

Ref. No- FACOR / Mines / 300/2025

Date: 21.07.2025

To
Divisional Forest Officer,
Cuttack Forest Division,
Cuttack

Sub: Submission of compliance of Stage-I order for Kalarangitta Chromite Mine of M/s Ferro Alloys Corporation Ltd. (FACOR Ltd.) in Cuttack Forest Division coming under jurisdiction of Sukinda Tehsil of Jajpur District, Odisha (Online proposal no. FP/OR/MIN/16453/2015) granted vide letter number 5-ORC288/2016-BHU 1/102806/2025 dated 21.03.2025

Respected Sir,

With reference to the subject cited above, we would like to intimate your good self that our proposal for seeking prior approval of the Central Government under section 2 (1) (ii) of the Van (Sanrakshan 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 of forest land in safety zone area for chromite ore mining of Kalarangitta Chromite Mines by M/s Ferro Alloys Corporation Ltd. (FACOR Ltd.) in Cuttack Forest Division coming under jurisdiction of Sukinda Tehsil of Jajpur District, Odisha (Online proposal no. FP/OR/MIN/16453/2015) has been granted Stage-I approval by MoEFCC vide vide letter number 5-ORC288/2016-BHU 1/102806/2025 dated 21.03.2025.

In compliance with the order, we are hereby submitting the point wise compliance of the order along with all annexures for your kind perusal and necessary action further.

Your kind corporation in this regard will be highly apricated & obliged.

Thanking you,
Yours faithfully,

For Ferro Alloys Corporation Ltd

M. Muthumari
21/07/2025

Muthumari M
Agent & Authorised Signatory

Received
No/
21/7/2025
Section Officer,
Cuttack Forest Division

Compliance to Stage-I (In- principal Approval Orders) Online Proposal No.: FP/OR/MIN/16453/2015 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 Ltd.) in Cuttack Forest Division coming under jurisdiction of Sukinda Tehsil of Jajpur District, Odisha.

Condition No 1:

Legal status of the diverted forest land shall remain unchanged;

Compliance:

Legal status of the diverted forest land shall remain unchanged. An undertaking to this effect is enclosed to this compliance at **Annexure-I**.

Condition No 2:

Compensatory Afforestation:

Condition No 2.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;

Compliance:

The Divisional Forest Officer, Cuttack Division has raised demand for Rs 50,67,000/- (Rupees Fifty Lakh Sixty Seven Thousand only) towards CA cost basing on approved scheme vide his office letter no 3019/5F (Forest Diversion)15/2025 dated 08.04.2025 and For Additional Compensatory Afforestation a sum of Rs 1,96,93,300/- vide the above referred letter (**Annexure- II**). The same along with the NPV totaling to Rs 6,45,54,030/- (Six Crore Forty-Five Lakh Fifty-Four Thousand and thirty Only) has been deposited in Accounts of Odisha CAMPA fund vide UTR No ICICR 42025051300556304 Dated 13.05.2025 (**Annexure-III**)

(CA+ACA Cost comes to Rs2,47,60300/-)

Condition No 2.b:

The non-forest land identified for raising compensatory afforestation shall be transferred and mutated in favour of the State Forest Department before issue of the final approval;

Compliance:

The Non-Forest land identified at, Village Kerajodi under Kankadahada Tahasil of district Dhenkanal has been mutated in favour of Forest Department (Vana Bibhaga) vide Plot No.315, & 318, Khata No.155 of Village Kerajodi under Kankadahad Tahasil of Dhenkanal District.The copy of the letter and ROR in favour of Forest Department is enclosed as **Annexure- IV**


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Condition No 2.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;

Compliance:

In compliance to this condition, it is 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.

Condition No 2.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;

Compliance:

Noted, At present No Penal Compensatory Afforestation has been stipulated. An undertaking to abide by the decision of the Competent authority in this matter is at **Annexure -VII**

Condition No 2.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;

Compliance:

The Identified CA land is 24 ha. The CA land has been demarcated, Pillar Posted. Hence there is no requirement for depositing the Cost of survey, demarcation and erection of permanent pillars, However, an undertaking to this effect is submitted to deposit the cost if so demanded.

(Annexure-VIII)

The CA Scheme has been prepared with 10 years maintenance with provisions for enhancement of wage rate, planting of indigenous species of 18month old seedlings.

Condition No 2.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 Kankadahad Tahsil of Dhenkanal District, and additional CA over an area of 24 ha of degraded forest land


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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.

Compliance:

The approved CA Cost has been deposited in the Odisha CAMPA Fund vide UTR No ICICR42025051300556304 Dated 13.05.2025 (**Annexure-III**). The State Govt will take up planation activities as per approved Scheme.

Condition No 2.g:

The land identified for the purpose of CA shall be clearly depicted on a Survey of India toposheet of 1:50,000 scale;

Compliance:

The Topo Map (1:50000 Scale) (F45N12) is enclosed as **Annexure- IX**

Condition No 3: NPV

Condition No 3.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;

Compliance:

The NPV Cost has been demanded by DFO, Cuttack vide his letter No 2996/5F (Forest Diversion) 15/2025 Dated 8.04.2025 (**Annexure-X**). The NPV amount demanded is Rs2,65,82,220/- (*Rupees Two Crore Sixty-Five Lakh Eighty-Two Thousand and Two hundred Twenty only*). The User agency has deposited the NPV in part i.e. Rs 1,73,74,000/- (*Rupees One Crore Seventy-Three Lakh Seventy Four Thousand only*) vide UTR No SBIN52015062516780059 dated 25.06.2015. The intimation Letter along with the UTR dated 25.06.2015 is at Annexure-XI. The balance amount (Rs2,65,82,220.00 – Rs1,73,74,000.00) Rs92, 08, 220 .00 (*Rupees Ninety-Two Lakh Eight Thousand & Two hundred Twenty only*) has been deposited vide UTR No ICICR 42025051300556304 Dated 13.05.2025 (**Annexure-III**) in Parivesh- I Portal. (**Balance NPV Deposited Rs92, 08,220.00**).

Condition No 3.b:


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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;

Compliance:

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 is enclosed at **Annexure- XII**

Condition No 3.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.

Compliance:

Agreed to the stipulated condition and the Penal NPV as calculated by the DFO, Cuttack and demanded vide his office letter no 3687/5F (Forest Diversion) 15/2025 dated 06.05.2025)

Annexure-XIII has been deposited vide UTR No ICICR 42025051300556304 Dated 13.05.2025 (Annexure-III) and intimated to DFO, Cuttack vide Letter No FACOR / Legal/ Mines/2025/37 dated 18.06.2025 (**Annexure- XIV**)

(PNPV Amount Rs1, 55, 33,510.00)

Condition No 4.a:

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/>);

Compliance:

All Compensatory levies as demanded /to be realized from the User Agency under the project has been transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>);

For any future demand if so, raised will also be deposited / transferred through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>); An undertaking to this effect is furnished at **Annexure- XV**.

Condition No 5:


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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. A plan indicating for plantation and SMC activities will be prepared and submitted to MoEF &CC before grant of final approval;

Compliance:

There is 2.098 ha of degraded forest land within 100 meter from outer perimeter of the mining lease. The required scheme for *gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40)*, 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 letter and the approved Scheme has been enclosed as **Annexure-XVI**

The DFO, Cuttack has raised demand for Rs16,02,039.00 vide his letter no 5006/5F/(Forest Diversion) 15/2025 dated 18 June 2025. The same amount has been deposited in Odisha CAMPA Account vide UTR No-ICICN42025062857260859 dated 28.06.2025 . The demand letter and UTR are enclosed as **Annexure-XVII**

Condition No 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;

Compliance:

All related kml file i.e. CA land, Diverted forest land has been uploaded. The Wildlife Zone of Impact / Study area has also been uploaded.

Condition No 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:

Compliance:

Condition No 7.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;

Compliance:


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The Scheme for Mitigative measures to minimize soil erosion and choking of stream 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 letter and the approved Scheme has been enclosed as **Annexure-XVIII**. An undertaking to implement the activities as per approved scheme within three years with effect from the issue of Stage-II clearance is enclosed as **Annexure- XIX**.

Condition No 7.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;

Compliance:

The 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 letter and the approved Scheme has been enclosed as **Annexure-XX**.

Condition No 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;

Compliance:

The 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 letter and the approved Scheme has been enclosed as **Annexure-XXI**

Condition No 7.d:

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°.

Compliance:

The 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 letter and the approved Scheme has been enclosed as **Annexure-XXII**.

Condition No 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:

Condition No 8.a:

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Mr. Mithun
Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kallapani, Dist- Jharkhand
Pin- 758007

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, protection and regeneration by erecting adequate number of 6 feet high 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;

Compliance:

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 maintained. Sufficient number of watchers will be deployed for its protection and maintenance. An undertaking to this effect is enclosed at **Annexure- XXIII**

Condition No 8.b:

Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;

Compliance:

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; an undertaking to this effect is at **Annexure-XXIV**

Condition No 8.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;

Compliance:

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. An undertaking to this effect is at **Annexure-XXV**

Condition No 8.d:

The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms;

Compliance:


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The State Government and the user agency will ensure that safety zone is maintained as per the prescribed norms. An undertaking to this effect is at **Annexure-XXVI**.

Condition No 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;

Compliance:

The State Govt. will ensure that the user agency will 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. An undertaking to this effect is at **Annexure-XXVII**.

Condition No 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;

Compliance:

The State Govt. will ensure 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. An undertaking to this effect is at **Annexure-XXVIII**.

Condition No 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;

Compliance:

Adequate care will be taken to check any rolling of overburden/dumps beyond diverted area and also to check soil erosion caused due to mining activities. An undertaking to this effect is at **Annexure-XXIX**.

Condition No 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;

Compliance:

The State Govt. will ensure 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.


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An undertaking to this effect is at **Annexure-XXX**.

Condition No 13:

No damage shall be caused to the top-soil and the user agency will follow the top soil management plan;

Compliance:

No damage shall be caused to the top-soil and the user agency will follow the top soil management plan (as in Approved Mining Plan). An undertaking to this effect is at **Annexure-XXXI**.

Condition No 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;

Compliance:

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 letter and the approved Scheme has been enclosed as **Annexure-XXXII**. The same will be followed. An undertaking to this effect is at **Annexure-XXXIII**.

Condition No 15:

The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;

Compliance:

The cost of felling of trees shall be deposited by the User Agency with the State Forest Department as required. An undertaking to this effect is at **Annexure-XXXIV**

Condition No 16:

Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO;

Compliance:


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Trees will be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO. An undertaking to this effect is at **Annexure- XXXV**.

Condition No 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;

Compliance:

The user agency will 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. An undertaking to this effect is at **Annexure- XXXVI**

Condition No 18:

User agency in consultation with the State Forest Department shall create and maintain alternate habitat/home for the avifauna, whose nesting tress 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;

Compliance:

A scheme to create and maintain alternate habitat/home for the avifauna, whose nesting tress 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 Memo No 2251/5F.FC -06/2025 dated 16.05.2025. The letter and the approved Scheme has been enclosed as **Annexure-XXXVII**. The same will be followed. An undertaking to this effect is at **Annexure-XXXVIII**.

Condition No 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;

Compliance:


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A Site-Specific Wildlife Conservation Plan has been approved by the Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha, Bhubaneswar vide Letter 10180/CWLW-FD-0032-2022 dated 11.11.2022. The same is at **Annexure-XXXIX**. The DFO, Cuttack has raised demand for Rs 1,50,52,000/- towards intervention cost vide letter no 3571 / 5F/ (Forest Diversion) 15/2025 dated 02.05.2025 (**Annexure-XL**). The amount has been deposited in Parivesh Web Portal vide UTR No ICICR 42025051300556304 Dated 13.05.2025 (**Annexure- III**).

Condition No 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 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;

Compliance:

The Project involves 23.80 ha of Forest Land. 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 Certificate along with the letter and proceedings of Gramsabha is at **Annexure-XLI**

Condition No 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;

Compliance:

The User Agency will 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. An undertaking to this effect is at **Annexure-XLII**

Condition No 22:


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The User Agency shall 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;

Compliance:

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. An undertaking to this effect is at **Annexure-XLIII**.

Condition No 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;

Compliance:

The stipulated condition is noted for guidance.

Condition No 24:

The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;

Compliance:

The required Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986 for production of 0.05MTPA (Ore) has been obtained vide Letter No.J-11015/183/2007-IA.II (M) Dated 13.05.2009 from MoEF, Govt. of India, New Delhi . The same is enclosed as **Annexure-XLIV**.

Condition No 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;

Compliance:

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.

An undertaking to this effect is at Annexure-XLV.


Mr. M. K. Singh
Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kalkaji, Old Jodhpur
Pin-756007

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;

The boundary of the diverted forest land, mining lease and safety zone, as applicable, will 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. An undertaking to maintain the same is at **Annexure-XLVI**

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.

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. An undertaking to this effect is at **Annexure-XLVII**.

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;

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. An undertaking to this effect is at **Annexure-XLVIII**.

No damage to the flora and fauna of the adjoining area shall be caused;

No damage to the flora and fauna of the adjoining area will be caused. An undertaking to this effect is at **Annexure-XLIX**.

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Muthumani M
Agent of Mines
Mrs. Pann Alaya Corporation Limited
Kallappan, Choz-Jagur
Ph. 756247

Compliance:

The compliance report has been uploaded on e-portal (<https://parivesh.nic.in/>).

Encl: Annexure-I to LII




MUTHUMANI M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapatti, Dist- Japur
Pin- 758067

Authorized Signatory
Kalarangiatta Chromite Mines
M/s Ferro Alloys Corporation Ltd




MUTHUMANI M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapatti, Dist- Japur
Pin- 758067

GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ଓ ଅଧିକାରୀଙ୍କ ଦ୍ଵାରା ପ୍ରଦତ୍ତ କାର୍ଯ୍ୟକ୍ରମ, କଟକ ବନଖଣ୍ଡ,
OFFICE OF THE DIVISIONAL FOREST OFFICER: CUTTACK FOREST DIVISION

AT: - GHATAKULA, NUAPADA, CUTTACK 753010

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

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

Memo No. 6303 / 5F/ (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 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.

Ref: - Letter No. S-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

17/25-07-25
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.

17/25-07-25
Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 305 / 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.

17/25-07-25
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: 23rd 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 coming under jurisdiction of Sukinda Tahasil of Jajpur District, Odisha.

Sl. No.	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 been 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 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 & 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 Deptt. the Collector letter and RoR are enclosed as Annexure-4 . However, the user agency has submitted an undertaking in this regard which is enclosed as Annexure-4A .
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.

	<p>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 Kankadahad 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.</p>	<p>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.</p>
g.	<p>The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo sheet of 1:50,000 scale;</p>	<p>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.</p>
3.	NPV	
a.	<p>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;</p>	<p>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 Gol, 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.</p>
b.	<p>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;</p>	<p>In compliance to this condition, the user agency has submitted an undertaking which is enclosed as Annexure-9.</p>
c.	<p>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.</p>	<p>In compliance to this condition, the user agency has deposited the penal NPV amounting of Rs.1,55,33,510.00 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.</p>
4.	<p>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/);</p>	<p>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.</p>

	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 upload of e-Green watch Portal is pending due to maintenance. However the user agency has submitted an undertaking for upload of 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 which is enclosed as Annexure-12A .
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 appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of	In compliance to this condition, a Scheme /Plan 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

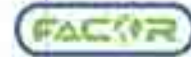
	repose at any given place is less than 28°	given place is less than 28° has been approved by RCCF, Angul Circle with an financial outlay of Rs.51,74,545.00 vide memo no. 2251 dt.16.05.2025. The user agency has submitted an undertaking to implement the scheme at the approved cost. The copy of approval 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 and the user agency will follow the top soil management plan;	In compliance to this condition, the user agency has 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	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

	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;	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 tress 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 tress 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 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;	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 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	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

	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;	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.


 25.07.25
 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. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Chittoor
Pin- 751007

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

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

COUNTERSIGNED

AT
Divisional Forest Officer
Cuttack Forest Division

PROFORMA FOR VERIFICATION OF DEPOSITS IN COMPENSATORY AFFORESTATION FUND

1. Name of Regional Office	Ministry of Environment, Forest and Climate Change, Govt of India, RO, Bhubaneswar
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 1,55,33,510.00
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/CA /IWMP/ 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- ICICR42025051 300556304	Rs 50,67,000.00	13.05.2025	ICICI BANK, MUMBAI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158
2	Additional Compensatory Afforestation	Online Payment	UTR No- ICICR42025051 300556304	Rs 1,96,93,300.00	13.05.2025	ICICI BANK, MUMBAI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158
3	NPV	RTGS	UTR No SBINS2015062 516780059	Rs. 1,73,74,000.00	25.06.2015	State Bank Of India, Bhubaneswar	Corporation Bank, Lodhi Complex, New Delhi, A/C No-SBO1025272
4	Differential NPV	Online Payment	UTR No- ICICR42025051 300556304	Rs 92,08,220.00	13.05.2025	ICICI BANK, MUMBAI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158
5	Penal NPV	Online Payment	UTR No- ICICR42025051 300556304	Rs. 1,55,33,510.00	13.05.2025	ICICI BANK, MUMBAI	ORRISA CAMPA, UNION BANK OF INDIA, A/C No- 150825816453158
6	Site Specific Wildlife Conservation Plan	Online Payment	UTR No- ICICR42025051 300556304	Rs 1,50,52,000.00	13.05.2025	ICICI BANK, MUMBAI	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
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Date:

Place:

APR 25.08.25
Divisional Forest Officer,
Cuttack Forest Division.

Principal Chief Conservator of Forests (FD & NO),
Odisha.

STATE FOREST HEADQUARTERS, ODISHA
OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS & HOFF
PLOT NO. GD-2/12, ARANYA BILAWAN, CHANDRASEKHARPUR
BHUBANESWAR-751023
E-mail:- nodal.pccfodisha@gmail.com

Memo No. 7699 /9F(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 (Sanrakshan 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, GoI, MoEF & CC, New Delhi.
(ii) Memo No.7729 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FE&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, GoI, MoEF & CC, New Delhi alongwith copy of Memo No. 7729 dt.29.03.2025 of OSD-cum-Special Secretary to Govt., FE&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 Kerujodi 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. M. D. D. D.
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, (W.I.) & C.W.I.W, 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, Luxmi Bhawan, Kums, 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]
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalapani, Dist- Jajpur
Pin- 755047

ବନଖଣ୍ଡ ଅଧିକାରୀ ଓଥା ବନ୍ୟପ୍ରାଣୀ ବିଭାଗରାଜକ କାନ୍ଥାକରକରକ, 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 08th 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 & 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 Dolia RF under Mahabirod 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.

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

(P.T.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.



To

The Divisional Forest Officer
Cuttack Forest Division
At- Ghatikula, Nungla
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 Satish 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 CAMPA account through e-portal (<https://portal.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 6,45,54,930/- (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
Rs
20/6/2025

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

Fund Details	Demand	Demanded Amount INR	Amount Paid by FACOR (INR)	Payment reference
Compensatory Afforestation		50,67,000	50,67,000	ICIC Bank Nos.
Additional Compensatory Afforestation		1,96,93,300	1,96,93,300	ICICR430750 51300556304
Bilateral SPV		92,08,220	92,08,220	Dated 13.05.2025
Site Specific Wild Conservation Plan		1,50,52,000	1,50,52,000	
Penal SPV		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 Pambesh Portal are enclosed herewith for your kind reference.

Therefore, we humbly request your good self for processing our Forest Diversion Proposal of Kahanangirani 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
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin-755047

AGENCY COPY

यूनियन बैंक Union Bank of India

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, Luxmibhawan, Kuansh, Pn 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, Jelitta 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 Union Bank of India

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, Luxmibhawan, Kuansh, Pn 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, 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. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin- 303047

M. Muthumani
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin- 303047

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

Socio-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
FPOA/MIN/16432015 Kalingajetta Committee Minors of M/s Ferro Alloys Corporation Ltd	MIN16432015158	3816453158	21 Mar 2025	CA : 5957000/- PCA : 0/- Safety Zoner : 0/- APV : 9208229/- Payment towards Site Specific Wild Life conservation : 15352050/- Other Charges 2 : 0/- Other Charges 3 : 0/- Total : 43564029/-	Paid	Fund Demand Verified by : 08 May 2025 Nodal Officer On : Bank Name : Union Bank Of India Mode of Payment : NEFT/RTGS (Challan) Challan Generated On : 12 May 2025 Transaction Date : 13 May 2025	Forwarded to office Completed Outlets

M. N. Muthumani
Muthuman M
Agent of Mines
Alloys Corporation Limited
Dist- Jaipur
Kaliapani - 303417
P.O. - 303417

Schedule I Form No.39-A

ଖଚିୟାନ

ମୌଜା : କେରଯୋଡ଼ି

ଚନ୍ଦ୍ରସିନ : କଳଦାସ

ଥାନା : କାମାରଜଗଡ଼

ଚନ୍ଦ୍ରସିନ ନମ୍ବର : 135

ଥାନା ନମ୍ବର : 4

ଜିଲ୍ଲା : ବୃନ୍ଦାବନ

କ୍ଷମିତାଙ୍କ ନାମ ଓ ଖେଡ଼ାଟ ବା ଖଚିୟାନର କ୍ରମିକ ନମ୍ବର	ଓଡ଼ିଶା ସରକାର ଖେଡ଼ାଟ ନମ୍ବର 1					
୧) ଖଚିୟାନର କ୍ରମିକ ନଂ	158/1					
୨) ପ୍ରସାର ନାମ, ପିତାଙ୍କ ନାମ, ଛାତି ଓ ବାସସ୍ଥାନ	ଜଙ୍ଗଲ ପରିବେଶ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ବିଭାଗ ଓଡ଼ିଶା ସରକାର					
ବ୍ୟବହାର	ସରକାରୀ ମାସ୍ତାନ					
୪) ବେସ	କଳକର	ଖରଣ୍ଡା	ସେସ	ନିହାର ସେସ ଓ ଅନ୍ୟାନ୍ୟ ସେସ ଯଦି କିଛି ଥାଏ	ମୋଟ	୫) କ୍ରମବର୍ତ୍ତନଶୀଳ ଖଚିୟାନ ବିବରଣୀ
		0.00	0.00	0.00	0.00	
୬) ବିଶେଷ ଅନୁସୂଚି ଯଦି କିଛି ଥାଏ	Alienation କେସ ନଂ 01/2025 (LRMS କେସ ନଂ-1770/2025) ତା-18.07.2025 ଦିନ ହୁକୁମ୍ ମୁତାବକ ପ୍ଲଟ ନଂ -318 ଉକ୍ତା ଏ 32.25 ଓ ପ୍ଲଟ ନଂ-315 ଉକ୍ତା ଏ 27.25 ହୁ ପୁରାତନ ଖାତା ନଂ 155 ରୁ					

BLANK SPACE FOR STAMPING

ଅତିରିକ୍ତ ପ୍ରକାଶନ ଚାରିଖ :

ଖଚିୟାନ ଧାର୍ଯ୍ୟ ଚାରିଖ :


 Addl Tahasildar
 Kankadahan

କମ୍ପ୍ୟୁଟର ଦ୍ଵାରା ତିଆରି ହେଇଛି

25/07/2025

ଅଫିସରଙ୍କ ଦ୍ଵାରା ନଂ : 158/1		ଖଣ୍ଡ : କେନ୍ଦ୍ରାପଡ଼ା			ପିଲା : ପ୍ରେମାନନ୍ଦ	
ପୁର ସମ୍ପର୍କ ଓ ପରବର୍ତ୍ତୀ ପ୍ରାପ୍ତି	ବିବାହ ଓ ପୁରବର୍ତ୍ତୀ ପ୍ରାପ୍ତି	ବିବାହ ବିବାହ ବିବାହ ଓ ପ୍ରାପ୍ତି	ବିବାହ			ମିଶ୍ର
			ପୁର	ପ୍ରାପ୍ତି	ମିଶ୍ର	
୧	୨	୩	୪	୫	୬	୭
315/3400	ପ୍ରାପ୍ତି-ପୁର	ପ୍ରାପ୍ତି	27.250	11.0277	ଏହି ବିବାହ ଓ ପ୍ରାପ୍ତି ବିବାହ ପ୍ରାପ୍ତି ଓ Affirmation ଦେବା ନଂ 01/2025 ଓ 09.07.2025 ଆବେଦନ ପ୍ରାପ୍ତି ପ୍ରାପ୍ତି	
318	ପ୍ରାପ୍ତି-ପୁର	ପ୍ରାପ୍ତି	32.250	13.0511	ପ୍ରାପ୍ତି	
2 ପ୍ରାପ୍ତି			39.500	24.0788	<div>25/07/2024 Addl Tahsildar Kankadahal</div>	
<div>Admin Kankadahal Tahsil</div>		<div>Record Officer Kankadahal Tahsil</div>				

କାନ୍ଦାହାଲ ପୁରବର୍ତ୍ତୀ ବିବାହ ପ୍ରାପ୍ତି

25/07/2025



(9)

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.


Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangi, 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	

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. Muthumay
Muthumay M
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Kallapani, Dist- Jajpur
Pin- 751047



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.



M. Mithun
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapat, Dist- Jajpur
Pin- 755027

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	


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


COLLECTOR, DHENKANAL.

Memo No. 10291/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.


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.


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.


COLLECTOR, DHENKANAL.

Schedule I Form No.39-A

ଖଚିୟାନ

ମୌଜା : ବେରଯୋଡ଼ି

ଚକସିଲ : କଙ୍କଡ଼ାହାଟ

ଥାନା : କାମାକ୍ଷାନଗର

ଚକସିଲ ନମ୍ବର : 135

ଥାନା ନମ୍ବର : 4

ଜିଲ୍ଲା : ବୃନ୍ଦାବନ

ଖଚିୟାନର ନାମ ଓ
ଖେସ୍ତାଟ ବା ଖଚିୟାନର
କ୍ରମିକ ନମ୍ବର

ଓଡ଼ିଶା ସରକାର ଖେସ୍ତାଟ ନମ୍ବର 1

୧) ଖଚିୟାନର କ୍ରମିକ ନଂ

158/1

୨) ପ୍ରକାର ନାମ, ପିତାଙ୍କ
ନାମ, ଛାତି ଓ ବାସସ୍ଥାନ

ଜଙ୍ଗଲ ପରିବେଷଣ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ବିଭାଗ ଓଡ଼ିଶା ସରକାର

ଖାତର

ସରକାରୀ ମାହାଲ

୪) ରେସ

କଳକର	ଖରଜା	ସେସ	ନିଷ୍କାର ସେସ ଓ ଅନ୍ୟାନ୍ୟ ସେସ ଯଦି କିଛି ଥାଏ	ମୋଟ	୫) କ୍ରମବର୍ତ୍ତନଶୀଳ ଖଚିୟାନ ବିବରଣୀ
	0.00	0.00	0.00	0.00	

୬) ବିଶେଷ ଅନୁସନ୍ଧାନ
ଯଦି କିଛି ଥାଏ

Alienation କେସ ନଂ 01/2025 (LRMS କେସ ନଂ-1770/2025) ତା-18.07.2025 ଦିନ ହୁକୁମ ମୁତାବକ
ପ୍ଲଟ ନଂ-318 ଉପରା ଏ 32.25 ଓ ପ୍ଲଟ ନଂ-315 ଉପରା ଏ 27.25 ବୁ ପୁରାତନ ଖାତା ନଂ 155 ରୁ

BLANK SPACE FOR STAMPING

ଅନ୍ତିମ ପ୍ରକାଶନ ତାରିଖ :

ଖଚିୟାନ ଧାର୍ଯ୍ୟ ତାରିଖ :

ଅନ୍ତିମ ହୁକୁମ ବିକାଶ ସେକ୍ସ, ଓଡ଼ିଶା

25/07/2025

କାର୍ଯ୍ୟକ୍ରମ ସଂଖ୍ୟା : 158/1		ବିଭାଗ : କେନ୍ଦ୍ରୀୟ			ପିଲା : କେନ୍ଦ୍ରୀୟ	
ପ୍ରାଥମିକ ଶିକ୍ଷା ସଂସ୍ଥା	ପ୍ରାଥମିକ ଶିକ୍ଷା ସଂସ୍ଥା	ପ୍ରାଥମିକ ଶିକ୍ଷା ସଂସ୍ଥା	ଉପାଦାନ			ମାତ୍ରା
			ପ୍ରାଥମିକ	ପ୍ରାଥମିକ	ପ୍ରାଥମିକ	
୧	୨	୩	୪	୫	୬	୭
315/3400	ପ୍ରାଥମିକ ଶିକ୍ଷା	ପ୍ରାଥମିକ ଶିକ୍ଷା	27.250	11.0277	ଏହି ପିଲା କେନ୍ଦ୍ରୀୟ ବିଭାଗର ପ୍ରାଥମିକ ଶିକ୍ଷା ବିଭାଗର 01/2025 ଓ 09.07.2025 ଆବେଦନ ପ୍ରାଥମିକ ଶିକ୍ଷା	
318	ପ୍ରାଥମିକ ଶିକ୍ଷା	ପ୍ରାଥମିକ ଶିକ୍ଷା	32.250	13.0511	ଏହି ପିଲା	
2 ପ୍ରାଥମିକ			34.500	14.0788		

Kankadashad Tahasil

Record
Kankadashad TahasilAddl Tahasil
Kankadashad

କାର୍ଯ୍ୟକ୍ରମ ସଂଖ୍ୟା : 158/1

25/07/2025

UNDERTAKING

(Ref: Online Proposal No Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the user agency will ensure that the 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.



M. Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Rajapur, Dist. Agart
Pin-786002

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

COUNTERSIGNED



Divisional Forest Officer
Cutack Forest Division



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.

Mithun M
Agent of Mines
M/s Ferro Alloys Corporation Limited
Kallamati, Orissa Jajpur
Pin- 755047

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

Survey Pillar to Pillar Latitude/ Longitudes/ Distance with Forward bearing & Backward Bearing Of Compensatory Afforestation Land Selected at Village Kerajodi under Kankadahada Tahasil of District Dhenkanal.

(As it relates to diversion of 23.80ha of Forest land in Kalarangiatta Chromite Mine of M/s Ferro Alloys Corporation Ltd)

Survey pillar	Latitude (N)	Longitude (E)	Pillar- Pillar Distance (in m)		Forward Bearing	Backward Bearing
A	21 ⁰ 06'46.03264"	85 ⁰ 31'40.17211"	A-B	516.38	90 ⁰ 8'47.1"	270 ⁰ 8'47.1"
B	21 ⁰ 06'45.98947"	85 ⁰ 31'58.06526"	B-C	497.99	179 ⁰ 55'24.8"	359 ⁰ 55'24.8"
C	21 ⁰ 06'29.79743"	85 ⁰ 31'58.08829"	C-D	400.22	270 ⁰ 54'33.5"	90 ⁰ 54'33.5"
D	21 ⁰ 06'30.00379"	85 ⁰ 31'44.22240"	D-E	118.00	0 ⁰ 9'22.7"	180 ⁰ 9'22.7"
E	21 ⁰ 06'33.84047"	85 ⁰ 31'44.23356"	E-F	120.78	269 ⁰ 35'4.0"	89 ⁰ 35'4.0"
F	21 ⁰ 06'33.81198"	85 ⁰ 31'40.04854"	F-A	375.86	0 ⁰ 32'36.9"	180 ⁰ 32'36.9"



Surveyor




Authorized Signatory





[Handwritten signature]

Surveyor

[Handwritten signature]

Authorized Signatory

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



[Signature]

Surveyor

[Signature]

Authorized Signatory

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



[Handwritten signature]

Surveyor

[Handwritten signature]

Authorized Signatory

Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallaperi, Dist- Japur
Ph- 755047



Surveyor

Authorized Signatory

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

Deekharath Pravin Kumar Das
Forester
Kittanpur Section

Kallapani
Forest Range Office
Kallapani, Dist- Jajpur



[Handwritten signature]

Surveyor

Lakshmi
 Forester
 Birtapur Section
[Handwritten signature]
 Forest Range Officer
 Kumbhariya West Range

[Handwritten signature]

Authorized Signatory

Muthumani M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kallaperi, Dist- Jaggur
 Pin- 756247

Annexure - 6

GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ତଥା ବନ୍ୟପ୍ରାଣୀ ସୁରକ୍ଷା ବିଭାଗର 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 08th 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 & 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 Dolia RE under Mahabirod 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
Kaliapali, Dist- Jajpur
Pin-755047

(P.T.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]
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Bhubaneswar
Pin-751047

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) 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 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://www.oregonia.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 6,45,54,930/- (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
Rs.
20/6/2025

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

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 Nos.
Additional Compensatory Afforestation		1,96,93,300 -	1,96,93,300 -	ICICI R420350 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 -	
Penal 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 Kishanganj 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


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, Laxmibhawan, Kuansh, 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, 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, Kuansh, 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, 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
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 756047

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



Sno, Proposal Detail		Application_No	Application No (New)	Date of DR-PRINCIPLE	Amount to be Paid/Amount Paid (in Rs.)	Payment Status	Payment Detail	Demand Letter
1	<div> <div>  <div> <div>Adammangela Oreminha</div> <div>Mines of M/s Ferro Alloys Corporation Ltd</div> </div> </div> </div>	MIN164522015158	5016453158	21 Mar 2025	<div> <div>CAT: 50070000/-</div> <div>RCAs: 0/-</div> <div>Safety Zones: 0/-</div> <div>WPH: 92082200/-</div> <div>Payment towards Site Specific Wild Life conservation: 150510000/-</div> <div>Other Charges2: 0/-</div> <div>Other Charges3: 0/-</div> <div>Total: 645340100/-</div> </div>	<div> <div>156913000/-</div> <div>0/-</div> <div>0/-</div> <div>15513510/-</div> </div> <div> <div>PAID</div> </div>	<div> <div>Fund Demand Verified by :08 May 2025</div> <div>Modal Officer On :Union Bank Of India</div> <div>Bank Name :NEFI/NTGS (Orallem)</div> <div>Mode of Payment :12 May 2025</div> <div>Challan Generated On :12 May 2025</div> <div>Transaction Date</div> </div>	<div> <div>Demand Letter</div> <div>Demand Challan</div> </div>

N. N. Murthy

Muthumani M
Agent of Mines
Mines Corporation Ltd.
Kaliapatti Dist-Jalpaiguri
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
Kalapani, Dist- Jajpur
Pin- 755047

P.T.O

1/2/11

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.

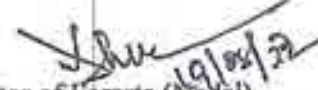
This is for favour of kind information and necessary action.

Yours faithfully


Conservator of Forests (Nodal)

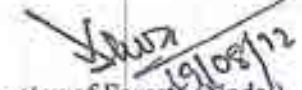
Memo No. 16104 /Dt. 19.08.2022

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), GoI, 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)


M/s. Ferro Alloys Corporation Limited
Kallapani, 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: rcfanganul@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.

Therefore the 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,
P.O-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- 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.nccfho@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 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**.

P.T.O

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapur, Dist. 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.

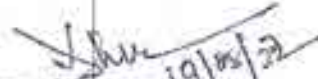
This is for favour of kind information and necessary action.

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. 5-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
Kaliapa, - 751004 Jaipur
Pin- 302047

(Copy Control)



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 23.00 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 Jaipur 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 Mahsbirod 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
13.7.2022



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. Muthumani

Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangiatta
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

Muthuraj

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

[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 Kism 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.

7. Present Vegetation:

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.

8. Adjacent Forest Blocks& Convenience for Management:

The area Selected in Village Kerajodi under Kankadahada Tahasil of Dhenkanal 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.

Name of Protected Forest	Notification No & date	Area in Ha	Remark
Kerajodi A Protected Forest	10F(Cons)77/2020/19366/F&E dated 01.12.2020	11.5381	Copy of Notification at Annexure--IVA
Kerajodi B Protected Forest	10F(Cons)77/2020/19373/F&E dated 01.12.2020	51.572	Copy of Notification at Annexure--IVB
Kerajodi C Protected Forest	10F(Cons)77/2020/19380/F&E dated 01.12.2020	97.7277	Copy of Notification at Annexure--IVC
Total	3 Block	160.8378	

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.

Details of Forest / Civil Administrative Unit:

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

9. Planting Model;

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* (Simili)
 - iii) *Emblica 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

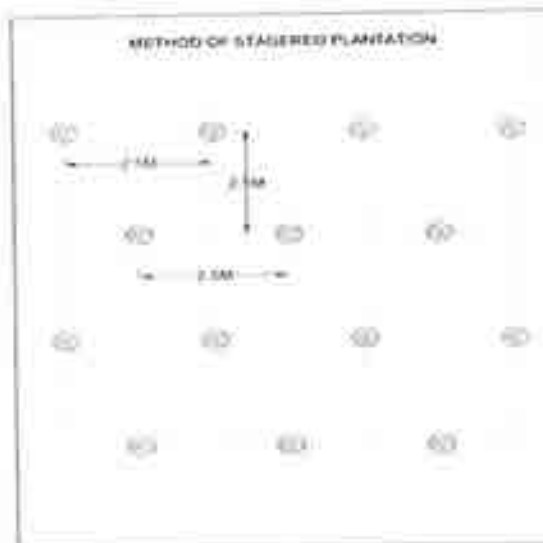
achieve healthy growth of existing seedlings / saplings / coppice shoots of favored species.
The operation includes

- 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.

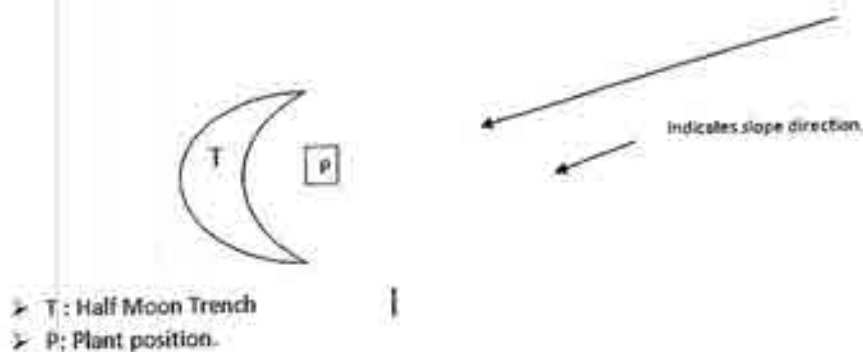
x) Casualty Replacement:

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.

M. Muthumary
Muthumari M
Agent of M. S. S.
Form Allotment Corporation Limited
Chennai, Tamil Nadu
Pin-755041

xj) 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

M. N. Maheshwari
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalmnani, Dist- Jaipur
Pin- 305047

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.

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

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/-

M. Nuthuman
 Muthuman M
 Agent of Mines Corporation Limited
 Mis. Ferro Alloy's, Dist- Jalpur
 Kaliapani, pin-755047

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 2020m (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)


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

**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 suggested for planting	Seedling 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)

M. Mathuram
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.

M. Muthumari
Muthumari M
Agent of Mines
Ms. Ferro Minerals Corporation Limited
Kallapani, Dist- Jalpaiguri
Pin-755042

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

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

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)
7	Maulabhanja Jiridamali-Anantapur INTER-DISTRICT	Dhenkanal	Dhenkanal	6.5	0.25 - 0.28	1.55
8	Kahneijena-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):

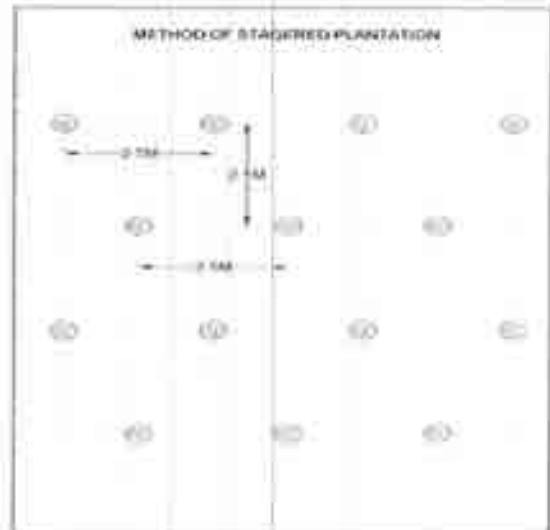
The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division / PCCF Office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

M. Muthumari
Muthumari M
Asst. of Mines
M/s. Fenix Aloys Corporation Limited
Kailashpuri, Dist- Jaipur
Pin- 302047

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:

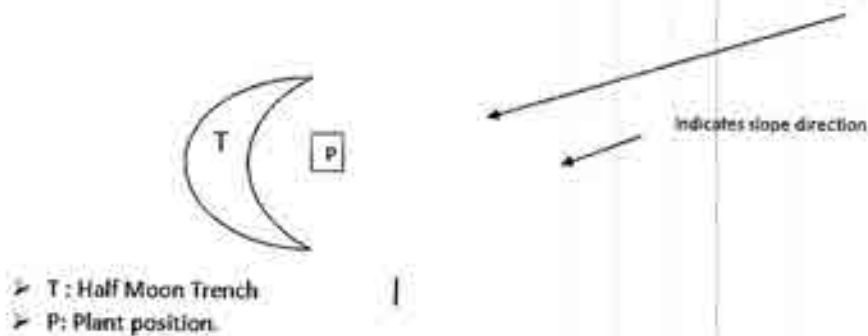
Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1st year and 10% in 2nd year operation in the approved cost norm. The same is to be carried 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

M. Mathurani
Mathurani &
Agent of Mines
Kalyani Corporation Limited
Pit...

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.

M. Muthumari
Muthumari M
Agent of Mines
M/S. Ferro Alloys Corporation Limited
Kallapant, Dist- Jaypur
Pin- 755047

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 be 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 officinalis* (Anla)
 - vii) *Limonia acidissima* (Kaintha)
 - viii) *Mangifera indica* (Aamba)
 - ix) *Pterocarpus marsupium* (Bija)
 - x) *Terminalia belerica* (Bahada)
 - xi) *Terminalia tomentosa* (Asana)
 - xii) *Syzygium 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/-

M. Muthumari
Muthumari M
Agent of Miras
M/s. Ferro Alloys Corporation Limited
Kaliapani Distt- Jaipur
Pin- 755047

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.

M. Muthumani
Muthumani M
Agent of Mines
Ms. Ferro Alloys Corporation Limited
Kallanani, Dist- Jaipur
Pin- 305047

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 approve 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.

[Handwritten Signature]
Project of Mines
Jais Corporation Limited
Kharapali, Dist- Jajpur
Pin- 755001

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	Commence ment 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/-**


Muthumani N
 Agent of Mines
 Kallapalli Dist- Jajpur
 P.O. 755027

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- 755047

End:

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
Mrs. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jagpur
Pin-751001

[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.

Muthumani M
Agent of Mines
M/s. Ferro Alk
Kaliap
P.O. Limited

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	Kisani	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 E/3, चन्द्रसेखरपुर
Bhubaneswar - 751 023 भुवनेश्वर - 751 023



Telephone: 0674-2301213, 2301248, 2302452, 2302453. Fax: 0674-2302432. E-mail: reg.ber.mefn@nic.in

No.5-ORC288/2016-BHU

18th November, 2016

To

The Principal Secretary,
Forest & Environment Deptt.,
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 Sukinda Tehsil of Jajpur district, Odisha.

Ref:

- 1) This office letter of even number dated 12.08.2016.
- 2) State Govt. letter No.107(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 to:

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.

(Signature)
Conservator of Forests (Central)

M. Muthumari
Muthumari M
Agent of FACOR
M/s. Ferro Alloys Corporation Limited
Kallangudi, Jajpur
Pin-750047



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.ed@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 Mines
Mrs. Ferro Alloys Corpore
Kaliapani, Dist.
Pin-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 бага 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

2

2

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

M. Muthumari
Muthumari M
 Agent of Mines
 Ferro Alloy Corporation Limited
 Kallipatti, Taluk Jajpur
 Pin-755041


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 Limited
 Kallakurichi, Dist- Jey.
 Pin- 625047

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


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

S/ 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 norm	9400	21568	8006	6700	4900	4900	4800	4800	4800	4800	4300										
1	2021-22	9400	23666	8826	7756	5834	6126	6432	6754	7092	7446	7819										96131
2	2022-23		9870	23778	9267	8144	6126	6432	6754	7092	7447	7818	8210									100938
3	2023-24			10364	24967	9730	8551	6432	6754	7092	7447	7819	8210	8621								105986
4	2024-25				10852	16215	10217	8979	6754	7092	7447	7819	8210	8621	9052							111286
5	2025-26					11426	27526	10728	9428	7092	7447	7819	8210	8621	9052	9505						116852
6	2026-27						11997	28902	11264	9899	7447	7819	8210	8621	9052	9505	9980					122694
7	2027-28							12597	30347	11827	10394	7819	8210	8621	9052	9505	9980	10479				128829
8	2028-29								13227	31864	12418	10914	8210	8621	9052	9505	9980	10477	11003			135271
9	2029-30									13888	33457	13039	11460	8621	9052	9505	9980	10479	11001	11553		142035
10	2030-31										14582	35130	13691	12033	9052	9505	9980	10479	11003	11551	12131	149137


 N. S. Kulkarni
 Agent of Mines
 Nuthuman N. Kulkarni
 Kailash, Dist. Jalpur
 Dist. Jalpur

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. $11895/250 = 47.58$ or 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. $11895/250 = 47.58$ or 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


M. Muthuraman
 Agent of Mines
 Ferro Alloys Corporation Limited
 Kallapani, Dist- Jaipur
 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										99967
1	2021-22		48047	8511	13770	14458	15181										104966
2	2022-23			50449	8937	14459	15181	15940									110214
3	2023-24				52971	9384	15182	15940	16737								115725
4	2024-25					55620	9853	15941	16737	17574							121512
5	2025-26						58401	10346	16738	17574	18453						127588
6	2026-27							61321	10863	17575	18453	19376					133968
7	2027-28								64387	11406	18454	19376	20345				140666
8	2028-29									67606	11976	19377	20345	21362			147699
9	2029-30										70986	12575	20346	21362	22430		155084
10	2030-31											74535	13204	21363	22430	23552	

M. M. Muthumari
Muthumari M
Agent of Mines
Kaliapani, Dist- Jaipur
Pin- 335047
M/s. Ferro Alloys Corporation Limited

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. M. Muthumary
Muthumary M
 Agent of Mines Corporation Limited
 P.O. 1-447, Jaipur
 N.S. Ferro Alloy Corporation Limited

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. Kuthuray
 Muthuram M
 Agent of Mines
 M/s Ferro Alloys Corporation Limited
 Jaipur, Dist- Jaipur
 Pin-302047

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. Huthany
M. Huthany
M. Huthany
M. Huthany

M/s. Ferro
Kallay
Pin-20047

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. Mathur
 M. Mathur
 Agent of Mines
 Ms. Ferro Alloys Corporation Limited
 10/10/2019

45	Watch & Ward	April / March	18	5598	0	5598
	Sub Total		21	6531	0	6531
10th Year maintenance						
46	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
47	Watch & Ward	April / March	18	5598	0	5598
	Sub Total		21	6531	0	6531
	Grand Total		425.0	132175.0	39012.0	171187.0

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	82	25502	3600	1398.00	0	30500.00
1st yr	105	32655	23360	2800.00	88546	147361.00
2nd Yr	45.0	13995	6566.00	1028.00	8050	29639.00
3rd Yr	41	12751	5486	911.00	0	19148.00
4th Yr	21	6531	0	326.00	0	6857.00
5th Yr	26	8086	0	404.00	0	8490.00
6th Yr	21	6531	0	326.00	0	6857.00
7th Yr	21	6531	0	326.00	0	6857.00
8th Yr	21	6531	0	326.00	0	6857.00
9th Yr	21	6531	0	326.00	0	6857.00
10th Yr	21	6531	0	326.00	0	6857.00
Total	425	132175.0	39012	8497.00	96596	276280.00

M. Muthumani
Muthumani M
Mines
ration Limited
P.O. Box 47

Matrix For Block plantation (@1600 Plants per Hectare)

Sl no	Common cement 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 term	30500	147361	29630	12148	8857	8490	8857	8857	8857	8857	8857	8857									
1	2021-22	30500	154729	32674	12166	8135	8751	11377	9648	10131	10637	11169										310117
2	2022-23		32025	163465	34338	23374	8751	9189	11946	10130	10638	11169	11728									325623
3	2023-24			34624	176248	36027	24438	9190	9648	12543	10637	11170	11727	12312								341903
4	2024-25				15307	179117	31824	15660	9650	10130	13170	11169	11728	12312	13929							558998
5	2025-26					37072	168071	39715	20943	10133	10637	13329	11727	12312	12919	13575						376988
6	2026-27						38826	197477	41701	18290	10640	11169	14520	12313	12931	13575	14254					893796
7	2027-28							40871	207151	43786	29305	11172	11727	15246	12929	13576	14255	14869				415587
8	2028-29								42918	217719	45975	11150	11731	12313	14008	13575	14257	14867	15715			488466
9	2029-30									45081	218605	48274	32750	12318	12929	13576	14254	14870	15715	16501		458186
10	2030-31										47115	240755	50888	34189	12924	13575	14254	14867	15719	16501	17324	881096

N. Nuthan
N. Nuthan M
 Agent of Mines
 M/s. Ferro Alloys Dist- Jaipur
 Kallapani, 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%(20nos)	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
			15	4665	0	4665
	Sub Total					
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
			15	4665	0	4665
	Sub Total					
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
			15	4665	0	4665
	Sub Total					
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
			15	4665	0	4665
	Sub Total					
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
			15	4665	0	4665
	Sub Total					
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
			15	4665	0	4665
	Sub Total					
	Grand Total		235.0	73085.0	10537.5	83622.5


 Muthumani M.
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, 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


Muthumani M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapara, Dist- Jaipur
 Pin- 755247

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	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	136098
1	2021-22	13400	51115	13579	10300	5834	6128	6432	6754	7092	7447	7819	8210	8622	9052	9504	9980	10479	11001	11553	12131	142904
2	2022-23		14970	55881	14256	10818	6126	6432	6754	7092	7447	7819	8210	8622	9052	9504	9980	10479	11001	11553	12131	150051
3	2023-24			14774	58575	34940	11558	6432	6754	7092	7447	7819	8210	8622	9052	9504	9980	10479	11001	11553	12131	157554
4	2024-25				15513	94804	15717	11927	6754	7092	7447	7819	8210	8622	9052	9504	9980	10479	11001	11553	12131	165433
5	2025-26					16389	61374	16503	11523	7092	7447	7819	8210	8622	9052	9504	9980	10479	11001	11553	12131	173705
6	2026-27							17103	67493	17128	13149	7447	7819	8210	8622	9052	9504	9980	10479	11001	11553	182390
7	2027-28								17948	68748	18194	13806	7819	8210	8622	9052	9504	9980	10479	11001	11553	191510
8	2028-29								18856	72206	19104	14446	8210	8622	9052	9504	9980	10479	11001	11553	12131	201086
9	2029-30									19799	75816	10059	8622	9052	9504	9980	10479	11001	11553	12131	12131	211141
10	2030-31										20789	79607	10662	10662	10662	10662	10662	10662	10662	10662	10662	211141

M. Muthuraj

Mrs. E. E. E. E. E.

OPEN SERIES
MAP

No. F45N12

Scale 1:50,000



भारतीय सर्वेक्षण विभाग

SURVEY OF INDIA

1st Edition: 2009

Price: Rs. 7/-

CONVENTIONAL SYMBOLS



REFERENCES

G.M.C. - Orissa Military Commission, (1822) - The Great & Small Orissa; 1880 - Wood's Orissa.

NOTES

Maple use in areas near above bridge near the line.
 Previous use approximates.
 A. Indian bridge, etc. represents the approximate bridge, in cases, however, the top and bottom of a bridge are shown.
 The survey of the bridge is made in accordance with the following:
 The bridge is shown as a line and not as a point, and the survey is made in accordance with the following:
 The bridge is shown as a line and not as a point, and the survey is made in accordance with the following:
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COMPILED INDEX

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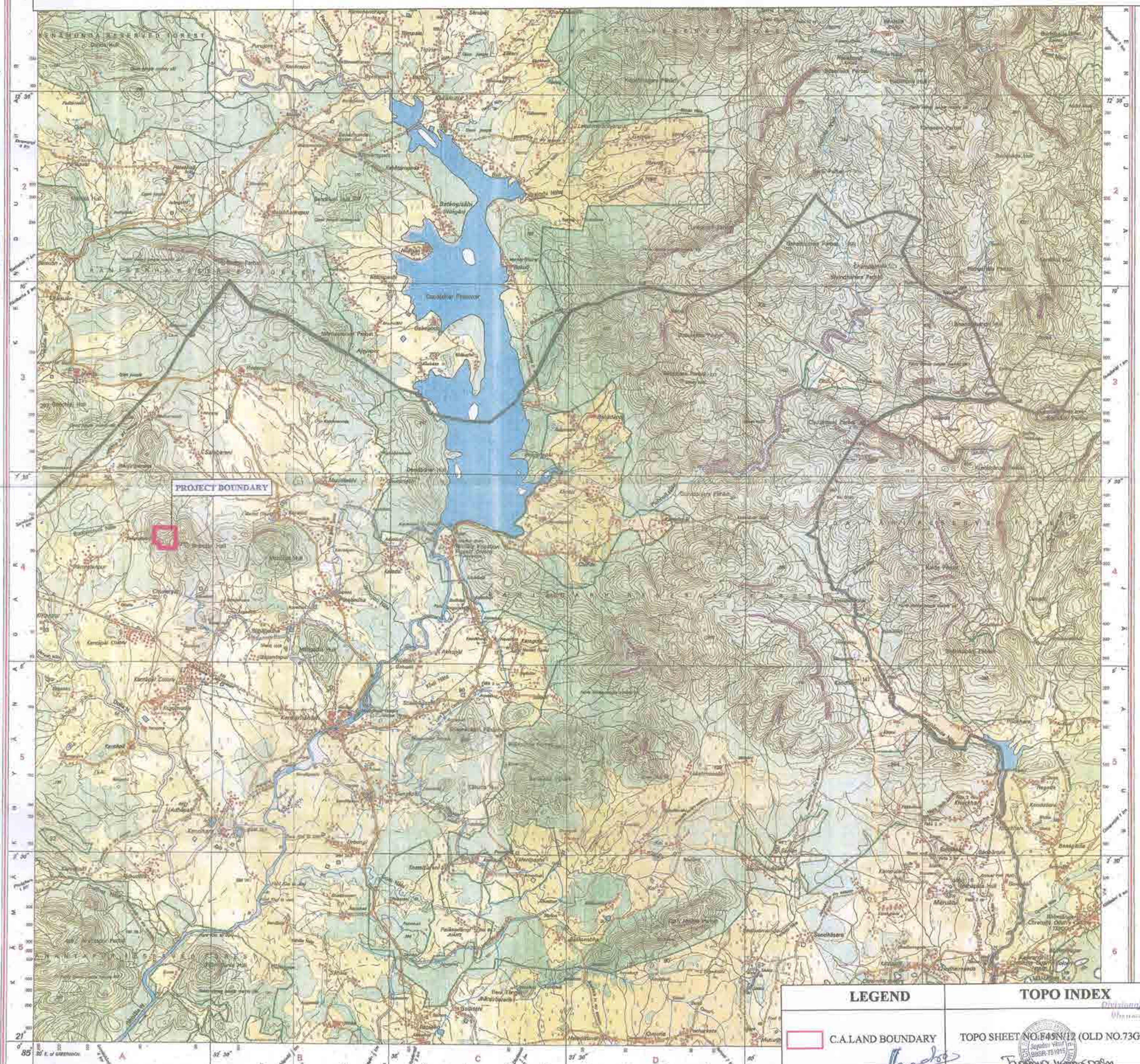
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TOPOGRAPHICAL MAP SHOWING THE NON-FOREST GOVT. LAND ALLOTTED FOR COMPENSATORY AFFORESTATION
 IN VILLAGE KERAJODI UNDER KANKADAHAD TAHASIL IN DHENKANAL DISTRICT, ODISHA OVER AN AREA 59.50 ACRE (24.0 HA.)
 AGAINST KALARANGIATTA CHORMITE MINES OF M/S FERRO ALLOYS CORPORATION LTD.
 (SUPERIMPOSED ON TOPOSHEET NO.F45N/12 OLD NO.73G/12)

SCALE-1:50,000



LEGEND

C.A.LAND BOUNDARY

TOPO INDEX

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

Forest Range Officer

Kankadahad West Range

Agent of Mines

Kankadahad, Dist. Jajpur

Pin-755047

Pin-755047

GOVERNMENT OF ODISHA

ଓଡ଼ିଶା ସରକାରଙ୍କ ଦ୍ଵାରା ପ୍ରସ୍ତୁତ କରାଯାଇଥିବା ଗୁରୁତ୍ଵପୂର୍ଣ୍ଣ ପତ୍ର

OFFICE OF THE DIVISIONAL FOREST OFFICER, CUTTACK FOREST DIVISION

VI - GHATAKULA, NUPADA, CUTTACK - 753030

Tel: 0671-2957611, Control Room: 0671-2340343, Toll Free No. 1800343747

Email: dfo.cuttack@odisha.gov.in

No. 2222 5F (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 Sahib records as on 25.11.1981) 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 differential amount of NPV

Ref: -

1. Letter No.5-ORC288/2016-BHD 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. Muthuman
Muthuman
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin-755047

(P.T.O)

Considering your earlier deposit towards NPV of Amount Rs. 1,73,74,000.00 vide FTR No. SBIN52015062516780059 dt. 25.06.2015. Now you are requested to make arrangement to deposit the balance amount of Rs. 92,08,220.00.00 (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 (CAMPA) 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,

[Signature]
Conservator of Forests,

[Signature]
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.

[Signature]
Conservator of Forests,

[Signature]
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.

[Signature]
Conservator of Forests,

[Signature]
S/c Cuttack Forest Division,

[Signature]
Muthuram
Agent of Mines
Ferro Alloys Corporation Limited
Kalapani, Dist- Jajpur
Pin- 751047

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) (
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 CAMPA account through e-portal (www.oregonline.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
Pd
20/6/2025

M. K. Mishra
Agent
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist.-Jaipur
Pin-302047

Funds Details	Demand	Demanded Amount INR	Amount Paid FACOR (INR)	by	Payment reference
Compensatory Afforestation		50,67,000/-	50,67,000/-		RTCI Bank
Additional Compensatory Afforestation		1,96,93,300/-	1,96,93,300/-		RTGS Nos.
Differential NPV		92,08,220/-	92,08,220/-		RTCI (420250 51300550304 Dated 13.03.2025)
Site Specific Wild Conservation Plan		1,50,52,000/-	1,50,52,000/-		
Penal 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 Paribeshi Portal are enclosed herewith for your kind reference.

Therefore, we humbly request your good self for processing our Forest Diversion Proposal of Kalpanigama 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

M. Muthumari
13/03/2025

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

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



PARIVESH
परिवेश

Ministry of Environment, Forest and Climate Change
Government of India



"Pro Active and Responsible for Pollution by Industries, Villages and Enterprises in Singhwale Hills"

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 the PRINCIPLE	Amount to be Paid / Amount Paid (in Rs.)	Payment Status	Payment Detail	Demand Letter
1	Kollerangalla-Channala Mines of Mys Ferro Alloys Corporation Ltd	MUN164532015158	58164531158	31 Mar 2025	CA: 9067000/- PCA: 0/- Safety Zones: 0/- NPV: 9068220/- Payment towards Site Specific Wild: 15052000/- Life conservation: 0/- Other Charges2: 0/- Other Charges3: 0/- Total: 64554000/-	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 Challan

N. Nithin
M
Muthumanthran Limited
Agent of Mines
Alloys Corporation
Dist: Jaipur
Pin: 302001
T-55041

From this result, the Adh. P.C.A.T. of the University of Zaragoza (Spain) has obtained a resolution of the Spanish O.S. for the purpose of the submission of the Principal file/contract to the O.S. of the Wikipedia and the adoption of necessary actions.

Meeting No. 428 Date 15th Feb. 1961

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 DEPARTMENT OF HEALTH AND HUMAN SERVICES
 OFFICE OF THE ASSISTANT SECRETARY FOR
 PUBLIC AFFAIRS

M. H. Hurvi
Munim Hurvi
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
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 : facormines@facor.in
facormines@dataone.in



BHF/F-13/ 755 /2015

June 25, 2015

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

Sub: Payment of NPV for the forest kissam 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/F (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 kissam 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.CORP0000371 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 (Admn.)

Encl. a/a

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 : +91-6784-240525
E-mail : facorocp@facor.in, facorgroup.in, CIN - L45201OR1955PLC008400

M. H. H. H. H. H.
Agent of mines
Mrs. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
Pin- 755047



भारतीय स्टेट बैंक
STATE BANK OF INDIA

APPLICATION FORM : RTGS

Branch: Rhodrak
Date: 25/6/2015
Revised Rs: 1,73,74,000 = 00
From: FA COR MINES
by Cheque No.:
Transfer for RTGS: AMOUNT
On: N. B. 100 CHARGE Muthu
Bank: Corporation Bank
Branch: Lochi Complex Branch
Favouring: CAMP A
Account No.: SB01025222
IFSC Code: CORP0000371
Amount Rs: 173,74,000 = 00
Rs. & Charges Rs: 56 = 00
Total Rs: 173,74,056 = 00
(Rupees one crore seventy three lac seventy four
thousand fifty six only)

SAEN 52015062516780059

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

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



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



Countersigned by
Divisional Forest Officer
Cuttack Forest Division
Office Seal

Divisional Forest Officer
Cuttack Forest Division



GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ଓଆ ବନ୍ୟପ୍ରାଣୀ ଚକ୍ରବର୍ତ୍ତୀଙ୍କ 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.inNo 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 (Fee- value class-1, 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.1,53,79,713.00.	Rs.1,55,33,510.00

(P.T.O)

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

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

To

The Divisional Forest Officer
Cuttack Forest Division
At- Ghatakula, Nungpada
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-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://portal.orega.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
Pul
20/6/2025*

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

Funds Details	Demand	Demanded Amount INR	Amount Paid FACOR (INR)	by	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-120250 51300556304
Differential NPV		92,08,220	92,08,220		Dated 13.05.2025
Site Specific Wild Conservation Plan		1,50,52,000	1,50,52,000		
Perid 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 Kalamangir-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
Kaliapani, Dist- Jajpur
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, Kuansh, Post- 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, Kuansh, Post- 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 /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



PARIVESH
परिवेश

"Pro Active and Responsive (Initiated by Interactive, Virtual and Environmental Single Window Hub)"

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



Sno. Proposal Detail		Application No	Application No (New)	Date of Issuance	Amount to be Paid/Amount Paid (in Rs.)	Payment Status	Payment Detail	Demanded Letter
1	Kalirangdaha Chromite Mines of M/s Ferro Alloys Corporation Ltd	MIN16-4532015158	5816-453158	21 Mar 2025	CA: 5657000/- PCA: 0/- Safety Zone: 0/- NPV: 9269220/- Payment towards: Size Specific Wild 15052000/- Life conservat: 0/- Other Charges2: 0/- Other Charges3: 0/- Total: 64554020/- Add CA: 19691300/- CAT: 0/- Add PA: 0/- Demand towards: 15513510/- Penal NPV: 0/-	Paid	Fund Demand Verified by: 08 May 2025 Modal Officer On: Union Bank Of India Bank Name: AEFIRTCOS (Chellan) Mode of Payment: 12 May 2025 Challan Generated On: 13 May 2025 Transaction Date:	Demanded Letter

M. Nuthan
Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Ltd
Kallipani, Dis. Talpiti
Pun-15


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/>);*


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalahandi, Dist- Jajpur
Pin- 751001

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


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalahandi, Dist- Jajpur
Pin- 751001
Countersigned by
Divisional Forest Officer
Cuttack Forest Division
COUNTERSIGNED

Divisional Forest Officer
Cuttack Forest Division

GOVERNMENT OF ODISHA

ବନଖଣ୍ଡ ଅଧିକାରୀ ତଥା ବନସ୍ଥାନୀ ଚରାବ୍ୟାପକଙ୍କ କାର୍ଯ୍ୟାଳୟକର୍ତ୍ତା, 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. 5004 / SP/ (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 Sahik 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
Kallapara, Dist- Jajpur
Pin-755047

APR 16 2025
Divisional Forest Officer
Cuttack Forest Division
(P.T.O.)

Memo No. 5007

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 18-06-25

Divisional Forest Officer,
Cuttack Forest Division.

Memo No. 5008

dt. 18.6.25

Copy submitted to the Principal Chief Conservator of Forests, Forest Diversion & 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 18-06-25

Divisional Forest Officer,
Cuttack Forest Division.

M. Muthumani

Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
Pin- 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.	150825816453226 <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 : 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.	150825816453226 <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

UTR No-ICICN42025062857260859 dated 28.06.2025

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

FACOR Legal Mines 2025 100

Date: 30.06.2025

To

The Divisional Forest Officer
Cutback Forest Division
At- Chhatrakula, 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 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 27.06.2025 issued by Nodal Officer in Parivesh Portal
2. Your demand letter dated 5006 SE 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. 5-ORC 288-2016-B11U 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 25.10.1980) 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.mie.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 160,03,000 (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

Received
Section Officer,
Cutback Forest Division

M. Muthumari
Muthumari 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/-	UFR No- ICICN42025062857260859 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



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



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



Amnesty for those convicted of past gross violations of human rights? Government not inclined.

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Wang, Y. Q., & Wang, J. (2006). The effects of the 2004 Asian tsunami on the tourism industry in China. *Journal of Tourism Management*, 27, 111-120.

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✓ **Fact** Only one source has the information from this source.

✗ **Not a Fact** Only one source has the information, but it is not the same.

✓ **Source** All sources have the same information.

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DOI 10.1002/pola.23201

Ref.	Project/Item	Applicant No.	App. Received On (Date)	Approved Name	Category	Area (No.)	Particulars/Name	Date of 1st Approval	Approved Status/Date	Review	1st Payment Date	Comment
1	RECONSTRUCTION OF 20.28	202402200005	2024-02-20	Managing Director, State of Karnataka Corporation Ltd.	Project	20.28	RECONSTRUCTION OF 20.28	2024-02-20	2024-02-20	✓	2024	✓ Paid
2	RECONSTRUCTION OF 20.28	202402200006	2024-02-20	Managing Director, State of Karnataka Corporation Ltd.	Project	20.28	RECONSTRUCTION OF 20.28	2024-02-20	2024-02-20	✓	2024	✓ Paid

M. M. Mahapatra
Agent of Mines
Terra Alloys Corporation Limited
Kot Yamti Dist Jajpur
Pin-753047

1



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 / 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. K. Mahapatra
Agent of M/s. Ferro Alloys Corporation
Kallapani, Dist- Jajpur
Pin-755047

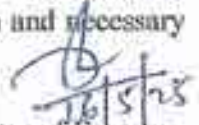
You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


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



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

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

CHAPTER-1

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. Mathur
M/s. Ferro Alloys Corporation Ltd
Kaliapani, Dist. Jajpur
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. S. Muthuram
Assistant of Mines
M/s. Ferro Alloys Corporation Limited
Kailashpur, 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>Madhuca 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 lebbek</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. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist. Bhubaneswar
Pin- 751047

APR 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 & Throne 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**

**Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kallapani, Dist- Jaipur
Pin-750047**

**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.	Jan/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

(Signature)
 Agent of M/s.
M/s. Ferro Agro Corporation Limited
 Kalyana, Dist. Hospet
 Pin-761047

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 = Rs1500.00 (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

M/s. Ferro Alloys Corporation Limited
Kalkapani, 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 (1mt. Diametre 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. Diametre 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. Muthuram
 M/s. Ferro Alloy & Co. Pvt. Ltd.
 Kalapatti, Dist- Jajpur
 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
 M/s. Ferro Alloys Corporation Limited
 Kalapara, Dist. Jaipur
 Pin-304657

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							


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

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

Sl. No.	Comment 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	95651	22301	15745	6857	6857	6857	6857	6857	6857												264976
1	2021-22	22300	100433	24587	18227	8335	8751	10502	9648	10131	10637	11169											234723
2	2022-23		22415	105455	25816	19138	8751	9189	11027	10131	10637	11169	11728										246457
3	2023-24			24586	110727	27107	20095	9189	9648	11579	10637	11169	11728	12314									258780
4	2024-25				25815	116264	28462	21100	9648	10131	12158	11169	11728	12314	12930								271719
5	2025-26					27106	122077	29885	22155	10131	10637	12766	11728	12314	12939	13576							285303
6	2026-27						28461	128191	31380	23263	16637	11169	13404	12314	12939	13676	14255						299371
7	2027-28							29884	134590	35949	24426	11169	11728	14074	12930	13576	14255	14968					314549
8	2028-29								31378	141310	34596	25647	11728	12314	14778	13576	14255	14968	15716				330277
9	2029-30									32947	148383	36726	26929	12314	12930	13517	14255	14968	15716	16502			346770
10	2030-31										34595	154805	38142	28276	12930	13576	14255	14968	15716	16502	17327		364130

M. V. Muthumani
Muthumani M
 Agent of Mines
 Sero Alloys Corporation Limited
 Bangalore, Dist. - Bangalore
 Ph: 153447

**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	NIL		0	0	0	0
1st Year Maintenance						
1	Taking an average perimeter of 250 Rmt/ Ha @ 93.85/ mt. (Half handle Bamboo Twigs/ mt @ 120 / Handle) Labour - material = 40: 60 (approx)	Sept/Oct.	30	9,330.00	14,133.00	23,463.00
2	Bamboo poles of 1" width in a distance of 2mtr. 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 row brace 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 on 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/ ftmt 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. Sharma
 M/s. Forman's Corporation Limited
 Dist. Jaipur
 Ph-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	31,698.50	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	58,133.50	89,164.00
OR	126	39,031.00	58,134.00	89,164.00

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

M. Muthumari

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

Matrix for Fencing Model-F-I (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	8957	14458	15181	15940															104966
3	2023-24			0	52972	9384	15181	15940	16737														110215
4	2024-25				0	55620	9853	15940	16737	17574													115723
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	13204	21362	##	23551							155083

N. Nithumy
 Nithumy M.
 Agent of Nilgiris
 District Corporation
 Nilgiris
 Kalapet
 616 001

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					


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, 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.

Muthuram N
Agent of Mines
M/s. Ferroalloy
D. 11-11-11
11-11-11

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 MD x 311 =	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 MD x 311 =	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 MD x 311 =	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 MD x 311 =	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 MD x 311 =	49,760.00	
	Total	78,410.00	


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

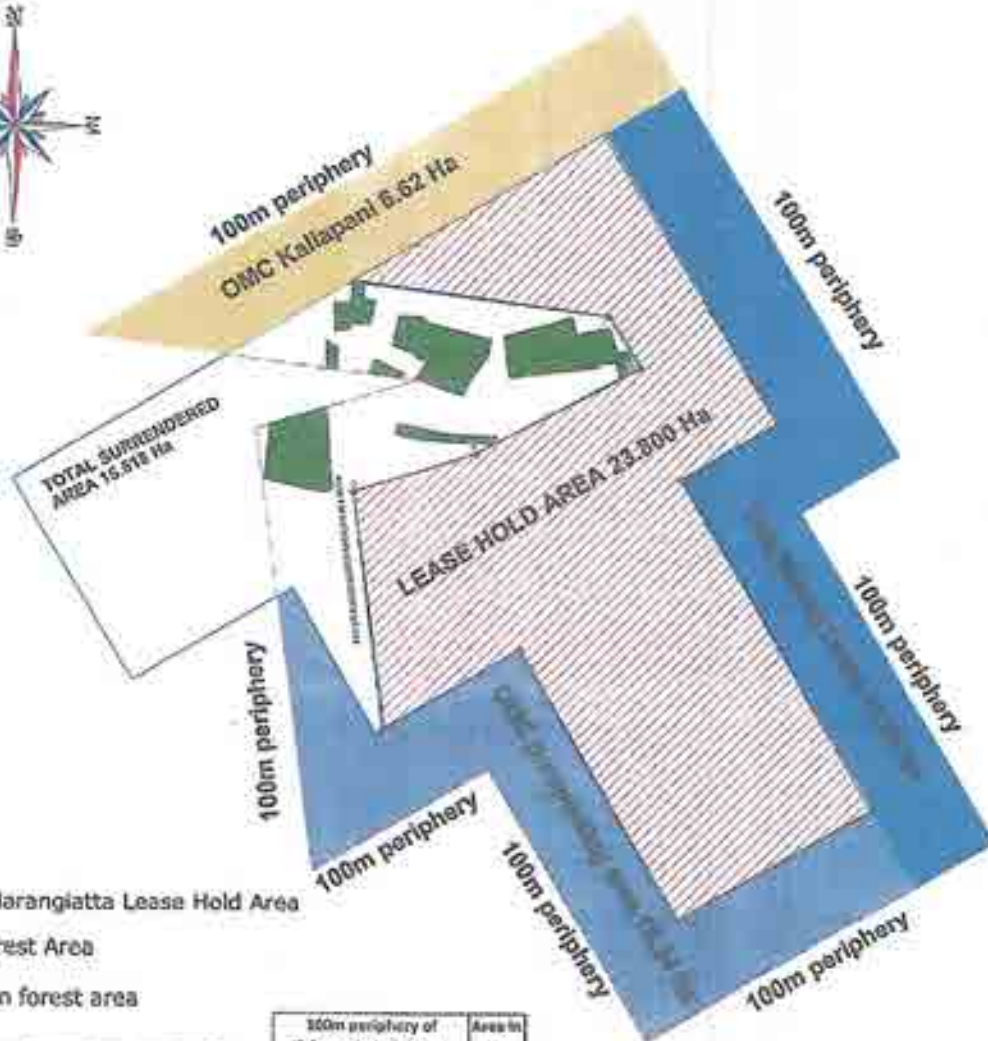
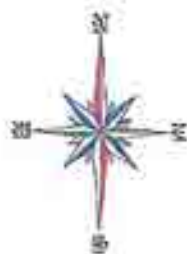
Abstract for 1 ha.					
Sl. No.	Year	No. person days	Labour cost @ Rs.311/- per day	Material Cost	Total cost (Rs.)
1	0 th Year	0	0.00	51,000.00	51,000.00
2	1 st Year	100	31,100.00	21,000.00	52,100.00
3	2 nd Year	160	49,760.00	28,650.00	78,410.00
4	3 rd Year	160	49,760.00	28,650.00	78,410.00
5	4 th Year	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	54704	86447	90769	95308	100073															478302
2	2022-23		53450	57440	90769	95308	100073	105077														502318
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	84865	134108	140813	147854	155246						742004

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



- Kalarangiatta Lease Hold Area
 Forest Area
 Non forest area

Forest land			
Sl No	Plot No	Area in M ²	Area in Ha
1	3605	6315	0.632
2	49	3438	0.344
3	72	1135	0.114
4	90	1160	0.116
5	34	1438	0.144
6	74	435	0.043
7	63	329	0.033
8	3558	1165	0.117
9	91	2154	0.215
10	92	1707	0.171
11	93	1706	0.171
TOTAL			2.658

100m periphery of Kalarangiatta M.L. area	Area in Ha
OMC Kallapani Mining lease	6.62
OMC Prospecting	10.24
Tata Mining lease	10.30
RACOR Mining Lease	8.30
TOTAL	35.46

M/s Ferro Alloys Corporation Limited

Project KALARANGIATTA CHROMITE MINE

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

M. Muthumani
Muthumani M
Agent of Mines

M/s. Ferro Alloys Corporation Limited
Kallapani, Dist- Jajpur
Pin- 751047

Plat No- 8/1007
Bukinda Range

15-05-25
Divisional Forest Officer
Cuttack Forest Division

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

UNDERTAKING

(Ref: Online Proposal No Proposal No FP/OR/MIN/16453/2015)

This is to undertake that the user agency will ensure submission of screen shot of uploaded KML files of diverted area, the CA area, and the WLMP area in the e-green watch portal.


M. Muthuram
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallarajam, Dist. Agasthi
Pin. 768102

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

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: 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- 755042

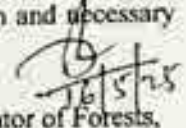
You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

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


Muthumani M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jajpur
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. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
K. Jagannath, B. Jagannath
B. Jagannath, B. Jagannath

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.H.-5, Chandikhole - Daitary Express High Way up to Duburi/Tomka and then through Duburi/Tomka-Kaliapani Road.

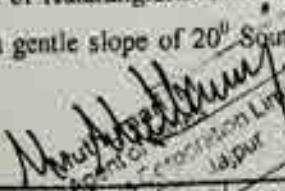
The mining Lease area of Kalarangiatta Chromite Mines of M/s FACOR is 23.80Ha. This land is considered to be of forest Kisam under Sabik Settlement.

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)(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


M/s Ferro Alloys Corporation Limited
Kalarangiatta, Bhadrak, Odisha
Patna, Bihar

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 120m 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
Muthuraj
Agent of Mines
Ms. Forest & CC, New Delhi
K2
Page 42

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 reels 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

Mrs Feroz Ali
Kuala Lumpur
Pin 75067

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>Emblica officinalis</i>	Euphorbiaceae
Bela	<i>Aegle marmelos</i>	Rutaceae
Karunja	<i>Pongamia pinnata</i>	Fabaceae
Dhamana	<i>Grewia tilitfolia</i>	Tiliaceae
Barakoli	<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.

Handwritten signature
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Kallakurichi Dist. Jagalur
Pin-756047

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-1.

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 $4.5 \text{ Mtr} \times 0.25 \text{ mtr} = 1.125 \text{ sq.mtr}$

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

$1.755 \text{ mtr} + 1.125 \text{ sq.mtr} = 2.88 \text{ sq.mtr}$

M. S. Maheshwari
Agent of M/s
M/s Ferro Alloys Corporation Limited
Kaniapah, Dist-Jaipur
Pin-305047

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**

ATC 15.05.25

**Divisional Forest Officer
Cuttack Forest Division**

M. S. Mahapatra
Agent
M/s. Ferro Alloys Corporation Limited
Kallapani, Dist-Jaipur
Pin- 305007

Annexure-I

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
Mulia			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
Mulia	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
---------------------	--------	----------------	------------------------

MIS. FERR. 1000. DE 1000.00
 K. 1000.00
 P. 1000.00


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	


 Mr. Muthu Kumar
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jaipur
 Pin- 305047

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
Agent of Mine
M/s. Ferro-Alloys Corporation Limited
Kalarangatta, Dist. Jajpur
Pin-751001

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


Muthuman M
Agent of Mine
M/s. Ferro-Alloys Corporation Limited
Kalarangatta, Dist. Jajpur
Pin-751001

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: rcefangul@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.

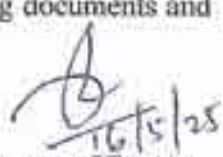
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

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
Agent of Jajpur
Kallapani, Dist- Jajpur
Pin- 755447

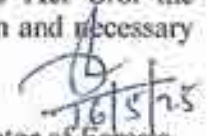
You are requested to do the needful as per above condition imposed in stage-1 approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


Regional Chief Conservator of Forests
Angul.

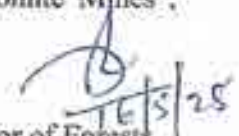
Memo No. 2252 /Dated- 16.5.25

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


Muthomari 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. Mitharaj
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalahandi, 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 Jajpur 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 23.80Ha. 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, 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.


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

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 FC Act-1980, the Safety Zone of 7.5 m 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
 Agent of Mines
 M/s. Ferro Alloy Corporation Limited
 Kallipam, Dist- Jaipur
 Pin- 755047

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
Neem	<i>Azadirachta indica</i>	Meliaceae
Karanja	<i>Pongamia pinnata</i>	Fabaceae
Dhamana	<i>Grewia vilifolia</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. S. Narayana
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, 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
Kallapani, Dist- Jaipur
Pin- 755047

15.05.2025

Divisional Forest Officer
Cutback 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.2,93,571/- per ha with 10 years maintenance. <i>2,99,571/-</i>	<i>Rs.18,88,698.69</i> <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 <i>Rs.35,79,159.00</i>

36,04,720/-

(Rupees Thirty-Five Lakh Seventy-Nine Thousand One Hundred Fifty-Nine) Only

Approved by Rs. 36,04,720/-



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

15.05.25

**DIVISIONAL FOREST OFFICER,
CUTTACK FOREST DIVISION.**

M. Muthuraj
Muthuraj & Co.
Agent of M/s. Fero Alloys Corporation Limited
Kalahandi
P.O. 751002

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. Muthuramy
Muthuramy
 Agent of Mines
 M/s. Fern Auto Corporation Limited
 Kalliparai Dist. Thirupur
 Pin: 626 002


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 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	Cost of Fertilizer & Insecticide:- (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	Cost of Fertilizer & Insecticide:- (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 Ali & Sons Limited
 Kaliapani, Dist- Jaipur
 Pin- 305047

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


 Muthuman
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapara, Dist- Jajpur
 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	22,300.06
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
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapani, Dist- Jaipur
 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.50,309/- 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							


 Muthumari M.
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalitapani, Dist- Jaipur
 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.	2021-22	22300	195651	22301	18749	6857	6857	6857	6857	6857	6857	6857											204976
2.	2022-23	22300	160423	24887	18227	8335	8335	8335	8335	10131	10637	11169											242711
3.	2023-24		23412	105425	25815	19138	8751	9189	11027	10121	10637	11169	11228										242457
4.	2024-25			24286	110727	27167	20695	9189	9648	11578	12158	13169	11728	12314									248780
5.	2025-26				25815	116264	28462	31100	36448	10131	12158	13169	11728	12314	12930								271719
6.	2026-27					27106	122077	29885	27155	10131	10637	12766	11728	12314	12930	13576							285308
7.	2027-28							29885	31380	23265	10637	11169	13494	12314	12930	13576	14255	14968					299871
8.	2028-29								30837	134590	22049	24226	11728	14074	14778	13976	14255	2068	15716				314340
9.	2029-30								31378	141319	34906	25647	11728	12314	12930	13576	14255	14968	15716	16502			330377
10.	2030-31									35947	145585	36526	26929	12314	12930	13576	14255	14968	15716	16502	17320		346790
											34905	38142	28278	12314	12930	13576	14255	14968	15716	16502	17320		364120

M. Muthumani
 Muthumani M
 Agent of Mines
 Corporation Limited
 Bkt-155047
 Pkt-155047
 Dist- Jaipur

Matrix for Model-1 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	2021-22	22351	15745	6857	6857	7827	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	204976
2	2022-23	22351	16045	24587	18272	8338	8751	10702	9540	10151	10037	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	234121
3	2023-24	23415	105455	25836	19138	8751	9186	11027	10231	10637	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	240457
4	2024-25	24586	110727	27197	20624	30065	9186	9648	11579	10637	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	258740
5	2025-26	25836	118264	28811	22811	28462	21169	9648	10131	12158	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	271719
6	2026-27	27160	127160	27160	27160	122077	26883	23155	10131	10037	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	11169	285305
7	2027-28	28462	134593	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811	29811
8	2028-29	29811	141319	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378	31378
9	2029-30	31378	145385	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947	32947
10	2030-31	32947	153803	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165	34165

M. Muthumary
Muthumari M
Agent of Mines
Kallapam 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					


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalasahi, Dist- Jaipur
 Pin- 751047

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
 Kalaspara, Dist. Jaipur
 Pin- 305047

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	5415				50140
9	2029-30								0	31360	4939	5186	5415	5717			52647
10	2030-31									0	32928	5186	5415	5717	6003		55279

M. V. Muthumani
Muthumani M
Agent of Mines
Muthumani Limited
B-155047
Kallapatti, Dist. Jajpur

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

N. N. Mathur

Muthuram M.
Agent of M. & S.
Muthuram M.
Kalepam, Dist. Jaipur
Pin- 305007

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 5Months= 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
 Ashish & Sons, Jaipur
 Khabra, D. Jaipur
 Pin 302017

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 3 Month = 100 MD x 311 =	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 MD x 311 =	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 MD x 311 =	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 MD x 311 =	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 MD x 311 =	49,760.00	
	Total	78,410.00	


 M/s. Ferro Alloys Corporation Limited
 Kallaperi, 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					


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

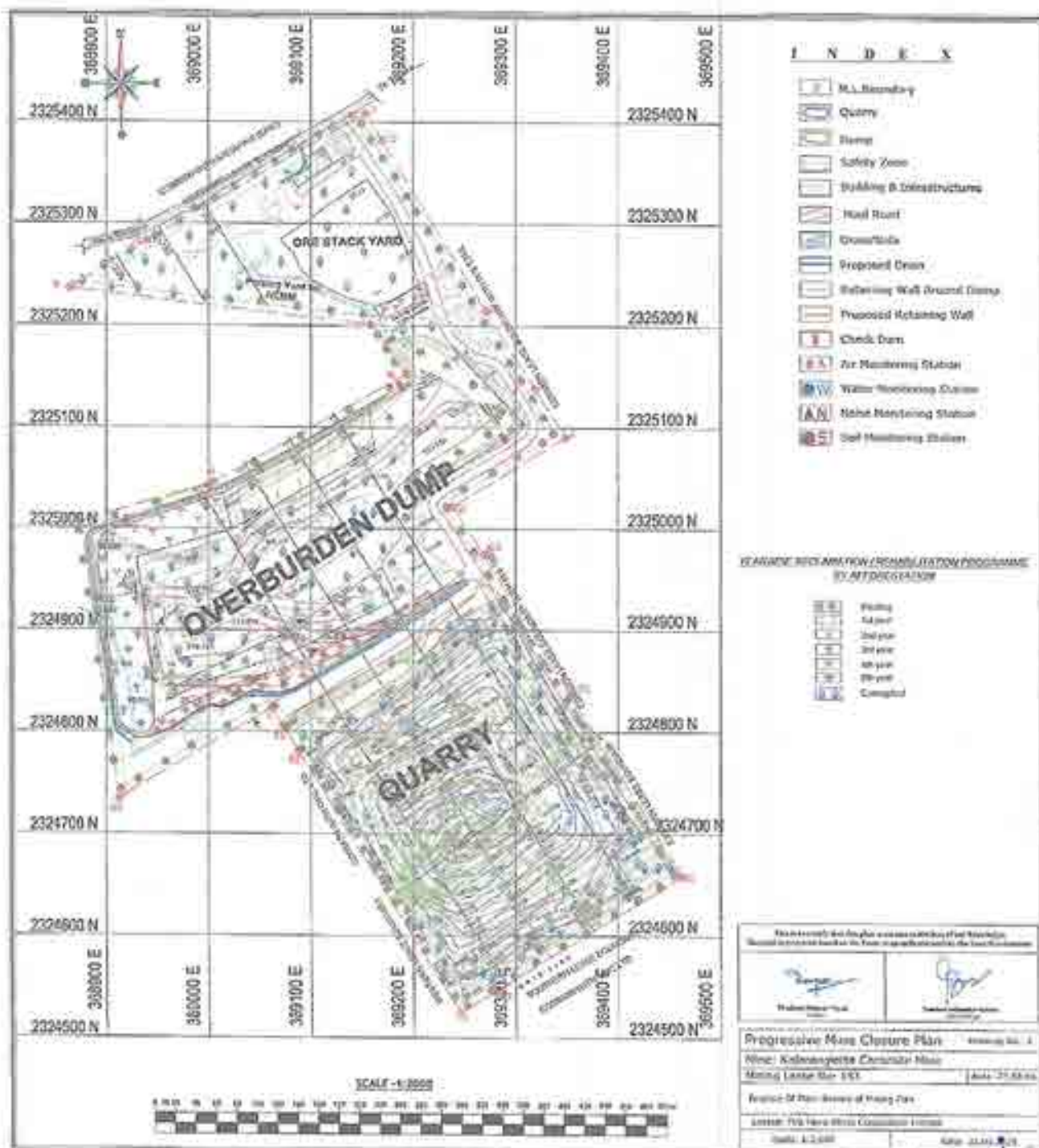

 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Pin- 755047

Matrix for Watering 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	86447	90769	93308	100073															478302
2	2022-23		53550	57440	90769	93308	100073	105077														502218
3	2023-24			56228	60312	93308	100073	105077	110331													527328
4	2024-25				59039	63328	100073	105077	110331	115847												553693
5	2025-26					61991	66494	705077	110331	115847	121640											581380
6	2026-27						65090	69819	110331	115847	121640	127722	134108									610449
7	2027-28							68345	73310	76973	121640	127722	134108	140813								640971
8	2028-29								71762	75350	80824	127722	134108	140813	147854							673030
9	2029-30										79118	84865	134108	140813	147854	155246						706671
10	2030-31																					743004

N. Nuthuman

Nuthuman M
Agent of Mines
Kalapatti, Dist-Japur
Pin-135047



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

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

M. H. Hattangy
 M. H. Hattangy
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalanagar, 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
Kalarangatta, Dist- Jajpur
Pin- 755002

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


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Dist- Jajpur
Pin- 755002

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 / 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.

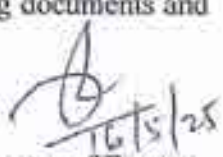
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

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. Muthukumar
M/s. Ferro Alloys Corporation Limited
Kakapada Dist- Jajpur
Pin- 755047

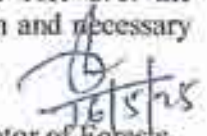
You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

Encl: As above.


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



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

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 5-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
Agent
M/s. Ferro Alloys Corporation Limited
Kaliapani, Odisha - 751047
Pin-751047

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. Ferro Alloys Limited
Kallapani, Dist- Jajpur
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"	Width of Retaining wall: 1.20m, Height: 1.00m AGL; Length 200m along the Dump periphery. (704 m already existing)
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	

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 Rs. 19,80,000/-

[Signature]

Regional Chief Conservator
of Forests, Angul Circle

[Signature]
15.05.25
Divisional Forest Officer,
Cuttack Forest Division.

[Signature]
M/s. Ferro Alloys Corporation
Kaliapani, 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. 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


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



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

Email Id: rcfangul@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.

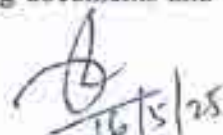
The following schemes submitted vide your memo under reference are approved by the undersigned and returned herewith for information and needful action.

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. Mahalingam
Agent, M/s. Ferro Alloys Corporation 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



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. Muthumani
Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kajapal Post, Jajapur
Pin - 751012

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 S-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


Muthuman
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. Hithum
 Agent of M/s. Hithum
 Hithum Limited
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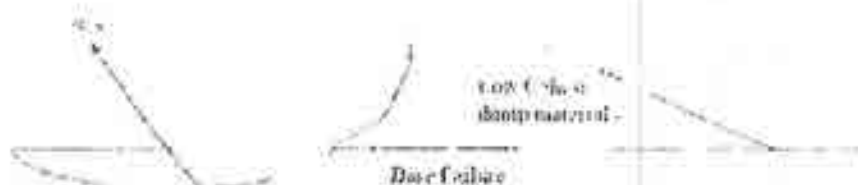
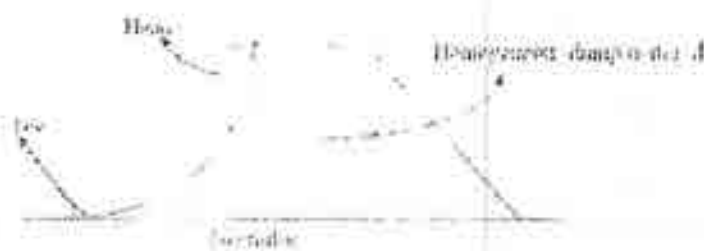
- Towards the inner side of terrace, half concrete open pipes are proposed to be installed to channelized rainwater and not allowing penetrating to inside the dump.
- Crated Boulder retaining wall of 2m height (0.5m below ground + 1.5m above the ground) X 1.0m wide shall be constructed around the dump.
- 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.



M. Muthuramy
 Muthuramy & Co. Pvt. Ltd.
 Acrint Mines
 M/s. Ferro Alloys Corporation Limited
 Kalapur, Dist. - Jajpur
 Pin - 755047

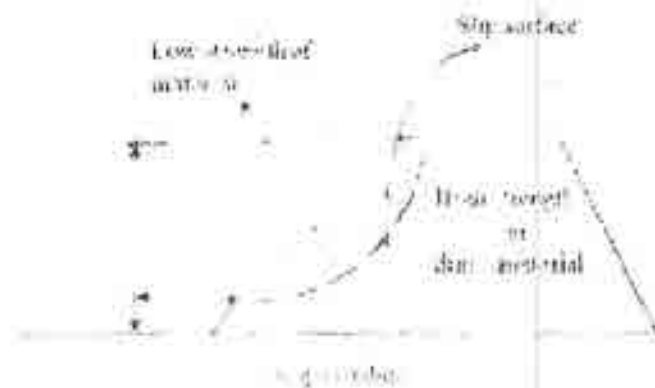


Figure 1 Dump failure line of slip.

Reasons for failure:

- i. Ground water and surface water flow condition play a critical role on the stability of dump slope. Frictional strength is reduced as the height of dump is raised, due to presence of water. The pore water pressure reduces the normal stress acting on material. The cohesive strength of weak geo-material will be further reduced due to presence of pore water pressure. Waste dump placed in a loose state, shear failure is often followed by static liquefaction which reduces the strength. The flow of water may enhance the seepage force, leading to formation and migration of tension crack.
- ii. Erosion also plays an important role in affecting the stability by surface weathering, ground water or surface water seepage, toe erosion and slope modification, ground water or surface runoff. Erosion changes the waste dump slope geometry and morphological character. The weathering and attrition of material at the toe of a potential slide reduce the restraining force that may de-stabilize the slope. Erosion of void filling materials, or zone of percolation can efficiently decrease cohesion among grain boundaries. The cohesion strength notably reduces the rock mass shear strength. The decrease in the shear strength may allow movement of dump slope along the weak plane. In addition localized erosion may also result in increase permeability and ground water flow along the slope. This may lead to failure due to formation of gullies and deep flow channels in the dump.
- iii. Other affecting parameters:
- Gradient of the Slope,
 - Ground Water Regime
 - Nature of Over burden Rock
- M. Mathur*
M. Mathur & Co. Limited
Surat

- ii. Erosion also plays an important role in affecting the stability by surface weathering, ground water or surface water seepage, toe erosion and slope modification, ground water or surface runoff. Erosion changes the waste dump slope geometry and morphological character. The weathering and attrition of material at the toe of a potential slide reduce the restraining force that may de-stabilize the slope. Erosion of void filling materials, or zone of percolation can efficiently decrease cohesion among grain boundaries. The cohesion strength notably reduces the rock mass shear strength. The decrease in the shear strength may allow movement of dump slope along the weak plane. In addition localized erosion may also result in increase permeability and ground water flow along the slope. This may lead to failure due to formation of gullies and deep flow channels in the dump.

- iii. Other affecting parameters:

- Gradient of the Slope,
- Ground Water Regime
- Nature of Over burden Rock

- 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,

[Signature]
 Agent of Mines
 Ferro Alloys Corporation Ltd.
 Kalapani, Dist. Jaipur
 Pin-755047

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>	Simili	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

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

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 51,74,545/- (Rupees Fifty-One Lakh ~~Forty-Three Thousand Five Hundred Eighty-Five~~) only

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

A.P.
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 51,43,585/-

Approved & Rs - 51,43,585/-



Regional Chief Conservator
of Forests, Angul Circle


15.05.25
DIVISIONAL FOREST OFFICER,
CUTTACK FOREST DIVISION.


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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	

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

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

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

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. Muthumani
 Agent of Mines
 Ferro Alloys Corporation Limited
 Kallipani, 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
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 = Rs1500.00 (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


 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 (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

Muthumari M
Agent of Works
M/s. Ferni Micro Projects Pvt. Ltd.
Kalahandi, Dist. Jajpur
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/s. Ferro Alloys Corporation Limited
 Agent of M/s.
 Kaliapani Dist- Jaipur
 Pin- 765047

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	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:-		388	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							


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


Matrix for Model-I A Conventional C.A. 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	96651	22301	15745	6857	6857	7832	8357	6657	6857	6557											204976
1	2021-22	22300	100433	24587	18227	6335	6751	10502	9548	10131	10537	11169											236721
2	2022-23		22415	105455	25816	19138	6751	9169	11027	10131	10637	11169	11728										246457
3	2023-24			24586	110727	27107	20095	9189	9648	11579	10637	11169	11728	12314									258789
4	2024-25				25815	116264	28462	21100	9648	10131	12158	11169	11728	12314	12930								271719
5	2025-26					27106	122077	29885	22155	10131	10637	12766	11728	12314	12930	13576							285505
6	2026-27						29461	128181	31380	23263	10637	11169	12404	12314	12930	13876	14255						299571
7	2027-28							29884	134590	32949	24425	11169	11728	14074	12930	13576	14255	14968					314549
8	2028-29								31378	141319	34596	24647	11728	12314	14778	13576	14255	14968	15716				330277
9	2029-30									32947	148185	36326	20929	12314	12930	15517	14235	14968	15716	16502			346790
10	2030-31										34595	155805	38142	28276	12930	13576	16293	14968	15716	16502	17327		364130

M. Muthurami
 Muthurami M
 Agent of Mines
 Nuthuram Corporation Limited
 P.O. 756047
 N.M.S. Ferro Alloys Corporation Limited
 P.O. 756047
 N.M.S. Ferro Alloys Corporation Limited
 P.O. 756047

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

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 5Month=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


 Mr. Ashwini
 Agent
 M/s. Ferro Alloy Corporation Limited
 KSI, 204
 Jaipur
 Date: 14/03/27

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 WH (Diesel 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															
1	2021-22	51000	54705	86477	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						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	84865	134108	140813	147854	155246						742004

M. Muthuram

Muthuram M
Agent of Mines
Corporation Limited
Kannanur, Dist:- Jeypur
B.P. 1155047

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.




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 Mines
M/s. Ferro Alloys Corporation Limited
Kallam, Chit-Jajpur
Pin- 751002

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(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
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapad, Old-Jagpur
Pin- 751007

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. Mathuram
 M. Mathuram
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalarangiatta, Dist. Jajpur
 Pin- 751047

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 2.9 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.


M. Muthuram
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallakudi, Dist. Angkor
Pin- 752047

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

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
COUNTER SIGNED


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. Muthuram

Muthuram M
Agent of Mines
M/s. Ferro-Alloys Corporation Limited
Kolar, Chit-Jagur
Pin- 582007

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
Rattihalli, Chel-Jajpur
Pin- 755047

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. Mithun

Mithun M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallangudi, Dist-Jaguar
Pin- 766042

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 2.13 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. Muthuram

Muthuram M
Agent of Mines
M/s Ferro Alloys Corporation Limited
Kallapet, Dist- Jajpur
Pin- 751047

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



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

Email Id: recfangul@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-755047

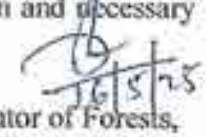
You are requested to do the needful as per above condition imposed in stage- I approval order and submit point-wise compliance along with supporting documents and CAMPA Format to this office immediately for further action.

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



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. M. Haryani
M. M. Haryani & Co. Pvt. Ltd.
Jaipur

Scheme for undertaking De-silting of the Village tanks and other water body Located within 5 Km from the mining lease boundary so as to mitigate the impact of siltation of such tanks/ water bodies.

In compliance to Stipulated Condition 14 of In- Principle Approval Orders dated 21-03-2023 Online Proposal No FP/OR/MIN/16453/2015;

1. 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) Adhinyam, 1980) vide Online Proposal no *FP/OR/MIN/16453/2015*. After due consideration the MoEF&CC, New Delhi has issued the "In- Principle Approval Order vide letter 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 14 reads as follows.

Condition No 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 de-silting 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 de-silting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before final approval.

This scheme is prepared with an aim to comply the condition stated above.

2. Locational of Mines:

Kalarangiatta Chromite Mine of M/s Ferro Alloys Corporation Ltd is located at Village Kalarangiatta under Sukinda Tahasil of district Jajpur. The Latitude & Longitude of the Mine is as follows.

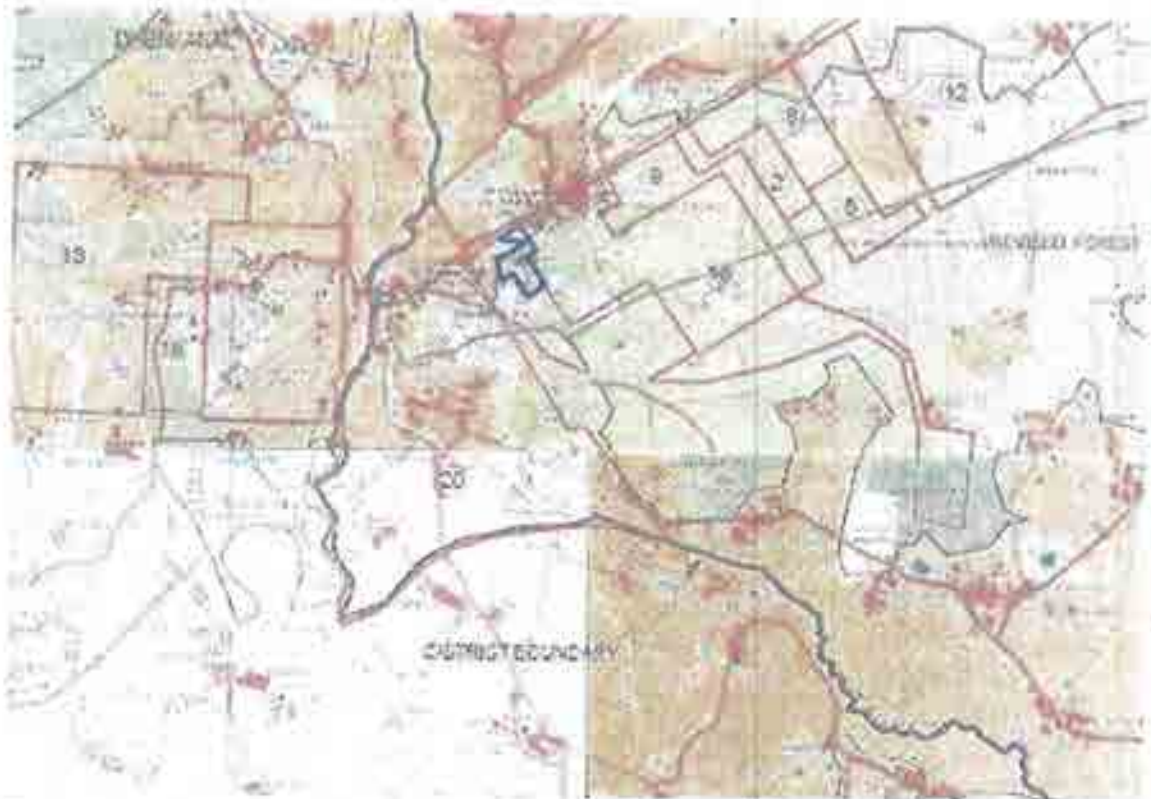
Latitude *21°01'00.57415"N to 21°01'29.29437"N*



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)



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 Owner ship.	Size. In Meter	Area in sq. m	Perimeter in Meter	Location	
						Latitude	Longitude
1	Ostia	Govt.	100x60	6000	320	21°03'15.8"N	85°46'18.7"E
2	Kalarangiata (Pond-I)	Govt.	40x30	1200	140	21°01'10.490"N	85°45'55.69"E
3	Kalarangiata (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	Kusumundla.	Govt.	90x55	4950	290	20°59'36.576"N	85°46'18.204"E

M. N. Sharma
Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kalapant, Dist. Jaipur
Pin-754047

6	Kakudia (Purna panasia)	Govt.	40x30	1200	140	21°00'51.3"N	85°47'39.8"E
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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:

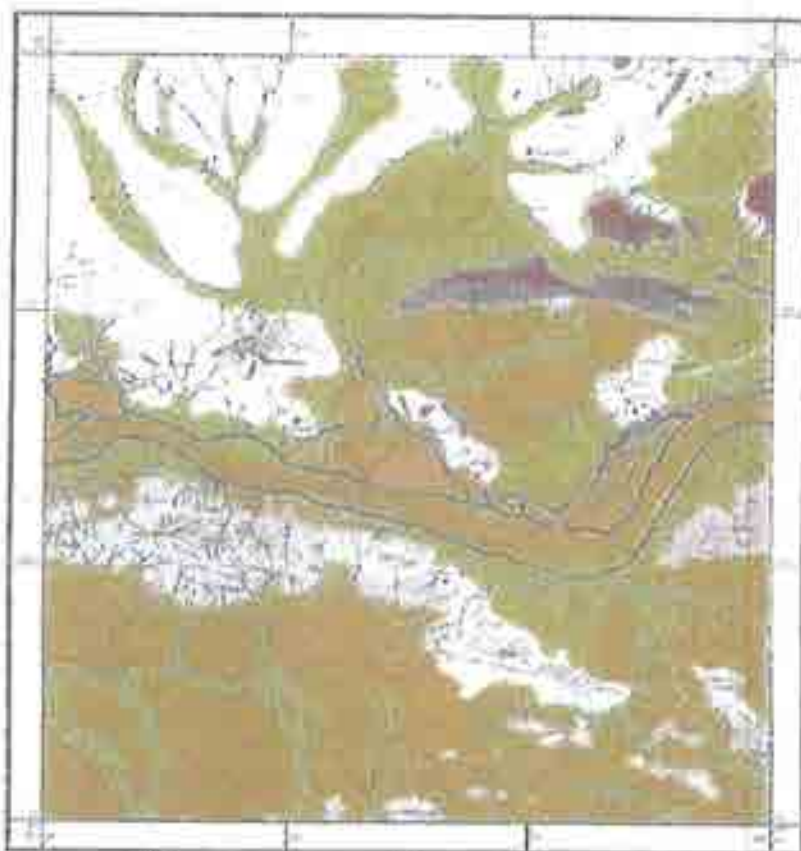
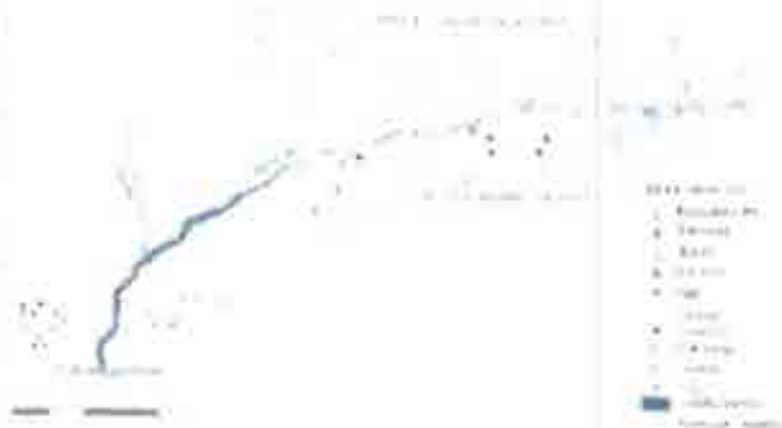
The drainage pattern is decided by Mahagiri hill range & Daitari Hill Range. The Sukinda Valley drains to Damsal Nalla which ultimately drains to Brahmani River after flowing about 29km. The nallas are as follows:

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	Patga nalla	N	Seasonal

Table 2 List of Nalla Coming within Buffer Zone.

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

Geological Map of the Area around the
Deoria Mines in the District of Deoria



Scale: 1:50,000
Projection: UTM
Datum: Everest

M. Muthumani
Muthumani
Agent of Mines
Mrs. Ferro Alloys Corporation Limited
Kaliapani, Dist. Jh
Pin-753001

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	Kalarangiata (Pond-I)										
3	Kalarangiata (Pond-II)										
4	Kakudia										
5	Kusumundia.										
6	Kakudia (Purna panasia)										

Table 4 Execution 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	Kalarangiata (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

M/s. Ferris
Agent of
Japur

2 nd Cycle					
2030-31	Ostia	4200	956214.00	5000.00	961214.00
2031-32	Kalarangista (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
Kallapani, Dist- Jaipur
Pin- 766047

**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

M. Muthumani
Muthumani
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, 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. Muthuramy
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Bhilai, Dist. Jharkhand
Pin. 767007

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. Muthuraj
M. Muthuraj
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kolarpet, Dist-Jodhpur
Raj. INDIA

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 2.16 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. Mathur M
Agent of Mines
M/s. Ferro-Alloys Corporation Limited
Kolar, Dist. Jharkhand
Pin- 726002

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 2.17 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 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.

H. Huthwaite
SHAW-WORTH 22
Agent of Mines
Mrs. Farn-Kings Corporation Limited
Millwall, Dist. - Jager
P.O. 700047

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
Cutlack 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: 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/-

(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.


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


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

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/S
Muthumani M
Agent of Mines
Ms. Ferro Alloys Corporation Limited
Kalkaji, Delhi - 110019
Pin-110019

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.

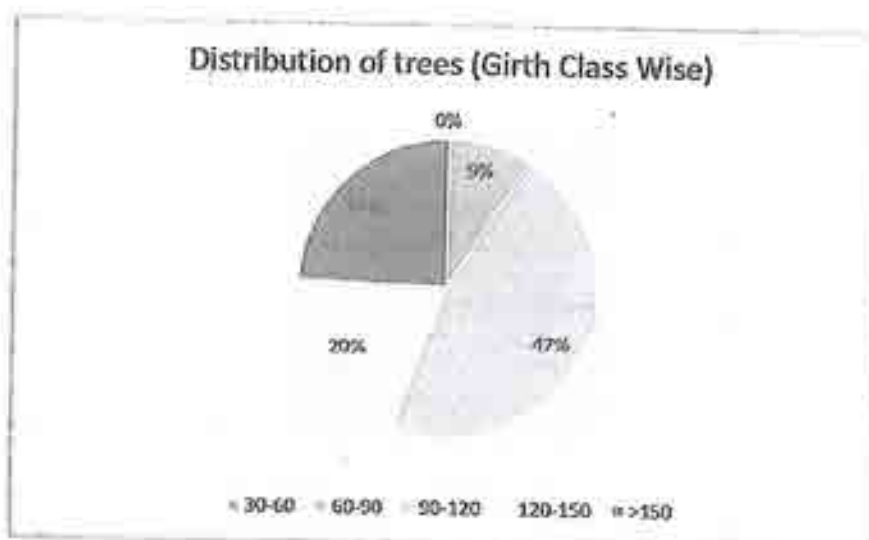
2.0 Number Trees existing within ML area:

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
Kallagan, Dist- Jaipur
Pin- 305047

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>Bambax celba</i>	Simili	0	0	1	1	1	3
6	<i>Schleichera oleosa</i>	Kusuma	0	0	1	0		1
7	<i>Cassia siamia</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



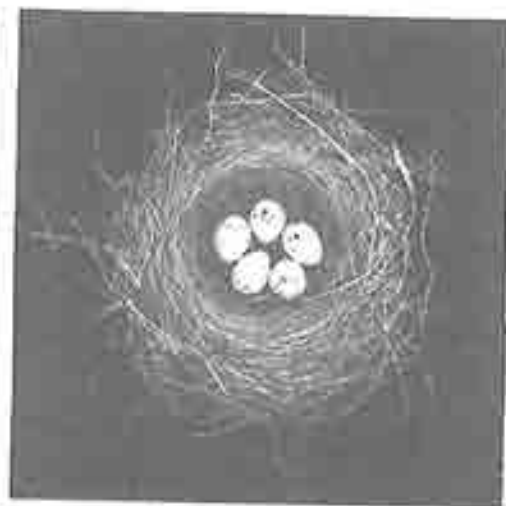
3.0 Types of Birds nest:

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

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. S. Mathur
Agent of
Mrs. Ferro Alloys Corporation Limited
Kallapani, Dist:- Jaipur
Pin- 305007

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. M. Mathur
 M/s. Farro Alloys Corporation Limited
 Agent of Mines
 Kallapet, Dist. - Jajpur
 Pin-751047

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



predators and it is often so see-through that you can see the eggs in the nest from below.

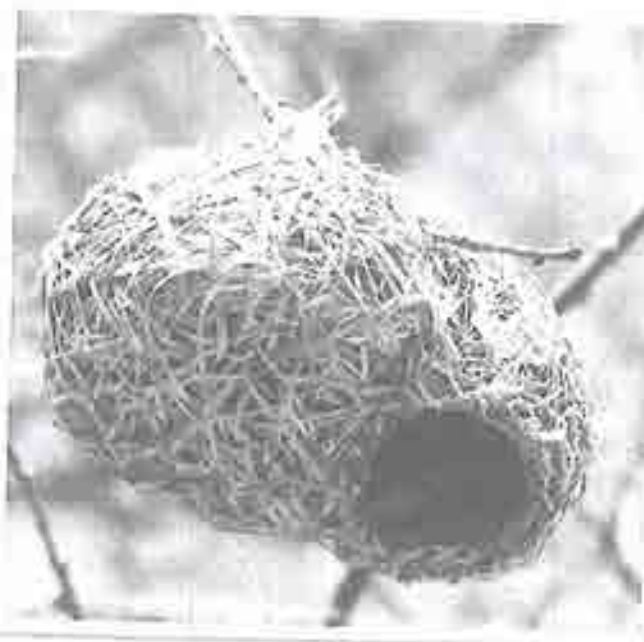
7. Pendant Nest:

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.



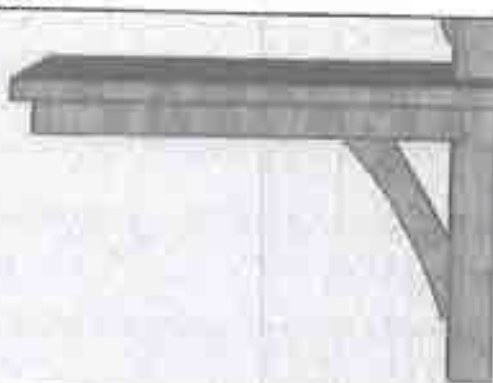


Sunbird nests are oval balls with an entrance on the side near the top. They are usually attached to two branches. Penduline tit nests are intricate nests built out of fluffy seeds or sheep's wool, in sheep growing areas, and the material is finely matted like felt to become waterproof. These nests have 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. H. H. H.
Mithun & Co.
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallapani, 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	 <p>Male bird's foot at lower</p>
2	Cavity nest	 <p>Box Nest:</p>
3	Platform	


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Ph. 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. Muthumani
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kallanani, 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

APR 15, 2015

DIVISIONAL FOREST OFFICER

CUTTACK FOREST DIVISION

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

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 M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallangudi, Dist. Angul
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.1450, SAHEED NAGAR, BHUBANESWAR- 751007
Phone: 0674-2602250, Website: www.wildlife.odisha.gov.in, Email: odishawildlife@gmail.com

No. 10/30 / 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 Kalaranglatta 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.

- 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.
- 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)

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



Memo No. 10181 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 ଓଆ ବନ୍ୟପ୍ରାଣୀ ଡଭାବଧାରକଙ୍କ କାର୍ଯ୍ୟାଳୟକଟକ , 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 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
 Kaptan
 Limited

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 WT. for information and necessary action.


Divisional Forest Officer,
Cuttack Forest Division.


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)
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://parivesh.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
Rel
20/6/2025

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

Funds Demand	Demand	Demanded Amount	Amount Paid	by	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 R470250 51300556304
Differential NPV		92,08,220/-	92,08,220/-		Dated 13.05.2025
Site Specific Wild Conservation Plan		1,50,52,000/-	1,50,52,000/-		
Final 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 Kalmangatta 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
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, Laxmibhawan, Kuansh, Post 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, 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, Kuansh, Post 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, 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 /ICICR 42025051300556304/ UBIN0996335 / Odisha CAMPA
Date: 13.05.2025

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

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



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Ministry of Environment, Forest and Climate Change
Government of India



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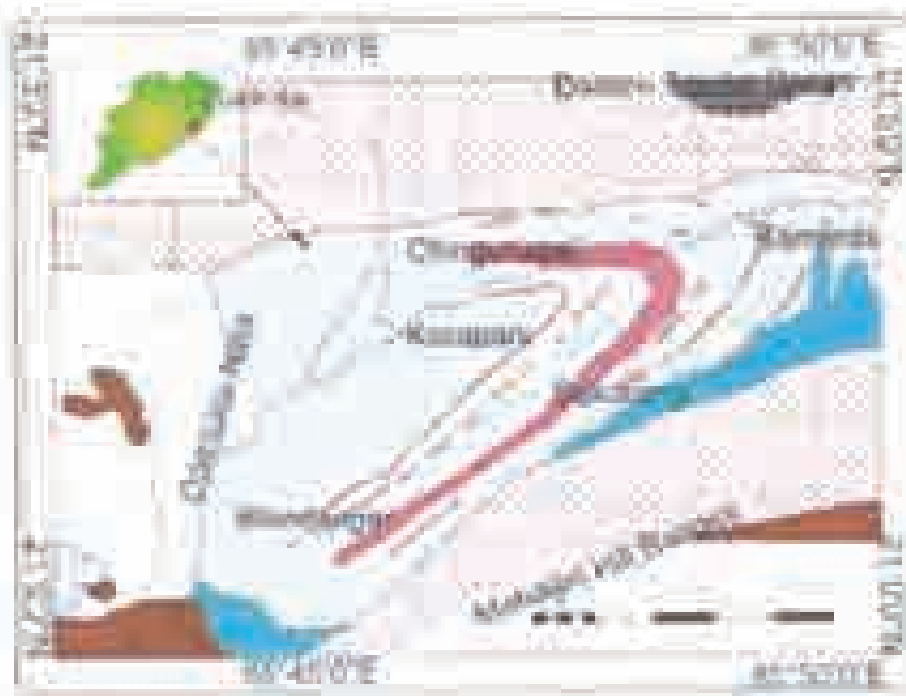
10:08:05 AM

Sl. No.	Proposal Detail	Application No.	Application No (New)	Date of PRINCIPLE	Amount to be Paid/Amount Paid (in Rs.)	Payment Status	Payment Detail	Demand Letter
1	17/02/2024/164532015158 Kalamanglietta Chromite Mines of M/s Ferro Alloys Corporation Ltd	6816453158	6816453158	21 Mar 2025	CA: 5657000/- JCA: 0/- Safety Zones: 0/- JPV: 6208220/- Payment towards Seta Specific Wild 1500.2000/- Life conservant : Other Charges2 : 0/- Other Charges3 : 0/- Total : 66554000/-	PAID	Fund Demand Verified by : 08 May 2025 Nodal Officer On : Bank Name : Union Bank Of India Mode of Payment : NEFT/RTGS (Challan) Challan Generated On : 12 May 2025 Transaction Date : 13 May 2025	Demand Letter Demand Letter Generated Challan

Mr. N. K. Kulkarni
Nuthumari M
Agent of Mines
Corporation Limited
M/s. Ferro Alloys Corporation Limited
Kaliapatti Dist. Jajpur
Pin- 756047



**Site Specific Wildlife Conservation Plan for
Kalarangiatta Chromite Mine at village
Kalarangiatta under Sukinda Tahasil dist. Jajpur
by M/s Ferro Alloy Corporation Ltd.**



By

**Divisional Forest officer,
Cuttack Division**

M. M. Mahapatra
Manager
Agent of Mines
M/s Ferro Alloy Corporation Limited
Kalarangiatta, Dist. Jajpur
Pin- 756005



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. Kalarangatta, Ostapal and Kethapal at Salinda Chromite Valley. The FACOR has applied for enhancement of Chrome Ore production from Kalarangatta Chromite Mine from present production level 0.05 MTPA to 0.15 MTPA to meet the requirement of its Ferro Alloys Plant at Raxa, 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, Bhenkanal 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 Kalarangatta 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 Salinda valley and surroundings will improve.

Thanking all

Place: Cuttack,

Dated the 31st March 2022.

Divisional Forest Officer,

Cuttack Division

M. Mathur
Authorized M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kethapal, Dist. Jagpur
Pin- 751001



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M. M. M. M.
Minister of Mines
Agent of Mines
Min. Forming Corporation, India
Kallangutta, Dist. Jagpur
Pin- 751004



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M. M. Mithun
Mithun Mithun
Agent of Mines
M/s. Feroz Alloy Conservation Limited
Calcutta, Dist. - Jharkhand
Pin- 753047



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M. S. Sathyanarayana
Managing Director
Ecolife Mining
Agencies Limited
M/s. Ferro Alloy Corporation Limited
P.O. Box No. 10047
Chennai - 600 047



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M. K. Singh
Agent of M/s
M/s. Fero Mining Corporation Limited
Kairangata, Dist. Jharkhand
Pin- 726001



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M. Mithun
Mithun Mithun
Agent of Mines
M/s. P. S. P. Ltd.
Kaurangutta, Dist. Jaipur
Pin- 302017



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. Kalarangatta, Ostapat and Kathapat at Subinda Chromite valley.
- ❖ Kalarangatta 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 SA/OR/MIN/66287/2011.
- ❖ 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 SA/SEIAA dated 18.11.2011.
- ❖ 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 (Sabit 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-012/2015).
- ❖ The project is located at Village Kalarangatta under Subinda Tahsil 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°44'38.03780"E.
- ❖ The Mine finds place in Survey of India Topo Sheet no F45N12 (71G/12).
- ❖ The Project cost is estimated to be Rs 12.18 Crore.

M. Mithun
Mithun M
Manager of Mines
M/s Ferro Alloys Corporation Limited
Jajpur, Dist. Jajpur
751001



- ❖ 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 SIA / 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 SA/OR/MIN/66287/2021 for which ToR has been issued.
- ❖ The Mine is approachable from NH-703 Chaudhatal- Talcher National Highway from Mangalpur and from Tamka via Mangalpur- Tamka Road (DDR).
- ❖ The Zone of Impact is considered to be 10km on all sides of the Project layout. The Zone of Impact comes within Cuttack Division, Odisha and Odisha Division and Keonjhar WL Division, Anandapur.
- ❖ The Zone of Impact computed to be 338.00 Sq.Km.
- ❖ Subada Kallapasi area along the Mahanadi DFF 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.

M. Mithun
Mithun M
Agent of Mines
M/s Felsar Ltd. Sagar, Odisha
2021



- ❖ 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: 138.00 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 966 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 jackal.
- ❖ 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, Kenduchip, Karadi, Baradi, Mahagiri DPF, Kandua, Kollo, Bannagar, Kakadai & villages coming South Eastern side of the Project.
- ❖ The forests of the study area as per Champion & Seth classification belongs to 38 Northern Tropical Moist Mixed Deciduous Forests and 58 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 31.4 Km towards North- west direction.

M. Mishra
Joint Project Manager
M/s. Forest Ltd.
Bhubaneswar, Odisha-751005



- ❖ There are fourteen elephant corridors in the state. Out of these corridors Maulabhanja-Jirdamal- 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 380m.
- ❖ Human- Animal Conflict in Sukinda Range of Cuttack Division is moderate but due to Maulabhanja- Jirdamal- Anantapur Corridor being disturbed, the elephant movement is very erratic in Kamakhyanagar East range of Chhakaral Division.
- ❖ There are 23 Chromite mines in this locality (Sukinda valley).
- ❖ A 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.
- ❖ Kalangajetta 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 clearance 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 Starlite Power Transmission Line Limited (Vedanta Ltd).
- ❖ IACOR has the capacity to produce 85,000 TPA of Charge Chrome / Ferro Chrome and 2,50,000 TPA of Chrome Ore at its Plant at Randa in Shadrak district, Orissa.
- ❖ It has two captive mines at Sukinda valley for excavation of Chrome ore at Ostapal Chromite mine and Kalangajetta Chromite Mine and these mines are at operational stage.

(Signature)
Agent of M/s
Ferro Alloys Corporation Limited
Chromite Ore Zone
Jagpur



- ❖ Mineral Reserves / Resources have been estimated based on the level of exploration as on 11.05.2013. The total-estimated reserve is 14.87 Lakh Ton.
- ❖ At present the opencast mining method is being carried out by removing overburden and side border 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 & 25° 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 OS dump of size 410m x 115m 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 enough 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 38° to 30° . Individual bench slope is to be 17.5° .
- ❖ 1100 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 soil from waste dump going out.

(Signature)
Project Officer
Tamil Nadu
Forest Dept.



- ❖ 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 - done combination.
- ❖ Since the GfB beaches 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 1m BGL during monsoon and in dry months the water table is at 5m 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 30m x 20m x 2m (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.

M. Mahalingam
Muthumani M
Agent of Mines
Kalamangudi, Dist. Salem
Pin-636004



- ❖ 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.
- ❖ Etc 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 33 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 1:35.
- ❖ The ore is being utilized in Ferro chrome, Ferro alloys plant of FACOR at Bhadrak. All the materials will be transported by Road only four miles to the Plant at Kambra 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 0.3 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 Bharegpur IT. 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

M. K. Kishore
Managing Director
M/s. Facor Ltd. Corporation Limited
Kalarangpetta, Kottayam
Pin- 706001




indirect employment in transport sector for transporting ore from Mine to Plant at Randia (Bhadrak).

- ✧ The treated Mine discharge water is being provided to Shimargarh 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 800 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 87m 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 Damuda nalla which is the main drainage of this area and joins with Brahmani river.
- ✧ There are number of Chromite mines in the Subinda 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.

M. M. Mishra
M. M. Mishra
Minister of Mines
Kansai, Jajpur, Odisha
For: Jajpur, Odisha



- ❖ The noise level is due to use of HEMM, and transport trucks.
- ❖ The noise level within Mining area is 58 dB, and near habitation is 60 dB, 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 5500 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 5.54 lakh cum OB and no Mineral reject will be generated.
- ❖ The stripping ratio is 1:1.4 i.e. for production of 1 Ton of Ore about 1.4 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 the generalized formula: $\text{DSi}_2\text{X}_2\text{O}_5(\text{OH})_4$ ($\text{Mg, Fe, Ni, Mn, Zn}$), $\text{KSAAl(Fe)Si}_2\text{O}_5(\text{OH})_4$. Chrysotile, antigorite, and lizardite are three of the primary serpentine minerals.


Agent of Mines
M/s. Ecoor Limited
Jajpur, Orissa
Pin-751002



- ❖ 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 shift of unpalatable, dwarf vegetation.
- ❖ More and more open forest will be covered by Eupatorium, Lantana, Combretum (Alandi).
- ❖ Batasia (Sisal) may be completely vanished from the region. Disappearance of many species may lead to loss of Biodiversity of the locality.
- ❖ Plants may be effected by heart rot (especially Saff), 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 select 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.

M. Muthusamy
Member
Forest of India
M/s. Puro Alloy Limited, Karur
Surrender Tohold this Report
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- ❖ 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 temperatures 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 trading 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 0.0508M TPA to 0.15 MTPA i.e. 3 times increase.
- ❖ The ore produced is being transported by Road to Bandia, 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 (2.5-4.5 cum) 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 Majdipur – Chandikhol – Bhadrak.

M. Facer Limited
Joint Venture
M/s. Facer Limited
Chandikhol Dist. Jalpaiguri
Pin- 786007



- ❖ 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 related 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 15,195 nos 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 tarpolins to avoid air pollution during transportation and ore fallout from trucks.
- ❖ The nearest water body is Damsala nalla flowing in Suidaha 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.

M. S. Mahapatra
Joint Project Officer
M/s. Eco Env Conservation Pvt. Ltd.
Bhubaneswar, Odisha



- ❖ 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* (*Desu*) 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 5meters 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 litter decompose to humus. It is suggested to increase mulchier 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 organised 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 Mautabhanja - Iridamali - Anantapur Elephant corridor is partly coming within Zone of Impact.
- ❖ It is proposed to improve habitat by renovating water body coming within Subanta Range. For saving the ground flora, the fire protection measures like control burning of

M. Mithun
Mithun M
Apex Mines
M/s. Ferro Alloys Corporation Limited
Kaverangurta, Dist. Sagar
755247



dry leaf litter, 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 Kamalshyanagar range. The Elephant corridor i.e. Maulabhanja-Jrdamal- Anantpur is mostly disturbed due to fragmentation of habitat by National Highway 200 and Angul- Sukinda- Daburi 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 or garland dams 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 dust.
- ❖ 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 in 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 as a single forest patch and providing vegetative fencing on Forest / Human interface side in Mahagiri DPF with fencing

M. Muthuraj
Muthuraj M
Agent of Mines
M/s Ferro Alloys Conservation Limited
Kalamnagar, Dist. Nagar
Pin- 766031



- 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 wildlife 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. 38.956 Lakh, Bhubaneswar Division: 58.402 Lakh, Keonjhar WL Division: Rs. 224 lakh)
 - ❖ The interventions suggested will be implemented by Cuttack Division, Bhubaneswar Division and Keonjhar WL Forest Division.


Mr. Subodh Kumar
Agent of M/s
M/s. Forests Conservation Limited
Kalingapatla, Dist. Sukinda
Pin- 756002



CHAPTER-I LOCATION OF PROJECT & ITS AREA



M. Mithun
Managing Director
M/s. Ecosys Ltd.
Kharangpeta, Dist. Balasore
Pin- 755007



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. Kalarangatta, Ostapal and Kathapal at Sukinda Chromite valley. Kalarangatta 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 (RCM) with maximum excavation of 0.458 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 need as follows.

- ii) 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*
- iii) 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.*

M. M. Mahapatra
Managing Director
Agent of Mines
MA Ferro Alloys Corporation
Chromite Ore
Kalarangatta



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 RFT Species duly authenticated separately for core and buffer zone should be furnished based on such primary 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 implementing the same should be made as part of the project cost."

The Land under Mining Lease is Non Forest Khasam at the time of execution of Lease deed (HLL Settlement). The entire land under mining lease (23.80ha) was of Forest Khasam as on 25.10.1980 (Sabli 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 Sl No OR-012/2016). The State Government vide their letter No 10F (Cons) 222/2016- 13765/ F&F dated 27.07.2016 has recommended for diversion of 23.80 ha forest land under provisions of the Forest (Conservation) Act,1980. (Annexure-0). The proposal is under consideration of the Government at various stages. In the 3th 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, Rats, Jackal, Sloth Bear, Wild boar, Fox, Porcupine, Barking Deer, Rhesus macaque, Hyena, Squirrel, Hare, Peacock, Angul Powl, Red Ring Dove, Parrot, Koel, Cobra, King Cobra, Python, Banded Krait, Viper, wild Boar 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 RFT Species have been recorded. The flora & fauna observed during study has been authenticated by DFO, Cuttack and communicated vide letter No 8295/BJ (Forest Diversion) 60/218 dated 04.12.2023 (Annexure-0).

M. S. Mahapatra
Joint Secretary
Ministry of Environment, Forest and Climate Change
Government of India
New Delhi-110003



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 Division Proposal now under consideration.

Location of the Project:

The project is located at Village Kalarangatta under Subinila Tahasil of district Jaipur. The Latitude & Longitude of the project is as follows.

Latitude 21°01'00.57415"N to 21°01'38.29437"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 D73G(1,2)

The location map is at Plate No-1

Forest / Civil Administrative Jurisdiction:

The entire project comes within the jurisdiction of Cuttack Division, Subinila Range. The Forest / Civil administrative jurisdiction is as given below.

Forest Administrative Jurisdiction		Civil Administrative Jurisdiction	
Description	Name	Description	Name
Beet	Kallapam	Village	Kalarangatta
Section	Kallapam	Tahasil	Subinila
Range	Subinila	District	Jaipur
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 hectaring in village Kalarangatta. The land schedule is as follows

M. M. Muthuraj
 Authorised Signatory
 Agent of M/s. Fanco
 M/s. Fanco Minerals Corporation Limited
 Registered. GPO, Jaipur
 Tel: 755017



The Specific Identity Component: For the Category IIa Offshoots (Line as Subsequently under National Spatial plan. Issued by MHA, Govt. of India)

Land Schedule of this Project (Sabli / Hal Settlements)													
Sabli Land schedule (Area in Ac)							Hal Land schedule (Area in Ac)						
No	Sl. No.	Status	Plot No.	Reason	Total area of the plot	Unsettled area	Chatta area	Status	Plot No.	Reason	Total area of the plot in Sq. Ft.	Unsettled area in Ha	Remarks: Hal Success Tenants
VILLAGE: KALIMATIYA, Dist: JALNAR													
1	33	Arable	8	Sabli	302.60	34.36	37	Sabli	78	Sabli	1.34	0.3	Excluded Mahants & Others
							37	Sabli	83	Sabli	0.12	0.06	Chaman Mahanta & Others
							82	Sabli	48	Sabli	1.36	0.73	Subsequently
							82	Sabli	85	Sabli	1.15	0.95	Mahanta
							118	A.A.A	47	Patharbari	13.78	7.49	Govt.
							118	A.A.A	214	Patharbari	1.46	0.8	Govt.
							118	A.A.A	215	Patharbari	28.72	14.09	Govt.
2	33	Arable	8	Sabli	442.30	14.25	120	Nirman & Patharbari Dept.	114	Sabli	1.46	0.33	Nirman & Patharbari Dept.
							120		47	Sabli	2.4	0.4	
							118	A.A.A	216	Patharbari	19.2	8.89	Govt.
							118	A.A.A	303	Patharbari	0.18	0.08	Govt.
							118	A.A.A	304	Patharbari	0.57	0.25	Govt.
							118	A.A.A	259	Patharbari	2.2	20	Govt.
							118	A.A.A	260	Patharbari	1.5	0.18	Govt.
						118	A.A.A	258	Patharbari	14.1	1.85	Govt.	
		Total				58.61						58.61 Ac = 23,800 Ha	

Copy of Land schedule of this project is submitted to the Government of India.

Handwritten signature and stamp:
 10. 11. 2014
 District Collector, Jalnari
 District Office, Jalnari
 District Office, Jalnari
 District Office, Jalnari



Abstract of land involved in the Project (Salub Settlement)		Abstract of land involved in the Project (HAI Settlement)		Percentage
Sal Jungai	23.800	Govt. Non Forest land	22.740	95.55
		Hirman & Paribahan Dept	0.263	1.11
		Private Land	0.797	3.33
Total	23.800	Total	23.800	100.00

(Total a summary of land involved in 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/CR/MPH/66387/ 2021 in Parivesh web site is at Annexure -IV.

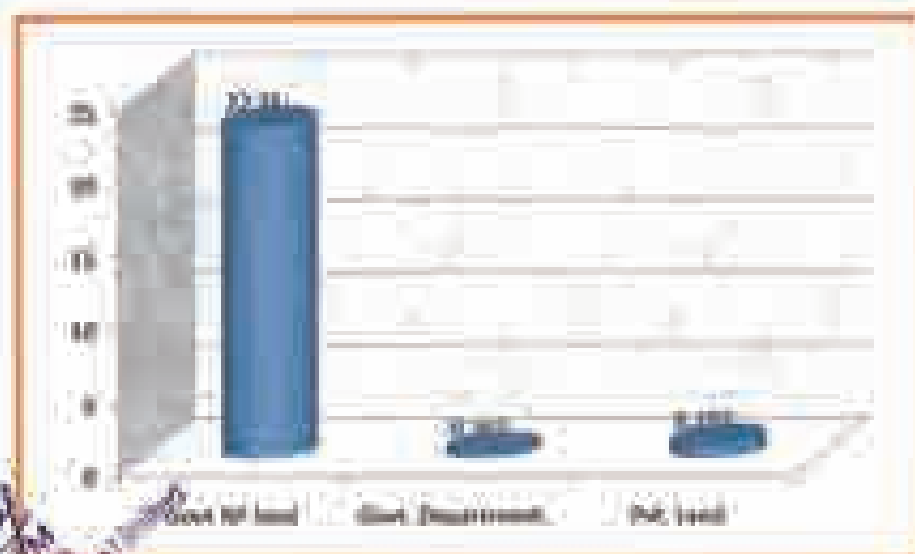
1.4 Nature & Land Involved in the Project:

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 HAI settlement record basing on which Lease deed has been executed is Non Forest land (Govt. Land - 22.740ha, Other Govt. Department: 0.263 ha and Private Land -0.797 ha).



M. Nathani
 Director
 Ministry of Environment
 Govt. of India
 New Delhi



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 (Sahib Kisan) 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/16453/2013 (State of Or. D12/2018). 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 5000 TPA vide 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 (HCRM) with maximum extraction of 0.438Mton cum / annum over all lease area 23.800ha vide online Application no SLA/OR/MIN/66287/2021 for which ToB has been issued (Annexure-I).


Mr. Mahesh Kumar
Agent of M/s
Karampadi Chromite Mine
Kalingapatia, Dist. Jajpur
Pin-755017



CHAPTER-II PROJECT & ITS IMPACT AREA



M. M. M. M.
Authorized Signatory
Agent of Mines
M/S. Forest Corporation Limited
Kathmandu, Nepal
P.O. Box 10000



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 S&B Records) and all Non Forest land as per Hal Settlement land records. It is a Mining Project situated at village Kalarangatta of Subinda Tahasil district Jagpur.

2.1 Location:

The project is located at Village Kalarangatta under Subinda Tahasil of district Jagpur. The Latitude & Longitude of this project is as follows.

Latitude $21^{\circ}01'00.57415''N$ to $21^{\circ}01'29.29437''N$

Longitude $85^{\circ}44'18.56168''E$ to $85^{\circ}44'38.02789''E$

The Mine finds place in Survey of India Top Sheet no F45N13 (73G/12)

The location map is at Plate No-1. The Mine is approachable from NH-200 Chandahat-Taticher National Highway from Mangalpur on Mangalpur-Tamka Road (DDR).

M. Anthony
Muthuman M
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Calcutta, Dist. Jagpur
Pin-751007



The Specific Wildlife Conservation Plan for Kalargutta Chocoolite Mine in Kalargutta under Gulbarga Taluk Dist. Agave by M/s. Easht Ltd.



M. Mallikarjun
Authorized Signatory
Agent of M/s.
M/s. Easht Limited
Karnataka
10/12/2017



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 2: Zone of Impact (sq. Kilometres)



2.2.1 Status of Overlapping Zone of Impact with other projects:

Sukinda Kalagani area along the Malanigiri DPF is the largest Chromite Ore deposit in Asia. The Chromite Ore Belt locally named as "Chromite Valley" accounts for about 38% 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.

M. M. Mishra
 Assistant
 Agent of Mines
 Sukinda Taluk, Jharsuguda District
 Odisha, India
 751003



Site Specific Wildlife Conservation Plan for Kalarangaitta Chromite Mine at Kalarangaitta under Subarea Tehsil dist. Jajpur by M/s Essar Ltd.

Sl No	Name of Mine	Name of Lessee	Ore	Remark
1	Kamarda Chromite Block	M/s Tata Steel Mining Ltd.	Chromite	Operative
2	Kallapara Chromite Mine	Balassore Alloys Ltd.	Chromite	Operative
3	Odupal Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
4	Kalarangaitta Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
5	Mahagiri mines Chromite	M/s IMFA Ltd.	Chromite	Operative
6	Talangi Chromite Mine	IDC of Odisha Ltd	Chromite	Operative
7	Chingulpal Chromite Mine	IMFA Ltd.	Chromite	Lapsed and handed over to Govt.
8	Sakinda Mines (Chromite)	IMFA Ltd	Chromite	Operative
9	Jindal Chromite Mine	Jindal Stainless Ltd.	Chromite	Non Operative
10	Saruatol Chromite Block	M/s Tata Steel Mining Ltd.	Chromite	Operative
11	South kallapari Chromite Mine	OMC Ltd.	Chromite	Operative
12	Kallapari Chromite Mine	OMC Ltd	Chromite	Operative
13	Sakrangl Chromite Mine	OMC Ltd	Chromite	Operative
14	Dattari Chromite Mine	OMC Ltd	Iron	Operative
15	Sakinda 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	Kahang Chromite Mines	OMC	Chromite	Non Operative
20	Chromite Mines in Mahagiri OPF	M/s Balassore alloys	Chromite	Non Operative
21	Belpatla Chromite Mines	OMC Ltd	Chromite	Non Operative

Table 4. Proposed mines in and near the study area

The relative location of other mines near to Kalarangaitta Chromite Mine is indicated in Plate-8.

M. Mithun
 Mithun
 Agent of Mines
 145, Ferro Alloy
 Kallapara
 P.O. Talangi



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 Bheramahal Division. The zone of impact and additional zone of impact considered is as follows.

M. Mithun
Mithun Mithun
Agent of Mine
M/s. Ferro Alloys Corporation Limited
Kharagpur, Dist. Jharkhand
Pin- 826001



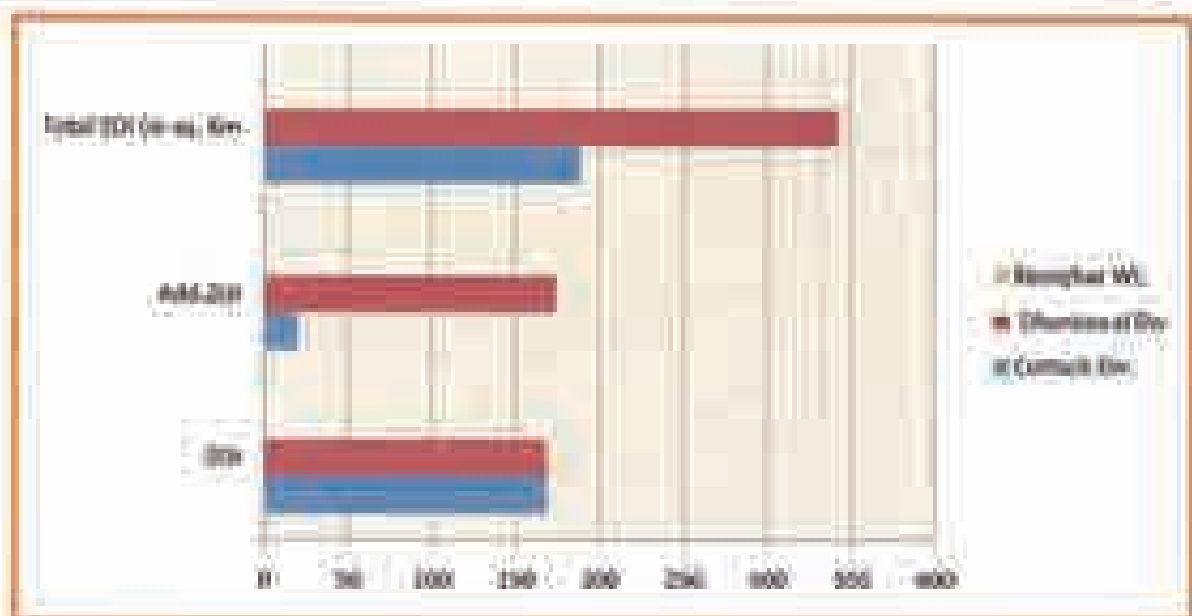
Site Specific Wildlife Conservation Plan for Kairangretta Chlorides Mine at Kairangretta under Jalapali Taluqd Dist. Jajpur by M/s. Factor Ltd



District / Division	ZOI in Sq. Km	Additional ZOI in Sq. Km	Total in Sq. Km	Percentage	% of Add. ZOI considered
Jajpur / Cuttack	168.74	10.7	168.44	35.45	11.67
Chambal / Ohankani	168.70	173.8	342.5	64.44	103.08
Keonjhar / Kandhar WL	0.56	0	0.56	0.11	0.00
Total	338.00	184.50	522.5	100.00	57.25

Table 4: Area of Additional ZOI in Sq. Km

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



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 (100m 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)	5.982	8.176	8.176	29.34
2	Storage of Top Soil	0	0	0	0.00
3	Over Burden / Dump	4.719	5.258	5.454	15.79
4	Mineral Storage	1.849	1.853	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	3.35

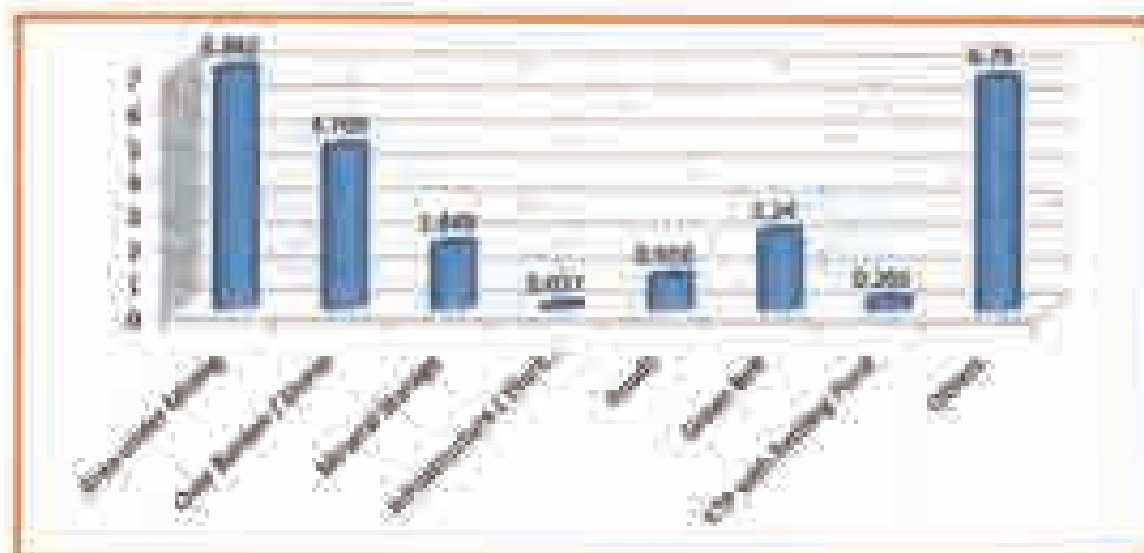
M. Muthuram
 Muthuram M
 Muthuram M
 Muthuram M



The Specific Wildlife Conservation Plan for Kharanggatta Chromite Mine in Kharanggatta under Subansiri Tehsil Dist. Japora by M/s. Feroz Ltd.

7	Railways	0	0	0	0.00
8	Green Belt	1,740	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	1.14
11	Mineral Separation Plant	0	0	0	0.00
12	Township Area	0	0	0	0.00
13	Others				0.00
14	Crane	0.303	0.302	0.302	1.37
15	Barrier	0.130	0.260	0.300	0.55
16	Perforated area	4.348	4.467	4.436	26.67
	Total	23.800	23.800	23.800	100.00

Table 2.1 Land Use pattern (Area in Hectare)



2.3.3 Zone of Impact (Buffer Zone):

The land use pattern of area coming within Zone of Impact has been analysed 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
	Districional	Japora	Kamruphat	
Barren/Forest land	98.379	11.820	0	155.149
Dense Forest	0.894	35.618	0.654	37.106
Open Forest	18.963	21.637	0.37	40.97
Forest Plant	0.343	0.255	0	0.497

M. Mithun
 Mithun M
 Agent of Forest
 M/s. Feroz Alloy Corporation Limited
 Dist. Japora
 780047



Site Specific Wildlife Conservation Plan for Kalarangatta Chrome Mine at Kalarangatta under Palakkad Taluk dist. Agumby M/s Pacer Ltd

Mining / Industry	0	14.173	0	14.173
Reservoir	0.036	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	5.535	0	12.134
Scrub dense	3.895	4.122	0	8.017
Scrub open	21.225	4.340	0	25.565
Barren / rocky / stony	0.889	0.206	0	1.095
Lake / ponds	1.158	0.528	0	1.736
River / stream	1.528	1.301		2.829
Total	168.7	168.273	1.024	338.0

Table 4 Land use pattern of Kalarangatta mine

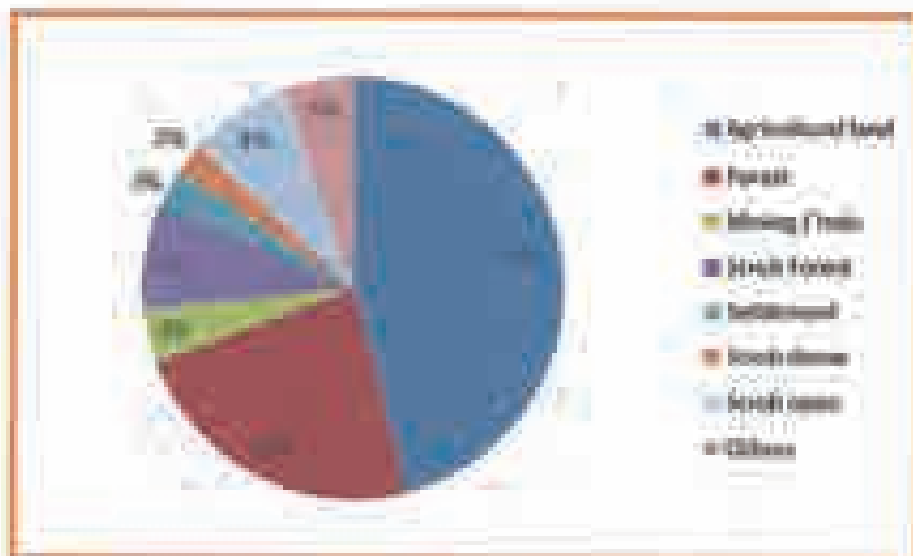
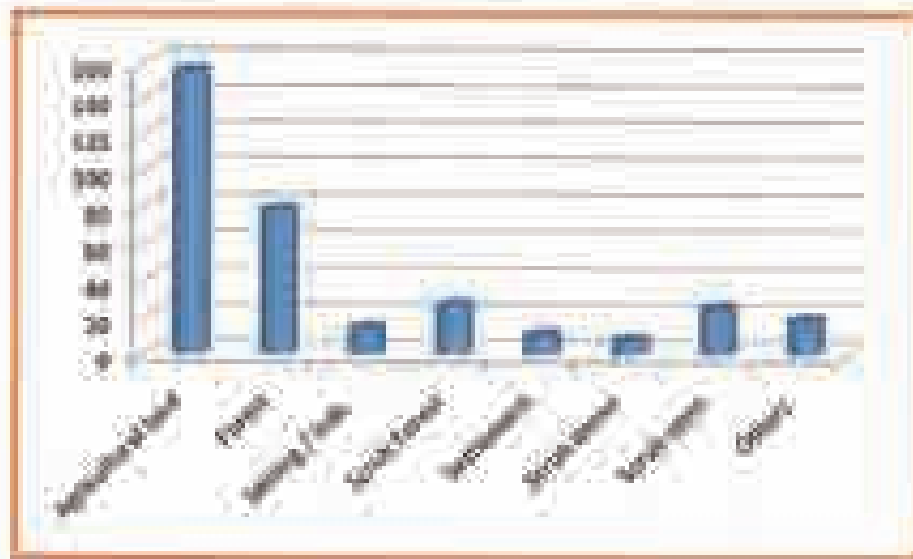
Broad land use (ZOI of Kalarangatta Mines)		
Land Use	Area in Sq. Km	Percentage
Agricultural land	155.199	45.9
Forest	28.573	23.2
Mining / Ind.	14.173	4.2
Scrub Forest	27.108	8.0
Settlement	10.513	3.1
Scrub dense	8.017	2.4
Scrub open	25.565	7.6
Others	18.903	5.6
Total	338.00	100.0

Table 5 Broad land use of Kalarangatta Mines

M. Mathuraj
 Project Director
 Agency of Wildlife
 M/s. Pacer Agumby Conservation Project
 Palakkad, Dist. Palakkad
 Pin: 626657



Site Specific Wildlife Conservation Plan for Kalarangatta Chocoolite Mine in Kalarangatta under Palamuru Tahsil Dist. Jangam by M/s. Esar Ltd.



M. Muthuraj
MUTHURAJ M
 Agent of Mines
 M/s. Ferro Alloy Corporation Limited
 Kalarangatta, Dist. Jangam
 Pin- 765047



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 Jorhat District and 29 villages in Dhekari District and no villages in Karimgar district) in the ZOI. The total population is 59,575 out of which ST population is 26523 (44.52%), SC population is 6139 (10.30%). The Male Female ratio is 955 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
Jorhat	24	6682	32607	16642	15965	1686	16619	17674
Dhekari	29	6060	26972	13671	13301	4473	9904	14986
Total	53	12742	59579	30313	29266	6159	26523	34660
	Percentage			50.88	49.12	10.30	44.52	58.17

Table 20 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	MAFG_WORK_P	NON_WORK_P
Jorhat	24	11837	7397	1383	1100	236	4420	4240	20670
Dhekari	29	11856	6203	1507	1304	251	3041	5403	15038
Total	53	23693	13600	2890	2404	487	7461	9643	35708
Percentage		100	58.07	12.24	11.29	2.06	32.12	41.18	60.00

Table 21. Summary of Occupational profile

M. M. Sharma
 Agent of M/s.
 M/s. Ferro Alloy Corporation Limited
 Kairangutta, Dist. Jorhat
 Pin- 781007



Site Specific Wildlife Conservation Plan for Kallangudi to Cheyenne Mine at Kallangutta under Palani Taluk Dist. Sign: by M/s. Parn Ltd

Total Population	59579									
Work Population	23593									
Non W_P	35986	<table><tr><td>Non W_P</td><td>35986</td></tr><tr><td>Work_P</td><td>23593</td></tr></table>	Non W_P	35986	Work_P	23593				
Non W_P	35986									
Work_P	23593									
Main W_P	13700									
Marginal W_P	9893	<table><tr><td>Marginal W_P</td><td>9893</td></tr><tr><td>Main W_P</td><td>13700</td></tr></table>	Marginal W_P	9893	Main W_P	13700				
Marginal W_P	9893									
Main W_P	13700									
Cultivators	2888									
Ag. Labour	2664									
Hit Work	487									
Other Trade	7663	<table><tr><td>Other Trade</td><td>7663</td></tr><tr><td>Hit Work</td><td>487</td></tr><tr><td>Ag. Labour</td><td>2664</td></tr><tr><td>Cultivators</td><td>2888</td></tr></table>	Other Trade	7663	Hit Work	487	Ag. Labour	2664	Cultivators	2888
Other Trade	7663									
Hit Work	487									
Ag. Labour	2664									
Cultivators	2888									

M. Muthumay
Muthumay M
 Agent of Mines
 M/s. Parn Alloys Corporation Limited
 Kallangudi, Dist- Palani
 Pin- 752447



2.5 Flora & Fauna:

2.5.1 (Flora) Core Zones:

Sr. No	Name of the Plant	Family	Local Name
Trees			
1	<i>Acacia auriculiformis</i>	Mimosaceae	Acacia / Sangham
2	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Bela
3	<i>Albizia procera</i> (Roxb.) Benth.	Mimosaceae	Shira
4	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	Chutana
5	<i>Anthocephalus kadamba</i>	Rubiaceae	Kadamba
6	<i>Artocarpus heterophylla</i> Lam.	Moraceae	Panas
7	<i>Azadirachta indica</i> A. Juss.	Melastomaceae	Nim
8	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Kanchana
9	<i>Dalbergia sissoo</i> L.f.	Fabaceae	Sissoo
10	<i>Delonix regia</i>	Caesalpiniaceae	Krushna choda
11	<i>Flacourtia rukmivandha</i> (Buch.-Ham.) Wall. Ex G. Don	Apocynaceae	Kurei
12	<i>Lagerströmia parviflora</i> Roxb.	Cytinaceae	Sidra
13	<i>Mangifera indica</i> L.	Anacardiaceae	Amra
14	<i>Melia azadirachta</i> L.	Melastomaceae	Mahamudha
15	<i>Michelia champaca</i> L.	Magnoliaceae	Champa
16	<i>Mimosa pudica</i> L.	Sapindaceae	Bulu
17	<i>Nyctanthes arborescens</i> L.	Nyctanthaceae	Gangasuli
18	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Amra
19	<i>Polyalthia longifolia</i>	Anacardiaceae	Dobadaru
20	<i>Psidium pinnata</i> (L.) Pierre	Fabaceae	Baranji
21	<i>Syzygium cumini</i> (L.) Merr.	Myrtaceae	Jamun
22	<i>Terminalia hainanica</i> (Gaertn.) Roxb.	Combretaceae	Sahada
23	<i>Trenea orientalis</i>	Camellaceae	Kurka
24	<i>Ziziphus maurandia</i> (Roxb.) Willd.	Rhamnaceae	Bambhal
Herbs			
1	<i>Achyranthes aspera</i> L.	Amaranthaceae	Agamanga
2	<i>Agrostis purpurascens</i> L.	Asteraceae	Pokamanga
3	<i>Cassia tora</i>	Caesalpiniaceae	Sara chanda
4	<i>Cleome viscaria</i> L.	Cecardiaceae	Sara torish
5	<i>Euphorbia hirta</i> (Lour.) Pers. Var. <i>madagascariensis</i> (Kong/Bennet & Rostk)	Lamiaceae	Saviraga

M. M. M. M.
 M/s. Pooja Ltd.
 Agent of M/s.
 Kaimangatta Choolu Mire
 Taluk of Tumkur Dist.
 Pooja Ltd.



Site Specific Wildlife Conservation Plan for Kaliranggatta Chiverna Mm at Kaliranggatta under Talawala Talawala dist. Admin by M/s Forest Ltd

6	<i>Colinus edum Sims</i>	Amniotus	Sree-tulsi
7	<i>Oenanthe corymbosa L.</i>	Rubiaceae	Chirapulla
Shrubs			
1	<i>Cerodendrum viscosum Vahl.</i>	Verbenaceae	Nagari
2	<i>Datura metel L.</i>	Solanaceae	Dudura
3	<i>Heliotropis jaya L.</i>	Scrophulariaceae	Modimodica
4	<i>Hibiscus rosa-sinensis L.</i>	Malvaceae	Mandara
5	<i>Lantana camara L.</i>	Verbenaceae	Nagari
6	<i>Vitex nigunda</i>	Verbenaceae	Begunia
7	<i>Woodfordia fruticosa (L.) Kurz.</i>	Lythraceae	Chusali
Climbers			
1	<i>Ayilone cordataoides (L.) Benth.</i>	Fabaceae	Santholathia
2	<i>Rutea parviflora Roxb.</i>	Fabaceae	Lata palai
3	<i>Oxycoccus wallichii Hook f.</i>	Dioscoreaceae	Pila ala
4	<i>Syntherisma laticarpa L.</i>	Syntherisma	Makur
5	<i>Tinospora cordifolia (Willd.) Miers ex Hook f. & Thoms.</i>	Menispermaceae	Colucha
Grasses			
1	<i>Pennisetum polystachyon</i>	Poaceae	Senna
2	<i>Chrysopogon aciculatus (Retz.) Trin.</i>	Poaceae	Copuchin
3	<i>Cynusa indica (L.) Gaertn.</i>	Poaceae	Chasa
4	<i>Eragrostis ciliaris (L.) A. Br.</i>	Poaceae	Chasa
5	<i>Pennisetum pedicellatum</i>	Poaceae	Onamath grass
6	<i>Saccharum spontaneum</i>	Poaceae	Kasalandi

Annex A.2 - Site Specific Data

M. S. S. S. S. S.
 M/s Forest Ltd
 Agents of Wildlife Conservation
 Kaliranggatta Talawala Dist. Admin
 Talawala Talawala
 Talawala Talawala



1.5.2 (Flora) Zone of Impact (Buffer Zone):

Sl. No	Name of the Plant	Family	Local Name
Trees			
1	<i>Acacia leucophloea</i> (Roxb.) Willd	Mimosaceae	Gahra
2	<i>Acacia nilotica</i> (L.) DeWile	Mimosaceae	Sabool
3	<i>Acacia senegal</i> (L.) Willd	Mimosaceae	Acacia / Sonchuan
4	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Bata
5	<i>Ailanthus verticillata</i> Roxb.	Simarubaceae	Malala
6	<i>Albizia scholarii</i> (L.) J.Wang	Leguminosae	Arbuda
7	<i>Albizia procera</i> (Roxb.) Barth	Mimosaceae	Situa
8	<i>Albizia scholarii</i> (L.) J.Wang	Leguminosae	Charana
9	<i>Amorpha canescens</i> L.	Leguminosae	Eup
10	<i>Amorpha canescens</i> L.	Leguminosae	Ata
11	<i>Anthocephalus kadamba</i>	Rubiaceae	Kadamba
12	<i>Artocarpus heterophylla</i> Lam.	Moraceae	Panas
13	<i>Artocarpus lacucha</i> A. Juss.	Moraceae	Hina
14	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Kanchana
15	<i>Bombax ceiba</i> L.	Bombacaceae	Siril
16	<i>Bursera flabellifera</i> L.	Anacardiaceae	Tala
17	<i>Bursera flabellifera</i> (L.) Spreng.	Euphorbiaceae	Kali
18	<i>Bursera flabellifera</i> (L.) Spreng.	Anacardiaceae	Chana
19	<i>Butea monosperma</i> (Lam.) Trish	Fabaceae	Palasa
20	<i>Carya marmorata</i> Roxb.	Lecythidaceae	Kumbhi
21	<i>Cassia alata</i>	Caesalpiniaceae	Sana chakunda
22	<i>Cassia fistula</i> L.	Caesalpiniaceae	Sonali
23	<i>Celastrus paniculatus</i>	Malvaceae	American Smell
24	<i>Chloroxylon swietenia</i> DC.	Flindersiaceae	Blaru
25	<i>Clitanthus collinus</i> (Roxb.) Barth. Ex Hook	Euphorbiaceae	Karada
26	<i>Cocos nucifera</i>	Arecaceae	Nadla
27	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Siroo
28	<i>Dillenia pentagyna</i> Roxb.	Dilleniaceae	Qu
29	<i>Diospyros malabarica</i> (Desf.) Kostel	Ebenaceae	Kenda
30	<i>Diospyros malabarica</i> Roxb.	Ebenaceae	Malabara Kenda
31	<i>Erythrina variegata</i>	Fabaceae	Tuladina
32	<i>Eucalyptus citridora</i>	Myrtaceae	Eucalyptus

M. P. Pacer
 M/s. Pacer
 Talukoda Taluk
 Dist. Jajnur
 Pin - 585417



Site Specific Wildlife Conservation Plan for Kairangatta Choomu Mutt at Kairangatta under Talukda Talasikott dist. Inset by M/s Pooor Ltd

33	<i>Ficus benghalensis</i> L.	Moraceae	Bana
34	<i>Ficus religiosa</i> L.	Moraceae	Oshin
35	<i>Ficus religiosa</i> L.	Moraceae	Oota
36	<i>Flacourtia indica</i> (Blum.) J. Merr.	Flacourtiaceae	
37	<i>Gardenia pumilifera</i> L.f.	Rubiaceae	Shuruba
38	<i>Gmelina arborea</i> Roxb.	Verbenaceae	Sambhan
39	<i>Haldina cordifolia</i> (Roxb.) Ridgdale	Rubiaceae	Kuruma
40	<i>Lagerstroemia parviflora</i> Roxb.	Lythraceae	Saha
41	<i>Limneria acidissima</i> L.	Rutaceae	Kaitha
42	<i>Melastoma longifolia</i> (Roxb.) Macbr. var. <i>latifolia</i> (Roxb.) A.Cheval	Lamiaceae	Mahua
43	<i>Melastoma philippensis</i> D. J. Atwell & J. G. Ag.	Euphorbiaceae	Dukuma
44	<i>Mangifera indica</i> L.	Anacardiaceae	Anba
45	<i>Melia azadirachta</i> L.	Meliaceae	Mahanurba
46	<i>Michelia champaca</i> L.	Magnoliaceae	Champa
47	<i>Mimusops elengi</i> L.	Sapotaceae	Bala
48	<i>Nyctanthes arborescens</i> L.	Asteraceae	Gangasul
49	<i>Oroxylum indicum</i> (L.) Kunt.	Bignoniaceae	Phanaphana
50	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Anba
51	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	Taranga
52	<i>Poliothia longifolia</i>	Anacardiaceae	Dehliharu
53	<i>Pternispermum acerifolium</i>	Alsiaceae	Muchukunda
54	<i>Schleichera alba</i> (Lam.) Oerf.	Sauriaceae	Banma
55	<i>Semecarpus prostratum</i> L.	Anacardiaceae	Bhalla
56	<i>Shorea robusta</i> Goertn.	Dipterocarpaceae	Sol
57	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Genduli
58	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Jamun
59	<i>Tamarindus indica</i>	Fabaceae	Tamuli
60	<i>Tectona grandis</i>	Verbenaceae	Sagun
61	<i>Terminalia alata</i> Heyne ex Roxb.	Combretaceae	Asana
62	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Combretaceae	Arjuna
63	<i>Terminalia bellica</i> (Goertn.) Roxb.	Combretaceae	Sahada
64	<i>Terminalia catappa</i> L.	Combretaceae	Desi badam
65	<i>Terminalia chebula</i> Retz.	Combretaceae	Kurita
66	<i>Trema orientalis</i>	Cannabaceae	Kharas
67	<i>Ziziphus jujuba</i> (Retz.) Willd.	Rhamnaceae	Barkoti

M. S. Muthuram
 Authorised by
 Agent of Mines
 M/s. Karmasana Corporation Limited
 Bangalore, Dist. Bangalore
 Pin: 755047



Site Specific Wildlife Conservation Plan for Kallangatta Openpit Mine at Kallangatta under Subada Taluk dist. Japur by MFL India Ltd.

Herbs			
1	<i>Adiantum nudum</i> (L.) Mett.	Melastomaceae	Bambashundi
2	<i>Acalypha indica</i> L.	Euphorbiaceae	Indramala
3	<i>Alternanthera versata</i> (L.) A.Br.	Amaranthaceae	Madanga zaga
4	<i>Achyrocline saturei</i> L.	Amaranthaceae	Apamiranga
5	<i>Aerva lanata</i> (L.) J.Sm. Ex Schum.	Amaranthaceae	Torania
6	<i>Ageratum conyzoides</i> L.	Asteraceae	Pokananga
7	<i>Achras indica</i> L.	Anacardiaceae	
8	<i>Amaranthus spinosus</i>	Amaranthaceae	Canta lanta
9	<i>Andropogon paniculatus</i> (Burm.) J. Wod.	Acridaceae	Shua neem
10	<i>Argemone mexicana</i> L.	Papaveraceae	Agara
11	<i>Boreria cristata</i> L.	Acridaceae	Garimunda
12	<i>Borhavia diffusa</i> L.	Nyctaginaceae	Purva
13	<i>Cassia siamea</i> (L.) Urban	Faboaceae	Thakuli
14	<i>Chrysopsis aculeatus</i> (Retz.) Trin.	Poaceae	Gugula
15	<i>Cleome viscaria</i> L.	Capparidaceae	Rana sonshi
16	<i>Colocasia esculenta</i> (L.) Schott	Araceae	Banana
17	<i>Commelina benghalensis</i> L.	Commelinaceae	Kanari
18	<i>Crotalaria speciosa</i> (Koenig) Sm.	Leguminosae	Rau
19	<i>Crotalaria pallida</i> Heyne ex Roth	Faboaceae	
20	<i>Cucumis melo</i> (L.) Choisy	Cucurbitaceae	Bamhaladi
21	<i>Cyperus rotundus</i> L.	Cyperaceae	Mutha
22	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	Munganga
23	<i>Elettaria scabra</i> L.	Asteraceae	Mayachuli
24	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Ghata
25	<i>Euphorbia cyparissia</i> (L.) A.Br.	Poaceae	Ghata
26	<i>Euterpe edulis</i> (L.) Pers. var. <i>rostrata</i> (Romb.) Bonnet & Rostk	Liliaceae	Inerajata
27	<i>Ficus religiosa</i> (L.) L.	Convolvulaceae	Sydnati
28	<i>Ficus religiosa</i> (L.) L.	Convolvulaceae	Bhambha
29	<i>Gilia oppositifolia</i> (L.) A. DC.	Malvaceae	Pitanga
30	<i>Gynandropsis pyramidalis</i>	Convolvulaceae	Kolika
31	<i>Ipomoea glauca</i> Roth.	Convolvulaceae	
32	<i>Ischaemum polystachyon</i> (L.) Link	Poaceae	Gyala
33	<i>Mimosa pudica</i>	Mimosaceae	Lajali

M. Muthuraj
Muthuraj M
Agent of Mines
Kallangatta Taluk Japur
Pin - 635002



Site Specific Wildlife Conservation Plan for Kallangatta Open-cast Mine at Kallangatta under Subinda Tehsil dist. Bagalur by NW's Forest Dept.

34	<i>Ocimum americanum</i> L.	Lamiaceae	Banabulasi
35	<i>Ocimum sanctum</i> Linn.	Lamiaceae	Sree tulasi
36	<i>Oldenlandia corymbosa</i> L.	Rubiaceae	Gharapodi
37	<i>Orthosiphon rubicundus</i> (D.Don) Benth.	Lamiaceae	
38	<i>Oxalis corniculata</i> L.	Oxalidaceae	Ambili
39	<i>Phyllanthus amarus</i> Schum. & Thonn.	Euphorbiaceae	Badi anala
40	<i>Phyllanthus wrightii</i> L.	Euphorbiaceae	Badi anala
41	<i>Phyllanthus virgatus</i> Forst. F.	Euphorbiaceae	Badi anala
42	<i>Rousselia tetraphylla</i>	Apocynaceae	Patalagurda
43	<i>Rungia pectinata</i> (L.) Nees	Asteraceae	Sankhanga
44	<i>Scorpiaria dulcis</i> L.	Scrophulariaceae	Badjuttinadhu
45	<i>Sida acuta</i> Ruess f.	Malvaceae	Raj amili
46	<i>Sida cordata</i> (Benth.) J. Boscum	Malvaceae	Belmanahatta
47	<i>Solanum virginianum</i> L.	Solanaceae	Ankaranti
48	<i>Sphaeranthus indicus</i>	Rubiaceae	Bhuan Kadamba
49	<i>Tridax procumbens</i> L.	Asteraceae	Bhaskaram
50	<i>Uraria lipopodioides</i> (L.) Pers. ex. DC.	Fabaceae	Krushanaprami
51	<i>Vanda tessellata</i> (Roxb.) Hook	Orchidaceae	Benu
52	<i>Veronica ruscifolia</i> (L.) Nash	Veronica	Benu
53	<i>Zingiber sp.</i>	Zingiberaceae	Bimada
Shrub			
1	<i>Agave americana</i>	Agavaceae	Murga
2	<i>Colotropis gigantea</i> (L.) R. Br.	Asclepiadaceae	Arilla
3	<i>Clerodendrum viscosum</i> Vahl	Verbenaceae	Nagar
4	<i>Clerodendrum serratum</i> (L.) Moen	Verbenaceae	Sankhanga
5	<i>Datura metel</i> L.	Solanaceae	Ondura
6	<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	Salapuri
7	<i>Desmodium pulchellum</i> (L.) Benth.	Fabaceae	Mangari
8	<i>Euphorbia heliophylla</i> Desf. non L.	Euphorbiaceae	Tikon raju
9	<i>Florimonia choppat</i> Buch. Ham.	Fabaceae	Baninathi
10	<i>Helicteres isora</i> L.	Sterculiaceae	Modmodica
11	<i>Millettia coccinea</i>	Millettaceae	Mandara
12	<i>Passiflora cornea</i> Jacq.	Passifloraceae	Anmal
13	<i>Scaevola gracillifolia</i> L.	Euphorbiaceae	Kallangatta
14	<i>Justicia adhaerens</i>	Acanthaceae	Besinga

(Signature)
 Agent of Reserve
 Kallangatta Open-cast Mine
 District, Bagalur
 PIN-562247



Site Specific Wildlife Conservation Plan for Kaimangatta Chinnar Allot at Kaimangatta under Subanta Taluk of the Taluk of Mysore Dist.

15	<i>Lantana camara</i> L.	Verbenaceae	Nagaki
16	<i>Lavandula stoechas</i> L.	Lynthaceae	Marquai
17	<i>Nerium oleander</i>	Apocynaceae	Kantiar
18	<i>Opuntia stricta</i> (Horn.)	Cactaceae	Nagaphani
19	<i>Pavetta tomentosa</i> Roob. Ex. Sm.	Rubiaceae	Kalundanti
20	<i>Phoenix attalla</i> Roob. Ex. Buch-Horn.	Arecaceae	Khapur
21	<i>Phyllanthus reticulatus</i> Poit.	Euphorbiaceae	Kajinga
22	<i>Ricinus communis</i>	Euphorbiaceae	Goca
23	<i>Vitex agardii</i>	Verbenaceae	Begonia
24	<i>Woodfordia fruticosa</i> (L.) Kurz	Lynthaceae	Dharaki
25	<i>Euphorbia corollata</i> (L.) Mill.	Rhamnaceae	Barbati
Cluster			
1	<i>Abrus precatorius</i>	Fabaceae	Kancha
2	<i>Aristolochia indica</i>	Aristolochiaceae	Purani
3	<i>Asparagus racematos</i> Willd.	Liliaceae	Satavari
4	<i>Azadirachta indica</i> (L.) Ait.	Moraceae	Saundharph
5	<i>Bauhinia vahlii</i> Wight & Arn.	Caesalpiniaceae	Sali
6	<i>Butea parviflora</i> Roob.	Fabaceae	Una pati
7	<i>Clitoria ternatea</i> L.	Fabaceae	Apurva
8	<i>Centropus bicus</i> (L.) Roob.	Centropiaceae	Gila
9	<i>Celastrus paniculata</i> Willd.	Celastraceae	Purva
10	<i>Cissampelos parira</i> L.	Asteraceae	Alakshadi
11	<i>Citrus grandis</i> L.	Vitaceae	Madaga
12	<i>Cleistanthus albus</i>	Verbenaceae	Danti
13	<i>Cucurbita maxima</i> (L.) Roob.	Cucurbitaceae	Nimbi
14	<i>Cryptantha buchanaani</i> Horn. & Schultes	Fernaceae	Gopalantha
15	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	Pita ali
16	<i>Dioscorea pentaphylla</i> L.	Dioscoreaceae	Ali ali
17	<i>Dioscorea wallichii</i> Hook. f.	Dioscoreaceae	Pita ali
18	<i>Hemibalanus indicus</i> (L.) R. & S.	Empidaceae	Anantamudi
19	<i>Ipomoea hederifolia</i> L.	Convolvulaceae	Scarlet morning glory
20	<i>Jasminum arborescens</i> Roob.	Oleaceae	Banemali
21	<i>Luffa acutangula</i> (L.) Roob var. amara	Cucurbitaceae	Pitavada
22	<i>Morone peruviana</i>	Fabaceae	Kanti
23	<i>Pergularia daemia</i> (Forst.) Chom.	Asclepiadaceae	Uttali

Signature
 Asst. Secy
 Wildlife Conservation
 Mysore Dist. Taluk
 Mysore



Site Specific Wildlife Conservation Plan for Kalirangalla Divisional Mammal Sanctuary
under Wildlife Conservation Act, 1938 by M/V Team Ltd

24	<i>Scladopus officinalis</i> (Roos.) Schott	Artocaceae	Gampola
25	<i>Smilax aspera</i> L.	Smilacaceae	Muneri
26	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. f. & Thoms.	Aristolochiaceae	Galluwa
27	<i>Trogon indicus</i> L.	Euphorbiaceae	Richuwa
28	<i>Cyathocarpus indica</i> (Thunb.) Merc.	Asclepiadaceae	Anantamoddi
Grass			
1	<i>Bambusa nana</i>	Poaceae	Gurra
2	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Qua
3	<i>Chrysopogon aculeatus</i> (Retz.) Trin.	Poaceae	Gugutha
4	<i>Cyperus rotundus</i>	Poaceae	Mutha
5	<i>Dendrocalamus strictus</i>	Poaceae	Sala Gama
6	<i>Elaeone indica</i> (L.) Gaertn.	Poaceae	Ghara(Kodua)
7	<i>Eragrostis ciliaris</i> (L.) R.Br.	Poaceae	Ghara
8	<i>Pennisetum pedicellatum</i>	Poaceae	Dhanathi grass
9	<i>Saccharum muria</i>	Poaceae	Shen
10	<i>Saccharum spontaneum</i>	Poaceae	Katandu
11	<i>Veronica plumicola</i> (L.) Nash	Poaceae	Sena
Ferns			
1	<i>Adiantum filix femina</i>	Polypodiaceae	Fern common
2	<i>Adiantum insigne</i> Forst.	Adiantaceae	-
3	<i>Adiantum philippense</i> L.	Adiantaceae	-
4	<i>Dryopteris sp.</i>	Dryopteridaceae	-
5	<i>Lygodium flexuosum</i> (L.) Sw.	Lygodaceae	Indrapul
6	<i>Marsilea murata</i> L.	Marsiliaceae	Somunila
7	<i>Selaginella sp.</i>	Selaginellaceae	Sampadu

Table 2.1 Ferns (Major ones)

M. M. M. M. M.
Muthuranga
Agent of M/V
M/V Team (Conservation Unit)
Kalamangudi, Dist. Jaffna
P.O. 26000



Site Specific Wildlife Conservation Plan for Kalungula Openpit Mine at Kalungula under Sakindri Tahsil dist. Jajpur by M/s. Feroz Ltd.

24	<i>Schinus molle</i> (Roxb.) Schott	Anacardiaceae	Gajapipali
25	<i>Sesuvium portulacastrum</i> L.	Sesuviumaceae	Mutha
26	<i>Tinospora cordifolia</i> (Willd.) Merr. ex Hook. f. & Thoms	Menispermaceae	Guluch
27	<i>Tragia involucrata</i> L.	Euphorbiaceae	Bichhuati
28	<i>Tyloschistia indica</i> (Burton f.) Merr	Asclepiadaceae	Anantamool
Grass			
1	<i>Bambusa nuda</i>	Poaceae	Bamusa
2	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Daba
3	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Poaceae	Guguchia
4	<i>Cyperus rotundus</i>	Poaceae	Mutha
5	<i>Dendrocalamus strictus</i>	Poaceae	Sala Bamusa
6	<i>Echinochloa indica</i> (L.) Gaertn.	Poaceae	Ghara(Kodua)
7	<i>Eragrostis ciliaris</i> (L.) R. & Br.	Poaceae	Ghara
8	<i>Pennisetum polycellatum</i>	Poaceae	Dhanath grass
9	<i>Saccharum muria</i>	Poaceae	(Thari)
10	<i>Saccharum spontaneum</i>	Poaceae	Kasalandi
11	<i>Vetiveria zizanioides</i> (L.) Nash.	Poaceae	Bina
Ferns			
1	<i>Adiantum filix femina</i>	Polypodiaceae	Fern common
2	<i>Adiantum incisum</i> Forst.	Adiantaceae	—
3	<i>Adiantum philippense</i> L.	Adiantaceae	—
4	<i>Dryopteris</i> sp.	Dryopteridaceae	—
5	<i>Lygodium flexuosum</i> (L.) Sw.	Lygodaceae	(udhaji)
6	<i>Marsilea thunbergii</i> L.	Marsiliaceae	Santuria
7	<i>Selaginella</i> sp.	Selaginellaceae	Sargibani

(Annex II) (Part II) (Page 20/21)

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 Agents of Mines
 Kalungula, Dist. Jajpur
 Pin- 755047



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 Mouse	<i>Mus musculus</i>	Sch. V
Birds			
1.	Cattle Egret	<i>Ardeotis ibis</i>	Sch. IV
2.	Common Crow	<i>Corvus brachyrhynchos</i>	Sch. V
3.	Common Pheasant Joke	<i>Mitroanigrans</i>	—
4.	Drongo	<i>Dicrurus adsimilis</i>	Sch. IV
5.	Grey Partridge	<i>Francolinus pondicerinus</i>	Sch. IV
6.	Owl	<i>Strix Species</i>	Sch. IV
Reptiles			
1.	Bronze-back Tree snake	<i>Dendrophiis trilinea</i>	Sch. IV
2.	Buff-striped Keel back	<i>Amphisinop strobilatum</i>	Sch. IV
3.	Chin	<i>Bungarus caeruleus</i>	—
4.	Common Indian Rat Snake	<i>Ptyas mucronatus</i>	Sch. II (Part-2)
5.	Eastern Bronze Slink	<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 ornata</i>	—

(Appendix 14 Fauna (Core Zone))

M. M. M. M. M.
 Agent of Forest
 M/s. Forest Agency, Conservation Forest
 Chikmagalur, Dist. Chikmagalur
 Pin- 576247



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. V
4	Common Palm Civet	<i>Paradoxurus hermaphrodita</i>	Sch. II
5	Five-striped Palm Squirrel	<i>Funambulus pennanti</i>	Sch. IV
6	Hyena	<i>Hyena hyena</i>	Sch. II
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 sylvaticus</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>Pardus pardus</i>	Sch. I
16	Little Indian Field Mouse	<i>Mus booduga</i>	Sch. V
17	Moose Deer	<i>Moschus moschiferus</i>	Sch. I
18	Ratel or Honey Badger	<i>Mellivora indica</i>	Sch. I
19	Rhesus Monkey	<i>Macaca mulatta</i>	Sch. II
20	Sloth Bear	<i>Ursus ursinus</i>	Sch. I
21	Wild Boar	<i>Sus scrofa</i>	Sch. III
Birds			
1	Alexandrine Parakeet	<i>Psittacula eupatoria</i>	Sch. IV
2	Ashy-browed Sparrow-lark	<i>Oreophelia grisea</i>	Sch. IV
3	Asian Eel	<i>Eudynamis scolopacea</i>	Sch. IV
4	Asian Open bill	<i>Anastomus osculator</i>	Sch. IV
5	Asian Palm Swift	<i>Cypripus palmarum</i>	Sch. IV
6	Black Drongo	<i>Dicrurus macrochrous</i>	Sch. IV
7	Black Eel	<i>Muraena nigra</i>	Sch. IV
8	Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	Sch. IV
9	Black-headed Oriole	<i>Oriolus chinensis</i>	Sch. IV
10	Black-shouldered Kite	<i>Elaenia melanoleuca</i>	Sch. IV
11	Blue Rock Pigeon	<i>Columba livia</i>	Sch. IV

M. M. Choudhary
 Managing Director
 M/s. Ecoor Ltd.
 10/10, 1st Floor, 1st Cross, 1st Stage,
 1st Cross, 1st Stage, 1st Cross, 1st Stage,
 1st Cross, 1st Stage, 1st Cross, 1st Stage



Site Specific Wildlife Conservation Plan for Kalirangutta Chromite Mine at Kalirangutta under Sakinaka Taluq dist. Jagpur by M/s Ferro Ltd.

12	Blue-tailed Bee-eater	<i>Merops philippinus</i>	Sch. IV
13	Brahmany Myra	<i>Sturnus pagodiarum</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 seymouxi</i>	Sch. IV
17	Cattle Egret	<i>Ardeotis 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 ethiops</i>	Sch. IV
22	Common Myna	<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>Heterocoryx varius</i>	Sch. IV
31	Indian Jungle Nightjar	<i>Caprimulgus indicus</i>	Sch. IV
32	Indian Roller	<i>Corvus benghalensis</i>	Sch. IV
33	Jungle Babbler		Sch. IV
34	Jungle Bush Quail		Sch. IV
35	Jungle Crow	<i>C. monstrosus</i>	Sch. IV
36	Jungle Myra	<i>Acridotheres fuscus</i>	Sch. IV
37	Large Cuckoo Shrike	<i>Corocina macul</i>	Sch. IV
38	Laughing Dove	<i>Streptopelia senegalensis</i>	Sch. IV
39	Lesser Golden-backed Woodpecker	<i>Dinopium bimphalense</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

M. S. Kulkarni
 M. S. Kulkarni
 Director of Mining
 M/s. Ferro Alloy Corporation Limited
 Kalirangutta, Dist. Jagpur
 Pin- 751001



Site Specific Wildlife Conservation Plan for Katarangatta Group of Mills at Katarangatta under Sukinda Taluk dist. Jagpur by M/s Ferro Ltd.

47	Red fowl	<i>Pavo cristatus</i>	Sch. I
48	Pied Crested Cuckoo	<i>Cuculor pectoratus</i>	Sch. IV
49	Pied Starling	<i>Sturnus contra</i>	Sch. IV
50	Palm-headed Parakeet	<i>Ptilinopus 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>Vanelia indicus</i>	Sch. IV
55	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	Sch. IV
56	Rose-ringed Parakeet	<i>Ptilinopus krameri</i>	Sch. IV
57	Rufous Tree pie	<i>Dendrocitta vagabunda</i>	Sch. IV
58	Scarlet Minivet	<i>Pericrocotus flammeus</i>	Sch. IV
59	Shrike	<i>Acridother tristis</i>	Sch. IV
60	Small Bee-eater	<i>Megascops 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 sordidus</i>	Sch. IV
64	White-breasted Kingfisher	<i>Haliastur intermedius</i>	Sch. IV
65	White-bellied Drongo	<i>Dicranus cornutus</i>	Sch. IV
66	White-breasted Waterhen	<i>Amuramit phoeniceus</i>	Sch. IV
67	White-eyed Buzzard	<i>Buteo hoes</i>	Sch. IV
68	Yellow-legged Button Quail	<i>Turnix tanki</i>	Sch. IV
69	Yellow-legged Green Pigeon	<i>Trochophanes</i>	Sch. IV
Reptiles			
1	Asian House Gecko	<i>Hemidactylus frenatus</i>	—
2	Bark Gecko	<i>Hemidactylus lescagei</i>	—
3	Bengal Monitor Lizard	<i>Varanus bengalensis</i>	Sch. I
4	Bhaskara Cobra	<i>Naja naja</i>	Sch. II (Part-2)
5	Brahminy Snake	<i>Rhynchophis brahmin</i>	Sch. IV
6	Brown back Tree snake	<i>Dendrolaphis trita</i>	Sch. IV
7	Buff-striped Keel back	<i>Amphisoma stellerum</i>	Sch. IV
8	Checkered Keel back	<i>Xenochrophis nasutus</i>	Sch. II (Part-2)
9	Common Brahminy Snake	<i>Eutropis carinata</i>	—
10	Common Garden Lizard	<i>Calotes versicolor</i>	—
11	Common Indian Rat Snake	<i>Ptyas mucron</i>	Sch. II (Part-2)

M. Muthuraj
 Authorized M
 Agent of M/s
 M/s Ferro Alloy Corporation Limited
 Katarangatta, Dist. Jagpur
 Pin- 755004



Site Specific Wildlife Conservation Plan for Kalarangutta Chromite Mine at Kalarangutta under Sukinda Tehsil dist. Jajpur by M/s Fecor Ltd.

12	Common Wolf Snake	<i>Lycodon subitax</i>	Sch. IV
13	Eastern Brown Skink	<i>Eutropis macularia</i>	—
14	Fan-throated Lizard	<i>Stenopodisma</i>	—
15	Indian Gamma/ Common Cat Snake	<i>Boliga trigonata</i>	Sch. IV
16	Indian Rock Agama	<i>Phamphosyllus blanfordianus</i>	—
17	Python	<i>Python molurus</i>	Sch. I
18	Russell's Viper	<i>Daboia russelli</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>Rhio 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 ornata</i>	—
7	Paddy-field Frog	<i>Rana limnoderis</i>	Sch. IV
8	Fainted Bandon Frog	<i>Kelutia raprobantia</i>	—
Fishes			
1	American fish	<i>Cyprinus carpio (Linnaeus)</i>	Cyprinidae
2	Bala	<i>Wallago ata</i>	Siluridae
3	Bura	<i>Osteobrama catla catla (Hamilton)</i>	Cyprinidae
4	Bhukur	<i>Catla carlo</i>	Cyprinidae
5	Chandi	<i>Clarias batracus (Linnaeus)</i>	Cyprinidae
6	Chang	<i>Anabas testudineus (Bloch)</i>	Channidae
7	Kalbura	<i>Puntius sophor (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>	Channidae
11	Mrigal	<i>Cirrhinus mrigala (Hamilton)</i>	Cyprinidae
12	Punti	<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>	Heteropneustidae

Total of 1000 (Eighty one)

M. H. D. Singh
 Authorised Signatory
 Fecor Ltd.
 Kalarangutta
 Jajpur Dist.
 Odisha



Site Specific Wildlife Conservation Plan for Kalangijetta Chromite Mine at Kalangijetta under Subsidy Tatweer dist. Jaisalmer by M/s Feroz Ltd.

12	Common Wolf Snake	<i>Lycodon aulicus</i>	Sch. IV
13	Eastern Brown Snake	<i>Eutropis macularia</i>	—
14	Fan-throated Lizard	<i>Sphenopodia pectoratoria</i>	—
15	Indian Gamba/ Common Cat Snake	<i>Bhaia trigonata</i>	Sch. IV
16	Indian Rock Agama	<i>Phrynosoma stansfordianus</i>	—
17	Python	<i>Python molurus</i>	Sch. I
18	Russell's Viper	<i>Daboia russellii</i>	Sch. III (Part-2)
19	Spotted House Gecko	<i>Hemidactylus brookei</i>	Not Listed
20	Yellow Monitor Lizard	<i>Varanus flavescens</i>	Sch. I
Amphibians			
1	Common Indian Toad	<i>Bufo melanostrigatus</i>	—
2	Common Indian Tree Frog	<i>Polydora indicata</i>	—
3	Indian Bull Frog	<i>Hoplobatrachus tigerinus</i>	Sch. IV
4	Indian Skittering Frog	<i>Euphonia cyanocephala</i>	—
5	Sheridan's Bull Frog	<i>Hoplobatrachus crassus</i>	Sch. IV
6	Narrow-mouthed Frog	<i>Microhyla ornata</i>	—
7	Paddy-field Frog	<i>Rana limnodynastes</i>	Sch. IV
8	Painted Bull Frog	<i>Kaloula taprobanica</i>	—
Fishes			
1	American cat	<i>Cyprinus carpio (Linnaeus)</i>	Cyprinidae
2	Bala	<i>Wallago attu</i>	Sharkidae
3	Bata	<i>Osteobrama cobia cotia (Hamilton)</i>	Cyprinidae
4	Bhakar	<i>Cotia cotia</i>	Cyprinidae
5	Chanda	<i>Channa batracus (Linnaeus)</i>	Cyprinidae
6	Chang	<i>Anabas testudineus (Bloch)</i>	Channidae
7	Kalbans	<i>Puntius sophon (Hamilton)</i>	Cyprinidae
8	Koi	<i>Anabas testudineus (Bloch)</i>	Anabantidae
9	Lata	<i>Channa punctatus (Bloch)</i>	Channidae
10	Mapar	<i>Channa striatus (Bloch)</i>	Channidae
11	Mrigal	<i>Cirrhinus mrigala (Hamilton)</i>	Cyprinidae
12	Punthi	<i>Heteropneustes fossilis (Bloch)</i>	Cyprinidae
13	Robu	<i>Cabeo rohita (Hamilton)</i>	Cyprinidae
14	Shol	<i>Channa punctatus (Bloch)</i>	Channidae
15	Singi	<i>Channa orientalis (Schneider)</i>	Heteropneustidae

Table 15: Fishes (Major) (contd.)

M. M. M. M.
 Muthumani M
 Project of M/s
 M/s Feroz Ltd.
 Kalangijetta, Dist. Jaisalmer
 Pin- 345047



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*, *Loganstonia panyflora*, *Gmelina arborea*, *Anogeisus latifolia*, *Arisida retusa* and *Pterocarpus marupium*. The middle story contains *Careya arborea*, *Ocotea cajanensis*, *Syzgium cumini*, *Diospyros melanoxylon*, *Helicteris laeva*, *Indigofera pulchra* and *Woodfordia fruticosa*. *Clerodendron* are commonly found as under growth. Common climbers seen are baubinia, *Smilax*, *Rutea* and *Combretum decandrum*. Presence of *Ocotea colinus*, *Chloroxylon swietenia*, and *Phyllanthus emblica* indicates forest marching to wards a drier tract. The forest floor which is quite open (density less than 30%) is now invaded by *Eupatorium* & *Dianath* 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 (200).	Forest Division it belongs.
1	Daltary DPF	10388.38	5368.00	Cuttack
2	Mahugin DPF	12040.55	7895.00	Cuttack
3	Ranigardi RF	13822.10	3954.00	Dhenkanal
4	Birsa RF	1362.90	1362.90	Dhenkanal
5	Dhalparah RF	372.30	372.30	Dhenkanal
6	Tipila RF	947.00	75.00	Dhenkanal
7	Maulabanya RF	1367.48	125.00	Dhenkanal
8	Daltary DPF	10388.38	100.39	Kendrapar
Total Area		90685.05	19254.39	

(Total 18 Forests within the ZOI)

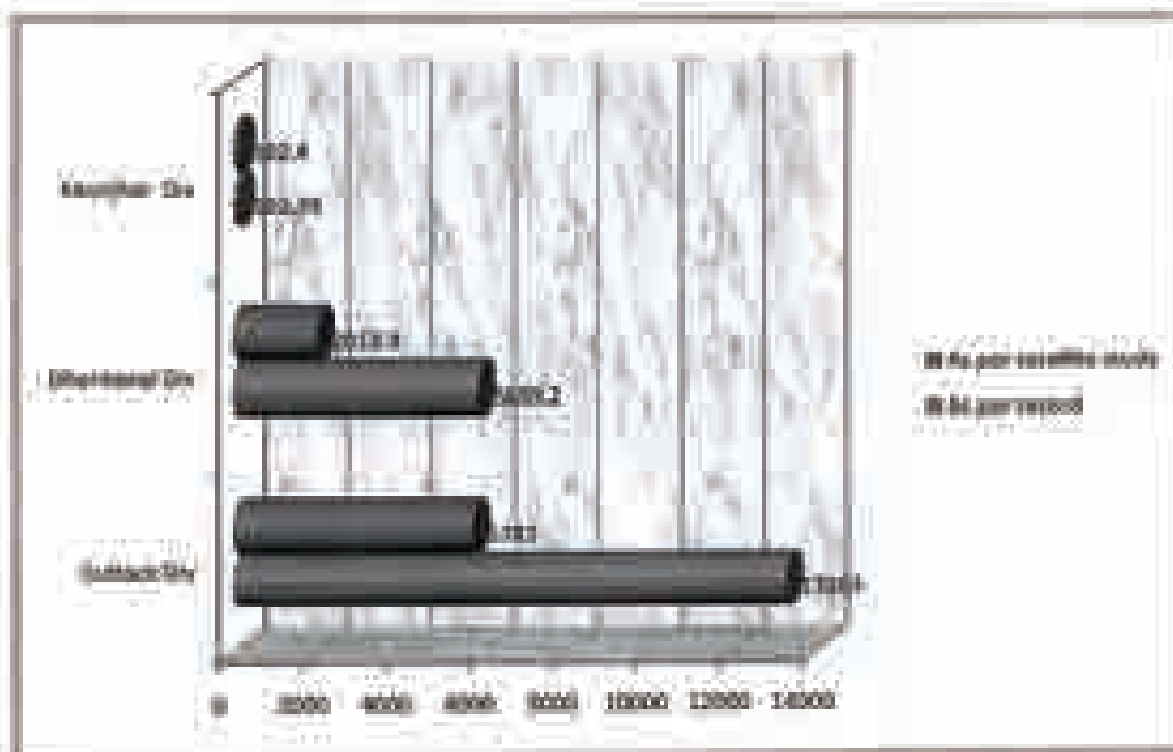
M. Muthuraj
 Authorised M
 Agent of Mines
 M/s. Feroz Mining Corporation Limited
 Katarangatta, Dist. Jagpur
 Pin- 758043



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

Source: LT Final 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/C₁₄ (Moist peninsular Sal) occur in different blocks and compartments.

M. M. Mahapatra
 Mithunaram M
 Agent of Mines
 Kaimangatta Chiroptera Mine
 Kaimangatta, Dist. Jajpur
 756067



3C/C2d(i) – Moist Peninsular Low level Sal:

In these forests the Characteristic associates of Sal in over wood are *Pterocarpus marsupium* and *Terminalia tomentosa* with *Emblica officinalis* in middle story. Natural regeneration is satisfactory. Quality Class V/II.

3B/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 hedericoides*, *Lagerstramia sp.*, *Terminalia chebula*, *Adina cordifolia*, *Bridelia retusa*, etc. In the middle story *Emblica*, *Diospyros melthocoryon*, *Butea monsperrma*, *Madhuca indica* are noticed.

3B/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 coromandelica*, *Dalbergia latifolia*, *Acacia catechu*, *Acacia nilotica* *Butea monsperrma*, *Buchanania lanzena* are seen in the forest. The ground flora is damaged due to repeated fires and gives an ugly look during summer.


Muthuman M
Agent of Mines
M/s. Facor Alloy Corporation Limited
Kalarangatta, Dist. Jagalur
Pin- 762047



2.6.2 Present Management System:

The Working Plan of Cuttack Division is under process of revision. The working Plan for Eoanjar WL Division, Anandapur has been approved for the period 2021-22 to 2030-31. The Forests & Working Circle assigned it as follows.

S.No	Name of Forest Block	Total area of the Forest Block in Ha.	Area coming within the buffer zone (ZOF).	WC assigned	Forest Division it belongs
1.	Dattary DPF	10386.38	5368.00	Imp. WC	Cuttack
2.	Mahagiri DPF	12040.55	7895.00	RWC and PI WC	Cuttack
3.	Ranjagarh RF	13822.10	1954.00	Eco. RS WC	Dhenkanal
4.	Birasal RF	1362.90	1362.90	Eco. RS WC	Dhenkanal
5.	Dhalparah RF	172.30	172.30	Eco. RS WC	Dhenkanal
6.	Tiptel RF	947.00	75.00	Eco. RS WC	Dhenkanal
7.	Maulabhanja RF		125.00	Eco. RS WC	Dhenkanal
8.	Dattary DPF	20386.38	102.98	Imp. WC	Eoanjar
Total Area					

From all forestland working circle jajpur

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 Sakinda Range, there are instances of elephant movement in Mangalpur, Purnapani, Rendudhip, Faradi, Baradi, Mahagiri DPF, Rankia, Kollo, Samnagar, Kakodai & villages coming South Eastern side of the Project.

Elephants from Balibo RF of Dhenkanal Division come to Barabati RF and then comes to Madhuban-Brighora- Kakodai and go back. Sometimes elephant from Anandapur Wildlife Division enters to study area from North side up to Deogaon & go back. It is also observed that in Khamsakshyanagar East Range, the elephant movement is from W-1 side to W-14 side of the project area passing through Andamal-Maulabhanja-Bandhanta-Birasal-Korlagai-Raibole-Karheipal then back on the same route. Occasional movement is observed in Dhalpara-Saraoda and crossed the Paoddara hills 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-1. Movements of other animals are also experienced mostly in harvesting time, Collection of mahua flowers & late rainy season.

M. Muthuraj
 Muthuraj
 Agent of M/V
 Ecoo Ltd.
 Kalrangama, Dist. Jajpur
 Pin- 751047



2.7.1 Wildlife Scenario

The project does not form a part of any wildlife Sanctuary, National Park nor any protected area. Dairy 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	13	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	01:02.5
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	01:02.3
2017	37	111	15	43	206	1:03

Figure 28 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	1	0	3

Figure 29 Tiger Census data

M. Mahapatra
 Mohanlal M
 Agent of Ferro
 M/s Ferro Ferro Corporation Limited
 Cuttack, Odisha-753004
 Tel: 753004



2.7.3 Wildlife Corridors:

There are fourteen corridors in the state as listed below. Out of these corridors Maulabhanja - Jirdamali 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.

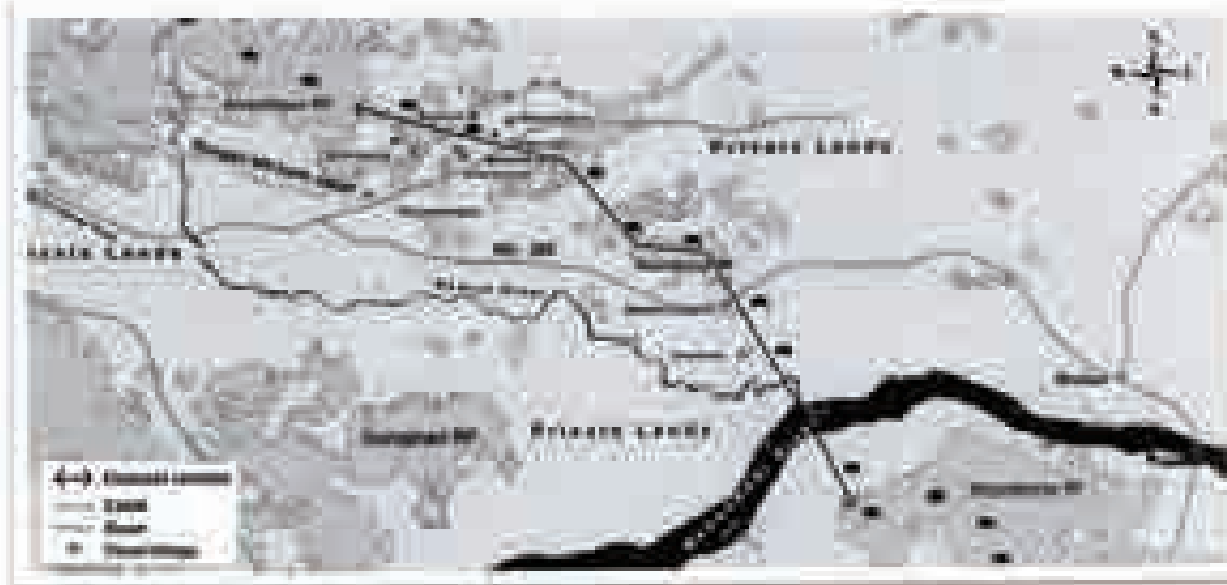
SNo.	Name of the Corridor	Extends over District	Name of the Divisions	Length of corridor(km)	Width of corridor(km)	Total area(Sq.km)
1	Badampahar(Mayurbhanj)- Phooladholi(Burkhand) INTERSTATE	Mayurbhanj	Koraputa, Kanker Angapour	16	0.3 - 1.3	24.8
2	Badampahar(Mayurbhanj)- Korla(Burkhand) INTERSTATE	Mayurbhanj	Rairangapur	43	0.2 - 3.8	36.00
3	W.Bengal-Godali Tulapada(Peopaga) INTERSTATE	Mayurbhanj, Balasore, West Bengal	Balaspada	72	0.1 - 0.7	39.5
4	Smilipal-Hudagarh-Kudhar INTER-DISTRICT	Mayurbhanj, Koraput, Balasore	Balaspada, Balasore WL, Koraput WL	41.7	0.7 - 3.1	31.89
5	Telkoi-Pallakura INTER-DISTRICT	Koraput, Angul	Koraput, Deogarh	30.4	0.2 - 0.8	13.24
6	Karo (Koraput)- Karampada (Sonepur, Burkhand) INTERSTATE	Koraput, (Burkhand)	Koraput	15	0.1 - 2.3	17.3
7	Maulabhanja Jirdamali Anantapur INTER-DISTRICT	Dhenkanal	Dhenkanal	6.5	0.25 - 0.28	1.55
8	Kalnasyana-Anantapur INTER-DISTRICT	Angul, Dhenkanal	Angul	6.8	0.4 - 1.1	5.23
9	Buguda-Central HT of Nayagarh Dist.	Nayagarh	Nayagarh	2.6	0.8 - 0.8	0.79
10	Nungson-Baruni	Angul	Adimali	4.5	0.8 - 4.8	30.7
11	Talchigarh	Sambalpur	Baramahal	8.9	0.5 - 0.08	4.96
12	Barpahal-Tarava Kantamal INTER-DISTRICT	Sopur, Boudh	Subarnapur	24.2	0.38 - 1.3	21.7

M. Muthusami
Muthusami M
Minister of Mines
M/s. Fero Alloy Corporation Limited
Kalahandi Dist. Jajpur
Pin- 752007



13	Kotagiri-Chandrapur INTER-DISTRICT	Kandhamal, Rayagada	Kalliguda, Rayagada	77	2.0-22.8	575.4
14	Kapilpat-Islandia INTER- DISTRICT	Kandhamal, Rayagada	Kalahandi(S), Kalahandi(N), Rayagada	75	0.2-0.5	28.9

Table 1



2.7.3HWC Details (Human-Wildlife Conflict):

Human- Animal Conflict in Sukinda Range of Cuttack Division is moderate but due to Maulabhanja- Iridamal- Anantapur Corridor being disturbed, the elephant movement is very erratic in Kamakhyanagar East range of Bhenkanal Division. The information on Human- Animal Conflict of Sukinda Range is furnished below:

vi) 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		

Figure 23.10: The *l*-value of a prime p is the number of nontrivial Dirichlet characters modulo p for which $\chi(p) \neq 0$.

M. M. M.
Agent of Mexico
Mexico Corporation Limited
Callahan, Wash., D.C.
(No. 7557)



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 21 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- Wildlife Conflict. 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 Projects:

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	Status
1	Kamarda Chromite Block	M/s Tata Steel Mining Ltd.	Chromite	Operative
2	Kalapari Chromite Mine	Balagore Alloys Ltd.	Chromite	Operative
3	Ontapal Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
4	Kalarangatta Chromite Mine	Ferro Alloys Corporation Ltd.	Chromite	Operative
5	Mahagiri mines Chromite	M/s IMFA Ltd.	Chromite	Operative
6	Talangi 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 kalapari Chromite Mine	OMC Ltd.	Chromite	Operative
10	Kalapari Chromite Mine	OMC Ltd.	Chromite	Operative

M. M. Mulla
 Authorized Agent
 M/s Ferro Alloys Corporation Limited
 Kalarangatta, Dist. Jajpur
 Pin- 755007



Site Specific Wildlife Conservation Plan for Kairangutta Chromite Mine at Kairangutta under Sukinda Taluqa dist. Jagpur by M/s Facor Ltd.

11	Suknang Chromite Mine	OMC Ltd	Chromite	Operative
12	Gairari Chromite Mine	OMC Ltd	Iron	Operative
13	Sukinda Chromite Mine	M/s Tata Steel Mining Ltd.	Chromite	Operative

Based on Wildlife Impact Assessment

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.

M. Mathur

Mathuram M
Agent of Sukinda
M/s. Forest Officer, Jagpur District



CHAPTER-III PROJECT & ITS PROBABLE IMPACT



M. Subbaraj
Muthuram M
Agent of Mines
M/s Feroz Adore Corporation Limited
Kasaragod Dist. Jagalur
Pin 675047



CHAPTER-III

PROJECT & ITS PROBABLE IMPACT

1.0 Project description:


Kalaranghatta 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 Taluk Settlement Records the land is of Forest Khass "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 (Open cast)

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 Rangle in Bhadrak District, Orissa. It has two captive mines at Sukinda valley for excavation of Chrome ore at Ostapal Chromite mine and Kalaranghatta Chromite Mine and these mines are at operational stage. This mine i.e. Kalaranghatta is under discussion.

1A.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.


M. Mukherjee
Authorized Signatory
Agent of M/s
Ferro Alloys Corp.
Kalaranghatta, Dist.
Jagat, Taluk Sukinda



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 21 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 50m ahead. Sufficient side drain 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.

M. Pathan
 Muhammad M
 Agent of Mines
 M/s. Hecol Corporation Limited
 Kallangutta, Dist. Jagpur
 Jharkhand



b) Waste Dump:

There is one OB dump of size 410m x 115m 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 211 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.

M. Muthuramy
Muthuramani M
Agent of Mines
M/s. Tanco Corporation Limited
Kalahandi, Dist- Jajpur
Pin- 755047



Site Specific Wildlife Conservation Plan for Kataragutta Chromite Mine at Palangutta under Sukinda Tahsil dist. Jaipur by M/s Fecor Ltd.

S.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	Doser	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 ccm)	1		
6	Rock Breaker		1	175 HP	
7	Water sprinkler (1210 TATA make)	8000 Lt	1	112 HP	
8	Dewatering Pumps	150M ³ / Hr	1	127 HP	
		100M ³ / Hr	2	75 HP	

Table 26. Summary of machinery required



M. Muthumani
Muthumani M
 Agent of Mines
 M/s. Fecor Mining Corporation Limited
 Jaipur, Dist. Jaipur
 Pin- 302002



Site Specific Wildlife Conservation Plan for Karangatta-Chinnatti Wildlife at Karangatta under Sundarban Tiger Reserve, Jharkhand



M. Mukherjee
Member, SA
Agent of Mines
M/s. Panna Minerals Corporation Limited
Katapah, Dist. Jharkhand
Pin - 751007



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 22 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.

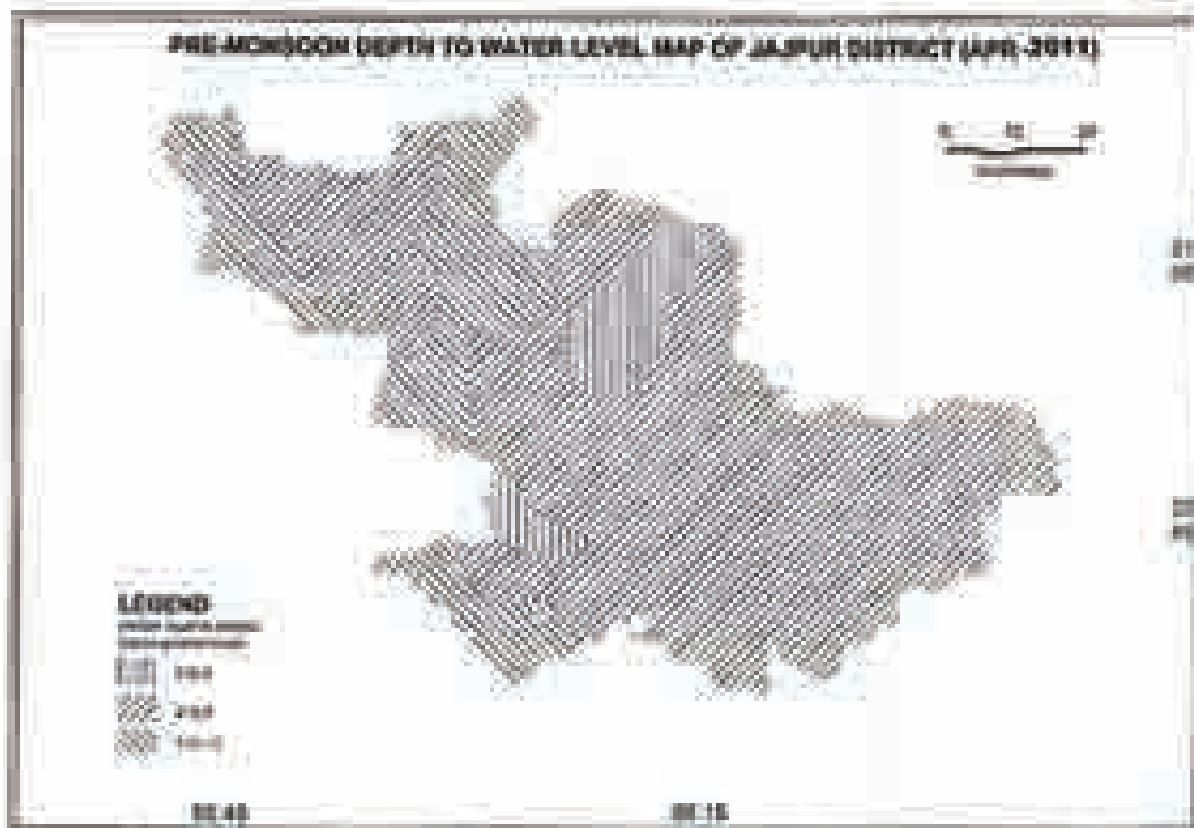
The water table as observed from nearby wells, the water table occurs at 6m BGL during monsoon and in dry months the water table is at 9m BGL. Surface level is 100m RL. As the present working level is 47m RL i.e. 53m BGL, mine has already punctured the water table. The pit bottom that will be achieved during this plan period is 30m RL.

The Water Table location in Sukinda Valley area as mentioned by CGWB is depicted below.


M. K. Sharma
Agent of Mines
M/s Ficer Ltd, Jagpur
Taluk Sukinda



Site Specific Wildlife Conservation Plan for Kalsangputta-Chowki Mine at Kalsangputta under Sukinda Tehsil dist. Jajpur by M/s Facer Ltd.

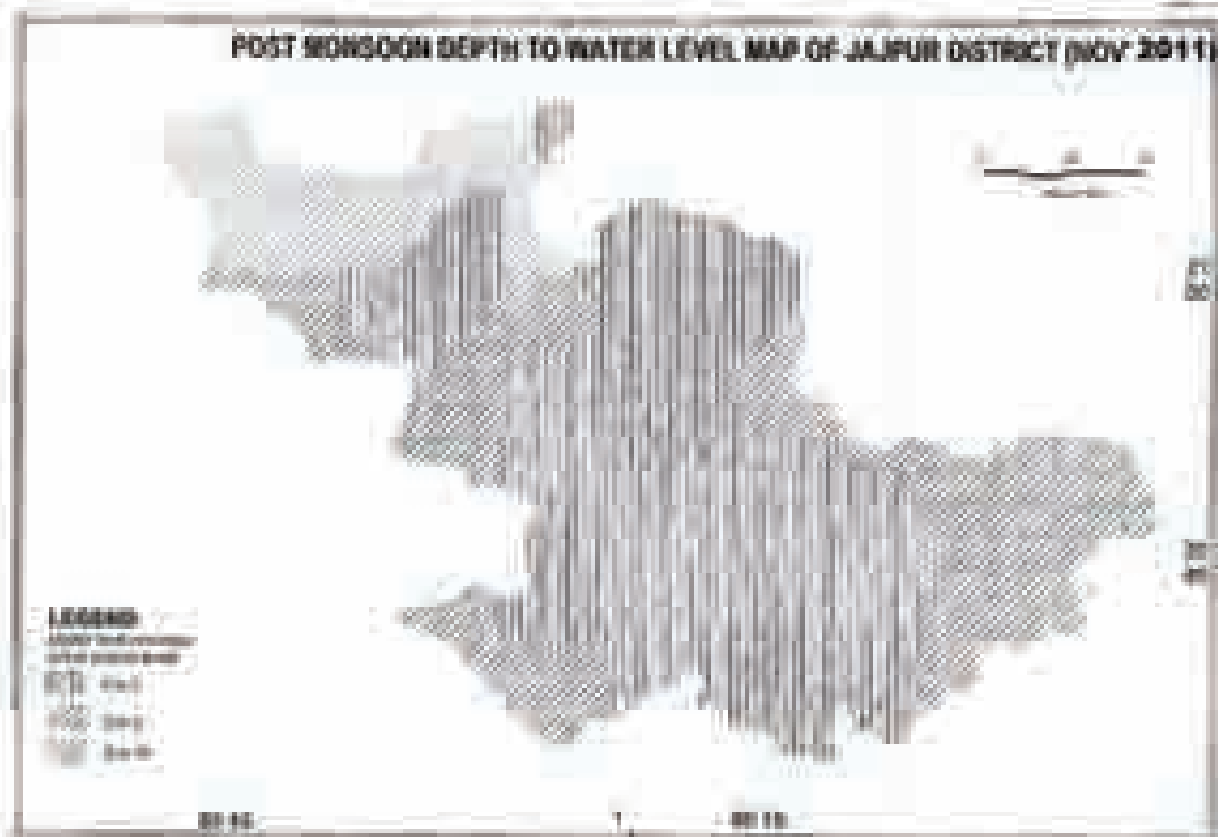


M. Mathur
Muthuman M
Agent of Mines
M/s Facer Corporation Limited
Jajpur, Odisha

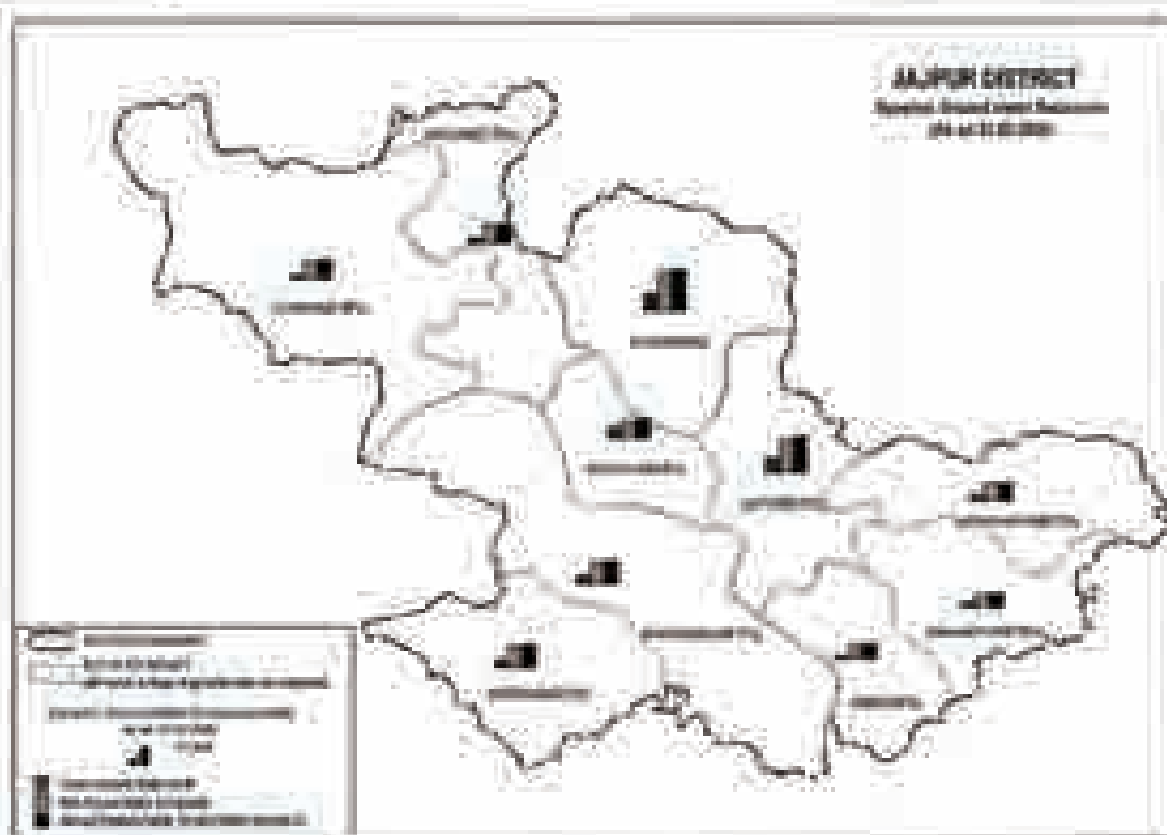


Site Specific Wildlife Conservation Plan for Kalangoltha Choroita Mine at Kalangoltha under Subanda Taluqa dist. Jajpur by M/s Pacer Ltd.

POST MONSOON DEPTH TO WATER LEVEL MAP OF JAJPUR DISTRICT (NOV 2011)



M. M. Mahapatra
Muthumati M
Agent of Jajpur
M/s. Pacer Limited, Jajpur



Subhitha
Agent of Airlines
Mrs. Peria Alana Corporation Limited
Kallagudi, Dist. Jaipur
Ph: 795047



n) 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 30m x 20m x 2m (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 ETB being used for dust suppressing, plantation and provided to villages for agricultural irrigation purpose.

q) 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)	OS/ SB/IS (M ³)	Roar			ROM to Waste ratio
				Ore (M ³)	Ore in Tonnes	Mineral Rejects (M ³)	
June/2021-2022	188000	1400	168000	20000	63600	0	1:8.3
2022-23	438000	1800	391000	47000	150000	0	1:8.4
G. Total	626000	3200	559000	67000	213600	0	1:8.4

Table 22 Tentative project production/Mineral rejectal ratio

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 haul road. Open cast 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.

M. Muthumari
Muthumari M
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Kharagpur, Dist- Japur
Pin- 756047




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 Bandla of district Bhadrak covering a distance of 115 KM.

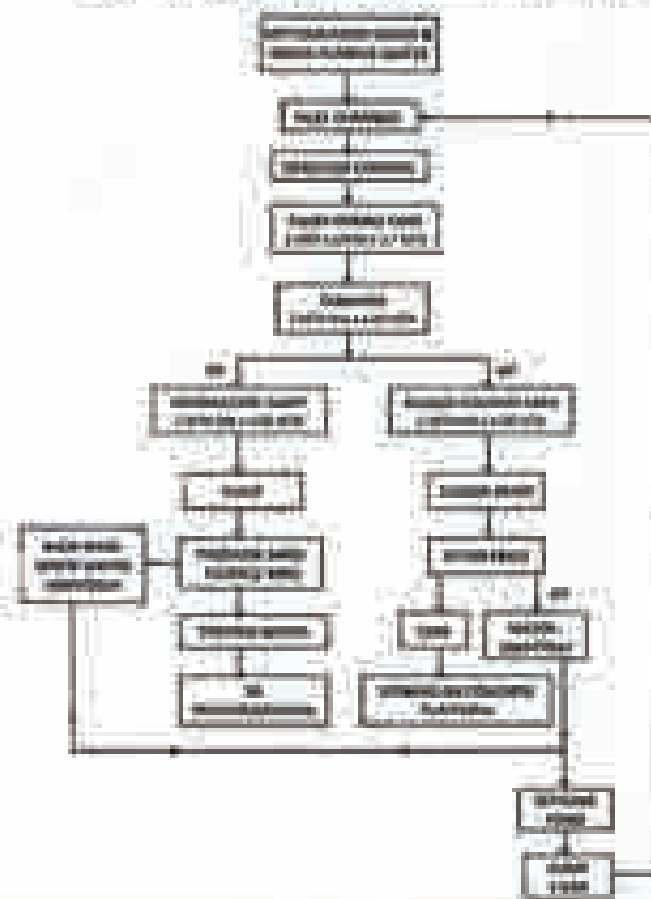
l) Effluent Treatment Plant (ETP):

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 ($Cr_2O_7^{-2}$). This hexavalent chromium is carcinogenic and need to be removed from mine discharge water before any use. The mine discharge water contains 0.3 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 ET. 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.


Mathuram M
Agent of Mines
M/s Ferro Ltd. Corporation Limited



WATER MANAGEMENT AND WASTE MANAGEMENT



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 Bhintangar village for irrigation purpose. The water is mostly used for cultivation of vegetables to an extent of 15-20 Acre land.

M. Chakraborty
Muthuram M
Agent of Mines
M/s. Ferro Alloy
Kolkata
Page 10



3.1 Project Impact on Flora & Fauna

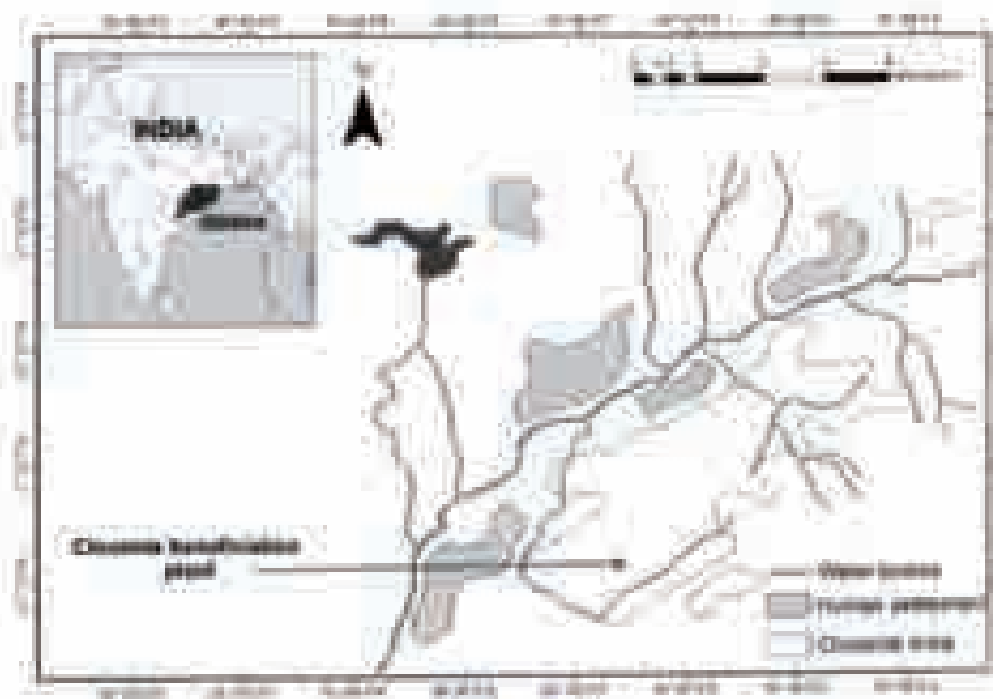
3.1.1 Impact on Soils:

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 coarse.

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 mine's area except for local irrigation purpose. No irrigation water is finding its way to Damiala nalla which is the main drainage of this area and joins with Brahmani River.



M. Muthumani
Muthumani M
Project Officer
MA's Forest Ltd.
Jagalur
Taluq
Sivakoda



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 iron 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-}]



B. If Water contains dichromate [$\text{Cr}_2\text{O}_7^{2-}$]



Stage-II



M. Muthuramalingam
Managing Director
Agent of Mines
Wildlife Conservation Officer
Jajpur, Dist. Jajpur
Pin- 751003



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 leasible. 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 concentrations becoming thin to thinner.

M. Mishra
Authorized M
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Kulapuri, Dist. Jajpur
Pin- 755047



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 dBI and near habitation is 60 dBI which is within prescribed norm of CPCB, New Delhi.

3.1.5 Fugitive emissions

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.

M. M. Mahapatra
Managing Director
Agent of Mines
M/s Ferro Alloy Corporation Limited
Kalarangatta, Jajpur
Pin - 751017



Sl No	Species	Girth Class						Total
		0-30cm	31-60cm	61-90 cm	91-120 cm	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	Schleichers oleosa	0	0	0	0	1	3	4
7	C. Slamia	0	0	1	7	0	0	8
8	Madraca 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 2/100 of form proposed to be filed

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% Cr₂O₃) 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)₃₋₄(Y)₂O₂(OH)₂. 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)₃₋₄(Si,Al,Fe)₂O₂(OH)₂. Chrysotile, antigonite, and lizardite are three of the

M. Mishra
Managing Director
Ecoart Ltd.
Katarangutta
Jajpur



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.

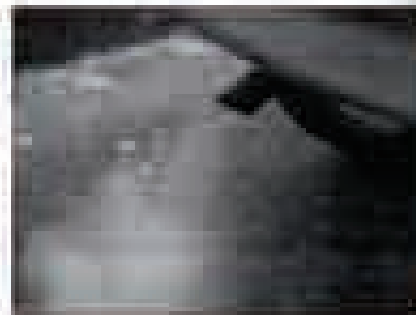
The largest part of most combustion gas is nitrogen (N_2), water vapor (H_2O) (except with pure-carbon fuels), and carbon dioxide (CO_2) (except for fuels without carbon); these are not toxic or noxious (although water vapor and carbon dioxide are greenhouse gases that contribute to global warming). 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.

M. Mithun
Mithun
Agent of Mines
Japur by M/s Fecor Ltd



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)	77.8 pounds (35.0 kg)
Carbon monoxide	20.9 grams/mile (13.06 g/km)	575 pounds (261 kg)
NO _x	1.35 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)

M. Mithun
Marketing M
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Calcutta, India
Pin- 700047



Main Motor Vehicle emissions:

NO_x

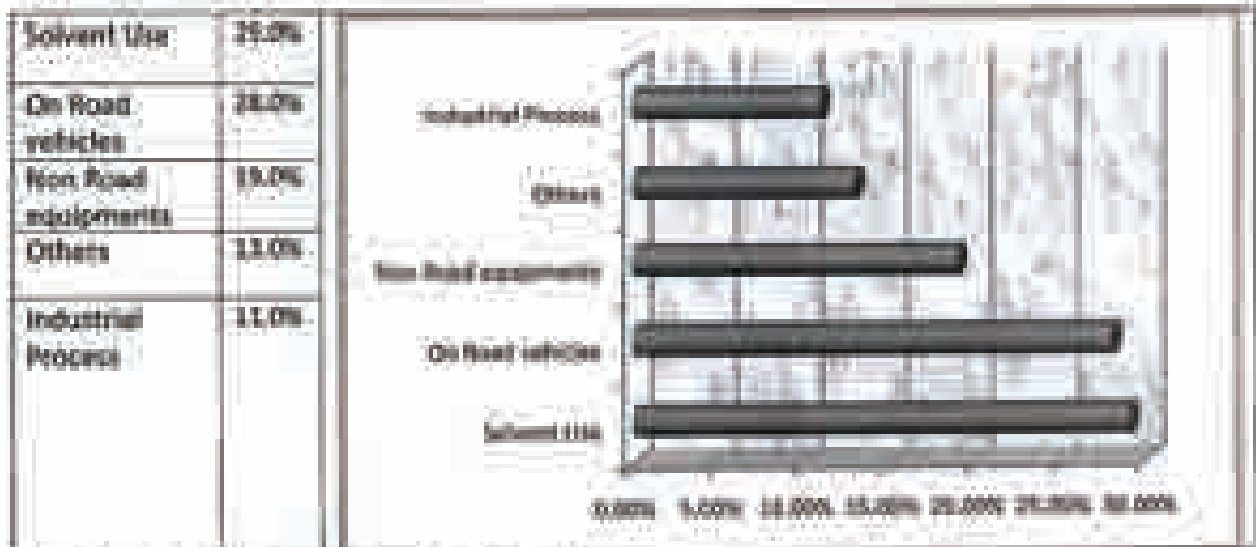
Mono-nitrogen oxides NO and NO₂ (NO_x) (whether produced this way or naturally by lightning) react with ammonia, moisture, and other compounds to form nitric acid vapor and related particles. Small particles can penetrate deeply into sensitive lung tissue and damage it, causing premature death in extreme 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.



Total Volatile organic compounds present due to vehicles

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.

M. Mishra
Mushumati M
Agent of Mines
M/s Fecor Ltd.
Bhubaneswar, Dist. Jajpur
Pin-751007



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 with of unpalatable, dwarf vegetation.
- iii. More and more open forest will be covered by Eupatorium, Lantana, 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.

M. Madhavi
Authorized M
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Khatola, Dist. Jagpur
Pin- 755043



- iv. 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.

M. Mathur
Mathur M
Agent of Mines
M/s. Pacer Corporation Limited
Kharagpur, Dist. Jagpur
Pin- 751047



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. Damasa 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 NHM for their project "Up gradation of NH-202". After detail traffic study at five important places in homogeneous section i.e. at Saranga, Pitri, 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

Mode	Base value as obtained (2006)	Year								
		2007- 2011	Projecte d (2012)	2012- 2016	Projecte d (2016)	2017 - 2021	Projecte d (2021)	2022 - 2026	Projecte d (2026)	2027 and after
Scenario-1: Projected Most Probable Traffic Growth Rate										
Two Wheelers	3493	8.32	1780	9.1	4124	8.44	4472	7.5	4808	6.75
Three Wheelers	386	10.79	428	11.38	475	10.7 1	525	8.68	571	7.5
Cars	713	8.91	798	9.8	877	8.38	959	8.44	1040	7.5
Jeeps	158	6.78	340	7.35	365	7.13	393	6.38	415	5.63
Buses	81	3.7	84	4.03	87	3.94	93	3.75	94	3.54
Trucks	3112	7.34	3345	7.8	3601	7.2	3860	6.6	4115	6.3
Tractor and Tractor with trailer	440	7.89	485	8.25	525	7.5	568	6.5	601	5.85

Table-11 Traffic Projections (Scenario-1)

M. Mallikarjuna
Authorized M
Agent of Ferro
M/s Ferro Alloy Corporation
Chakrapur, Dist- Jharkhand
Pin- 758047



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 15 ton. Hence for 50000 TPA, about 3325 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, 1 nos. 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, 1 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 Mangalpur – Chandikhol – Bhadrak.


M. M. Mishra
Agent of Mines
Kalaranglatta
Japur



CHAPTER-IV IMPACT MITIGATION MEASURES



M. Muthuraj
Muthuraj M
Agent of Mines
M/s. Ferrar Corporation Limited
Kharagpur, Dist. Jajpur
Pin- 755047



CHAPTER-IV

Impact Mitigation Measures & Financial Projection

4.0 Adverse Impacts of the Project & Mitigation Measures suggested:

Kataranglatta 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 MI 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 MI area, dumping at Stock yard and subsequently beneficiation and transportation to outside the MI 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 MI area is also associated with transport related dust pollution.

Mitigation measures:

The mitigation measures adopted by User Agency are

- Trees planted along the Haul Road within the MI 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.

M. Mathur
Authorized Signatory
Agent of Forest
Min. Govt. of Odisha
Kataranglatta, Dist. Jajpur
Pin- 755017



The Specific Wildlife Conservation Plan for Kalarangatta Chromite Mine at Kalarangatta under Srinagar Tahsil Dist. Jammu by M/s Ferro 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	

Source: M/s Ferro Ltd. records and J. Govt.

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.

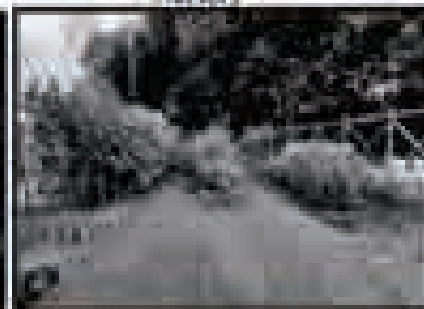
Safety zone plantation



Haul Road Side plantation



Stream



M. Mathur
Mathurani M
Agent of Mines
M/s Ferro Alloy Corporation Limited
Kalarangatta, Dist. Jammu
Pin- 181047



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	Kanchamra nalla	NW	Seasonal
3	Largal kanta nalla	NW	Seasonal
4	Pandara nalla	S	Seasonal
5	Sarabhusuni nalla	N-NW	Seasonal
6	Patapet nalla	W	Seasonal
7	Nadi barana nalla	W	Seasonal
8	Pua gadhua nalla	W- NW	Seasonal
9	Patna nalla	N	Seasonal

Table 4.2 Nallas

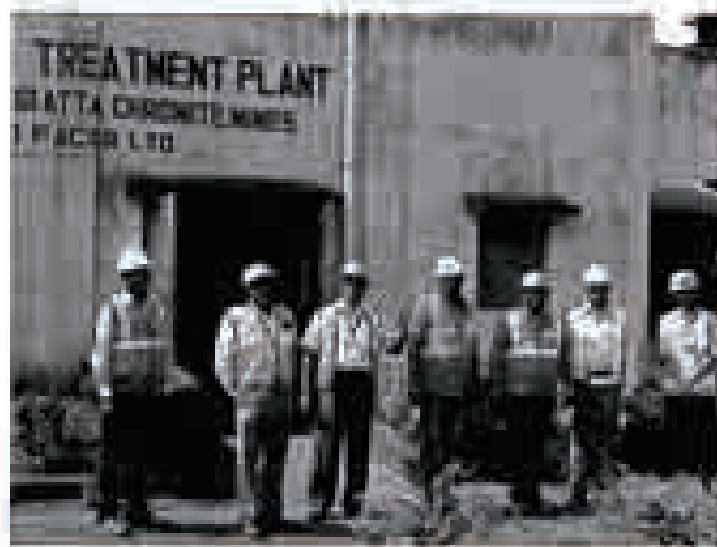
Besides dust settling on water body, the major problem is Hexavalent Chromite (Cr^{VI}) in mine discharge water. It is carcinogenic in nature.

M. Muthumani
Muthumani M
 Agent of Mines
 Facer Corporation Limited
 Plot 384, DDA, Jajpur
 Pin- 755042



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.



M. Mathan
Authorized Agent of Mines
M/s. Facco Ltd.
Kalarangatta, Dist. Jagalur
Pin- 626007



Site Specific Wildlife Conservation Plan for Kalarangatta Chromite Mine at Kalarangatta under Sakreda Taluk Dist. Jagalur by M/s Ferro Ltd.

The input / output of Mines discharge through ETP test result is furnished below.

Online Pollution Monitoring Portal					
Site Name: Kalarangatta 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	51.27	0
12	2021-10-12	0.98	4.9	51.88	0
13	2021-10-13	0.97	4.86	52.97	0
14	2021-10-14	0.97	4.76	46.83	0
15	2021-10-15	0.94	4.9	41.53	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	71.22	0
20	2021-10-20	0.91	4.78	52.84	0
21	2021-10-21	0.95	4.75	50.58	0
22	2021-10-22	0.95	4.63	76.08	0
23	2021-10-23	0.88	4.69	51.16	0
24	2021-10-24	0.93	4.75	60.35	0
25	2021-10-25	0.87	4.61	68.7	0
26	2021-10-26	0.91	4.57	62.22	0
27	2021-10-27	0.91	4.63	102.46	0
28	2021-10-28	0.88	4.52	76.58	0
29	2021-10-29	0.88	4.49	76.71	0

M. Mathan
 Authorised Signatory
 Ferro Alloys Corporation Limited
 Kalarangatta, Taluk Jagalur
 Pin- 755047



Site Specific Wildlife Conservation Plan for Kalarangatta Chromite Mine at Kalarangatta under Sulenda Taluk dist. Nipal by M/s Ferro 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	2021-10-03	2021-10-12	2021-10-30	2021-10-03
35	Minimum Value	0.8	4.69	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	4.73	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 24 Online Pollution Monitoring portal

Online Pollution Monitoring Portal

Site Name: Kalarangatta Chromite Mines of M/s. Ferro Alloy 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

Sr 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	0.03	7.21	10.76	1.3
2	2021-10-02	0.03	7.68	0	0.6
3	2021-10-03	0.03	7.38	5.58	0
4	2021-10-04	0.03	7.38	9.3	1.02
5	2021-10-05	0.03	7.54	10.83	9.22
6	2021-10-06	0.03	7.59	12.59	7.21
7	2021-10-07	0.03	7.61	9.43	4.38
8	2021-10-08	0.03	7.63	8.22	0
9	2021-10-09	0.03	7.36	7	3.46
10	2021-10-10	0.03	6.93	6.83	4.84
11	2021-10-11	0.03	6.71	6.86	6.93
12	2021-10-13	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

M. Subhany
 M. Subhany
 Environmental Engineer
 Ferro Alloy Corporation Limited

FERRO ALLOY CORPORATION LIMITED
 KALARANGATTA CHROMITE MINES
 SULENDA TALUK, NIPAL DISTRICT
 KERALA



Site Specific Wildlife Conservation Plan for Kalarangatta Chrome Mine at Kalarangatta under Sukinda Tehsil dist. Jagpur by M/s Facer Ltd.

16	2021-10-16	0.03	8.16	0.44	7.56
17	2021-10-17	0.03	8.21	4.46	7.13
18	2021-10-18	0.03	7.81	16.04	6.88
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	11.93
27	2021-10-27	0.02	8.26	16	11.63
28	2021-10-28	0.02	8.24	10.02	17.63
29	2021-10-29	0.02	8.17	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 - 8	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	7.63	8.99	7.76
39	Standard Deviation	0.01	0.79	5.58	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 20: Online pollution monitoring data

The ETP established within the Mt. 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.

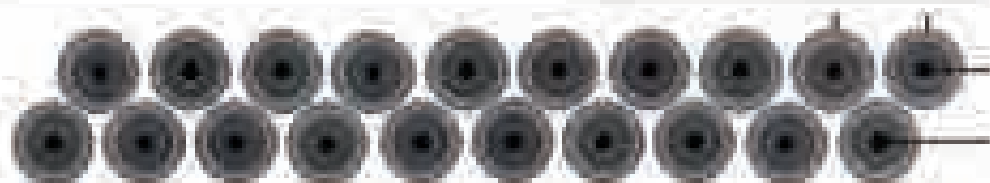
4.3 Adverse Impacts on Soil & Mitigation Measures:

The mining activities will disturb the land surface. After mining the area will be reclaimed. To check the soil erosion from dumps, planting 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.

(Signature)
 Project Officer
 M/s. Facer Limited
 Kalarangatta, Dist. Jagpur
 Pin- 756047



Top view



Side view



Besides staggered planting, rows of *Chrysopogon zosterifolius* (bera) 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 5 meter 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 litter decompose to humus. It is suggested to increase multilayer 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.

M. Mithun
Authorised Signatory
Agent of Mines
M/s. Faar Alloys Corporation Limited
Kallangatta, Dist. Jajpur
Pin- 755047



Physiographic map of Sukinda Range
of Mahagiri Wildlife Sanctuary

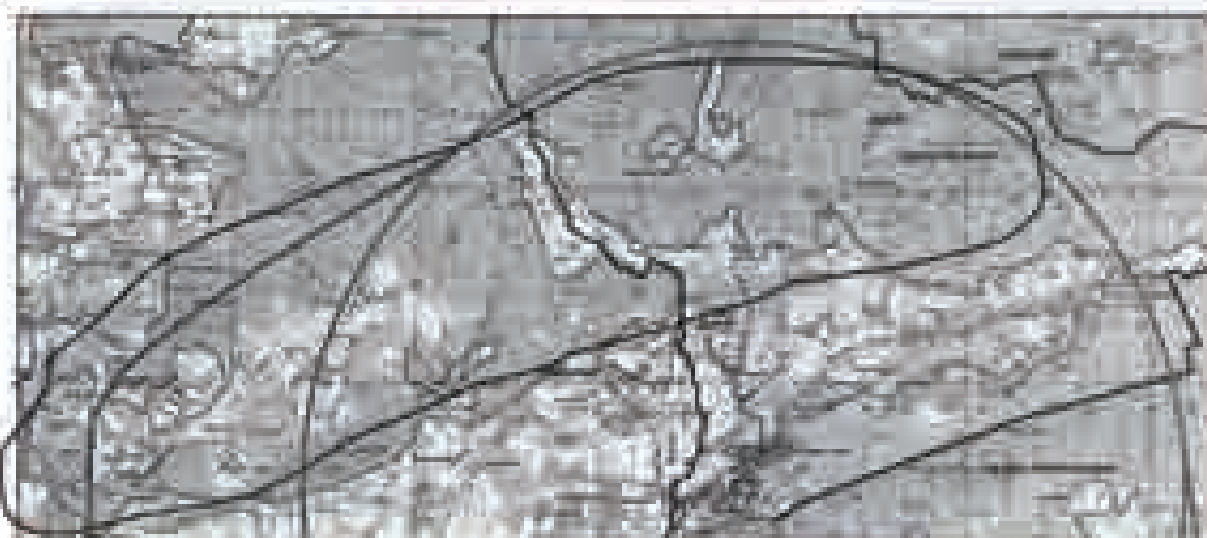


It is proposed to completely protect 5 ha of forests in Mahagiri BPF by involving VSS members and constant patrolling in the area. Hence a sum of Rs 3.00 lakh is provided to identify a patch with good forest and protect from all biotic interference through VSS. A sum of Rs2.00 lakh is also provided to supplement PCL availability to Range Officer, Sukinda.

4.5 Impact on Fauna & Impact Ameliorating Measures

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 of Impact. The Maslabhanja – Jridamali – 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.

M. K. Mishra
Agent of Mines
M/s Facer Ltd.
Kalarangatta, Dist. Jajpur
Pin- 751007



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-Jadamali-Anantapur is mostly disturbed due to fragmentation of habitat by National Highway 200 and Angul- Sukinda- Daburi 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 gulland 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.

M. K. Mahapatra
Project Officer
Wildlife Conservation, Jajpur
Sukinda (Dist. Jajpur)
Pin - 751001



- 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.

M. Mithun
Mithun M
Agent of Mining
M/s. Facor Corporation Limited
Kalamati, Dist. Jagpur
Pin- 752047



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.

S. 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	1/-	1 patch of 5.0 ha	1.00
B)	Involvement of VSS & regular interaction	Annual	0.10 L	10	1.00
C)	Additional POL support	LS			2.00

Total 10 components and financial provision made through core

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 Kalkapani Section of Sukinda Range at cost of Rs 5.00 lakh @Rs2.50 lakh per Water body)

M. Mithun
 Mithun Mithun
 Agent of Mines
 Pacer Alloy Corporation Limited
 Kalkapani, Dist. Jajpur
 Pin 755047



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.

M. Mahalingam
M. Mahalingam
Agent of M/s
Kallangotta Chromite Mines
Kallangotta Taluq, Jagalur
Per: Jagalur



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.



M. K. Sharma
Authorized Signatory
Agent of Mines
Company, Govt.
of India
No. 1/2000/1



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) Pickle making from Forest based fruits / local fruits like Jack fruit, Mango, Amla,
- c) 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). (Bhantagar 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.

M. Mithun
Mithun Mithun
Agent of Ecor
Company, (PVT) Limited
The Jagdal, Jagpur



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 Cerana)	No.	6500/-	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/-	1	0.30	
6	Engaging Bee keeping Technician (Part time basis)	Months	2500/-	36	0.90	
7	Unforeseen				0.55	
	Total				7.00	

Table 47 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 NTTP:

NTTP collecting is gradually declining. Value addition to NTTP 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, Mushroom cultivation, Pickle 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. Muthuraj
 Muthuraj
 Agent of State
 Forest Dept. - Jajpur
 Kalanghatta, Jajpur
 Dist. Jajpur
 Pin - 751004



4.8.8 Abstract of Interventions proposed:

Abstract of Intervention for Contract Division					
S.No	Description	Unit	Rate	Quantum	Amount in lakh Rs.
Habitat Improvement:					
1a	Identification of the site in a highly forest patch and providing vegetative fencing on forest / Human interface with fencing maintenance	Patch	L	1 patch of 5 Ha	1.00
1b	Involvement of VSS & regular interaction	Annual	0.10 L	10	1.00
1c	Additional POC support	LS			2.00
2	Removal of water body (existing)	No	2.50 L	2	5.00
Protection & Surveillance:					
3a	Deployment of Gaps with	No	13272/ PMA	1 x 60 month	7.963
3b	Elephant Drive equipment	No			
4	Search Light	No	5000/-	20	1.00
5	Cage	No	2.00 L	1	2.00
6	Other accessories	LS			2.00
7	Enhancement of Mobility of Officials / Staff Providing a hired vehicle (@ Rs.41666.67/ mth for 3 years)	Months	41666.67 PMA	60	25.00
Integrated Fire Protection:					
8a	Providing Blowers	No	0.400	5	1.00
8b	Control burning	LS			1.00
8c	Recurring Expenses for Blowers (POT)	Annual	0.10L	5*10*0.1	5.00
Improvement of Avifauna Habitat					
9a	Placing of Box Nests	No	2500/-	150	1.25



**State Specific Wildlife Conservation Plan for Kallangudi-Chemmy Mine in Kallangudi
Taluk, Kallangudi Taluk and Taluk, Kallangudi Taluk.**

Sl. No.	Wildlife Conservation Plan for Kallangudi-Chemmy Mine in Kallangudi Taluk, Kallangudi Taluk and Taluk, Kallangudi Taluk.	No.	250/-	1500/-	1.75
65	Sparrows Conservation (Filling of numbers nests)	No.			
7	Alumina livelihood support				
7a	Bee Keeping	Unit	2,001	1	7.00
7b	Value Addition to NTFP through SQD	No.	1,001	2	6.00
					in 2 villages 2 units through 2 SHGs
8	Incentive to VSI involved in bio diversity area- Small Village Development Work	US			2.00
	Total				87.463
	Add 20% for cost escalation				18.493
	Total				98.956

Total amount of investment Rs. 98,956/-

(Rupees Ninety Eight Lakh Ninety Five Thousand & Six Hundred Only)

M. M. M. M. M.

Project Officer
Kallangudi-Chemmy Mine
Kallangudi Taluk
Kallangudi Taluk
Kallangudi Taluk



INTERVENTIONS TO BE IMPLEMENTED BY DHENKANAL DIVISION

4.9. Integrated Fire Management:

(i) Fire Line maintenance:

It is proposed to provide fire line around Maulabhanja RF and Jridamali 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 POU 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. Mithun
Assistant to
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangotta, Dist. Japur
Pin- 755004



4.9.2 Abstract of Interventions:

Abstract of Intervention for Chennarayana 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 30: Abstract of Interventions (Chennarayana Division)

(Rupees Eighteen Lakh Forty Thousand and Two Hundred Only)

M. Mathan
Authorized Signatory
Agent of Mining
M/s. Environmental Conservation
Sakonda Taluq, Dist. Jagalur
Tamil Nadu



INTERVENTIONS TO BE IMPLEMENTED BY KEONJHAR WILDLIFE DIVISION

4.10.1 Providing Solar Lights

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

Total cost of intervention for Keonjhar Wildlife Division

(Rupees Three Lakh Twenty Four Thousand Only)

M. Mishra
 Managing Director
 Agency of Forest
 M/s. Facer Mining Corporation Limited
 Sakumari, Dist. Jajpur
 Pin- 751024



CHAPTER-V FINANCIAL IMPLICATIONS & MONITORING



M. Shukla
Mithunam M
Agent of Pacer
100, Pacer Mining Corporation Limited
Kalarangutta, Dist. Jajpur
Pin-751007



CHAPTER-V

Financial Implications & Monitoring

5.3 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 ramioides* (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 satthi 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. Mathany
Authorised Signatory
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Dist. Jaisalmer
Pin- 345007



ii) By Dhenkanal Division:

- ◆ Fire line maintenance over 15 KM in Maulabhanja – Jirdamail RF.
- ◆ Providing 5 blowers along with PDL 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. Muthumani
Muthumani M
Agent of Mines
M/s. Pacer Alloy Corporation Limited
Kataranghatta, Dist- Jajpur
Pin- 752004



5.3 Abstract of Financial Implications (For Cuttack Division)

Abstract of Intervention for Cuttack Division					
Sl. No.	Description	Unit	Rate	Quantity	Amount in Lakh Rs
Habitat Improvement:					
1a	Identification of S/S 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	1.00
1b	Involvement of VSS & regular interaction	Annual	0.10/L	10	1.00
1c	Additional PDL support	LS			2.00
2	Renovation of water body (Existing)	No	2.50/L	2	5.00
Protection & Surveillance:					
3a	Deployment of Gajle watch,	No	13772/- PM	1 x 60 month	7.50/L
Elephant Drive equipments:					
4	Search Light	No	5000/-	20	1.00
5	Cage	No	200/L	1	2.00
6	Other accessories	LS			2.00
7	Enhancement of Mobility of Officals / Staff providing a hired vehicle (@ Rs.41886.57/ PM for 3 years) including PDL	Month	41886.57 PM	60	25.00
Integrated Fire Protection:					
8a	Providing blowers	No	0.60/L	5	1.00
8b	Control Burning	LS			1.00
8c	Recurring Expenses for Blowers (PDL)	Annual	0.10/L	5*10*0.1	5.00
Improvement of Avifauna Habitat:					
9a	Fixing of Box Nest	No	2500/-	100	3.75

W. P. ...
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5th Special Wildlife Conservation Plan for Endangered Chennai Mongoose at Mahalingapuram
and Suburban Tiger area, Nagar by M/s Forest Ltd.

6b	Scatterown Compensation / Fencing of northern boundary	No.	2500	1500	3.75	
7	Alternate Livelihood support					
7a	Bee Keeping	Unit	7.00 L	1	7.00	in 2 villages
7b	Value Addition to MTP 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	US			7.00	
	Total				82.483	
	Add 20% for cost escalation				16.493	
	Total				98.956	

(Rupees Ninety Eight Lakh Ninety Five Thousand & Six Hundred Only)

M. N. Mahalingam
M. N. Mahalingam
Joint Project Officer
5th Special Wildlife Conservation Plan
for Endangered Chennai Mongoose
at Mahalingapuram and Suburban
Tiger area, Nagar by M/s Forest Ltd.



6.1 Abstract of Financial Implications (For Cuttack Division)

Abstract of Implication for Cuttack Division						
Sl No	Description	Unit	Rate	Quantity	Amount in lakh Rs	Remark
Habitat Improvements:						
1a	Identification of Shu 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 Dfs
1b	Involvement of VSS & regular interaction	Annual	0.20 L	5	1.00	
1c	Additional POC support	Ls			2.00	
2	Renovation of water body (Existing)	No	2.50 L	2	5.00	
3a	Protection & Surveillance	No	13553.43 L	1 x 60 month	12.216	
	Deployment of Gaps with		12272.5		15.926	
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 41665.67/ PM for 5 years)	Month	41665.67 PM	60	25.00	
Integrated Fire Protection						
5a	Providing Blowers:	No	0.20 L	5	1.00	
5b	Control Burning	Ls			2.00	
5c	Recurring Expenses for Blowers (POL)	Annual	0.10 L	5*5*0.1	2.50	
Improvement of Avifauna Habitat						
6a	Fixing of Box Nest	No	2500/-	150	1.75	
6b	Sparrows Conservation (Filling of earthen nests)	No	1500/-	1500	1.75	



Site-Specific Wildlife Conservation Plan for Kalamanglata Chromite Mine at Kalamanglata
under Suban District, Region IV-MFL, Factor Ltd.

7	Alternate Livelihood support					
7a	Bee Keeping	Unit	7.00 L	1	7.00	In 2 villages
7b	Value Addition to NTFP through SWG	No	1.00 L	3	6.00	3 units through 3 SWG
8	Incentive to VSS involved in Bio diversity area. Small Village Development Work.	L5			2.00	
	Total				67,936	62,649
	Add 20% for cost escalation				17,383	17,654
	Total				108,513	106,982

Amount to be provided for Biodiversity Conservation

(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
Kalamanglata Chromite Mining
Factor Ltd.

[Signature]
Divisional Forest Officer
Suban District



(B) Financial Flow Chart

Sl. No.	Intervention	Target	Year					Cost				
			1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1a	Identification of the site in a single forest patch and providing vegetative fencing on forest / human interface side with fencing maintenance	1.00	1.00									
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
2a	Additional PDL support	2.00	2.00									
2	Renovation of water body (barling)	5.00	5.00									
3a	Deployment of Gaur watch	7.96	1.5728	1.5728	1.5728	1.5728	1.5728	1.5728				
3b	Elephant Drive equipment											
1	Search Light	1.00	1.00									
2	Cage	2.00	2.00									
3	Other accessories	2.00	2.00									
4	Enhancement of Mobility of Officials / Staff: Providing a hired vehicle (@ Rs-41665.67/ mt for 5 years) including PDL	25.00	5.00	1.00	1.00	1.00	1.00	1.00				
Integrated Fire Protection												
1a	Providing Firemen	1.00	1.00									
1b	Control Burning	2.00	1.00									
1c	Recurring Expenses for Firemen (PDL)	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												
1a	Feeding of Non Nest	3.75	2	1.75								



id	Spoon Conservation (Hiring of earthen kettles)	1.75	2.50	1.25					
7	Alternate Livelihood support...								
7a	See Knaping	7.00	7.00						
7b	Value Addition to MRP through 100%	6.00	6.00						
8	Incentive to VSS involved in dis- tributing units. Small Village Development Works	2.00	2.00						
	Total	17.40	18.4426	7.1876	7.1876	7.1876	0.6	0.6	0.6
	Add 20% for cost escalation	3.48	3.689	1.439	1.439	1.439	0.129	0.129	0.129
	Total	20.88	22.131	8.626	8.626	8.626	0.729	0.729	0.729

100

Mr. McGinnis
1000 1st Ave.
New York, N.Y.
10010



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* 325/-)	KM	15 MD / KM @ Rs325/-	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)

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

6.2 For Fire Insurance Division


Abstract of Interventions for Fire Insurance Division

Sr	Description	Unit	Rate	Quantity	Amount in Lakh Rs.	Remarks
1	For fire insurance: Rangpur	Area	3.200	1	3.200	Total Expenditure in the year
(a)	At rate of Rs. 1000 per sq. ft. of a width of 1000 sq. ft.	sq. ft.	1.212	1	1.212	
(b)	For fire insurance: Rangpur	Area	1.800	1	1.800	
(c)	At rate of a width of 1000 sq. ft. of a width of 1000 sq. ft.	sq. ft.	0.816	1	0.816	Total Expenditure in the year
(d)	For fire insurance: Rangpur	Area	2.200	1	2.200	
(e)	At rate of a width of 1000 sq. ft. of a width of 1000 sq. ft.	sq. ft.	0.520	1	0.520	
2	Providing Modern Fire Fighting equipments	No.	1.00	1	1.00	Total Expenditure in the year
(f)	At rate of Rs. 1000 per sq. ft. of a width of 1000 sq. ft.	sq. ft.	0.401	1	0.401	
(g)	For fire insurance: Rangpur	Area	0.101 / sq. ft.	1	0.101	
3	For fire insurance: Rangpur	Area	0.101 / sq. ft.	1	0.101	Total Expenditure in the year
(h)	At rate of Rs. 1000 per sq. ft. of a width of 1000 sq. ft.	sq. ft.	0.101	1	0.101	
(i)	For fire insurance: Rangpur	Area	0.101 / sq. ft.	1	0.101	
4	Total				28.72	28.72
5	Add 20% for cost escalation				5.74	5.74
6	Total				34.46	34.46

(Rupees Thirty-Four Lakh Forty-Six Thousand Only)

(Rupees Thirty Five Lakh Eleven Thousand & Eight hundred only)


Head Environment
 Kalarangla Chandra Mha
 HQ PCCPI


Assistant M
 Agent of Works
 Mr. P. P. Chandra Mha
 Kalarangla Chandra Mha
 PCCPI


 Head Environment



See Specific Wildlife Conservation Plan for Kaleranghatia Chrome Mine at Kaleranghatia under Satalda Tahasil dist. Jalpaiguri by M/s Teco Ltd.

5.3 For Keonjhar WL Division:

Abstract of Intervention for Keonjhar Wildlife Division					
Sr 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% Exc				0.54
	G.Total				3.24

Table A7 Abstract of Intervention (Keonjhar WL division)

(Rupees Threelakh twenty fourThousand Only)

5.3.1 Physical & 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	4nos	4									
2	Printing of IEC Materials	10yr	1	1	1	1	1	1	1	1	1	1

Table A8 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 Exc	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 A9 Financial flow chart

M. M. M. M.
 M. M. M. M.
 Agent of Mines
 M/s Teco Alloys Corporation Limited
 Kaleranghat, Dist. Jalpaiguri
 Pin- 785003



Use Specific Wildlife Conservation Area for conservation of various species of Kalarangatta
Forest. Schedule of activities. Annex to BOD Form III

6.3 For Kalarangatta Wildlife Division

Abstract of Intervention for Ecological Wildlife Diversity

Sl. No.	Description	Unit	Rate	Quantity	Amount in Rupees Rs.
a)	Providing Solar Light (High mark)	nos.	4500/-	18	8.10
b)	Printing of IEC Materials	Printed	0.50/-	5	2.50
	Total				10.60
	Add 20% for cost escalation				2.12
	Total				12.72

(Rupees Twelve Lakh Forty Eight Thousand Only)

[Signature]
Head-Environment
Kalarangatta Chromite Mine
M/s. FACCEL

[Signature]
Divisional Forest Officer
Kalarangatta (WL) Division
Jalgaon

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	500	1	1	1	1	1

(Annex III Physical Flow Chart)

(B) Financial Flow Chart:

Sl. No.	Intervention	Target	Year				
			1st	2nd	3rd	4th	5th
1	Providing Solar Light	8.10	2.70	2.70			
2	Printing of IEC Materials	2.50	0.50	0.50	0.50	0.50	0.50
	S.Total	10.60	3.2	3.2	0.5	0.5	0.5
	Add 20% Cost Est	2.12	0.64	0.64	0.1	0.1	0.1
	G.Total	12.72	3.84	3.84	0.6	0.6	0.6

(Annex IV Financial Flow Chart)

[Signature]
Muthumani M
Agent of Mines
M/s. Kalyani Corporation Limited
Kalyani, Dist. Jharkhand
Pin- 828007



See Specific Wildlife Conservation Plan for Kalsamgatta Chemosite Area at Kalsamgatta
Project Submittal Form D11, signed by RA's Field (48)

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, Bhanimalai Division and DFO, Keonjhar WL Division. The Asst. Conservator of Forests, Cuttack Division will act as member secretary.

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. 149.46 lakh as detailed below:

Sl No	Executive Agency	Amount in lakh Rs
I	Forest Department	
a	Cuttack Division	105.510 105.920
b	Bhanimalai Division	34.67 35.118
c	Keonjhar WL Division	9.28
	Total	149.460 150.520

(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, Bhanimalai Division and Keonjhar WL Forest Division.

[Signature]
Regional Chief Conservator of Forests
Kalsamgatta Chemosite Area
Angul Circle

[Signature]
Regional Chief Conservator of Forests
Angul Circle

* Revision for subsequent to enhancement of area under project
(After further approval of RA's)

[Signature]
Regional Chief Conservator of Forests
Angul Circle
Kalsamgatta Chemosite Area
Angul Circle
Kalsamgatta Chemosite Area
Angul Circle
Kalsamgatta Chemosite Area
Angul Circle



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 (Com) 228/2016- 11769/ 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 11.05.2009	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 HP/ WLS/ PA from the Project	Plate-II
3	Map showing the Other Mines within the Zone of Impact	Plate-III

M. Mathur
 Managing Director
 Agent of Mines
 M/s. Facer Projects Construction Limited
 Kallangudi, Dist. Jajpur
 Pin- 753007

FORM-II
(for projects other than linear projects)
 Government of Odisha
 Office of the District Collector, Jajpur

No. 1538Date, 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


Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Aliapali, 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


(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,

End:- 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, Dist- Jaipur
Pin- 751007


District Welfare Officer,
Jaipur

FORM-II
[for projects other than linear projects]
Government of Odisha
Office of the District Collector, Jajpur

No. 1538

Date. 28/7/16

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


Muthamani 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 M
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 Kisam. 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
Gero Alloys Co.
Baliapali
P.O.

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

M. M. M. M.
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Bhubaneswar
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 Tahasijl	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.

G. P. 6.16
Sub-Collector-Cum-Chairman, SDLC
Jaipur

Memp No. 1265 / Date. 22/6/16

Copy forwarded to all members for information and necessary action.

G. P. 6.16
Sub-Collector-Cum-Chairman, SDLC
Jaipur

M. Muthumari
Muthumari M
Agent of Mines
M/s. Fern Alloys Corporation Limited
Jalpani, 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
Jaipur

Memo No. 1267 / Date. 22/6/16

Copy submitted to the Collector, Jaipur for favour of kind information and necessary action.

Ref. 1-6-16
Sub-Collector-Cum-Chairman, SDLC
Jaipur

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

COLLECTORATE : JAJPUR

Ph. 06728-222001 (O). 222330 (R). FAX - 222087
E-mail: dm-jajpur@nic.in. web site: www.jajpur.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- Jajpur

Ms. Sabita Behera, Z.P. Member, Zone No. 12

At- Uttarposi, Po- Purunabaulamala, Dist- Jajpur

Ms. Tapaswini Malik, Z.P. Member, Zone No. 39

At/Po- Atta, Dist- Jajpur

Sub:-


Holding of District Level Committee meeting on Forest Rights Act,
06 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, Jajpur.

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,
Jajpur

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,
Jajpur

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.

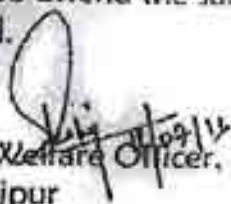

District Welfare Officer,
Jajpur


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

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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.


Muthuram
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, JAIPUR**

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, Jaipur
3. Sri Dibakar Munda, Z.P. Member, Zone No. 3
4. Ms. Sabita 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), Tahasilidar, Sukinda
8. Miss Chetna Sethy, OWS, District Welfare Officer, Jaipur
9. Sri Padan Charan Jena, ADWO, Jaipur
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, Jaipur to initiate the Agenda wise discussion.

Then District Welfare Officer, Jaipur 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


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
A-11, W-11, Dist- Jaipur
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 M
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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 Agent of Mines
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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


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
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.

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Agent of Mines
M/s. Ferro Alloys Corpn. Limited
Kaliapani, Dist. Cuttack
Pin- 751 001

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 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 Tahasildar, 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.

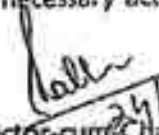
The Meeting ended with vote of thanks to the Chair and the members present.


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corpn.
Jhapani, Dist- J.
Pin- 755047


Collector-cum-Chairman,
Jajpur

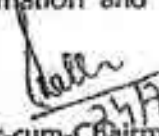
Memo No. 1508 /Date. 25/7/16

Copy forwarded to all members for information and necessary action.


24/7/16
Collector-cum-Chairman,
Jajpur

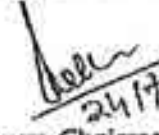
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Memo No. 1509 /Date. 25/7/16

Copy forwarded to the P.D., DRDA, Jajpur/ Sub-Collector, Jajpur/ Block Development Officer, Sukinda/ Tahasildar, Sukinda for information and necessary action.


24/7/16
Collector-cum-Chairman,
Jajpur

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,
Jajpur


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



7/10/19

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an. LTI of Kairi Munda

Cuttack Foreign
Mukhammat
Agent of Mines
Alloys Corporation
Dist- Jaipur
755047

M/s. Ferro Alloys Corp.
Kaliapani, Dist- Jh.
Pin- 755047

୪ ସହରାଦି ଅଞ୍ଚଳ

୫. [Stamp] LTI of Jogendra Tinda

୬. [Stamp] LTI of Lochan Sarda

୭. [Stamp] ସୁବରାଜନାଥପୁର

୮. [Stamp] ପୁରୀ

୯. [Stamp] LTI of Gengi Hembra

୧୦. [Stamp] LTI of Shari Munda

୧୧. ପରାମ୍ପରା ନିୟମ

୧୨. ଜମାଦାର ନାମ

୧୩. ସ୍ୱାଧୀନତାପ୍ରାପ୍ତି

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୧୫. ନିୟମ

୧୬. ନିୟମ

୧୭. [Stamp] LTI of Kasam Sarda

୧୮. [Stamp] LTI of Sumi Birma

୧୯. ନିୟମ

୨୦. [Stamp] 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 କୁଂଜାବତୀ

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LT1 of Rabi Mansah

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LT1 of Dusheshan Mahanta

୨୬ Mahendra Mahanta

୨୭ Brindaban Chatter

୨୮ Kuntal Kuntal

୨୯ Chandra Mani Munda

୩୦ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

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୩୪ Salakh Mahanta

୩୫ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

୩୬ ଶ୍ରୀମତୀ ସୁମିତ୍ରା

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୩୮ LT1 of Saroj Nayak

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ଶ୍ରୀମତୀ ସୁମିତ୍ରା

M. Muthumari
Muthumari M
Agent of M/s. Ferro Alloy

80 SUKRAM-GOP

81 Gopi Chatter

82 S. munda

83 Baranali Mohanty

84 Sarat Kumar Mohanta

85 Kabi dhradhyula

86 ଶ୍ରୀମତୀ ସୁକୁମାରୀ

87 ଶ୍ରୀମତୀ ରମାକାନ୍ତ

88 LTI A Sudersen munda

89 ଶ୍ରୀମତୀ ସୁକୁମାରୀ

90 ଶ୍ରୀମତୀ ସୁକୁମାରୀ

91 Shankararam Bhuja

92 Siva Dasakavati

93 Gopinath pingra

Asst. Conservator of Forests
Cuttack Forest Division

M. Muthumari
Agent of Mines
M/s. Ferro Alloys
Kaliar
1st. Jan
1947

Block Development Officer
Sukinda

RE LTD 2 27/12 2016
REVENUE INSPECTOR
KANKADRA

6/5/16
REVENUE INSPECTOR
KANKADRA

Madhuri Hembrar
P.S. member Ransol G.P.

6.5.2016
Water Extension Officer
BURINDA BLOCK

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6.5.16
P.S. member
Ransol G.P.

6.5.16
GENERAL MANAGER
1st FLOOR
Ransol G.P.

6.5.16
Executive Officer
Ransol G.P.

6.5.16
Mines Manager
M/s. Ferro Alloys Chromite Mines
M/s. FACOR LTD.

M. Muthumari

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

6.5.2016 27/12/16

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¹⁰ The Tahsildar Sukinda.

Sub-Report regarding Conversion of Patti Sabha / Prasar Sabha
for issuance of Certificate under Forest Rights Act - 2006 for
diversion of forest land for non-forest use in connection with
FACOR Choomite Mines, Kallarangiate.

Ref: - Tahsil office Sekonda Memo NO: 29/4/16.

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(Forest Range Officer)
Sukinda Range
Forest Range Officer

Muthumani
Agent of Mines

TAHASILDAR
SUKINDA

Asst. Conservator of Forests
Cuttack Forest Division. $\cdot \chi(R_1)$
Kannadapatt

10/2/98
Forester
Ransol

Director (Africa)
Power of Attorney holder
FERROALLOYS CORP.
ION LTD

CELESTIAL SIGNS
OF
THE
FUTURE
OF
THE
UNION



UNDERTAKING

(Ref: Stipulated Condition No 2.21 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

This is to undertake that mining will be carried out 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.

M. Muthuramya
 Muthuramya M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalarangatta, Chab-Jajur
 Ph. 785547

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

By e-mail

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
OFFICE OF THE REGIONAL CONTROLLER OF MINES, BHUBANESHWAR

No. BBS/JMP/CR/2188/RMP/2022-23

Dt : 06/01/2023

Shri/Ms. Ferro Alloys Corporation Limited,
D.P. Nagar, Raxada Bhadrak Bhadrak

Sub: Approval of the Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) in respect of Kalangajuta Mining Lease Area for Chromite Ore over an area of 23.80 ha of M/s Ferro Alloys Corporation Ltd., situated in Kalangajuta Village, Sukinda Taluka, Jagpur District of Odisha State.

Sir,

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.D.445(E) dated 28.04.1987 and S.O. 1857(E) dated 18th May, 2016, I hereby approve the Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) in respect of Kalangajuta Mining Lease Area for Chromite Ore over an area of 23.80 Ha. of M/s Ferro Alloys Corporation Ltd., situated in Kalangajuta Village, Sukinda Taluka, Jagpur 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 immediate effect.

M/s. Ferro Alloys Corporation Ltd.
D.P. Nagar, Raxada Bhadrak Bhadrak
Pin- 756047

(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/QP/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. 203 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 documents 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 proponent, 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 grassing/grazing of worked out mining lease area in accordance with Hon'ble 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.

B-Special Conditions:

(1). Mining work at common boundary with adjacent lessee should be started only after getting necessary permissions.

Yours Faithfully

(B.L.GUJAR)

Regional Controller Of Mines,

Indian Bureau of Mines, Bhubaneswar

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. zokul@ibm.gov.in

(2). The Director of Mines, Directorate of Mines, Government of Odisha, Heads of the Department Building, Bhubaneswar- 751001. Email- directorofmines@orissaminerals.gov.in

(3). The Director of Mines Safety, Chaitanya, Email- ulafossanuksh@gmail.com

(4). Sri Avijit Bhunia, Qualified Person by mail. Email- avijit.bhuniar@veda-eta.co.in

(5). Concerned MCDD, file.


B.L. Gujar
Regional Controller Of Mines
Indian Bureau of Mines, Bhubaneswar

Approved

Chapter 1 : General Information

1.1 : Lease Details

IBM Registration Number :	IBM/173/2011
Lease Code :	40054601
Mine Code :	11OR119022
Name of Lessee :	Ferro Alloys Corporation Limited
Address of Lessee :	D.P.Nagar, Randa Bhadrak Bhadrak
Type of Lessee :	Private
Name of Mining Lease :	KALARANGIATTA
State :	ODISHA
District :	JAJAPUR
Tehsil/ Taluk/ Mandal :	Kulipani
Village :	Kalarangiatia (CT)
Lease Area (Ha) :	23.800
Forest Area (Ha) :	23.8000
Name of Minerals :	CHROMITE
Name of associated minerals :	
Type :	Existing Lease

Digitally signed by Mr. M. K. Mishra, DN: cn=M. K. Mishra, o=Mineral Development Corporation, email=mkmishra@mdc.co.in, c=IN, Date: 2011.07.17 11:17:17 +05'30'

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
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1.3 : Existing Lease

Date of Execution :	18/04/2008
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Muthumari M
 Agent of Mines
 Ferro Alloys Corporation Limited
 Kalicani, Dist- Jaipur
 Pin- 303007

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/OTFM/50-ORI/BH U/2012-13	28/03/2013	01/04/2013	31/03/2018	Scheme Of Mining	-
3	MS/OTFM/42-ORI/BH U/2017-18/2794	13/02/2018	01/04/2018	31/03/2023	Review Of Mining Plan	-
4	MRRMP/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


 Agent of Mines
 Mines Department
 Government of India

Applicable :	Yes
Letter No :	J-11015/183/2007-1.AJ(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.L-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


 Mr. Anil Kumar M.
 General Manager
 Ferro Alloys Corporation Limited
 Kailashpuri, Dist- Jaipur
 Pin- 302011

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)
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1.3.5.1 : Location of Boundary Pillars

View Location of Boundary Pillars Excel	J66306123163204cd971a09location_boundary_pillars_of_KCM.xlsx
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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 Randia Bhadrak Odisha	6784240320	facor.mines@vedanta.co.in	Resolution_POA to Sawick Mazumdar_FACOR.pdf

1.3.7 : Qualified Person Details as per MIOAHCEMCR, 2016

S.N.	Prefix	Name	PAN of QP	Address	Mobile no.	Qualification	M/s. Ferro Alloys Corporation Limited Est. Jaipur, Dist- Jaipur prescribed under 755047 the rule	Agent of Mines Muthumani M
1	Mr	Avijit Bhunia	BQHPB6353D	Kalarangiata Chromite Mine Kalarangiata Jaipur Odisha 755028	8093038833	BE Mining Engineering	11	avijit.bhuniar@veda ma.co.in
2	Mr	Imandi Rama Rao	AAVPI2168J	Kalarangiata Chromite Mine Kalarangiata Jaipur Odisha	9437528823	Mc Geology	24	imandiramara.rao@v cdama.co.in

Approved

M. M. Muthurani
Muthurani M
Agent of Mines
Ferro Alloys Corporation Limited
Mis. Ferro Alloys Corp. Dist. Jaipur
Kaliapani, 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 I
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	Damsala Nallah is 970m away from the lease boundary
Public roads (Tar road, cart road)	Nil	0.01	Tomka Mangalpur Highway passes along the northern Boundary of the lease area
Railway track	Nil	0	No railway track passing within 5km radius of
Human settlements	Nil	0.2	Nearest Village Methman M. Agent of Mangalpur
Archaeological monuments/ places of worship/public utilities etc	Nil	0	No archaeological monuments and places of worship within 5km radius

M. Methman

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 lumpy ore, granular ore, ferruginous ore, disseminated ore and banded ore. Lithology comprises of soil and alluvium and laterite, dolerite dyke, meta-basic lavadolerite, 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 serpentine. 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 earths 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

Muthumani M
Agent of Mines
M/s Ferro Alloys Corporation Limited
Kallanpur, Dist- Jodipur
Raj. 326037

Muthumani M

boreholes named as Limonitised 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 MEMC 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 MEMC 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					
(from)					(to)					
Dip Direction of the Ore Body					Plunge of Mineral Body (degree) (if any)		Direction of Plunge			
NW		NB		SW		0.00		SE		W

000

2A.2: Exploration

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

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 radical	Av Grade (%)	Latitude (dd:mm:ss)		Longitude (dd:mm:ss)	
	From	To											From	To	From	To
1	Nil	Nil	Nil	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

EA.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 radical	Av. Grade	Latitude (dd:mm:ss)		Longitude (dd:mm:ss)	
	From	To											From	To	From	To
1	Nil	Nil	Nil	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

Approved by
 Director, Mines & Geology
 District, Jharkhand
 Date: 15/05/2019
 Page: 7/8

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	551.20	0	0.00	4	551.20	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	Maheshwari Mining pvt ltd	NABL accredited	Log_Sheet_2018-22.xlsx

* Chemical analysis of core from core 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
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M/s. Ferro Alloys Corporation Limited
Kalyani, Dist. Jharkhand

[Signature]

1	Nil	1	1	Nil
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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 MEMC 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	23,800000	0.000000	23,800000
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	23,800000	0.000000	23,800000

2A.2.2: Summary of The Previous Exploration (Before Last Plan Period)


 M/s. Ferro Alloys Corporation Limited
 Agent of Mines
 Kallanani, Dist- Jejjur
 Pin: 755047

Name of The Agency

Exploration was carried out by M/s FACOR LTD (In house Exploration Team) c

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
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)			
										Form	To	Form	To

M/s Ferro Alloys
Agent of Mines
Muthumani M

M. Muthumani

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)		Longitude (dd:mm: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


 Mr. M. M. M. M.
 Agent of Mines
 M/o. From Office, Government of India

2A.2.2.10: Chemical Analysis

Sl.No.	Sample ID	Minerals	Radical Analysis	Attachment
1	Sample attached	chromite from 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 - Kulungriana, (1).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

Authumari M
 Director of Mines
 Department of Mines
 Kalungriana, 255041
 25/05/2023

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 Kalatrangata 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 influence for section 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 influence zone is considered 45 meter, and during calculation under the 211 category it is considered 50m and during the calculation of the total resource- the average influence is taken i.e 47m. All the resources are in 331 categories. Total 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. M. Madhavi

65.00	198810.00	3.20	636192.00
2.00	91050.00	3.20	291360.00
2.00	90920.00	3.20	290944.00

2.A.2.4.3: Mineral Resource Estimate for Conversion to Mineral Reserve

Modelines. Volume of the total body is called total production. Chlorophyll is the primary pigment in plants.

Title: Effect of Vitamin D on Bone Density
 Author: John Doe
 Institution: University of California, Berkeley
 Date: 10/20/2023

section. According to UNFC classification, Reserve & resources for the mine is classified into 3 categories i.e., Proved Mineral Reserve (111), Probable Mineral Reserve (121), Feasibility Mineral Resource (211). The 111 category is estimated from 39mRL (lowest current level) up to 03mRL (lowest 5th year development). Similarly, the 121 category is estimated from 03mRL (lowest 5th year development) up to 00mRL (Ultimate Pit Limit). The 211 category is estimated from 00mRL (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 notified 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 infrastructures, 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 106/2(b) of MMR(1961) permission. Dumping activity shall be done in a systematic manner at the main dump situated at the northern side of the pit. No rebuilding 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 by 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 ferrochrome price is decreasing exponentially.

M/s. Ferro Alloy Corporation Limited

M. N. Mahapatra

2	Ultimate Pit Limit	2	2960.00	50.00	-106.00	148000.00	3.20	472600.00	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/Bloc k	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 Agent of Mines	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

M/S Ferro Alloys Corporation Ltd. Dist- Jaipur
Chromite
40.37
M. N. Mahapatra

												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	37530.00	3.20	120096.00	121	forest land	Chromite	39.2	cross- sectional method. In depth column bottom mRL mentioned.

M. Muthusamy
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 M. Muthusamy
 Agent of Mines
 Muthusamy Corporation Limited
 Kallakurichi, District Villupur
 Pin- 605 007
 M/s. Ferro Alloys Corporation Limited

7	3	71	50.00	0.00	3550.00	3.20	11360.00	121	forest land	Chromite	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	Chromite	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
Reserves/ 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		The 121 category is estimated from 01mRL (lowest 5th

MIC
 Officer of Mines
 Muthumani N
 22.11.2022
 01mRL (lowest 5th

						year development) up to 00mRL (Ultimate Pit Limit).
3. Probable Mineral Reserve (A)	122	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 -106mRL (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

M. Mulhans
 Mulhans
 Agent of Mines
 Kalafani, Dist-Jaipur
 Pin-305004
 M/s. Ferro Alloys Corporation Limited

2A.2.5.1: Geological Mapping

SLN	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)		Longitude (dd:mm:ss)	
						From	To	From	To
1	NH	NH	0	0	0.0000	00:00:00.00	NH	NH	00:00:00.00

2A.2.5.3: Pitting

Number of Pins
Nil

Sl.No.	Year	Land Type	Pit ID	Length of Pit (m)	Width of Pit (m)	Depth of Pit (m)	Latitude (dd:mm:ss)		Longitude (dd:mm: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

Antithesis

Antithesis

2A.2.5.4.1: SPACING

Min (m)	Max (m)	Avg (m)
0.00	0.00	0.00

M. Muthuram
Agent of NINT
To Allco's Corporation
Japan, Dist. Jaipur
pin-755047

Chapter 3: Mineral Beneficiation / Processing

Name of The Ore/Mineral	Not applicable
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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	Cr2O3	41.9700
2	FeO	22.3700
3	Gr Fe ratio	1.6500
4	SiO2	7.0300
5	Al2O3	11.6900
6	MgO	6.8260
7	CaO	1.7100
8	MnO	0.1700
9	P2O5	0.1000
10	SO3	0.2570
11	TrO2	2.1300
12	Na2O	0.2000
13	K2O	0.0300
14	LOI	3.6000

Muthumani M
Agent of Mines

M. Muthumani

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 Scr	Aperture	Classifier /	Classifier /	Water Requ	Fresh Water	Recirculate
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M. Muthuram
 Agent of Mines
 Muthuram Limited
 Ferro Alloys Corporation
 Kaliapani, Dist- Jaipur
 Pin- 755047

	Mill		Mill	Rate(ton)	Size(mm)	Size(mm)	Screen/Classifier	Size of Screen/Classifier (mm), if applicable	Screen undersize (tph)	Screen oversize (tph)	treatment(l/h)	Requirement (l/h)	Water (l/h)
1	Nil	Not applicable	00	0.0000	0.0000	0.0000	00	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	00	Not applicable	00	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


 M. S. Murthy
 Managing Director
 M/S. Ferro Alloys Corporation Limited
 Kaliapani, Dist. Jalgaon
 Pin- 395047

Sl.No	Type of Scrubbers / washers	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product Size (mm)	Product Quality, if available	Water Requirement(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 Requirement (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

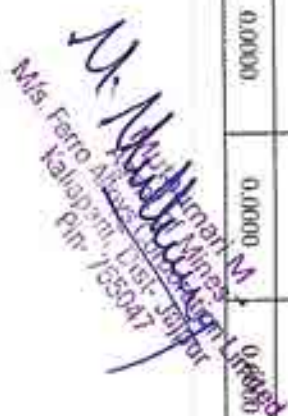
3.6.3: Gravity Separation

Sl.No	Type of separators (jig, table, spiral, etc.)	Stages, if applicable	Make	Capacity(tph)	Feed Size(mm)	Product (Cone) (tph)	Product-Mid (tph), if available	Product-Tail (tph)	Water Requirement (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 Requirement (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


 M/s. Ferro Alloys and Minerals Private Limited
 Kalupent, Dist: Jolapur
 PIN- 735047

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 Requirement(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 Requirement(l/h)	Fresh Water Requirement (l/h)	Recirculated Water (l/h)
1	NA	Not applicable	(0)	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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 Kallapani, 753001

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
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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


 M/s. Ferro Alloys Corporation Limited
 Agent of Mines
 Kalibangan, Dist- Jodhpur
 Pin- 342007

Chapter 4A: Mining Operations

4A.1.1: Existing Method of Mining		Mechanized	
Choose one or more	Combination of loaders and tippers	None	None
4A.1.2: Proposed Method of Mining		Mechanized	
Choose one or more	Combination of loaders and tippers	None	None
<p>Reasons for Proposed Changes</p> <p>Review of Mining plan for the period of 2023 to 2028 The proposed mining method shall be 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 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 backho</p>			

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*600.5	

4A.2.1.2: Dumps and Stacks



 Mining Officer

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

SLNo.	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

SLNo.	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 coir mat 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 in)
single pit	2023-2024	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

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_PIT DUMP.pdf
Recovery Study Report	No	Nil
Hydrological Study Report	Yes	Comprehensive report on GW_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_PIT 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	1.89	10-58, Avg 40.4%
2	2024-2025	63140.00	80000.00	143140.00	80000.00	0.00	1.89	10-58, Avg 40.4%
3	2025-2026	43948.00	50000.00	93948.00	50000.00	0.00	1.89	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. Muthuman
 M/s. Ferro Alloy Corporation
 Katarangiatta
 1.14

5	2027-2028	352800.00	50000.00	402800.00	50000.00	0.00	0.14	10-58, Avg 40.4%
	Total	1642330.00	380000.00	2022530.00	380000.00	0.00		

4A.3.3: Dump workings

Sl.No.	Year	Dump ID	Latitude (dd:mm:ss)		Longitude (dd:mm: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) (=B+D)	150000.00	80000.00	50000.00	50000.00	50000.00	380000.00
(F) Total Quantity Handled (t) (=A+C)	150000.00	80000.00	50000.00	50000.00	50000.00	380000.00

4A.4: Machine Calculation


 Mr. Anil Kumar M. Agarwal
 Asst. Manager, Ferro Alloy Corporation Limited
 Kalupani, Dist- Jaipur
 pin- 755047

4A.4.1: Machine Requirement Summary

Number of Average Working Days in One Year (A)	350
Number of Shifts per Day (B)	3
Material Handling Required per Day (D) ((D)=Largest of (Q1,Q5)/(A))	4708.57
Material to be Handled per Shift (E) ((E)=(D)/(B))	1569.33
Handling Required per Hour (F) ((F)=(E)/8 hours)	261.5
Effective Shift Time	6 hrs 00 mins

4A.4.2: Shovel / Excavator Requirement

Effective Shift Time										6 hrs		00 mins		
Sl.No.	Type	Bucket Capacity (m ³ /A)	Bucket Fill Factor (B)	Swell Factor (C)	Tonnage Factor (m ³ /t) (D)	Machine Utilization Factor (%) (U)	Efficiency (%) (E)	Cycle time (sec) (F)	(G) TPH =TPH (G) =(3600 x A x B x C x D x E x U) / F)	Total Hours (H) =Number of working days x Number of shifts/day x Effective shift hours	Yearly handling by one Excavator (I) (I)=(G x H)	Maximum handling of the material by this machine during the block period (J)	Number of excavator machines required (K) = (J) / I	Standby excavator (L)
1	Backhoe	2.40	0.80	0.9	2.00	0.80	1.00	120	82.94	6300	522522.00	900000.00	1.72	0
2	Backhoe	1.50	0.85	0.9	2.00	0.80	1.00	150	44.06	6300	277578.00	350000.00	1.26	0
3	Backhoe	0.90	0.85	0.9	2.00	0.80	0.80	150	21.15	6300	133245.00	56134.00	0.42	0

4A.4.3: Dumper Requirement

Effective Shift Time	6 hrs	00 mins
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M. N. Sharma
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Kaliapani, Dist. Jaipur
Pin- 305047

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 (i) (B)	Speed of the dumper (KMPH) (i)	Lead Distance (KM) (ii)	Time taken to cover distance in minutes/iii (i)/(i) x 60	Queuing, Loading Time at Shovel (min) (iv)	Queuing, Unloading Time during unloading (min) (v)	Total Time to complete one trip (vi) = (iii) + (iv) + (v)	No. of Trips / hr = (60 / vi)	Total transportation per hour = (B X vii)	Yearly handling by one dumper TPH (ix) = A x	Maximum handling of the material by this machine during the block period (i) (x)	Number of dumpers 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 Hole (m) (including Sub-grade Drilling)	Spacing (m)	Burden (m)	Bulk Density of Waste (t/m ³)	Bulk Density of Mineral (t/m ³)	Yield per Hole (t)	Yield per Meter (t/m) = Yield per Hole (t) / Depth of Hole (m) (including Sub-grade Drilling)	Annual Target Known (t)	Drilling Requirement per Day (m) = (Annual Target Known (t) / Yield per Meter (t/m))	Drilling Requirement per Shift (m)	Rate of Drilling per Hours (m/hr) = Drilling Requirement per Shift (m) / Drilling 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

M/s. Chandra Sekhara Enterprises
 10/10, 1st Floor, Anna Nagar,
 Chennai - 600 024
 Tel: 044-2630417
 Email: chandra.sekhara@chandra-sekhara.com

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	Liugong	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	Liugong	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	Nil

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 Development / Waste (kg/M)	Depth Of Hole
1	0.00	0.00	000	0.00	000	000	0.00	0.00	M/s Ferro Alloys Corporation Limited Kallipani, Dist. Jyoti	Agent of Mines Muthuram	0.00

M. Muthuram
P. No. 1547

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)	Numbe r of Rows	Yield per Holes in ROM Zone (m ³)	Freqe ncy of Blasting in a Week	Maximum num ber of Holes Blasted in a Round	No of Holes R equired 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 aker	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	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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Ms. Ferro Alloys Corporation Limited
Kaliaperi, Dist- Jaipur
Pin- 755047

1	Foreman	1	1	1	4
2	Mine-mate	2	2	1	7
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	Dozer/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
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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 (E))					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)	Longitude (dd:mm:ss)	Total Dump	Existing
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 M. K. Sharma
 Agent
 Ferro Alloys Corporation Limited
 Kallanpali, Dist. Jaipur
 Pin- 305007

				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


 Mr. N. S. Jaiswal
 N. S. Jaiswal Corporation Limited
 N. S. Jaiswal, Dist. Jaipur
 Kalangan, 755047

				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 hardnes	present in the mineral i.e. FeO, MgO, SiO ₂ , Al ₂ O ₃ etc.
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* 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

N. Mutum
Agent of Mines
Alicys Corporation Limited
Sri Jagann, Dist: Jajpur
Pin-755047
Phone-755047

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 MCCDR 2017

Rule 35 (1) Kalarangar 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 IBM 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
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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. Subramanian
 Director, CSR
 Dist- Jajpur
 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

Ms. Feena
 Kallianpur
 Pin- 755047
 Mobile: 9843000000
 Email: feena.kallianpur@gmail.com

5.2.2.13: Efforts for green energy	
Total energy consumption (KWh)	Green energy consumption (% of total)
600000.00	1.00
5.2.2.14: Water & recycled use	
Total water consumption (KLD)	Water recycled (% of total)
80.00	96.00

5.2.3: 2025-2026

Details of Work Proposed during the Year / Measures Planned for the Affected Segment	Cumulative Work done / Measures Taken
5.2.3.1: Area to be Developed for Recreation	
Area (Ha)	Area (Ha)
0.05	0.65
5.2.3.2: Area for Water Storage & Recharge Facility	
Area (Ha)	Area (Ha)
0.00	11.00
5.2.3.3: Efforts Made towards Housing for Local Communities	
Number of Houses	Number of Houses
0	0
5.2.3.4: Efforts Made towards Providing Transport to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
15	130
5.2.3.5: Efforts Made towards Providing Healthcare to Local Communities	
Number of Beneficiaries	Number of Beneficiaries
2500	10000
5.2.3.6: Efforts Made towards Providing Hygiene & Sanitation to Local Communities	

M/S.

For

18/04/2024

18/04/2024

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 ODP			
Number of Toilets Built inside the Lease Area		Number of Toilets Built outside the Lease Area	
5		20	
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)	
6000000.00		1.00	
5.2.3.14: Water & recycled use			

Muthumanthi M
General Manager
Mines
Department of Mines
P.O. Box 75847
Jalpur


 M/s. Murthuman M
 Director of Mines
 Jalandhar
 Pin- 151007

Total water consumption (KLD)	Water recycled (% of total)
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

Agent of Operations
M/s. Ferno India Pvt. Ltd.
Jalpur, Dist- Jalpur
Pin- 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 ODF		
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 Swatchata		
Number of Swatchata Programmes Proposed		Number of Swatchata 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

5.2.5: 2027-2028

M. M. Muthumani
 Agent of Ferro Alloys Corporation Limited
 Kallupani, District Tirupur
 Pin- 765047
 M/s. Ferro Alloys Corporation Limited
 Kallupani, District 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

M/s. Ferro Ferro
 Kalidindi, Dist. Jaipur
 PIN-303004
 Tel: 9828075504

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)	
6000000.00		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 Allez
 Agent of M/s. Ferro Allez & Partners
 Kallipara, Dist- Jolpur
 Pin- 755047

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


 M. Mahesh Kumar
 Project Officer
 SRIRO AALOKS CORPORATION, Dist: JALPAIGI
 Jalpaiguri, West Bengal - 735003

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 Dumps(in hect)	Area under utility services(in hect)	Area under Stack yards(in hect)	Mined out Area Reclaimed but not rehabilitated(in hect)	Mined outArea 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)
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	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. S. Mahapatra
 M.S. Ferro Alloys Corporation Limited
 Kallapani, Dist. Jaipur
 Pin- 305007

Average Rainfall of The Area (mm)	1757.72
Proposed Area under Water Storage	One settling pond is there near ETTP 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)	
		From	To
		Longitude(dd mm:ss)	
		From	To

M. M. Muthuraman
 M/s. Ferro Alloys Corporation Limited
 P.O. Box 155047
 Kalibpatti, Dist. Japur
 M/s. Ferro Alloys Corporation Limited

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.ss)		Longitude (dd:mm:ss.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: Garland Drains

Year	Proposed Band Length (m)	Latitude (dd:mm:ss.ss)		Longitude (dd:mm:ss.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 (%)
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 Mr. Anurag Kumar
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalpana, Dist. Jaipur
 Pin- 305047

	Year (INR)			
1	7609500.00	6.50	17632	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	Desilting 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
1	2023-2024	-	0.00	0.00	0	0.00	0.00	Nil	Nil	0.00
2	2024-2025	-	0.00	0.00	0	0.00	0.00	Nil	Nil	0
3	2025-2026	-	0.00	0.00	0	0.00	0.00	Nil	Nil	0

4	2026-2027	-	0.00	0.00	00	0.00	0.00	Nil	Nil	Nil	Nil	0
5	2027-2028	-	0.00	0.00	0	0.00	0.00	Nil	Nil	Nil	Nil	0

6.2.5: Pisciculture

6.2.5.1: Total Expenditure incurred as on Date (INR)	0
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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. Ferre, Agent, District Engineer,
 Kalikatt, Dist. Jalgaon
 15/04/2024

Sl.No	Year	Type of Recreational Facility	Area Covered (Ha)	Latitude (dd:mm:ss.s)		Longitude (dd:mm:ss.s)		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	2021-2024	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	2
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
 Kalapatti District
 P.O. Box 115057
 Chennai - 600 057

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


 Mr. M. S. Sharma
 Agent of M/s. Ferro Alloys Corporation Limited
 Kallipani, Dist-Jaipur
 Pin- 305047

4	2026-2027	0.00			0.00
5	2027-2028	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 Dumps(in hect)	Area under the Tailing Dam	Area under utility services(in hect)	Area undisturbed/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)	Subutilized 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

Ms. Feen
 K. 100001155047
 Agent of Mining
 Mined out Area
 under Tailing Dam
 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


 M. S. Mittal
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kailashpur, Dist- Jalpur
 Pin- 755047

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

SLNo	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

755041
Dist. Jalpa
Allot. 5 Compartment
Jalpa
Bihar
755041

Total Area Proposed to be put to use in best 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	<u>Point 16, Bank Guarantee, compressed.pdf</u>

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. Muthuraj
 M/s. Ferro Alloys Corporation Limited
 Kalaperi, Dist. Jaffar
 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	OB/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

Muthumanthi
Agent of Mines
M/s. Ferro Alloys Corporation Ltd.
150k ton

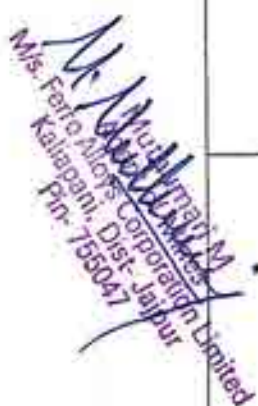
M. Muthumanthi

						enhanced production of 150k 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
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.)	10% of Royalty (a)	Total Expenditure for SDF implementation (b)			
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


 Mrs. Ferio Alloys Corporation Limited
 Kaliapani, Dist- Jaipur
 Pin- 755047

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 Metrage (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	2028962.98	1005247.78	-1023715.20	As the 99% 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

M. M. 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


 M. Muthukumar
 M. S. Ferro Alloys Limited
 Kalaiyur, Pin 750047

Backfilled Area available for Reclamation and Rehabilitation	0	0	0	0
Backfilled Area Reclaimed and Rehabilitated	0	0	0	0
Balance Backfilled Area	0	0	0	0

8.2.6: Production of Minerals

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
8.2.6.1: ROM				
Opencast	398808.0000	247567.2000	-151240.8000	EC not received for enhanced production target of 150KT
8.2.6.2: Cleaned Ore				
Opencast	0.0000	0.0000	0.0000	0
Dump Mining	0.0000	0.0000	0.0000	0
Recovery from Mineral Rejects or Tailings	0.0000	0.0000	0.0000	0
Total	0.0000	0.0000	0.0000	0

8.2.7: Handling of Mineral Rejects/ Sub-Grade

Particulars	Proposals	Achievement	Deviation	Reasons for deviation
Generation of mineral rejects				
Opencast	0	0	0	0
Dump Mining	0	0	0	0
Other recovery	0	0	0	0
Stacking of mineral rejects/ sub-grade mineral (Dump Id)				
	0	0	0	0
Blending of mineral reject / sub-grade				
	0	0	0	0

Muthuraj
Agent of Mines
2, Jile Fort, Alor's Dist- 100

M. Muthuraj

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 Id)	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

Mutlurmani M.
Regional Manager
Kallur
Pin- 755047

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

Municipal Corporation
Jaipur
2023

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 (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. K. Srinivas
 Managing Director
 M. S. K. Srinivas & Co. Private Limited
 Tel: 0844-2550647

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)	360	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	0	5	1

Muthumay
 Assistant Engineer
 Kalappam - Dist - Jaffna
 15/04/2017

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 glance information as annexure V2.pdf
2	Copy of MDPA (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 Kaluranganjatta Chromite Mine.pdf
7	Chemical and Mineralogical analysis report	Nil	Chemical and mineralogical Assay certificates.pdf
8	Exploration details	Nil	Exploratory Boreholes 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_Kaluranganjatta.pdf
11	Copy of Study reports conducted as per Para 4.3.1	Nil	SLOPE STABILITY REPORT KALARANGI ATTA_FACOR PIT DUMP.pdf
12	Experience & Qualification Details of Qualified Person	Nil	Point 8. Experience Agent of mines M/s Ferro Alloy Corporation Limited M. Murugan
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

M. Murugan

	(RoC)/Partnership .arm (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, CTO, EC.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
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist-Jaipur
 Pin- 755047

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 (.KMZ format)(Georeferenced):A statutory plan as per MCIDR, 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 UTM-Model.pdf
3	Surface Geological Plan of the lease (.KMZ 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 UTM-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 (.KMZ 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 I to V (3) Active dump and yearwise dump.	Nil	<p>Year-wise dev. plan-Model-5.pdf</p> <p>Muthumani M <i>(Signature)</i> <i>(Stamp)</i></p>

	proposal for year 1 to 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 lease 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 plans/section as deemed necessary by approving authority.		Plate 12 FINANCIAL ASSURANCE PLAN UTM-Model.pdf


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

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13	Five Year Production and Development sections (in pdf format);	Nil	YEARWISE DEVELOPMENT SECTIONS- Model.pdf
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M. Subramanian
Agent of Mines
M/s. 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. Mithun
 Mithun M
 Agent of Mines
 M/s. Ferro-Alloys Corporation Limited
 Kallipada, Dist- Jajpur
 Pin- 751007

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, Orissa, India
Pin- 751002

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 & Forests

Paryavaran Bhawan,
C.G.O. Complex, Lodi Road,
New Delhi - 110 003

Dated the 13th May, 2009

To

M/s Ferro Alloys Corporation Limited
Laxmi 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 0.58ha is kept for storage of top soil, 7.192ha for over burden dump, 2.286ha 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 Ranjagarh RF and Dhalparha RF and two protected forests namely Mahaganj 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 targetted production capacity of the mine is 50,000 tonnes per annum.

..2/-

M. K. Mishra
M. K. Mishra
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 70.28m³ 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 nickelliferous 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 nickelliferous 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.10.9lakhs.

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 Bhimtanagar 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:

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

43/-

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.

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

24/-

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 OB 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 OB 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 7.5m 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 2500 plants 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 stabilise 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.

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

5/-

- (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.

5.6/-

M. Muthuraj
Muthuraj
Agent of Mines
M/s. Ferro Alloy Corporation Limited
Kaliapani, Jajpur
Pin- 751 047

- (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^{6+}). 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

57/-

M. Muthumay
Muthumay M
 Agent of Mines
 Corporate
 Dist-Jajpur
 65047
 Ms. Ferr
 Kallu
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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.

(xxx) 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, SO_2 & 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, SO_2 & 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.

8/-


Muthuramy
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kailashani, Dist- Jaipur
Pin- 765047

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 closures 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/ Tahsiladar's Office for 30 days.

2/-

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


(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.

..10/-


Muthumari M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kaliapani, Dist- Jaipur
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 (EZ), Ministry of Environment and Forests, A-3 Chandrasekharpur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakanthe 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) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.

M. Muthumary
 Muthumary M.
 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.


Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kolarpet, Dist. Angkor
Pin- 712242

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

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. A. Khan
Surveyor

Surveyor
Kalarangiatta Chromite Mines
CORP LTD


Divisional Forest Officer
Cutback Forest Division


15/07/2025
Authorized Signatory


15/07/25
Forester
Ransol Section

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


Dy. Ranger
Cutback 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)
Forester
 Ransol Section

(Signature)
Dy. Ranger
 Sukinda Range

(Signature)
 15/07/2025
Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jajpur
 Pin- 755047



M. Muthumari
15/07/2025

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

S. Ali Khan
(S. Ali Khan)

Surveyor
Sialta Chromite Mines
FACOR LTD

Divisional Forest Officer
Cutlack Forest Division

Forester
Ransol Section

Sub. 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

AF
 Divisional Forest Officer
 Cuttack Forest Division

J. Singh
 District
 Range Section

M. Muthumari
 15/07/2023
 Muthumari M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliapani, Dist- Jajpur
 Pin- 755047

Dr. J. Singh
 Dy. Ranger
 Sukinda Range



[Signature]
CS. Ali Khan

Surveyor
 Khatia Chromite Mines
 FACOR LTD

[Signature]
Divisional Forest Officer
 Cuttack Forest Division

[Signature]
Forester
 Ransol Section

[Signature]
Deputy Ranger
 Sukinda Range

[Signature]
 15/09/2023
Muthuman M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kaliepani, Dist- Jaipur
 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.

M. Muthuram
Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Bhilai, Chh. Jhark
Pin-767017

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.

M. Mithun

Mithun M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallangudi, Dist-Jagpur
Pin- 761007

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



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
Kallanur, Dist. Jangar
Pin-766057

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



UNDERTAKING

(Ref: Stipulated Condition No 2.30 of In- Principle Approval order dated 21.03.2025
Online Proposal No FP/OR/MIN/16453/2015)

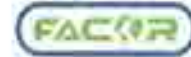
This is to undertake that the User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly.

M. Muthuraj
 Muthuraj M
 Agent of Mines
 M/s. Ferro Alloys Corporation Limited
 Kalarangatta, Chik-Jajur
 Pin- 753027

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. Muthuraj M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalarangatta, Dist- Jajpur
Pin- 751047

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

Countersigned by
Divisional Forest Officer
Cuttack Forest Division
COUNTERSIGNED
Office Seal

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.

M. Muthuram
M. Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kallagudi, Ghat-Jaguar
Pin- 718607

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

Countersigned by
Divisional Forest Officer
Cuttack Forest Division

Office Seal
COUNTERSIGNED

APZ
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.


Muthuram M
Agent of Mines
M/s. Ferro Alloys Corporation Limited
Kalluram, Dist- Jagan
Pin- 751007

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
Kalsopur, Dist-Jagat
Pin-756002

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