitation/roads will be properly fenced by the user agency

M. Muthuram

Mr. Charles M.
Agent of Mines
Mts. Ferro-Alloys Corporation Limited
Hollister, Calif.-Joliet
Ill., U.S.A.

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

COUNTERSIGNED

AP

Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.8(c) of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the Safety zone will be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration will be taken up in this area by the user agency at project cost under the supervision of the State Forest Department

M. Mithun
 Mithun M
 Agent of Mine
 M/s. Ferro Alloys Corporation Limited
 Kalarangatta, G.O. - 751002
 Pin- 751002

Authorized Signatory,
Kalarangatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED

AP
Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.8(d) of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the State Government and the user agency will ensure that safety zone is maintained as per the prescribed norms

M. Mathur
 Authorized Signatory
 M/s Ferro Alloys Corporation Limited
 Belpahar, Cuttack
 Odisha-753007

Authorized Signatory,
 Kalarangiatta Chromite Mine,
 M/s Ferro Alloys Corporation Ltd

Countersigned by
 Divisional Forest Officer
 Cuttack Forest Division

Office Seal
COUNTERSIGNED

AP
 Divisional Forest Officer
 Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.9 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the user agency will take up works for construction and cleaning of garland drains, stabilizing retaining walls, proper terracing of OB dumps and checking gully formation resulting in soil erosion.


Mithun M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Dist- Jharkhand
Pin- 835107

Authorized Signatory,
Kalarangiattha Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.10 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the user agency will maintain that plants which are having lowest translocation factor can be preferred under afforestation on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps.

M. Mithunang
 Mithunang M
 Agent of Mine
 M/s. Ferro Alloys Corporation Limited
 Kolar, Dist- Jharkhand
 Pin- 832007

Authorized Signatory,
 Kalarangiatta Chromite Mine,
 M/s Ferro Alloys Corporation Ltd

Countersigned by
 Divisional Forest Officer
 Cuttack Forest Division

Office Seal
 COUNTERSIGNED

AP
 Divisional Forest Officer
 Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.11 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that adequate care will be taken by the User Agency to check any rolling of overburden/dumps beyond diverted area and also to check soil erosion caused due to mining activities.

M. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Vallabhi, Ghat-Jajpur
Pin-751017

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED

[Signature]

Divisional Forest Officer
Cuttack Forest Division

UNDERTAKING

(Ref: Stipulated Condition No 2.12 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

*This is to undertake that the user agency will made all possible efforts to prevention
of fall of wild animals into mining pit by fencing the open pit area.*


M. Mathur
Authorized Signatory
Agent of Mines
M/s. Ferro-Alloys Corporation Limited
Bhilai, Chh. Jigar
Pin- 765002

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division

UNDERTAKING

(Ref: Stipulated Condition No 2.13 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that No damage shall be caused to the top-soil and the user agency will follow the topsoil management plan.


M. Mithun
Authorized Signatory
M/s. Ferro Alloys Corporation Limited
Kallakudi, Dist.-Jaguar
Pin- 605002

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS: ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-86764-296010 (O), 296011(Res),

Email Id: rccfangul@gmail.com.

Memo No. 2251 /SF.FC-06/2025. Dated. 16.5.25

To

The Divisional Forest Officer,
Cuttack Forest Division.

Sub: - Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd.(FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **Approval of schemes.**

Ref: - Your Memo No. 3960 dated 15.5.2025.

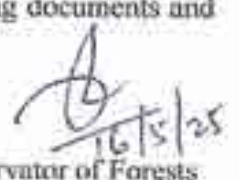
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

Sl. No.	Condition No	Name of the scheme	Financial outlay. (Rs.)
1.	5	Scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	16,02,039/-
2.	7(a)	Mitigative measures to minimize soil erosion and choking of streams .	5,60,400/-
3.	7(b)	Planting of adequate draught hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme.	36,04,720/-
4.	7 (c)	Construction of Check Dams, retention / toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.	19,80,000/-
5.	7 (d)	Stabilize the overburden dumps by appropriate grading/ benching in accordance with the approve scheme, so as to ensure that angles of repose at any given place are less than 28°.	51,74,545/-
6.	14	De-silting of village tank and other water bodies located within 5 Km. from the Mining lease boundary of Kalarangiatta Chromite Mines of FACOR	77,43,085/-
7.	18	Scheme for alternate habitat / Home for the Avifauna , whose nesting trees are to be cleared in Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	19,83,300/-

M/s. Ferro Alloys Corporation Limited
Kaliapada, Dist. Jajpur
Pin- 751047

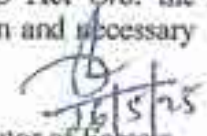
You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


16/5/25
Regional Chief Conservator of Forests
Angul.

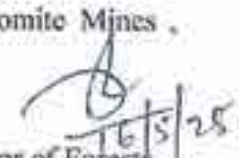
Memo No. 2252 /Dated- 16.5.25

Copy along with a copy of above approved schemes forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act O/o. the Principal Chief Conservator of Forests, Odisha for favour of information and necessary action with reference to Memo No.3960 dated 15.5.2025.


16/5/25
Regional Chief Conservator of Forests,
Angul.

Memo No. 2253 /Dated- 16.5.25

Copy forwarded to the Authorised Signatory, Kalarangiatta Chromite Mines, M/s- FACOR Ltd. for information and necessary action.


16/5/25
Regional Chief Conservator of Forests,
Angul



SCHEME FOR
DE-SILTATION OF VILLAGE POND COMING WITHIN 5KM RADIUS OF
KALARANGIATTA CHROMITE MINE OF M/S FERRO ALLOYS
CORPORATION LTD AGAINST DIVERSION OF 23.80 HA OF FOREST
LAND IN SUKINDA TAHASIL OF JAIPUR DISTRICT, ODISHA.



By

Kalarangiatta Chromite Mine

M/s Ferro Alloys Corporation Ltd,

M. Muthuraj
Muthuraj Ferro Alloys Corporation Ltd
Jaipur

M/s

Longitude

85°44'18.96168"E to 85°44'38.02780"E

The Mine finds place in Survey of India Topo Sheet no F45N12 (73G/12)



3. List of Ponds available within 5 km radius of Mines outer boundary.

After field visit by expert group, it is observed that the following tanks / water bodies fall within 5 Km from boundary of the mining lease area which need de-silting.

Sl No	Name of the village	Status of the Pond Ownership	Size, in Meter	Area in sq. in	Perimeter in Meter	Location	
						Latitude	Longitude
1	Ostia	Govt.	100x60	6000	320	21°03'15.8"N	85°46'18.7"E
2	Kalarangista (Pond-I)	Govt.	40x30	1200	140	21°01'10.490"N	85°45'55.69"E
3	Kalarangista (Pond-II)	Govt.	50x40	2000	180	21°01'10.490"N	85°45'55.69"E
4	Kakudia	Govt.	75x64	4800	278	21°00'35.984"N	85°46'45.666"E
5	Kusumundia	Govt.	90x55	4950	290	20°59'36.576"N	85°46'18.204"E

6	Kakudia (Purna parusia)	Govt.	40x30	1200	140	21°00'51.3"N	85°47'39.8"E

Table 1. List of tanks Available for de-silting.

4. Topography:

The ponds are mostly on plain terrain. They are situated close to habitation.

5. Soil Type.

The soil is hard and lateritic. The pond silt is basically of clay, silt and sand. The silts are soft and easily can be removed. The depth of siltation as observed varies from 60cm to 200cm. On an average 115cm or say 1 meter silt is proposed to be removed.

6. Climate:

The tract experiences a tropical climate. The rainfall is experienced from June- September. The summer is extremely hot & humid. The temperature rises up to 47°C during May. The average rain fall is about 1500mm.

7. Drainage:

The drainage pattern is decided by Mahagiri hill range & Daitari Hill Range. The Sulinda Valley drains to Damsal Nalla which ultimately drains to Brahmani River after flowing about 29km. The nallas are as follows:

Sl No	Name	Flow Direction	Nature
1	Damsal nalla	N-NW	Perennial
2	Kanchamua nalla	NW	Seasonal
3	Langal kantia nalla	NW	Seasonal
4	Pandara nalla	S	Seasonal
5	Sasubhuasuni nalla	N-NW	Seasonal
6	Petapet nalla	W	Seasonal
7	Nadi barana nalla	W	Seasonal
8	Pua gadhua nalla	W- NW	Seasonal
9	Patra nalla	N	Seasonal

Table 2. List of Nalla Crossing within Buffer Zone.

8. Factors of Siltation

Generally siltation is seen in ponds, lakes and other type of water bodies. The quantum of siltation varies in these places due to degree of deposition or setting of soil eroded from the locality, decaying of fallen leaves, grasses etc. and decomposed organic materials settled at bottom of ponds / water bodies. Mainly soil erosion causes siltation for ponds in this area along with washing away of other decomposed materials. Higher gradient and excess rainfall causes soil erosion from waste dump, excavated areas, naturally denuded surface etc. Air borne sand/dust along with vegetative materials falling on the pond / water bodies also attribute to siltation. Due to siltation there is decrease in the depth of the pond / water bodies and obviously the storage capacity decreases. Therefore, de-siltation is essential at regular intervals by adopting various measures to ensure availability of water to the required extent i.e. as per capacity of the water bodies.

9. Methodology for De-Siltation.

Keeping in view the site condition it is proposed to take up de-siltation on a cycle of five year basis (i.e. each pond will be de-silted twice within the plan period over 10 year) particularly during summer months when the pond / water bodies are dried up with exposed silts. Removal of silts is to be done either manually or mechanically basing on ground condition and quantity of silts accumulation. Silt accumulation occurs in the basal area of the tank which is roughly estimated to be 30% less of the aerial area. The estimated quantum of silt that is required to be removed is given in the table.

Sl No	Name of the village	Surface area in sq.m.	Silt area to be operated in sq.m. (70% of surface area)	Quantum of Silt to be removed in M ³ (@1.00m depth)	Estimated Cost in Rs. Earth Work Only @Rs.227.67	Method of Excavation.
1	Ostia	6000	4200	4200	956214.00	Mechanical
2	Kalarangiata (Pond-I)	1200	840	840	191242.80	Mechanical
3	Kalarangiata (Pond-II)	2000	1400	1400	318738.00	Mechanical
4	Kakudia	4800	3360	3360	764971.20	Mechanical
5	Kusumundia.	4950	3465	3465	788876.55	Mechanical
6	Kakudia (Purna panasia)	1200	840	840	191242.80	Mechanical
	Total	20150	14105	14105	3211285.35	

Table 3 Cost Estimate

During excavation the excavated silt are to be put on the embankment of the pond with top height at least of 1 meter and base width 2.5meter basing on availability of

land on periphery. The soil on embankment to be compacted and inlet and outlet pipe are to be fixed in the embankment (6" diameter PVC pipe or Cement Pipe).

Execution Planning.

As indicated above de-siltation will be carried out in a Five year cycle. All the ponds will be de- silted twice in the plan period i.e. 10 years. The year wise work program is as follows.

Sl No	Name of Village	Year of Execution									
		25-26	26-27	27-28	28-29	29-30	30-31	31-32	32-33	33-34	34-35
1	Ostia										
2	Kalaranglata (Pond-I)										
3	Kalaranglata (Pond-II)										
4	Kakudia										
5	Kusumundia.										
6	Kakudia (Purna panasia)										

Table 4 Enclosure Plan.

NB: The Blue colour represents year of execution of the ponds concerned.

11. Cost Estimation

A. Cost estimate:

As per schedule of rate for earth work "Earth work in excavation by mechanical means (hydraulic excavation means over areas exceeding 30cm depth 1.5m in width as well as 10sqm. On plan including disposal of excavated earth lead up to 50 m and life up to 1.5m disposal earth to be leveled and neatly dressed etc complete @Rs222.74/ cum. Analysis of Rate is enclosed as Annexure-I. Basing on volume of earth work as indicated above Table, cost estimate to be calculated. In addition cost of Inlet / outlet pipes, an additional cost of Rs 5000/- per tank is to be added. Year wise cost factor is calculated as follows.

B. Year wise Financial break up

Year	Name of Pond to be taken up	Volume of Earth work	Cost @Rs227.00 / cum	Fixing of Pipe etc.	Total Cost.
1st Cycle					
2025-26	Ostia	4200	956214.00	5000.00	961214.00
2026-27	Kalaranglata (Pond-I & II)	2240	509980.80	10000.00	519980.80
2027-28	Kakudia	3360	764971.20	5000.00	769971.20
2028-29	Kusumundia.	3465	788876.55	5000.00	793876.55
2029-30	Kakudia (Purna panasia)	840	191242.80	5000.00	196242.80

Ms. Ferri
K.

2 nd Cycle					
2030-31	Ostia	4200	956214.00	5000.00	961214.00
2031-32	Kalarangata (Pond-I & II)	2240	509980.80	10000.00	519980.80
2032-33	Kakudia	3360	764971.20	5000.00	769971.20
2033-34	Kusumundia	3465	788876.55	5000.00	793876.55
2034-35	Kakudia (Purna panasia)	840	191242.80	5000.00	196242.80
	Total Cost	28210	3211285.35	60000.00	3236285.35

Table 5 Financial Break Up

Projected Cost	64,52,570.70
Add 20% for Cost escalation	12,90,514.14
Total Project cost	77,43,084.84

(Rupees Seventy Seven lakh Forty Three Thousand and Eighty Four Only)

12. Execution:

This project of De-siltation of Village tank will be carried out by the user agency either by himself or by outsourcing under their overall supervision.

13. Inspection and Monitoring.

The manner of execution & periodical monitoring will be made by the M/s FACOR Ltd authority. The Execution and achievements may be reviewed by the Divisional Forest Officer, Cuttack from time to time as possible. In case of some dispute if the earmarked tank could not be de- silted in assigned year it may be executed in the next year along with the next year's programme. If it will not be possible in the subsequent year then the site may be changed on approval of DFO, Cuttack.

Approved for Rs. 77,43,085/-



Regional Chief Conservator
of Forests, Angul Circle

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jaipur
Pin- 305047

**Analysis of rate for De-silting work in Ponds etc. as per PWD rate Odisha
wage rate @ Rs. 462/- Per day**

Sl. No	Description of Work	MD Required	Amount @Rs.462/-
1	Earth work in slushy soil (in water up to 0.6m depth requiring the aid of pans and vessels) within 50m. Initial lead and 1.5m initial lift as per the direction and specification of the Department.	Man Mulia 21 No	9702/-
		Woman Mulia 23 No	10626/-
		S. Total	20328/-
2	Overhead Charges 10%		2032.80/-
3	Sundries 2%		406.56/-
	Total		22767.36/-
	Rate for 100 cum		22767.36/-
	Rate per cum		Rs. 227.67/-

15.05.25
DIVISIONAL FOREST OFFICER

CUTTACK FOREST DIVISION

Muthuram
Muthuram
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kakapani, Dist- Jaipur
Pin- 755047

UNDERTAKING

(Ref: Stipulated Condition No 2.14 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that for taking of Di-siltation of tanks coming within 5 km radius from the mine lease boundary, a Scheme has been approved by the Regional Chief Conservator of Forests, Angul Circle vide his Memo No 2251/5F.FC -06/2025 dated 16.05.2025. The same will be followed.


M. Muthuram
Authorized Signatory
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd
Kallanur, Dist. Jajpur
Pin- 755002

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.15 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the cost of felling of trees shall be deposited by the User Agency with the State Forest Department as required.

M. Mathuram
 M. Mathuram
 Authorized Signatory
 M/s. Ferro-Alloys Corporation Limited
 Kalarangatta Chromite Mine
 Bhubaneswar, Odisha

Authorized Signatory,
Kalarangatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED

[Signature]
 Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.16 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that trees will be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO.

M. Mathuram
 M. Mathuram M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalarangatta, Dist- Jharkhand
 Pin- 726007

Authorized Signatory,
 Kalarangatta Chromite Mine,
 M/s Ferro Alloys Corporation Ltd

Countersigned by
 Divisional Forest Officer
 Cuttack Forest Division

Office Seal
COUNTERSIGNED

DP
 Divisional Forest Officer
 Cuttack Forest Division



OFFICE OF THE REGIONAL CHIEF CONSERVATOR OF FORESTS, ANGUL CIRCLE,
AT/PO- HAKIMPADA, ANGUL- 759143, ODISHA, Phone-86764-296010 (O), 296011(Res),
Email Id: rcfanguel@gmail.com

Memo No. 2251 / SF.FC-06/2025. Dated. 16.5.25

To

The Divisional Forest Officer,
Cuttack Forest Division.

Sub: - Proposal for diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha of forest land in safety zone area of chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd.(FACOR) in Cuttack Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha- **Approval of schemes.**

Ref: - Your Memo No. 3960 dated 15.5.2025.

The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

Sl. No.	Condition No	Name of the scheme	Financial outlay. (Rs.)
1.	5	Scheme for plantation within 100 meters from the outer perimeter of the mining lease area of Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	16,02,039/-
2.	7(a)	Mitigative measures to minimize soil erosion and choking of streams .	5,60,400/-
3.	7(b)	Planting of adequate draught hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme.	36,04,720/-
4.	7 (c)	Construction of Check Dams, retention / toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme.	19,80,000/-
5.	7 (d)	Stabilize the overburden dumps by appropriate grading/ benching in accordance with the approve scheme, so as to ensure that angles of repose at any given place are less than 28°.	51,74,545/-
6.	14	De-silting of village tank and other water bodies located within 5 Km. from the Mining lease boundary of Kalarangiatta Chromite Mines of FACOR	77,43,085/-
7	18	Scheme for alternate habitat / Home for the Avifauna , whose nesting trees are to be cleared in Kalarangiatta Chromite Mines of M/s- FACOR Ltd.	19,83,300/-

(Signature)
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jajpur
Pin- 755047

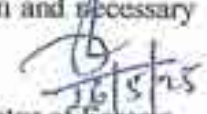
You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


16/5/25
Regional Chief Conservator of Forests
Angul.

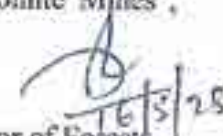
Memo No. 2252 /Dated- 16.5.25

Copy along with a copy of above approved schemes forwarded to the Principal Chief Conservator of Forests, Forest Diversion & Nodal Officer, FC Act O/o. the Principal Chief Conservator of Forests, Odisha for favour of information and necessary action with reference to Memo No.3960 dated 15.5.2025.


16/5/25
Regional Chief Conservator of Forests,
Angul.

Memo No. 2252 /Dated- 16.5.25

Copy forwarded to the Authorised Signatory, Kalarangiatta Chromite Mines, M/s- FACOR Ltd. for information and necessary action.


16/5/25
Regional Chief Conservator of Forests,
Angul


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

SCHEME FOR
CREATION AND MAINTAINING ALTERNATE
HABITAT/HOME FOR THE AVIFAUNA, WHOSE NESTING
TREES ARE TO BE CLEARED IN THIS PROJECT AS IT RELATES
TO DIVERSION OF 23.80HA OF FOREST LAND COMING IN
KALARANGIATTA CHROMITE MINES OF M/S FERRO
ALLOYS CORPORATION LIMITED, SUKINDA DISTRICT:
JAJAPUR.



By

Kalarangiatta Chromite Mine

M/s Ferro Alloys Corporation Ltd,

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangiatta, Dist. Jajapur
Pin-755047

In compliance to Stipulated Condition 18 of In- Principle Approval Orders dated 21-03-2023 Online Proposal No FP/OR/MIN/16453/2015;

Scheme to create and maintain alternate habitat/home for the avifauna, whose nesting trees are to be cleared in this project i.e. for Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd (FACOR)

1.0 Introduction:

The mining Lease area of Kalarangiatta Chromite Mines of M/s FACOR is 23.80Ha. This land is considered to be of forest Kisam under Sabik Settlement. For diversion of Forest Land for mining purpose forest diversion proposal has been filed under provisions of the Forest (Conservation) Act, 1980 now renamed as "Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980) vide Online Proposal no FP/OR/MIN/16453/2015. After due consideration the IRO, Bhubaneswar has issued the "In- Principle Approval Order vide letter no 5-ORC288/2016-BHU I/102806/2025 Dated 21-03-2025.

There are stipulated conditions to be complied before final approval of forest diversion i.e. Stage-II orders. The condition no 18 reads as follows.

The user agency in consultation with the State Government shall create and maintain alternate habitat/home for the avifauna, whose nesting trees are to be cleared in this project. Bird's nests artificially made out of eco-friendly material shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project.

This Scheme is prepared in compliance to condition no 18 as stated above.

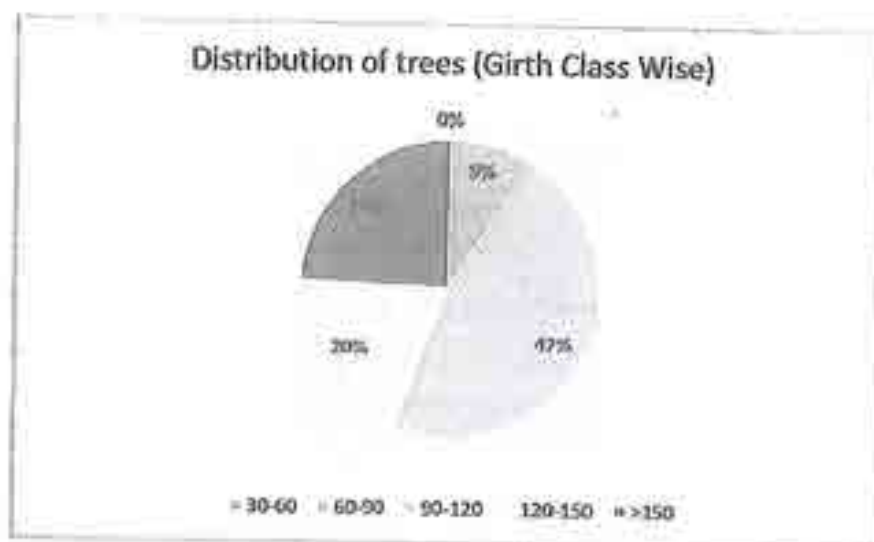
2.0 Number Trees existing within ML area:

The Kalarangiatta Chromite Mine is an old mine carved out from Tata Chromite Mine and leased out to FACOR. The Lease deed has been executed taking all land as non-Forest Kisam. Forest diversion is being processed after guidelines to consider all forests recorded as on 25.10.1980 i.e. Sabik Forest.

For processing of Forest diversion proposal, tree enumeration has been taken up. The trees standing within ML area is furnished below. All total there are 48 trees. The Species wise and girth class wise trees standing is furnished below.

M. Mathur
Muthuram
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalahandi, Dist- Jajpur
Pin- 755047

Sl No	Scientific Name	Local Name	Girth Class (in cm)					Total
			30-60	60-90	90-120	120-150	>150	
1	<i>Mangifera indica</i>	Mango	0	2	0	0	1	3
2	<i>Syzigium cumini</i>	Jamu	0	0	0	1	0	1
3	<i>Ficus benghalensis</i>	Bara	0	0	0	0	2	1
4	<i>Terminalia belerica</i>	Bahada	0	0	1	0	0	1
5	<i>Bombax ceiba</i>	Simli	0	0	1	1	1	3
6	<i>Schleichera oleosa</i>	Kusuma	0	0	1	0		1
7	<i>Cassia siamiae</i>	Chakunda	0	1	7	0	0	8
8	<i>Madhuca indica</i>	Mahula	0	0	1	2	4	7
9	<i>Ficus religiosa</i>	Osta	0	0	0	0	1	1
10	<i>Eucalyptus Spp.</i>	Eucalyptus	0	1	10	5	2	18
	Total		0	4	21	9	11	45
	Percentage		0	8.9	46.7	20.0	24.4	100.0



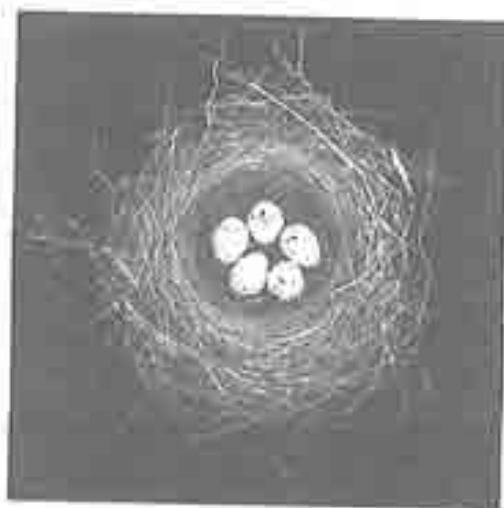
3.0 Types of Birds nest:

Birds' nests are very diverse. The tiniest birds can build the most intricately woven nests that are well concealed and camouflaged and yet the large raptors can just pile together a lot of twigs out in the open in a tree or rock ledge for all to see. The amount of skill and instinct that goes into creating these works of art is mind blowing. The following types of nests are usually observed in nature.

M. Muthumari
 Muthumari M
 Agent of Mines
 Ferro Alloys Corporation Limited
 Kaliapani, Dist. Jajpur
 Pin-755047

1. Cup Shape Nest:

These cup shaped nests are used by many different bird species like the flycatchers, chats, batises, larks, thrushes, warblers and many others. They consist of a coarser, strong outer shell constructed from grass, rootlets, tendrils and fine vines. These nests are then lined with soft material like downy feathers or soft fluffy seeds. Spider's web is often used to bind the nest together and often material like pieces of lichen and moss are added to the outside to camouflage the nest that is often placed in the fork of a tree.



2. Scrape Nest:

These scrape nests are literally a shallow depression in sand, gravel or soil. They are created by the bird simply scratching the soil or sand away from the centre point in a circle. Some of these scrape nests are lined with bits of soft material but many are not lined at all and the bird just lays the eggs on the ground. These nests are created mainly by ground birds like lapwings, plovers, oystercatchers, thick-knees and many others. Sometimes the birds will place little pebbles or buck droppings around the outer part of the nest to camouflage it. The eggs of these birds are normally well camouflaged because of their colour and cryptic markings. Because the nestlings are at a great danger in these nests on the ground, lapwing and plover chicks are born with their



M. Shanthi
Agent of
Mrs. Ferro Alloys Corporation Limited
Kaliapalli, Dist. Jagpur
Pin-755047

eyes open and they can walk immediately after hatching. Teeny little fluffballs can be seen running around with their very protective parents at that stage.

3. Burrow Nest:

These burrows are found in sandbanks on riverbanks or in the sides of termite mounds and sometimes in the roof of the large aardvark burrows or in erosion gullies and old mine shafts.



Ant-eating Chats are known to build their long burrows in the roofs of the large aardvark burrows. These burrows can be over a metre long and they end in a larger chamber where the eggs are laid. The nesting chamber is often lined with soft material. Usually these burrows are constructed at a slight gradient upwards so they can't be flooded when it rains.

4. Mound Nest:

Flamingos build mounds or turret shapes out of mud or clay on islands in shallow pans. Other water birds like coots construct an untidy mound that floats in the water or is attached to reeds or submerged branches in the water. Any nearby vegetation is used in the construction of these nests like reeds, sedge stems, grass, etc. Nests built in or over water are usually safe from predators.



M. Mathur
Mukunda
Agent of Mines
M/s. Ferro Alloy's Corporation Limited
Kalia 15th, Dist. Jajpur
Pin- 751007

5. Cavity Nest:

These nests are usually found in natural tree cavities or they are excavated by barbets or woodpeckers themselves. Sometimes the cavities can be in walls, roofs or holes in buildings. The excavated tree cavities have neat round holes in tree trunks facing away from the prevailing weather, wind and rain. These cavities end in a larger chamber where the eggs are laid and the chicks raised.



Nesting cavities are sought after by many types of birds that do not excavate their own nests. There is often competition for these nesting cavities and the original owners can be evicted after all their hard work. There are many birds that will use excavated cavity nests like hoopoes, starlings and some sparrows and many others.

6. Platform Nest:

Platform nests are very simple in design and consist mainly of woody twigs placed in the fork of a tree or on the ledge of a cliff to form a platform on which to lay their eggs. These nests are made by many large raptors, herons and some storks. If the nest is used in successive years, it can become quite large and sturdy.

Doves and pigeons also construct thin, flimsy nests out of little twigs. Sometimes there is no attempt to hide the nest from



M. Muthuman
Muthuman
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani Dist-Jaipur
Pin-755047

predators and it is often so see-through that you can see the eggs in the nest from below.

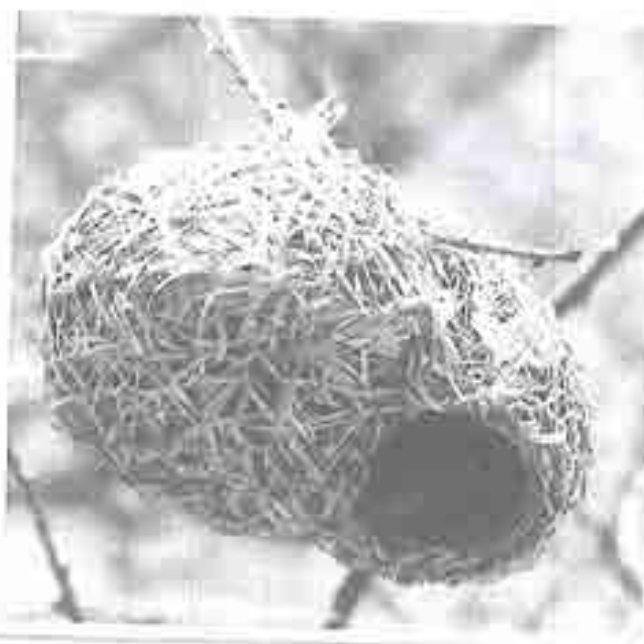
7. Pendant Nest:

These pendant style nests are usually woven out of green blades of grass or thin strips of palm leaves. They usually hang from the end of a thin twig in a tree and snakes find it difficult to access these types of nests. The different weavers each have their own design of these intricately woven nests. The entrances of these nests are usually underneath or to the side.



8. Sphere Nest:

Sphere or ball-shaped nests are usually built in grass tussocks or in trees and are well camouflaged with pieces of lichen and moss bound with thin strands of spider web.

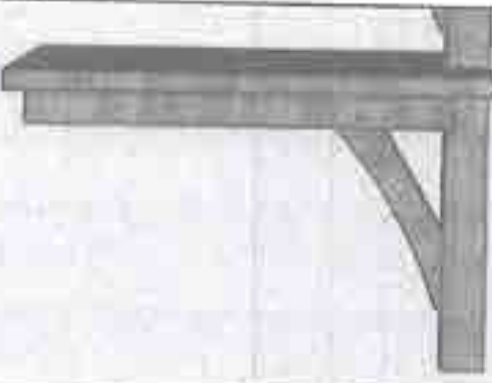


Sunbird nests are oval balls with an entrance on the side near the top. They are usually attached to two branches. Penduline tit nests are intricate nests built out of fluffy seeds or sheep's wool, in sheep growing areas, and the material is finely matted like felt to become waterproof. These nests have a false entrance that leads to a shallow pouch, to fool predators. The real entrance is very narrow and is just above the false entrance. The birds open and close the entrance with their feet when they arrive or leave the nest. These penduline tits roost in these nests even out of breeding season. Cisticolas build their oval ball-shaped nest deep in a little low bush or clump of grass, well hidden from predators.

M. Mathur
M. Mathur
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jaipur
Pin-755047

9. Birds nest Proposed for fixing to develop Bird's habitat

The bird's natural nests described above cannot be exactly recreated and fixed in nature. Nests approximately close to the type of nest that can be prepared / constructed and fixed in nature are indicated below.

Sl No	Nest type	Nests close to the design / type
1	Cup Shaped	
2	Cavity nest	 Box Nest:
3	Platform	


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaligani, Dist- Jaipur
 755047

		
4	Sphere:	 

10. Cost Estimation:

Considering various aspects and success of artificial (percentage of Birds Occupancy) in nearby areas the following types of birds nest will be fixed. The detail cost estimation is furnished below.

Sl No	Types of Nest	Rate#	Quantum	Amount in Rs
1	Cup shaped nest from Bamboo (12" dia at open end)	350/-	250 No	87,500/-
2	Cavite nest: Box nest from durable planks (12.5mm thick) Box Size: 25cm x25cmx 30 cm with hipped roof)	2800/-	350 no	9,80,000/-
3	Platform Nest (From 1" planks) Size: 45 cm x 30cm with wooden support	1750/-	100 No	1,75,000/-
4	Platform Nest (Bamboo Internodes)	275/-	400 No	1,10,000/-
5	Sphere nest (Earthen Pots with two openings ; Size 6-8" dia at the middle portion)	300/-	500 No	1,50,000/-
	S. Total			1502500.00

M. Muthumanj
Muthumanj M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

Maintenance cost @10% of the projected cost (for subsequent 2 years)			150250.00
Total			1652750.00
Add 20% for Cost escalation			330550.00
Total			1983300.00

(Rupees Nineteen Lakh Eighty Three Thousand & Three Hundred Only)

The rate includes procurement / transportation & fixing of nests.

11. Executing Agency:

The above prescribed activities i.e. fixing of birds' nest will be implemented by the User agency within a period of 3 years from opening of mine. The User agency may engage agency having past experience in preparation and fixing of bird's nest

Approved for Rs. 19,83,300/-



Regional Chief Conservator
of Forests, Angul Circle

AP-15.05.2015

DIVISIONAL FOREST OFFICER

CUTTACK FOREST DIVISION

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallanani, Dist- Jajpur
Pin- 755047

UNDERTAKING

(Ref: Stipulated Condition No 2.18 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that a scheme to create and maintain alternate habitat/home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials will be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project. A Scheme has been approved by the Regional Chief Conservator of Forests; Angul Circle vide his Memo No 2251/5F.FC -06/2025 dated 16.05.2025. The same will be followed / implemented.



M. Mathur
Agent of Mines
M/s. Ferro-Alloys Corporation Limited
Kallanpur, Dist-Jajpur
Pin-751007

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

COUNTERSIGNED



Divisional Forest Officer
Cuttack Forest Division



OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE)
& CHIEF WILDLIFE WARDEN, ODISHA

Government of Odisha, Forest, Environment & Climate Change Department
PRAKRUTI BHAWAN, PLOT NO.1459, SAHEED NAGAR, BHUBANESWAR- 751007
Phone: 0674-2602250, Website: www.wildlife.odisha.gov.in, Email: odishawildlife@gmail.com

No. 10180 / CWLW-FDWC-FD-0032-2022
Bhubaneswar, Dated the 11 November 2022

To

The Director (Mines)
M/s FACOR Ltd.
Laxmi Bhawan, Kuans. Bhadrak - 756100

Sub: Mining of Chromite ore in Kalaranglata Chromite Mines of M/s Ferro Alloys Corporation Limited in Jajpur District - Approval of Site Specific Wildlife Conservation Plan

Sir,

It is to intimate that you have to implement mitigation measures as per the Site Specific Wildlife Conservation Plan approved in compliance to Standard ToR No.(xviii) for Mining Project prescribed by SEIAA, Odisha in their letter No.3495/SEIAA dt 18.11.2021.

2. I am directed to convey the approval of PCCF (WL) & CWLW, Odisha for the Site Specific Wildlife Conservation Plan in respect of the above project at financial outlay of ₹150.52 lakh (Rupees one crore fifty lakh fifty-two thousand) only as detailed below -

Sl. No.	Name of the Division	Cost of approved activities
i	In project impact area in Cuttack Division	₹105.922 lakh
ii	In project impact area in Dhenkanal Division	₹35.118 lakh
iii	In project impact area in Keonjhar WL Division	₹9.480 lakh
Total cost :		₹150.520 lakh

3. Activities in the project area will be executed by the project proponent under the guidance of DFO, Cuttack Division. A sum of ₹150.52 lakh only shall be deposited in State CAMPA fund only through e-portal (<https://parivesh.nic.in/>) for implementation of various activities within the project impact area by the Forest Department through concerned DFOs.

4. The following conditions may be noted for future compliance.

- a. If there would be need for Site Specific Wildlife Conservation Plan after expiry of the present plan period, the User agency will have to submit another such plan at least one year before the expiry of the existing Conservation Plan and deposit the amount upon its approval. In case of delay, it will be dealt as per law for violations of Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986.
- b. The user agency has to give an undertaking to bear the differential cost in case of enhancement of wage rate during implementation of the plan.

Encl: Copy of approved SSWLCP

Yours faithfully

Conservator of Forests (Wildlife)

Approved SSWLCP

M. Muthumani
Muthumani M
Agent of Mines
Ms. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur P.T.O.
Pin- 755047



Memo No. 10101 dt 11/11/2022

Copy forwarded for information and necessary action to the -

1. OSD-cum-Special Secretary to Government of Odisha, F,E &CC Department, Bhubaneswar with reference to that Department Memo.No.10F (Cons)228/2016/13770/F&E dt 27.07.2016.
2. PCCF & HoFF, Odisha with reference to F,E&CC Department Memo.No.13770/F&E dt 27.07.2016.
3. Regional Chief Conservator of Forests, Angul Circle with reference to Memo.No.6766 dt 13.10.2022 of DFO, Cuttack Division
4. Regional Chief Conservator of Forests, Baripada Circle with reference to this office Memo.No.8400 dt 19.09.2022
5. Divisional Forest Officer(s), Cuttack/ Dhenkanal/ Keonjhar WL Division alongwith copy of approved SSWLCP

M. Muthumani
Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047



Conservator of Forests (Wildlife)



GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ତଥା ବନ୍ୟପ୍ରାଣୀ ଚରାବଧାରକଙ୍କ କାର୍ଯ୍ୟାଳୟକଚ୍ଚ, କଟକ ବନଖଣ୍ଡ,
OFFICE OF THE DIVISIONAL FOREST OFFICER: CUTTACK FOREST DIVISION
AT: - GHATAKULA, NUAPADA, CUTTAK 753010
Tel:- 0671-2957611, Control Room:- 0671-2340343, Toll Free No.18003457473
Email: - dfo.cuttack@odisha.gov.in
No 3571 / 5F/ (Forest Diversion) 15/2025
Dated, Cuttack the 22nd th May, 2025.

To

The Authorized Signatory,
 Kalarangiatta Chromite Mines,
 M/S FACOR Ltd.

Sub: - Diversion of 23.80 ha of forest land (as per Sabik records as on 25.10.1980) including 2.240 ha forest land in safety zone area for Chromite ore mining of Kalarangiatta Chromite Mines of M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha-Demand of Site Specific Wildlife Conservation Plan.

Ref: - (i) Memo No.10180 Dt. 11.11.2022 of Conservator of Forests (Wildlife), O/o-PCCF (WL) & CWLW, Odisha to your address.
 (ii) This office letter No.7895 dt.24.11.2022.

Sir,

With reference to the above correspondence, this is to inform you that, the Principal Chief Conservator of Forests (Wildlife) & CWLW, Odisha has approved the Site Specific Wildlife Conservation Plan in respect of the above project with the financial outlay of Rs.150.52 Lakh (Rupees One Crore Fifty Lakh Fifty-Two Thousand) only vide his memo under reference as detailed below.

Sl. No.	Name of the Division	Cost of approved activities
i	In project impact area in Cuttack Division	Rs.105.922 lakh
ii	In project impact area in Dhenkanal Division	Rs.35.118 lakh
iii	In project impact area in Keonjhar WL Division	Rs.9.480 lakh
Total cost		Rs.150.520 lakh

Hence, you are requested to make arrangement for payment Rs.150.520 Lakh (Rupees One Crore Fifty Lakh Fifty-Two Thousand) only with the Adhoc Body of CAMPA through the e-payment module and submit required evidence in respect of the payment to this office for reference and onward transmission.

(P.T.O)

M. Muthumani
 Muthumani M
 Agent of Mines
 M/s Ferro Alloys
 Kalkaji
 limited

-1/211

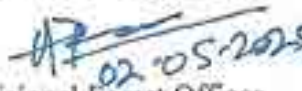
Further, the user agency will have to submit another such plan at least one year before the expiry of the existing Conservation Plan and deposit the amount upon its approval. In case of delay, it will be dealt as per law for violations of Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986. The user agency has to give an undertaking to bear the differential cost in case of enhancement of wage rate during implementation of the plan.

Encl: - As above.

Yours faithfully


Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 3572 dt. 02.05.2025
Copy submitted to the Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Odisha, Bhubaneswar for favour of kind information and necessary action.


Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 3573 dt. 02.05.2025
Copy submitted to the Chief Conservator of Forests (Nodal), O/o the PCCF & HoFF, Odisha for favour of kind information and necessary action.


Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 3574 dt. 02.05.2025
Copy submitted to the Regional Chief Conservator of Forests, Angul for favour of kind information and necessary action.


Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 3575 dt. 02.05.2025
Copy submitted to the Divisional Forest Officer, Dhenkanal/ Keonjhar WL for information and necessary action.


Divisional Forest Officer,
Cuttack Forest Division.


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalahandi, Dist- Jajpur
Pin- 755047

To

The Divisional Forest Officer
Cuttack Forest Division
At: Ghatakula, Nuapada
Dist.-Cuttack, Odisha-753010.

Sub: Payment of differential amount of NPV, Penal NPV, Implementation cost to CA & Additional CA and Cost of Site-Specific Wildlife Conservation Plan ("SSWCP") in light with 'In-Principle' approval dated 21.03.2025 under section 2 for diversion for diversion of 23.80 ha of forest land (as per Subik records as on 25.10.1980) of Kalarangiatta Chromite Mines of Ferro Alloys Corporation Limited ("FACOR") (Online proposal no. FP/OR/MIN/16453/2015)

Reference

1. Online Challan dated 12.05.2025 issued by Nodal Officer in Parivesh Portal
2. Your demand letter dated 3571/5F dated 02.05.2025 (SSWCP)
3. Your demand letter dated 3019/5F dated 08.04.2025 (CA & Additional CA) f
4. Your demand letter dated 3687/5F dated 06.05.2025 (Penal NPV)
5. Your demand letter dated 2996/5F dated 08.04.2025 (Differential NPV)
6. Our letter dated 24.03.2025 seeking issuance of demand in light with 'In-Principle' approval
7. Stage-I (In-Principle) nos. 5-ORC288/2016-BHU dated 21.03.2025
8. Online Forest Diversion Proposal no. FP/OR/MIN/16453/2015 of Kalarangiatta Chromite Mines

Respected Sir,

With utmost respect and humbleness, we wish to bring to your kind notice that we have received various demand letters, referenced as 02 to 05, from your esteemed office concerning the payment of the differential amount for the Net Present Value (NPV), Penal NPV, Implementation Cost for Compensatory Afforestation (CA), Additional Compensatory Afforestation, and the Cost of Site-Specific Wildlife Conservation Plan (SSWCP) with respect to our Kalarangiatta Chromite Mines of M/s. FACOR Ltd.

As per the provisions related to Stage-I (In-Principle) approval (Reference No. 7, dated 21.03.2025) and provision for deposit in Orissa CAMPAA account through e-portal (<https://forest.ori.nic.in>) we have duly collated all the aforesaid demands and uploaded the necessary details in the Parivesh Portal on 08.05.2025 for approval and generation challan by the Nodal Officer (Forest Conservation Act), Odisha.

Subsequently, we have received online challan on 12.05.2025 for payment of total amount INR 6,43,54,030/- (Six Crore Forty Five Lacs Fifty Four Thousand thirty only) against the above demands. Upon receipt of online challan, we immediately deposited the aforesaid demanded amount on 13.05.2025 against the CAMPAA account mentioned in the above challan. It is pertinent to mention that we paid amount 1,55,33,510/- against the demand for Penal NPV under protest and without accepting the liability as FACOR has not violated any provision of Forest Conservation Act while operating the mines under the High Court interim protection order. The details of amount paid are as under:

*Received
Per
20/6/2025*

M. Muthuramy
Muthuramy
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jajpur
Pin- 755047

Funds Demand Details	Demanded Amount INR	Amount Paid by FACOR (INR)	Payment reference
Compensatory Afforestation	50,67,000 :-	50,67,000 :-	KICJ Bank RTGS Nos.
Additional Compensatory Afforestation	1,96,93,300 :-	1,96,93,300 :-	KICR420250 51300556304
Differential SPV	92,08,250 :-	92,08,250 :-	Dated 11.08.2025
Site Specific Wild Conservation Plan	1,50,52,000 :-	1,50,52,000 :-	
Pend SPV	1,55,33,310 :-	1,55,33,310 :- (Under Protest)	
Total	6,45,54,030 :-	6,45,54,030 :-	

Copy of Payment Challan and payment-status downloaded from Paribesh Portal are enclosed herewith for your kind reference.

Therefore, we humbly request your good self for processing our Forest Diversion Proposal of Kichanpur Iron Ore Mines at the earliest.

We are duty bound to comply with all the applicable laws and regulations issued by the competent authorities in our endeavour to sustainable utilization of natural resources for nation's growth.

Your kind cooperation in this regard shall be highly appreciated and obliged.

Yours sincerely

For & on behalf of Ferro Alloys Corporation Limited

Muthumari M
Authorized Signatory & Agent / Head of Mine
Encl : As above

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

AGENCY COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address.	Ferro Alloys Corporation Ltd, Laxmibihawan, Kuansh, Po, Dist- Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

BANK COPY



NEFT / RTGS CHALLAN for CAMPA Funds

Date : 12-05-2025

Agency Name.	FERRO ALLOYS CORPORATION LTD
Application No.	5816453158
MoEF/SG File No.	5-ORC288/2016-BHU
Location.	ORRISA
Address:	Ferro Alloys Corporation Ltd, Laxmibihawan, Kuansh, Po, Dist- Bhadrak, ODISHA, Bhadrak
Amount(in Rs)	64554030/-

Amount in Words : Six Crore Forty-Five Lakh Fifty-Four Thousand and Thirty Rupees Only

NEFT/RTGS to be made as per following details;

Beneficiary Name:	ORRISA CAMPA
IFSC Code:	UBIN0996335
Pay to Account No.	150825816453158 <i>Valid only for this challan amount.</i>
Bank Name & Address:	Union Bank Of India FCS Centre, 21/1, III Floor, Jelita Towers, Mission Road, Bengaluru-560027

- This Challan is strictly to be used for making payment to CAMPA by NEFT/RTGS only

Note: After making the required payment through challan, if the payment status has not been updated even after 7 working days, then kindly mail a copy of your challan with transaction date and reference id to Email: fcsblr@unionbankofindia.bank, epurse@unionbankofindia.bank, ubin0903710@unionbankofindia.bank

Transaction/UTR No-RTGS /ICICR 42025051300556304/ UBIN0996335 / Odisha CAMPA
Date: 13.05.2025

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M/s. Ferro Alloys Corporation Limited
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Ministry of Environment, Forest and Climate Change
Government of India

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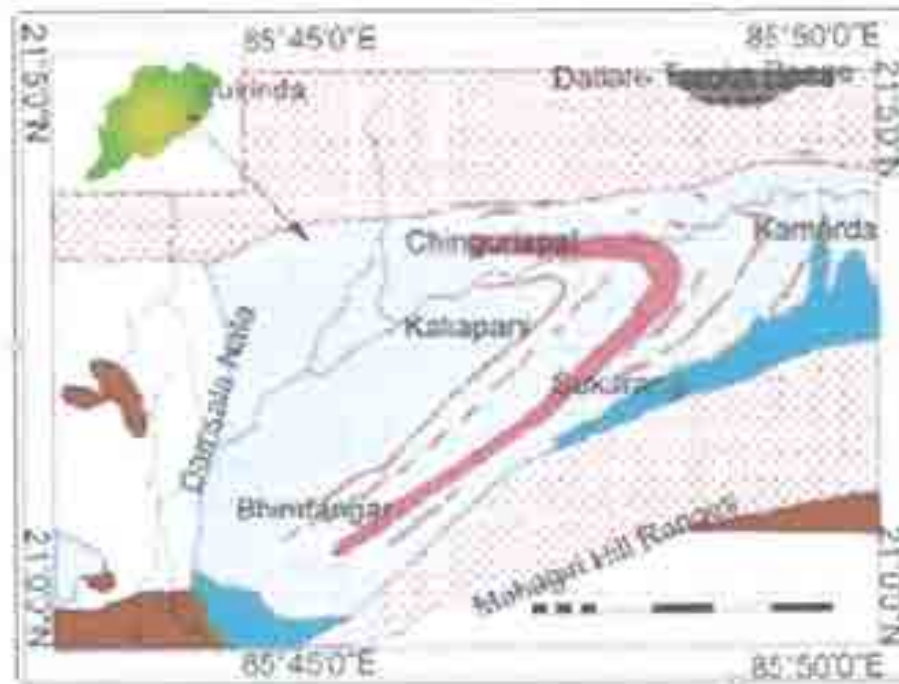
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Sl. No.	Proposal Detail	Application No	Allocation No (New)	Limit of 10% PRINCIPLE	Account to be Paid/Amount Paid (In Rs.)	Payment Status	Payment Detail	Demanded Letter
1	175300116/2045/2015 Kollaringadla Chromite Mines of H/s Ferro Alloys Corporation Ltd	MIN164532015150	SB16453150	21 Mar 2025	CA: 50070002 PCA: 0/- Safety Zone: 0/- MPV: 3200200/- Payment towards: Site Specific Wild (15002000) Life conservation Other Charges2 : 0/- Other Charges3 : 0/- Total : 64558020/-	 Paid	Fund Demand Verified by : 08 May 2025 Nodal Officer On : Union Bank Of India Bank Name : NEFT/RTGS (Challan) Mode of Payment : 12 May 2025 Challan Generated On : 13 May 2025 Transaction Date :	Demand Letter Government Order

M/s. Ferro Alloys Corporation Limited
Kallagani, Dist. Tirupur
Tn- 635047
Nuthurani M
Agent of Mines
Mr. N. K. Narayanan



**Site Specific Wildlife Conservation Plan for
Kalarangiatta Chromite Mine at village
Kalrangiatta under Sukinda Tahasil dist. Jajpur
by M/s Ferro Alloy Corporation Ltd.**



By

**Divisional Forest officer,
Cuttack Division**

M. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047



Preface

Ferro Alloys Corporation Limited (FACOR) is the oldest and most reputed producer of High Carbon Ferro Chrome/Charge Chrome in India. It has three Captive Chromite Mines i.e. Kalarangiatta, Ostapal and Kathapal at Sukinda Chromite Valley. The FACOR has applied for enhancement of Chrome Ore production from Kalarangiatta Chromite Mine from present production level 0.05 MTPA to 0.15 MTPA to meet the requirement of its Ferro Alloys Plant at Randia, Bhadrak. In Compliance to the ToR conditions issued by State Environment Impact Assessment Authority (SEIAA), Odisha this plan has been prepared.

I sincerely thank the Divisional Forest Officer, Dhenkanal and Divisional Forest Officer, Keonjhar Wildlife Division, Anandapur for providing required inputs for preparation of this Plan. My thanks also goes to M/s FACOR for providing required information on Mining activities in Kalarangiatta Chromite Mines for reference and incorporating in the Wildlife Conservation Plan.

On implementation of this plan prescription it is expected that the flora and fauna of this Sukinda valley and surroundings will improve.

Thanking all.

Place: Cuttack.

Dated the 31st March 2022

Divisional Forest Officer,

Cuttack Division


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jeypur
Pin- 755042



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Executive Summary

- ❖ Ferro Alloys Corporation Limited (FACOR) is the oldest and most reputed producer of High Carbon Ferro Chrome/Charge Chrome in India known for its consistent supply, best-in-class quality and Service in domestic as well as Global Market.
- ❖ FACOR has three Captive Chromite Mines i.e. Kalarangiatta, Ostapal and Kathapal at Sukinda Chromite valley.
- ❖ Kalarangiatta Chromite mining lease has been executed on 18.04.2008 over an area of 23.800 ha.
- ❖ The Lessee has obtained Environment Clearance for production of 50,000 TPA vide MoEF, Government of India letter No. J-11015/183/2007-IA.II (M) dated 13.09.2009.
- ❖ The Lessee has applied for Environment Clearance for enhancement of production from 0.05 MTPA to 0.15 MTPA chrome Ore (ROM) with maximum excavation of 0.438 Million cum / annum over all lease area 23.800ha vide online Application no SIA/OR/MIN/66287/2021.
- ❖ Considering the application the State Environment Impact Assessment Authority, (SEIAA) has issued the ToR (Terms of Reference) for preparation of EIA/ EMP Report as per EIA Notification 2006 vide letter No 3495/SEIAA dated 18.11.2021.
- ❖ The Land under Mining Lease is of Non Forest Kissam at the time of execution of Lease deed (HAL Settlement). The entire land under mining lease (23.80ha) was of Forest kissam as on 25.10.1980 (Sabik Settlement).
- ❖ The Lessee has applied for diversion of Forest land as per provisions of the Forest (Conservation) Act, 1980 vide Proposal No FP/OR/MIN/16453/2015 (State SI No OR-012/2016).
- ❖ The project is located at Village Kalarangiatta under Sukinda Tahasil of district Jajpur. The Latitude & Longitude of the project is Latitude: 21°01'00.57415"N to 21°01'29.29437"N; Longitude: 85°44'18.96168"E to 85°44'38.02780"E.
- ❖ The Mine finds place in Survey of India Topo Sheet no F45N12 (73G/12).
- ❖ The Project cost is estimated to be Rs 12.18 Crore.

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- ❖ The Project is Non Linear in shape.
- ❖ This Site Specific Wildlife Conservation Plan is being prepared in compliance to "Terms of Reference" issued for Preparation of EIA / EMP Report under EIA Notification 2006 for environment Clearance.
- ❖ Subsequently it will cover the conditions under Forest (Conservation) Act, 1980 if so stipulated.
- ❖ The Forest Diversion proposal is under consideration at various stages for "In Principle Approval"
- ❖ The Project is not forming a part of Wildlife Sanctuary / National Park / Protected area nor passing through any Eco Sensitive Zone of any Wildlife Sanctuary / National Park / Protected area. Hence Clearance under section 29 of the Wildlife (Protection) Act, 1972 is not required.
- ❖ Now the Lessee has applied for expansion of Production Capacity from 0.05 MTPA to 0.15 MTPA chrome Ore (ROM) with maximum excavation of 0.438 Million cum / annum over all lease area 23.800ha vide online
- ❖ Application no SIA/OR/MIN/66287/2021 for which ToR has been issued.
- ❖ The Mine is approachable from NH-200 Chandikhol- Talcher National Highway from Mangalpur and from Tamka via Mangalpur- Tamka Road (ODR).
- ❖ The Zone of Impact is considered to be 10km on all sides of the Project layout. The Zone of impact comes within Cuttack Division, Dhenkanal Division and Keonjhar WL Division, Anandapur.
- ❖ The Zone of Impact computed to be 338.00 Sq.Km.
- ❖ Sukinda Kaliapani area along the Mahagiri DPF is the largest Chrome Ore deposit in Asia. The chrome ore belt locally named as "Chrome Valley" accounts for about 98% of the total proved chromite (chromium ore) reserves of the country.
- ❖ This study area is found to be very near to many other chromite projects.

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- ❖ Due to Overlapping nature of Zone of Impact, additional Zone of Impact has been considered towards South, South West & South East mostly coming in Cuttack and Dhenkanal Division.
- ❖ ZOI- 338.00 Sq. Km, Add. ZOI taken 193.50 Sq. Km which constitutes about 57.25% of original ZOI.
- ❖ The current Mining plan is for Two years i.e. 2021-22 and 2022-23.
- ❖ There is no habitation within the Core area. In the Zone of impact of the project there are 53 villages (24 villages in Jajpur District and 29 villages in Dhenkanal District and no villages in Keonjhar district) in the ZOI.
- ❖ The total population is 59,579 out of which ST population is 26523 (44.52%), SC population is 6139 (10.30%).
- ❖ The Male Female ratio is 965 female per 1000 male.
- ❖ There is no Rare, Endangered & Threatened (RET) species (both Flora & fauna) in the zone of impact. The Schedule-I animals as per Wildlife (Protection) Act, 1972 has been indicated in the text.
- ❖ The major animals seen in this buffer zone are mainly Elephant, Wild boar, Deer, Sloth Bear and peafowl.
- ❖ On interaction with villagers, Forest Staff and other employees in the locality it is noted that in Sukinda Range, there are instances of elephant movement in Mangalpur, Purnapani, Kendudhip, Karadi, Baradi, Mahagiri DPF, Rankia, Koilo, Barnagar, Kakudai & villages coming South Eastern side of the Project.
- ❖ The forests of the study area as per Champion & Seth classification belongs to 3B Northern Tropical Moist Mixed Deciduous Forests and 5B Northern Tropical dry mixed deciduous Forests.
- ❖ The Working Plan of Cuttack Division is under process of revision. The Working Plan for Keonjhar WL Division has been approved and valid from 2021-22 to 2030-31.
- ❖ The nearest Sanctuary is Kapilas at a distance of 31.1 Km towards North- west direction.

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- ❖ There are fourteen elephant corridors in the state. Out of these corridors Maulabhanja - Jiridamali- Anantapur Inter-District corridor is partly coming within the Additional Zone of Impact.
- ❖ The length of corridor is about 6.50 km with a width of 250 to 280m.
- ❖ Human- Animal Conflict in Sukinda Range of Cuttack Division is moderate but due to Maulabhanja- Jiridamal- Anantapur Corridor being disturbed, the elephant movement is very erratic in Kamakhyanagar East range of Dhenkanal Division.
- ❖ There are 21 Chromite mines in this locality (Sukinda valley).
- ❖ 13 number of Site Specific Wildlife Conservation Plan has been approved and in force.
- ❖ The forest department is taking adequate steps for Improving Habitat, Extensive Soil & Moisture Conservation Measures, Fire Protection measures, Steps to reduce Human-Animal Conflict, Compassionate grant for life & property losses / damaged due to man-animal conflict, Extensive awareness program on Forest Fire, Tree planting, Wildlife Conservation and related matters.
- ❖ Kalarangiatta Chromite Mining Lease was granted over 23.800 ha for 30 years to M/s Ferro Alloys Corporation Limited on 18.04.2008.
- ❖ The lessee has filed forest diversion proposal and continuing mining operation over the broken up area.
- ❖ The mine is categorized as "A" Fully Mechanized (Opencast).
- ❖ In the year 2020, Honorable National Company Law Tribunal (NCLT) Cuttack Bench under the provisions of Insolvency and Bankruptcy Code (IBC)- 2016 vide its order dated 30.01.2020 has approved the resolution plan of M/s Sterlite Power Transmission Line Limited (Vedanta Ltd).
- ❖ FACOR has the capacity to produce 65,000 TPA of Charge Chrome / Ferro Chrome and 2,50,000 TPA of Chrome Ore at its Plant at Randia in Bhadrak district, Orissa.
- ❖ It has two captive mines at Sukinda valley for excavation of Chrome ore at Ostapal Chromite mine and Kalarangiatta Chromite Mine and these mines are at operational stage.

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Muthu M.
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangi, Dist. Jajpur
Pin- 755047



- ❖ Mineral Reserves / Resources have been estimated based on the level of exploration as on 31.05.2021. The total estimated reserve is **14.87 Lakh Ton**.
- ❖ At present the opencast mining method is being carried out by removing overburden and side burden by making suitable benching system.
- ❖ The geometry of the benches is kept with 6m height, 10m width and the overall slope 18° in North Side & 23° in all other side. Drains and barriers are constructed along the bench for proper drainage and safety of moving vehicles respectively. There is only one mining pit with 240m length, 290m width and 53m depth from surface.
- ❖ During coming Mining plan period the quarry will be expanded in three sides for further depression up to 30m RL to meet the proposed production.
- ❖ The present working depth is 47m RL. During 2021-22, the working depth will be at 44m RL and at the end of plan period i.e. 2022-23 pit limit of 30m RL will be achieved.
- ❖ The ultimate pit limit that can be reached in subsequent plan is 23m RL. The surface level of the pit is 100m RL.
- ❖ There is one OB dump of size 410mx115m covering an area of 4.709 ha.
- ❖ The overburden quantity estimated to be excavated during balance plan period is 5.59 Lac M^3 .
- ❖ At the north side of the quarry pit, there is earmark space for dumping the waste generated.
- ❖ The total height of the Dump is 35m in two stages. The dump will be expanded towards western direction and the present stock pile area will be moved to the north part of the lease area where already a stock pile area is present.
- ❖ At the conceptual stage the total dump height will be of 50m consisting of two benches. The overall slope of the dump will be maintained at 28° to 30° . Individual bench slope is to be 37.5° .
- ❖ 2100 nos of Saplings will be planted in the dead faces to arrest soil erosion.
- ❖ Additional 231 m retaining wall will be provided all around toe of the dump to prevent silt from waste dump going out.

M. M. Mathur
Agent of M/s. Facor Ltd.
Jajpur

M/s. Facor Ltd.
Kali



- ❖ Garland drains have been provided all around the toe of dump. One settling pond of 1000 M³ capacity is already provided to collect the surface runoff of dump and other areas.
- ❖ Check dams on garland drains provided at suitable intervals to arrest silt on the drains.
- ❖ There is no sub grade / top soil dump.
- ❖ The top soil generation during plan period is estimated to be 3200m³. It will be used for plantation within the same year of production.
- ❖ Most of the Ore / Overburden will be excavated by shovel- dumper – dozer combination.
- ❖ Since the OB benches in the quarry are generally soft / semi hard in nature, it can be excavated by the excavator directly and no drilling, blasting is required to lift the materials.
- ❖ The water table as observed from nearby wells, the water table occurs at 6m BGL during monsoon and in dry months the water table is at 9m BGL.
- ❖ Surface level is 100m RL. As the present working level is 47m RL i.e. 53m BGL, mine has already punctured the water table.
- ❖ The pit bottom that will be achieved during this plan period is 30m RL.
- ❖ A small sump is provided at the western side of the quarry bottom. All rain water, seepage water will accumulate at the sump.
- ❖ At the quarry bottom the depression will be made for excavation of the chromite ore and part of the said depression will be converted in to sump to store rain water, seepage water and mine discharge. The size of sump will be 30mx20mx2m (approximately).
- ❖ The accumulated water will be pumped out through pipes.
- ❖ Pumped out water (Mine discharge) varies with the season. During rainy season about 1100 KLD and in dry months about 600 KLD is the mine discharge.

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Muthumari M
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- ❖ About 8 KLD is being obtained from Bore well to meet domestic consumption. The mine discharge water after treatment in the ETP being used for dust suppressing, plantation and provided to villages for agricultural irrigation purpose.
- ❖ Pit roads are no permanent status but changes depending on site of Bench working.
- ❖ Working / dead bench width is further widened to become a haul road.
- ❖ Opencast working is proposed at deeper level i.e. from 100m RL to 30 m RL. Accordingly the haul roads are designed.
- ❖ The width of the haul road is not lesser than 3 times width of the largest dumper engaged in mine plus 5 m.
- ❖ In this mine the width is kept at 12m. There is adequate space on either side of the road for drainage and bench. The gradient of the haul is 1:16.
- ❖ The ore is being utilized in Ferro chrome, Ferro alloys plant of FACOR at Bhadrak. All the materials will be transported by Road only from mine to the Plant at Randia of district Bhadrak covering a distance of 115 KM.
- ❖ A large quantity of mine discharge water is being pumped out of the mine / settling pits. Chrome Ore mainly contains trivalent chromium (Cr^{+3}) in process of oxidation small fraction of Cr^{+3} gets oxidized to Cr^{+6} as in Dichromate ($Cr_2O_7^{-2}$).
- ❖ This hexavalent chromium is carcinogenic and need to be removed from mine discharge water before any use. The mine discharge water contains 0.2 to 0.4 mg/l against a safe limit of 0.05mg/l for human consumption.
- ❖ An ETP has been established within the Mining Lease area with a capacity of 400KL per hour with technology / design by Kharagpur IIT. All mine discharge is being treated in this ETP which removes hexavalent Chromium, Silt, adjust pH before further use of water.
- ❖ The output parameters are pH-7-8.5, Cr^{+6} <0.01mg/ L, TSS- <10mg /L, Total Cr - <0.2mg/L.
- ❖ The project is providing employment to 233 persons (Direct and Indirect) contractual labour in the Mine and related activities. Besides direct employment many person get

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Indirect employment in transport sector for transporting ore from Mine to Plant at Randia (Bhadrak).

- ❖ The treated Mine discharge water is being provided to Bhimtangar village for irrigation purpose. The water is mostly used for cultivation of vegetables to an extent of 15-20 Ac of land.
- ❖ The land surface will be disturbed due to mining. On conceptual stage only two benches will be planted up with native species.
- ❖ Mine discharge water about 600 KLD to 1100 KLD will definitely exert pressure on Water table. The mining excavation has already punctured the water table (91m RL). The present working level is 47m RL.
- ❖ The mine discharge water contains Cr^{++} ions which is carcinogenic in nature. It is much relief that the ETP discharge water contains about 0.02mg/L which is much below the CPCB norm.
- ❖ No water is being discharged to outside the mines area except for local irrigation purpose. No irrigation water is finding its way to Damsala nalla which is the main drainage of this area and joins with Brahmani River.
- ❖ There are number of Chromite mines in this Sukinda valley. The effect of individual mines may not be on a perceptible danger level but the synergy effect of all mines is laudable.
- ❖ Due to planting activities on Dumps, haul roads and vacant lands lot of greenery has been created and the ugly face of excavation is covered up to some extent.
- ❖ Though due to mining, there is effect on Water table of the region the combined effect of water harvesting measures have reduced the effect.
- ❖ Excavation, unloading, loading of Ore, transportation within the Mining Lease area and outside the ML area are adding fugitive dust to the atmosphere.
- ❖ The level of RSPM (PM_{10} and $PM_{2.5}$) is comparatively high than the normal level but within the prescribed Limit of CPCB.
- ❖ There is no provision for drilling and blasting in this mine.

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- ❖ The noise level is due to use of HEMM, and transport trucks.
- ❖ The noise level within Mining area is 68 dBL and near habitation is 60 dBL which is within prescribed norm of CPCB, New Delhi.
- ❖ Dust emission sources were identified based on mining activities of the project. Loading of materials (Ore, OB, Mineral rejects, & Truck dumping of materials (Ore, OB, Mineral rejects are point of dust generation.
- ❖ Movement of dumper (wheel) generated dust, Unloading of materials (Ore, OB, Mineral rejects), Wind erosion from waste dump, Trucks Activity wise dust emissions during excavation of ore have been estimated.
- ❖ During forest diversion proposal the tree enumeration has been conducted. All total 48 numbers of different trees / girth class and 6500 number of saplings has been enumerated. No tree felling is required.
- ❖ The biological environment is not going to be disturbed during plan period and beyond rather the condition will improve due to planting on dump surface, Haul Road side.
- ❖ During excavation of Overburden and mineral reject (below 10% Cr_2O_3) will be produced.
- ❖ During plan period 5.59 Lakh Cum OB and no Mineral reject will be generated.
- ❖ The stripping ratio is 1: 8.4 i.e. for production of 1 Ton of Ore about 8.4 cum of waste will be generated.
- ❖ Though stabilization of dump is being taken up and appropriate slope is maintained, still there is possibility of soil erosion from the dump surface.
- ❖ Adequate measures will be taken for stabilization of dump Overburden and side burden consists of serpentine materials along with clay etc.
- ❖ Serpentine is not the name of a single mineral. Instead it is a name used for a large group of minerals that fit this generalized formula: $(X)_{2-3}(Y)_2O_5(OH)_4$. (Mg,Fe,Ni, Mn,Zn)₂₋₃(Si,Al,Fe)₂O₅(OH)₄. Chrysotile, antigorite, and lizardite are three of the primary serpentine minerals.

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- ❖ During rains there is no possibility of any leaching elements to be characterized as acid. Due to transport related problems there may be acid rain due to exhaust burnt gases.
- ❖ Lowering of ground water table will lower moisture availability and result in stunted growth, reduced site quality, disappearing colony of moisture loving vegetation, replacement of moisture loving species by thorny, hardy & low quality species.
- ❖ Excess biotic pressure over a long period may result visit of unpalatable, dwarf vegetation.
- ❖ More and more open forest will be covered by Eupatorium, Lantena, Combretum (Atandi).
- ❖ Bahunia (Siali) may be completely vanished from the region. Disappearance of many species may lead to loss of Biodiversity of the locality.
- ❖ Plants may be affected by heart rot (especially Sal), Canker and top dying phenomena may be noticed in a long run.
- ❖ Accumulation of dust on leaf surface for a long period may reduce photosynthesis hence reduced oxygen generation. It may also affect growth rate of plants, especially planted on road sides.
- ❖ Animal movement of available species may be gradually restricted and finally seized from this tract.
- ❖ Scarcity of food stock and water in forest may force animals to come to habitations and agricultural field.
- ❖ More and more Human- Animal Conflict resulting repelling attitude of locals' towards wildlife.
- ❖ More respiratory, digestive disease may affect animals.
- ❖ Presence of Cr^{+6} (Chromium hexavalent) a carcinogenic substance in water & dust particle may induce health hazard.
- ❖ Presence of iron, Nickel and other heavy metals on grass fodder foliage surface may adversely affect herbivorous health.
- ❖ Animal behavior may change due to constant effect of noise & light of traffic.



- ❖ Reptiles may be affected seriously due to light and ground vibration.
- ❖ Loss of shelter place/ niche may make them homeless.
- ❖ Food and Water may become a limiting factor and seriously affecting the carrying capacity of the area.
- ❖ Compact soil without good vegetation will accelerate soil erosion.
- ❖ Nocturnal animals may have extremely a hard time.
- ❖ Rising temperature in summer may induce sun stroke.
- ❖ Side effect of mining on flora and fauna is being gradually felt in this region. Loss of bio diversity, pollution of water body i.e. Damsala nalla and evading nature of fauna from this locality is felt by a common man.
- ❖ Direct and indirect employment being provided by mining company.
- ❖ The occupational profile indicates more and more people are being diverted from agriculture to other trade i.e. mostly mine related occupation.
- ❖ The socio economic condition of the locality has improved. Under CSR program of mines owner, peripheral development is quite perceptible.
- ❖ The production level for which EC is in process, the production level will enhance from 0.050M TPA to 0.15 MTPA i.e. 3 times increases.
- ❖ The ore produced is being transported by Road to Randia, Bhadrak. The truck capacity is mostly 16 ton. Hence for 50000 TPA, about 3125 trip truck load is required. Taking 300 working days about 10 trucks are engaged per day. In enhanced production condition, about 30-35 trucks will be engaged per day.
- ❖ For handling the ore stacks at mine-site one wheel loader (2.5-4.5cum) is provided to keep in tune with quantum of handling.
- ❖ For handling the generated waste rock to the decentralized portion/waste dump of the pit, 2 excavators and 8 dumpers will be engaged.
- ❖ There is no movement of mega animals neither within the ML area nor at immediate road alignment up to Magalpur – Chandikhol – Bhadrak.



- ❖ In mining activities fugitive dust generation is expected at ore excavation, loading within the mining pit, transportation within ML area, dumping at Stock yard and subsequently beneficiation and transportation to outside the ML area to destination for end use.
- ❖ The excavation is being carried out at 53m BGL and Ore is at wet condition. No drilling and blasting is required hence fugitive dust generation at pit level, transportation up to pit head is not feared.
- ❖ Transportation from Pit head to Stock yard and un-loading is associated with no dust generation.
- ❖ From stock yard to outside the ML area is also associated with transport relation dust pollution.
- ❖ Trees have been planted along the Haul Road within the ML area, as well as dump slope and green belt zone. Till 01.12.2021, a total of 15,195nos of sapling have been planted inside the mining.
- ❖ Survival rate varies from 85 to 90%.
- ❖ Sprinkling of water on haul road frequently (thrice in December to March and four times in summer) is being taken up. The frequency of water sprinkling depends upon weather condition and moisture on the road surface.
- ❖ Ore containing moisture <10% will be avoided for transporting outside to prevent any fall out.
- ❖ The truck will be fully covered with tarpoline to avoid air pollution during transportation and ore fallout from trucks.
- ❖ The nearest water body is Damsala nalla flowing in Sukinda Valley and joins with Brahmani River. Any contamination of Damsala nalla water will affect aquatic fauna of River Brahmani.
- ❖ The project proponent has installed Effluent Treatment Plant of 400KLD per hour capacity to treat the mine discharge water. The ETP reduce all Hexavalent Chromium to Trivalent Chromium, pH within 7 to 8.5 range, and turbidity at a low range.
- ❖ The treated water is used for mining dust suppression and irrigation purpose.

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- ❖ No water is being discharged to outside water bodies without treatment.
- ❖ The mining activities will disturb the land surface. After mining the area will be reclaimed.
- ❖ To check the soil erosion from dumps, plating of local tree species is being carried out.
- ❖ It is suggested to take up plantation on staggered spacing. Rows of *Chrysopogon zizanioides* (bena) along the contour to be planted in double row (1/2m apart to filter the runoff and check soil erosion. It may be planted at a vertical interval of 5meter on dump surface.
- ❖ Due to accumulation of dusts containing heavy metals particles changes the behavior of soil in the Zone of Impact.
- ❖ This can only be arrested / checked by more and more leaf litters decompose to humus. It is suggested to increase multitier tree planting along with fire control measures in nearby forests.
- ❖ Adequate provisions will be made by the user agency to assist Forest staff in fire control measures.
- ❖ Mock drill on forest fire control, fire fighting and corresponding training will be organized by the User agency through subject experts every year in consultation with Forest staffs.
- ❖ Due to lot of mines in the area and planting activities by them, the tree covers though improved on Safety zone and other vacant land the mining excavation area has lost its green cover. Bio diversity of the area is at a degradation path.
- ❖ The fauna concentration is thin due to integral effect of all mining activities including transportation. The animal concentration is comparatively good towards north western side of Zone on impact.
- ❖ The Maulabhanja – Jiridamali – Anantapur Elephant corridor is partly coming within Zone of Impact.
- ❖ It is proposed to improve habitat by renovating water body coming within Sukinda Range. For saving the ground flora, the fire protection measures like control burning of

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dry leaf litters, Fire line maintenance and provision for modern firefighting equipments will be provided at project cost.

- ❖ The forest functionaries are mainly facing problems due to erratic elephant movement in both Sukinda and Kamakshyanagar range. The Elephant corridors i.e. Maulabhanja-Jirdamali- Ananatpur is mostly disturbed due to fragmentation of habitat by National Highway 200 and Angul- Sukinda- Duburi Rail line under construction.
- ❖ The activities being implemented by user agency are Tree planting on Dump surface and both sides of haul Road, Retention walls along the dump outer line to check sliding of dump, loose boulder check dams on garland drain to check silt from runoff water.
- ❖ Channeling of water from Dump (Top bench / terrace) to ground level by pipes to prevent soil erosion.
- ❖ Sprinkling of water on haul road and on vacant areas to suppress dusts.
- ❖ Treating the Mine discharge through ETP and utilizing the treated water for dust suppression
- ❖ The Lessee during the Plan Period will take up planting of trees on Dump surface on staggered manner.
- ❖ Planting of rows of *Vetiveria zizanioides* (bena) along the contour and to be planted in double row (1/2m apart to filter the runoff and check soil erosion. It is to be planted at a vertical interval of 5meter on dump surface.
- ❖ User agency to assist Forest staff in fire control measures.
- ❖ Mock drill on forest fire control, fire fighting and corresponding training will be organized by the User agency through subject experts every year in consultation with Forest staffs.
- ❖ Not only tree species will be planted, other varieties i.e grasses, herbs, shrubs, climbers etc are also to be planted to maintain bio diversity of the area and maintain a ground flora.
- ❖ Forest department will identify of 5.0ha site in a single forest patch and providing vegetative fencing on Forest / Human interface side in Mahagiri DPF with fencing

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maintenance, deployment of Gaja Sathi in Sukinda Range to assist forest staffs in smooth passage of Elephants within the Zone of Impact and beyond.

- ❖ Providing Elephant Driving Equipments Renovation of Existing Water body, steps for Integrated Fire Fighting and Incentive to VSS Involved in Bio diversity area, livelihood support and improvement of avifauna habitat etc will be taken up. Solar light, distribution of IEC materials are also suggested.
- ❖ This plan is valid for 10 years i.e. from 2022-23 to 2031-32.
- ❖ The cumulative Plan Cost is projected at Rs 120.598 lakh (Cuttack Division: Rs 98.956 Lakh, Dhenkanal Division: 18.402 Lakh, Keonjhar WL Division: Rs 3.24 lakh)
- ❖ The interventions suggested will be implemented by Cuttack Division, Dhenkanal Division and Keonjhar WL Forest Division.


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CHAPTER-I LOCATION OF PROJECT & ITS AREA



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CHAPTER-I

LOCATION OF PROJECT & ITS AREA

1.0 Introduction:

Ferro Alloys Corporation Limited (FACOR) is the oldest and most reputed producer of High Carbon Ferro Chrome/Charge Chrome in India known for its consistent supply, best-in-class quality and Service in domestic as well as Global Market for 4-5 decades. FACOR has three Captive Chromite Mines i.e. Kalarangiatta, Ostapal and Kathapal at Sukinda Chromite valley. Kalarangiatta Chromite mining lease has been executed on 18.04.2008 over an area of 23.800 ha. The lessee has obtained Environment Clearance for production of 50,000 TPA vide MoEF, Government of India letter No. J-11015/183/2007-IA.II (M) dated 13.09.2009.

The Lessee has applied for Environment Clearance for enhancement of production from 0.05 MTPA to 0.15 MTPA chrome Ore (ROM) with maximum excavation of 0.438 Million cum / annum over all lease area 23.800ha vide online Application no SIA/OR/MIN/66287/2021. Considering the application the State Environment Impact Assessment Authority, (SEIAA) has issued the ToR (Terms of Reference) for preparation of EIA/ EMP Report as per EIA Notification 2006 vide letter No 3495/SEIAA dated 18.11.2021. The ToR is at **Annexure-I** In the said ToR, under "B. Standard ToR for Mining Project" there are stipulated conditions need to be complied with. The conditions read as follows.

- "xvi) A Study shall be got done to ascertain the impact of Mining Project on Wildlife of the study area and details furnished. Impact of the project on the wildlife in surrounding and any other protected area and accordingly detailed mitigative measures required should be worked out with cost implications and submitted*
- xvii) Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife corridors, Ramsar Site, Tiger / Elephant Reserve / (existing as well as proposed) if any, within 10 km of the mining lease should be clearly indicated supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above should be obtained from the standing committee of National Board of Wildlife and copy furnished.*

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xviii) A detailed biological study of the study area[core zone and buffer zone (10kilometer radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna endangered endemic and RET Species duly authenticated separately for core and buffer zone should be furnished based on such primery survey clearly indicating the Schedule of the fauna present. In case of any Schedule -I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implemwenting the same should be made as part of the project cost."

The Land under Mining Lease is Non Forest Kissam at the time of execution of Lease deed (HAL Settlement). The entire land under mining lease (23.80ha) was of Forest kissam as on 25.10.1980 (Sabik Settlement). The Lessee has applied for diversion of Forest land as per provisions of the Forest (Conservation) Act,1980 vide **Proposal No FP/OR/MIN/16453/2015**(State SI No OR-012/2016). The State Government vide their letter No 10F (Cons) 228/2016- 13769/ F&E dated 27.07.2016 has recommended for diversion of 23.80 ha forest land under provisions of the Forest (Conservation) Act,1980. **(Annexure-II)**. The proposal is under consideration of the Government at various stages. In the Site Inspection Report (SIR) dated 13.04.2016 has indicated about presence of the following animals in the forest area proposed for diversion and around as follows.

"Migratory Elephant, Mongoose, Ratels, Jacket, Sloth Bear, Wild boar, Fox, Porcupine, Barking Deer, Rhesus macaque, Hyena, Squirrel, Hare, Peacock, Jungal Fowl, Red Ring Dove, Parrot, Koel, Cobra, King Cobra, Python, Banded Krait, Viper, wild lizard etc"

Out of the above animals mentioned in the "Site Inspection Report"Elephant, Sloth Bear, Peacock, Python are considered to be endangered animals (Schedule-I) under the Wildlife (Protection)Act,1972.

The user agency conducted biological study of the study area[core zone and buffer zone (10kilometer radius of the periphery of the mine lease)] through subject experts. Details of flora and fauna endangered endemic and RET Species have been recorded. The flora & fauna observed during study has been authenticated by DFO, Cuttack and communicated vide letter no 8795/5F (Forest Diversion) 60/218 dated 04.12.2021 (Annexure-III).

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As there is presence of Schedule-I animals / Birds / Reptiles as per Wildlife (Protection) Act, 1972, this "Site Specific Wildlife Conservation Plan" is being prepared to comply the stipulated conditions under ToR and stipulated condition likely to be imposed under Forest Diversion Proposal now under consideration.

Location of the Project:

The project is located at Village Kalarangiatta under Sukinda Tahasil of district Jajpur. The Latitude & Longitude of the project is as follows.

Latitude 21°01'00.57415"N to 21°01'29.29437"N

Longitude 85°44'18.96168"E to 85°44'38.02780"E

The Mine finds place in Survey of India Topo Sheet no F45N12 (73G/12)

The location map is at Plate No-I

Forest / Civil Administrative Jurisdiction:

The entire project comes within the jurisdiction of Cuttack Division, Sukinda Range. The Forest / Civil administrative jurisdiction is as given below.

Forest Administrative Jurisdiction		Civil Administrative Jurisdiction:	
Description	Name	Description	Name
Beat	Kaliapani	Village	Kalarangiatta
Section	Kaliapani	Tahasil	Sukinda
Range	Sukinda	District	Jajpur
Division	Cuttack	Division	Central, Cuttack
Circle	Angul		

Table 1 Forest/Civil Administrative jurisdiction

1.1 Extent of Project Area & Land Schedule:

The Mining Lease area is 23.800 ha coming in village Kalarangiatta. The land schedule is as follows

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Site Specific Wildlife Conservation Plan for Kalarangiatla Chromite Mine at Kalarangiatla under Sukinda Tahasil dist. Jaipur by M/s Facer Ltd.

Land Schedule of the Project (Sabik / Hal Settlement)													
Sabik Land schedule (Area in Ac)					Hal Land schedule (Area in Ac)					Remarks Hal Record Tenants			
Sl no	Khata no	Status	Plot no	Kisam	Total area of the plot	Leased out area	Khata no	Status	Plot no	Kisam	Total area of the plot in ha	Leased out area in ha	
VILLAGE: KALRANGIATTA, Dist: JAJPUR													
1	32	Anabadi	4	Sal Jungle	202.40	24.56	6	Sthitiban	215/1663	Sarad III	1.54	0.2	Kalekar Mahanta & Others
							37	Sthitiban	78	Biali	1.61	0.03	Chaitan Mahanta & Others
							37	Sthitiban	83	Biali	0.54	0.06	
							82	Sthitiban	48	Sarad III	1.26	0.73	Baidyanath Mahanta
							82	Sthitiban	85	Biali	1.35	0.95	
							116	A.A.A	47	Patharbani	13.76	7.49	Govt.
							116	A.A.A	214	Patharbani	1.46	0.4	Govt.
							116	A.A.A	215	Patharbani	58.72	14.05	Govt.
							120	Nirman & Paribahan Dept	114	Rasta	1.46	0.25	Nirman & Paribahan Dept
							120		42	Rasta	2.4	0.4	
2	32	Anabadi	6	Sal Jungle	443.30	34.25	116	A.A.A	266	Patharbani	19.2	9.89	Govt.
							116	A.A.A	303	Patharbani	0.19	0.08	Govt.
							116	A.A.A	304	Patharbani	0.57	0.25	Govt.
							116	A.A.A	259	Patharbani	22.2	20	Govt.
							116	A.A.A	260	Patharbani	14.5	0.18	Govt.
							116	A.A.A	258	Patharbani	34.7	3.85	Govt.
		Total				58.81							58.81Ac = 23.800 ha

Table 2 Land schedule of the project (Sabik/hal settlement)

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Abstract of land involved in the Project (Sabik Settlement)		Abstract of land involved in the Project (Hal Settlement)		Percentage
Sal Jungal	23.800	Govt. Non Forest land	22.740	95.55
		Nirman & Paribahan Dept	0.263	1.11
		Private Land	0.797	3.35
Total	23.800	Total	23.800	100.00

Table 3 Abstract of land schedule of the project

1.3 Cost of the Project:

The Project cost is estimated to be **Rs12.18Crore**. The Copy of Form-B (Part-I) as submitted online for Environment Clearance vide application No SIR/OR/MIN/66287/ 2021 in Parivesh web site is at Annexure -IV.

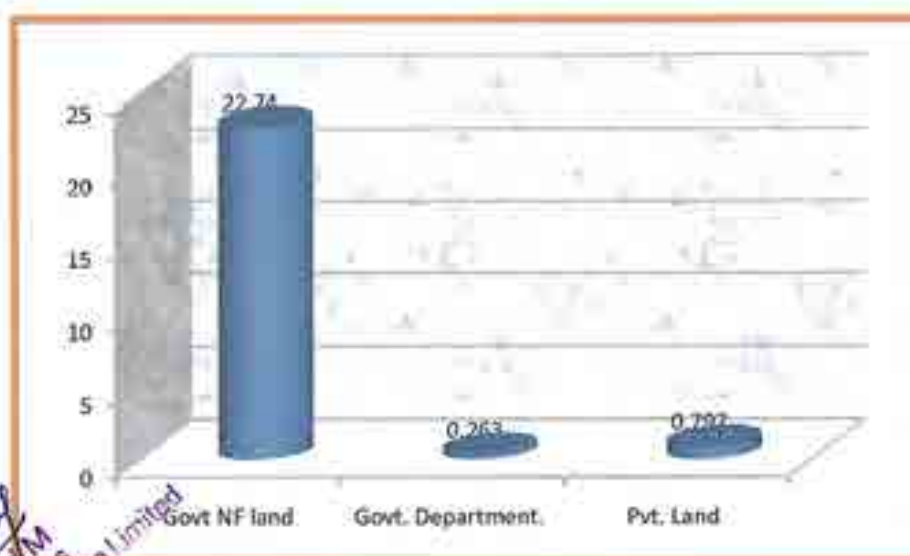
1.4 Nature & Land involved in the Project:

1.4.1 Nature of the Project:

The Project is Non Linear in shape.

1.4.2 Land details of the Project:

The total Land for Forest Diversion purposes is Forest land. As per the Hal settlement record basing on which Lease deed has been executed is Non Forest kisam (Govt. Land – 22.740ha, Other Govt. Department: 0.263 ha and Private Land -0.797 ha





1.5 Stipulated Condition under which plan to be prepared:

This Site Specific Wildlife Conservation Plan is being prepared in compliance to "Terms of Reference" issued for Preparation of EIA / EMP Report under EIA Notification 2006 for environment Clearance. Subsequently it will cover the conditions under Forest Conservation Act, if so stipulated.

1.6 Statutory Clearances:

1.6 (i) Status of Forest Clearance:

The project involves 23.800ha of Forest Land (Sabik Kisam) for which application has been filed by M/s FERRO ALLOYS CORPORATION LTD(FACOR) under provisions of the Forest(Conservation) Act,1980 vide Proposal No FP/OR/MIN/16453/2015 (State SI No OR-012/2016). The proposal is under consideration at various stages for "In Principle Approval"

1.6 (ii) Status of Wildlife Clearance:

The Project is not forming a part of any Wildlife Sanctuary / National Park / Protected area nor passing through any Eco Sensitive Zone of any Wildlife Sanctuary / National Park / Protected area. Hence Clearance under section 29 of the Wildlife (Protection) Act, 1972 is not required.

1.6(iii) Status of Environmental Clearance:

The project has obtained Environment Clearance for production of 50000 TPA vides Letter No. J-11015/ 183/2007-IA.II (M) dated 13.05.2009 of Ministry of Environment & Forests, Govt. of India, New Delhi (Annexure-V). Now the Lessee has applied for expansion of Production Capacity from 0.05 MTPA to 0.15 MTPA chrome Ore (ROM) with maximum excavation of 0.438Million cum / annum over all lease area 23.800ha vide online Application no SIA/OR/MIN/66287/2021 for which ToR has been issued (Annexure-I).


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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalarangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

CHAPTER-II PROJECT & ITS IMPACT AREA



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CHAPTER-II

PROJECT & ITS IMPACT AREA

2.0 Description of Project Area & its Impact Area:

The Project area is 23.800 ha (All forest land as per Sabik Records) and all Non Forest land as per Hal Settlement land records. It is a Mining Project situated at village Kalaranglatta of Sukinda Tahasil district Jajpur.

2.1 Location:

The project is located at Village Kalaranglatta under Sukinda Tahasil of district Jajpur. The Latitude & Longitude of the project is as follows.

Latitude $21^{\circ}01'00.57415''N$ to $21^{\circ}01'29.29437''N$

Longitude $85^{\circ}44'18.96168''E$ to $85^{\circ}44'38.02780''E$

The Mine finds place in Survey of India Topo Sheet no F45N12 (73G/12)

The location map is at Plate No-I. The Mine is approachable from NH-200 Chandikhol-Talcher National highway from Mangalpur on Mangalpur- Tamka Road (ODR).


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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatla under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.



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2.2 Zone of Impact:

The Zone of Impact is considered to be 10km on all sides of the Project layout. The Zone of Impact comes within Cuttack Division, Dhenkanal Division and Keonjhar WL Division, Anandapur. The Zone of Impact computed to be 338.00 Sq.Km. The District division wise breakup is as follows.

District / Division	ZOI in Sq. Km	Percentage
Jajpur / Cuttack	168.74	49.92
Dhenkanal / Dhenkanal	168.70	49.91
Keonjhar / Keonjhar WL	0.56	0.17
Total	338.00	100.00

Table 4 Area break up Districtwise



2.2.1 Status of Overlapping Zone of Impact with other projects:

Sukinda Kaliapani area along the Mahagiri DPF is the largest Chrome Ore deposit in Asia. The Chrome Ore Belt locally named as "Chrome Valley" accounts for about 98% of the total proved chromite (chromium ore) reserves of the country, of which about 97% occur in the Sukinda Valley. This study area is found to be very near to many other chromite projects. But the locality was found to be economically and socially backward. Following table lists all projects within or near the study area.

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Sl No	Name of Mine	Name of Lessee	Ore	Remark
1	Kamarda Chromite Block	M/s Tata Steel Mining Ltd.	Chromite	Operative
2	Kaliapani Chromite Mine	Balasore Alloys Ltd.	Chromite	Operative
3	Ostapal Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
4	Kalarangiatta Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
5	Mahagiri mines Chromite	M/s IMFA Ltd.	Chromite	Operative
6	Tailangi Chromite Mine	IDC of Odisha Ltd	Chromite	Operative
7	Chingudipal Chromite Mine	IMFA Ltd.	Chromite	Lapsed and handed over to Govt.
8	Sukinda Mines (Chromite)	IMFA Ltd	Chromite	Operative
9	Jindal Chromite Mine	Jindal Stainless Ltd.	Chromite	Non Operative
10	Saruabil Chromite Block	M/s Tata Steel Mining Ltd.	Chromite	Operative
11	South kaliapani Chromite Mine	OMC Ltd.	Chromite	Operative
12	Kaliapani Chromite Mine	OMC Ltd	Chromite	Operative
13	Sukrangi Chromite Mine	OMC Ltd	Chromite	Operative
14	Daitari Chromite Mine	OMC Ltd	Iron	Operative
15	Sukinda Chromite Mine	M/s Tata Steel Mining Ltd.	Chromite	Operative
16	Kathpal Chromite Mine	OMC Ltd	Chromite	Non-Operative
17	Birasal Chromite Mine	OMC Ltd	Chromite	Non-Operative
18	Kathpal Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Lapsed
19	Kalrangi Chromite Mines	OMC	Chromite	Non Operative
20	Chromite Mines in Mahagiri DPF	M/s Balasore alloys	Chromite	Non Operative
21	Balipada Chromite Mines	OMC Ltd	Chromite	Non Operative

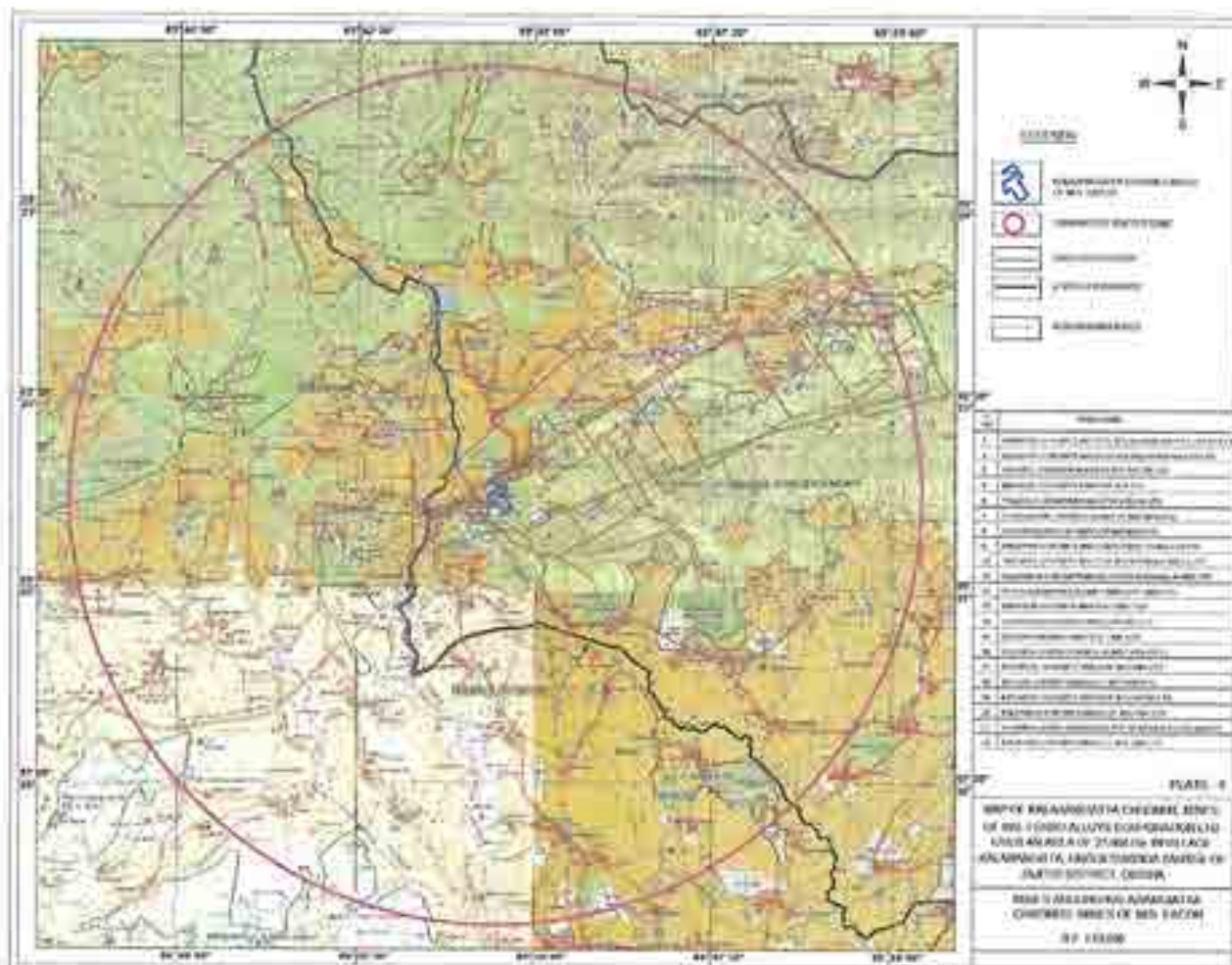
Table 5 Projects within or near the study area

The relative location of other mines near to Kalarangiatta Chromite Mine is indicated in Plate-II.

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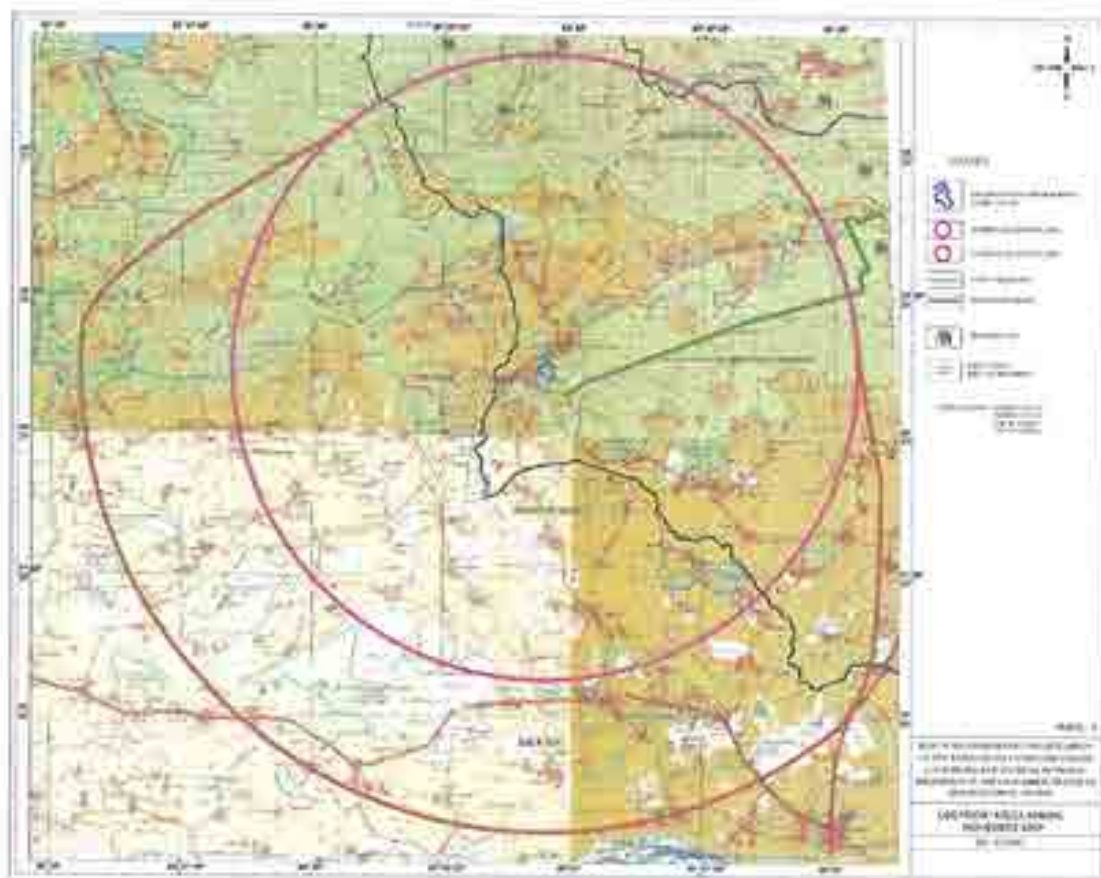
2.2.2 Additional Zone of Impact Considered:

Due to Overlapping nature of Zone of Impact, additional Zone of Impact has been considered towards South, South West & South East mostly coming in Cuttack and Dhenkanal Division. The zone of impact and additional zone of impact considered is as follows.

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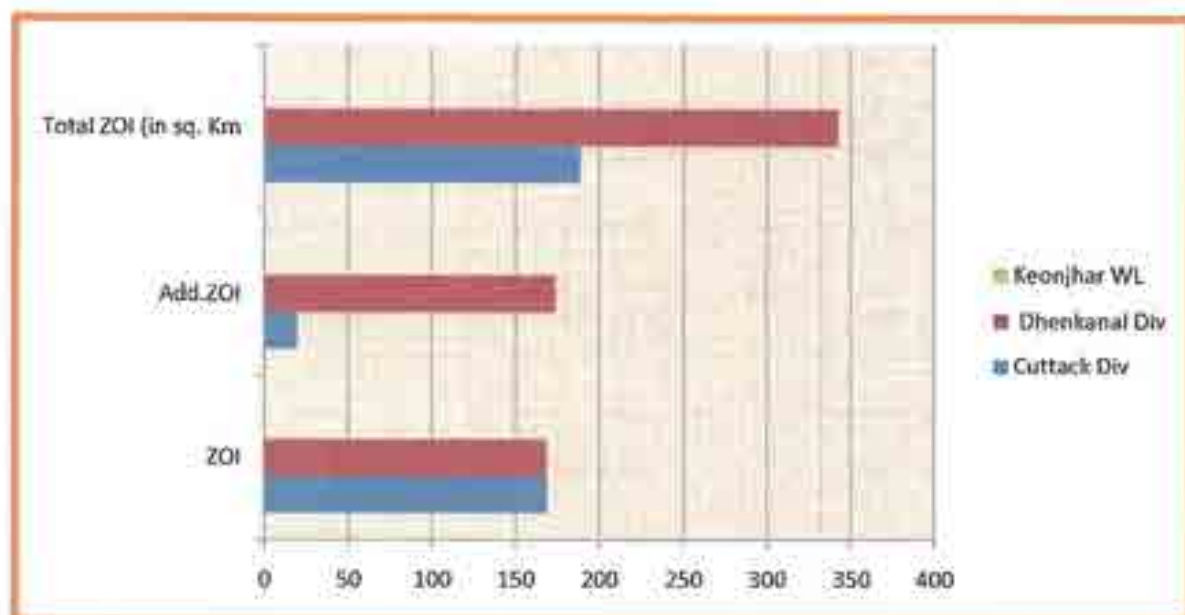
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District / Division	ZOI in Sq. Km	Additional ZOI in Sq.Km	Total in Sq. Km	Percentage	% of Add.ZOI considered
Jajpur / Cuttack	168.74	19.7	188.44	35.45	11.67
Dhenkanal / Dhenkanal	168.70	173.8	342.5	64.44	103.02
Keonjhar / Keonjhar WL	0.56	0	0.56	0.11	0.00
Total	338.00	193.50	531.5	100.00	57.25

Table 6 Area in Additional ZOI in Sq. km

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2.3 Land Use Pattern:

The land use pattern is an important indicator of Core & Buffer Zone to decide the nature of threat and probable interventions required. Core area land use pattern and Buffer zone (10km Radius area) are furnished below.

2.3.1 Core Zone:

The current Mining plan is for Two years i.e. 2021-22 and 2022-23. As per approved Mining Plan / Scheme the land use pattern at present and end of plan period and at conceptual stage is furnished below.

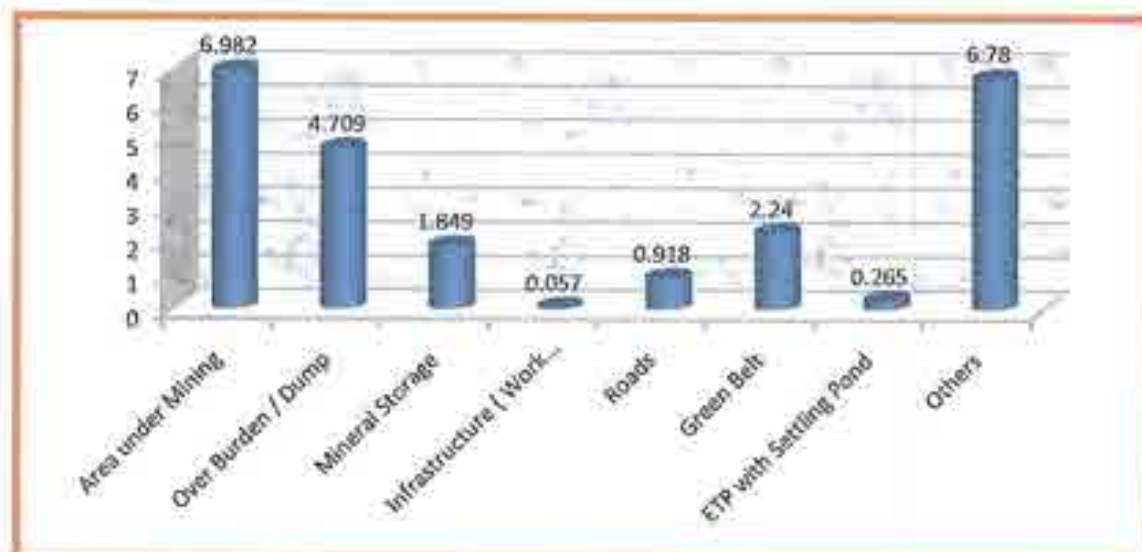
Land Use Pattern Core Zone (ML area) All Area in ha)					
Sl No	Description	Land use (Present)	Land use (end of Plan period)	Conceptual	% (Present land use)
1	Area under Mining (Excavation)	6.982	8.176	8.176	29.34
2	Storage of Top Soil	0	0	0	0.00
3	Over Burden / Dump	4.709	6.258	8.451	19.79
4	Mineral Storage	1.849	1.353	0.100	7.77
5	Infrastructure (Work shop, Admin building, etc)	0.057	0.057	0.057	0.24
6	Roads	0.918	0.918	0.918	3.86



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7	Railways	0	0	0	0.00
8	Green Belt	2.240	1.744	1.744	9.41
9	Tailing Pond	0	0	0	0.00
10	ETP with Settling Pond	0.265	0.265	0.265	1.11
11	Mineral Separation Plant	0	0	0	0.00
12	Township Area	0	0	0	0.00
13	Others				0.00
i	Drain	0.302	0.302	0.302	1.27
ii	Barrier	0.130	0.260	0.300	0.55
iii	Periferial area	6.348	4.467	3.436	26.67
	Total	23.800	23.800	23.800	100.00

Table 7 Land use pattern Core zone (ML Area)



2.3.2 Zone of Impact (Buffer Zone):

The Land use pattern of area coming within Zone of Impact has been analyzed through Satellite imagery study. The land use pattern as observed is as follows.

Land use pattern Zone of Impact (Buffer Zone):				
Land Use	District (Area in Sq.Km)			Total
	Dhenkanal	Jajpur	Keonjhar	
Agricultural land	98.329	56.820	0	155.149
Dense Forest	0.834	35.618	0.654	37.106
Open Forest	18.963	21.637	0.37	40.97
Forest Plant.	0.342	0.155	0	0.497

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Mining / Industry	0	14.173	0	14.173
Reservoir	0.016	0.475	0	0.491
Road	0.123	0.111	0	0.234
Scrub Forest	10.469	16.639	0	27.108
Settlement	4.350	6.163	0	10.513
Tree cover	6.599	5.935	0	12.534
Scrub dense	3.895	4.122	0	8.017
Scrub open	21.225	4.340	0	25.565
Barren / rocky / stony	0.869	0.206	0	1.075
Lake / ponds	1.158	0.578	0	1.736
River / stream	1.528	1.301		2.829
Total	168.7	168.273	1.024	338.0

Table 8 Land use pattern ZOI(Buffer zone)

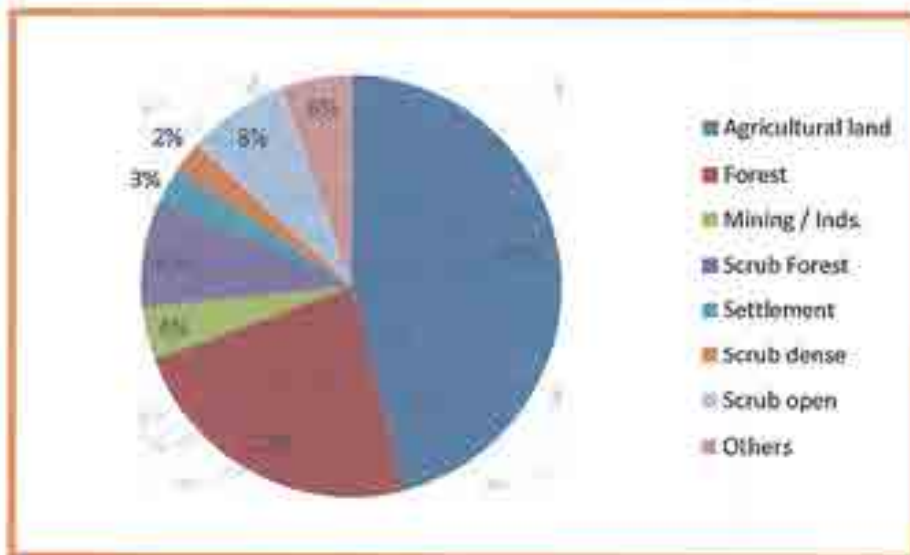
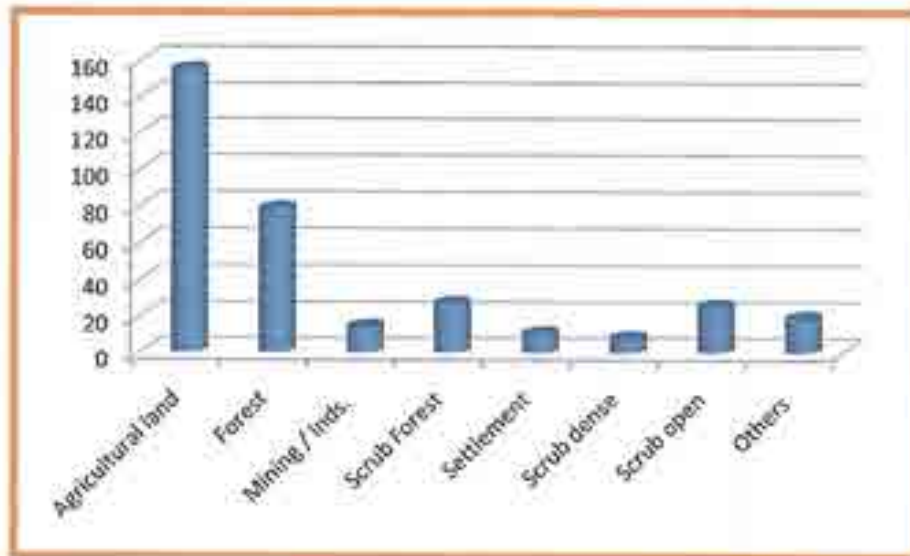
Broad land use (ZOI of Kalarangiatta Mines)		
Land Use	Area in Sq. Km	Percentage
Agricultural land	155.149	45.9
Forest	78.573	23.2
Mining / Inds.	14.173	4.2
Scrub Forest	27.108	8.0
Settlement	10.513	3.1
Scrub dense	8.017	2.4
Scrub open	25.565	7.6
Others	18.902	5.6
Total	338.00	100.0

Table 9 Broad land use(ZOI of Kalarangiatta Mines)

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2.4 Habitation:

There is no habitation within the Core area. In the Zone of Impact of the project there are 53 villages (24 villages in Jajpur District and 29 villages in Dhenkanal District and no villages in Keonjhar district) in the ZOI. The total population is 59,579 out of which ST population is 26523 (44.52%), SC population is 6139 (10.30%). The Male Female ratio is 965 female per 1000 male. The demographic profile of Zone of Impact as per Census 2011 is furnished below:

Abstract								
District	No of Village	No HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST	P_LIT
Jajpur	24	6682	32607	16642	15965	1666	16619	17674
Dhenkanal	29	6060	26972	13671	13301	4473	9904	16986
Total	53	12742	59579	30313	29266	6139	26523	34660
	Percentage			50.88	49.12	10.30	44.52	58.17

Table 10 Demographic profile

2.4.1 Occupational Profile (Zone of Impact):

The occupational profile of Zone of Impact has been analyzed on the basis of 2011 Census data. The occupational profile as observed is as follows.

Abstract (Occupational Profile)									
District	No of Village	TOT_WORK_P	MAIN_WORK_P	MAIN_CL_P	MAIN_AL_P	MAIN_HH_P	MAIN_OT_P	MARG_WORK_P	NON_WORK_P
Jajpur	24	11637	7397	1381	1160	236	4620	4240	20970
Dhenkanal	29	11956	6303	1507	1504	251	3041	5653	15016
Total	53	23593	13700	2888	2664	487	7661	9893	35986
Percentage		39.60	58.07	12.24	11.29	2.06	32.47	41.93	60.40

Table 11 Abstract(Occupation profile)

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Total Population	59579	
Work Population	23593	
Non W_P	35986	
Main W_P	13700	
Marginal W_P	9893	
Cultivators	2888	
Ag. Labour	2664	
HH Work	487	
Other Trade	7661	

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2.5 Flora & Fauna:

2.5.1 (Flora) Core Zone:

Sl. No	Name of the Plant	Family	Local Name
Trees			
1	<i>Acacia auriculiformis</i>	<i>Mimosaceae</i>	Acacia / Sunajhari
2	<i>Aegle marmelos</i> (L.) Correa	<i>Rutaceae</i>	Bela
3	<i>Albizia procera</i> (Roxb.) Benth.	<i>Mimosaceae</i>	Sirisa
4	<i>Alstonia scholaris</i> (L.) R.Br.	<i>Apocynaceae</i>	Chatiana
5	<i>Anthocephalus kadamba</i>	<i>Rubiaceae</i>	Kadamba
6	<i>Artocarpus heterophylla</i> Lam.	<i>Moraceae</i>	Panas
7	<i>Azadirachta indica</i> A. Juss.	<i>Meliaceae</i>	Nima
8	<i>Bauhinia racemosa</i> Lam.	<i>Caesalpiniaceae</i>	Kanchana
9	<i>Dalbergia sissoo</i> L.f.	<i>Fabaceae</i>	Sisoo
10	<i>Delonix regia</i>	<i>Caesalpiniaceae</i>	Krushna chuda
11	<i>Holarrhena antidysentrika</i> (Buch.-Ham.) Wall. Ex G. Don	<i>Apocynaceae</i>	Kurei
12	<i>Lagerstroemia parviflora</i> Roxb.	<i>Lythraceae</i>	Sidha
13	<i>Mangifera indica</i> L.	<i>Anacardiaceae</i>	Amba
14	<i>Melia azedarach</i> L.	<i>Meliaceae</i>	Mahanimba
15	<i>Michelia champaca</i> L.	<i>Magnoliaceae</i>	Champa
16	<i>Mimusops elengi</i> L.	<i>Sapotaceae</i>	Baula
17	<i>Nyctanthes arbor-tristis</i> L.	<i>Nyctanthaceae</i>	Gangasiuli
18	<i>Phyllanthus emblica</i> L.	<i>Euphorbiaceae</i>	Amla
19	<i>Polyalthia longifolia</i>	<i>Annonaceae</i>	Debadaru
20	<i>Pongamia pinnata</i> (L.) Pierre	<i>Fabaceae</i>	Karanja
21	<i>Syzygium cumini</i> (L.) Skeels	<i>Myrtaceae</i>	Jamun
22	<i>Terminalia bellirica</i> (Goertn.) Roxb.	<i>Combretaceae</i>	Bahada
23	<i>Trema orientalis</i>	<i>Cannabaceae</i>	Kharkas
24	<i>Ziziphus mauritiana</i> (Retz.) Wild.	<i>Rhamnaceae</i>	Kanteikoli
Herbs			
1.	<i>Achyranthes aspera</i> L.	<i>Amaranthaceae</i>	Apamaranga
2.	<i>Ageratum conyzoides</i> L.	<i>Asteraceae</i>	Pokasungha
3.	<i>Cassia tora</i>	<i>Caesalpiniaceae</i>	Bana chakunda
4.	<i>Cleome viscosa</i> L.	<i>Capparaceae</i>	Bana sorish
5.	<i>Eusteralis stellata</i> (Lour.) Panig. Var. <i>roxburghiana</i> (Kemg) Bennet & Raizada	<i>Lamiaceae</i>	Iswarajata



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6.	<i>Ocimum canum</i> Sims.	<i>Lamiaceae</i>	Sree tulasi
7.	<i>Oldenlandia corymbosa</i> L.	<i>Rubiaceae</i>	Gharapudia
Shurbs			
1	<i>Clerodendrum viscosum</i> Vent.	<i>Verbenaceae</i>	Nagari
2	<i>Datura metel</i> L.	<i>Solanaceae</i>	Dudura
3	<i>Helicteres isora</i> L.	<i>Sterculiaceae</i>	Modimodica
4	<i>Hibiscus rosa-sinensis</i>	<i>Malvaceae</i>	Mandara
5	<i>Lantana camara</i> L.	<i>Verbenaceae</i>	Nagairi
6	<i>Vitex nigundo</i>	<i>Verbenaceae</i>	Begunia
7	<i>Woodfordia fruticosa</i> (L.) Kurz	<i>Lythraceae</i>	Dhataki
Climbers			
1	<i>Atylosia scrabaeoides</i> (L.) Benth.	<i>Fabaceae</i>	Sanakolatha
2	<i>Butea parviflora</i> Roxb.	<i>Fabaceae</i>	Lata palas
3	<i>Dioscorea wallichii</i> Hook.f.	<i>Dioscoreaceae</i>	Pita alu
4	<i>Smilax zeylanica</i> L.	<i>Smilacaceae</i>	Muturi
5	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook.f. & Thoms.	<i>Menispermaceae</i>	Guluchi
Grasses			
1	<i>Bambusa nutans</i>	<i>Poaceae</i>	Baunsa
2	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	<i>Poaceae</i>	Guguchia
3	<i>Eleusine indica</i> (L.) Gaertn.	<i>Poaceae</i>	Ghasa
4	<i>Eragrostis ciliaris</i> (L.) R.Br.	<i>Poaceae</i>	Ghasa
5	<i>Pennisetum pedicellatum</i>	<i>poaceae</i>	Dinanath grass
6	<i>Saccharum spontaneum</i>	<i>poaceae</i>	Kasatandi

Table 12 Flora (Core Zone)

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2.5.2 (Flora) Zone of Impact (Buffer Zone):

Sl. No	Name of the Plant	Family	Local Name
Trees			
1	<i>Acacia leucophala</i> (Roxb.) Willd.	Mimosaceae	Gahira
2	<i>Acacia nilotica</i> (L.) Delile	Mimosaceae	Babool
3	<i>Acacia auriculiformis</i>	Mimosaceae	Acacia / Sunajhari
4	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Bela
5	<i>Ailanthus varieg</i> Roxb.	Simaroubaceae	Mahala
6	<i>Alangium salvifolium</i> (L.f.) Wang.	Alangiaceae	Ankula
7	<i>Albizia procera</i> (Roxb.) Benth.	Mimosaceae	Sirisa
8	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	Chatiana
9	<i>Anacardium occidentale</i>	Anacardiaceae	Kaju
10	<i>Annona squamosa</i> L.	Annonaceae	Ata
11	<i>Anthocephalus kadamba</i>	Rubiaceae	Kadamba
12	<i>Artocarpus heterophylla</i> Lam.	Moraceae	Panas
13	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Nima
14	<i>Bauhinia racemosa</i> Lam.	Coesalpinaceae	Kanchana
15	<i>Bombax ceiba</i> L.	Bombacaceae	Simili
16	<i>Borassus flabellifer</i> L.	Arecaceae	Tala
17	<i>Bridelia retusa</i> (L.) Spreng.	Euphorbiaceae	Kasi
18	<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	Chara
19	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Palasa
20	<i>Careya arborea</i> Roxb.	Lecythidaceae	Kumbhi
21	<i>Cassia siamiae</i>	Caesalpinaceae	Sana chakunda
22	<i>Cassia fistula</i> L.	Caesalpinaceae	Sunari
23	<i>Ceiba pentandra</i>	Malvaceae	American Simili
24	<i>Chloroxylon swietenia</i> DC.	Flindersiaceae	Bheru
25	<i>Cleistanthus collinus</i> (Roxb.) Benth. Ex Hook.	Euphorbiaceae	Karada
26	<i>Cocos nucifera</i>	Arecaceae	Nadia
27	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Sisoo
28	<i>Dillenia pentagyna</i> Roxb.	Dilleniaceae	Ou
29	<i>Diospyros malabarica</i> (Desr.) Kostel.	Ebenaceae	Kendu
30	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Mankada kendu
31	<i>Erythrina variegata</i>	Fabaceae	Paladhua
32	<i>Eucalyptus citridora</i>	Myrtaceae	Eucalyptus

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33	<i>Ficus benghalensis</i> L.	Moraceae	Bara
34	<i>Ficus hispida</i> L.f.	Moraceae	Dimiri
35	<i>Ficus religiosa</i> L.	Moraceae	Osta
36	<i>Flacourtia indica</i> (Burm.f.) Merr.	Flacourtiaceae	
37	<i>Gardenia gummifera</i> L.f.	Rubiaceae	Ghurudu
38	<i>Gmelina arborea</i> Roxb.	Verbenaceae	Gambhari
39	<i>Haldina cordifolia</i> (Roxb.) Ridsdale	Rubiaceae	Kuruma
40	<i>Lagerstroemia parviflora</i> Roxb.	Lythraceae	Sidha
41	<i>Limonia acidissima</i> L.	Rutaceae	Kaitha
42	<i>Madhuca longifolia</i> (Koen.) Macbr. var. <i>latifolia</i> (Roxb.) A. Cheval	Sapotaceae	Mahua
43	<i>Mallotus philippensis</i> (L.) Muell.-Arg.	Euphorbiaceae	Kukuma
44	<i>Mangifera indica</i> L.	Anacardiaceae	Amba
45	<i>Melia azedarach</i> L.	Meliaceae	Mahanimba
46	<i>Michelia champaca</i> L.	Magnoliaceae	Champa
47	<i>Mimusops elengii</i> L.	Sapotaceae	Baula
48	<i>Nyctanthes arbor-tristis</i> L.	Nyctanthaceae	Gangasiuli
49	<i>Oroxylum indicum</i> (L.) Vent.	Bignoniaceae	Phanaphana
50	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Amla
51	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	Karanja
52	<i>Polyalthia longifolia</i>	Annonaceae	Debadaru
53	<i>Pterospermum acerifolium</i>	Malvaceae	Muchukunda
54	<i>Schleichera oleosa</i> (Lour.) Oken	Sapindaceae	Kusuma
55	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	Bhalia
56	<i>Shorea robusta</i> Gaertn.f.	Dipterocarpaceae	Sal
57	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Genduli
58	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Jamun
59	<i>Tamarindus indica</i>	Fabaceae	Tentuli
60	<i>Tectona grandis</i>	Verbenaceae	Saguan
61	<i>Terminalia alata</i> Heyne ex Roth	Combretaceae	Asana
62	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Combretaceae	Arjuna
63	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Bahada
64	<i>Terminalia catappa</i> L.	Combretaceae	Desi badam
65	<i>Terminalia chebula</i> Retz.	Combretaceae	Harida
66	<i>Trema orientalis</i>	Cannabaceae	Kharkas
67	<i>Ziziphus jujuba</i> (Retz.) Willd.	Bhamnaceae	Barakoli

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Herbs			
1	<i>Abelmoschus manihot</i> (L.) Medic.	Malvaceae	Banabhendi
2	<i>Acalypha indica</i> L.	Euphorbiaceae	Indramaris
3	<i>Alternanthera sessilis</i> (L.) R.Br.	Amaranthaceae	Madaranga saga
4	<i>Achyranthes aspera</i> L.	Amaranthaceae	Apamaranga
5	<i>Aerva lanata</i> (L.) Juss. Ex Schultes	Amaranthaceae	Torania
6	<i>Ageratum conyzoides</i> L.	Asteraceae	Pokasungha
7	<i>Amaranthus viridis</i> L.	Amaranthaceae	
8	<i>Amaranthus spinosus</i>	Amaranthaceae	Kanta leutia
9	<i>Andrographis paniculata</i> (Burm.f.) Wall.	Acanthaceae	Bhuin neem
10	<i>Argemone mexicana</i> L.	Papaveraceae	Agara
11	<i>Barleria cristata</i> L.	Acanthaceae	Daskerenda
12	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Puruni
13	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Thalakudi
14	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Poaceae	Guguchia
15	<i>Cleome viscosa</i> L.	Capparaceae	Bana sorish
16	<i>Colocasia esculenta</i> (L.) Schott	Araceae	Banasaru
17	<i>Commelina benghalensis</i> L.	Commelinaceae	Kanasiri
18	<i>Costus speciosus</i> (Koenig) Sm.	Costaceae	Keu
19	<i>Crotalaria pallida</i> Heyne ex Roth	Fabaceae	
20	<i>Curcuma pseudomontana</i> Graham	Zingiberaceae	Banahaladi
21	<i>Cyperus rotundus</i> L.	Cyperaceae	Mutha
22	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	Bhrungaraja
23	<i>Elephantopus scaber</i> L.	Asteraceae	Mayurchulia
24	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Ghasa
25	<i>Eragrostis ciliaris</i> (L.) R.Br.	Poaceae	Ghasa
26	<i>Eusteralis stellata</i> (Lour.) Panig. Var. <i>roxburghiana</i> (Kern) Bennet & Razada	Lamiaceae	Iswarajata
27	<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	Jyotismati
28	<i>Evolvulus nummularius</i> (L.) L.	Convolvulaceae	Bichamalia
29	<i>Glinus oppositifolius</i> (L.) A. DC.	Molluginaceae	Pitasaga
30	<i>Hygrophilla auriculata</i>	Acanthaceae	Koilekha
31	<i>Justicia glauca</i> Rottl.	Acanthaceae	
32	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Gayasa
33	<i>Mimosa pudica</i>	Mimaceae	Lajakuli

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Site Specific Wildlife Conservation Plan for Kalarangiatla Chromite Mine at Kalarangiatla under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

34	<i>Ocimum americanum</i> L.	Lamiaceae	Banatulasi
35	<i>Ocimum canum</i> Sims	Lamiaceae	Sree tulasi
36	<i>Oldenlandia corymbosa</i> L.	Rubiaceae	Gharapudia
37	<i>Orthosiphon rubicundus</i> (D.Don) Benth.	Lamiaceae	
38	<i>Oxalis corniculata</i> L.	Oxalidaceae	Ambiliti
39	<i>Phyllanthus amarus</i> Schum. & Thonn.	Euphorbiaceae	Badi anala
40	<i>Phyllanthus urinaria</i> L.	Euphorbiaceae	Badi anala
41	<i>Phyllanthus virgatus</i> Forst. F.	Euphorbiaceae	Badi anala
42	<i>Rauvolfia tetraphylla</i>	Apocyanaceae	Patalagaruda
43	<i>Rungia pectinata</i> (L.) Nees	Acanthaceae	Sankhasaga
44	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Badijustimadhu
45	<i>Sida acuta</i> Burm.f.	Malvaceae	Bajramuli
46	<i>Sida cordata</i> (Burm.f.) Borssum	Malvaceae	Brhmanajhatia
47	<i>Solanum virginianum</i> L.	Solanaceae	Ankaranti
48	<i>Sphaerathus indicus</i>	Rubiaceae	Bhuin Kadamba
49	<i>Tridax procumbens</i> L.	Asteraceae	Bisayakarani
50	<i>Uraria lagopodioides</i> (L.) Desv. ex. DC.	Fabaceae	Krushanaprani
51	<i>Vanda tessellata</i> (Roxb.) Hook.	Orchidaceae	Rasna
52	<i>Vetiveria zizanioides</i> (L.) Nash.	Poaceae	Bena
53	<i>Zingiber</i> sp.	Zingiberaceae	Banaada
Shurbs			
1	<i>Agave americana</i>	Agavaceae	Murga
2	<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	Arakha
3	<i>Clerodendrum viscosum</i> Vent	Verbenaceae	Nagari
4	<i>Clerodendrum serratum</i> (L.) Moon	Verbenaceae	Samarkana
5	<i>Datura metel</i> L.	Solanaceae	Dudura
6	<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	Salapni
7	<i>Desmodium pulchellum</i> (L.) Benth.	Fabaceae	Masaparni
8	<i>Euphorbia nerifolia</i> auct. non L.	Euphorbiaceae	Trikon siju
9	<i>Flemingia chappar</i> Buch.-Ham.	Fabaceae	Ranikathi
10	<i>Helicteres isora</i> L.	Sterculiaceae	Modimodica
11	<i>Hibiscus rosa-sinensis</i>	Malvaceae	Mandara
12	<i>Ipomoea carnea</i> Jacq.	Convolvulaceae	Ammari
13	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Nalibaigaba
14	<i>Justicia adhatoda</i>	Acanthaceae	Basanga

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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalarangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

15	<i>Lantana camara</i> L.	Verbenaceae	Nagairi
16	<i>Lawsonia inermis</i> L.	Lythraceae	Manjuati
17	<i>Nerium oleander</i>	Apocyanaceae	Kanlar
18	<i>Opuntia stricta</i> (Haw.)	Cactaceae	Nagaphani
19	<i>Pavetta tomentosa</i> Roxb. Ex. Sm.	Rubiaceae	Kukurdanti
20	<i>Phoenix acaulis</i> Roxb. Ex Buch.-Ham.	Arecaceae	Khajuri
21	<i>Phyllanthus reticulatus</i> Poir	Euphorbiaceae	Jajanga
22	<i>Ricinus communis</i>	Euphorbiaceae	Gaba
23	<i>Vitex nigundo</i>	Verbenaceae	Begunia
24	<i>Woodfordia fruticosa</i> (L.) Kurz	Lythraceae	Dhataki
25	<i>Ziziphus zuzuba</i> (L.) Mill.	Rhamnaceae	Barkoli
Climber			
1	<i>Abrus precatorius</i>	Faceae	Kaincha
2	<i>Aristolochia indica</i>	Aristolochiaceae	Panairi
3	<i>Asparagus racemosus</i> Willd.	Liliaceae	Satabari
4	<i>Atylosia scrabaeoides</i> (L.) Benth.	Fabaceae	Banakolatha
5	<i>Bauhinia vahlii</i> Wight & Arn.	Caesalpinaceae	Siali
6	<i>Butea parviflora</i> Roxb.	Fabaceae	Lata palas
7	<i>Clitoria ternatea</i> L.	Fabaceae	Aparajita
8	<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpinaceae	Gila
9	<i>Celastrus paniculata</i> Willd.	Celastraceae	Pingu
10	<i>Cissampelos pareira</i> L.	Menispermaceae	Akanabindhi
11	<i>Cissus quadrangularis</i> L.	Vitiaceae	Hadajoda
12	<i>Clerodendrum phlomidis</i>	Verbanaceae	Donkari
13	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Nirmuli
14	<i>Cryptolepis buechananii</i> Roem. & Schultes	Periplocaceae	Gopakanhu
15	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	Pita alu
16	<i>Dioscorea pentaphylla</i> L.	Dioscoreaceae	Air alu
17	<i>Dioscorea wallichii</i> Hook.f.	Dioscoreaceae	Pita alu
18	<i>Hemidesmus indicus</i> (L.) R.Br.	Periplocaceae	Anantamool
19	<i>Ipomoea herderifolia</i> L.	Convolvulaceae	Scarlet morning glory
20	<i>Jasminum arborescens</i> Roxb.	Oleaceae	Banamalli
21	<i>Luffa acutangula</i> (L.) Roxb var. amara	Cucurbitaceae	Pitatarada
22	<i>Mucuna puriens</i>	Fabaceae	Baidonka
23	<i>Pergularia daemia</i> (Forssk.) Chiov.	Asclepiadaceae	Uturuli

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24	<i>Scindapsus officinalis</i> (Roxb.) Schott	Araceae	Gajapippali
25	<i>Smilax zeylanica</i> L.	Smilacaceae	Muturi
26	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook.f. & Thoms.	Menispermaceae	Guluchi
27	<i>Tragia involucrate</i> L.	Euphorbiaceae	Bichhuati
28	<i>Tylophora indica</i> (Burm.f.) Merr.	Asclepiadaceae	Anantamool
Grass			
1	<i>Bambusa nutans</i>	Poaceae	Baunsa
2	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Duba
3	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Poaceae	Guguchia
4	<i>Cyperus rotundus</i>	Poaceae	Mutha
5	<i>Dendrocalamus strictus</i>	Poaceae	Salia Baunsa
6	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Ghasa(Kodua)
7	<i>Eragrostis ciliaris</i> (L.) R.Br.	Poaceae	Ghasa
8	<i>Pennisetum pedicellatum</i>	Poaceae	Dinanath grass
9	<i>Saccharum munja</i>	Poaceae	Khari
10	<i>Saccharum spontaneum</i>	Poaceae	Kasatandi
11	<i>Vetiveria zizanioides</i> (L.) Nash.	Poaceae	Bena
Ferns			
1.	<i>Athyrium filix femina</i>	Polypodiaceae	Fern common
2.	<i>Adiantum incisum</i> Forssk.	Adiantaceae	--
3.	<i>Adiantum philippense</i> L.	Adiantaceae	--
4.	<i>Dryopteris</i> sp.	Dryopteridaceae	--
5.	<i>Lygodium flexuosum</i> (L.) Sw.	Lygodiaceae	Indrajai
6.	<i>Marsilea minuta</i> L.	Marsileaceae	Sunsunia
7.	<i>Sellaginella</i> sps	Sellaginellaceae	Sanjibani

Table 13 Flora (Buffer zone)

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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatta under Sukinda Tahasil dist. Jaipur by M/s Facor Ltd.

24	<i>Scindapsus officinalis</i> (Roxb.) Schott	Araceae	Gajapippali
25	<i>Smilax zeylanica</i> L.	Smilacaceae	Muturi
26	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook.f. & Thoms.	Menispermaceae	Guluchi
27	<i>Tragia involucrate</i> L.	Euphorbiaceae	Bichhuati
28	<i>Tylophora indica</i> (Burm.f.) Merr.	Asclepiadaceae	Anantamool
Grass			
1	<i>Bambusa nutans</i>	Poaceae	Baunsa
2	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Duba
3	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Poaceae	Guguchia
4	<i>Cyperus rotundus</i>	Poaceae	Mutha
5	<i>Dendrocalamus strictus</i>	Poaceae	Salia Baunsa
6	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Ghasa(Kodua)
7	<i>Eragrostis ciliaris</i> (L.) R.Br.	Poaceae	Ghasa
8	<i>Pennisetum pedicellatum</i>	Poaceae	Dinanath grass
9	<i>Saccharum munja</i>	Poaceae	Khari
10	<i>Saccharum spontaneum</i>	Poaceae	Kasatandi
11	<i>Vetiveria zizanioides</i> (L.) Nash.	Poaceae	Bena
Ferns			
1.	<i>Athyrium filix femina</i>	Polypodiaceae	Fern common
2.	<i>Adiantum incisum</i> Forssk.	Adiantaceae	--
3.	<i>Adiantum philippense</i> L.	Adiantaceae	--
4.	<i>Dryopteris</i> sp.	Dryopteridaceae	--
5.	<i>Lygodium flexuosum</i> (L.) Sw.	Lygodiaceae	Indrajai
6.	<i>Marsilea minuta</i> L.	Marsileaceae	Sunsunia
7.	<i>Selaginella</i> sps	Sellaginellaceae	Sanjibani

Table 13 Flora (Buffer zone)

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2.5.3 Fauna (Core zone)

Sl. No	Common Name	Scientific Name	Conservation status
Mammal			
1.	Common house rat	<i>Rattus rattus</i>	Sch. V
2.	Common Mongoose	<i>Herpestes edwardsi</i>	Sch. II
3.	Five-striped Palm Squirrel	<i>Funambulus pennanti</i>	Sch. IV
4.	Jackal	<i>Canis aureus</i>	Sch. II
5.	Little Indian Field Mice	<i>Mus musculus</i>	Sch. V
Birds			
1.	Cattle Egret	<i>Bubulcus ibis</i>	Sch. IV
2.	Common Crow	<i>Corvus brachyrhynchos</i>	Sch. V
3.	Common Periah kite	<i>Milvismigrans</i>	----
4.	Drongo	<i>Dicrurus adsimilis</i>	Sch. IV
5.	Grey Partridge	<i>Francolinus pondicerianus</i>	Sch. IV
6.	Owl	<i>Strix Species</i>	Sch IV.
Reptiles			
1.	Bronze-back Tree snake	<i>Dendrelaphis tristis</i>	Sch. IV
2.	Buff-striped Keel back	<i>Amphiesma stolatum</i>	Sch. IV
3.	Chiti	<i>Bungarus caeruleus,</i>	
4.	Common Indian Rat Snake	<i>Ptyas mucosus</i>	Sch. II (Part-2)
5.	Eastern Bronze Skink	<i>Eutropis macularis</i>	----
6.	Naga	<i>Naja naja</i>	----
Amphibians			
7.	Common Indian Toad	<i>Duttaphrynus melanostictus</i>	-----
8.	Common Indian Tree Frog	<i>Polypedates maculatus</i>	----
9.	Narrow-mouthed Frog	<i>Microhyla ornate</i>	---

Table 14 Fauna (Core Zone)

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2.5.4 Fauna (Buffer zone)

Sl No	Common Name	Scientific Name	Conservation Status
Mammal			
1	Common house rat	<i>Rattus rattus</i>	Sch. V
2	Common Langur	<i>Presbytis entellus</i>	Sch. II
3	Common Mongoose	<i>Herpestes edwardsii</i>	Sch. II
4	Common Palm Civet	<i>Paradoxurus hermaphroditus</i>	Sch. II
5	Five-striped Palm Squirrel	<i>Funambulus pennantii</i>	Sch. IV
6	Hyena	<i>Hyaena hyaena</i>	Sch. III
7	Indian Elephant	<i>Elephas maximus</i>	Sch. I
8	Indian Field Mouse	<i>Mus booduga</i>	Sch. V
9	Indian Fox	<i>Vulpes bengalensis</i>	Sch. II
10	Indian hare	<i>Lepus nigricollis</i>	Sch. IV
11	Indian Pangolin	<i>Manis crassicaudata</i>	Sch-I
12	Indian Porcupine	<i>Hystrix indica</i>	Sch. IV
13	Jackal	<i>Canis aureus</i>	Sch. II
14	Jungle Cat	<i>Felis chaus</i>	Sch. II
15	Leopard	<i>Panthera pardus</i>	Sch. I
16	Little Indian Field Mice	<i>Mus booduga</i>	Sch. V
17	Mouse deer	<i>Moschiola indica</i>	Sch. I
18	Ratel or Honey Badger	<i>Mellivora capensis</i>	Sch. I
19	Rhesus Monkey	<i>Macaca mulata</i>	Sch. II
20	Sloth Bear	<i>Melursus ursinus</i>	Sch. I
21	Wild Boar	<i>Sus scrofa</i>	Sch. III
Birds			
1	Alexandrine Parakeet	<i>Psittacula eupatria</i>	Sch. IV
2	Ashy-crowned Sparrow-lark	<i>Eremopterix grisea</i>	Sch. IV
3	Asian Koel	<i>Eudynamis scolopacea</i>	Sch. IV
4	Asian Open bill	<i>Anastomus oscitans</i>	Sch. IV
5	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Sch. IV
6	Black Drongo	<i>Dicrurus macrocercus</i>	Sch. IV
7	Black Kite	<i>Milvus migrans</i>	Sch. IV
8	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	Sch. IV
9	Black-headed Oriole	<i>Oriolus xanthornus</i>	Sch. IV
10	Black-shouldered Kite	<i>Elanus caeruleus</i>	Sch. IV
11	Blue Rock Pigeon	<i>Columba livia</i>	Sch. IV

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12	Blue-tailed Bee-eater	<i>Merops philippinus</i>	Sch. IV
13	Brahminy Myna	<i>Sturnus pagodarum</i>	Sch. IV
14	Bronze-winged Jacana	<i>Metopidius indicus</i>	Sch. IV
15	Brown Shrike	<i>Lanius cristatus</i>	Sch. IV
16	Brown-headed Barbet	<i>Megalaima zeylanica</i>	Sch. IV
17	Cattle Egret	<i>Bubulcus ibis</i>	Sch. IV
18	Common Crow	<i>Corvus splendens</i>	Sch. V
19	Common Hoopoe	<i>Upupa epops</i>	Sch. IV
20	Common Indian Nightjar	<i>Caprimulgus asiaticus</i>	Sch. IV
21	Common Kingfisher	<i>Alcedo atthis</i>	Sch. IV
22	Common Mynah	<i>Acridotheres tristis</i>	Sch. IV
23	Coppersmith Barbet	<i>Megalaima haemacephala</i>	Sch. IV
24	Crested Serpent Eagle	<i>Spilornis cheela</i>	Sch. IV
25	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Sch. IV
26	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Sch. IV
27	Grey Partridge	<i>Francolinus pondicerianus</i>	Sch. IV
28	House Sparrow	<i>Passer domesticus</i>	Sch. IV
29	House Swift	<i>Apus affinis</i>	Sch. IV
30	Indian Cuckoo / Brainfever Bird	<i>Hierococcyx varius</i>	Sch. IV
31	Indian Jungle Nightjar	<i>Caprimulgus indicus</i>	Sch. IV
32	Indian Roller	<i>Coracias benghalensis</i>	Sch. IV
33	Jungle Babbler		Sch. IV
34	Jungle Bush Quail		Sch. IV
35	Jungle Crow	<i>C. marorrhynchus</i>	Sch. IV
36	Jungle Myna	<i>Acridotheres fuscus</i>	Sch. IV
37	Large Cuckoo Shrike	<i>Coracina macei</i>	Sch. IV
38	Laughing Dove	<i>Streptopelia senegalensis</i>	Sch. IV
39	Lesser Golden-backed Woodpecker	<i>Dinopium benghalense</i>	Sch. IV
40	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	Sch. IV
41	Lesser Whistling-Duck	<i>Dendrocygna javanica</i>	Sch. IV
42	Little Cormorant	<i>Phalacrocorax niger</i>	Sch. IV
43	Little Egret	<i>Egretta garzetta</i>	Sch. IV
44	Oriental Honey-Buzzard	<i>Pernis ptilorhynchus</i>	Sch. IV
45	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	Sch. IV
46	Paddy field Pipit	<i>Anthus rufulus</i>	Sch. IV

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47	Pea fowl	<i>Pavo cristatus</i>	Sch. I
48	Pied Crested Cuckoo	<i>Clamator jacobinus</i>	Sch. IV
49	Pied Starling	<i>Sturnus contra</i>	Sch. IV
50	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	Sch. IV
51	Pond Heron	<i>Ardeola grayii</i>	Sch. IV
52	Red Jungle Fowl	<i>Gallus gallus</i>	Sch. IV
53	Red-vent Bulbul	<i>Pycnonotus cafer</i>	Sch. IV
54	Red-wattled Lapwing	<i>Vanellus indicus</i>	Sch. IV
55	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	Sch. IV
56	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Sch. IV
57	Rufous Tree pie	<i>Dendrocitta vagabunda</i>	Sch. IV
58	Scarlet Minivet	<i>Pericrocotus flammeus</i>	Sch. IV
59	Shikra	<i>Accipiter badius</i>	Sch. IV
60	Small Bee-eater	<i>Merops orientalis</i>	Sch. IV
61	Spotted Dove	<i>Streptopelia chinensis</i>	Sch. IV
62	Spotted Owlet	<i>Athene blewitti</i>	Sch. I
63	Tailor Bird	<i>Orthotomus sutorius</i>	Sch. IV
64	White Breasted Kingfisher	<i>Halcyon smyrnensis</i>	Sch. IV
65	White-bellied Drongo	<i>Dicrurus caerulescens</i>	Sch. IV
66	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Sch. IV
67	White-eyed Buzzard	<i>Butastur teesa</i>	Sch. IV
68	Yellow-legged Button Quail	<i>Turnix tanki</i>	Sch. IV
69	Yellow-legged Green Pigeon	<i>Treron phoenicoptera</i>	Sch. IV
Reptiles			
1	Asian House Gecko	<i>Hemidactylus frenatus</i>	-----
2	Bark Gecko	<i>Hemidactylus leschenaultii</i>	-----
3	Bengal Monitor Lizard	<i>Varanus benghalensis</i>	Sch. I
4	Binocellate Cobra	<i>Naja naja</i>	Sch. II (Part-2)
5	Brahminy Snake	<i>Ramphotyphlops braminus</i>	Sch. IV
6	Bronze back Tree snake	<i>Dendrelaphis tristis</i>	Sch. IV
7	Buff-striped Keel back	<i>Amphiesma stolatum</i>	Sch. IV
8	Checkered Keel back	<i>Xenochrophis piscator</i>	Sch. II (Part-2)
9	Common Brahminy SKink	<i>Eutropis carinata</i>	----
10	Common Garden Lizard	<i>Calotes versicolor</i>	-----
11	Common Indian Rat Snake	<i>Ptyas mucosus</i>	Sch. II (Part-2)

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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatla under Sukinda Tahasil dist. Jaipur by M/s Facor Ltd.

12	Common Wolf Snake	<i>Lycodon aulicus</i>	Sch. IV
13	Eastern Bronze Skink	<i>Eutropis macularia</i>	----
14	Fan-throated Lizard	<i>Sitana ponticeriana</i>	----
15	Indian Gamma/ Common Cat Snake	<i>Boiga trigonata</i>	Sch. IV
16	Indian Rock Agama	<i>Psammophilus blanfordianus</i>	-----
17	Python	<i>Python molurus</i>	Sch. I
18	Russel's Viper	<i>Daboia russelii</i>	Sch. II (Part-2)
19	Spotted House Gecko	<i>Hemidactylus brookii</i>	Not Listed
20	Yellow Monitor Lizard	<i>Varanus flavescens</i>	Sch. I
Amphibians			
1	Common Indian Toad	<i>Bufo melanostictus</i>	---
2	Common Indian Tree frog	<i>Polypedates maculatus</i>	----
3	Indian Bull Frog	<i>Hoplobatrachus tigerinus</i>	Sch. IV
4	Indian Skittering Frog	<i>Euphlyctis cyanophlyctis</i>	-----
5	Jerdon's Bull Frog	<i>Hoplobatrachus crassus</i>	Sch. IV
6	Narrow-mouthed Frog	<i>Microhyla ornate</i>	----
7	Paddy-field Frog	<i>Rana limnocharis</i>	Sch. IV
8	Painted Ballon Frog	<i>Kaloula taprobanica</i>	-----
Fishes			
1	American rui	<i>Cyprinus carpio (Linnaeus)</i>	Cyprinidae
2	Balia	<i>Wallago attu</i>	Siluridae
3	Bata	<i>Osteobrama cotio cotio (Hamilton)</i>	Cyprinidae
4	Bhakur	<i>Catla catla</i>	Cyprinidae
5	Chanda	<i>Clarius batracus (Linnaeus)</i>	Cyprinidae
6	Chang	<i>Anabas testudineus (Bloch)</i>	Channidae
7	Kalbans	<i>Puntius saphori (Hamilton)</i>	Cyprinidae
8	Koi	<i>Anabas testudineus (Bloch)</i>	Anabantidae
9	Lata	<i>Channa punctatus (Bloch)</i>	Channidae
10	Magur	<i>Channa striatus (Bloch)</i>	Clariidae
11	Mrigal	<i>Cirrhinus mrigala (Hamilton)</i>	Cyprinidae
12	Punthi	<i>Heteropneustes fossilis (Bloch)</i>	Cyprinidae
13	Rohu	<i>Labeo rohita (Hamilton)</i>	Cyprinidae
14	Shol	<i>Channa punctatus (Bloch)</i>	Channidae
15	Singi	<i>Channa orientalis (Schneider)</i>	Heteropneusidae

Table 15 Fauna (Buffer zone)

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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

12	Common Wolf Snake	<i>Lycodon aulicus</i>	Sch. IV
13	Eastern Bronze Skink	<i>Eutropis macularia</i>	----
14	Fan-throated Lizard	<i>Sitana ponticeriana</i>	----
15	Indian Gamma/ Common Cat Snake	<i>Baiga trigonata</i>	Sch. IV
16	Indian Rock Agama	<i>Psammophilus blanfordianus</i>	----
17	Python	<i>Python molurus</i>	Sch. I
18	Russel's Viper	<i>Daboia russelii</i>	Sch. II (Part-2)
19	Spotted House Gecko	<i>Hemidactylus brookii</i>	Not Listed
20	Yellow Monitor Lizard	<i>Varanus flavescens</i>	Sch. I
Amphibians			
1	Common Indian Toad	<i>Bufo melanostictus</i>	---
2	Common Indian Tree frog	<i>Polypedates maculatus</i>	----
3	Indian Bull Frog	<i>Hoplobatrachus tigerinus</i>	Sch. IV
4	Indian Skittering Frog	<i>Euphyctis cyanophlyctis</i>	-----
5	Jerdon's Bull Frog	<i>Hoplobatrachus crassus</i>	Sch. IV
6	Narrow-mouthed Frog	<i>Microhyla ornate</i>	----
7	Paddy-field Frog	<i>Rana limnocharis</i>	Sch. IV
8	Painted Ballon Frog	<i>Kaloula taprobanica</i>	-----
Fishes			
1	American rui	<i>Cyprinus carpio (Linnaeus)</i>	Cyprinidae
2	Balia	<i>Wallago attu</i>	Siluridae
3	Bata	<i>Osteobrama cotio cotio (Hamilton)</i>	Cyprinidae
4	Bhakur	<i>Catla catla</i>	Cyprinidae
5	Chanda	<i>Clarius batracus (Linnaeus)</i>	Cyprinidae
6	Chang	<i>Anabas testudineus (Bloch)</i>	Channidae
7	Kalbans	<i>Puntius saphori (Hamilton)</i>	Cyprinidae
8	Koi	<i>Anabas testudineus (Bloch)</i>	Anabantidae
9	Lata	<i>Channa punctatus (Bloch)</i>	Channidae
10	Magur	<i>Channa striatus (Bloch)</i>	Clariidae
11	Mrigal	<i>Cirrhinus mrigala (Hamilton)</i>	Cyprinidae
12	Punthi	<i>Heteropneustes fossilis (Bloch)</i>	Cyprinidae
13	Rohu	<i>Labeo rohita (Hamilton)</i>	Cyprinidae
14	Shol	<i>Channa punctatus (Bloch)</i>	Channidae
15	Singl	<i>Channa orientalis (Schneider)</i>	Heteropneusidae

Table 15 Fauna (Buffer zone)

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2.5.5 Status of Rare, Endangered & Threatened Species:

There is no Rare, Endangered & Threatened (RET) species (both Flora & fauna) in the zone of impact. The Schedule-I animals as per Wildlife Protection Act, 1972 has been indicated under Para 2.5.3 & 2.5.4 above. These species are considered to be threatened under the Wildlife (Protection) Act, 1972.

2.6 Forests within Zone of Impact:

The forests of the study area as per Champion & Seth Classification belong to 3B Northern Tropical moist mixed deciduous forests and 5B Northern Tropical dry mixed deciduous Forests. The common associates are Sal with *Terminalia tomentosa*, *Lagerstomia parviflora*, *Gmelina arboria*, *Anogeisus latifolia*, *Bridelia retusa* and *Pterocarpus marsupium*. The middle story contains *Careya arborea*, *Oogenia oojensis*, *Syzygium cumini*, *Dyospyros melanoxylon*, *Helecteris ixora*, *Indigofera pulchra* and *Woodfordia fruticosa*, *Clerodendron* are commonly found as under growth. Common climbers seen are baubinia, Smilax, Butea and Combretum decandrum. Presence of *Cleistanthus collinus*, *Chloroxylon swietenia*, and *Phyllanthus emblica* indicates forest marching to words a drier tract. The forest floor which is quite open (density less than 30%) is now invaded by Eupatorium & Dinanath grass.

The Forests within Zone of Impact is as follows.

Sl No	Name of Forest Block	Total area of the Forest Block in Ha.	Area coming within the buffer zone (ZOI).	Forest Division it belongs.
1	Daitary DPF	10386.36	5368.00	Cuttack
2	Mahagiri DPF	12040.55	7895.00	Cuttack
3	Ranjagarh RF	13822.10	3954.00	Dhenkanal
4	Birasal RF	1362.90	1362.90	Dhenkanal
5	Dhalparah RF	372.30	372.30	Dhenkanal
6	Tipilei RF	947.00	75.00	Dhenkanal
7	Maulabhanja RF	1367.48	125.00	Dhenkanal
8	Daitary DPF	10386.36	102.39	Keonjhar
Total Area		50685.05	19254.59	

Table 16 Forests within the ZOI

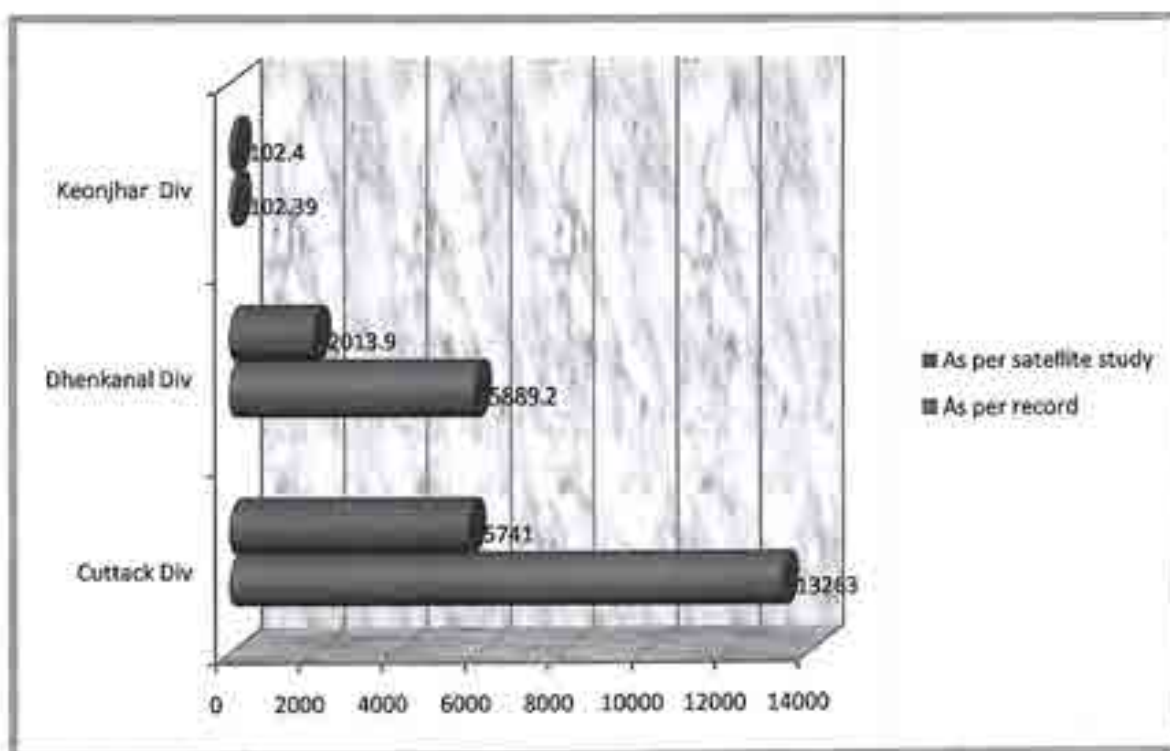
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Total Forest area within ZOI

Total Forest area within ZOI		
Name of Division	Area in ha as per Records	Area as per Satellite study (in ha)
Cuttack Div	13263	5741.0
Dhenkanal Div	5889.2	2013.9
Keonjhar Div	102.39	102.40
Total	19254.59	7857.3

Table 17 Total forest area within ZOI



2.6.1 Forest Crop Composition:

The forest in Zone of Impact comes under the major group Tropical Forest on the basis of "Champion and Seth revised classification". Three Varieties of sub-type 3C/C_{2b} (Moist peninsular Sal) occur in different blocks and compartments.

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3C/C2e(ii) – Moist Peninsular Low level Sal:

In these forests the Characteristic associates of Sal in over wood are *Pterocarpus marsupium* and *Terminalia tomentosa* with *Emblia officinalis* in middle story. Natural regeneration is satisfactory. Quality Class I/II.

5B/C1c – Dry Peninsular Sal Forest:

Dry peninsular Sal forests cover the largest area of this zone and it is found extensively in all most all blocks. The entire block comes under this Sub-type except its steep slopes and ridges, where miscellaneous crop exists. The low moisture retaining capacity of the soil and drier condition prevailed by repeated annual ground fire stabilizes the forest of this Sub-type. Sal is the principal species, which often constituting about 65 % and the quality varies from Q-III to Q-IV. Regeneration of Sal is inadequate and high percentage of unsoundness of trees of all girth classes is the peculiar feature in this area. This is due to poor soil, continuous annual ground fire. The associates of Sal are *Terminalia tomentosa*, *Terminalia arjuna*, *Pterocarpus marsupium*, *Terminalia belerica*, *Lagerstromia sp*, *Terminalia chebula*, *Adina cardifolia*, *Bridelia retisa*, etc. In the middle story *Emblia*, *Dyospyrus melanoxylon*, *Beutea mosperma*, *Madhuca indica* are noticed.

5B/C2 –Northern Dry Mixed Deciduous Forest:

Northern Dry Mixed Deciduous Forest is scattered throughout the hill tracts having poor humus contain soil. This Type of forest occurs in all most all blocks exist towards the southern part of the Division. The culmination stage of plant succession is noticed in this locality, where the existing Sal crop has been replaced by miscellaneous species owing to excess illicit felling, fire and over grazing. The crop is less open and trees are stunted. The trees remain leafless for a longer period and the forests give a desolate look in summer season. *Dendrocalamus strictus* is seen in these forests.

Sal with *Sterculia urence*, *Linea coromondelica*, *Dalbergia latifolia*, *Acacia chatechu*, *Acacia nilotica* *Buetea monosperma*, *Buchnanian lanzena* are seen in the forest. The ground flora is damaged due to repeated fires and gives an ugly look during summer.


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2.6.2 Present Management System:

The Working Plan of Cuttack Division is under process of revision. The working Plan for Keonjhar WL Division, Anandapur has been approved for the period 2021-22 to 2030-31. The Forests & Working Circle assigned is as follows.

Sl No	Name of Forest Block	Total area of the Forest Block in Ha.	Area coming within the buffer zone (ZOI).	WC assigned	Forest Division it belongs.
1	Daitary DPF	10386.36	5368.00	Imp. WC	Cuttack
2	Mahagiri DPF	12040.55	7895.00	RWC and PI WC	Cuttack
3	Ranjagarh RF	13822.10	3954.00	Eco. RS WC	Dhenkanal
4	Birasal RF	1362.90	1362.90	Eco. RS WC	Dhenkanal
5	Dhalparah RF	372.30	372.30	Eco. RS WC	Dhenkanal
6	Tipilei RF	947.00	75.00	Eco. RS WC	Dhenkanal
7	Maulabhanja RF		125.00	Eco. RS WC	Dhenkanal
8	Daitary DPF	10386.36	102.39	Imp. WC	Keonjhar
Total Area					

Table 18 Forests and working circles assigned

2.7 Wildlife Habitat & Movement Pattern of Mega fauna:

The major animals seen in this buffer zone are mainly Elephant, Wild boar, Deer, Sloth Bear. On interaction with villagers, Forest Staff and other employees in the locality it is noted that in Sukinda Range, there are instances of elephant movement in Mangalpur, Purnapani, Kendudhip, Karadi, Baradi, Mahagiri DPF, Rankia, Koilo, Bamnagar, Kakudai & villages coming South Eastern side of the Project.

Elephants from Balibo RF of Dhenkanal Division come to Barabati RF and then comes to Madhuban- Birighora- Kakudia and go back. Sometimes elephant from Anadapur Wildlife Division enters to study area from North side up to Deogaon & go back. It is also observed that in Khamakshyanagar East Range, the elephant movement is from W-S side to W-N side of the project area passing through Jiridamal-Maulabhanja-Bandhanja-Birasal-Koriapal-Raibole-Kanheipal then back on the same route. Occasional movement is observed in Dhalpara-Saranda-and crossed the Panddara nalla on the boarder of Dhenkanal- Jajpur District. They move to Mahagiri DPF and then to Rabena RF of Anandapur WL division. The movement of animals is depicted on plate no-I. Movements of other animals are also experienced mostly in harvesting time, Collection of mahua flowers&late rainy season.

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2.7.1 Wildlife Scenario:

The project does not form a part of any wildlife Sanctuary, National Park nor any protected area. Daitary DPF is one of the good animal habitats due to its moist nature of vegetation. The nearest Sanctuary is Kapilas at a distance of 31.1 Km towards North- West direction.

2.7.2 Census data on wild life:

The Elephant census has been conducted in the state during 2012, 2015 and 2017. The elephant population during these three censuses in Cuttack, Dhenkanal and Keonjhar WL Division, Anandapur is as follows.

Name of Division	Male	Female	Unknown	Young	Total	Male : Female
Cuttack						
2012	3	9	4	6	22	1:03
2015	12	13	1	9	35	01:01.1
2017	7	17	0	13	37	01:02.4
Dhenkanal						
2012	31	93	3	35	162	1:03
2015	35	90	5	34	164	01:02.6
2017	30	94	15	30	169	01:03.1
Keonjhar WL						
2012	8	21	0	11	40	1: 2.6
2015	11	26	0	12	49	1:2.4
2017	13	27	1	10	51	1: 2.1
Total						
2012	34	102	7	41	184	1:03
2015	47	103	6	43	199	01:02.2
2017	37	111	15	43	206	1:03

Table 19 Wildlife census data

Tiger Census has also been conducted during 2016. The Division wise result as available is as follows.

Sl.No	Name of Division	Tiger				Leopard			
		M	F	C	Total	M	F	C	Total
1	Cuttack	0	0	0	0	0	0	0	0
2	Dhenkanal	0	0	0	0	0	1	0	1
3	Keonjhar WL	1	2	0	3	2	3	0	5

Table 20 Tiger Census data

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2.7.3 Wildlife Corridors:

There are fourteen corridors in the state as listed below. Out of these corridors Maulabhanja - Jiridamali- Anantapur Inter-District corridor is partly coming within the Additional Zone of Impact. The length of corridor is about 6.50 km with a width of 250 to 280m

S/no	Name of the Corridor	Extends over Districts	Name of the Divisions	Length of corridor(km)	Width of corridor(km)	Total area(Sq.km)
1	Badampahar(Mayurbhanj)-Dhobadhobin(Jharkhand) INTERSTATE	Mayurbhanj	Karanjia, Rairangapur	16	0.5 - 1.5	24.3
2	Badampahar(Mayurbhanj)-Karida(Jharkhand) INTERSTATE	Mayurbhanj	Rairangapur	43	0.2 - 2.6	26.09
3	W.Bengal-Deuli-Suliapada(Passage) INTERSTATE	Mayurbhanj, Balasore; (West Bengal)	Baripada	72	0.1 - 0.7	39.5
4	Similipal-Hadagarh-Kuldiha INTER-DISTRICT	Mayurbhanj, Keonjhar, Balasore	Baripada, Balasore WL, Keonjhar WL	41.7	0.7 - 3.5	91.39
5	Telkoi-Pallahara INTER-DISTRICT	Keonjhar; Angul	Keonjhar, Deogarh	30.4	0.2 - 0.6	13.24
6	Karo (Keonjhar)-Karampada (Saranda, Jharkhand) INTERSTATE	Keonjhar, (Jharkhand)	Keonjhar	15	0.3 - 2.3	17.3
7	Maulabhanja Jiridamali-Anantapur INTER-DISTRICT	Dhenkanal	Dhenkanal	6.5	0.25 - 0.28	1.55
8	Kahneljena-Anantapur INTER-DISTRICT	Angul; Dhenkanal	Angul	6.6	0.4 - 1.1	5.22
9	Buguda-Central RF of Nayagarh Divn	Nayagarh	Nagarh	2.6	0.8 - 0.6	0.76
10	Nuagaon-Baruni	Angul	Athmallik	4.5	0.4 - 4.6	20.7
11	Tal-Kholgarh	Sambalpur	Rairakhol	6.3	0.5 - 0.08	4.56
12	Barpahad-Tarava-Kantamal INTER-DISTRICT	Sonpur, Boudh	Subarnapur	24.2	0.38 - 1.5	21.7



Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalarangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

13	Kotagarh-Chandrapur INTER-DISTRICT	Kandhamal, Rayagada	Balliguda, Rayagada	77	2.0 - 22.4	575.4
14	Kariapat-Urladani INTER-DISTRICT	Kandhamal, Rayagada	Kalahandi(S), Kalahandi(N), Rayagada	75	0.2 - 0.5	28.9

Table 21 Wildlife corridors



2.7.3HWC Details (Human- Wildlife Conflict):

Human- Animal Conflict in Sukinda Range of Cuttack Division is moderate but due to Maulabhanja- Jiridamal- Anantapur Corridor being disturbed, the elephant movement is very erratic in Kamakhyanagar East range of Dhenkanal Division. The information on Human- Animal Conflict of Sukinda Range is furnished below.

a) Crop damage:

Crop damage data of Sunkinda Range			
Year	No of cases	Area affected in Acre	Amount paid
2015-16	11	3.30	35000/-
2016-17	0		
2017-18	0		

Table 22 Crop damage data of Sunkinda Range

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b) Animal Death

Sl.No	Name of the Range	Year	No. of Wild Animal Dead
01.	Sukinda	2018-2019	1 no Spotted Deer
02.	Sukinda	2019-2020	1 no Sloth Bear
03.	Sukinda	2020-2021	1 no Female Spotted deer rescued in Serious Injury condition
04.	Sukinda	2020-2021	1 no Dead male Sloth Bear

Table 23 Animal death data of Sukinda Range

2.7.4 Public View on Man Animal Conflict:

Public view is very against occurrence of Human- Animal Conflict. Dhenkanal division is always in limelight for Human- WildlifeConflict. It is very urgently required to reduce Human- Wildlife Conflict in this area.

2.8 Other Projects within ZOI & and their Impact Zone:

2.8.1 Mining Project:

There are 21 Chromite mines in this locality. The list has been provided under Para 2.2.1 above.

2.8.2 Wildlife Conservation Plan approved & in Implementation Stage:

The Wildlife Conservation Plan for following mining projects are in operative stage. These are as follows.

Sl No	Name of Mine	Name of Lessee	Ore	Remark
1	Kamarda Chromite Block	M/s Tata Steel Mining Ltd.	Chromite	Operative
2	Kaliapani Chromite Mine	Balasore Alloys Ltd.	Chromite	Operative
3	Ostapal Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
4	Kalarangiatta Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
5	Mahagiri mines Chromite	M/s IMFA Ltd.	Chromite	Operative
6	Tailangi Chromite Mine	IDC of Odisha Ltd	Chromite	Operative
7	Sukinda Mines (Chromite)	IMFA Ltd	Chromite	Operative
8	Jindal Chromite Mine	Jindal Stainless Ltd.	Chromite	Non-Operative
9	South kaliapani Chromite Mine	OMC Ltd.	Chromite	Operative
10	Kaliapani Chromite Mine	OMC Ltd	Chromite	Operative

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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalarangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

11	Sukrangi Chromite Mine	OMC Ltd	Chromite	Operative
12	Daitari Chromite Mine	OMC Ltd	Iron	Operative
13	Sukinda Chromite Mine	M/s Tata Steel Mining Ltd.	Chromite	Operative

Table 24 Wildlife plans approved

2.9 Interventions implemented by Forest department

The forest department is taking adequate steps for

- I. Improving Habitat,
- II. Extensive Soil & Moisture Conservation measures
- III. Fire Protection measures,
- IV. Steps to reduce Human- Animal Conflict.
- V. Compassionate grant for life & property losses / damaged due to man- animal conflict.
- VI. Extensive awareness program on Forest Fire, Tree planting, Wildlife Conservation and related matters.

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CHAPTER-III PROJECT & ITS PROBABLE IMPACT



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CHAPTER-III

PROJECT & ITS PROBABLE IMPACT

3.0 Project description:

Kalarangiatta Chromite Mining Lease was granted over 23.800 ha for 30 years to M/s Ferro Alloys Corporation Limited on 18.04.2008. The entire lease hold area of 23.800 ha was non forest land and lease has been executed basing on Hal Settlement records. As per Sabik Settlement Records the land is of Forest Kisam "Sal Jungal". The lessee has filed forest diversion proposal and continuing mining operation over the broken up area. The mine is categorized as "A" Fully Mechanized (Opencast)

In the year 2020, Honorable National Company Law Tribunal (NCLT) Cuttack Bench under the provisions of Insolvency and Bankruptcy Code (IBC)- 2016 vide its order dated 30.01.2020 has approved the resolution plan of M/s Sterlite Power Transmission Line Limited (Vedanta Ltd). In pursuant to the said order of NCLT, Cuttack, the Board of Directors of M/s Ferro Alloys Corporation Limited has also been changed with effect from dated 21.09.2020. Consequently the Board of Directors have appointed the nominated owner of the company vide its resolution dated 27.09.2020 in accordance with the statutory provisions.

FACOR has the capacity to produce 65,000 TPA of Charge Chrome / Ferro Chrome and consume 2,50,000 TPA of Chrome Ore at its Plant at Randia in Bhadrak district, Orissa. It has two captive mines at Sukinda valley for excavation of Crome ore at Ostapal Chromite mine and Kalarangiatta Chromite Mine and these mines are at operational stage. This mine i.e. Kalangiatta is under discussion.

3A.Period of lease and date of expiry of lease:

The Lease was granted for 30 years and executed on 18.04.2008. The lease was valid up to 17.04.2038. As per MMDR (Amendment) Act, 2015 the life of the mine is extended up to 50 years i.e. the life is up to 17.04.2058.

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3B. Reserve / Resource:

Mineral Reserves / Resources have been estimated based on the level of exploration as on 31.05.2021. The total estimated reserve is **14.87 Lakh Ton** as furnished below.

Mineral Reserves / Resources available		
Level of Exploration	Quantity in Lakh Ton	Grade Cr ₂ O ₃ %
G1- Detailed exploration	13.24	10-52% Cr ₂ O ₃ %
G2- General Exploration	1.63	10-52% Cr ₂ O ₃ %
G3- Prospecting	--	10-52% Cr ₂ O ₃ %
G4 Reconnaissance	-	10-52% Cr ₂ O ₃ %
Total	14.87	10-52% Cr ₂ O ₃ %

Table 25 Mineral Reserves /Resources available

3C. Present Mining Methods:

At present the opencast mining method is being carried out by removing overburden and side burden by making suitable benching system. The geometry of the benches is kept with 6m height, 10m width and the overall slope 18° in North Side & 23° in all other side. Drains and barriers are constructed along the bench for proper drainage and safety of moving vehicles respectively. Benches are connected with each other with ramps in 1:16 gradient. Haul roads are maintained properly for smooth movement of HEMM. The connecting Haul Roads on the surface level of the lease hold areas are provided with barriers on both sides but in quarry area parapet walls of 1m to 1.5m height have been provided along the free side of the bench. All corners and bends are arranged in such a way that operators / drivers of the vehicles have a clear view of at least 30mt ahead. Sufficient side drains and cross drain are provided to keep the road dry especially in rainy season. Sufficient road signs are also provided to run the vehicle smoothly.

3D. Designed Parameters:

a) Mining Pit:

There is only one mining pit with 240m length, 290m width and 53m depth from surface. During coming plan period the quarry will be expanded in three sides for further depression up to 30m RL to meet the proposed production. The present working depth is 47m RL. During 2021-22, the working depth will be at 44m RL and at the end of plan period i.e. 2022-23 pit limit of 30m RL will be achieved. The ultimate pit limit that can be reached in subsequent plan is 23m RL. The surface level of the pit is 100m RL.

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b) Waste Dump:

There is one OB dump of size 410mx115m covering an area of 4.709 ha. The overburden quantity estimated to be excavated during balance plan period is 5.59 Lac M³. At the north side of the quarry pit, there is earmark space for dumping the waste generated. The total height of the Dump is 35m in two stages. The dump will be expanded towards western direction and the present stock pile area will be moved to the north part of the lease area where already a stock pile area is present. There is sufficient space for accommodating the ore volume. Considering an average daily dispatch of 500 Tonnes, the proposed production will be dispatched in 300 days. There will be no problem for storing of ore.

At the conceptual stage the total dump height will be of 50m consisting of two benches. The overall slope of the dump will be maintained at 28° to 30°. Individual bench slope is to be 37.5°. 2100 nos of Saplings will be planted in the dead faces to arrest soil erosion. Additional 231 m retaining wall will be provided all around toe of the dump to prevent silt from waste dump going out. Garland drains have been provided all around the toe of dump. One settling pond of 1000 M³ capacity is already provided to collect the surface runoff of dump and other areas. Check dams on garland drains provided at suitable intervals to arrest silt on the drains.

c) Use of Top Soil / Mineral waste:

There is no sub grade / top soil dump. The top soil generation during plan period is estimated to be 3200m³. It will be used for plantation within the same year of production.

d) Proposed method of working and integrated mechanization.

Most of the Ore / Overburden will be excavated by shovel- dumper – dozer combination. Since the OB benches in the quarry are generally soft / semi hard in nature, it can be excavated by the excavator directly and no drilling, blasting is required to lift the materials. The rock breaker shall be used wherever any hard materials are encountered to break the material. Dozer is required to clear the haul road and collect the waste materials at one point for ease handling by shovel. The summary of machineries to be deployed in the mine is furnished below.


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Site Specific Wildlife Conservation Plan for Kalaranglatta Chromite Mine at Kalranglatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

Sl No	Type	Size	Quantity	Air Pressure / HP	Performance per shift.
1	Excavator	1.5 M ³	2	349 HP	160-200 Trips / day or 960 – 1200M ³ per day
2	Dumpers (HYVA)	6M ³ / 18T	8	112-125 HP	160-200 Trips / day or 960 -1200 M ³ per day
3	Dozer	BEML D-80	1	200 HP	
4	Wheel Loader	HINDUSTAN 1.5M ³	1	123 HP	150 -200 M ³ /day
5	Light Vehicle	37 HP (3200 rmp)	1		
6	Rock Breaker		1	175 HP	
7	Water sprinkler (1210 TATA make)	6000 Lt	1	112 HP	
8	Dewatering Pumps	130M ³ / Hr	1	127 HP	
		100M ³ / Hr	2	75 HP	

Table 26 Summary of machineries deployed



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e) Bench Geometry:

The bench geometry (Proposed) can be summarized as follows.

Bench Geometry (Proposed)			
Particulars	Parameters	FY 2021-22	FY 2022-23
Bench Geometry	Height in m	7	7
	Width in m	7.5	7.5
	Individual bench slope angle	70°	70°

Table 27 Bench Geometry (Proposed)

f) Drilling & Blasting:

Not required.

g) Minimum and maximum depth of water table based on observations from nearby wells and water bodies Maximum and Minimum depth of Workings.

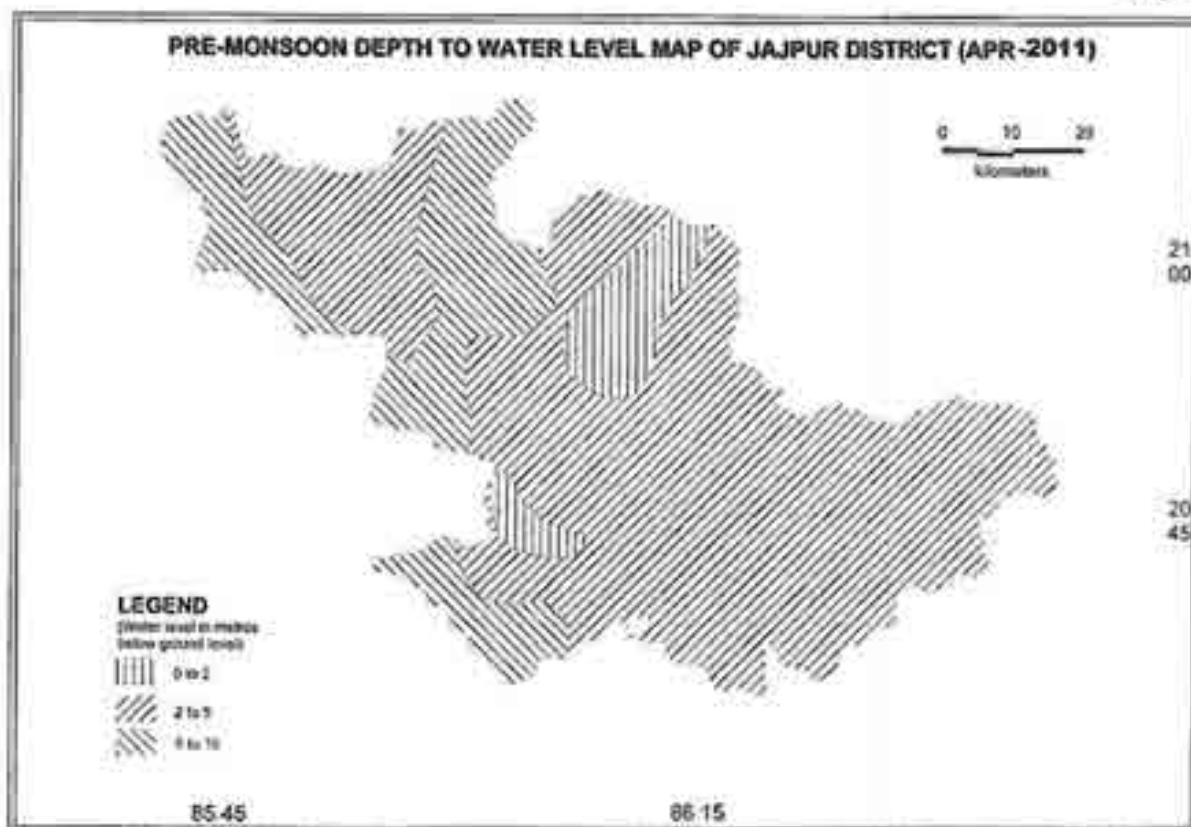
The water table as observed from nearby wells, the water table occurs at 6m BGL during monsoon and in dry months the water table is at 9m BGL. Surface level is 100m RL. As the present working level is 47m RL i.e. 53m BGL, mine has already punctured the water table. The pit bottom that will be achieved during this plan period is 30m RL

The Water Table situation in Sukinda Valley area as mentioned by CGWB is depicted below.


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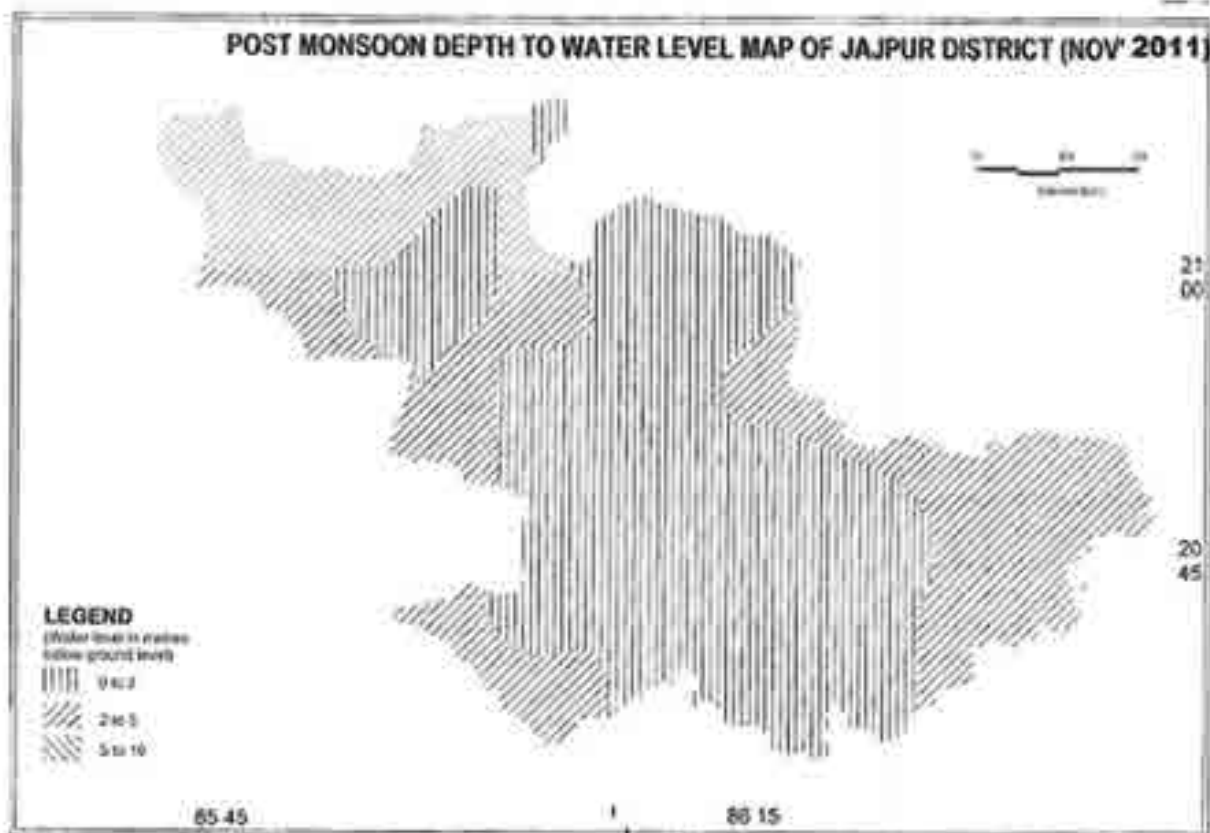
Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.



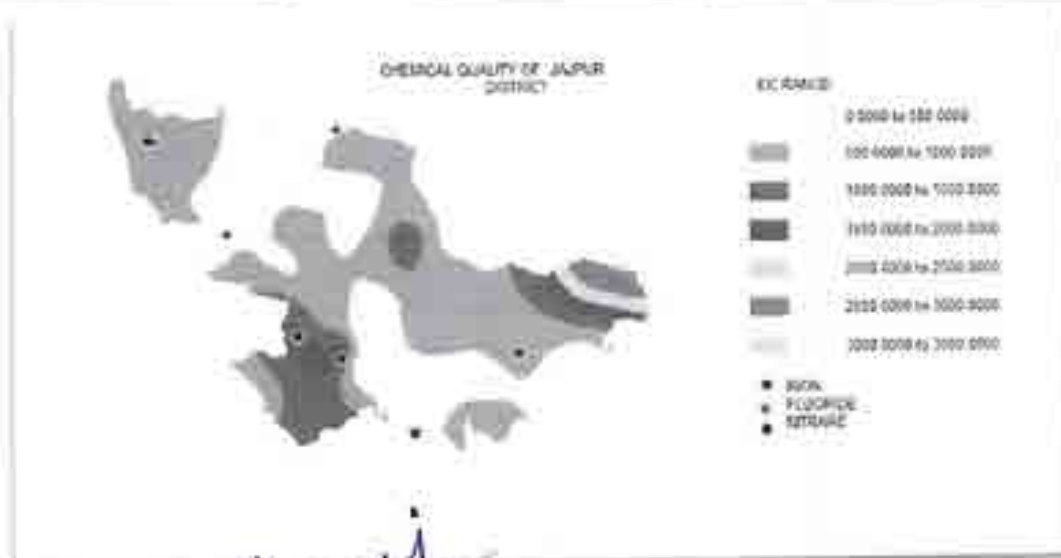
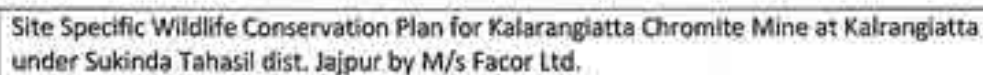
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h) Mine Discharge:

A small sump is provided at the western side of the quarry bottom. All rain water, seepage water will accumulate at the sump. At the quarry bottom the depression will be made for excavation of the chromite ore and part of the said depression will be converted in to sump to store rain water, seepage water and mine discharge. The size of sump will be 30mx20mx2m (approximately). The accumulated water will be pumped out through pipes.

Pumped out water (Mine discharge) varies with the season. During rainy season about 1100 KLD and in dry months about 600 KLD is the mine discharge. About 8 KLD is being obtained from Bore well to meet domestic consumption. The mine discharge water after treatment in the ETP being used for dust suppressing, plantation and provided to villages for agricultural irrigation purpose.

i) Production of Ore / Sub Grade Ore & Management.

The tentative projected production / Top soil/ Mineral reject is furnished below.

Year	Excavation (M ³)	Top Soil (M ³)	OB/ SB/IB (M ³)	Rom			ROM to Waste ratio
				Ore (M ³)	Ore in Tonnes	Mineral Rejects (M ³)	
June/2021-2022	188000	1400	168000	20000	63600	0	1:8.5
2022-23	438000	1800	391000	47000	150000	0	1:8.4
G. Total	626000	3200	559000	67000	213600	0	1:8.4

Table 28 Tentative project production/Top soil/Mineral reject

NB: Bulk density of Ore 1 cum= 3.20 T

j) Haul Road:

Pit roads are no permanent status but changes depending on site of Bench working as the Working / dead bench width is further widened to become a haul road. Opencast working is proposed at deeper level i.e. from 100m RL to 30 m RL. Accordingly the haul roads are designed.

The width of the haul road is not lesser than 3 times width of the largest dumper engaged in mine plus 5 m. In this mine the width is kept at 12m. There is adequate space on either side of the road for drainage and bench. The gradient is 1:16.

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k) End use & Transportation:

The ore is being utilized in Ferro Chrome, Ferro Alloys Plant of FACOR at Bhadrak. All the materials will be transported by Road only from mine to the Plant at Randia of district Bhadrak covering a distance of 115 KM.

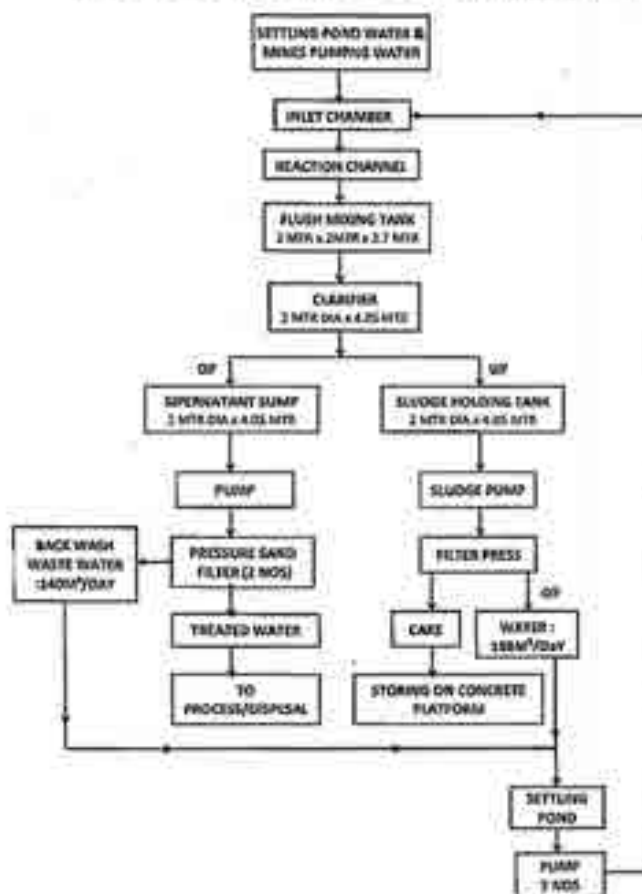
l) Effluent Treatment Plant (ETP):

A large quantity of mine discharge water is being pumped out of the mine / settling pits. Chrome Ore mainly contains trivalent chromium (Cr^{+3}) in process of oxidation small fraction of Cr^{+3} gets oxidized to Cr^{+6} as in Dichromate ($\text{Cr}_2\text{O}_7^{-2}$). This hexavalent chromium is carcinogenic and need to be removed from mine discharge water before any use. The mine discharge water contains 0.2 to 0.4 mg/l against a safe limit of 0.05mg/l for human consumption. An ETP has been established within the Mining Lease area with a capacity of 400KL per hour with technology / design by Kharagpur IIT. All mine discharge is being treated in this ETP which removed hexavalent Chromium, Silt; adjust pH before further use of water. The output parameters are pH-7-8.5, Cr^{+6} <0.01mg/ L, TSS- <10mg /L, Total Cr - <0.2mg/L. The treatment flow chart is furnished below.


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UPSHASU K. I.P. FLOW SHEET OF KALARANGIATTA CHROMITE MINE



m) Socio- Economic Benefits:

The project is providing employment to 233 persons (Direct and Indirect) contractual labour in the Mine and related activities. Besides direct employment many person get indirect employment in transport sector for transporting ore from Mine to Plant at Randia (Bhadrak).

The treated Mine discharge water is being provided to Bhimtangar village for irrigation purpose. The water is mostly used for cultivation of vegetables to an extent of 15-20 Acof land.

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3.1 Project Impact on Flora & Fauna:

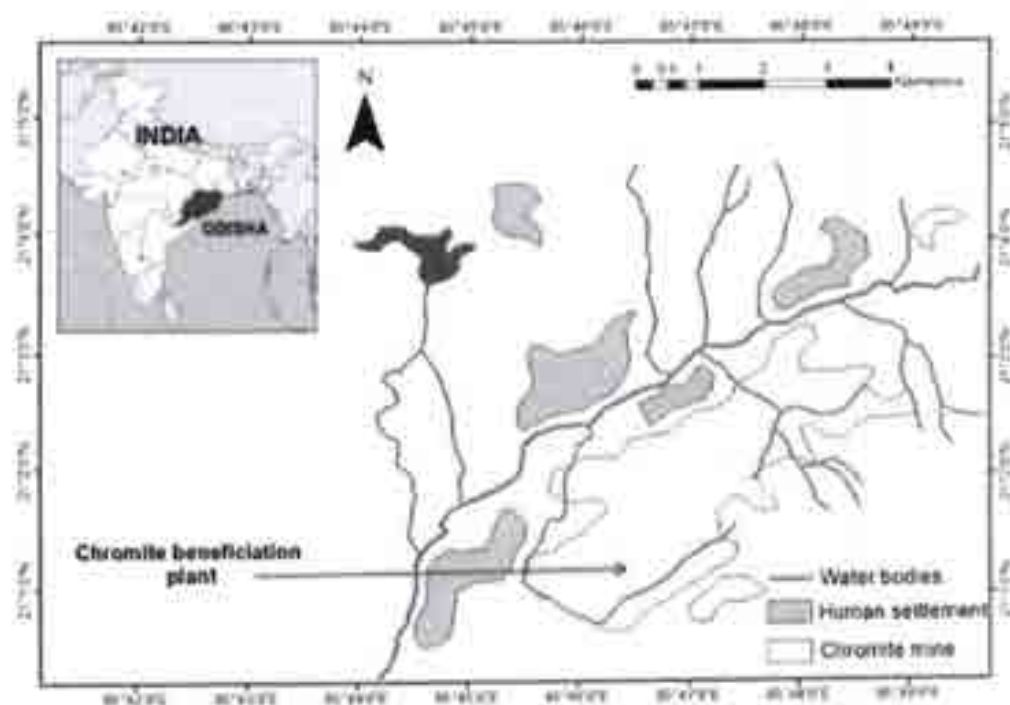
3.1.1 Impact on Soil:

The land surface will be disturbed due to mining. On conceptual stage only two benches will be planted up with native species. Rest of the area will be maintained as water body. Due to flying dusts from road transportation, the soil characters will be changed. Deposit of heavy metals like Nickel, Cobalt on surface of soil (Top layer) will cause soil texture course.

3.1.2 Impact on Water & Water Regime:

Mine discharge water about 600 KLD to 1100 KLD will definitely exert pressure on Water table. The mining excavation has already punctured the water table (91m RL). The present working level is 47m RL.

The mine discharge water contains Cr^{+6} ion which is carcinogenic in nature. It is much relief that the ETP discharge water contains about 0.02mg/L which is much below the CPCB norm. No water is being discharged to outside the mines area except for local irrigation purpose. No irrigation water is finding its way to Damsala nalla which is the main drainage of this area and joins with Brahmani River.



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Principle of ETP Functioning:

Chromium is found in two forms in waste streams i.e. hexavalent (Cr^{6+}) & trivalent (Cr^{3+}). Treatment of chromium is usually consists of two stage process; first the reduction of hexavalent chromium to trivalent form and second precipitation of the trivalent chromium.

1. Hexavalent chromium is a strong oxidizing agent and can readily be reduced to trivalent chromium by means of adding reducing agent i.e. Ferrous Sulphate (FeSO_4). After proper mixing with ferrous sulphate in flash mixer thus the hexavalent chromium is reduced to trivalent chromium while ferrous ion will be oxidized to ferric ion Fe^{3+} .
2. In the next stage by adding alkaline reagent that is NaOH / lime $\text{Ca}(\text{OH})_2$ the ferric ion and chromium ion will be precipitated jointly at pH 8.0 – 8.5 as Ferric Hydroxide [$\text{Fe}(\text{OH})_3$] & Chromium Hydroxide [$\text{Cr}(\text{OH})_3$].
3. The supernatant from settling tank is further filtered for removal of Fe^{3+} in form of suspended solids.

Reaction

Stage-I

- A. If Water contains chromates [CrO_4]²⁻
$$[\text{CrO}_4]^{2-} + 3\text{Fe}^{2+} + 8\text{H}^+ \longrightarrow \text{Cr}^{3+} + 3\text{Fe}^{3+} + 4\text{H}_2\text{O}$$
- B. If Water contains dichromate [Cr_2O_7]²⁻
$$[\text{Cr}_2\text{O}_7]^{2-} + 6\text{Fe}^{2+} + 14(\text{H}^+) \longrightarrow 2\text{Cr}^{3+} + 6\text{Fe}^{3+} + 7\text{H}_2\text{O}$$

Stage - II

- A. $\text{Cr}^{3+} + 3\text{NaOH} \longrightarrow \text{Cr}(\text{OH})_3 \downarrow + 3\text{Na}^+$
- B. $\text{Fe}^{3+} + 3\text{NaOH} \longrightarrow \text{Fe}(\text{OH})_3 \downarrow + 3\text{Na}^+$

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3.1.3 Project Impact on Flora & Fauna:

There are number of Chromite mines in this Sukinda valley. The effect of individual mines may not be on a perceptible danger level but the synergy effect of all mines is laudable. Due to planting activities on Dumps, haul roads and vacant lands lot of greenery has been created and the ugly face of excavation is covered up. Though there is effect on Water table of the region the combined effect of water harvesting measures have reduced the effect. The local flora is not affected by lowering of water table due to constant watering, sprinkling of water in the immediate vicinity. The nature of forests (Dry deciduous mixed forest) is found unchanged. The biodiversity of native flora has been partly changed due to planting species though mostly non brows able and hardy species. Though floral density remains unchanged the composition has been changed which affects the bio diversity of the area.

Impact on Fauna:

Due to noise generated from mining activities and traffic throughout day and night, mine lighting and presence of heavy population in the locality as affected the tranquility of animals and they are keeping away from the locality. Animal concentration is becoming thin to thinner.

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3.1.3 Impact on Air.

Excavation, unloading, loading of Ore, transportation within the Mining Lease area and outside the ML area are adding fugitive dust to the atmosphere. The level of RSPM (PM_{10} and $PM_{2.5}$) is comparatively high than the normal level but within the prescribed Limit of CPCB. The last quarter AAQ Report for January 2021 quarters is attached as **Annexure-V**. The AAQ report for stations within the ML area and outside are below the norm for RSPM level prescribed by CPCB.

3.1.4 Ambient Noise Level:

There is no provision for drilling and blasting in this mine. The noise level is due to use of HEMM, and transport trucks. The noise level for quarter ending September, 2021 is at **annexure-VI**. The noise level within Mining area is 68 dBL and near habitation is 60 dBL which is within prescribed norm of CPCB, New Delhi.

3.1.5 Fugitive emission:

Dust emission from mining activity: Dust emission sources were identified based on mining activities of the project. Following mining and material handling operations were considered

- Loading of materials (Ore, OB, Mineral rejects)
- for dust emission sources: & Truck dumping of materials (Ore, OB, Mineral rejects)
- Movement of dumper (wheel) generated dust
- Unloading of materials (Ore, OB, Mineral rejects)
- Wind erosion from waste dump
- Trucks Activity wise dust emissions during excavation of ore have been estimated.

The expected emissions from various mining activities like mining, waste dumping, backfilling and transport of ore and overburden through haul roads wherever applicable have been estimated. It is found to be below prescribed norm.

3.1.6 Impact on Biological Environment:

During forest diversion proposal the tree enumeration has been conducted. All total 48 number of different trees / girth class and 6500 number of saplings has been enumerated. The Girth class wise breakup is furnished below.

During mining process, there will be mostly vertical development and no trees are proposed to be felled.

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Sl No	Species	Girth Class						Total
		0-30cm	31-60cm	61-90cm	91-120cm	121-150cm	>150cm	
1	Mangifera indica	0	0	2	0	0	1	3
2	Syzgium Cumini	0	0	0	0	1	0	1
3	Ficus bengalensis	0	0	0	0	0	2	2
4	Terminalia bellerica	0	0	0	1	0	0	1
5	Bombax ceiba	0	0	0	1	1	1	3
6	Schleichera oleosa	0	0	0	0	1	3	4
7	C.Siamia	0	0	1	7	0	0	8
8	Madhuca indica	0	0	0	1	2	4	7
9	Ficus religiosa	0	0	0	0	0	1	1
10	Eucalyptus spp.	0	0	1	10	5	2	18
	Total	0	0	4	20	10	14	48

Table 29 No of trees proposed to be felled

Hence the biological environment is not going to be disturbed during plan period and beyond rather the condition will improve due to planting on dump surface, Haul Road side.

3.1.7 Solid Waste & Acid Mine Drainage:

Solid waste:

During excavation Overburden and mineral reject (below 10% Cr₂ O₃) will be produced. During plan period 5.59 Lakh Cum OB and no Mineral reject will be generated. The stripping ratio is 1: 8.4 i.e. for production of 1 Ton of Ore about 8.4 cum of waste. The waste materials will be dumped in the earmarked space. Though stabilization of dump is being taken up and appropriate slope is maintained, still there is possibility of soil erosion from the dump surface. Adequate measures will be taken for stabilization of dump.

Acid Mine Drain:

Overburden and side burden consists of serpentine materials along with clay etc. **Serpentine** is not the name of a single mineral. Instead it is a name used for a large group of minerals that fit this generalized formula: (X)₂₋₃(Y)₂O₅(OH)₄. In this formula, X will be one of the following metals: magnesium, iron, nickel, aluminum, zinc, or manganese; and, Y will be silicon, aluminum, or iron. The appropriate generalized formula is therefore as follows: (Mg,Fe,Ni, Mn,Zn)₂₋₃(Si,Al,Fe)₂O₅(OH)₄. Chrysotile, antigorite, and lizardite are three of the

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primary serpentine minerals. There are many other serpentine minerals, most of which are rare. Serpentine group minerals have similar physical properties and form by similar processes. They often occur as fine-grained admixtures and can be difficult to distinguish within a rock. Geologists usually call these materials "serpentine" rather than more specific names to simplify communication.

During rains there is no possibility of any leaching elements to be characterized as acid. Due to transport related problems there may be acid rain due to exhaust burnt gases.

Exhaust gas or flue gas is emitted as a result of the combustion of fuels such as natural gas, gasoline (petrol), diesel fuel, fuel oil, biodiesel blends. According to the type of engine, it is discharged into the atmosphere through an exhaust pipe, flue gas stack, or propelling nozzle. It often disperses downwind in a pattern called an *exhaust plume*.

It is a major component of motor vehicle emissions (and from stationary internal combustion engines), which can also include:

- Crankcase blow-by
- Evaporation of unused gasoline

Motor vehicle emissions contribute to air pollution and are a major ingredient in the creation of smog in some large cities.

The largest part of most combustion gas is nitrogen (N_2), water vapor (H_2O) (except with pure-carbon fuels), and carbon dioxide (CO_2) (except for fuels without carbon); these are not toxic or noxious (although water vapor and carbon dioxide are greenhouse gases that contribute to global warming). A relatively small part of combustion gas is undesirable, noxious, or toxic substances, such as carbon monoxide (CO) from incomplete combustion, hydrocarbons (properly indicated as C_xH_y , but typically shown simply as "HC" on emissions-test slips) from unburnt fuel, nitrogen oxides (NO_x) from excessive combustion temperatures, and particulate matter (mostly soot).

Exhaust gas temperature (EGT) is important to the functioning of the catalytic converter of an internal combustion engine. It may be measured by an exhaust gas temperature gauge. EGT is also a measure of engine health in gas-turbine engines.

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Cold engines:



Steam from tailpipe of cold vehicles:

During the first two minutes after starting the engine of a car that has not been operated for several hours, the amount of emissions can be very high. This occurs for two main reasons:

- **Rich air-fuel ratio requirement in cold engines:** When a cold engine is started, the fuel does not vaporize completely, creating higher emissions of hydrocarbons and carbon monoxide, which diminishes only as the engine reaches operating temperature. The duration of this start-up phase has been reduced by advances in materials and technology, including computer-controlled fuel injection, shorter intake lengths, and pre-heating of fuel and/or inducted air.
- **Inefficient catalytic converter under cold conditions:** Catalytic converters are very inefficient until warmed up to their operating temperature. This time has been much reduced by moving the converter closer to the exhaust manifold and even more so placing a small yet quick-to-heat-up converter directly at the exhaust manifold. The small converter handles the start-up emissions, which allows enough time for the larger main converter to heat up. Further improvements can be realized in many ways, including electric heating, thermal battery, chemical reaction preheating, flame heating and super insulation.

Component	Emission Rate	Annual pollution emitted
Hydrocarbons	2.80 grams/mile (1.75 g/km)	77.1 pounds (35.0 kg)
Carbon monoxide	20.9 grams/mile (13.06 g/km)	575 pounds (261 kg)
NO _x	1.39 grams/mile (0.87 g/km)	38.2 pounds (17.3 kg)
Carbon dioxide - greenhouse gas	415 grams/mile (258 g/km)	11,450 pounds (5,190 kg)

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Main Motor Vehicle emission:

NO_x

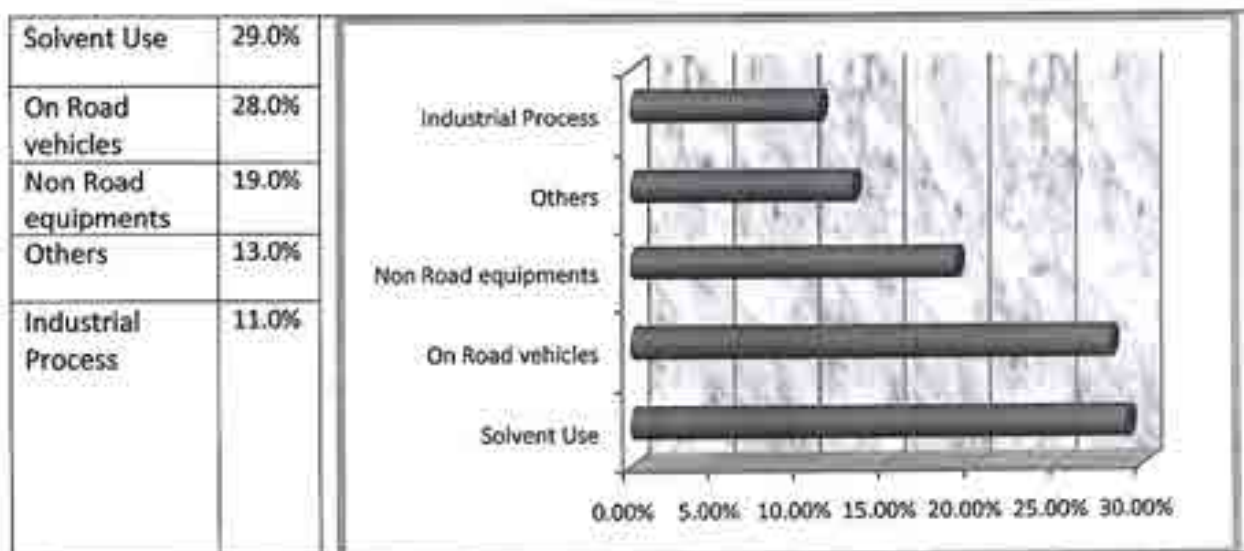
Mono-nitrogen oxides NO and NO₂ (NO_x)(whether produced this way or naturally by lightning) react with ammonia, moisture, and other compounds to form nitric acid vapor and related particles. Small particles can penetrate deeply into sensitive lung tissue and damage it, causing premature death in extreme cases. Inhalation of NO species increases the risk of lung cancer and colorectal cancer and inhalation of such particles may cause or worsen respiratory diseases such as emphysema and bronchitis and heart disease.

The largest emissions of NO_x came from on road motor vehicles, with the second largest contributor being non-road equipment which is mostly gasoline and diesel stations.

The resulting nitric acid may be washed into soil, where it becomes nitrate, which is useful to growing plants.

Volatile organic compounds

In atmosphere the volatile organic compounds presence is due to vehicles and others as furnished below.



Non-road equipment is mostly gasoline and diesel stations.

When oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) react in the presence of sunlight, ground level ozone is formed, a primary ingredient in smog. A 2005 U.S. EPA report gives road vehicles as the second largest source of VOCs in the U.S. at 26%



and 19% are from non road equipment which is mostly gasoline and diesel stations. 27% of VOC emissions are from solvents which are used in the manufacture of paints and paint thinners and other uses.

Ozone

Ozone is beneficial in the upper atmosphere, but at ground level ozone irritates the respiratory system, causing coughing, choking, and reduced lung capacity. It also has many negative effects throughout the ecosystem.

Carbon monoxide (CO)



MOPITT CO Mixing Ratio at Surface (ppbv)

MOPITT satellite computer image of carbon monoxide March 2010

Carbon monoxide poisoning is the most common type of fatal air poisoning in many countries. Carbon monoxide is colorless, odorless and tasteless, but highly toxic. It combines with hemoglobin to produce carboxyhemoglobin, which blocks the transport of oxygen. At concentrations above 1000ppm it is considered immediately dangerous and is the most immediate health hazard from running engines in a poorly ventilated space.

Hazardous air pollutants (toxics)

Chronic (long-term) exposure to benzene (C_6H_6) damages bone marrow. It can also cause excessive bleeding and depress the immune system, increasing the chance of infection. Benzene causes leukemia and is associated with other blood cancers and pre-cancers of the blood.

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Particulate matter (PM₁₀ and PM_{2.5})

The health effects of inhaling airborne particulate matter have been widely studied in humans and animals and include asthma, lung cancer, cardiovascular issues, premature death. Because of the size of the particles, they can penetrate the deepest part of the lungs. U.S. Federal Highway Administration (FHWA) state that in 2002 about 1 per-cent of all PM₁₀ and 2 per-cent of all PM_{2.5} emissions came from the exhaust of on-road motor vehicles (mostly from diesel engines).

Carbon dioxide (CO₂)

Carbon dioxide is a greenhouse gas. Motor vehicle CO₂ emissions are part of the anthropogenic contribution to the growth of CO₂ concentrations in the atmosphere which according to the vast majority of the scientific community is causing climate change. Motor vehicles are calculated to generate about 20% of the European Union's man-made CO₂ emissions, with passenger cars contributing about 12%. European emission standards limit the CO₂ emissions of new passenger cars and light vehicles.

3.1.8 Vibration (due to blasting):

There is no provision for drilling & blasting as the rock is comparatively soft. Hence vibration due to blasting is nil.

3.1.9 Synergic Impact on Flora&Fauna:

At the present system of mining i.e. opencast mining and treatment of effluent, the following threats to flora and fauna is feared.

Threat to Flora:

- i. Lowering of ground water table will lower moisture availability and result in stunted growth, reduced site quality, disappearing colony of moisture loving vegetation, replacement of moisture loving species by thorny, hardy & low quality species.
- ii. Excess biotic pressure over a long period may result visit of unpalatable, dwarf vegetation.
- iii. More and more open forest will be covered by Eupatorium, Lantena, Combretum (Atandi).
- iv. Bahunia (Siali) may be completely vanished from the region.
- v. Disappearance of many species may lead to loss of Biodiversity of the locality.

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- vi. Plants may be affected by heart rot (especially Sal), Canker and top dying phenomena.
- vii. Accumulation of dust on leaf surface for a long period may reduce photosynthesis hence reduced oxygen generation. It may also affect growth rate of plants, especially planted on road sides.

Threat to Fauna:

- i. Movement of available species may be gradually restricted and finally seized from this tract.
- ii. Scarcity of food stock and water in forest may force them to come to habitations, agricultural field.
- iii. More and more Human- Animal Conflict resulting repelling attitude of locals' towards wildlife.
- iv. More respiratory, digestive disease may affect animals.
- v. Presence of Cr^{+6} (Chromium hexavalent) a carcinogenic substance in water & dust particle may induce health hazard.
- vi. Presence of iron, Nickel and other heavy metals on grass fodder foliage surface may adversely affect herbivorous health.
- vii. Animal behavior may change due to constant effect of noise & light of traffic.
- viii. Reptiles may be affected seriously due to light and ground vibration.

On habitat.

- i. Loss of shelter place/ niche may make them homeless.
- ii. Food and Water may become a limiting factor and seriously affecting the carrying capacity of the area.
- iii. Compact soil without good vegetation will accelerate soil erosion.
- iv. Nocturnal animals may have extremely a hard time.
- v. Rising temperature in summer may induce sun stroke.

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3.2. Ancillary Impact of the Project on Flora & Fauna:

Side effect of mining on flora and fauna is being gradually felt in this region. Loss of bio diversity, pollution of water body i.e. Damsala nalla and evading nature of fauna from this locality is felt by a common man.

3.3 Socio Economic Impact of the Project:

Besides direct and indirect employment being provided by mining company, the occupational profile indicates more and more people are being diverted from agriculture to other trade i.e. mostly mine related occupation. The socio economic condition of the locality has improved. Under CSR program of mines owner, peripheral development is quite perceptible.

3.3.1 Impact on Traffic:

The Traffic study was conducted by NHA for their project "Up gradation of NH-200". After detail traffic study at five important places in homogeneous section i.e. at Saranga, Pitiri, Mangalpur, Duburi and Chandikhol the traffic increase in the road up to 2027 and after has been projected. As per most probable increase the growth rate at different years is furnished below.

Traffic Projections.

General

General										
Mode	Base value as obtained (2006)	Year								
		2007-2011	Projected (2012)	2012-2016	Projected (2016)	2017 - 2021	Projected (2021)	2022 - 2026	Projected (2026)	2027 onwards
Scenario-1: Projected Most Probable Traffic Growth Rate										
Two Wheelers	3490	8.32	3780	9.1	4124	8.44	4472	7.5	4808	6.75
Three Wheelers	386	10.79	428	11.38	476	10.31	525	8.63	571	7.5
Cars	733	8.91	798	9.8	877	9.38	959	8.44	1040	7.5
Jeeps	318	6.78	340	7.35	365	7.13	391	6.38	415	5.63
Buses	81	3.7	84	4.03	87	3.94	91	3.75	94	3.56
Trucks	3112	7.34	3340	7.8	3601	7.2	3860	6.6	4115	6.3
Tractor and Tractor with trailer	449	7.99	485	8.25	525	7.5	564	6.5	601	5.85

Table 31 Traffic Projection Report

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Production Related Traffic Pressure:

The production level for which EC is in process by which production level will enhance 0.050M TPA to 0.15 MTPA i.e. 3 times increases. The ore produced is being transported by Road to Randia, Bhadrak. The truck capacity is mostly 16 ton. Hence for 50000 TPA, about 3125 trip truck load is required. Taking 300 working days about 10 truck is engaged per day. In enhance production condition, about 30-35 trucks will be engaged per day. This traffic load has been taken in to account while making traffic study by NHAI at Mangalpur crossing.

a) Haulage & Transport within M.L Area Transportation between M.L Area & Dispatch Point:

For handling the ore stacks at mine-site, 1nos. of wheel loader (2.5-4.5cum) is provided to keep in tune with quantum of handling.

For handling the generated waste rock to the decentralized portion/waste dump of the pit, 2 excavator and 8 dumper will be engaged.

b) Transportation to Outside:

All the ore will be transported by Road to Randia, Bhadrak i.e. Ferro chrome / charge chrome plant of FACOR.

3.4 Impact /Effect on Movement of Mega Fauna:

There is no movement of mega animals neither within the ML area nor at immediate road alignment up to Magalpur – Chandikhol – Bhadrak.


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CHAPTER-IV IMPACT MITIGATION MEASURES



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CHAPTER-IV

Impact Mitigation Measures & Financial Projection

4.0 Adverse Impacts of the Project & Mitigation Measures suggested:

Katarangiatta Chromite mine is over 23.800 ha and all land though initially of Non forest land as per Hal Settlement, it is now considered as Forest land for the purpose of Forest (Conservation) Act, 1980. The production of the mine as per present Environment Clearance is 50000 TPA and proposed to be enhanced to 150000 TPA. The mine working is opencast mining categorized as "Category-"A" Fully Mechanized". Transportation of Ore within ML area and outside is by Road. The probable impacts and mitigative measures suggested are as follows.

4.1 Adverse Impact on Air & Mitigation Measures:

In mining activities fugitive dust generation is expected at ore excavation, loading within the mining pit, transportation within ML area, dumping at Stock yard and subsequently beneficiation and transportation to outside the ML area to destination for end use.

The excavation is being carried out at 53m BGL and Ore is at wet condition. No drilling and blasting is required hence fugitive dust generation at pit level, transportation up to pit head. Transportation from Pit head to Stock yard and un-loading is associated with dust generation. From stock yard to outside the ML area is also associated with transport relation dust pollution.

Mitigation measures:

The mitigation measures adopted by User Agency are

- Trees planted along the Haul Road within the ML area, as well as dump slope and green belt zone. Till 01.12.2021, a total of 15,195nos of sapling have been planted inside the mining. Survival rate is varies from 85 to 90%. Plantation details for last five years have been furnished as follows.

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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalarangiatta under Sukinda Tahasil dist. Jaipur by M/s Facor Ltd.

Year	Area in ha		No of plants		Survival rate
	Proposed	Actual	Proposed	Actual	
2017-18	0.630	0.866	1580	2165	95%
2018-19	0.630	0.650	1580	1624	85%
2019-20	0.606	0.650	1520	1674	90%
2020-21	0.316	0.494	790	1235	90%
2021-22	0.454	0.890	1140	2246	

Table 32 Plantation details last 5 year

An audit has been conducted for the conformation of number of trees planted inside the rivers and hills and found satisfactory as mentioned in the above table.

- Sprinkling of water on haul road frequently (thrice in December to March and four times in summer. The frequency of water sprinkling depends upon weather condition and moisture on the road surface.
- Ore containing moisture <10% will be avoided for transporting outside to prevent any fall out.
- The truck will be fully covered with tarpoline to avoid air pollution during transportation and ore fallout from trucks.

Safety zone plantation



Haul Road Side plantation



Nursery



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4.2 Adverse impact on Water body & Mitigation Measures:

The nearest water body is Damsala nalla flowing in Sukinda Valley and joins with Brahmani River. Any contamination of Damsala nalla water will affect aquatic fauna of River Brahmani. The other nalla flowing within zone of impact are as follows.

Sl No	Name	Flow Direction	Nature
1	Damsal nalla	N-NW	Perennial
2	Kanchamua nalla	NW	Seasonal
3	Lungal kantia nalla	NW	Seasonal
4	Pandara nalla	S	Seasonal
5	Sasubhuasuni nalla	N-NW	Seasonal
6	Petapet nalla	W	Seasonal
7	Nadi barana nalla	W	Seasonal
8	Pua gadhua nalla	W- NW	Seasonal
9	Patna nalla	N	Seasonal

Table 33 Nallas/River

Besides dust settling on water body, the major problem is hexavalent Chromite (Cr^{+6}) in mine discharge water. It is carcinogenic in nature.

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Mitigative measures:

The project proponent has installed Effluent Treatment Plant of 400KLD per hour capacity to treat the mine discharge water. The ETP reduce all Hexavalent Chromium to Trivalent Chromium, pH within 7 to 8.5 range, and turbidity at a low range.



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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

The input / output of Mines discharge through ETP test result is furnished below.

Online Pollution Monitoring Portal					
Site Name: Kalarangiatta Chromite Mines of M/s. Ferro Alloys Corporation Limited					
From Date: 2021/10/01 To Date: 2021/10/31					
Report Name: Custom Report					
Report Created by FerroACL on 2021-11-09 11:08:14					
Sl No.	Time	ETP_1_Inlet-Chromium_U	ETP_1_Inlet-pH_U	ETP_1_Inlet-TSS_U	ETP_1_Inlet-Flow_U
1	2021-10-01	0.94	4.87	29.81	0
2	2021-10-02	0.95	4.69	21.76	0
3	2021-10-03	0.95	4.63	18.56	0
4	2021-10-04	0.95	4.8	34.55	0
5	2021-10-05	0.95	4.82	46.35	0
6	2021-10-06	1	4.73	45.64	0
7	2021-10-07	1.01	4.71	23.85	0
8	2021-10-08	1.01	4.68	17.57	0
9	2021-10-09	1.01	4.78	34.14	0
10	2021-10-10	1	4.83	41.02	0
11	2021-10-11	0.99	4.85	53.27	0
12	2021-10-12	0.98	4.9	51.88	0
13	2021-10-13	0.97	4.86	52.92	0
14	2021-10-14	0.97	4.76	46.83	0
15	2021-10-15	0.94	4.9	41.55	0
16	2021-10-16	0.87	4.67	85.91	0
17	2021-10-17	0.85	4.67	62.56	0
18	2021-10-18	0.86	4.67	84.4	0
19	2021-10-19	0.88	4.69	73.22	0
20	2021-10-20	0.91	4.78	52.84	0
21	2021-10-21	0.95	4.75	50.98	0
22	2021-10-22	0.95	4.65	76.08	0
23	2021-10-23	0.88	4.69	53.16	0
24	2021-10-24	0.93	4.76	40.35	0
25	2021-10-25	0.87	4.61	48.7	0
26	2021-10-26	0.93	4.57	62.22	0
27	2021-10-27	0.91	4.63	102.66	0
28	2021-10-28	0.88	4.52	76.58	0
29	2021-10-29	0.88	4.49	76.71	0

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Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalarangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

30	2021-10-30	0.85	4.6	103.13	0
31	2021-10-31	0.8	4.58	48.16	0
32	Prescribed Standards	0 -	5.5 - 9	0 - 200	0 -
33	Maximum Value	1.01	4.9	103.13	0
34	Maximum Value At Time	2021-10-07	2021-10-12	2021-10-30	2021-10-01
35	Minimum Value	0.8	4.49	17.57	0
36	Minimum Value At Time	2021-10-31	2021-10-29	2021-10-08	2021-10-01
37	Geometric Mean	0.93	4.71	53.46	0
38	Median	0.94	4.69	50.98	0
39	Standard Deviation	0.06	0.11	22.65	0
40	Valid Data Points	31	31	31	31
41	Total Data Points	31	31	31	31
42	Data Availability %	100	100	100	100

Table 34 Online Pollution Monitoring portal

Online Pollution Monitoring Portal

Site Name: Kalarangiatta Chromite Mines of M/s. Ferro Alloys Corporation Limited

From Date: 2021/10/01 To Date: 2021/10/31

Report Name: Custom Report

Report Created by FerroACL on 2021-11-09 11:10:09

Sl No.	Time	ETP_2_Outlet-Chromium_U	ETP_2_Outlet-pH_U	ETP_2_Outlet-TSS_U	ETP_2_Outlet-Flow_U
1	2021-10-01	0.02	7.21	10.76	2.3
2	2021-10-02	0.02	7.08	0	0.6
3	2021-10-03	0.02	7.38	5.58	0
4	2021-10-04	0.02	7.58	9.3	1.02
5	2021-10-05	0.02	7.54	10.83	9.22
6	2021-10-06	0.02	7.59	12.59	7.21
7	2021-10-07	0.02	7.61	9.43	4.58
8	2021-10-08	0.03	7.63	8.22	0
9	2021-10-09	0.03	7.36	7	2.46
10	2021-10-10	0.03	6.93	6.82	4.84
11	2021-10-11	0.03	6.71	6.86	6.93
12	2021-10-12	0.03	6.51	2.47	6.61
13	2021-10-13	0.03	6.34	0	6.46
14	2021-10-14	0.03	6.17	0	10.12
15	2021-10-15	0.03	6.12	0	8.08

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16	2021-10-16	0.03	6.16	0.44	7.96
17	2021-10-17	0.03	6.21	4.46	7.13
18	2021-10-18	0.03	7.81	16.04	6.86
19	2021-10-19	0.03	8.53	22.84	9.27
20	2021-10-20	0.04	8.43	8.99	7.13
21	2021-10-21	0.03	8.38	8.18	18.2
22	2021-10-22	0.01	8.31	14.33	14.98
23	2021-10-23	0.01	8.3	19.09	14.87
24	2021-10-24	0.01	8.29	8.58	7.76
25	2021-10-25	0.01	8.27	9.51	10
26	2021-10-26	0.01	8.23	12.11	11.91
27	2021-10-27	0.02	8.26	16	11.63
28	2021-10-28	0.02	8.24	10.02	17.61
29	2021-10-29	0.02	8.12	9.95	12.1
30	2021-10-30	0.02	8.12	9.23	13.11
31	2021-10-31	0.02	8.11	7.53	8.33
32	Prescribed Standards	0 - 2	5.5 - 9	0 - 100	0 - 400
33	Maximum Value	0.04	8.53	22.84	18.2
34	Maximum Value At Time	2021-10-20	2021-10-19	2021-10-19	2021-10-21
35	Minimum Value	0.01	6.12	0	0
36	Minimum Value At Time	2021-10-22	2021-10-15	2021-10-02	2021-10-03
37	Geometric Mean	0.02	7.53	8.62	8.04
38	Median	0.02	7.61	8.99	7.76
39	Standard Deviation	0.01	0.79	5.59	4.83
40	Valid Data Points	31	31	31	31
41	Total Data Points	31	31	31	31
42	Data Availability %	100	100	100	100

Table 35 Online pollution Monitoring portal

The ETP established within the ML area takes care of hexavalent Chromium and reduce it to trivalent chromium. The treated water is used for mining dust suppression and irrigation purpose. No water is being discharged to outside water bodies without treatment. So there is no chance of water pollution due to discharge water from mines to outside.

4.3 Adverse Impacts on Soil & Mitigation Measures:

The mining activities will disturb the land surface. After mining the area will be reclaimed. To check the soil erosion from dumps, plating of local tree species is being carried out. There is gap in between Row to Row and line to line (about 2m spacing). It is suggested to take up plantation on a staggered spacing as indicated below.

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Top view



Side view



Besides staggered planting, rows of *Chrysopogon zizanioides* (bena) along the contour to be planted in double row (1/2m apart to filter the runoff and check soil erosion. It may be planted at a vertical interval of 5meter on dump surface.

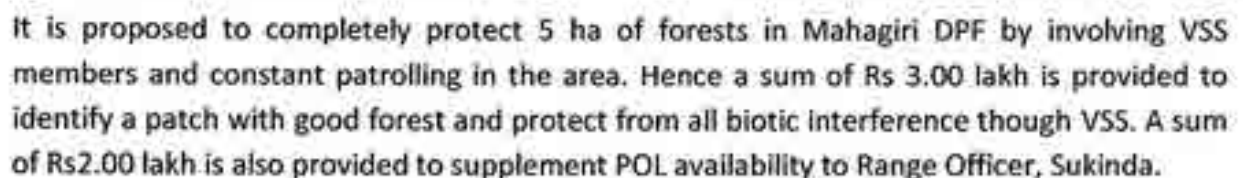
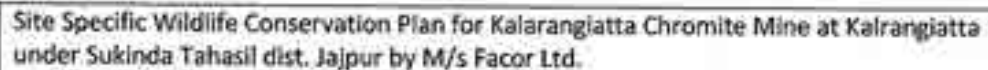
Due to accumulation of dusts containing heavy metals particles changes the behavior of soil. This can only be arrested / checked by more and more leaf litters decompose to humus. It is suggested to increase multitier tree planting along with fire control measures in nearby forests.

Adequate provisions will be made by the user agency to assist Forest staff in fire control measures. Mock drill on forest fire control, fire fighting and corresponding training will be organized by the User agency through subject experts every year in consultation with Forest staffs.

4.4 Adverse Impact on Flora & Suggestive Damage Control Measures:

Due to lot of mines in the area and planting activities by them, the tree covers though improved on Safety zone and other vacant land the mining excavation area has lost its green cover. Bio diversity of the area is at a degradation path.

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The fauna concentration is thin due to integral effect of all mining activities including transportation. The animal concentration is comparatively good towards north western side of Zone on Impact. The Maulabhanja – Jiridamali – Anantapur Elephant corridor is partly coming within Zone of Impact. It is proposed to improve habitat by renovating water body coming within Sukinda Range. For saving the ground flora, the fire protection measures like control burning of dry leaf litters, Fire line maintenance and provision for modern firefighting equipments will be provided at project cost.

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4.6 Impact on Habitation & Human- Wildlife Conflict Damage Caused:

Human- Animal Conflict is experienced in Kamakshyanagar East Range and Sukinda Range to a greater extent. In order to reduce the conflict, it is proposed to provide Gaja Sathi in Sukinda Range on consolidated remuneration of Rs 10000/- per month each. Elephant driving equipments are also to be provided to strengthen the damage control measures.

4.7 Identified Problems on Wildlife Management & Ameliorating Measures.

The forest functionaries are mainly facing problems due to erratic elephant movement in both Sukinda and Kamakshyanagar range. The Elephant corridors i.e. Maulabhanja- Jirdamali- Ananatpur is mostly disturbed due to fragmentation of habitat by National Highway 200 and Angul- Sukinda- Duburi Rail line under construction. Considering all aspects the following measures are suggested for implementation.

4.7.1 Activities within Lease area:

a) The activities being implemented by user agency are

- I. Tree planting on Dump surface and both sides of haul Road,
- II. Retention walls along the dump outer line to check sliding of dump,
- III. Loose boulder check dams on garland drain to check silt from runoff water,
- IV. Channeling of water from Dump (Top bench / terrace) to ground level by pipes to prevent soil erosion.
- V. Sprinkling of water on haul road and on vacant areas to suppress dusts.

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- VI. Treating the Mine discharge through ETP and utilizing the treated water for dust suppression.

4.7.2 Interventions to be implemented within Lease area / by Lessee:

The following activities will be implemented by the Lessee during the Plan Period.

- I. Planting of trees on Dump surface on staggered manner.
- II. Planting of rows of *Vetiveria zizanioides* (bena) along the contour and to be planted in double row (1/2m apart to filter the runoff and check soil erosion. It is to be planted at a vertical interval of 5meter on dump surface.
- III. User agency to assist Forest staff in fire control measures.
- IV. Mock drill on forest fire control, fire fighting and corresponding training will be organized by the User agency through subject experts every year in consultation with Forest staffs.
- V. Where ever plantations will be taken up not only tree species will be planted, other varieties i.e grasses, herbs, shrubs, climbers etc are also to be planted to maintain bio diversity of the area and maintain a ground flora.


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INTERVENTIONS TO BE IMPLEMENTED BY CUTTACK DIVISION

4.8 Interventions to be implemented by Forest Department:

The mine is entirely within Cuttack Division. Within the Zone of impact, all total three divisions i.e. Cuttack, Dhenkanal and Keonjhar WL Division are coming. The division wise interventions proposed are as follows.

4.8.1 Habitat Improvement:

a) Maintaining Bio diversity in Mahagiri DPF:

It is proposed to provide adequate protection to 5 ha forest area in Mahagiri DPF through complete vegetative fencing, VSS involvement. Adequate fire protection is to be provided to the identified patch. The components and financial provisions made in this plan is given below.

Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs
A)	Identification of 5.0ha site in a single forest patch and providing vegetative fencing on Forest / Human interface side in Mahagiri DPF with fencing maintenance	Patch	Ls	1 patch of 5.0 ha	3.00
B)	Involvement of VSS & regular interaction	Annual	0.10 L	10	1.00
C)	Additional POL support	LS			2.00

Table 36 Component and financial provisions made in Mahagiri DPF

b) Renovation of Existing Water body:

There are many water body created during last five years. It is now partially silted up and requires De- silting to enhance water holding capacity. It is proposed to renovate two such water bodies in Kaliapani Section of Sukinda Range at acost of Rs 5.00 lakh @Rs2.50 lakh per Water body)

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4.8.2 Protection & Surveillance:

a) Deployment of Gaja sathi

It is proposed to deploy One Gaja Sathi in Sukinda Range to assist forest staffs in smooth passage of Elephants within the Zone of Impact and beyond. They will be stationed at Bamanagar, Sukinda Range Watch Tower and keep a watch on Animal movement round the clock (24x7 hr) They will be paid @ Rs13272/- per month for 5 years. A provision of Rs 796320/- or say 9.763 Lakh is proposed in this Plan (1x13272/-x60m)

b) Providing Elephant Driving Equipments:

It is proposed to provide elephant driving equipments like Search light, Cage and other accessories to efficiently handle the situation. These will cost Rs 5.00 lakh (Search light: 1.00 lakh, cage / ladder- Rs2.00 lakh & other accessories Rs2.00 lakh)

c) Strengthening of Staff Mobility- Providing a Hired Vehicle:

In order to improve mobility of Staffs / Officials it is proposed to provide a hired vehicle at a cost of Rs 25.00 Lakh including cost of POL for a period of 5 years @ Rs 41666.67 per month. Hence a sum of Rs25.00 Lakh is provided in this Plan.

4.8.3 Integrated Fire Fighting:

a) Providing Modern Fire Fighting Equipments:

It is proposed to have control burning to reduce the Fire effect during summer/ dry months from March. It is proposed to practice control burning during January / February along road sides and vulnerable localities. It is also proposed to provide 5 blowers (Modern Fire fighting equipments) @ Rs 0.60 lakh per Blower. Hence a sum of Rs 6.00 lakh is provided (Rs3.00 Lakh for Control burning @ Rs 30000/- per annum and Rs 3.00 lakh for Firefighting equipments i.e. Blower)

b) Recurring Expenses for blowers (POL):

For smooth functioning of Blowers a sum of Rs 10000/- per blower per year is provided. For 5 blowers for 10 years a sum of Rs 5.00 lakh is provided in this Plan.

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4.8.4 Improvement of Avifauna habitat:

Due to various Mining activities lot of trees has been sacrificed in Sukinda valley. Due to loss of big old trees, the Avifauna has lost their natural host trees. It is proposed to improve avifauna habitat by fixing artificial nests in the habitations and Sukinda valley.

(i) Fixing of Box nests:

It is proposed to fix Box nests of 20cmx25cmx 30cm with hipped roof in corridors of Sukinda valley. It is proposed to fix 150 box nests @ Rs 2500/- per nest. Hence a provision of Rs 3.75 lakh is provided in this Plan.

(ii) Sparrows Conservation.

Due to rapid urbanization, the sparrows natural habitat i.e. thatched house has been replaced RCC Buildings. In order to conserve sparrows in Urban / Rural habitations, it is proposed to provide earthen nests for sparrows. A sum of Rs 3.75 lakhs is provided in this Plan for fixing 1500sparrows' nest @Rs250/- per earthen nest in and around Mines area at habitations / Institution premises etc.



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4.8.5 Providing Alternate Livelihood Support:

Due to mining activities many people have got Employment Avenue in the locality. Mining and transport sector are the main employment avenue directly and indirectly. The tribals depending upon forests have lost many NTFP on which they were depending upon. In order to provide alternate livelihood support, it is proposed to popularize the following trades.

- a) Bee keeping,
- b) Prickle making from Forest based fruits / local fruits like Jack fruit, Mango, Amla.
- a) **Bee Keeping:**

It is proposed to fix 100 Bee Box in the periphery of the mines area. The modalities of bee keeping are as below.

Elephant menace is very acute in some villages. On interaction with the villagers / Bee Keepers it is observed that elephant kept away from villages after massive bee unit installed in the village. This was very effective. Due to lack in maintenance and supervision, bee units gradually became defunct.

It is proposed to provide 100 units in two villages @50 box unit per village). (Bhimtangar and Ransole Village)

A facilitator having good knowledge on bee keeping or a local youth after short training from "Krushi Vigyan Kendra (KVK)" will be engaged on part time basis for up keeping of bee units, extraction of honey till the villagers became accustomed with the process. This will be taken up on pilot project basis. On its success, bee fencing concept may be extended to other critically affected villages.

In this process, villagers will earn additional income and improve their economic condition.

The project cost is estimated for one village to be Rs 7.00lakh as detailed below.


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Components of Bee Keeping & Cost projected						
Sl No	Description	Unit	Rate	Quantum	Amount in lakh Rs	Remark
1	Orientation meeting of villagers	No	15000/-	1	0.15	The KVK staffs / technicians will be consulted in implementing the project.
2	Honey Bee Boxes with Colonies (Apis Indica Cerena)	No	4500/-	100	4.50	
3	Honey Extractor Stainless Steel	No	5000/-	2	0.10	
4	Bee Veil, Smokers, Queen Excluder Sheets, Drone Traps, Swarm Nets and other accessories	IS		As required	0.50	
5	Providing management tips to beneficiary	No	15000/-	2	0.30	
6	Engaging Bee keeping Technician (Part time basis)	Month	2500/-	36	0.90	
7	Unforeseen				0.55	
	Total				7.00	

Table 37 Components of Bee keeping and Cost projected

For two villages a sum of Rs 7.00 lakh is proposed in this plan.

b) Value addition to NTFP:

NTFP collecting is gradually declining. Value addition to NTFP items will provide a good opportunity for alternate income. It is proposed to involve two SHG in the process. The trade will be decided on consultation with villagers / VSS. The trades preferred are Preparing "Triphala Churna", Leaf Plate / Paper plate making, Mush room cultivation, Prickle making from Forest based fruits / local fruits like Jack fruit, mango, Amla etc. A sum of Rs 6.00 lakh is proposed in this Plan. All technical support including marketing will be assisted. If required one NGO / other organizations working in this field will be engaged to facilitate and implement this support.

4.8.6 Incentive to VSS involved in Bio diversity area:

VSS are key helping partner in forest and Wildlife management. Without their assistance it is difficult to have a control of the situation. It is proposed to give incentives to VSS involved in Bio Diversity area Protection & Management in shape of "Small Village Development Work". A sum of Rs 2.00 lakh is provided for this purpose.

M. Muthumani
Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliachandrapur, Dist- Jajpur
Pin- 751047



Site Specific Wildlife Conservation Plan for Kalarangiatla Chromite Mine at Kalarangiatla under Sukinda Tahasil dist. Jaipur by M/s Facor Ltd.

4.8.8 Abstract of Interventions proposed:

Abstract of Intervention for Cuttack Division

Abstract of Intervention for Cuttack Division						
Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs	Remark
	Habitat Improvement:					
1a	Identification of 5ha site in a single forest patch and providing vegetative fencing on Forest / Human interface side with fencing maintenance	Patch	Ls	1 patch of 5 ha	3.00	In Mahagiri DPF
1b	Involvement of VSS & regular interaction	Annual	0.10 L	10	1.00	
1c	Additional POL support	LS			2.00	
2	Renovation of water Body (Existing)	No	2.50 L	2	5.00	
	Protection & Surveillance:					
3a	Deployment of Gaja sathi	No	13272/- PM	1 x 60 month	7.963	
3b	Elephant Drive equipments					
i.	Search Light	No	5000/-	20	1.00	
ii.	Cage	No	2.00 L	1	2.00	
iii.	Other accessories	LS			2.00	
4	Enhancement of Mobility of Officials / Staff- Providing a Hired vehicle (@ Rs 41666.67/ PM for 5 years)	Month	41666.67 PM	60	25.00	
	Integrated Fire Protection					
5a	Providing Blowers:	No	0.60L	5	3.00	
5b	Control Burning	LS			3.00	
5c	Recurring Expenses for Blowers (POL)	Annual	0.10L	5*10*0.1	5.00	
	Improvement of Avifauna Habitat					
6a	Fixing of Box Nest	No	2500/-	150	3.75	

Mrs. Ferrel, Agn. Dist. Jajpur
Phn. 756047
Muthu Mari M
Agent of Mines
Jajpur



Site Specific Wildlife Conservation Plan for Kalaranglatta Chromite Mine at Kalaranglatta
under Sukinda Tahasil dist. Jalpur by M/s Facor Ltd.

6b	Sparrows Conservation (Fixing of earthen Nests)	No	250/-	1500	3.75	
7	Alternate Livelihood support					
7a	Bee Keeping	Unit	7.00 L	1	7.00	In 2 villages
7b	Value Addition to NTFP through SHG	No	3.00 L	2	6.00	2 units through 2 SHG
8	Incentive to VSS involved in Bio diversity area. Small Village Development Work"	LS			2.00	
	Total				82.463	
	Add 20% for cost escalation				16.493	
	Total				98.956	

Table 38: Abstract of intervention (Cuttack Division)

(Rupees Ninety Eight Lakh Ninety Five Thousand & Six Hundred Only)

M. N. H. H. H. H. H.

Approved by
Secretary, Mines
Department
Agri. Cont. Div. Dist. -
M/s. Ferro Kalapam, 755041
Bhilai



INTERVENTIONS TO BE IMPLEMENTED BY DHENKANAL DIVISION

4.9.1 Integrated Fire Management:

(i) Fire Line maintenance:

It is proposed to provide fire line around Maulabhanja RF and Jiridamali RF over a length of 15 km. Fire line will be maintained for 10 years regularly. For maintenance of Fire Line 15 MD is provided per km. At the present wage rate i.e. @Rs326/- the cost is estimated to be Rs 7.335 lakh (15km*15MD/Km *326/- *10yr). Hence a provision is made accordingly.

(ii) Providing Modern Fire Fighting equipments:

It is proposed to provide modern Fire Fighting equipments (Blower) to help quick forest fire control. 5 numbers of Blower will be provided @ Rs0.60 lakh. Hence a sum of Rs 3.00 lakh is provided in this plan.

(iii) Recurring Expenditure for Blowers (Modern Fire Fighting equipments):

It is proposed to provide POL expences for smooth running of Blowers. Rs 10000/- per blower per annum is provided. Hence for 5 blowers for 10 years a sum of Rs5.00 lakh is provided in this plan.

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047



Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

4.9.2 Abstract of Interventions:

Abstract of Intervention for Dhenkanal Division					
Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs
1	Fire Line maintenance: (15*15* 10* 326/-)	RKM	15 MD / KM @ Rs326/-	15	7.335
2	Providing Modern Fire Fighting equipments	No	0.60 L	5	3.00
3	POL Expenses (0.1*5*10)	Annual	0.10 L / blower	5	5.00
	S. Total				15.335
	Add 20% for cost escalation				3.067
	Total				18.402

Table 39 Abstract of intervention (Dhenkanal Division)

(Rupees Eighteen Lakh Forty Thousand and Two Hundred Only)

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliopari, Dist- Jajpur
Pin- 755047



INTERVENTIONS TO BE IMPLEMENTED BY KEONJHAR WILDLIFE DIVISION

4.10.1 Providing Solar Light:

It is proposed to provide solar street light in two villages @ two High mask Solar light per village. All total 4 number of Solar light will be fixed @ Rs 0.30 lakh per light. Hence a sum of Rs 1.20 lakh is proposed in this Plan.

4.10.2 Distribution of IEC materials:

It is essential to educate people about animal behavior, How to react on Elephant sighting and restrain to be followed. It is proposed to Provide Rs1.50 lakh for printing of IEC materials and distribution to public along the elephant movement area.

4.10.3 Abstract of Interventions:

Abstract of Intervention for Keonjhar Wildlife Division					
Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs
a)	Providing Solar Light (High mask)	No	0.30 L	4	1.20
b)	Printing of IEC Materials	Annual	0.15 L	10	1.50
	Total				2.70
	Add 20% for cost escalation				0.54
	Total				3.24

Table 40 Abstract of Intervention (Keonjhar WL Division)

(Rupees Three Lakh Twenty Four Thousand Only)

M. Muthumary
Muthumary M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapatti, Dist- Jajpur
Pin- 755047



CHAPTER-V FINANCIAL IMPLICATIONS & MONITORING



M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliatani, Dist. Jajpur
Pin- 755047



CHAPTER-V

Financial Implications & Monitoring

5.0 Summary of Mitigation Measures:

The mitigative measures suggested are as follows.

a) To be Implemented by User agency

The following activities will be implemented by the Lessee during the Plan Period.

- I. Planting of trees on Dump surface on staggered manner.
- II. Planting of rows of *Chrysopogon zizanioides* (bena) along the contour and to be planted in double row (1/2m apart to filter the runoff and check soil erosion. It is to be planted at a vertical interval of 5meter on dump surface.
- III. User agency to assist Forest staff in fire control measures.
- IV. Mock drill on forest fire control, fire fighting and corresponding training will be organized by the User agency through subject experts every year in consultation with Forest staffs.
- V. Where ever plantations will be taken up not only tree species will be planted, other varieties i.e grasses, herbs, shrubs, climbers etc are also to be planted to maintain bio diversity of the area and maintain a ground flora.

b) By Forest Department:

i) By Cuttack Division:

- Maintaining Bio diversity in Mahagiri DPF over 5 ha,
- Deployment of Gaja sathi 1 number for 5 years,
- Providing Elephant Driving Equipments,
- Renovation of Existing Water body two numbers in Kaliapani Section.
- Integrated Fire Management,
- Activities on Birds Conservation (Creation of Alternate home for Birds, Sparrows)
- Providing Livelihood support to villagers.
- Incentive to VSS involved in Bio diversity area (Small village development activities)
- Providing a hired vehicle for 5 years.

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani Dist- Jaipur
Pin. 305047



ii) **By Dhenkanal Division:**

- ❖ Fire line maintenance over 15 KM in Maulabhanja – Jiridamali RF
- ❖ Providing 5 blowers along with POL for smooth running.

iii) **By Keonjhar WL Division:**

- ✦ Providing Solar Light to wildlife affected villages (Two villages)
- ✦ Distribution of IEC materials to educate people about animal behavior, How to react on Elephant sighting and restrain to be followed.

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047



5.1 Abstract of Financial Implications (For Cuttack Division)

Abstract of Intervention for Cuttack Division						
Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs	Remark
Habitat Improvement:						
1a	Identification of Sha site in a single forest patch and providing vegetative fencing on Forest / Human interface side with fencing maintenance	Patch	LS	1 patch of 5 ha	3.00	in Mahagiri DPF
1b	Involvement of VSS & regular interaction	Annual	0.10 L	10	1.00	
1c	Additional POL support	LS			2.00	
2	Renovation of water Body (Existing)	No	2.50 L	2	5.00	
Protection & Surveillance:						
3a	Deployment of Gaja sathi.	No	13272/- PM	1 x 60 month	7.963	
3b	Elephant Drive equipments.					
i.	Search Light	No	5000/-	20	1.00	
ii.	Cage	No	2.00 L	1	2.00	
iii.	Other accessories	LS			2.00	
4	Enhancement of Mobility of Officials / Staff- Providing a Hired vehicle (@ Rs 41666.67/ PM for 5 years) including POL	Month	41666.67 PM	60	25.00	
Integrated Fire Protection						
5a	Providing Blowers:	No	0.60L	5	3.00	
5b	Control Burning	LS			3.00	
5c	Recurring Expenses for Blowers (POL)	Annual	0.10L	5*10*0.1	5.00	
Improvement of Avifauna Habitat						
6a	Fixing of Box Nest	No	2500/-	150	3.75	

M. V. Mahapatra
 Agent of Facor Corporation Limited
 Jaipur
 P. No. 133147
 M/s. Ferro Kallipara Dist. Jaipur



Site Specific Wildlife Conservation Plan for Kalarangiatla Chromite Mine at Kalarangiatla under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

6b	Sparrows Conservation (Fixing of earthen Nests)	No	250/-	1500	3.75	
7	Alternate Livelihood support					
7a	Bee Keeping	Unit	7.00 L	1	7.00	In 2 villages
7b	Value Addition to NTFP through SHG	No	3.00 L	2	6.00	2 units through 2 SHG
8	Incentive to VSS involved in Bio diversity area. Small Village Development Work	LS			2.00	
	Total				82.463	
	Add 20% for cost escalation				16.493	
	Total				98.956	

Table 4.1 Abstract of Intervention for Cuttack Division

(Rupeesninety Eight Lakh Ninety Five Thousand & Six Hundred Only)

M. M. Mohanty
 Agent of Mines
 Ferro Alloys Corporation Limited
 Dist. Jajpur
 Pin- 755047
 M/s. Ferro Alloys Corporation Limited
 Dist. Jajpur
 Pin- 755047



Site Specific Wildlife Conservation Plan for Kalaranglatta Chromite Mine at Kalaranglatta under Sukinda Tahasil Dist. Jaipur by M/s Facor Ltd.

6.1 Abstract of Financial Implications (For Cuttack Division)

Abstract of Intervention for Cuttack Division						
Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs	Remark
Habitat Improvement:						
1a	Identification of 5ha site in a single forest patch and providing vegetative fencing on Forest / Human interface side with fencing maintenance	Patch	LS	1 patch of 5 ha	3.00	In Mahagiri DPF
1b	Involvement of VSS & regular interaction	Annual	0.20 L	5	1.00	
1c	Additional POL support	LS			2.00	
2	Renovation of water Body (Existing)	No	2.50 L	2	5.00	
3a	Protection & Surveillance: Deployment of Gaja sathi	No	13556.43/-	2 x 60 month	11.268	
			13272/-		15.926	
			PM			
3b	Wild Animal Drive / Rescue Equipments					
i.	Search Light	No	5000/-	20	1.00	
ii.	Cage	No	2.00 L	1	2.00	
iii.	Other accessories	LS			2.00	
4	Enhancement of Mobility of Officials / Staff- Providing a Hired vehicle (@ Rs 41666.67/ PM for 5 years)	Month	41666.67 PM	60	25.00	
Integrated Fire Protection						
5a	Providing Blowers:	No	0.60L	5	3.00	
5b	Control Burning	LS			3.00	
5c	Recurring Expenses for Blowers (POL)	Annual	0.10L	5*5*0.1	2.50	
Improvement of Avifauna Habitat						
6a	Fixing of Box Nest	No	2500/-	150	3.75	
6b	Sparrows Conservation (Fixing of earthen Nests)	No	250/-	1500	3.75	



Site Specific Wildlife Conservation Plan for Kalarangiatla Chromite Mine at Kalarangiatla under Sukinda Tahasil Dist. Jajpur by M/s Facor Ltd.

7	Alternate Livelihood support						
7a	Bee Keeping		Unit	7.00 L	1	7.00	In 2 villages
7b	Value Addition to NTFP through SHG		No	3.00 L	2	6.00	2 units through 2 SHG
8	Incentive to VSS involved in Bio diversity area. Small Village Development Work".		LS			2.00	
	Total					87.926	88.268
	Add 20% for cost escalation					17.585	17.654
	Total					105.511	105.922

Table 42 Abstract of intervention for Cuttack Division

(Rupees One Crore Five Lakh Fifty One Thousand & One Hundred Only)
(Rupees One Crore Five Lakh Ninety two Thousand & Two hundred only)

[Signature]
Head-Environment
Kalarangiatla Chromite Mine
M/s FACOR Ltd.

[Signature]
Divisional Forest Officer
Cuttack Forest Division

[Signature]
Mr. M. K. Nayak
Muthupari M
Agent of Mines
Corporation Limited
Jajpur Dist. Jajpur
Pin- 755047
Mrs. Jero Alloy
Kaliapara Dist. Jajpur



Site Specific Wildlife Conservation Plan for Kalaranglatta Chromite Mine at Kalaranglatta under Sukinda Tahasil dist. Jaipur by M/s Facor Ltd.

(B) Financial Flow Chart

Sl no	Interventions	Target	Year									
			1st	2 nd	3rd	4th	5th	6th	7th	8th	9th	10th
1a	Identification of Sha site in a single forest patch and providing vegetative fencing on Forest / Human interface side with fencing maintenance	3.00	3.00									
1b	Involvement of VSS & regular interaction	1.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
1c	Additional POL support	2.00	2.00									
2	Renovation of water Body (Existing)	5.00	5.00									
3a	Deployment of Gaja sathi.	7.963	1.5926	1.5926	1.5926	1.5926	1.5926					
3b	Elephant Drive equipments.											
i.	Search Light	1.00	1.00									
ii.	Cage	2.00	2.00									
iii.	Other accessories	2.00	2.00									
4	Enhancement of Mobility of Officials / Staff- Providing a Hired vehicle (@ Rs 41666.67/ PM for 5 years) including POL	25.00	5.00	5.00	5.00	5.00	5.00					
Integrated Fire Protection												
5a	Providing Blowers:	3.00	3.00									
5b	Control Burning	3.00	3.00									
5c	Recurring Expenses for Blowers (POL)	5.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Improvement of Avifauna Habitat												
6a	Fixing of Box Nest	3.75	3.75									
												120

M. Mohan
 M/s. Facor Ltd.
 Jaipur
 Pfr-133047
 M/s. Ferro Kalaranglatta Dist- Jaipur



Site Specific Wildlife Conservation Plan for Kalaranggiatta Chromite Mine at Kalaranggiatta under Sukinda Tahasil dist. Jaipur by M/s Facor Ltd.

[illegible]

Table 43. Financial flow chart.

Mr. Anthony J. Scully
 Director of Finance
 American Telephone & Telegraph Company
 150 Nassau Street
 New York 1, N.Y.



Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

5.2 For Dhenkanal Division:

Abstract of Intervention for Dhenkanal Division					
Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs
1	Fire Line maintenance: (15*15* 10* 326/-)	RKM	15 MD / KM @ Rs326/-	15	7.335
2	Providing Modern Fire Fighting equipments	No	0.60 L	5	3.00
3	POL Expenses (0.1*5*10)	Annual	0.10 L / blower	5	5.00
	S. Total				15.335
	Add 20% for cost escalation				3.067
	Total				18.402

Table 44 Abstract of intervention (Dhenkanal Division)

(Rupees Eighteen Lakh Forty Thousand and Two Hundred Only)


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047



6.2 For Dhenkanal Division:

Abstract of Intervention for Dhenkanal Division

Sl No	Description	Unit	Rate	Quantum	Amount in lakh Rs.	Remark
1	Fire Line maintenance Ranjagarh	Annua	3.297	1 yr	16.17	Detail Calculation in the text
(a)	RF Inter District / Division at a width of 10m over 30 km	m	1.234		16.425	
(b)	Fire Line maintenance: Ranjagarh R Internal at a width of 3m over 20 km	Annu	0.802	5	4.01	
(c)	Fire Line maintenance: Maulabhanja RF at a width of 3m over 15km	m	0.816		4.02	
		Annu	0.609	5	3.045	
2	Providing Modern Fire Fighting equipments	No	0.601	5	3.00	
			0.621		3.100	
3	POL Expenses (0.1*5*5)	Annual	0.10 L / blower	5	2.50	
	S Total				28.725	29.265
	Add 20% for cost escalation				5.745	5.853
	Total				34.47	35.118

(Rupees Thirty Four Lakh Forty Seven Thousand Only)

(Rupees Thirty Five Lakh Eleven Thousand + Eight hundred only)

Head-Environment
Kalarangatta Chromite Mine
M/s FACCP

M. Muthumari
Muthumari M
Agent of Mines
M/s Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

Authorized Signatory
M/s Ferro Alloys Corporation Limited



Site Specific Wildlife Conservation Plan for Kalarangiatta Chromite Mine at Kalrangiatta under Sukinda Tahasil dist. Jajpur by M/s Facor Ltd.

5.3 For Keonjhar WL Division:

Abstract of Intervention for Keonjhar Wildlife Division					
Sl no	Description	Unit	Rate	Quantum	Amount in lakh Rs
a)	Providing Solar Light	No	0.30 L	4	1.20
b)	Printing of IEC Materials	Annual	0.15 L	10	1.50
	Total				2.70
	Add 20% Esc				0.54
	G.Total				3.24

Table 47 Abstract of Intervention (Keonjhar WL Division)

(Rupees Threelakh twenty fourThousand Only)

5.3.1Physical & Financial Flow Chart:

(A) Physical Flow Chart:

Sl No	Intervention	Target	Year									
			1st	2nd	3rd	4th	5th	6 th	7th	8th	9th	10th
1	Providing Solar Light	4no	4									
2	Printing of IEC Materials	10yr	1	1	1	1	1	1	1	1	1	1

Table 48 Physical Flow chart

(B) Financial Flow Chart:

Sl No	Intervention	Target	Year									
			1st	2nd	3rd	4th	5th	6 th	7th	8th	9th	10th
1	Providing Solar Light	1.20	1.20									
2	Printing of IEC Materials	1.50	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	S.Total	2.70	1.35	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Add 20% Cost Esc	0.54	0.27	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	G.total	3.24	1.62	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18

Table 49 Financial flow chart

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047



6.3 For Keonjhar WL Division:

Abstract of Intervention for Keonjhar Wildlife Division

Sl no	Description	Unit	Rate	Quantity	Amount in lakh Rs
a)	Providing Solar Light (High mask)	No	0.301	18	5.40
b)	Printing of IEC Materials	Annual	0.501	5	2.50
	Total				7.90
	Add 20% for cost escalation				1.58
	Total				9.48

Table 48: Abstract of Intervention (Keonjhar WL Division)

(Rupees Nine Lakh Forty Eight Thousand Only)

[Signature]
Head-Environment
Kalaranglatta Chromite Mine
M/s. FACOR Ltd.

[Signature]
Divisional Forest Officer
Keonjhar (WL) Division
Bansdegpur

6.3.1 Physical & Financial Flow Chart:

(A) Physical Flow Chart:

Sl No	Intervention	Target	Year				
			1st	2nd	3rd	4th	5th
1	Providing Solar Light	18	9	9			
2	Printing of IEC Materials	5yr	1	1	1	1	1

Table 49: Physical Flow chart

(B) Financial Flow Chart:

Sl No	Intervention	Target	Year				
			1st	2nd	3rd	4th	5th
1	Providing Solar Light	5.40	2.70	2.70			
2	Printing of IEC Materials	2.50	0.50	0.50	0.50	0.50	0.50
	S.Total	7.9	3.2	3.2	0.5	0.5	0.5
	Add 20% Cost Esc	1.58	0.64	0.64	0.1	0.1	0.1
	G.Total	9.48	3.84	3.84	0.6	0.6	0.6

Table 50: Financial Flow chart

[Signature]
Muthumari M
Agent of Mines
M/s. Farco Alloys Corporation Limited
Kaliaganj, Dist. Jagpur
Pin- 755047



6.4 Plan Period:

This plan is valid for 5 years i.e. from 2022-23 to 2026-27. Another plan will be prepared one year prior to expiry of this plan, if such necessity is felt by the Chief Wildlife Warden. An undertaking to this effect is at Annexure- XI

6.5 Monitoring & Evaluation:

The project implementation will be monitored by a committee headed by Regional Chief Conservator of Forests, Angul Circle. The members of the Committee are the DFO, Cuttack Division, DFO, Dhenkanal Division and DFO, Keonjhar WL Division. The Asst. Conservator of Forests, Cuttack Division will act as member conveyor.

6.6 Interim Review & Revision of the Plan:

The Plan may be reviewed periodically and effectiveness of plan prescription may be evaluated. If required it may be modified after 3 year of implementation.

6.7 Projected Plan Cost:

150.520

The cumulative Plan Cost is projected at Rs 149.461 lakh as detailed below.

Sl No	Executive Agency	Amount in lakh Rs
1	Forest Department	
a	Cuttack Division	105.511 105.922
b	Dhenkanal Division	34.47 35.118
c	Keonjhar WL Division	9.48
	Total	149.461 150.520

(Rupees One Crore Forty Nine Lakh Forty Six Thousand & One Hundred Only)
(Rupees One Crore Fifty Lakh Fifty Two Thousand only)

6.8 Executing Agency:

Above interventions described will be implemented by Cuttack Division, Dhenkanal Division and Keonjhar WL Forest Division.

Signature
Head-Environment
Kalaranglatta Chromite Mine
M/s FACOR LTD.

Signature
The Principal C.C.F. (Wildlife) &
CWLW, Odisha, Bhubaneswar

* Revision done consequent to enhancement of minimum wages before issue for the approval of scheme

Signature
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jajpur
Pin- 755007

Signature
Principal Chief Conservator of Forests
(Wildlife) & Chief Wildlife Warden
Odisha, Bhubaneswar



CHAPTER-VI

Annexure

In the text many documents has been referred to substantiate the data & figures. These are appended here for reference.

To pin point the location maps / plates have been prepared and given as plates. The lists of such plates are given here for reference.

A. Documents

Sl No	Details of annexure	Annexure No	No of Pages
1	ToR (Terms of Reference) vide letter No 3495/SEIAA dated 18.11.2021.	I	14
2	Letter No 10F (Cons) 228/2016- 13769/ F&E dated 27.07.2016	II	10
3	Copy of Form-B (Part-I) as submitted online	III	11
4	The project has obtained Environment Clearance vide Letter No. J-11015/ 183/2007-IA.II (M) dated 13.05.2009	IV	10
5	The last quarter AAQ Report for January 2022	V	3
6	The noise level for quarter ending September,2021	VI	1
7	Undertaking	VII	1

B. Maps / Plates.

Sl. No.	Maps	Plate no.
1	Location Map, Zone of Impact, Additional Zone of Impact and wildlife movement path (1:50000 Scale)	Plate-I
2	Map showing the distance of NP/ WLS/ PA from the Project	Plate-II
3	Map showing the Other Mines within the Zone of Impact	Plate-III

M. Muthuraj
Muthuraj M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

FORM-II
(for projects other than linear projects)
 Government of Odisha
 Office of the District Collector, Jajpur

No. 1533Date 28/7/16

TO WHOMSOEVER IT MAY CONCERN

In compliance of the Ministry of Environment and Forests (MoEF), Government of India's letter No.11-9/98-FC (pt.) dated 3rd August 2009 wherein the MoEF issued guidelines on submission of evidence for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition Forest Rights) Act, 2006 ('FRA' for short) on the forest land proposed to be diverted for non-forest purposes, it is certified that 23.80 hectares of forest land proposed to be diverted in favour of M/s. FACOR Ltd. for Kalarangi Atta Chromite Mines in Jajpur district falls within jurisdiction of Kalarangi Atta village in Sukinda tahsil.

It is further certified that:

- (a) the complete process for identification and settlement of rights under the FRA has been carried out for the entire 23.80 hectares of forest land proposed for diversion. A copy of records of all consultation and meetings of Forest Rights Committee, Gram Sabha (s), Sub-Division Level Committee and the District Level Committee are enclosed as Annexure- A to Annexure-C.
- (b) the proposal for such diversion (with full details of the project and its implementations, in vernacular/local language) have been placed before each concerned Gram Sabha of forest-dwellers, who are eligible under FRA;
- (c) the each of concerned Gram Sabhas, has certified that all formalities/processes under the FRA have been carried out, and that they have given their consent to the proposed diversion and the compensation and ameliorative measures, if any, having understood

M. Muthumari
 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Aliapani, Dist.
 Pin- 755047

the purpose and details of proposed diversion. A copy of the certificate issued by the Gram Sabha of Kaliapani village is enclosed (as mentioned above).

(d) the discussion and decisions on such proposals had taken place only when there was a quorum of minimum 50% of the members of the Gram Sabha present;

(e) the diversion of forest land for facilities managed by the Government as required under section 3 (2) of the FRA have been completed and the Gram Sabhas have given their consent to it;

(f) the rights of Primitive Tribal Groups and Pre-Agricultural Communities, where applicable have been specifically safeguarded as per Section 3 (1) (e) of the FRA.

Encl: As above


(Satya Kumar Mallick)
Collector & District Magistrate,
Jaipur


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

COLLECTORATE : JAIPUR
Ph. 06728-222001 (O), 222330 (R), FAX - 222087
E-mail: dm@jaipur.nic.in, web site: www.jaipur.nic.in
(ST & SC DEV. SECTION)

No. _____ /Date. _____

To

The Divisional Forest Officer,
Cuttack Forest Division, Ghatakul,
Nuapara, Cuttack.

Sub:-

Issuance of certificate under Forest Rights Act, 2006 in
connection with Kalarangi Atta Chromite Mines of
M/s. FACOR LTD.

Ref:-

Letter No. 374 Dt. 07.11.2015 of GM, Ferro Alloys
Corporation Ltd.

Sir,

In inviting a reference to the letter on the captioned subject
cited above, I am directed to enclose herewith the model certificate
[23.80 hectares] in Form-II for projects other than liner projects under
Forest Rights Act, 2006 in favour of M/s. FACOR LTD. for Kalarangi Atta
Chromite Mines for taking further action at your end.

Yours faithfully,

Encl:- As above


District Welfare Officer,
Jaipur

Memo No. 1581 / Date. 20/11/16

Copy forwarded to the General Manager, Kalarangi Atta
Chromite Mines of M/s. FACOR Ltd. At/Po- Kalarangi Atta, Dist- Jaipur
for information and necessary action.


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, D. 25005
Pin- 750007


District Welfare Officer,
Jaipur

FORM-II
(for projects other than linear projects)
Government of Odisha
Office of the District Collector, Jajpur

No. 1538

Date. 28/11/16

TO WHOMSOEVER IT MAY CONCERN

In compliance of the Ministry of Environment and Forests (MoEF), Government of India's letter No.11-9/98-FC (pt.) dated 3rd August 2009 wherein the MoEF issued guidelines on submission of evidence for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition Forest Rights) Act, 2006 ('FRA' for short) on the forest land proposed to be diverted for non-forest purposes, it is certified that 23.80 hectares of forest land proposed to be diverted in favour of M/s. FACOR Ltd. for Kalarangi Atta Chromite Mines in Jajpur district falls within jurisdiction of Kalarangi Atta village in Sukinda tahsil.

It is further certified that:

- (a) the complete process for identification and settlement of rights under the FRA has been carried out for the entire 23.80 hectares of forest land proposed for diversion. A copy of records of all consultation and meetings of Forest Rights Committee, Gram Sabha (s), Sub-Division Level Committee and the District Level Committee are enclosed as Annexure-A to Annexure-C.
- (b) the proposal for such diversion (with full details of the project and its implementations, in vernacular/local language) have been placed before each concerned Gram Sabha of forest-dwellers, who are eligible under FRA:
- (c) the each of concerned Gram Sabhas, has certified that all formalities/processes under the FRA have been carried out, and that they have given their consent to the proposed diversion and the compensation and ameliorative measures, if any, having understood


Muthuman M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jajpur
Pin- 755047

the purpose and details of proposed diversion. A copy of the certificate issued by the Gram Sabha of Kaliapani village is enclosed (as mentioned above).

(d) the discussion and decisions on such proposals had taken place only when there was a quorum of minimum 50% of the members of the Gram Sabha present;

(e) the diversion of forest land for facilities managed by the Government as required under section 3 (2) of the FRA have been completed and the Gram Sabhas have given their consent to it;

(f) the rights of Primitive Tribal Groups and Pre-Agricultural Communities, where applicable have been specifically safeguarded as per Section 3 (1) (e) of the FRA.

Encl: As above

M. Muthumani
Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

(Satya Kumar Mallick)
22/7/11
(Satya Kumar Mallick)
Collector & District Magistrate,
Jaipur

**PROCEEDING OF THE SUB-DIVISIONAL LEVEL COMMITTEE ON DIVERSION OF
FOREST LAND FOR NON-FOREST PURPOSE & APPROVAL OF INDIVIDUAL
CLAIMS UNDER S.T & OTHER TRADITIONAL FOREST DEWELLERS
(RECOGNITION OF FOREST RIGHTS) ACT, 2006 HELD ON 01.06.2016 IN THE
OFFICE CHAMBER OF SUB-COLLECTOR, JAJPUR**

The Sub Divisional Level Committee meeting on Diversion of Forest Land for use of Non-Forest purpose and approval of the individual claims under Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 was held on 01.06.2016 at 9.00 AM under Chairmanship of Sub-Collector, Jajpur.

The following members of the committee were present.

1. Sri Ajay Kumar Sahoo, OFS, ACF, Cuttack
2. Sri Kamadeba Dehuri, P.S Member of Sukinda P.S
3. Sri Pandu Tiya, P.S Member of Sukinda P.S
4. Smt. Sati Dehury, P.S. Member of Dharmasala P.S
5. Sri Debadutta Mahanta, OAS (I), BDO, Sukinda
6. Miss. Chetna Sethi, DWO, Jajpur
7. Sri Padan Charan Jena, ADWO, Jajpur
8. Sri A.K. Pati, Representative of M/s. FACOR
9. Sri B. Dora, Representative of M/s. FACOR

At the outset, the Chairman welcomed all members present and advised the DWO to make aware the members on purpose of the meeting. Initiating the discussion DWO intimated that Gram Sabha of Kalarangi Atta has recommended the diversion proposal of M/s. FACOR Ltd. for use of non-forest purpose under Forest Rights Act. classified as Jungle Klsam, The detailed village wise position is given below.

Name of the Agency	Name of the GP	Name of the Village	Area applied for
M/s. FACOR Ltd.	Ransol	Kalarangi Atta	23.80 Hec.

On perusal of Grama Sabha proceeding forwarded by Block Development Officer, Sukinda, It is revealed that, detailed and elaborate discussion was made in the Gram Sava/Palli Sava regarding Forest Right Act., 2006 and implementation of displacement and its implication and rehabilitation was explained to them in odiya vernacular. Further, It is seen the people present in the Gram Sabha had agreed and given their written consent with recommendation for diversion of forest land of above extent for non-forest use by the M/s. FACOR authorities.

M. Muthumary
Muthumari M
Agent of Mines
Corro Alloys Co.
Kaliapani
Pvt. Limited

After threadbare discussion, It was unanimously decided for diversion of the forest land of 23.80 Hecter for use of non-forest purpose by M/s. FACOR Ltd.

Hence the committee unanimously decided to send the diversion of forest land for use of non-forest purpose by M/s. FACOR Ltd. to District Level Committee.

Then discussion was made as regards the formation of SDLC & DLC in Urban/Municipalities for approval of the proposal submitted by Executive Officer, Vyasanagar Municipality in connection of Solid Waste Management, the Chairman of the committee instructed the DWO, Jajpur to brief up the new guidelines of the ST/SC Dev. Deptt. regarding implementation of FRA in Municipal areas as communicated vide letter No.7531 dt.06.04.2015. The DWO, Jajpur apprised that as per the new provisions of MOTA, Govt. of India, the members of the SDLC and DLC are to be nominated from the concerned Municipal areas. Accordingly the Chairman instructed the Executive Officers of both Jajpur and Vyashagar Municipalities to nominate the new members belonging to the ST Community as per the fixed criteria of the Govt.

Both the Executive Officers present in the meeting nominated the following elected ST members before the SDLC for consideration which is as follows.

Sl. No.	Name of the Municipality	Members nominated by EOs
1	2	3
1.	Jajpur Municipality	1. Sushree Kanak Munda, W. No. 6 (ST Female) 2. Sri Godhi Dehuri, W. No. 16 (ST Male)
2.	Vyasanagar Municipality	1. Mansingh Hembram, W. No. 5 (ST Male) 2. Saraswati Jamuda, W. No. 14 (ST Female) 3. Sapahi Bhuyan, W. No. 17 (ST Female)

The Chairman instructed both Executive Officers to apprise their respective Municipal Councils about the due nomination of the above members as the members of SDLC and DLC as per the provision of Forest Rights Act, 2006 with respect to Municipal/Urban areas.

Thereafter, the DWO intimated that 257 nos. of individual claims in respect of Aradapala, Patana & Ragada villages under Sukinda Tahasil were received with the recommendation of Forest Rights Committee and Gram Sava of the respective villages for approval and issuance of titles after due approval of the District Level Committee.

The detailed village wise position is given below.

Name of the Tahasil	Name of the Village	No. of application received	Total Area in acres
Sukinda	Aradapala	57	Ac. 89.50
	Patana	75	Ac. 50.78
	Ragada	125	Ac. 114.73
	Total	257	Ac. 255.01

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M. S. Sharma
M/s. Ferro Alloys Corporation Limited
Agent of Mines
Kaliapani, Dist. - 755047
Pin- 755047

After joint verification by the revenue and forest officials for determining the possession of actual extent of forest land, the team founded 257 nos. of claim cases eligible for vesting of individual Rights under Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. The committee verified the joint verification report of the revenue and forest officials and case record submitted by Tahasildar, Sukinda and found it was in order. After verification of the case records submitted by Tahasildar, Sukinda, the Sub-Collector-cum-Chairman of the committee decided that, the extend of the land may be reduced on basing of the actual possession of the claimant i.e Homestead & Agriculture purpose only & for Homestead - Ac. 0.10 Dec and for Agriculture- Ac. 0.20 dec. The District Welfare Officer apprised before the committee that, as per Sec 4(6) of the FRA, 2006 a claimant is eligible for a maximum land upto 4 (four) hectors. The A.C.F, Cuttack verified each case record prepared by the Tahasildar, Sukinda and suggested that, as advised by the Chairman the case records may be revised as per actual possession of the tenants before holding of District Level Committee. Accordingly, the Chairman of the Committee rectified the areas as submitted by the Tahasildar, Sukinda and then advised the DWO to rectify the case records in co-ordination with Tahasildar, Sukinda.

It was also resolved unanimously by the Sub-Divisional Level Committee to recommend 257 nos. of claim cases belonging to Scheduled Tribe community covering total extent of Ac.50.02 of land (as per revised extent of land) to District Level Committee for consideration and approval. The village wise breakup is as follows.

Name of the Tahasil	Name of the Village	No. of application received	Area covered (as per revise case record)
Sukinda	Aradapala	57	Ac. 12.43
	Patana	75	Ac. 14.58
	Ragada	125	Ac. 23.01
	Total	257	Ac. 50.02

The meeting ended with vote of thanks to the chair.

[Signature]
Sub-Collector-Cum-Chairman, SDLC
Jaipur

Memp No. 1265 / Date. 22/6/16

Copy forwarded to all members for information and necessary action.

[Signature]
Sub-Collector-Cum-Chairman, SDLC
Jaipur

[Signature]
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Jaipur, Dist- Jaipur
Pin- 755047

Memo No. 1266 / Date. 22/6/16

Copy to Tahasildar, Sukinda /BDP, Sukinda for Information and necessary action.

Ref. 1-6-16
Sub-Collector-Cum-Chairman, SDLC
Jajpur

Memo No. 1267 / Date. 22/6/16

Copy submitted to the Collector, Jajpur for favour of kind information and necessary action.

Ref. 1-6-16
Sub-Collector-Cum-Chairman, SDLC
Jajpur

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jajpur
Pin- 755047

COLLECTORATE : JAIPUR

Ph. 06728-222001 (O), 222330 (R), FAX - 222087
E-mail: dm-jaipur@nic.in, web site: www.jaipur.nic.in
(ST & SC DEV. SECTION)

No 1414 /Date 11/7/16

To

The D.F.O., Cuttack

Sri Dibakar Munda, Z.P. Member, Zone No. 3

At/Po- Masudpur Dist- Jaipur

Ms. Sabita Behera, Z.P. Member, Zone No. 12

At- Uttarposi, Po- Purunabaulamala, Dist- Jaipur

Ms. Tapaswini Malik, Z.P. Member, Zone No. 39

At/Po- Atta, Dist- Jaipur

Sub:-

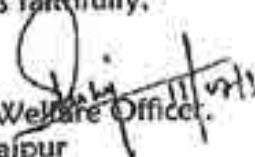
Holding of District Level Committee meeting on Forest Rights Act,
2006 for diversion of forest land for use of non-forest purpose by
M/s. FACOR Ltd.

Sir,

I am directed to say that the Collector-cum-Chairman, DLC has been
pleased to convene the meeting of District Level Committee on Scheduled Tribes
and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 on
diversion of Forest Land for non Forest purpose and approval of Individual claims
on 12.07.2016 at 5.00 PM in the Residential Office Chamber of Collector, Jaipur.

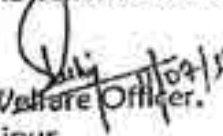
You are, therefore requested to make it convenient to attend the said
meeting on the scheduled date & time fixed and take part in the said deliberation.

Yours faithfully,


District Welfare Officer,
Jaipur

Memo No. 1415 /Date. 11/7/16

Copy submitted to the Sub-Collector-cum-Chairman, SDLC, FRA for
information. He is requested to attend the said meeting on the scheduled date,
time & venue fixed without fail.


District Welfare Officer,
Jaipur

Memo No. 1416 /Date. 11/7/16

Copy submitted to the Tahasildar, Sukinda / Block Development
Officer, Sukinda for favour of information. They are requested to attend the said
meeting on scheduled date, time & venue fixed without fail.

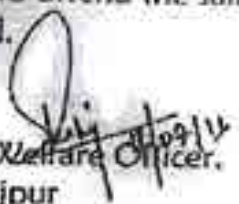

District Welfare Officer,
Jaipur


M. Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

11211

Memo No. 1417 / Date. 11/2/16

Copy forwarded to the General Manager, Ferro Alloys Corporation Ltd., At- Kalarangi Atta Chromite Mines, Po- Kalarangi Atta, Dist- Jajpur, Pin- 755028 for information. He is requested to attend the said meeting on scheduled date, time & venue fixed without fail.


District Welfare Officer,
Jajpur

Memo No. 1418 / Date. 11/2/16

Copy to P.A. to Collector, Jajpur for kind appraisal of Collector.


M. Mathur
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047


District Welfare Officer,
Jajpur

**PROCEEDING OF THE DISTRICT LEVEL COMMITTEE MEETING
HELD ON 12.07.2016 AT 5.00 PM IN THE OFFICE CHAMBER OF
COLLECTOR, JAJPUR**

The District Level Committee was convened on 12.07.2016 for conferment of Forest Right to the ST and Other Traditional Forest Dwellers and diversion of forest land for use of non-forest purpose by M/s. TATA STEEL LTD. & M/s. FACOR Ltd. The Collector-cum-Chairman presided over the meeting. The following members of the committee were present.

1. Sri Ajaya Kumar Sahoo, A.C.F., Cuttack
2. Sri Maheswar Panigrahi, OAS (S), Sub-Collector, Jajpur
3. Sri Dibakar Munda, Z.P. Member, Zone No. 3
4. Ms. Sapita Behera, Z.P. Member, Zone No. 12
5. Ms. Tapaswini Malik, Z.P. Member, Zone No. 39
6. Sri Debadatta Mahanta, OAS (I), Block Development Officer, Sukinda
7. Sri Naba Kishore Jena, OAS (I), Tahasildar, Sukinda
8. Miss Chetna Sethy, OWS, District Welfare Officer, Jajpur
9. Sri Padan Charan Jena, ADWO, Jajpur
10. Sri Rajesh Patel, Rep. of M/s. TATA STEEL Ltd.
11. Sri Anil Kumar Pati, Rep. of M/s. FACOR Ltd.

At the out set the Chairman welcomed all members present in the meeting and appraised the members about aim and objectives of the meeting and advised District Welfare Officer, Jajpur to initiate the Agenda wise discussion.

Then District Welfare Officer, Jajpur initiated the agenda wise discussion as follows.

Agenda- 1 Approval of individual claims for issuance of titles.

Initiating the discussion the Collector-cum-Chairman of DLC wanted to know on verification report prepared by the team in respect of claims. The District Welfare Officer expressed that after the physical verification of the claims by the revenue and forest officials, 257 individual claim cases were found eligible covering a total area measuring Ac. 50.02 Dec. of the following villages for homestead- Ac. 0.10 Dec. & Agriculture- Ac. 0.20 Dec. purpose only recommended by SDLC. Further, the District Welfare Officer intimated before the Committee that, those individual claims have also been


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Kashipur, Dist- Jajpur
Pin- 755047

recommended by Sub-Divisional Level Committee after due verification and rectification of the case records prepared by the Tahasildar, Sukinda which was held on 01.06.2016. Then all the case records were verified by D.F.O, Cuttack represented by ACF, Cuttack and subsequently advised that the sketch map of case records should be prepared in future after getting GPS reading by the team. The village wise FR RoRs to be distributed to the families is as follows for which respective Tahasildars have submitted the case records.

Name of the Tahasil	Name of the Village	No. of RoRs	Area covered (as per revise case record)
Sukinda	Aradapala	57	Ac. 12.43
	Patana	75	Ac. 14.58
	Ragada	125	Ac. 23.01
	Total	257	Ac. 50.02

The committee unanimously approved for vesting of individual Forest Rights title with respect to 257 Forest Dwellers, who were found eligible.

Agenda-2 Diversion of forest land for use of non-forest purpose by M/s. TATA STEEL Ltd.

Initiating the discussion the DWO apprised before the committee that, one allegation petition of Lambodar Mohanta, Secretary, Forest Rights Committee, Kalarangi Atta has been received from Forest & Environment Department vide Letter No. 10056 Dt. 26.05.2016 and the same has also been forwarded to BDO, Sukinda and ACF, Cuttack vide this office Letter No. 1273 Dt. 23.06.2016 on due approval of the Collector-cum-Chairman, DLC for enquiry. On the petition the petitioner has alleged that irregularities committed in Gram Sabha convened for diversion of forest Land for use of non-forest purpose by M/s. TATA STEEL Ltd. and during convening the palli sabha the guideline of FRA under Section 11 (1) (a) & (b) and Sub-Section 2 (a) (b), (c), (d) & (e) and sub section 3, 4, 5 has been contravened. Accordingly, the same has been enquired by the Block Development Officer, Sukinda and ACF, Cuttack and submitted their enquiry report for consideration of the diversion proposal. Further, the ACF, Cuttack present in the meeting expressed that on the day of

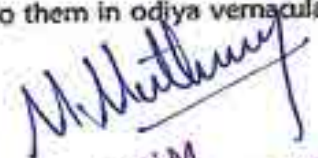
M. Muthumani
Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 755047

Palli Sabha, Sri Lambodar Mohanta was also present in the meeting and participated in the palli sabha, but denied to put his signature in the attendance sheet. As per the provision of the FRA, 2006, 12 nos. of FRC members were present out of 15 in the said palli sabha (i.e above 50%). The matter has also been enquired jointly by the BDO, Sukinda and ACF, Cuttack as regards the remarks of petitioner that during filing, determination and verification of claims by palli sabha, the Forest Rights Committee has been kept unaware regarding the matter which violates section 11 of sub-section (1) (a) (b), Sub-Section 2 (a) (b), (c), (d) & (e) and sub section 3, 4, 5 of ST & OTFD Rule, 2007. During enquiry it is revealed from interrogation to people of Kalarangi Atta village, the local Sarpanch & on perusing the Palli Sabha resolution that no such deviation has been made during convening of the Palli Sabha for the diversion proposal of M/s. TATA STEEL Ltd. and it has been conducted transparently by abiding the laws after fulfillment of requisite quorum i.e 50%. Hence, the allegation filed by Sri Lambodar Mohanta has no merit and is baseless. Thereafter, the Chairman desired to know about the verification report prepared by Tahasildar, Sukinda and the recommendation of Gram Sabha of Kaliapani, Kalarangi Atta & Mahulkhala village for the proposal of Diversion of Forest Land for use of Non-Forest purpose of Sukinda Chromite Mines of M/s. TATA STEEL Ltd.

The DWO apprised before the committee that, the the Gram Sabha of Kaliapani, Ransol G.P has recommended the proposal for diversion of Forest Land measuring 330.972 ha. for use of non-forest purpose by M/s. TATA STEEL Ltd. for Sukinda Chromite Mines before the SDLC & DLC for approval. The detailed village wise position is given below.

Name of the Agency	Name of the GP	Name of the Village	Area applied for
M/s. TATA STEEL Ltd. (Sukinda Chromite Mines)	Kaliapani	Kaliapani	123.195 Ha.
	Ransol	Kalarangi Atta	206.304 Ha.
	Ransol	Mahulkhala	1.473 Ha.
		Total	330.972 Ha.

On verification of the Grama Sabha proceedings forwarded by Block Development Officer, Sukinda, it is revealed that detail discussion was made in the Gram Sava/Palli Sava regarding Forest Right Act., 2006 and its provision and the same was explained to them in odia vernacular. Further, it is seen that the people present


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75504
M/s. T. Limited

in the Gram Sabha have agreed and given their written consent with recommendation for diversion of the forest land of above extent for non-forest use by the M/s. TATA STEEL Ltd. The above areas has been verified by the Revenue Inspector, Kankadapal for determining the possession of land by any claimant under Forest Rights Act- 2006. Moreover, it was found that no individual and community are in possession of the above scheduled land. The same has been confirmed by the Revenue Inspector, Kankadapal through Tahasildar, Sukinda.

Then the Chairman wanted to know regarding compensatory measure for afforestation taken by the mining authorities for the above land. The representatives present in the meeting have confirmed that, no compensatory measure for afforestation is required as this is an on-going mining project. The Forest & Environment Department vide their letter No. 11975 Dt. 26.06.2016 has clarified regarding compensatory afforestation in Para-7 that "since the sabik kisam forest land proposed for diversion now has been broken up prior to 1980, compensatory afforestation is not required to be taken up in this project". The guidelines issued by the Forest & Environment Department vide Letter No. 11975 Dt. 26.06.2016 was placed before the committee for consideration.

Further, the said proposal was also approved by the SDLC giving proper safeguard to the individuals and community claims as per Section 3 (1) (i) & 3(1)(e), 3(2) under Forest Rights Act, 2006 and recommended to DLC for approval. The detail elaborate discussion was made on the recommendation of the SDLC and the District Level Committee approved the Diversion of Forest Land for use of Non-Forest purpose by M/s. TATA STEEL Ltd.,

Agenda No. 3 Diversion of Forest land for use of non-forest purpose by M/s. FACOR Ltd.

DWO apprised before the committee that, the petitioner Sri Lambodar Mahanta has also reflected his petition regarding irregularities committed in Gram Sabha convened for diversion of forest Land for use of non-forest purpose by M/s. FACOR Ltd. and during convening the palli sabha the guideline of FRA under Section 11 (1) (a) & (b) and Sub-Section 2 (a) (b), (c), (d) & (e) and sub section 3, 4, 5 has been contravened. Accordingly, the


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Kaliapani, Dist- Jajpur
Pin- 755047

same has been enquired by the Block Development Officer, Sukinda and ACF, Cuttack and submitted their enquiry report for consideration of the diversion proposal. Further, the ACF, Cuttack present in the meeting expressed that on the day of Palli Sabha, Sri Lambodar Mohanta was also present in the meeting and participated in the palli sabha, but denied to put his signature in the attendance sheet. As per the provision of the FRA, 2006, 12 nos. of FRC members were present out of 15 in the said palli sabha (i.e above 50%). The matter has also been enquired jointly by the BDO, Sukinda and ACF, Cuttack as regards the remarks of petitioner that during filing, determination and verification of claims by palli sabha, the Forest Rights Committee has been kept unaware regarding the matter which violates section 11 of sub-section (1) (a) (b), Sub-Section 2 (a) (b), (c), (d) & (e) and sub section 3, 4, 5 of ST & OTFD Rule, 2007. During enquiry it is revealed from interrogation to people of Kalarangi Atta village, the local Sarpanch & on perusing the Palli Sabha resolution that no such deviation has been made during convening of the Palli Sabha for the diversion proposal of M/s. FACOR Ltd. and it has been conducted transparently by abiding the laws after fulfillment of requisite quorum i.e 50%. Hence, the allegation filed by Sri Lambodar Mohanta has no merit and is baseless. Thereafter, the Chairman desired to know about the verification report prepared by Tahasildar, Sukinda and the recommendation of Gram Sabha of Kalarangi Atta village for the proposal of Diversion of Forest Land for use of Non-Forest purpose of Kalarangi Atta Chromite Mines of M/s. FACOR Ltd.

The DWO apprised before the committee that, the Gram Sabha of Ransol G.P has recommended the proposal for diversion of Forest Land measuring 23.80 ha, for use of non-forest purpose by M/s. FACOR Ltd, for Kalarangi Atta Chromite Mines before the SDLC & DLC for approval. The detailed village wise position is given below.

Name of the Agency	Name of the GP	Name of the Village	Area applied for
M/s. FACOR Ltd.	Ransol	Kalarangi Atta	23.80 Ha.
		Total	23.80 Ha.

M. Muthamari M
Muthamari M
Agent of Mines
M/s. Ferro Alloys Cor.
Kaliapani, D.
Pin- 75

On verification of the Grama Sabha proceedings forwarded by Block Development Officer, Sukinda, it is revealed that detail discussion was made in the Gram Sava/Palli Sava regarding Forest Right Act., 2006 and its provision and the same was explained to them in odiya vernacular. Further, it is seen the people present in the Gram Sabha have agreed and given their written consent with recommendation for diversion of the forest land of above extent for non-forest use by M/s. FACOR Ltd. The above areas has been verified by the Revenue Inspector, Kankadapal for determining the possession of land by any claimant under Forest Rights Act- 2006. Moreover, it was found that no individual and community are in possession of the above scheduled land. The same has been confirmed by the Revenue Inspector, Kankadapal through Tahasilder, Sukinda.

Then the Chairman wanted to know regarding compensatory measure for afforestation taken by the mining authorities for the above land. The representative, M/s. FACOR Ltd. present in the meeting has also confirmed that, the land measuring area 23.80 Ha. has already been occupied in the District of Dhenkanal for afforestation on due approval of the DFO, Dhenkanal and correspondence to DFO, Cuttack vide Letter No. 3812 Dt. 04.05.16 by the DFO, Dhenkanal. Records prepared with this effect has also been placed before the committee for verification. After verification, the same is found correct.

Further, the said proposal was also approved by the SDLC giving proper safeguard to the individuals and community claims as per Section 3 (1) (i) & 3(1)(e), 3(2) under Forest Rights Act, 2006 and recommended to DLC for approval. The detail elaborate discussion was made on the recommendation of the SDLC and the District Level Committee approved the Diversion of Forest Land for use of Non-Forest purpose by M/s. FACOR Ltd.,

The committee resolved to submit certificate in favour of M/s. TATA STEEL LTD. (Area- 330.972 Ha.) & M/s. FACOR Ltd. (Area- 23.80 Ha.) for diversion of the above forest area by the Collector as Chairman of District Level Committee on Forest Rights Act, 2006.

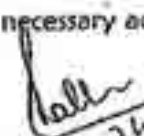
The Meeting ended with vote of thanks to the Chair and the members present.


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corpn
Calhapani, Dist- J.
Pin- 755047


Collector-cum-Chairman,
Jajpur

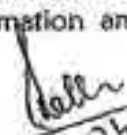
Memo No. 1508 /Date. 25/7/16

Copy forwarded to all members for information and necessary action.


24/7/16
Collector-cum-Chairman,
Jaipur

(4)
Memo No. 1509 /Date. 25/7/16

Copy forwarded to the P.D., DRDA, Jaipur/ Sub-Collector, Jaipur/ Block Development Officer, Sukinda/ Tahasildar, Sukinda for information and necessary action.


24/7/16
Collector-cum-Chairman,
Jaipur

Memo No. 1510 /Date. 25/7/16

Copy forwarded to the Director, ST-cum- Special Secretary to Govt., ST & SC Development Department., Odisha, Bhubaneswar for information and necessary action.


24/7/16
Collector-cum-Chairman,
Jaipur


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin 755047

ଡାକ୍ତରୀ ମନୁ ଶୁଦ୍ଧିକରଣ ବାବଦରେ ଏକ ଶୁଦ୍ଧ ଶୁଦ୍ଧ ଆବିଷ୍କାରୀ ମନୁ ଏହାପାଇଁ -
 ପାଠ୍ୟାବଳୀ ବାବଦରେ ମାନବ ପଦ୍ଧତିରୁ ଆବିଷ୍କାର କରାଯାଇଛି । ୮. ୩. ୧) ଶୁଦ୍ଧ
 ଶୁଦ୍ଧିକରଣ ବାବଦରେ ଶୁଦ୍ଧିକରଣ ।

[illegible][illegible]

Recorded in my presence.

8/7/16

Горько-маленький Биско

১. ব্যয়াদায়ী

an. LTI of Kaini Munda

Asst. Conservator of Forests
Cuttack Forest Division

Cutback Forest
Cultural Mines
Cultural Mines
Cultural Mines

MO...
Agent...
Alloys Corp...
...Dist-...
...755047

Ferrero
Kaliyap
Pin-

୪ ସରକାରୀ ଅଫିସ

୫. [Redacted] LTI of Jogendra Tine

୬. [Redacted] LTI of Lohan Sarder

୭. [Redacted] ସୁବରାଜକୃଷ୍ଣାବତୀ

୮. [Redacted] ଚନ୍ଦ୍ରାବତୀ

୯. [Redacted] LTI of Gengi Hembram

୧୦. [Redacted] LTI of Sumi Murda

୧୧ ପରାଣ ମହାନ୍ତି

୧୨ ଚନ୍ଦ୍ରାବତୀ

୧୩ ସୁବରାଜକୃଷ୍ଣାବତୀ

୧୪ ଜି.ପି.ଏ.ସି

୧୫ ପ୍ରମୋଦକୃଷ୍ଣାବତୀ

୧୬ ମିନୋରୀୟାଲ୍ ଅଫିସ

୧୭ [Redacted] LTI of Kasam Sarder

୧୮ [Redacted] LTI of Sumi Birna

୧୯ ବ୍ରଜବିହାରୀ

୨୦ [Redacted] LTI of Siba. S.M.

M. Muthumari
Muthumari M
Agent of Mines
Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

୨୧ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୨୨ ଶ୍ରୀମତୀ କୁମାରୀ ଶ୍ରୀମତୀ

୨୩ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ

୨୪

LTI of Rabi Mansah

୨୫

LTI of Dusheshan Mahanta

୨୬ Mahendra Mahanta

୨୭ Brindaban Chatter

୨୮ Kuntal K. Nayak

୨୯ Chandra manir Munda

୩୦ ଶ୍ରୀମତୀ Banerjee

୩୧ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୩୨ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୩୩ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୩୪ Salakh. Mahanta

୩୫ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୩୬ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୩୭ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୩୮ LTI of Sanjay Nayak

୩୯

ଶ୍ରୀମତୀ ସୁମିତ୍ରା

M. Muthumari
Muthumari M
Agent of LTI
M/s. Ferro Alloys

80 SUGAM-GOP

81 Gopi Chatter

82 S. Mada

83 Baramali Mohan

84 Sarat Kumar Mohanta

85 Rabi Chandra

86 ନିଧିଶିଳା ପିଣ୍ଡା

87 ନିଧିଶିଳା ପିଣ୍ଡା

88 LTI A Sudersen Munde

89 ନିଧିଶିଳା ପିଣ୍ଡା

90 ନିଧିଶିଳା ପିଣ୍ଡା

91 Shankar Bha

92 Sita Das Nayak

93 Gopinath Pingra

Asst. Conservator of Forests
Cuttack Forest Division

M. Muthumari
Agent of Mines
M/s. Ferro Alloys
Kalia
1st. Jy
047

Block Development Officer
Sukinda

ଆମ ଦାୟିତ୍ବ ହେଉଛି - ପ୍ରକୃତ ସମ୍ବଳକୁ ସଫଳତା ସହ
ଆମ ଦେଶ/ସମ୍ପ୍ରଦାୟକୁ ଉନ୍ନତ କରିବା ନିମନ୍ତେ ।

ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ - ଜିଉଛନ୍ତି ଧନ୍ୟବାଦ
 ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ - ଶ୍ରୀମତୀ
 ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ - ଶ୍ରୀମତୀ
 ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ - ଶ୍ରୀମତୀ

राजकुल - प्रकाश - ११११११११

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୧. ସ୍ୱାଧୀନତା - ଶ୍ରେଷ୍ଠତମ ପ୍ରାଣ ସଂରକ୍ଷଣ

171

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kahapani, Dist. Jai
Pin- 755014

RECEIVED 27/5/16
KANKADU

6/5/16
REVENUE INSPECTOR
KANKADU

G. N. N. N.
6/5/16
Madhuri Hembrar
P. S. Membak Ransal G.P.

6/5/16
P. S. Membak
Ransal G.P.

J. P. S.
P. S. Membak
Ransal G.P.
Executive Officer
Ransal G.P.

M. Muthumari

Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jorh
Pin 785047

6.5.2016
Executive Officer
BUKINDA BLOCK

6/5/16
P. S. Membak
Ransal G.P.

6/5/16
GENERAL MANAGER
FACOR

6/5/16
FACOR

6/5/16
Mines Manager
Jangalita Chromite Mines
M/s. FACOR LTD.

6/5/16
22/5/16

6/5/16

6/5/16

6/5/16

6/5/16

2009

To

Sub-Report regarding Controversy of Pelli Sabha / Eranna Sabha for issuance of Certificate under Forest rights Act - 2006 for diversion of forest land for non-forest use in connection with F&COP Chavante Mines, Kalamangiatte.

Ref:- Tahsil office Seelinda Memo No: 29/4/16.

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ସୂଚନା ଦେଉଛନ୍ତି ଚାହାନ୍ତି ଉପରୋକ୍ତ ନିମ୍ନଲିଖିତ ସୂଚନା ଉପରେ ଆଧାର କରି କାର୍ଯ୍ୟକାରୀ
e-M/s FACTOR Ltd କରୁଥିବା ଏକ କ୍ଷେତ୍ର ମାଧ୍ୟମରେ ସାହିତ୍ୟ ହେଉଥିବା କାର୍ଯ୍ୟକାରୀ
ମାଲିକାନା ସୂଚନା ଉପରେ ଆଧାର କରି ସାହିତ୍ୟ ହେଉଥିବା କାର୍ଯ୍ୟକାରୀ
ମାଲିକାନା ସୂଚନା ଉପରେ ଆଧାର କରି ସାହିତ୍ୟ ହେଉଥିବା କାର୍ଯ୍ୟକାରୀ

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M. Muthumari M
Agent of Mines
M/s. Ferro Alloys Refractories Limited

SABIR AND HALI G-RELA MIN LAND SCHEDULE OF M/L. FACOR, KALAF. GIATTA CHROMITE MINES ON AC 58.81

Sl. No.	Name of the Village	Khata No.	Status	STAKE LAND SCHEDULE				LAND SCHEDULE				Remarks			
				P. No.	Kisam	Total area of the Plot	Leased out area	Khata No.	Status	Plot No.	Kisam		Total area of the Plot	Leased out area	
2	Kalarangatta	32	Anabadi		Sai Jungle	Ac. 202.40	Ac. 24.55								
2	Kalarangatta	32	Anabadi	6	Sai Jungle	Ac. 443.30	Ac. 34.25								

(Forest Range Officer)
Sukinda Range
District Range Officer

Muthumani
Agent of Mines

TALASILDAR
SUKINDA

Asst. Conservator of Forests
Cuttack Forest Division.

Kanadapal

Forester
Ransol

Director (Mines)
Power of Attorney
FERRO ALLOYS CORP.
INDIA LTD

Chief Executive
Office
Cuttack Forest Division

Hsv e-mail

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
OFFICE OF THE REGIONAL CONTROLLER OF MINES, BHUBANESHWAR

No. BRS/JJP/CR/7186/RMP/2022-23

DOI: 10.1002/for

Star/Mc: Petro Alloys Corporation Limited,
D. P. Nayyar, Roodin Braintree Rhodora

Sub: Approval of the Revision of Mining Plan along with Progressive Mine Closure Plan (PMCP) in respect of Kalarangula Mining Lease Area for Chromite Ore over an area of 23.80 ha of M/s Fern Alloys Corporation Ltd., situated in Kalarangula Village, Sukunda Taluka, Balasore District of Odisha State.

512

In exercise of the powers conferred by clause (b) of sub-section (2) of section 5 of the Mines & Minerals (Development & Regulation) Act, 1957 read with Government of India Order No.S.O.445(E) dated 28.04.1987 and S.O. 1857(E) dated 18th May, 2010, I hereby approve the Review of Mining Plan along with Progressive Mine Closure Plan (PMP) in respect of Kalinganada Mining Lease Area for Chromite Ore over an area of 23.28 Ha. of M/s. Ferro Alloys Corporation Ltd., situated in Kalinganada Village, Sukinda Taluk, Jajpur District of Odisha State. This approval is subject to the following conditions:-

A—General Conditions:

- (1). The review of Mining Plan is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.
- (2). That this approval of aforesaid Review of Mining Plan does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Act, 1957, or the Mineral Concession Rules, 2016 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under and other relevant statutes, order and guidelines as may be applicable to the lease area from time to time
- (3). The provisions of the Mines Act, 1952 and Rules and Regulations made thereunder including submission of notices of opening, appointment of manager and other statutory officials as required by the Mines Act, 1952 shall be complied with.
- (4). The execution of Review of Mining Plan shall be subjected to variations of prohibitory orders / notices, if any.
- (5). If anything is found to be concealed as required by the Mines Act in the contents of the mining plan and the plan for rectification has not been made, the approval shall be deemed to have been withdrawn with immobilize effect.

M. S. Ferro Alloys Ltd.
Kaliyannur, Dist. Jodhpur
Pin- 755047

(6). This approval for proposed mining operations and associated activities is restricted to the mining lease area only from this date. The mining lease area is as shown on the statutory plans by the Lessee/AP/ Applicant and Indian Bureau of Mines has not undertaken any survey/ verification of mining lease boundary on the ground.

(7). Your attention is invited to the Supreme Court interim order in W.P. (C) No. 202 dated 12.12.1996 for compliance. The approval of above said Mining Plan is therefore, issued without prejudice to and is subject to the said directions of the Supreme Court as applicable.

(8). This department does not undertake any responsibility regarding correctness of the boundaries of the lease area shown on the ground.

(9). At any stage, if it is observed that the information furnished in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.

(10). If this approval conflicts with any other law or court order/ Direction under any statute, it shall be revoked immediately.

(11). It shall be mandatory for the project proposer, abstracting ground water, to obtain "No Objection Certificate" from Central Ground Water Authority or, the concerned State/ Union Territory Ground Water Authority, as the case may be.

(12). Lessee shall ensure grazing/ re-grazing of worked out mining lease area in accordance with the Supreme Court Order dated 8/1/2020.

(13). This approval has been given for mining proposal for the year 2023-24 to 2027-28 and are subject to the validity of lease period.

(14). The next Review of Mining Plan for the subsequent period of five years shall become due 180 days before expiry of this document proposal period.

(15). The validity period of the financial assurance shall be renewed before the expiry of the same and should be submitted to this office on or before 1/4/2028.

A-Special Conditions:

(1). Mining work at common boundary with adjacent lessee should be started only after getting necessary permissions.

Yours Faithfully

(B.L.GOURAB)

Regional Controller Of Mines,

Indian Bureau of Mines, Bhandara

Copy for information to:-

(1). The Controller of Mines (EZ), Indian Bureau of Mines, CP-13, Sector V, Salt Lake City, Kolkata- 700 091 by mail. zokol@ibm.gov.in

(2). The Director of Mines, Directorate of Mines, Government of Odisha, Heads of the Department Building, Bhubaneswar- 751 001. Email- directoratodm@odishaibm.gov.in

(3). The Director of Mines Safety, Chhatra, Email- alfarhassainkha@gmail.com

(4). Sri Arjit Bhunia, Qualified Person by mail. Email- arjit.bhunia@ibm.co.in

(5). Concerned MCDR file.

M. J. Mohapatra
Managing Director
Indian Bureau of Mines Limited

Approved

Chapter 1 : General Information

1.1 : Lease Details

IBM Registration Number :	IBM/173/2011
Lease Code :	40054601
Mine Code :	110RI19022
Name of Lessee :	Ferro Alloys Corporation Limited
Address of Lessee :	D.P. Nagar, Ranchi Bhadrak Bhadrak
Type of Lessee :	Private
Name of Mining Lease :	KALABRANGIATTA
State :	ODISHA
District :	JALAPUR
Tehsil/Taluk/ Mandal :	Kaliqunt
Village :	Kalirangpara (CT)
Lease Area (Ha) :	23.800
Forest Area (Ha) :	23.8000
Name of Minerals :	CHROMITE
Name of associated minerals :	
Type :	Existing Lease


 M. K. Mishra
 District Collector
 Jharkhand
 15/05/2017

Period of the proposal (FY) from :	2023 - 24
Period of the proposal (FY) to :	2027 - 28
Type of working :	Opencast
Nature of Use :	Captive
Category of Mine :	Category A

1.1.1 : Initial/subsequent Lease grant details

Grant	From	To	Lease deed execution date	Lease registration date
Initial Grant	18/04/2008	17/04/2038	18/04/2008	10/04/2008

1.1.2 : Mining Plan Submission Criteria Details

Type of Document :	Review Of Mining Plan Under Rule 17(2) Of MCR, 2016
Reasons For Modification :	Last Mining Plan Was Approved For The Period Of 2018 To 2022 And This Will Be The Review Of Mining Plan From 2023 To 2028
Period for which modification is proposed :	2023-2024 to 2027-2028

1.2 : Land Ownership Details

View Land Ownership Details Excel	LAND OWNERSHIP DETAILS OF KCM.xlsx

1.3 : Existing Lease

Date of Execution :	18/04/2008

M. Muthumari M
Muthumari M
Agent of Mines
Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaisalmer
Pin- 345047
M/s. Ferro Alloys Corporation Limited

1.3.1 : Approval of earlier Mining Plan & Its Subsequent Review in Chronological Order

S.N.	Letter Number	Date	Period		Type Of Approved Document	Remark
			From	To		
1	314(3)/2005-MCCM(C)/MP-18	06/10/2005	01/05/2008	31/03/2013	Mining Plan	-
2	MS/OTPM/50-ORI/BH U/2012-13	28/03/2013	01/04/2013	31/03/2018	Scheme Of Mining	-
3	MS/OTPM/42-ORI/BH U/2017-18/2794	13/02/2018	01/04/2018	31/03/2023	Review Of Mining Plan	-
4	MERMP/A/09-ORI/BHU /2021-22/665	29/07/2021	01/06/2021	31/03/2023	Modification Of Mining Plan	-

1.3.2 : Partial Surrendered Area During Stages of Operations in Chronological Order

Sr.no	Date	Supplementary Surrender order / Letter Number	Supplementary Lease Deed Date	Final Retained Area over which current Mining Plan is Prepared (ha)
1	Nil	Nil	Nil	23.800

1.3.3 : Transfer of Lease Area Subsequent to Grant

Sr.no	Transfer of lease deed letter number	Date of execution of Transfer lease deed	Name of Transferee	Nature of block transferred	
				Granted through auction	Other than through auction for captive use
1	NIL	03/01/2001	NIL	Nil	Nil

1.3.4 : Statutory Compliances

1.3.4.1 : Environment Clearance


 Anurag Singh
 Agent of Mines Corporation Ltd.
 14/08/2023

Applicable :	Yes
Letter No :	J-11015/183/2007-LA/II(M)
Date :	13/05/2009
Validity :	17/04/2038
ROM Mineral in tonnes :	50000.0000

1.3.4.2 : SPCB Approvals

Letter No :	4158/IND-1-CON-6318
Approval of :	Consent To Operate
Date :	17/03/2022
Validity :	31/03/2023
ROM Mineral in tonnes :	50000.0000

1.3.4.3 : Forest Clearance

Applicable :	Yes
Letter No :	UNDER PROCESS
Date :	12/11/2011
Validity :	05/05/1002
Area (Ha) :	23.8000

1.3.4.4 : Land Acquisition Details


 M. S. Raju
 Managing Director
 Ferro Alloys Corporation Limited
 Kalaburagi, Dist. - Bellary
 pin- 575021

Total Area Acquired in hectare	22.7390
Total Amount Paid (INR) :	10000.0000

1.3.5 : Mine Location Details

Toposheet Number :	F45N12(Earlier 73G/12)

1.3.5.1 : Location of Boundary Pillars

View Location of Boundary Pillars Excel	166306172163204e6972169location_boundary_pillars_of_KCM.xlsx

1.3.6 : Owner/Nominated Owner Details

Name	PAN of owner / Nominated Owner	Address of owner/ Nominated Owner	Mobile Number	Email	Please attach Minutes of Board Resolution in case of Nominated Owner
Ferro Alloys Corporation Limited	AAACF1999A	DPNagar Rauda Bhatra Odisha	6784240320	factor.mines@vedanta.co.in	Resolution_POA to Saurick Mazumdar FACOR.pdf

1.3.7 : Qualified Person Details as per MCOAHCEMCR, 2016

S.N.	Prefix	Name	PAN of QP	Address	Mobile no.	Qualification		
1	Mr	Avjit Bhunia	BQHPB6353D	Kalarangata Chromite Mine Kalarangata Jaipur Odisha 755028	8093038833	BE Mining Engineering	11	avjit.bhuniar@vedanta.co.in
2	Mr	Imandi Ramu Rao	AAVPI2168J	Kalarangata Chromite Mine Kalarangata Jaipur Odisha	9437528823	Msc Geology	24	imandiram.rao@vedanta.co.in

Muthuman M
Agent of Mines
M/s Ferro Alloys Corporation Limited
H-8F, Kharibari, Dist- Jaipur
presented on 07/5/2024

735028

Approved

M. N. Muthuram
Muthuram M.
Agent of Mines
Ferro Alloy's Corporation Limited
Dist- Jaipur
Pin- 755047

Chapter 2A : Geology & Exploration

2A.1 : Geology

2A.1.1 : Topography

Terrain :	Plain
Highest Level (m) from MSL :	104.0000
Lowest Level (m) from MSL :	40.0000
Average Level (m) from MSL :	78.0000
Drainage Pattern :	Parallel
Order of Stream :	Order 1
Min Dist of Stream from Lease Area(m) :	970.0000

2A.1.2 : Details of Physiographic features and Infrastructures available in and around the lease/ block area

Description	Location if existing Within the lease/block area	Distance from boundary periphery in kms, if existing outside the lease/block area, (within 5.00Kms)	Remark if any
River/Nallah/Reservoir	Nil	0.97	Damsula Nallah is 970m away from the lease boundary
Public roads (Tar road, cart road)	Nil	0.01	Tomika Mangalpur Highway passes along the northern Boundary of the lease area
Railway track	Nil	0	No railway track passing within 5km radius of Methimari M
Human settlements	Nil	0.2	Nearest Village Kalahandi
Archaeological monuments/ places of worship/public utilities etc	Nil	0	No archaeological monuments and places of worship within 5km radius

M. Muthuram

2A.1.4 : Local Geology & Structure

2A.1.4.1 : Local Geological Set-up

Topography: Entire leasehold area is a flat terrain having a gentle slope 20 degree towards North-West. The highest contour in the lease hold at North East corner of the lease boundary. **Local Geology:** The leasehold area is situated on the Southern limb of Sukinda ultramafic complex and represents a highly weathered and altered product of ultramafic mass overlain by laterite, the top part of which is further decomposed to soil due to extensive weathering. The different lithological units have been encountered in quarries and exposed. Further, as per the borehole intersection avg. The thickness of different lithological units are Alluvial: 2-3m; Laterite: 8-12 meters. Peridotite extends from 88mRL to -156mRL (approximately 250m) with intensive alteration observed named as Limonised Peridotite, Serpentinised Peridotite. Along with it traces of Pyroxene & Tale schist also observed in a few bore holes but it is very minimum.

2A.1.4.2 : Structure

Structure of Lease Hold Area: No structural features like fold, shear zone, slip plane etc., could be seen in the area because of the laterite covering area. However 3 sets of joints could be observed in the exposed part of the wall rock contact (limonite) in the quarry towards F/W side. The joints are filled with secondary mineral deposits like silica, limonite, magnesite etc. and their thickness vary from 1 to 5mm. The joints are extending for a length of 1 to 3m both along strike and dip direction. A 15-20m wide dyke found after detail exploration drilling inside the mine lease boundary.

2A.1.4.3 : Lithology, Petrographic & Mineralogical Description for Major, Associated & Indicator Minerals

Lithology, Petrographic & Mineralogical Description for Major, Associated & Indicator Minerals: The chromite deposit of Sukinda belt is mainly stratiform type and can be classified into the categories like bumpy ore, granular ore, ferruginous ore, disseminated ore and banded ore. **Lithology** comprises of soil and alluvium and laterite, dolerite dyke, meta-basalt, lavioleitic, chromiferous ultramafics. Chromite is an iron chromium oxide mineral and the only ore of chromium metal. Chromite is a metal used to induce hardness, toughness and chemical resistance in steel. The alloy produced is known as stainless steel. Chromium occurs in minor amounts in such a large number of silicate minerals that a complete list of chromium bearing minerals would have little significance. The monoclinic amphiboles, pyroxenes, and chlorites are the most important group of chromium bearing silicates. It is found in ultrabasic rocks such as peridotite and also associated with serpentinite. It is a high temperature mineral often found in the lower parts of magma bodies from the fractional crystallization process. It is also found in serpentines and other metamorphic rocks derived from the alteration of ultrabasic rocks. The name is commonly used for any Cr-rich mineral of the spinel group, particularly for the chromite-magnesiochromite series.

2A.1.4.4 : Mode of Occurrence & Controls of Mineralization

Mode of Occurrence and Controls of Mineralization: Chromite is found as orthoaccumulate lenses in peridotite from the earth's mantle. It is also occurred in layered ultramafic intrusive rock. It is found in metamorphic rocks such as some serpentinites. Ore deposits of chromite from as early magmatic differentiates.

2A.1.4.5 : Extent of Weathering/ Alteration

Extent of Weathering/Alteration: Soil developed from ultramafic rocks are particularly rich in trace metals like Ni and Cr deposit high Cr concentrations in ultramafic rocks. The Chromite FeCr_2O_4 is a common primary spinel in mafic and ultramafic rocks. Observations have been made of chromite which have undergone significant alteration during metamorphism, observed in the core of

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Odisha-755017



boreholes named as Limestoneised Peridotite, Serpentinised Peridotite.

	Friable
2A.1.4.6 : Nature/Form of Mineral Specify if any other	Chromite is a crystalline mineral composed primarily of iron oxide and chromium oxide compounds. It can be represented by the chemical formula of $FeCr_2O_4$. It is an oxide mineral belonging to the spinel group.

2A.1.4.7 : Extent of Mineralization

Extent of Mineralization: Commercial chromite deposits that are large enough for mining are generally found stratiform deposit and podiform deposit and other source of chromite are laterites that are weathering product of peridotite. Laterites are more widely known as source of nickel and cobalt. Laterites have historically been minor source of chromite. Most of the world's chromite resources occur as stratiform deposits in layered deposit.

2A.1.4.8 : Deposit Type (as per MEAMC Rule)

The lease hold area is situated on the southern limb of Sukinda ultramafic complex which is a stratiform deposit in nature falls under type-1 (Bedded Stratiform & tabular deposits of regular and irregular habit) according to MEAMC rule 2015. It represents a highly weathered and altered product of ultramafic mass overlain by 8 to 12m thickness of laterite capping, top part of which is further decomposed to soil due to extensive weathering.

Strike / Trend of the Ore Body							
N	52	E	to	S	52		W
Amount of Dip of the Ore Body (degree)				Amount of Dip of the Ore Body (degree)			
	85				90		(to)
	(from)						
Dip Direction of the Ore Body				Plunge of Mineral Body (degree) (if any)			
NW	NE	SW	0.00		SE		W

2A.2: Exploration

M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

2A.2.1: Summary of The Previous Exploration (for fresh grant) / During Last Plan Period (for existing leases)

Name of The Agency					
NIL					

2A.2.1.1: Geological Mapping

SL.No.	Year		Scale	Area Covered (Ha)	
	From	To			
1	01/06/2018	31/03/2022	1:2000	23.8000	

2A.2.1.2: Airborne Geophysical Survey

SL.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					From	To	From	To
1	NIL	0.00	0.00	0.0000	NIL	NIL	NIL	NIL

2A.2.1.3: Ground Geophysical Survey

SL.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					From	To	From	To
1	NIL	0.00	0	0.0000	NIL	NIL	NIL	NIL

2A.2.1.4: Geochemical Survey

SL.No.	Type of Sample	No of Samples	Analysis report	Area Covered (Ha)	
				From	To
1	NIL	NIL	NIL	NIL	NIL

2A.2.1.5: Pitting


 P. S. Srinivasan
 Director, District Mineral
 Development Authority,
 Tirunelveli District
 Tamil Nadu

Number of Pits

Nil

Sl.No.	Year	Pit ID	Length of Pit (m)	Width of Pit (m)	Depth of Pit (m)	Depth (from)	Depth (to)	Running mtr	Litho units exposed	Name of the mineral	Av Grade (%)	Latitude (dd:mm:ss.ss)	Longitude (dd:mm:ss.ss)
	From	To										From	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.1.6: Trenching

Number of Trenches

Nil

2A.2.1.6.1: Spacing

Min (m)	Max (m)	Avg (m)
Nil	Nil	Nil

Sl.No.	Year	Trench ID	Length of Trench (m)	Width of Trench (m)	Depth of Trench (m)	Depth (from)	Depth (to)	Running mtr	Litho units exposed	Name of the mineral	Av. Grade	Latitude (dd:mm:ss.ss)	Longitude (dd:mm:ss.ss)
	From	To										From	To
1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

2A.2.1.7 Exploratory Drilling(Core/Non Core)

Sl.No.	Year		Exploration agency	Core holes		Non-core (RC/DTH)		Grand total		Attach log sheet of each borehole in csv/excel format
	From	To		Number of boreholes drilled	Total mtrs	Number of boreholes drilled	Total mtrs	Number of boreholes drilled	Total mtrs	
1	01/04/2018	31/03/2019	Outside Agency	3	320.00	9	960.00	12	1280.00	Log Sheet 2018-19.xlsx

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Geological Survey of India
Mineral Resources Division
New Delhi-110002
Phone: 7690471
Fax: 7690471

2	01/04/2019	31/03/2020	In house & Outside agency	3	254.20	4	340.00	7	594.20	Log sheet 2019-20.xlsx
3	01/04/2020	31/03/2021	Outside agency (MMPL Pvt Ltd)	4	351.20	0	0.00	4	351.20	Log Sheet 2020-21.xlsx
4	01/04/2021	31/03/2022	Outside agency (MMPL Pvt Ltd)	25	3387.00	0	0.00	25	3387.00	Log Sheet 2021-22.xlsx

2A.2.1.8: Exploratory Mining

Sl No.	Pit/Adit ID	Length in Mtr	Width in Mtr	Depth in mtrs	Volume (m ³)
1	N/A	0.00	0.00	0.00	0.00

2A.2.1.9: Sampling

Sl.No.	Type of sample	No of samples collected	Number of samples analyzed	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Remark if any
				From	To	From	To	
1	Drill Core	742	742	21:01:01.75	21:01:27.28	85:44:20.59	85:44:36.12	Core drill samples analyzed at NABL Lab during the year 2021-22

2A.2.1.10: Chemical Analysis

Sl.No.	Sample ID	Minerals	Radical with grade in %	Name of Agency	Type of agency	Attachment
1	uploaded in attachment	chromite	Chromite	Maheswari Mining pvt ltd	NABL accredited	Log_Sheet_2018-21.xlsx

* Chemical analysis of core from vore samples may be uploaded in CSV file which shall normally include Five files namely collar file, survey file and Geology log file, Assay file & ROD File

2A.2.1.11: Petrology & Mineralogical Studies

Sl.No.	Type of Sample	Number of Sample Drawn	Number of Sample Analyzed	Petrographic Study Report

M/s. Ferro Alloys Corporation Limited
Kariyapattanam, District, India

M. M. M. M.

1	Nil	1	1	Nil

2A.2.1.12: Beneficiation Studies

Sl.No.	Type of Beneficiation	Number of Samples	Attach
1	Others	Nil	Nil

2A.2.1.13: Bulk Density Study as per MEMIC Rules, 2016 and SOP of CGPB

Method adopted for calculating bulk density of ore and waste

Bulk density study has been carried out by NABL Lab SGS. Test type: Dry Bulk density Test Protocol: ASTM D4531-15 (Method B)

Sl.No.	Nature of Ore/OB	Mineral	Number of samples	Bulk Density Established (t/m^3)
1	Frangible Ore	chromite	3	3.20
2	Core Sample	Chromite	4	3.23

2A.2.1.14: Area Covered under Exploration

Level of exploration	Area in Ha.		Total Area in Ha.
	Forest	Non Forest	
G-1	23,800,000	0.000000	23,800,000
G-2	0.000000	0.000000	0.000000
G-3	0.000000	0.000000	0.000000
G-4	0.000000	0.000000	0.000000
Area proved as Non-mineralized	0.000000	0.000000	0.000000
Area to be explored	0.000000	0.000000	0.000000
Total	23,800,000	0.000000	23,800,000

2A.2.2: Summary of The Previous Exploration (Before Last Plan Period)

M. Muthuraj
 Agent of Mines
 Muthuraj & Co. Limited
 No. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 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627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 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1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038,

Name of The Agency

Exploration was carried out by M/s FACOR LTD (In house Exploration Team) &

2A.2.2.1: Geological Mapping

Sl.No.	Year		Scale	Area Covered (Ha)
	From	To		
1	15/12/2008	31/05/2018	1:2000	23.80

2A.2.2.2: Airborne Geophysical Survey

Sl.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					From	To	From	To
1	Self-Potential (SP)	0.00	0.000000	0.00	Nil	Nil	Nil	Nil

2A.2.2.3: Ground Geophysical Survey

Sl.No.	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
					From	To	From	To
1	NIL	00	0	0.0000	00:00:00:00	Nil	Nil	00:00:00:00

2A.2.2.4: Geochemical Survey

Sl.No.	Type of Sample		No of Samples
	From	To	
1	Rock-chip		20

2A.2.2.5: Pitting

Sl.No.	Pit ID	Length of Pit (m)	Width of Pit (m)	Depth of Pit (m)	Litho units exposed	Litho Unit From (m)	Litho Unit To (m)	Average Grade(%)	Running Metres (m)	Latitude (dd:mm:ss.ss)			
										From	To	From	To

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Agent of M/s
Muthumani M

[Signature]

1	0.00	0.0000	0.0000	0.0000	nil	0.00	0.0000	Nil	Nil	Nil	Nil

2A.2.2.7: Exploratory Drilling

2A.2.1.7.1: Core/Non-core Drilling

Sl.No.	Year		Exploration agency	Core holes		Non-core (RC/DTH)		Grand total		Attach log sheet of each borehole in csv/excel format
	From	To		Number of boreholes drilled	Total mtrs	Number of boreholes drilled	Total mtrs	Total boreholes	Total mtrs	
1	01/04/2012	31/03/2013	In house	0	0.00	92	2150.00	92	2150.00	Log sheet 2012-13.xlsx
2	01/04/2013	31/03/2014	In house	0	0.00	2	65.00	2	65.00	Log sheet 2013-14.xlsx
3	01/04/2014	31/03/2015	In house	0	0.00	34	798.00	34	798.00	Log sheet 2014-15.xlsx
4	01/04/2016	31/03/2017	In house	0	0.00	4	157.00	4	157.00	Log sheet 2016-17.xlsx
5	01/04/2017	31/03/2018	In house	0	0.00	4	140.00	4	140.00	Log sheet 2017-18.xlsx

2A.2.2.8: Exploratory Mining

Sl.No	Pit / Adit ID		Volume (m ³)
1	single pit		907247.00

2A.2.2.9: Sampling

Sl.No.	Type of sample	Number of Samples	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	Remarks
				From	To		
1	Drill Core	570	23.80	21-00-58.70	21-01-27.50	85-44-32.20	85-44-51.57

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 M/o From Office Bangalore
 Bangalore Rd limited

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2A.2.2.10: Chemical Analysis

Sl.No.	Sample ID	Minerals	Radical Analysis	Attachment
1	Sample attached	chromite iron Silica	Chromite	Analysis_2012-23.XLSX

2A.2.2.11: Petrology & Mineralogical Studies

Sl.No.	Type of Sample	Number of Sample Drawn	Number of Sample Analyzed	Petrographic Study Report
1	Mineral	1	1	Petrology and Mineralogy Report Kathangian, J.T..pdf

2A.2.2.12: Beneficiation Test

Sl.No.	Type of Beneficiation	Number of Samples	Attachment
1	Nil	Nil	Nil

2A.2.2.13: Bulk Density

Sl.No.	Rock Type	Number of Samples	Minerals	Bulk Density Established (t/m ³)
1	Ore from Pit	3	chromite	3.20
2	Core sample	4	Chromite	3.22

2A.2.2.14: Area Covered under Exploration

Level of exploration	Area in Ha.		Total Area in Ha.
	Forest	Non Forest	
G-1	Nil	Nil	23.8000
G-2	Nil	Nil	0.0000
G-3	Nil	Nil	0.0000
G-4	Nil	Nil	0.0000


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 Department of Mines
 Government of Karnataka
 Bangalore

Area proved as Non-mineralized		Nil		Nil
Area to be explored		Nil		Nil
Total		Nil		Nil

Sl.No.	Year		Area converted to G1 from G2, G3 & G4	% increase in G-1 Area	Remaining Area % in G2	Remaining Area % in G3	Remaining Area % in G4	Remaining Area in G2	Remaining Area in G3	Remaining Area in G4
	From	To								
1	12/08/2018	31/03/2023	23.80	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Potentially Mineralised area (Ha)										
9.60										

2A.2.3 Ore Body Geometry & Grade

Sl.No.	Name of the ore band	General Strike / Trend	Dip Of Mineral Body	Average Strike Length (m)	Average Width (m)	Chemical parameters				
						Average Depth (m)	Name of the radical	Min Grade (%)	Max Grade (%)	Avg Grade (%)
1	Band 1	E-W	N	280.00	15.00	250.00	Chromite	10.00	58.00	40.50

2A.2.4: Reserve / Resource Estimation Method

2A.2.4.1: Methodology

Resource / Reserve Estimation Method

Sectional Area Method

Methodology

The mineral mined from Kalarangal mines is Chromite. Here we found single ore body of Chromite running from east to west. It has the trend of N52°E to S52°W & dip of 85° to 90° (Almost Vertically). The Ore body has Avg. Strike length of 280m, avg. width of 15m, avg. grade of 42% of Cr2O3. The area is divided into four sections named Section-1, Section-2, Section-3, Section-4 with 50m of spacing in between. The Avg. Bulk density of the ore body is 3.2. To calculate volume of ore body the sectional area from each transverse section is considered multiplied by influence for each section except for section 1. For section-1 average ore body width is taken to avoid overestimation as the ore body is making an "L" shape. The average ore body width is 15.50m near Section-1. For Section-2,3,4 the influence is as described in the table. The influence for section 2 is less as it is affected by the width of dyke which is nearly 20m in current profile. The average ore body width is 15.50m near Section-2. As the ore body in Kalarangal is an L-shaped ore body and it is taking bend near section 2. Also, a dyke is present near section 2. Hence the area of the ore body is arranged in Sec-2 at different depths. During calculation under the 111 category, the influence zone is considered 30.5 meter, during calculation under the 121 category, the average influence is taken i.e 47m. All the resources are in 331 categories. Final quantity calculated= 1.79 lakh ton. Reserve & resources for the mine is classified into 3 categories according to UNFC classification i.e., Proved Mineral Reserve (111), Probable Mineral Reserve (121), Feasibility Mineral

M. Mathan

section. According to UNFC classification, Reserve & resources for the mine is classified into 3 categories i.e., Proved Mineral Reserve (11), Probable Mineral Reserve (12), Feasibility Mineral Resource (21). The 11 category is estimated from 39mRL (lowest current level) up to 03mRL (lowest 5th year development). Similarly, the 12 category is estimated from 03mRL (lowest 5th year development) up to 06mRL (Ultimate Pit Limit). The 21 category is estimated from 06mRL (Ultimate Pit Limit) up to -106mRL (highest depth exploration).

2A.2.4.4: Threshold value & Cut off Parameters

Threshold value & Cut off Parameters: The threshold value is a component to mineral conservation as it is deciding the lower limit of subgrade ore in a mineral deposit. The threshold value of specific mineral decides the mining. Currently the threshold value for the chromite ore modified by IBM in 2009 is 10% Cr₂O₃. Currently the total ROM above 10% is usable at FACOR's Charge Chrome Plant, with proper blending. At present there is no Plan for Beneficiation of low-grade ore. However, in future as per requirement it may be sent for beneficiation. And also, in future as per requirement - some washing system (manual or mechanized) or some other suitable technology may be implemented to enrich the ore grade as well as Cr-Fe ratio.

2A.2.4.5: Mining Factors or Assumptions

Mining Factors or Assumptions: Mining factors including as ore grade and recovery, cost of infrastructure, ore extraction, labour and machine costs, and geo-technical factors and economic factor such demand for the mineral and technology available and used. Fully mechanized open cast mining method has been considered for the mining operation with the usage of HEMM. A novel mining approach, namely boundary pillar mining has also been considered from first-year end to extract ore from the western boundary area. Currently, no drilling & blasting is being done but in the future, if it is required- shall be implemented after taking due approval from the concerned authority by modifying 106/2j of MMR1961 permission. Pumping activity shall be done in a systematic manner at the main dump situated at the northern side of the pit. No rehandling of dump is proposed, however, in future, dump handling can be done to shift the overburden outside the mine boundary for community development purposes (i.e. road development, filling of low-lying areas etc) after taking due approval from the concerned authority.

2A.2.4.6: Metallurgical Factors or Assumptions

Metallurgical Factors or Assumptions: Metallurgical grade chromite is mainly used as base material for ferro chrome production. The chromium extracted from chromite is used in chrome plating and alloying for the production of corrosion-resistant superalloys, nichrome, and stainless steel. Chromium is used as a pigment for glass and paint and electroplating. The total chrome ore shall be transported to FACOR's own Charge Chrome plant for processing. There is no requirement for the beneficiation process but ore blending shall be done and some minor grade enrichment processes shall be implemented through the manual/semi-mechanized washing system.

2A.2.4.7: Cost & Revenue Factors

Cost & Revenue Factors: The cost of mining shall be economical as being done since last 10 years. The ore shall be used in its own Ferro Chrome plant situated at Bhadrak. Total ore shall be converted into FeCr alloy and then it shall be sold in market. The cost of production for next 5 years is expected to be around Rs. 1800/Ton, and the ferrochrome produced from the charge chrome plant shall be Rs 80000/Ton of FeCr. Gross profit shall be maximum in first year (it will be around 125 crore) and then it shall be decreased to 17 crore per year as the benefit margin is decreasing exponentially.

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(Signature)

2	Ultimate Pit Limit	2	2960.00	50.00	-106.00	148000.00	3.20	473600.00	211	forest land	Chromite	43.7	mentioned
3	Ultimate Pit Limit	3	1316.00	50.00	-92.00	65800.00	3.20	210560.00	211	forest land	Chromite	43.7	cross section method. In depth column bottom mRL has been mentioned
4	Ultimate Pit Limit	4	751.00	40.00	-42.00	30040.00	3.20	96128.00	211	forest land	Chromite	43.7	cross section method. In depth column bottom mRL has been mentioned
Total						305809.00		978588.80					

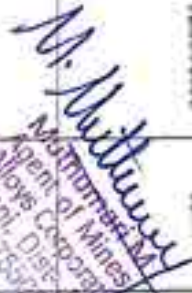
2A.2.4.12: Calculation of Reserves - I

Sl.No.	Cross section/Block	Sectional area/ block area (in Sq mtr)	Influence (m)	Depth (m)	Volume (m ³)	Bulk Density (t/m ³)	Resource Quantity (t)	UNFC code	Type of Land	Name of the	Grade (%)	Method used
1	1	2040	15.50	62.00	31620.00	3.20	101184.00	111	forest land	M/S Ferro Alloys Corporation Ltd. Dist- Jaipur	40.37	cross-sectional estimation

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 M/S Ferro Alloys Corporation Ltd. Dist- Jaipur
 Chromite 40.37

												method. In depth column bottom mRL. mentioned.
2	2	435.41	30.50	30.00	13280.00	3.20	42496.00	111	forest land	Chromite	40.37	cross- sectional method. In depth column bottom mRL. mentioned.
3	3	434	50.00	6.00	21700.00	3.20	69440.00	111	forest land	Chromite	40.37	cross- sectional method. In depth column bottom mRL. mentioned.
4	4	1338	40.00	3.00	53520.00	3.20	171264.00	111	forest land	Chromite	40.37	cross- sectional method. In depth column bottom mRL. mentioned.
5	1	5543	15.50	0.00	85916.50	3.20	274932.80	121	forest land	Chromite	39.2	cross- sectional method. In depth column bottom mRL. mentioned.
6	2	834	45.00	0.00	37510.00	3.20	120096.00	121	forest land	Chromite	39.2	cross- sectional method. In depth column bottom mRL. mentioned.

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7	3	71	50.00	0.00	3550.00	3.20	11360.00	121	forest land	Chronicle	39.2	cross-sectional method in depth column bottom mRL mentioned.
8	4	184	40.00	0.00	7360.00	3.20	23552.00	121	forest land	Chronicle	39.2	cross-sectional method in depth column bottom mRL mentioned.
Total					254476.50		814324.80					

2A.2.4.13: Calculation of Reserves - II

Mineral	CHROMITE
Reserve/ Resources estimated as on	01/09/2022
UNIT of estimation	tonnes

A. Mineral Reserve

Classification	Code	Quantity		Grade		Remark	
		Forest	Non Forest	Total	Forest		Non Forest
1. Proved Mineral Reserve (A)	111	384384.02	0.00	384384.02	40.37	0.00	The 111 category is estimated from 39mRL (lowest current level) up to 03mRL (lowest 5th year development).
2. Probable Mineral Reserve (A)	121	429940.80	0.00	429940.80	39.2	0.00	The 121 category is estimated from 03mRL (lowest 5th year development).

							year development) up to 00mRL (Ultimate Pit Limit).
3. Probable Mineral Reserve (A)	122	0.00	0.00	0.00	0.00	0.00	Nil

B. Remaining Resources

Classification	Code	Quantity		Total	Grade		Remark
		Forest	Non Forest		Forest	Non Forest	
1. Feasibility Mineral Resource (B)	211	978588.80	0.00	978588.80	43.7	0.00	The 211 category is estimated from 00mRL (Ultimate Pit Limit) up to -100mRL (highest depth exploration).
2. Prefeasibility Mineral Resource (B)	221	0.00	0.00	0.00	0.00	0.00	Nil
3. Prefeasibility Mineral Resource (B)	222	0.00	0.00	0.00	0.00	0.00	Nil
4. Measured Mineral Resource (B)	331	0.00	0.00	0.00	0.00	0.00	Nil
5. Indicated Mineral Resource (B)	332	0.00	0.00	0.00	0.00	0.00	Nil
6. Inferred Mineral Resource (B)	333	0.00	0.00	0.00	0.00	0.00	Nil
7. Reconnaissance Mineral Resource (B)	334	0.00	0.00	0.00	0.00	0.00	Nil
Total Mineral Resources (A+B):					1792913.62		

2A.2.4.13: Calculation of Reserves -III

No associate minerals are available!

2A.2.5: Future Exploration Proposal

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 M/s. Ferro Alloy Corporation Limited

2A.2.5.1: Geological Mapping

SIN	Year	Scale	Area Covered (Ha)
1	Nil	Nil	0.00

2A.2.5.2: Ground Geophysical Survey

Sl.No.	Year	Type of Survey	Spacing (m)	Total line (km)	Area Covered (Ha)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
						From	To	From	To
1	Nil	Nil	0	0	0.0000	00:00:00:00	Nil	Nil	00:00:00:00

2A.2.5.3: Pitting

Number of Pits										
Nil										
Sl.No.	Year	Land Type	Pit ID	Length of Pit (m)	Width of Pit (m)	Depth of Pit (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
							From	To	From	To
1	Nil	Nil	-	0.00	0.00	0.00	00:00:00.00	Nil	Nil	00:00:00.00

2A.2.5.4: Trenching

Number of Trenches	
0	

2A.2.5.4.1: SPACING

Min (m)	Max (m)	Avg (m)
0.00	0.00	0.00

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Chapter 3: Mineral Beneficiation / Processing

Name of The Ore/Mineral	Not applicable

3.1: Mineralogy of the ROM ore/ Mineral

Sl.No	Valuable Mineral Name	Approx. Mineral %	Gangue Minerals name	Approx. Mineral Gangue %
1	NA	0.0000	NA	0.0000

3.2: Complete Chemical Analysis of the ROM Ore/Mineral

Sl.No	Radical	Wt%
1	Cr ₂ O ₃	41.9700
2	FeO	22.3700
3	Cr Fe ratio	1.6500
4	SiO ₂	7.0300
5	Al ₂ O ₃	11.6900
6	MgO	6.8260
7	CaO	1.7100
8	MnO	0.1700
9	P ₂ O ₅	0.1000
10	SO ₃	0.2570
11	TiO ₂	2.1300
12	Na ₂ O	0.2000
13	K ₂ O	0.0300
14	LOI	3.6000

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3.3: Crushing Section

3.3.1: Primary Crushing

Sl.No	Type of Crusher	Make	Capacity of Crusher(tph)	Feed Size(mm)	Product Size(mm)
1	Other	00	00	0.0000	0.0000

3.3.2: Secondary Crushing

Sl.No	Type of Crusher	Make	Capacity of Crusher(tph)	Feed Size(mm)	Product Size(mm)
1	Other	00	00	0.0000	0.0000

3.3.3: Tertiary Crushing

Not Applicable

3.4: Grinding Section

3.4.1: Dry Grinding

Sl.No	Type of Mill	Stages	Make of the Mill	Feed Flow Rate(tph)	Feed Size(mm)	Product Size Mill Discharge(mm)	Type of Screen	Make	Aperture Size of Screen/Classifier (mm), if applicable	Classifier / Screen undersize (tph)	Classifier / Screen oversize (tph)
1	Nil	Not applicable	00	0.0000	0.0000	0.0000	00	00	Nil	Nil	Nil

3.4.2: Wet Grinding

Sl.No	Type of	Stages	Make of the	Feed Flow	Feed	Product	Type of Ser	Aperture	Classifier /	Classifier /	Water Requi	Fresh Water	Recirculate

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	Mill	Mill	Rate (tph)	Size (mm)	Size (mm)	emul/Classifier	Size of Screen em/Classifier (mm), if applicable	Screen undersize (tph)	Screen oversize (tph)	Item (mm/lb)	Requirement (t/lb)	(d Water/lb)
1	Nil	60	0.0000	0.0000	0.0000	60	0.0000	Nil	Nil	Nil	Nil	Nil

3.5: Dry Processing

3.5.1: Screening and Classification

Sl.No	Type of Screen/Classifier	Stages	Make	Capacity(tph)	Aperture Size of Screen/Classifier (mm), if applicable	Feed Size(mm)	Product (mm)	Product Quality(if applicable)
1	00	Not applicable	00	0.0000	0.0000	0.0000	0.0000	00

3.5.2: Other Operations

Sl.No	Type of equipment / operation	Stages, if applicable	Make	Capacity (tph)	Feed Size (mm)	Product-Mid (tph), if available	Product-Tail (tph)
1	DO	Not applicable	DO	0.0000	0.0000	0.0000	0.0000

3.5.3: Product Quality

Products	Wt%	In Tonnes	Size (Range) mm	Complete chemical analysis
Concentrate	0.0000	0.0000	00	00
Sub-grade	0.0000	0.0000	00	00
Rejects	0.0000	0.0000	00	00

3.6: Wet Processing

3.6.1: Scrubbing / Washing

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Sl.No	Type of Screens / washers	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product Size (mm)	Product Quality, if available	Water Require ment(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	00	Not applicable	00	0.0000	0.0000	0.0000	00	0.0000	Nil	Nil

3.6.2: Screening and Classification

Sl.No	Type of screen / classifiers	Stages, if applicable	Make	Capacity(tph)	Aperture Size of Screen/Classifier (mm), if applicable	Feed Size(mm)	Product Size (mm)	Product Quality, if available	Water Require ment(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	00	Not applicable	00	0.0000	0.0000	0.0000	0.0000	00	Nil	Nil	Nil

3.6.3: Gravity Separation

Sl.No	Type of separators (jig, table, spiral, etc.)	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product (Cane) (tph)	Product-Mid (tph), if available	Product-Tail (tph)	Water Require ment(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	NA	0	00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6.4: Magnetic Separation

Sl.No	Type of magnetic separators (magnetic intensity)	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product-Mag (tph)	Product-Mid (tph), if available	Product non-Mag (tph)	Water Require ment(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	NA	NA	00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6.5: Flotation


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 Pin- 755047

Sl.No	Type of flotation equipment (froth column)	Stages (rougher/ cleaner, etc), if applicable	Make	Capacity(tph)	Feed Size(mm)	Product-Float (tph)	Product non-Float (tph)	Water Require ment(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	NA	NA	00	0.0000	0.0000	0.0000	0.0000	0.0000	Nil	Nil

3.6.6: Other Operations

Sl.No	Type of equipment / operation	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product-Conc (tph)	Product-Mid (tph), if available	Product-Tail (tph)	Water Require ment(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	NA	Not applicable	(H)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.6.7: Product Quality (wet processing)

Products	Wt%	In Tonnes	Size (Range) mm	Complete chemical analysis
Concentrate	0.0000	0.0000	00	00
Sub-grade	0.0000	0.0000	00	00
Rejects	0.0000	0.0000	00	00

3.7: Overall Product Quality (Dry cum Wet Processing)

Products	Wt%	In Tonnes	Size (Range) mm	Complete chemical analysis
Concentrate	0.0000	0.0000	00	00
Sub-grade	0.0000	0.0000	00	00
Rejects	0.0000	0.0000	00	00

3.8: Disposal Method for tailing/ rejects

a) Explain the disposal method for tailing or reject from processing plant with detail chemical / mineral analysis of tailing	Nil

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 Jaipur
 Mis. Ferro Alloy
 Kalsang, Jaipur

b) Size and capacity of tailing pond, toxic effect of such tailings, process adopted to neutralise its effect (if any)	Nil
c) Any other data (if available)	Nil

3.9: Overall water requirement of mining and mineral processing

Indicate quantity, source of supply, disposal of water and extent of recycling and chemical analysis of water	Nil

3.10: Flow sheets and charts

Material balance chart of mineral processing plant(s) (each stage of process)	Nil
Attach flow sheet of beneficiation of plant(s)	Nil
Any other data (if applicable)	Nil


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 M/s. Ferro Alloys Corporation Limited
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Chapter 4A: Mining Operations

		Mechanized	
4A.1.1: Existing Method of Mining			
Choose one or more	Combination of loaders and tipplers	None	None
4A.1.2: Proposed Method of Mining		Mechanized	
Choose one or more	Combination of loaders and tipplers	None	None
Reasons for Proposed Changes		Review of Mining plan for the period of 2023 to 2028 The proposed mining method shall be fully mechanized open cast A shovel mining method of boundary pillar mining has also been considered from 2nd year to extract the blocked ore at the boundary area but all the mining activity shall be performed within the mining lease by leaving 75m as it is In first year open cast mining method is considered for ore and OB mining with bench dimensions 8m x 8m 70degree bench angle by using the shovel backs	

4A.2: Operational Parameters

4A.2.1: Inventory of Existing Pits & Dumps

4A.2.1.1: Pits

Sl.No.	Pit ID	Pit Status	Area Covered by Pit(Ha)	Pit Dimensions(L*W*D)
1	single pit	Active	7.14	298*239*60-0

4A.2.1.2: Dumps and Stacks

District Mining Officer, Khammam District

 10/05/2024

4A.2.1.2.1: Dump Details

Sl.No.	Dump ID	Dump Status	Type of Dump	Total of Dump Quantity(t)	Area Covered by Dump(Ha)	Height(m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
							From	To	From	To
1	Over burden dump	Active	Waste	1981854.00	5.80	22.00	21:01:10.54	21:01:22.51	85:44:18.17	85:44:32.78

4A.2.1.2.2: Stack Details

Sl.No.	Stack ID	Type of Stack	Total Stack of Quantity(t)	Area Covered by Stack(Ha)	Height(m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)	
						From	To	From	To
1	1	Stack for mineral	12000.2	0.92	3	21:01:23.11	21:01:27.01	85:44:23.59	85:44:28.22

4A.2.1.3: Details of stabilised dumps

Sl.No.	Dump ID	Number of Terraces	Average Height of Terraces(m)	Length of Toe Wall(m)	Length of Garland Drain(m)	Area Stabilized(Ha)	Method of Stabilization
1	Over burden dump	1	20.00	904.00	1901.00	6.74	plantation, geotextile installation and cor nut installation

4A.2.2: Opencast Mining

4A.2.2.1: Bench Parameters

Pit ID	Year	Max Height of the Benches in Over Burden (m)	Min Width of the Benches in Over Burden (m)	Slope of the Bench in Over Burden (degree)	Max Height of the Benches in Mineral (m)	Minimum Width of the Benches in Mineral (m)	Slope of the Bench in Mineral (degree)	Overall Slope of Pit (degree)	Number of Benches in Top Soil	Number of Benches in Over Burden	Number of Benches in Mineral	Max Depth of Workings (m)	Depth of Water Table (m)	Max Slope Angle of Haul Roads (1xx (m)
single pit	2013-2024	8.00	8.00	70.00	8.00	8.00	70.00	38.00	0	8	5	78.00	90.00	16
single pit	2024-2025	8.00	8.00	70.00	8.00	0.50	70.00	38.00	0	9	3	94.00	90.00	16

Single Pit	2025-2026	8.00	8.00	70.00	8.00	0.50	70.00	38.00	0	9	5	94.00	90.00	16
Single pit	2026-2027	8.00	8.00	70.00	8.00	0.50	70.00	51.00	0	10	3	97.00	90.00	16
Single pit	2027-2028	8.00	8.00	70.00	8.00	8.00	70.00	51.00	0	10	4	97.00	90.00	16

4A.2.2.2: Yearwise Opencast Development - I Continue

Sl.No.	Year	Pit ID	Bench	Direction	Bulk Density of Overburden (BD1) (ton/m ³)	Bulk Density of Mineral (BD2) (ton/m ³)	Top Soil Volume (Length x Width x Height) (m ³)	Over Burden Volume (Length x Width x Height) (m ³)	Over Burden Quantity (t)	ROM Volume (Length x Width x Height) (m ³)	ROM Quantity (t)	Recovery	Mineral Reject (t)	Production in Main (t)	Production in Associated (t)	Ore to OB Ratio (ton/m ³)
1	2023-2024	single pit	Open pit mining upto RL22	All around the pit periphery. North-south and East-west and also at pit bottom	2.00	3.20	0.00	578067.00	1156134.00	46875.00	150000.00	1.00	0.00	150000.00	0.00	0.2595
2	2024-2025	single pit	Open pit mining upto RL06 and boundary pillar mining at western side of the pit	Open pit mining and boundary pillar mining at western side of the pit	2.00	3.20	0.00	31570.00	63140.00	25000.00	80000.00	1.00	0.00	80000.00	0.00	2.5341
3	2025-2026	single pit	Boundary pillar mining from RL58 to RL86	Boundary pillar mining at western	2.00	3.20	0.00	21974.00	43948.00	15625.00	50000.00	1.00	0.00	50000.00	0.00	2.2754

M. N. Nuthan
 Agent of the
 Feroz Ali Shah
 Feroz Ali Shah
 Feroz Ali Shah

2	Dumper	Eachet	10.00	1
3	Tipper	Eachet	20.00	1

4A.3: Material Handling Summary

4A.3.1: Studies Undertaken

Title	Study Undertaken	Attachment (only pdf allowed)
Blast Vibration Study Report	No	Nil
Slope Stability Study Report	Yes	SLOPE STABILITY REPORT KALARANGIATTA_FACOR_PTL_DUMP.pdf
Recovery Study Report	No	Nil
Hydrological Study Report	Yes	Comprehensive report on CW Kalarangiatta Mines, 04.08.2021. Submitted copy: compressed.pdf
Mineral Beneficiation Study Report	No	Nil
Subsidence Study Report	No	Nil
Geotechnical Study Report	Yes	SLOPE STABILITY REPORT KALARANGIATTA_FACOR_PTL_DUMP.pdf
Any Other Study Report	Yes	Novel Mining method at Kalarangiatta Chromite Mine.pdf
Bulk Density Study Report	Yes	Bulk density report.pdf.pdf

4A.3.2: In-situ Mining

Sl.No.	Year	Waste Quantity(t)	ROM Quantity(t)	Total Handling (t)	ROM Quantity Saleable Mineral (t)	ROM Quantity Mineral Reject (t)	Ore to OB Ratio (ROM Quantity / Waste Quantity)	Grade Range (%)
1	2023-2024	1156134.00	150000.00	1306134.00	150000.00	0.00		10-58, Avg 40.4%
2	2024-2025	63140.00	80000.00	143140.00	80000.00	0.00		10-58, Avg 40.4%
3	2025-2026	43948.00	50000.00	93948.00	50000.00	0.00		10-58, Avg 40.4%
4	2026-2027	26508.00	50000.00	76508.00	50000.00	0.00	1.89	10-58, Avg 40.4%

M. M. Williams

5	2027-2028	352800.00	50000.00	402800.00	50000.00	0.00	0.14	10-5%, Avg 40.4%
	Total	1642530.00	380000.00	2022530.00	380000.00	0.00		

4A.3.3: Dump workings

Sl.No.	Year	Dump ID	Latitude (dd-mm:ss.ss)		Longitude (dd-mm:ss.ss)		Area (m ²)	Avg Height of Dump (m)	Volume (m ³)	Total Dump Quantity (t)	Proposed Dump Handling Quantity (t) (A)	Proposed Recovery of Saleable Mineral (t) (B)	Proposed Waste Quantity (t) (A-B)	Grade Range (%)	Justification
			From	To	From	To									
1	Nil	-	00:00:00.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	NA

4A.3.4: Calculation Summary

Year	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	Total
(A) Total ROM quantity (t)	150000.00	80000.00	50000.00	50000.00	50000.00	380000.00
(B) Saleable ore from ROM (t)	150000.00	80000.00	50000.00	50000.00	50000.00	380000.00
(C) Proposed Dump Handling Quantity (t)	0.00	0.00	0.00	0.00	0.00	0.00
(D) Saleable Ore recovered from dump workings (t)	0.00	0.00	0.00	0.00	0.00	0.00
(E) Total Saleable Ore (t) (E=B+D)	150000.00	80000.00	50000.00	50000.00	50000.00	380000.00
(F) Total Quantity Handled (t) (F=A+C)	150000.00	80000.00	50000.00	50000.00	50000.00	380000.00

4A.4: Machine Calculation


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Sl.No.	Total Hour = Number of working days (W) x Number of shifts/day x Effective shift hours (Machine Requirement at Summary) (A)	Capacity of Dumpers (C) (B)	Speed of the dumper (KMPH) (D)	Lead Distance (KM) (E)	Time taken to cover distance in minutes (H) $= (E/D) \times 60$	Queuing, Loading Time at Shovel (min) (IV)	Queuing, Unloading Time during unloading (min) (V)	Total Time to complete one trip (VI) $= (H) + (V) + (IV)$	No. of Trips / hr = (60 / VI)	Total trans portation per hour = (B X VI)	Yearly hauling by one dumper (IX) = A x TPH	Maximum hauling of the material by this machine during the block period (I) (X)	Number of dumppers will be (XI) $= (X) / (IX)$	Plus Standby dumper (XII)
1	5418	20.00	9.00	3.60	24.00	5.00	2.00	35.80	1	33	182044.80	1306134.00	7	1

4A.4.4: Drill Machine Requirement

Effective Shift Time					6 hrs					00 mins				
Sl.No.	Type of Drill	Depth of H ole/inclad mg Sub- grade Drilling (m)	Spacing (m)	Burden (m)	Bulk Density of Waste (ton/m ³)	Bulk Density of Material (ton/m ³)	Yield per Hole (t)	Yield per Meter (t/m) = Yield per Hole (t)/Depth of Hole/in clading Sub-grade Drilling (m)	Annual Target Known (t)	Drilling Re quirement per Day (m) = (Annual Target Known (t) / Yield per Meter (t/m) (A)	Drilling Re quirement per Shift (m)	Rate of Drilling per Hours (m/hr) = Drilling Re quirement per Shift (t m)/Effecti ve Shift Time	Required No. of drills (m/c) = Required rate of drilling in meters per hr / Actual rate of drilling in meters per hr of the machine deployed	Stand by Drill
1	Nil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nil	Nil	Nil	Nil	Nil	Nil



 MMS Logo

4A.4.5: Machine Deployment Details

4A.4.5.1: Excavator & Loading Equipment

Sl.No.	Type	Make	Capacity (m ³)	No. of Equipments
1	Backhoe	Volvo	2.40	2
2	Backhoe	Lingong	1.50	1
3	Backhoe	Volvo	0.90	1

4A.4.5.2: Dozers Details

Sl.No.	Type	Make	Capacity (hp)	No. of Equipments
1	Bulldozer	Lingong	170.00	1

4A.4.5.3: Drilling Details

Sl.No.	Type	Make	Capacity (t)	Diameter of Hole(mm)
1	0.00	00	0.00	NH

4A.5 Blasting Requirement

4A.5.1: Blasting & Explosive Requirement in Waste/Development

Sl.No.	Drill Pattern / Spacing of Holes (m)	Burden of Holes (m)	Number of Rows / Rings	Yield per Holes in Waste (m ³)	Frequency of Blasting in a Week	Maximum Number of Holes Blasted in a Round	Charge per Hole (kg)	Charge per Round (kg)	Explosive Requirement Per Month in Development (kg)	Powder Factor in Waste (kg/M ³)	Depth Of Hole
1	0.00	0.00	000	0.00	000	000	0.00	0.00	Miso Ferro Alloys Corporation Limited Kaisapatt, Dist. Jodhpur	Murthun 800/M ³ Agent of Mines	0.00

M. Murthun
For Sd/-

4A.5.2: Blasting & Explosive Requirement in Mineral / Ore

Type of Explosive		Type of Explosives used / to be Used																	
NIL		Aluminised Slurry Explosives (Large Diameter)																	
Sl.No.	Total ROM p posed to be handled in CU M/annu m	Total ROM p posed to be handled in CU/M/ day	Spacing of Holes (m)	Burden of Holes (m)	Number of Rows	Yield per Holes in ROM Zone (m ³)	Frequen cy of Blasting in a Week	Maxim um Number of Holes Blasted in a Round	No of Holes R equiped to be Blasted per Round	Charge per Hole (kg)	Charge per Round (kg)	Explosi ve Req uireme nt Per Month for ROM Zone Blasting (kg)	Powder Factor in Ore (kg/t)	Pop Shootin g (no of Boulder s)	Plaster Shootin g (no of Boulder s)	Use of Rockbr eaker	Capacit y	Second ary Blasting Require ments	Depth Of Hole
1	0.00	0.00	0.00	0.00	NIL	0.00	000	000	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

4A.6: Man Power Deployment

4A.6.1: Managerial

Sl.No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	1st Class	0	0	0	1	1
2	2nd Class Manager	1	1	1	1	4
3	Mining Engineer	0	0	0	1	1
4	Geologist	0	0	0	1	1
5	Mechanical Engineer	0	0	0	1	1
6	Electrical Engineer	0	0	0	1	1

4A.6.2: Supervisory

Sl.No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day

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1	Forum	1	1	1	4
2	Mini-meet	2	2	1	2
3	other	1	1	1	4

4A.6.3: Skilled Workers / Operators

Sl.No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	Operator	3	3	3	0	9
2	Dumper Operator	8	8	8	0	24
3	Doser/Grader Operator	1	1	1	0	3
4	Pump Operator	2	2	2	1	7
5	Technician	3	3	3	2	11

4A.6.4: Semi-skilled Workers

Sl.No.	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	3	3	2	57	65

4A.6.5: Unskilled Workers

Sl.No.	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	0	0	0	0	66

4A.6.6.6: Others Specify

Sl. No.	Particular	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day

1	other	6	6	6	2	20

4A.6.7: No of Persons Engaged Per Day

Sl.No.	Number of Persons in Shift 1	Number of Persons in Shift 2	Number of Persons in Shift 3	Number of Persons in General Shift	Total No. of Persons per day
1	31	31	30	136	228
No of Shifts per Day ((A) = Machine Requirement Summary (B))					3
Average Daily Employment per Shift ((B) = (Total Number of Person per Day) / (A))					76
Material to be Handled per Shift ((C) = Machine Requirement Summary (D))					1569

4A.6.8: Supervision

Sl.No.	Particular	Qualification	Requirement / Proposed	In Position / Existing Strength	(Requirement / Proposed) - (In Position / Existing Strength) = (-) Shortage / (+) Excess	Remarks
1	Assistant Manager	2nd Class Certificate	04	01	03	0.00
2	Geologist	Post Graduation	01	01	0.00	0.00
3	Mine Foreman	Foreman Certificate	04	04	0	0.00
4	Mines Manager	Degree With 1st Class	01	01	0.00	0.00
5	Mining Engineer	Degree	01	01	0.00	0.00
6	Mining Mate	Mate Certificate	07	07	0	0.00
7	Others Specify	Mech/Electrical	02	02	0.00	0.00

4A.7: Waste Management

4A.7.1: Existing Dump

Sl.No.	Year	Dump Id	Type of Dump	Proposed	Height (m)	Latitude (dd:mm:ss.s)	Longitude (dd:mm:ss.s)	Total Dump	Existing


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			Area (ha)		From	To	From	To	Quantity (m ³)	Dump Location	
1	2023-2024	1	Waste	5.80	22.00	21:01:10.54	21:01:22.51	85:44:18.17	85:44:32.78	1984383.00	with the lease area

4A.7.2: New Dump

Sl. No.	Year	Dump Id	Type of Dump	Proposed Area (ha)	Height (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Total Dump Quantity (m ³)	New Dump Location
						From	To	From	To		
1	2023-2024	Over burden dump	Waste	7.83	40.00	21:01:08.53	21:01:22.81	85:44:18.15	85:44:31.44	578067.00	Within the existing overburden dump
2	2024-2025	Overburden dump	Waste	7.83	43.00	21:01:08.53	21:01:22.81	85:44:18.15	85:44:31.44	31570.00	Within the existing overburden dump
3	2025-2026	Overburden dump	Waste	7.83	46.00	21:01:08.53	21:01:22.81	85:44:18.15	85:44:31.44	21974.00	Within the existing overburden dump
4	2026-2027	Overburden dump	Waste	7.83	48.00	21:01:08.53	21:01:22.81	85:44:18.15	85:44:31.44	13254.00	Within the existing overburden dump
5	2027-2028	Overburden dump	Waste	7.83	60.00	21:01:08.53	21:01:22.81	85:44:18.15	85:44:31.44	176400.00	Within the existing overburden dump

4A.7.3: Existing Stack

Sl. No.	Year	Stack ID	Type of Stack	Proposed Area (ha)	Height (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.ss)		Total Stack Quantity (m ³)	Existing Stack Location
						From	To	From	To		
1	2023-2024	1	Stack for	0.97	3.00	21:01:23.82	21:01:28.86	85:44:24.31	85:44:29.08	3750.06	Near ETP


 M. S. Jaiswal
 Director, Environment
 Feroz Ali Road, Dist. Jaipur
 Rajasthan, 302004

				colour friable ore. The associated gangue minerals are serpentine, magnetite and laterite and limonite-grain size of chrome crystals varies between 0.1mm to 1.5mm	present in the mineral i.e. FeO, MgO, SiO ₂ , Al ₂ O ₃ etc.

* Choose among these:

1. Captive use in own industry

2. Direct Selling

3. Selling Post-Beneficiation / Up-gradation

* Select more than one, if applicable

Approved by

M. M. Muthuram
 Agm. of Mines
 Agnays Corporation Limited
 Erode, Tamil Nadu, Dist. Jeypur
 Pin-626 001, 155047

Chapter 4 B : Mining Operations UG : NA

Approved

Chapter 5: Sustainable Mining

5.1: Sustainable Mining and SDF Implementations in Compliance of Rule 35 of MCDDR 2017

Rule 35 (1) Kalarangaria mines is taking all possible precautions for undertaking sustainable mining. Every year budgets are being taken under sustainable development framework in terms of sustainable mining, sustainable dumping practices, sustainable environmental practices and also corporate social responsibilities. In last financial year total 100.7 lakhs rupees was taken in budget under SDF and 113.19 lakhs rupees was spent on actual on the areas of environmental protection, progressive mine closure plan, CSR and other welfare activities. Rule No 35 (2): As per sub rule 2 of this rule, drone survey data in required format along with ortho-mosaic image, DTM, DSM and other details submitted on time Rule No 35 (3): As per sub rule 3, star rating format has been duly filled in the defined portal and the mine visit by IBN official has also been over for the year 2021-22. Rule No 35 (4): Rule 35(5) is not applicable for current year.

(Total 200 characters)

Compliance of Vishakha Committee Guidelines for prevention of women harassment at workplace	Implemented

5.2: CSR INITIATIVES

5.2.1: 2023-2024

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.1.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.10	0.50
5.2.1.2: Area for Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
1.00	10.00
5.2.1.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses

M. Choudhary
 Director, District Jail
 Jaipur, Dist- Jaipur
 Pin- 302001, 755047

0		0
5.2.1.4: Efforts Made towards Providing Transport to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
15		100
5.2.1.5: Efforts Made towards Providing Healthcare to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
2500		5000
5.2.1.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
750		2000
5.2.1.7: Efforts Made towards Skill Development Programs to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
60		200
5.2.1.8: Efforts Made to Promote Education & Knowledge Based Initiatives		
Number of Beneficiaries		Number of Beneficiaries
150		350
5.2.1.9: Communication Facilities Provided to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
15		100
5.2.1.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities		
Number of Beneficiaries		Number of Beneficiaries
750		750
5.2.1.11: Adoption of ODF		
Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area	Number of Beneficiaries


 Mrs. Kallappa
 P.O. Box 15047
 Bangalore-560015

4	10	350
5.2.1.12: Awareness Program among Mine Workers for Swatchata		
Number of Swatchata Programmes Proposed		Number of Swatchata Programmes Held
4		4
5.2.1.13: Efforts for green energy		
Total energy consumption (KWh)		Green energy consumption (% of total)
6000000.00		500.00
5.2.1.14: Water & recycled use		
Total water consumption (KLD)		Water recycled (% of total)
80.00		96.00

5.2.2: 2024-2025

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.2.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.05	0.60
5.2.2.2: Area For Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
0.00	11.00
5.2.2.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses
0	0
5.2.2.4: Efforts Made towards Providing Transport to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
15	115

Muscat
Muscat Corporation Limited
D.O.S. 17-10-2019
Mubarak Al-Sayid

5.2.2.5: Efforts Made towards Providing Healthcare to Local Communities			
Number of Beneficiaries			Number of Beneficiaries
5000			7500
5.2.2.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities			
Number of Beneficiaries			Number of Beneficiaries
1500			2750
5.2.2.7: Efforts Made towards Skill Development Programs to Local Communities			
Number of Beneficiaries			Number of Beneficiaries
120			260
5.2.2.8: Efforts Made to Promote Education & Knowledge Based Initiatives			
Number of Beneficiaries			Number of Beneficiaries
300			500
5.2.2.9: Communication Facilities Provided to Local Communities			
Number of Beneficiaries			Number of Beneficiaries
15			115
5.2.2.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities			
Number of Beneficiaries			Number of Beneficiaries
1250			1500
5.2.2.11: Adoption of ODF			
Number of Toilets Built inside the Lease Area		Number of Toilets Built outside the Lease Area:	Number of Beneficiaries
5		15	400
5.2.2.12: Awareness Program among Mine Workers for Swachhata			
Number of Swachhata Programmes Proposed			Number of Swachhata Programmes Held
4			8

Mr. [Signature]
 Joint Project Manager
 Date: 12/08/2019
 Mr. [Signature]
 Joint Project Manager
 Date: 12/08/2019

Number of Beneficiaries		Number of Beneficiaries
2250		4250

5.2.3.7: Efforts Made towards Skill Development Programs to Local Communities

Number of Beneficiaries		Number of Beneficiaries
180		380

5.2.3.8: Efforts Made to Promote Education & Knowledge Based Initiatives

Number of Beneficiaries		Number of Beneficiaries
450		800

5.2.3.9: Communication Facilities Provided to Local Communities

Number of Beneficiaries		Number of Beneficiaries
15		130

5.2.3.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities

Number of Beneficiaries		Number of Beneficiaries
1750		2750

5.2.3.11: Adoption of ODF

Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area	Number of Beneficiaries
5	20	450

5.2.3.12: Awareness Program among Mine Workers for Swachhata

Number of Swachhata Programmes Proposed		Number of Swachhata Programmes Held
4		12

5.2.3.13: Efforts for green energy

Total energy consumption (KWh)		Green energy consumption (% of total)
600000.00		1.00

5.2.3.14: Water & recycled use


 M. M. Muthumari M
 Managing Director of Mines
 M/s. Muthumari M
 Phone: 7355 157

Total water consumption (KLD)	Water recycled (% of local)
80.00	96.00

5.2.4: 2026-2027

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.4.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.05	0.70
5.2.4.2: Area for Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
0.00	11.00
5.2.4.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses
0	0
5.2.4.4: Efforts Made towards Providing Transport to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
15	145
5.2.4.5: Efforts Made towards Providing Healthcare to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
10000	15000
5.2.4.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
3000	6500
5.2.4.7: Efforts Made towards Skill Development Programs to Local Communities	
Number of Beneficiaries	Number of Beneficiaries

Asst. Commissioner
 District Jail
 Dist. Jaipur
 Phone: 755947

240		560
5.2.4.8: Efforts Made to Promote Education & Knowledge Based Initiatives		
Number of Beneficiaries		Number of Beneficiaries
600		1250
5.2.4.9: Communication Facilities Provided to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
15		145
5.2.4.10: Any Other Steps Taken For Improving the Socio-Economic Standard of Local Communities		
Number of Beneficiaries		Number of Beneficiaries
2250		4500
5.2.4.11: Adoption of ODP		
Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area	Number of Beneficiaries
5	25	500
5.2.4.12: Awareness Program among Mine Workers for Swachhata		
Number of Swachhata Programmes Proposed		Number of Swachhata Programmes Held
4		16
5.2.4.13: Efforts for green energy		
Total energy consumption (KWh)		Green energy consumption (% of total)
600000.00		1.00
5.2.4.14: Water & recycled use		
Total water consumption (KLD)		Water recycled (% of total)
80.00		96.00

S.2.5: 2027-2028

M. M. Muthumanjari
 Agent of Ferro Alloys Corporation Limited
 Kallipanni, Dist. Tirupur
 Pin- 765047
 M/s. Ferro Alloys Corporation Limited
 Kallipanni, Dist. Tirupur
 Pin- 765047

Details of Work Proposed during the Year / Measures Planned for the Affected Segment		Cumulative Work done / Measures Taken
5.2.5.1: Area to be Developed for Recreation		
Area (Ha)		Area (Ha)
0.05		0.75
5.2.5.2: Area for Water Storage & Recharge Facility		
Area (Ha)		Area (Ha)
0.00		11.00
5.2.5.3: Efforts Made towards Housing for Local Communities		
Number of Houses		Number of Houses
0		0
5.2.5.4: Efforts Made towards Providing Transport to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
15		160
5.2.5.5: Efforts Made towards Providing Healthcare to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
10000		25000
5.2.5.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
3000		9500
5.2.5.7: Efforts Made towards Skill Development Programs to Local Communities		
Number of Beneficiaries		Number of Beneficiaries
240		800
5.2.5.8: Efforts Made to Promote Education & Knowledge Based Initiatives		
Number of Beneficiaries		Number of Beneficiaries
600		1850

Ms. Pooja K. Sharma
Kalyanpur, Jaipur
755047

5.2.5.9: Communication Facilities Provided to Local Communities			
Number of Beneficiaries		Number of Beneficiaries	
15		160	
5.2.5.10: Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities			
Number of Beneficiaries		Number of Beneficiaries	
2250		6750	
5.2.5.11: Adoption of ODF			
Number of Toilets Built inside the Lease Area	Number of Toilets Built outside the Lease Area	Number of Beneficiaries	
5	30	500	
5.2.5.12: Awareness Program among Mine Workers for Swatchata			
Number of Swatchata Programmes Proposed		Number of Swatchata Programmes Held	
4		20	
5.2.5.13: Efforts for green energy			
Total energy consumption (KWh)		Green energy consumption (% of total)	
600000.00		1.00	
5.2.5.14: Water & recycled use			
Total water consumption (KLD)		Water recycled (% of total)	
80.00		96.00	

5.3: Rehabilitation & Resettlement of Affected Persons

Particular	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028
Proposed Number of Project Affected Persons(PAP)	0	0	0	0	0
Proposed Number of Person for Alternate Arrangement for Sustainable Livelihood	0	0	0	0	0


 Ms. Ferro Allice Kallipen, Joint-Joint
 Agent of M/s. Ferro Allice Kallipen Limited
 P.O. Box 123456

Proposed Number of Person for Skill Training	0	0	0	0	0
Proposed Number of Person Likely to get Direct Employment	0	0	0	0	0
Proposed Number of Person Likely to get Indirect Employment	0	0	0	0	0
Proposed Project Affected Families Skilled and Absorbed	0	0	0	0	0
Proposed Number of Project Affected Families	0	0	0	0	0

Approved

M. M. M. M.
 Member of
 G. A. S. Corporation, Dist. J. S.
 District, Dist. J. S.
 District, Dist. J. S.

Chapter 6: Progressive Mine Closure Plan

6.1: Status of Land

Total Area Degraded				Total mined out area Reclaimed and Rehabilitated				Other Areas Reclaimed and Rehabilitated	
Total area under excavation in the lease	Area under Dumped (in hect)	Area under utility services (in hect)	Area under Stock yards (in hect)	Mined out Area Reclaimed but not rehabilitated (in hect)	Mined out Area fully Rehabilitated from Reclaimed area (in hect)	Area under Water Reservoir considered Rehabilitated (in hect)	Subutilized Waste dump Rehabilitated (in hect)	Virgin area under Green Belt (in hect)	
Area under mining operation	Mined Out area in the lease								
7.14	7.14	5.80	1.35	0.97	0.00	0.00	0.00	0.00	2.24

6.2: Progressive Reclamation and Rehabilitation Plan

6.2.1: Backfilling

Quantity of Waste / Fill Material Available at Site (m ³)	0.00
Availability of Top Soil for Spreading (m ³)	0.00
Proposed Spread Area (m ²)	0.00

6.2.1.1: Year Wise Proposal

Sl.No	Year	Pit ID	Area (m ²)	Top RL	Bottom RL	Estimated Expenditure (₹ INR)
1	Nil	single pit	0.00	0.00	0.00	0.00

6.2.2: Water Reservoir


 M. Anand Kumar
 M.S. Ferro Alloys Corporation Limited
 Kallapani, Dist. Jaipur
 Pin- 305047

Average Rainfall of The Area (mm)	1757.72
Proposed Area under Water Storage	One settling pond is there near ETP which shall be maintained and also the pit bottom sump shall be used for water storage

6.2.2.1: Preparations For Ground Water Recharging

6.2.2.1.1: Drilling Holes	
Year	Proposed no of Holes to be Drilled
2023-2024	1.00
2024-2025	2.00
2025-2026	2.00
2026-2027	0.00
2027-2028	0.00

6.2.2.1.2: Preparation of Course Gravel Bed	
Year	Proposed Area of Bed (LxW)
2023-2024	Nil
2024-2025	Nil
2025-2026	Nil
2026-2027	Nil
2027-2028	Nil

Please specify, if others

Roof-top rainwater harvesting is already provided at two locations. No proposal in the plan period for drilling and course gravel bed

6.2.2.2: Protective measures (Please specify running meter)

6.2.2.2.1: Fencing	
Year	Proposed Fencing Length (m)
	Latitude(dd:mm:ss.ss) Longitude(dd:mm:ss.ss)
	From To From To

M. M. Muthuman
 M/s. Ferro Alloys Corporation
 Dist. Japur
 Kalispani, 755047
 P.O.

2023-2024	0.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00
2024-2025	0.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00
2025-2026	0.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00
2026-2027	0.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00
2027-2028	0.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00

6.2.2.2: Retaining Wall

Year	Proposed Wall Length (m)	Latitude (dd:mm:ss)		Longitude (dd:mm:ss)	
		From	To	From	To
2023-2024	500	21:01:09.29	21:01:09.29	85:44:18.33	85:44:30.62
2024-2025	406	21:01:13.04	21:01:20.32	85:44:17.92	85:44:28.15
2025-2026	0	00:00:00.00	00:00:00.00	00:00:00.00	00:00:00.00
2026-2027	0	00:00:00.00	00:00:00.00	00:00:00.00	00:00:00.00
2027-2028	0	00:00:00.00	00:00:00.00	00:00:00.00	00:00:00.00

6.2.2.3: Gashand Drains

Year	Proposed Brand Length (m)	Latitude (dd:mm:ss)		Longitude (dd:mm:ss)	
		From	To	From	To
2023-2024	780	21:01:09.04	21:01:20.27	85:44:17.82	85:44:27.84
2024-2025	0	0.00	00:00:00.00	00:00:00.00	00:00:00.00
2025-2026	0	0.00	00:00:00.00	00:00:00.00	00:00:00.00
2026-2027	0	0.00	00:00:00.00	00:00:00.00	00:00:00.00
2027-2028	0	0.00	00:00:00.00	00:00:00.00	00:00:00.00

6.2.3: Green Belt Development

6.2.3.1: Cumulative work done (upto end of previous block of five years)

Sl.No	Total Expenditure Incurred up to Last	Area Covered (Ha)	Number of Plants	Survival Rate (%)


 M. N. Muthuram
 Agent of M/s. Ferro Alloy Corporation Limited
 M/s. Ferro Alloy Corporation Limited
 Kallapani, Dist- Jalpaiguri
 Pin- 715504

	Year (INR)			
1	7609500.00	6.50	17633	85.00

6.2.3.2: Year Wise Proposal

Sl.No	Year	Green Belt Location (s)	Area Proposed to be Covered (Ha)	Number of Plants Proposed	Expected Survival Rate (%)	Estimated Expenditure (₹ INR)
1	2023-2024	Dump yard	0.56	1400	85	140000
2	2024-2025	Dump yard	0.57	1425	85	142500
3	2025-2026	Dump yard	0.50	1250	85	125000
4	2026-2027	Dump yard	0.41	1025	85	102500
5	2027-2028	Dump yard	0.48	1200	85	120000

6.2.4: Use of Shallow Pits

6.2.4.1: Cumulative Work Done (upto end of previous block of five years)

Sl.No	Pit ID	Work Done	Area covered (m ²)	Total Expenditure Incurred (up to last five year block) (₹ INR)
1	setling pit	Deslting of setling pond	860.00	270000.00

6.2.4.2: Year Wise Proposal

Sl.No	Year	Pit ID	Total Area(Ha)	Area Proposed for Crops (Ha)	Suitable Crops	Area Proposed for Grass (Ha)	Total Proposed Expenditure (₹ INR)	Latitude (dd:mm:ss.ss)				Longitude (dd:mm:ss.ss)				Remarks
								From	To	From	To					
1	2023-2024	-	0.00	0.00	0	0.00	0.00	Nil	Nil	Nil	Nil					0.00
2	2024-2025	-	0.00	0.00	0	0.00	0.00	Nil	Nil	Nil	Nil					0
3	2025-2026	-	0.00	0.00	0	0.00	0.00	Nil	Nil	Nil	Nil					0

4	2026-2027	-	0.00	0.00	00	0.00	0.00	Nil	Nil	Nil	0
5	2027-2028	-	0.00	0.00	0	0.00	0.00	Nil	Nil	Nil	0

6.2.5: Pisciculture

6.2.5.1: Total Expenditure incurred as on Date (INR)	0

6.2.5.2: Cumulative work done as on Date

Sl.No	Pft ID	Area (m ²)	Expenditure (₹ INR)
1	-	0.00	0.00

6.2.5.3: Year Wise Proposal

Sl.No	Year	Pft ID	Area (m ²)	Estimated Expenditure (₹ INR)
1	Nil	-	0.00	0.00

6.2.5.4: Source of Water for Pisciculture

nil

6.2.5.5: Whether the quality of water has been assessed & found to be suitable for Pisciculture

No

6.2.6: Recreational Facility

6.2.6.1: Total Expenditure Incurred (up to last five year block) (INR)	300000.00

6.2.6.2: Cumulative work done as on Date

Sl.No	Pft ID	Area (m ²)	Expenditure (₹ INR)
1	Recreational facility created in nearby villages	5000.00	300000.00

6.2.6.3: Year Wise Proposal


 M/s. Ferro Alloys Corporation Limited
 Kalladurai, Dist. Jajalur
 Pin- 755047

Sl.No	Year	Type of Recreational Facility	Area Covered (Ha)	Latitude (dd:mm:ss)		Longitude (dd:mm:ss)		Estimated Expenditure (INR)
				From	To	From	To	
1	2023-2024	Park Development	0.07	21:01:22.65	21:01:23.89	85:44:27.42	85:44:29.26	30000.00
2	2024-2025	Park Development	0.06	21:01:26.86	21:01:28.13	85:44:24.62	85:44:25.97	30000.00
3	2025-2026	Masjid Renovation and park Development	0.05	21:01:23.77	21:01:24.68	85:44:30.41	85:44:31.31	100000.00
4	2026-2027		0.00	00:00:00.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00
5	2027-2028		0.00	00:00:00.00	00:00:00.00	00:00:00.00	00:00:00.00	0.00

6.2.7: Dump Area Stabilization & Development

Sl.No	Year	Dump ID	No of Terraces	Average Height of Terraces (m)	Length of Toe Wall (m)	Length of Garland Drain (m)	Area Stabilized (Ha)	Method of Stabilization	Estimated Expenditure (INR)	No of Check Dams
1	2023-2024	Overburden dump	3	15.00	500.00	780.00	0.56	plantation and geotextile installation	200000.00	3
2	2024-2025	Overburden dump	3	15.00	406.00	0.00	0.57	plantation and geotextile installation	200000.00	3
3	2025-2026	Overburden dump	3	15.00	0.00	0.00	0.50	plantation and geotextile installation	175000.00	1
4	2026-2027	Overburden dump	3	15.00	0.00	0.00	0.41	plantation and geotextile installation	150000.00	1
5	2027-2028	Overburden dump	3	15.00	0.00	0.00	0.48	plantation and geotextile installation	150000.00	1

6.2.8: Other Form of Reclaiming the Area

M/s. Ferro Alloys Corporation Limited
 Agent of Mines Installation
 Kalapatti District
 P.O. Box 1100047
 Kallakurichi

6.2.8.1: Cumulative work done as on Date

Sl.No	Total Expenditure incurred as on Date (INR)	Work Done
1	0.00	0

6.2.8.2: Year Wise Proposal

Sl.No	Year	Work Proposals	Estimated Expenditure (INR)
1	2023-2024	0.00	0.00
2	2024-2025	0.00	0.00
3	2025-2026	0.00	0.00
4	2026-2027	0.00	0.00
5	2027-2028	0.00	0.00

6.2.9: Topsoil Management

6.2.9.1: Cumulative Work Done as on Date

Sl.No	Top Soil Generated (m ³)	Top Soil Utilized (m ³)	Topsoil Stored (m ³)	Total expenditure incurred as on date (₹)
1	7453.00	7453.00	0.00	1825985.00

6.2.9.2: Year Wise Proposal

Sl.No	Year	Topsoil Generated (m ³) (A)	Topsoil Utilized (m ³) (B)	Topsoil Stored (m ³) (A-B)	Estimated Expenditure (INR)
1	2023-2024	0.00	0.00	Nil	0.00
2	2024-2025	0.00	0.00	Nil	0.00
3	2025-2026	0.00	0.00	Nil	0.00


 M. Mahalingam
 Agent-in-Charge
 Ferro Alloys Corporation Limited
 Kallaperi, Dist- Jajipur
 pin- 755047

4	2026-2027	0.00	0.00	0.00	0.00	0.00	0.00
5	2027-2028	0.00	0.00	0.00	0.00	0.00	0.00

6.2.10: Tailings Dam Management

Sl.No	Year	Yearly generation of Tailing (m ³) (A)	Total capacity of Tailing Pond (m ³)	Measures Proposed for Periodic Desilting	Yearly Utilization of Tailing (m ³) (B)	Disposal of Tailing to Tailing Pond (m ³) (A-B)	Tailing Dam Design	Structural Stability Studies
1	2023-2024	0.00	0.00	000	0.00	0.00		
2	2024-2025	0.00	0.00	000	0.00	0.00		
3	2025-2026	0.00	0.00	000	0.00	0.00		
4	2026-2027	0.00	0.00	000	0.00	0.00		
5	2027-2028	0.00	0.00	000	0.00	0.00		

6.2.11: Land Use of Lease Area at the Expiry of Lease Period

Total Area Degraded				Non Degraded area	Total mined out area Reclaimed and Rehabilitated				Other Areas Reclaimed and Rehabilitated				
Mined Out area in the lease	Area under Dump/in hect)	Area under the Tailing Dam	Area under utility services(in hect)	Area under bed/virgin	Mined out Area Reclaimed but not rehabilitated(in hect)	Mined out Area fully Rehabilitated from Reclaimed area(in hect)	Area under Water Reservoir considered Rehabilitated (in hect)	Stabilized Waste dump Rehabilitated (in hect)	Virgin area under Green Belt (in hect)	Rehabilitated Area under utility services(in hect)	Rehabilitated Area under Tailing dam (in hect)		
7.82	7.74	0.00	1.85	6.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Ms. Feenp
 K. 100221155047
 01/11/2023
 155047

Chapter 7: Financial Assurance/ Performance Surety (AREA PUT TO USE)

2023-2024

Consolidated View of Financial Assurance

Sl.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	7.14	0.68	7.82
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	5.80	1.94	7.74
4	Mineral Storage	0.97	0.00	0.97
5	Infrastructure (Workshop, Administrative Building etc.)	0.06	0.00	0.06
6	Roads	0.56	0.00	0.56
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.26	0.00	0.26
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	6.39	0.00	6.39
	Total	21.18	2.62	23.80

2024-2025

Consolidated View of Financial Assurance


 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalluram, Dist- Jalgaon
 Pin- 395004

Sl.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	7.82	0.00	7.82
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	7.74	0.00	7.74
4	Mineral Storage	0.97	0.00	0.97
5	Infrastructure (Workshop, Administrative Building etc.)	0.06	0.00	0.06
6	Roads	0.56	0.00	0.56
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.26	0.00	0.26
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	6.39	0.00	6.39
	Total	23.80	0.00	23.80

2025-2026

Consolidated View of Financial Assurance

Sl.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	7.82	0.00	7.82
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	7.74	0.00	7.74
4	Mineral Storage	0.97	0.00	0.97
5	Infrastructure (Workshop, Administrative Building etc.)	0.06	0.00	0.06
6	Roads	0.56	0.00	0.56

7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.26	0.00	0.26
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	6.39	0.00	6.39
	Total	23.80	0.00	23.80

2026-2027

Consolidated View of Financial Assurance

Sl.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	7.82	0.00	7.82
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	7.74	0.00	7.74
4	Mineral Storage	0.97	0.00	0.97
5	Infrastructure (Workshop, Administrative Building etc.)	0.06	0.00	0.06
6	Roads	0.56	0.00	0.56
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.26	0.00	0.26
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	6.39	0.00	6.39
	Total	23.80	0.00	23.80


 M/s. Ferro Alloys Corporation Limited
 Kailashnagar, Dist- Jaipur
 Pin- 305005

Sl.No	Particular	Area put to use at Start of Year (ha) (A)	Additional Requirement (ha) (B)	Total (ha) (C = A + B)
1	Area under Mining	7.82	0.00	7.82
2	Topsoil stacking	0.00	0.00	0.00
3	Overburden/Waste Dumping	7.74	0.00	7.74
4	Mineral Storage	0.97	0.00	0.97
5	Infrastructure (Workshop, Administrative Building etc.)	0.06	0.00	0.06
6	Roads	0.56	0.00	0.56
7	Railway	0.00	0.00	0.00
8	Tailing Pond	0.00	0.00	0.00
9	Effluent Treatment Plant	0.26	0.00	0.26
10	Mineral Separation Plant	0.00	0.00	0.00
11	Township Area	0.00	0.00	0.00
12	Others to specify	6.39	0.00	6.39
	Total	23.80	0.00	23.80
	Grand Total			23.80

Financial Assurance

Financial Assurance

116
Kallia Gate
Karnal Distt
7150047
Rajendra Lal
Co-operative
Society

Category A Mining Lease

Total Area Proposed to be put to use in hect(Year 1 to 5)	Amount of Bank Guarantee (Lac INR)	Valid till (dd/mm/yyyy)	Upload copy of Bank Guarantee as attachment
23.80	119.00	31/03/2028	Point 16, Bank Guarantee, compressed.pdf

Category B Mining Lease

Sl No	Total Area Proposed to be put to use in hect (Year 1 to 5)	Amount of Bank Guarantee (Lac INR)	Valid till (dd/mm/yyyy)	Upload copy of Bank Guarantee as attachment
1	Nil	Nil	Nil	Nil

Approved

M. M. Mithal
 M/s. Ferro Alloy Corporation Limited
 Kalipatti, Dist- Jalpaiguri
 Pin- 765047

Chapter 8: Review of Previous Proposals (Not applicable for fresh grant)

8.1: General

8.1.1: Lease Area Utilization

Sl. No.	Type of land use (in ha)	Area at the beginning of the proposal period	Area proposed under activity	Actual Area utilized in the proposal period	Deviation	Reasons for deviation
1	Mining	6.98	8.18	7.14	-1.04	EC not received for enhanced production of 150k ton
2	Mineral storage	1.85	1.35	0.97	-0.38	EC not received for enhanced production of 150k ton
3	Mineral Beneficiation plant	0.00	0.00	0.00	0	0
4	Township	0.00	0.00	0.00	0	0
5	Tailing Pond	0.00	0.00	0.00	0	0
6	Railways	0.00	0.00	0.00	0	0
7	Roads	0.92	0.92	0.56	-0.36	EC not received for enhanced production of 150k ton
8	Infrastructure (Workshop, administrative building etc.)	0.06	0.06	0.06	0	0
9	Off-waste dump	4.71	6.26	5.80	-0.46	EC not received for enhanced production of 150k ton
10	Top soil preservation	0.00	0.00	0.00	0	0
11	Others	2.94	2.57	2.97	0.4	EC not received for

Muthuman M
Agent of Mines
Mrs. Ferro Alloys Corporation Ltd
150k ton

M. Muthuman

						enhanced production of 150% ton
12	Total area put to use	17.45	19.33	17.50	-1.83	0
13	Excavated area reclaimed	0.00	0.00	0.00	0	0
14	Waste dump area reclaimed	0.00	0.00	0.00	0.00	0
15	Undisturbed Area	6.35	4.47	6.30	1.83	0
	Total	23.80	23.80	23.80	0	

8.1.2: SDF and CSR Expenditures

Activity	Proposals		Achievement	Deviation	Reasons for deviation
	10% of Royalty (a)	Total Expenditure For SDF implementation (b)			
Total expenditure incurred for implementation of SDF at mine level including - Environment Protection - CSR & other welfare activities in peripheral area (Explanation: Expenditure is not over and above the statutory levies imposed by the Government; However, THIS EXCLUDES CONTRIBUTION TO DMF & NMET and is over and above the statutory levies imposed by the Government.)					
CSR (Corporate Social Responsibility) spending at the mine level in Proposal Period (as per Companies Act, 2013 or otherwise)	25885000.00	42665000.00	42665000.00	0.00	NA

8.2: Technical Details


 Mr. N. K. Sharma
 M/s. Ferro Alloys Corporation Limited
 Kalasahi, Dist. Jalgaon
 Pin- 395047

8.2.1: Exploration

Particulars	Proposals			Achievement			Deviation			Reasons for deviation
	Boreholes	Pits	Trenches	Boreholes	Pits	Trenches	Boreholes	Pits	Trenches	
Number of Boreholes/ Pits/ Trenches	34	Nil	Nil	48	Nil	Nil	14	Nil	Nil	No deviation, Achieved more than the proposal
Boreholes Meterage (If Boreholes selected in first row) (m)	3833			5812.4			1979			No deviation, Achieved more than the proposal
Grid	50			50			00			0
G Axis upgradation during Proposal Period as per guidelines of MEMC Rule 2015	0			0			0			0
Area converted under G1 from G2/G3	0			0			0			0

8.2.2: Mine Development (Opencast/ Underground/ Both/ Dump Mining)

Particulars	Proposals	Actual	Deviation	Reasons for deviation
8.2.2.1: Generation of Ore/Waste While Development				
Ore	398808	247567.2	-151240.8	EC not received for enhanced production target of 150KTP
Waste	3028962.98	1005247.78	-1023715.20	As the ore production target not achieved, hence OB excavation has also been done as per desired stripping ratio
Generated Waste while ROM	0.00	0.00	0.00	NA

Mr. Muthuraj

recovery				
Dumping Site (For Surface)	Northern side of the pit		00	NA
Removal of waste/ over burden in cubic meters	1014481.49	502623.89	-511857.60	As the ore production target not achieved, hence OB excavation has also been done as per desired stripping ratio
8.2.2.2: Excavation				
Lateral extent	240	240	00	No Deviation
Vertical extent	70	60	10	EC not received for enhanced production target of 150KT

8.2.3: Mining operation: Dump Mining

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Handling of Material	0	0	0	0
Waste Generated post recovery	0	0	0	0
Dumping site for waste	0	0	0	0

8.2.4: Zero Waste Mining

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Alternative use / Disposal of Waste Generated (excluding top soil)	0.00	0.00	0.00	0

8.2.5: Backfilling

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Site (Co-ordinates)	0	0	0	0
Area	0	0	0	0
Depth	0	0	0	0
Volume Backfilled (CuM)	0	0	0	0


 M. Madhavan
 Ms. Ferre Kalanay
 100% Joint

8.2.8: Environment Compliances

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
8.2.8.1: Top soil				
Generation	7700	7453	-247	Soil thickness found little less compared to plan
Utilization	7700	7453	-247	247m ³ not generated
Stacking (Dump 1st)	0	0	0	0
Reclamation	0	0	0	0
Rehabilitation	6300	6500	200	Sufficient peripheral dumping method followed to generate more dead face
8.2.8.2: Afforestation (Dumps/Benches/Backfilled Area etc.)				
2019 - 2020	6060	6700	640	Sufficient peripheral dumping method followed to generate more dead face
2020 - 2021	3160	4940	1780	Sufficient peripheral dumping method followed to generate more dead face
2021 - 2022	4540	9500	4960	Sufficient peripheral dumping method followed to generate more dead face
2022 - 2023	3810	8950	5140	Sufficient peripheral dumping method followed to generate more dead face
2018 - 2019	0	0	0	0
8.2.8.3: Afforestation (Green Belt)				
2018 - 2019	0	0	0	0
2019 - 2020	0	0	0	0
2020 - 2021	0	0	0	0


 M. S. Kallappa
 Director
 Murugan M. Kallappa & Sons Limited
 Pur - 135047

2021 - 2022	0	0	0	0
2022 - 2023	0	0	0	0
Construction of check dams	0	0	0	0
Construction of Garland Drain (in meter)	0	0	0	0
Construction of Retaining Walls (in meter)	0	0	0	0
8.2.8.4: Tailings				
Generation	0	0	0	0
Utilization	0	0	0	0
Disposal	0	0	0	0

8.3: Socio-Economic Review

8.3.1: Rehabilitation & Resettlement for Project Affected People

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
No. of Project Affected People (PAP)	0.0000	0.0000	0.0000	0
%age of PAP for whom alternate arrangements made for sustained livelihood	0.0000	0.0000	0.0000	0
% of project affected families given employment	0.0000	0.0000	0.0000	0
% of project affected families who have been skilled by the lessee and absorbed (% of total employment given to affected families)	0.0000	0.0000	0.0000	0

8.3.2 : Grievance Redressal

Munir Ahmad
 Director
 Rehabilitation & Resettlement
 PAF-1

Grievances Received	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
	0	1	0	1	1
Grievances Redressed	0	1	0	1	1

8.3.3: Welfare and socio-economic development programs for local communities

Particulars	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023
8.3.3.1 Support for Drinking Water & Agriculture					
No. of Water Storage Tanks constructed	0	0	0	0	0
Drinking Water Facilities provided (Bore wells/ Pumps etc.)	Borewell with submersible pump provided.	Borewell with submersible pump provided.	Borewell with submersible pump provided.	Borewell with submersible pump provided.	Borewell with submersible pump provided.
Irrigation Support provided (Canals/ Pumps etc.)	ETP treated water is being provided to villagers for irrigation	ETP treated water is being provided to villagers for irrigation	ETP treated water is being provided to villagers for irrigation	ETP treated water is being provided to villagers for irrigation	ETP treated water is being provided to villagers for irrigation
No. of Water tanks De-silted	0	0	0	0	0
Water Treatment Facilities provided (A/N/A)	0	0	0	0	0
Amount of Water treated (in KL) (if selected A in above)	0	0	0	0	0
8.3.3.2 Support to Health & Medical Services					
No. of persons identified from Occupational health diseases	0	0	0	0	0
No. of Health Camps/ Medicine Camps Organized	1	1	1	1	1
8.3.3.3 Support to Skill development & Education					
Vocational Training Provided/ Support Provided					
No. of employees undergone Vocational training	0	3	0	0	0
No. of other persons undergone Vocational training	14	42	67	94	88


 M. S. Kumar
 Director, Human Resource
 Pric: 150047

Number of Literacy & Education Camps held/ Supported	2	2	2	2	2
8.3.3.4 Support to Transportation Services & Infrastructure					
Expenditure on Transportation Services & Infrastructure	1533000	128000	15000	168000	250000
Road development (m) in the peripheral area (not lease area)	300	350	350	400	1100
No. of Public transport support provided (Ambulance/Buses/ School Vans etc)	2	2	2	2	2
8.3.3.5 Swatchata Programs: Creating/providing sanitation and healthy condition in and around the mine area					
Adoption of ODF within mining lease area					
No. of Toilets built in the Lease Area	2	0	0	2	1
Adoption of ODF in nearby villages					
No. Of Toilets built in the villages	2	2	2	1	1
Provision for greenage recreational facility (Within Lease Area/ Outside)					
Recreational Area Type (Picnic Spot/ tracks/Park Etc)	0.08	0.08	0.08	0.08	0.15
Area covered (For within Lease Area only)	0.01	0.01	0.01	0.01	0.01
Awareness program among Mine workers for Swatchata					
No. of Swatchata Programmes held	6	4	6	5	1

Muthumay
 Accepted
 Kallapart - Dist - Jolpur
 15/04/2022

Chapter 9 : Impact Assessment (NA)

Approved

Chapter 10: Annexures

1. Upload Document

1.1 Upload Document

Sl.No.	Title	Is Upload	Document (only pdf allowed)
1	Any Other	Yes	At a place information as annexure_V2.pdf
2	Copy of MDP/A (as applicable)	Nil	Nil
3	Copy of Performance Surety	Nil	Nil
4	Copy of Bank Guarantee	Nil	Point_16_Bank_Guarantee_compressed.pdf
5	Mineral processing flowsheet with stage wise recovery	Nil	Nil
6	Any other Report or Certification as required in the submitted Document.	Nil	Novel Mining method at Kalurangaipattu Concise Mine.pdf
7	Chemical and Mineralogical analysis report	Nil	Chemical and mineralogical Assay certificates.pdf
8	Exploration details	Nil	Exploratory Benchnotes BH No.1 to 184.pdf
9	Copy of Scale relaxation approval granted(if applicable)	Nil	Nil
10	Copy of feasibility Report	Nil	Feasibility Report_Kalurangaijuu.pdf
11	Copy of Study reports conducted as per Para 4.3.1	Nil	SLOPE STABILITY REPORT KALARANGI ATA_FACOR_PIL DUMP.pdf
12	Experience & Qualification Details of Qualified Person	Nil	Point 8 Experience Report of Mines M/s Ferro Alloys Corporation Limited
13	Consent letter for Qualified Person.	Nil	Point 7 Consent letter of_QP.pdf
14	ID & Address Proof of Owner/ Nominated Owner	Nil	Aadhar card Photo ID.pdf
15	Copy of Registration of Company	Nil	Certificate of Incorporation FACOR.PDF

[Signature]

	(RoC)/Partnership firm (Registration) & Deed		
16	Copy of Declaration of Owner/Nominated Owner in case of Company/partnership firm	Nil	RESOLUTION OF NOMINATED OWNER.pdf
17	Copy of Environment and Forest Clearance, Consent to Establish, Consent to Operate	Nil	EC, CTE, CIO, FC.pdf
18	Copy of lease deed executed	Nil	Point 2 MINING LEASE DEED.pdf
19	Letter of Intent /Letter of lease grant	Nil	Grant Order.pdf

Approved


 M. Madhukar
 Agent of Mines
 Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jajpur
 Pin- 755047
 M/s. Ferro Alloys Corporation Limited

Chapter 11: Plates (OC)

1. Upload Document

1.1 Upload Document

S.N.	Title	Is Upload	Document
1	Lease sketch plan;	Nil	LEASE PLAN.pdf
2	Surface Plan (K.MZ format)(Georeferenced); A statutory plan as per MCDDR, 2017. The Plan should be submitted showing different color codes for (1) Active Pits & Excavation area (2) Excavated area reclaimed & rehabilitated (3) Active dumps (4) Stabilized & rehabilitated dump area, (5) Green belt (6) Mineral Stacks (7) Utilities such as plant, buildings etc (8) Lease boundary along with other details.	Nil	Plate 2 SURFACE PLAN LTM-Model.pdf
3	Surface Geological Plan of the lease (K.MZ format)(Georeferenced); The Plan should be submitted showing different color codes for: (1) Lithological/Geological Occurrence (2) Area under G1, G2, G3 & G4 (3) Active pits & Excavation area (4) Dump Area (5) Mineral Stacks (6) Lease boundary along with other details.	Nil	Plate 3 SURFACE GEOLOGICAL PLAN LTM-Model.pdf
4	Surface Geological sections (in Pdf format); Geological sections with different color coding depicting all the features shown in Surface Geological Plan.	Nil	GEOLOGICAL SECTIONS V5.pdf
5	Five year Production and Development plan (K.MZ format)(Georeferenced); The Plan should be submitted showing different color coding for: (1) Active Pit and Excavation area, (2) Year wise excavation proposal for year 1 to V (3) Active dump and yearwise dump	Nil	Year-wise dev. plan-Model-5.pdf Muthumani M Regional Engineer No. Muthumani

	proposal for year - 10 V (4) Year wise Dump working proposal for year 1 to V (6) Lease boundary (with reference to chapter 4) along with other details.		
6	Five year Production and Development sections (in pdf format); Year wise excavation and dumping proposals with different color coding depicting all the features as shown in the Five year Production and development plan.	Nil	YEARWISE DEVELOPMENT SECTIONS- Model.pdf
7	Progressive Mine Closure Plan (KMZ format)(Georeferenced); The Plan should be submitted showing different color coding for : (1) Yearwise excavated area Reclaimed & rehabilitated for year 1 to V (2) Year wise dump area to be stabilized and dump area to be rehabilitated for year 1 to V (3) Year wise Green area proposed from year 1 to V (4) Any other reclamation and rehabilitation measures proposed (5) Lease boundary (with reference to chapter 6) along with other details.	Nil	PMCP.pdf
8	Progressive mine Closure sections (in pdf format); Year wise Progressive mine closure sections showing all the yearwise reclamation, rehabilitation proposals as depicted in the Progressive mine closure plan.	Nil	PMCP SECTIONS-Model.pdf
9	Conceptual Plan and section (KMZ format)(Georeferenced); The Plan should depict the status of leave area as envisaged at the end of life of Mine showing all the details. Status of land use shall be depicted by different color coding.	Nil	Plate 9 CONCEPTUAL PLAN UTM- Model.pdf
10	Geo referenced Cadastral Plan,Duly certified by the State Government.	Nil	Lease Plan and DGPS PLAN-Merged.pdf
11	Environmental Plan (KMZ format)(Georeferenced);As per MCDR, 2017 indicating all the details.	Nil	Plate 11 Environment plan UTM-Model.pdf
12	Any other plan/section as deemed necessary by approving authority.		Plate 12 FINANCIAL ASSURANCE PLAN UTM-Model.pdf


 M/s. Ferro Alloys Corporation Limited
 Kallapani, District Jalpur
 Pin- 755047

13	Five Year Production and Development sections (in pdf format);	Nil	YEARWISE DEVELOPMENT SECTIONS- Model.pdf

Approved

M. Subramanian
Agent of Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin- 755047

Chapter 11 : Plates(UG) : NA

Approved





UNDERTAKING

(Ref: Stipulated Condition No 2.22 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the User Agency will comply with the Hon'ble Supreme Court order on regressing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner.

M. Muthuram
Authorized Signatory
M/s. Ferro Alloys Corporation Limited
Bhilai, Chh. Jigar
Pin- 492017

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

COUNTERSIGNED

[Signature]
Div. Officer
Cuttack Forest Division

UNDERTAKING

(Ref: Stipulated Condition No 2.23 of In- Principle Approval order dated
21.03.2025
Online Proposal No Proposal No FP/OR/MIN/16453/2015)

This is to undertake that Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, as amended time to time and the Rules framed there-under;


M. Mathur
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Chh. Jajpur
Pin- 751007

Authorized Signatory,
Kalarangatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division

No.J-11015/183/2007-IA.II (M)

Government of India
Ministry of Environment & ForestsParyavaran Bhawan,
C.G.O. Complex, Lodi Road,
New Delhi - 110 003Dated the 13th May, 2009

To

M/s Ferro Alloys Corporation Limited
Lexmi Bhawan, Kuans,
Bhadrak,
Orissa
E-mail: bls_factor168@sancharnet.in
facormines@dataone.in**Subject: Bhimtanagar Chromite Mining Project of M/s Ferro Alloys Corporation Limited, located in Village Kalarangiatta (Bhimtanagar), Tehsil Sukinda, District Jajpur, Orissa - environmental clearance regarding.**

Sir,

This has reference to your letter No. BHF/DM/50/08 dated 25.07.2008 and subsequent letters dated 27.01.2009 and 10.03.2009 on the subject mentioned above. The Ministry of Environment and Forests had earlier prescribed additional Terms of Reference (TORs) to the project on 18.06.2007. The mine was earlier worked by M/s TISCO and the lease was granted in favour of the project proponent only on 10.06.2005, therefore, for all practical purposes, it is a new mine for the present proponent. The proposal is for opening of a new mine for production of 50,000 tonnes per annum (TPA) of chrome ore. The total mine lease area of the project is 23.8ha, out of which, 1.008ha is an agricultural land (tenanted land) and 22.792ha is waste land. No forestland is involved. Area proposed for mining is 8.41ha, an area of 0.56ha is kept for storage of top soil, 7.192ha for over burden dump, 2.285ha for mineral storage, 1.404ha for infrastructure, 1.165ha for roads, 1.743ha for green belt, 0.416ha for ETP and 0.604ha is others (drain). The Damsala Nallah is flowing in the buffer zone of the mine at a distance of 0.6km from the mine lease boundary. No national Park/Wildlife Sanctuary/Bio-sphere Reserve/Tiger Reserve etc. are reported to be located within 10km of the mine lease. In support of this, a letter dated 12.01.2009 from the Divisional Forest Officer, Cuttack and an authenticated map through the Divisional Forest Officer-cum-Wildlife Warden, Cuttack has been provided. Two reserve forests, namely Ranjagari RF and Dhalparha RF and two protected forests namely Nishagiri PF and Daitari PF are reported to be located in the buffer zone of the mine at a distance of 3.6km, 6.5km, 0.2km and 6.0km respectively from the mine lease boundary. The mine working will be opencast by mechanized method involving drilling and blasting. The targatted production capacity of the mine is 54,000 tonnes per annum.

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M. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

50,000TPA of chrome ore and the life of mine is 10 years. Approximately 167TPD of mineral will be transported through the road. The topography of the area is flat at an elevation above mean sea level ranging from 103m -110m RL. The general ground level is reported at 110m RL. The present working depth of mine is 93mRL (17m bgl) and the ultimate working depth of mine will be 40mRL (70m bgl). The groundwater table in the core zone reported to vary from 99m RL (6m bgl) to 96m RL (9m bgl) during post-monsoon and pre-monsoon. The mine working will intersect the ground water table. Hydro-geological report has been provided reporting the stage of groundwater development in the area as 51%, which is reported under safe category. The peak water requirement of the project is estimated as 70.26m³ per day, which will be obtained from the ground water (0.54m³ per day) and the mine sump water (69.74m³ per day). There is no population in the core zone, therefore, displacement of population and R&R has not been envisaged. Approximately 12,292m³ per month of solid waste comprising 234m³ per month of top soil, 11,475m³ per month of over burden and 583m³ per month of nickeliferous limonite will be generated, which will be disposed off in the earmarked area. It is estimated that 13.77lakh m³ of over burden and 0.7lakh m³ of nickeliferous limonite will be generated during the life of the mine. No backfilling is proposed. The entire quantity of the waste will be disposed off in the form of an external dump having maximum projected height of 30m. Plantation will be raised in an area of 12.715ha at the end of the mine life and an area of 5.21ha will be developed as water body during the post mining stage. The State Pollution Control Board, Orissa had issued Consent to Establish to the project on 26.09.2008 for enhancement of production of chromite ore (ROM) to 50,000TPA over mine lease area of 23.8ha. The public hearing of the project was held on 26.03.2008, as per the EIA Notification, 2006 for production of 50,000TPA of chromite ore over an area of 23.8ha. The Indian Bureau of mines approved the mining plan including progressive mine closure plan of the project on 06.10.2005 for lease area of 23.8ha. The Central Ground Water Authority issued NOC to the project on 17.06.2008 for a period of five years. The capital cost of the project is Rs.493Lakhs and the capital cost for the environmental protection measures is proposed as Rs.53.36Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.10.91Lakhs.

2. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Shimtanagar Chromite Mining Project of M/s Ferro Alloys Corporation Limited for an annual production capacity of 50,000tonnes (0.05million tonnes) of chrome ore by opencast mechanized method involving total mining lease area of 23.8ha, subject to implementation of the following conditions and environmental safeguards.

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A. Specific conditions

- (i) All the conditions stipulated by the State Pollution Control Board, Orissa in their consent to establish shall be effectively implemented.
- (ii) The environmental clearance is granted for opencast mining only. For the underground mining, the project proponent shall obtain separate clearance after getting the mine plan approval from the Indian Bureau of Mines.
- (iii) The environmental clearance is subject to approval of the State Landuse Department, Government of Orissa for diversion of agricultural land for non-agricultural use.
- (iv) The project proponent shall ensure that no natural watercourse and/or water resources are obstructed due to any mining operations. Adequate measures shall be taken for protection of Damsala Nallah and other seasonal channels, if any, emanating from the mine lease, during the course of mining operation.
- (v) The top soil shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (vi) The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and their phase-wise stabilization shall be carried out. There shall be one external over burden dump having maximum projected height of 30m. Proper terracing of the OB dump shall be carried out so that the over all slope of the dump shall be maintained to 27°. The OB dump shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (vii) Catch drains and siltation ponds of appropriate size shall be constructed for the working pit, soil, OB and mineral dumps to arrest flow of silt and sediment directly into the Damsal Nallah and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after the monsoon and maintained properly.

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Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dump to prevent run off of water and flow of sediments directly into the Damsala Nallah and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.

Storm water return system should be provided. Storm water should not be allowed to go to the effluent treatment plant during high rainfall/super cyclone period. A separate storm water sump for this purpose should be created.

- (viii) Dimension of retaining wall at the toe of the over burden dump and the OS benches within the mine to check run-off and siltation should be based on the rainfall data.
- (ix) Effluents containing Cr^{++} shall be treated to meet the prescribed standards before reuse/discharge. Effluent Treatment Plant should be provided for treatment of mine water discharge and wastewater generated from the workshop and mineral separation plant.

Run off from the OS dump and other surface run off should be analysed for Cr^{++} and in case its concentration is found higher than the permissible limit the water should be treated before reuse/discharge.

- (x) Separate impervious concrete pits for disposal of sludge shall be provided for the safe disposal of sludge generated from the mining operations.
- (xi) The project proponent shall ensure that the treated effluents conforming to the prescribed standards shall only be discharged.
- (xii) Plantation shall be raised in an area of 12.715ha including a 3.5m wide green belt in the safety zone around the mining lease, over burden dump, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500plants per ha.
- (xiii) The void left unfilled in an area of 5.21ha shall be converted into the water body. The higher benches of the excavated void/mine pit shall be terraced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by the local people to use the water body. Perimeter fencing shall be carried out all along the excavated area.

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- (xiv) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xv) Regular monitoring of water quality upstream and downstream of the Damsala Nallah shall be carried out and record of monitored data should be maintained and submitted to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.
- (xvi) The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xvii) Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers in and around the mining lease during the mining operation. The periodic monitoring ((at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)) shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.
- (xviii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project and effectively implement all the conditions stipulated therein.
- (xix) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xx) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.

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 Muthuraj
 Agent of Mines
 Ms. Ferro Alloy Corporation Limited
 Kaliapani, Jajpur
 Pin- 754707

- (xxi) Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (xxii) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxiii) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- (xxiv) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxv) Consent to operate shall be obtained from the State Pollution Control Board, Orissa before starting production from the mine.
- (xxvi) The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 km from proposed mine.
- (xxvii) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxviii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxix) The critical parameters such as SPM , $RSPM$, NO_x in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation whichever is closer shall be monitored periodically (at least once a month). Further, quality of discharged water shall also be monitored (TDS, DO, PH, suspended particulate matter and Cr^{VI}). The monitored data shall be uploaded on the website as well as displayed on a display board at a suitable location in public domain.
- (xxx) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant etc. spotted in the study area. Action plan for

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 Muthumani M
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 Corporation Limited
 Kalu, Dist-Jajpur
 Pin-755047

conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.

- (xxxi) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

B. General conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of mineral chromite ore and the waste shall be made.
- (iii) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM, SPM, SO₂ & NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (iv) Data on ambient air quality (RSPM, SPM, SO₂ & NO_x) should be regularly submitted to the Ministry of Environment and Forests including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vi) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (vii) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards

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Pin- 755047

prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

- (viii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- (ix) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (x) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Bhubaneswar.
- (xi) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.
- (xii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xiii) The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests, Bhubaneswar.
- (xiv) A copy of clearance letter will be marked to concerned Panchayat / local NGO if any, from whom suggestion/representation has been received while processing the proposal. The clearance letter shall also be put on the web site of the company.
- (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/Tahsildar's Office for 30 days.

M. Murthy
Murthuman M
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 M/s. Ferro Alloys Corporation Limited
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28/-

- (xvi) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within seven(7) days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

3. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

5. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Orissa and any other Court of Law relating to the subject matter.

6. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.

(SATISH C. GARKOTI)
Additional Director (S)

Copy to:

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.

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M. Muthumari
Muthumari M
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Pin- 755047

- (v) The Chief Wildlife Warden, Government of Orissa, Bhubaneswar,
- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (E2), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Jaipur District, Government of Orissa.
- (xi) E1 Division, Ministry of Environment & Forests, E1 Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.

M. Muthumary
 Muthumary &
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Pin- 755047



UNDERTAKING

(Ref: Stipulated Condition No 2.25 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that No labour camp shall be established on the forest land and the User Agency will provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas.

M. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Salem, Dist. Jangar
Pin- 768007

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
COUNTERSIGNED

[Signature]
Divisional Forest Officer
Cuttack Forest Division

Survey Pillar to Pillar Latitude/ Longitudes/ Distance with Forward bearing & Backward Bearing Of KALARANGIATTA LEASE BOUNDARY

(As it relates to diversion of 23.80ha of Forest land in Kalarangiatta Chromite Mine of M/s Ferro Alloys Corporation Ltd)

BOUNDARY DESCRIPTION OF KALARANGIATTA LEASE BOUNDARY							
SL No.	PILLAR ID		LONGITUDE	LATITUDE	FORWARD BEARING	BACKWARD BEARING	DISTANCE IN METER
	FROM	TO					
1	D	E	E85°44'18.96168"	N21°01'07.28973"	58°31'43"	238°31'43"	173.936
2	E	F	E85°44'24.07497"	N21°01'10.28087"	148°22'38"	328°22'38"	352.238
3	F	G	E85°44'30.55348"	N21°01'00.57415"	58°9'24"	238°9'24"	255.286
4	G	H	E85°44'38.02780"	N21°01'05.00981"	328°21'57"	148°21'57"	426.262
5	H	I	E85°44'30.18540"	N21°01'16.75508"	58°1'1"	238°1'1"	130.13
6	I	J	E85°44'33.95957"	N21°01'19.06468"	328°16'11"	148°16'11"	373.1
7	J	K	E85°44'27.10666"	N21°01'29.29437"	239°7'1"	59°7'1"	336.853
8	K	L	E85°44'17.14086"	N21°01'23.59730"	96°36'32"	276°36'32"	296.893
9	L	M	E85°44'27.36503"	N21°01'22.56178"	144°54'46"	324°54'46"	59.321
10	M	N	E85°44'28.55936"	N21°01'20.99195"	240°12'31"	60°12'31"	217.141
11	N	O	E85°44'22.06193"	N21°01'17.43518"	253°38'29"	73°38'29"	135.052
12	O	D	E85°44'17.58408"	N21°01'16.16492"	172°9'38"	352°9'38"	275.787


S. Atk Khan
Surveyor

Surveyor
Kalarangiatta Chromite Mines
CORP LTD


Divisional Forest Officer
Cuttack Forest Division


15/07/2025
Authorized Signatory


15/07/25
Forester
Ransol Section

Muthuman M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047


Dy. Ranger
Sukinda Range

Safety Zone Pillars for Kalarangiatta Chromite Mines by M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha



[Signature]
C.S. Ali Khan.
 Surveyor
 Kalarangiatta Chromite Mines
 - FACOR LTD.

[Signature]
 Divisional Forest Officer
 Cuttack Forest Division

[Signature]
 15/7/25
Forester
 Ransol Section

[Signature]
Di. Ranger
 Sukinda Range

[Signature]
 15/07/2025
Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jajpur
 Pin- 755047



(S. Ali Khan)

Surveyor
Sialta Chromite Mines
FACOR LTD

Debaraj Kumar Choudhary
District Forest Officer

15/7/25
Forester
Ransol Section

M. Muthumari
15/07/2025

Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047

15/7/25
By. Ranger
Sukinda Range

Lease Boundary Pillars for Kalaranghatta Chromite Mines by M/s Ferro Alloys Corporation Ltd. (FACOR) in Cuttack Forest Division coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha



S. Ali Khan
(S. Ali Khan)
 Surveyor
 Kalaranghatta Chromite Mines
 - FACOR LTD

[Signature]
 Divisional Forest Officer
 Cuttack Forest Division

[Signature]
 Director
 Ransol Section

M. Muthumari
 15/07/2025
 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jajpur
 Pin- 755047

[Signature]
 Dy. Ranger
 Sukinda Range



CS. Ali Khan
 Surveyor
 Chhota Chikma Mines
 FACOR LTD.

AP
 Divisional Forest Officer
 Cuttack Forest Division

Forester
 Ransol Section

By Ranger
 Sukinda Range

M. Muthumari
 15/09/2023
 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalispani, Dist- Jeipur
 Pin- 755047







UNDERTAKING

(Ref: Stipulated Condition No 2.27 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the layout plan of the proposal will not be changed without the prior approval of the Central Government and the forest land will not be used for any purpose other than that specified in the proposal.

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 Muthuramy M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
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 Pin-342007

Authorized Signatory,
 Kalarangiatta Chromite Mine,
 M/s Ferro Alloys Corporation Ltd

Countersigned by
 Divisional Forest Officer
 Cuttack Forest Division

Office Seal
COUNTERSIGNED

AP
 Divisional Forest Officer
 Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.28 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

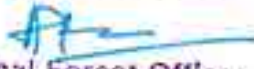
This is to undertake that the forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.


Muthuram M
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M/s. Ferro Alloys Corporation Limited
Bellefard, Eluru - Jajpur
Pin- 756042

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.29 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that No damage to the flora and fauna of the adjoining area will be caused.

M. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
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Pin. 833202

Authorized Signatory,
Kalarangatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

COUNTERSIGNED

AP
Divisional Forest Officer
Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.30 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the User Agency shall submit the annual self -compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly.

M. Mathur
 Mathur M
 Agent of Mines
 M/s. Ferro-Alloys Corporation Limited
 Bhatnagar, Bhatnagar
 Pin-751007

Authorized Signatory,
 Kalarangiatta Chromite Mine,
 M/s Ferro Alloys Corporation Ltd

Countersigned by
 Divisional Forest Officer
 Cuttack Forest Division
COUNTERSIGNED
 Office Seal

[Signature]

Divisional Forest Officer
 Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.31 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that on the event of any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife will be implemented / abide by such conditions.

M. Mathuray
 M. Mathuray
 Agent of Mine
 M/s Ferro Alloys Corporation Limited
 Kalarangatta, Dist- Jharkhand
 Pin- 835107

Authorized Signatory,
 Kalarangiattha Chromite Mine,
 M/s Ferro Alloys Corporation Ltd

Countersigned by
 Divisional Forest Officer
 Cuttack Forest Division
COUNTERSIGNED
 Office Seal

[Signature]
 Divisional Forest Officer
 Cuttack Forest Division



UNDERTAKING

(Ref: Stipulated Condition No 2.32 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the user agency will comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.


Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Bilaspur, Chh. Garh
Pin- 761007

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division

UNDERTAKING

(Ref: Stipulated Condition No 2.33 of In- Principle Approval order dated
21.03.2025
Online Proposal No Proposal No FP/OR/MIN/16453/2015)

This is to undertake that no violation will be committed under the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and violation of any of these conditions will amount to violation of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and action would be taken as prescribed in para 1.16 of Chapter 1 of the Consolidated Guidelines and Clarifications on Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 as issued by this Ministry's letter dated 29.12.2023.


M. Muthuram
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallangudi, Dist- Jodhpur
Pin- 345007

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division

UNDERTAKING

(Ref: Stipulated Condition No 2.34 of In- Principle Approval order dated
21.03.2025
Online Proposal No Proposal No FP/OR/MIN/16453/2015)

*This is to undertake that the compliance report shall be uploaded on e-portal
(<https://parivesh.nic.in/>).*


M. Mathur
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Chh-Jagun
Pin-751027

Authorized Signatory,
Kalarangiatta Chromite Mine,
M/s Ferro Alloys Corporation Ltd

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED


Divisional Forest Officer
Cuttack Forest Division