JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

Letter No.-JSW/S/O/2023/121 **Date- 04.03.2023**

To
The Divisional Forest Officer,
Keonjhar Forest Division
Keonjhar.

(Through the Range Officer, Barbil)

Sub: Proposal for non-forestry use of 63.30 ha Sabik Kissam forest land in addition to 371.192 ha of forest land already diverted forest land located within the miming lease hold area in favour of JSW Steel Ltd for Nuagaon Iron Ore Mines in Barbil Tahasil of District Keonjhar (Odisha).

X-Sub: Submission of Compliance of Stage-I stipulation imposed by MoEF&CC, Govt. of India.

Ref: Your Office Letter No.2217/6F-Mining-100/2021, dt.25.03.2022.
Letter No. 8-17/2001-FC(vol), dt.14.03.2022 of MoEF&CC, Govt. of India.

Dear Sir,

With reference to the subject cited above, we would like to inform you that Stage-I Forest Clearance has been obtained over 63.30 ha of forest land in favour of M/s JSW Steel Ltd for Nuagaon Iron Ore Mine vide letter No. 8-17/2001-FC(vol), dt.14.03.2022.

Now we are submitting here with the pointwise compliance stipulated in Stage-I Forest Clearance as advice by your good office.

Sl. No	Condition	Compliance
A. 1	**Compensatory Afforestation**	
(i)	The Compensatory afforestation over equivalent non-forest land, shall be raised by the State Forest Department at the project cost. At least 1000 saplings per ha shall be planted over admissible CA land. If this not possible to plant these many seedlings in the identified NFL, the balance seedlings will be planted in degraded the cost of the User Agency. In such cases CA cost will be revised and duly approved by the competent authority and	Compensatory Afforestation land identified over 63.30 ha in village Phuljhar under Banspal Tahasil of Keonjhar District. The CA Scheme is approved CCF(Nodal) with financial outlay of Rs.68,58,800/-. Beside this the Degraded Forest Land is identified over 65 Ha is identified in Kuanr DPF under BJP Ragne of Keonjhar Division for Additional Compensatory Afforestation. The ACA Scheme is also approved by CCF(Nodal) with financial out lay of Rs.1.59,29,700/-. The total financial cost of CA & ACA is adjusted against the advance NPV paid by JSW Steel Ltd. The relevant letter is enclosed as

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

	deposited online in the CAF managed by the CAMPA;	**Annexure-1.**
(ii)	25% of the CA cost additionally will be spent towards soil and moisture conservation activities in the proposed CA area as per site requirement and deposited in CAF.	The cost of Soil Moisture Conservation activities is added in proposed Compensatory Afforestation Scheme.
(iii)	The cost of compensatory afforestation at the prevailing wage rates as per compensatory afforestation scheme and the cost of survey, demarcation and erection of permanent pillars, if required on the 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	The Compensatory Afforestation & Additional Compensatory Afforestation Scheme are approved at the prevailing wage rate as per the norm.
(iv)	The non-forest land identified for CA shall be transferred and mutated in favour of the State Forest Department and subsequently notified by the State Government as RF under Section - 4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act before Stage-II approval. A copy of the final Notification shall be submitted along with the compliance of Stage-I approval	The Non forest land identified for CA is transferred and mutated in favour of State Forest Department. The copy of the ROR is enclosed as **Annexure-2.** Subsequently the said land is notified as PF under Section-29 of Indian Forest Act, 1927. The Copy of the notification is enclosed as **Annexure-3.**
(v)	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 with all requisite details prior to Stage II approval.	The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area is uploaded on the e-Green watch portal with all requisite details.
2.	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 in accordance with the MoEF&CC's guidelines dated 6.01.2022 read with guidelines dated	We have paid the cost of advance Net Present Value over entire Forest land on dt.10.06.2020. Copy of the letter is enclosed as **Annexure-4.**

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

	19.01.2022.	
3	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/)	Compensatory levies are adjusted towards advance NPV paid by JSW Steel Ltd as demanded by DFO, Keonjhar. The relevant letter is enclosed as **Annexure-1.**
4	**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:**	
(i)	Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three year with effect from the issue of Stage-II clearance in accordance with the approved Plan in consultation with the State Forest Department.	The Scheme regarding Mitigative measures to minimize soil erosion and choking of stream has been approved by RCCF Rourkela with financial out lay of Rs.16,21,43,000/-. The Approved Scheme is enclosed as **Annexure-5**. We undertake to execute the item of works mentioned in the approved scheme in a phase manner at the project cost in consultation with the State Forest Department. An undertaking is enclosed as **Annexure-6.**
(ii)	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	The Scheme regarding adequate drought hardy plant species and sowing of seeds has been approved by RCCF, Rourkela with Financial outlay of Rs.2,94,91,300/-. The scheme is enclosed as **Annexure-7.** We undertake to execute the item of works mentioned in the approved scheme in a phase manner at the project cost in consultation with the State Forest Department. An undertaking is enclosed as **Annexure-6.**
(iii)	Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme	The Scheme regarding Construction of Check Dam, retention/toe walls to arrest sliding down of the excavated material along the contour is technically approved by RCCF, Rourkela with the financial cost of Rs.16,21,43,000/- has been provided earlier scheme in compliance to the condition No.4(i). The same scheme is enclosed as **Annexure-5.** We undertake to execute the item of works mentioned in the approved scheme in a phase manner at the project cost in consultation with the State Forest Department. An undertaking is enclosed as **Annexure-6.**

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

(iv)	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 degree and	The Scheme regarding stabilize the overburden dumps by appropriate grading/benching so as to ensure that angles of repose at any given place is less than 28^0 is approved by RCCF, Rourkela. The financial forecast of Rs.16,21,43,000/- has already provided in the earlier scheme prepared in compliance condition no.4(i). The same scheme is enclosed as **Annexure-5.** We undertake to execute the item of works mentioned in the approved scheme in a phase manner at the project cost in consultation with the State Forest Department. An undertaking is enclosed as **Annexure-6.**
(v)	No damage shall be caused to the top-soil and the user agency will follow the top soil management plan.	The Scheme regarding top soil management is approved by RCCF, Rourkela with financial cost of Rs.3,67,16,110/-. The scheme is enclosed as **Annexure-8**. We undertake to execute the item of works mentioned in the approved scheme in a phase manner at the project cost in consultation with the State Forest Department. An undertaking is enclosed as **Annexure-6.**
5	Compliance of observations, as suggested by the IRO in its monitoring report, may be ensured by the State Government and a status report on the same may be submitted to the IRO of the Ministry at the interval of every six months.	We undertake to submit the status report to IRO of the Ministry as suggested by the IRO in its monitoring report at the interval of every six months. An undertaking to this effect is enclosed as **Annexure-6.**
6	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 Stage-II Clearance;	The Scheme regarding gap planting & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40) within 100 m outer perimeter of mining lease is technically approved by RCCF, Rourkela with financial cost of Rs.3,21,81,600/- is enclosed as **Annexure-9.** We undertake to execute the item of works mentioned in the approved scheme in a phase manner at the project cost in consultation with the State Forest Department. An undertaking is enclosed as **Annexure-6.**
7	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	The Scheme of de-silting of village tanks & other water bodies located within the 5 KM from the mine lease boundary so as to mitigate the impact of siltation of such tanks/water bodies is approved by RCCF, Rourkela with financial out lay of Rs.84,49,100/- is enclosed as **Annexure-10.** We undertake to execute the item of works mentioned in

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

	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 Stage-II approval;	the approved scheme in a phase manner at the project cost in consultation with the State Forest Department. An undertaking is enclosed as **Annexure-6.**
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:**	
(i)	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;	The safety zone is demarcated (7.5 meter trip all along the inner boundary of mining lease area) by erecting of 6 feet high RCC pillar. Each pillar inscribed with serial number and DGPS co-ordinates.
(ii)	Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;	Boundary of the safety zone of the mining lease, adjacent to habitation/roads is properly fenced by JSW Steel Ltd.
(iii)	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;	We undertake to maintained the Safety Zone as green belt around mining lease & regeneration shall be taken up in this area under super vision of State Forest Department. An undertaking is enclosed as **Annexure-6.**
(iv)	Afforestation on degraded forest land to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost under the supervisions of the State Forest Department. The degraded forest land (DFL) so selected	Afforestation of 1.5 times safety zone over 15.00 ha of degraded forest land identified in Kunar DPF under BJP range of Keonjhar Forest Division. The Scheme regarding afforestation of 1.5 times safety zone is technically approved by RCCF, Rourkela with financial cost of Rs.73,39,200/-. The approved scheme is enclosed as **Annexure-11.** We undertake

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

	will be informed to the MoEF & CC with shape files before Stage-II approval and afforestation will be done within three years from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department; and	that afforestation is to be done within three years from the date of Stage-II forest clearance in consultation with State Forest Department. An undertaking to this effect is enclosed as **Annexure-6.**
(v)	The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms	We undertake to maintain the safety zone as per the prescribed norms. An undertaking is enclosed as **Annexure-6.**
9	As the enumeration was done in 2016 and there is likely chances of increase in the number of trees in the area proposed for diversion, therefore tree numeration needs to be done in the area and report on the same shall be submitted along with the Stage-I compliance;	Total 2899 nos of tree is re-enumerated over 63.30 ha forest land proposed for diversion in consultation with Forest Department. The tree enumeration list is enclosed as **Annexure-12.**
10	The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;	We undertake to deposit the cost of tree felling to the State Forest Department. An undertaking is enclosed as **Annexure-6.**
11	Wildlife management Plan: Cost of implementation of the provisions of the Wildlife Management Plan, on pro rata basis, shall be deposited into the account of CAMPA of the State	The Site Specific Wildlife Management Plan is approved by PCCF (WILDLIFE) & CWLW, Odisha vide letter No.1834/CWLW-FDWC-FD-0125-2021, dt.25.02.2022 with financial outlay of Rs.899.198 lakh. The approval letter is enclosed as **Annexure-13.** The total amount of Rs.899.198 lakh is adjusted towards advance NPV paid by JSW Steel Ltd. The relevant letter is enclosed as **Annexure-1.**
12	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 to be diverted and submit the documentary evidence, along with compliance of Stage-I approval, as prescribed by this Ministry's letter No. 11-9/1998-FC (Pt.) dated 03.08.2009 read with 05.07.2013, in support thereof	The certificate of Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Right) Act, 2006 is issued by District Collector, Keonjhar over entire forest area in favour of ex-lessee. The copy of the Certificate is enclosed as **Annexure-14.**
13	The compliance report shall be	The Compliance Report is uploaded on e-

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

	uploaded on e-portal (https://parivesh.nic.in/)	portal.(http://parivesh.nic.in/)
B	**Conditions which need to be complied on field after handing over of forest land to the user agency by the State Forest Department but the compliance in form of undertaking shall be submitted prior to Stage-II approval**	
1.	Legal status of the diverted forest land shall remain unchanged;	Legal Status of the forest land remained unchanged.
2	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;	We undertake to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India. An undertaking is enclosed as **Annexure-6.**
3	Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO);	We undertake to felled the trees in phase manner as per requirement in the approved Mining Plan with prior permission of concerned DFO. An undertaking is enclosed as **Annexure-6.**
4	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.	We undertake to 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 is enclosed as **Annexure-6.**
5	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	We undertake to continue the mining in a phase manner & execute the concurrent reclamation plan as per approved mining plan & submit the annual report on implementation thereof to Nodal Officer. An undertaking to this effect is enclosed as **Annexure-6.**

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

	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.	
6	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;	We undertake to 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. An undertaking is enclosed as **Annexure-6.**
7	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 and the Rules framed there-under;	M/s JSW Steel Ltd., the successful bidder in respect of Nuagaon Iron Ore block over an area of 776.969 hects. (as per DGPS)/767.284 hects. (as per RoR) in Nuagaon village under Barbil Tahasil of Keonjhar district for the period of 50 (fifty) years as provided under section 8A, sub-section 2 of the Mines and Minerals Development and Regulation Act, 1957. The lease deed was executed and registered on 27.06.2020.
8	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;	The Environmental Clearance has obtained from the MoEF vide their No. J-11015/1156/2007–IA.II(M) Dated 05.08.2021 for a quantity of 7.99 MTPA of Iron ore in favor of JSW Steel Ltd. The copy of the letter is enclosed as **Annexure-15.**
9	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;	No labour camp has been established in the forest land. An undertaking to this effect is enclosed as **Annexure-6.**
10	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 diverted forest land, mining lease and safety zone are demarcated on the ground by erecting of four feet high reinforced cement concrete pillars. Each pillar inscribed with Serial number & DGPS co-ordinates. The photographs is enclosed as **Annexure-6.**

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

11	The layout plan of the mining plan/ 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;	We undertake that the layout plan of the mining plan shall not be changed without prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal. An undertaking is enclosed as **Annexure-6.**
12	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;	We undertake that the forest land proposed to be diverted shall not be transferred to any other agency without prior approval of the Central Government. An undertaking is enclosed as **Annexure-6.**
13	No damage to the flora and fauna of the adjoining area shall be caused	We undertake that no damage to the flora and fauna of the adjoining area shall be caused. An undertaking to this effect is enclosed as **Annexure-6.**
14	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;	We undertake to submit the annual self-compliance report to the State Government, concerned Regional Office and to this Ministry by the end of march every year regularly. An undertaking to this effect is enclosed as **Annexure.6.**
15	Any other condition that the concerned Regional Office of this Ministry may stipulate, with prior approval of competent authority, in the interest of conservation, protection and development of forests & wildlife; and	We undertake to comply any other condition that the concerned Regional Office of this Ministry may stipulate, with prior approval of competent authority, in the interest of conservation, protection and development of trees & wildlife. An undertaking is enclosed as **Annexure-6.**
16	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.	We undertake to 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. An undertaking to this effect is enclosed as **Annexure-6.**
17	Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.	We undertake to comply the violation of any condition of Forest Conservation Act, 1980 as prescribed in para 1.21 of Chapter 1 of Hand book of comprehensive guidelines issued by this Ministry's letter No. 5-2/2017-FC, dt.28.03.2019. An Undertaking is enclosed as **Annexure-6.**

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

As all the stipulated conditions have been complied by us, we, therefore request your good self to kindly take necessary action at your end for onward transmission of the compliance report for obtaining the **final approval of forest Clearance** (Stage-II) from MoEF&CC, Govt. of India, New Delhi for diversion of 63.30 ha of forest land in respect of Nuagaon Iron Ore Mine of M/s JSW Steel Ltd under Barbil Tahasil in Keonjhar District, Odisha.

An early action at your end is highly solicited.

For JSW Steel Limited

Authorized Signatory

Mrutyunjaya Mahapatra

Encls: Compliance Report with Annexures in 6 Sets

ANNEXURE-1

OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION

Phone No- 06766-254315, email ID- dfo.keonjhar@odisha.gov.in

Memo No. 1241 /Mining-100/2021
Dated, Keonjhar the 08 - 2 - 2023

To

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

Sub: Adjustment of Rs. 27,94,02,070/- deposited towards-NPV,SSWCP scheme of C.A, ACA, Gap planting & 1.5 time safety zone against already deposited amount of Rs. 48,71,31,000/- towards lumpsum amount @7.50 lakh / ha (for total forest area within the ML) in respect of Nuagaon Iron Ore Mines of M/s JSW Steel Limited.

Ref: 1. F. No. 8-17/200-FC(Vol.) dated 11.11.2022 of MoEF&CC, Govt of India.
2. Memo No. 22098/FE&CC dated 12.12.2022 of OSD-Cum-Special Secretary to Government, FE&CC Department, Odisha, Bhubaneswar.
3. Memo No. 26088 dated 26.12.2022 of Conservator of Forests (Nodal), O/o the PCCF&HoFF, Odisha, Bhubaneswar.

With reference to the aforementioned letters on the captioned subject, the adjustment of Rs. 27,94,02,070/- in respect of Nuagaon Iron Ore Mines of M/s JSW Steel Limited is furnished hereunder-

1. Whereas the Para-C of the GoI, MoEF & CC, New Delhi letter dated 31.03.2020 which inter alia states that "While obtaining approval under the provisions of FCA-1980 the new lessee shall pay the Net present value (NPV) for the total forest area located within the mining lease, along with any other amount due as per guidelines issued by Government of India form time to time. However, on the date of issuance of letter of intent, the State Government shall realize a lump sum amount at the rate of Rs 7.50 lakh per ha (for the total forest area within the mining lease) from the new LoI holder . This amount shall be deposited into the account of CAMPA, which will be adjusted against actual compensatory levies payable on the forest land, at the time of approval.

2. Whereas the new lessee i.e M/s JSW Steel Limited has already deposited Rs 48,71,31,000/- in State specific CAMPA Account on dated 10.06.2020 towards a lumpsum amount @ 7.50 lakh/ ha for total forest land within the Mining Lease of Nuagaon Iron Ore Mines over 649.508 ha as per the above guideline of GoI, MoEF&CC, New Delhi and as per separate link provided by MoEF&CC on https://parivesh.nic.in/ portal as "NPV payment against lease transfer (As per guidelines issued on 31.03.2020 of FC approval)".

3. Whereas GoI, MoEF&CC, New Delhi have accorded Stage -1/ in-principle approval issued vide F. No. 8-17/2001-FC(Vol) dated 14.03.2022 for non-forestry use of 63.30 ha Sabik Kisam Forest Land in addition to 371.192 ha of forest land already diverted located within the Mining lease hold area of 767.284 ha in favor of M/s JSW Steel Ltd for Nuagaon Iron Ore Mines in Barbil Tahasil of District- Keonjhar, Odisha.

4. Whereas the under-signed has issued demand letter to M/s JSW Steel Ltd. vide this office letter No 1807 dated 11.03.2022 to deposit Rs. 8,99,19,800/- towards approved cost of SSWLCP for non-forestry use of 63.30 ha Sabik kisam Forest land in addition to 371.192 ha

already diverted forest land located within the M.L area of 767.284 ha on favour of M/s JSW Steel Ltd. For Nuagaon Iron Ore Mine of Barbil Tahasil as per condition No-A(ii) of in-principle approval at 14.03.2022 of GoI, MoEF&CC, New Delhi.

5. Whereas the U.A has requested vide his letter no-JSW/S/0/2022-47 dated 08.04.2022 & No-JSW/S/0/2022/48 dated 14.04.2022 to adjust the following demanded amount i.e. **Rs.27,94,02,070/-** from the lump sum amount of Rs. 48,71,31,000/- already deposited by the JSW Steel Ltd. @ 7.50 lakh per ha over 649.508 ha forest land.

Sl. No.	**Particulars**	**Amount (in Rs.)**	**Remarks** (No. & date of **d**emand letter)
a.	Net Present Value (NPV) over 63.30 ha Sabik Kissam Forest Land involved in the ML.	7,06,99,770.00	No. 2579/ Mining dt. 07.04.2022.
b.	Site Specific Wildlife Conservation Plan (SSWLCP)	8,99,19,800.00	No. 1807/ Mining dt. 11.03.2022
c.	Compensatory Afforestation over 94.961 ha of non-forest Govt. land identified in village Bali under Banspal Tahasil of BJP Range	4,14,06,000.00	No. 4332/ Mining dt. 08.06.2022
d.	Additional Compensatory Afforestation over 31.00 ha degraded forest land identified in Kunar DPF under BJP Range	1,50,67,200.00	No. 4332/ Mining dt. 08.06.2022
e.	Compensatory Afforestation over 63.30 ha of non-forest Govt. land identified in village Phuljhar under Banspal Tahasil of BJP Range	68,58,800.00	No. 2541/ Mining dt. 05.04.2022
f.	Additional Compensatory Afforestation over 65.00 ha degraded forest land identified in Kunar DPF under BJP Range	1,59,29,700.00	No. 2541/ Mining dt. 05.04.2022
g.	Gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40) located in the area within 100 meter from outer perimeter of the mining lease.	3,21,81,600.00	No. 4543/Mining dt. 17.06.2022
h.	Afforestation over 1.5 times of safety zone over 15.00 ha of degraded forest land identified in Kunar DPF under BJP Forest Range of Keonjhar Division.	73,39,200.00	No. 4543/Mining dt. 17.06.2022
	Total	**27,94,02,070.00**	

6. Whereas MoEF &CC, GoI vide the F.No.-8-17/2001-FC (Vol) dated 11.11.2022 has clarified that the issue related to adjustment to NPV is purely an administrative matter & the ministry in its guideline dated 31.03.2020 & subsequent clarification dated 12.10.2021 has already clarified that such adjustment can be under taken at the level of State Govt.

7. Whereas the Conservator Forests (Nodal) vide his memo No. 26087 dated 26.12.2022 has communicated the FAC observation in F.No-8/17-2001-FC (viii) dated 11.11.2022 and requested to take appropriate action in the matter related to the adjustment of NPV in accordance with guideline & clarification issued by the Ministry.

8. Now therefore, as per guideline vide F No. -11-97/2018-Fl dated 31.03.2020 in Para-C & as per FAC observation dt 17.10.2022 & F No. 8/17/2001-FC (Vol) of MoEF & CC, GoI dt 11.11.2022 & the said letter Communication by C.F (Nodal) vide his Memo No- 26087 dated 26.12.2022 the total demanded amount of Rs **27,94,02,070.00**/- towards compensatory levies as detailed in preceding table at point No. 5 may be adjusted from the lumps sum amount of Rs 48,71,31,000/- already deposited by the User Agency i.e M/s JSW Steel India Ltd @ 7.50 lakhs per ha vide UTR No. SBIN52020061000092730 dt. 10.06.2022 in Odisha, CAMPA Account over 649.508 ha through forest land involved in the Nuagaon Iron Ore Mines.

08/02/23

Divisional Forest Officer,
Keonjhar Division.

Memo No. 1242 **/Dated** 08-02-2023

Copy forwarded to the Authorized Signatory, M/s JSW Steel Ltd, Plot No-3, Forest Park Road, Near Sishubhawan Square, Bhubaneswar- 751009 for information and necessary action.

08/02/23

Divisional Forest Officer,
Keonjhar Division.

Memo No. 1243 **Dated.** 08-02-2023

Copy forwarded to the Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, FC Act, O/o the PCCF & HoFF, Odisha, Bhubaneswar for favour of kind information and necessary action with reference to his memo No 26087 dated 26.12.2022. Necessary adjustment in an account in which lump sum amount of Rs.48,71,31,000/- is deposited may be done with CAMPA, Odisha.

08/02/23

Divisional Forest Officer,
Keonjhar Division.

Memo No. 1244 **/ Dated.** 08-02-2023

Copy forwarded to the Chief Executive Officer, State CAMPA Authority, O/o the PCCF & HoFF, Odisha, Bhubaneswar for favour of kind information and necessary action.

08/2/23

Divisional Forest Officer,
Keonjhar Division.

Memo No. 1245 **/ Dated.** 08-02-2023

Copy forwarded to the OSD-cum-Special Secretary of Govt. Forest, Environment & Climate Change Departments for favour of information and necessary action with reference to his Memo No. 22098/FE&CC dated 12.12.2022.

08/02/23

Divisional Forest Officer,
Keonjhar Division.

Schedule I Form No.39-A

ANNEXURE-2

ଖତିୟାନ

ମୌଜା : ଫୁଲଗର | ତହସିଲ : ବାଂଶପାଳ
ଥାନା : [illegible] | ତହସିଲ ନମ୍ବର : 05
ଥାନା ନମ୍ବର : 44 | ଜିଲ୍ଲା : କେନ୍ଦୁଝର

ଜମିଦାରଙ୍କ ନାମ ଓ ଖେୱାଟ ବା ଖତିୟାନର କ୍ରମିକ ନମ୍ବର	ଓଡିଶା ସରକାର ପ୍ରଥମ ଭାଗ ଖେୱାଟ ନମ୍ବର ।
୧)ଖତିୟାନର କ୍ରମିକ ନଂ	154/2
୨) ପ୍ରଜାର ନାମ, ପିତାର ନାମ , ଜାତି ଓ ବାସସ୍ଥାନ	ରାଜ୍ୟ ଜଙ୍ଗଲ ଓ ପରିବେଶ ବିଭାଗ, ଓଡିଶା । ।
ସ୍ୱତ୍ୱ	

	ଜଳକର	ଖଜଣା	ସେସ	ନିସ୍ତାର ସେସ ଓ ଅନ୍ୟାନ୍ୟ ସେସ ଯଦି କିଛି ଥାଏ	ମୋଟ	୪) କ୍ରମବର୍ଦ୍ଧନଶୀଳ ଖଜଣାର ବିବରଣୀ
୩)ଦେୟ		0.00	0.00	0.00	0.00	

୬) ବିଶେଷ ଅନୁସଙ୍ଗ ଯଦି କିଛି ଥାଏ	Alienation case No- 5/2019 ହୁକୁମ ମୁତାବକ ପ୍ଲଟ ନଂ 1836/2807 ହେ° 3.8330, ପ୍ଲଟ ନଂ 1945/2808 ହେ° 10.0860,ପ୍ଲଟ ନଂ 1946/2809 ହେ° 15.5980,ପ୍ଲଟ ନଂ 1969/2810 ହେ° 12.3440, ପ୍ଲଟ ନଂ 1970/2811 ହେ° 4.5360 ଅଲଗ କରି ପ୍ରଚଳନ ଖାତା 153 ରୁ । Alienation Case No. 06/2022 (ବା.ଖା କେଶ ନଂ 5691/2022) ହୁମୁ ପ୍ଲଟ ନଂ 1724 ରକବା ହେ 18.0000, ପ୍ଲଟ ଂ 1753/2815 ରକବା ହେ 20.7000, ପ୍ଲଟ ନଂ 1754/2816 ରକବା ହେ 16.3126, ପ୍ଲଟ ନଂ 1755 ରକବା ହେ 8.2874 ଖା.ଖା 254 ରୁ ।

BLANK SPACE FOR STAMPING

COURT OF THE TAHASILDAR ★ BANSPAL ★

ଅନ୍ତିମ ପ୍ରକାଶନ ତାରିଖ :

ଖଜଣା ଧାର୍ଯ୍ୟ ତାରିଖ :

ADDL. TAHASILDAR
BANSPAL
14/12/2022

ଭୂଲେଖ ଓଡ଼ିଶା ବିଶେଷ ରେକର୍ଡ଼ ଓଡ଼ିଶା

ଖତିୟାନର କ୍ରମିକ ନଂ : 154/2 | ମୌଜା : [illegible] | ଜିଲ୍ଲା : କେନ୍ଦୁଝର

ପ୍ଲଟ ନମ୍ବର ଓ ଚକର ନାମ	କିସମ ଓ ପ୍ଲଟର ଲକ୍ଷଣ	କିସମର ବିସ୍ତାରିତ ବିବରଣୀ ଓ ଚୌହଦି	ରକବା			ମନ୍ତବ୍ୟ
			ଏକର	ଡି	ହେକ୍ଟର	
୭	୮	୯	୧୦		୧୧	୧୨
1836/2807	ପର୍ବତ ବୁଲ		9	471	3.8330	Rev.Misc. Case No. 5/2019 ଦ୍ଵାରା ପ୍ଲଟ ନଂ 1836 ରୁ ରକବା ହେ 3.8330 ଖା.ଖ. 154 କୁ ।
1945/2808	ପର୍ବତ ବୁଲ		24	920	10.0860	Rev.Misc. Case No. 5/2019 ଦ୍ଵାରା ପ୍ଲଟ ନଂ 1945 ରୁ ରକବା ହେ 10.0860 ଖା.ଖ. 154 କୁ ।
1946/2809	ପର୍ବତ ବୁଲ		38	540	15.5980	Rev.Misc. Case No. 5/2019 ଦ୍ଵାରା ପ୍ଲଟ ନଂ 1946 ରୁ ରକବା ହେ 15.5980 ଖା.ଖ. 154 କୁ ।
1969/2810	ପର୍ବତ ବୁଲ		30	500	12.3440	Rev.Misc. Case No. 5/2019 ଦ୍ଵାରା ପ୍ଲଟ ନଂ 1969 ରୁ ରକବା ହେ 12.3440 ଖା.ଖ. 154 କୁ ।
1970/2811	ପର୍ବତ ବୁଲ		11	200	4.5360	Rev.Misc. Case No. 5/2019 ଦ୍ଵାରା ପ୍ଲଟ ନଂ 1970 ରୁ ରକବା ହେ 4.5360 ଖା.ଖ. 154 କୁ ।
1724	ପର୍ବତ ବୁଲ		44	479	18.0000	
1753/2815	ପର୍ବତ ବୁଲ		51	150	20.7000	
1754/2816	ପର୍ବତ ବୁଲ		40	309	16.3126	
1755	ପର୍ବତ ବୁଲ		20	478	8.2874	
9 ପ୍ଲଟ			271	047	109.6970	ADDL. TAHASILDA BANSPAL

ANNEXURE-3

GOVERNMENT OF ODISHA
FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT
****

NOTIFICATION

Bhubaneswar, dated the 02.3.23

No.FE-DIV-FLD-0120-2021-{10F-(Cons)-138/15)}- 3951 /FE&CC, In exercise of the powers conferred under Section 33 of the Odisha Forest Act, 1972 (Odisha Act 14 of 1972), the State Government do hereby declare that the following land situated in Village - **Phuljhar** under Banspal Tahasil in the District of Keonjhar mutated and transferred in favour of Forest, Environment & Climate Change Department for raising Compensatory Afforestation thereon against proposed diversion for non-forestry use of 63.30 ha Sabik Kisam Forest land in addition to 371.192 ha of forest land already diverted forest land located within the Mining Lease hold area of 767.284 ha in favour of M/s JSW Steel Ltd. for Nuagaon Iron Ore Mines in Barbil Tahasil of District Keonjhar (Odisha) therein vide 'in-principle' approval of Government of India, MoEF&CC (FC Division), New Delhi communicated in letter No.8-17/2001-FC, dt.14.03.2022 under section-2 of the Forest (Conservation) Act, 1980, the limits of which are specified below and the area of which is 63.30 Ha (156.416 Ac) shall be Protected Forest with effect from the date of issue of the Notification and shall be known as "**Phuljhar Protected Forest**".

Forest Block:

Name of the Protected Forest	:	Phuljhar
Area in Ha	:	63.30
Area in Acres	:	156.416
Name of the Village	:	Phuljhar
Name of the Police Station	:	Nayakote
Name of the Tahasil	:	Banspal
Name of the Sub-Division	:	Keonjhar
Name of the District	:	Keonjhar

Land Schedule:

Village	Khata No.	Plot No.	Kissam	Total area in Ac.	Boundary description			
					North	South	East	West
Phuljhar	154/2	1724	Parbat - II	44.479	Plot No. 1725	Plot No. 1780 & 1755	Plot No. 1754/ 2816	Plot No. 443
		1753/ 2815		51.150	Kasia Vill.	Plot No. 1725, 1754/ 2816, 1739	Sankari Vill.-45	Plot No. 1753 (P)
		1754/ 2816		40.309	Plot No. 1753/	Plot No. 1755	Sankari Vill.-45	Plot No. 1725 &

P.T.O.

					2815			1724
		1755		20.478	Plot No. 1724 & 1754/ 2816	Plot No. 1755/ 2774	Sankari Vill. -45	Plot No. 1780
Total				**156.416 Ac or 63.30 Ha**				

By Order of the Governor

(DR. MONA SHARMA)
Additional Chief Secretary to Government

By e-mail: deputydirectorpp@rediffmail.com
Memo No. 3952 /FE&CC, Date 2.3.23

Copy with soft copy (CD form) forwarded to the Director of Printing, Stationery and Publication, Odisha Cuttack for publication in an extra-ordinary issue of the Odisha Gazette and supply 10 copies of printed notification each to Forest, Environment & Climate Change Department/ Director of Land Records and Surveys, Odisha, Cuttack/ Collector, Keonjhar/ Divisional Forest Officer, Keonjhar Forest Division/ Tahasildar, Banspal Tahasil, Dist.- Keonjhar.

2. The Notification is statutory and may be assigned SRO number.

24/3/2023
OSD-cum-Special Secretary to Government

Memo No. 3953 /FE&CC, Date 2.3.23

Copy forwarded to the Assistant Inspector General of Forests, Govt. of India, Ministry of Environment, Forest and Climate Change, (F.C. Division), Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110003/ Deputy Director General of Forests (Central), Govt. of India, MoEF & CC, Integrated Regional Office, A/3, Chandrasekharpur, Bhubaneswar-23 for information and necessary action.

24/3/2023
OSD-cum-Special Secretary to Government

Memo No. 3954 /FE&CC, Date 2.3.23

Copy forwarded to the R&DM Department/ Steel & Mines Department/ Director of Land Records and Surveys, Odisha, Cuttack/ R.D.C. (N.D.) Sambalpur / Collector, Keonjhar/ Tahasildar, Banspal Tahasil, Dist.-Keonjhar for information and necessary action.

24/3/2023
OSD-cum-Special Secretary to Government

Memo No. 3955 /FE&CC, Date 2.3.23

Copy forwarded to the Principal Chief Conservator of Forests & HoFF, Odisha/ Principal Chief Conservator of Forests (FD&NO) FC Act, O/o the PCCF, Odisha/ Regional Chief Conservator of Forests, Rourkela Circle/ Divisional Forest Officer, Keonjhar Forest Division for information and necessary action.

24/3/2023
OSD-cum-Special Secretary to Government

Memo No. 3956 /FE&CC, Date 2.3.23

Copy forwarded to the Head State Portal, IT Centre, Odisha Secretariat, Bhubaneswar / OE (IT) Section, FE&CC Department w.r.t. this Department letter No. 21646/F&E Dt. 22.11.2016 / 5 spare copies for G.F. for information and necessary action.

24/3/2023
OSD-cum-Special Secretary to Government

ANNEXURE-4

JSW Steel Limited

Regd. Office : JSW Centre,
Bandra Kurla Complex,
Bandra (E), Mumbai – 400 051

Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website: www.jsw.in
CIN NO. L27102MH1994PLC152925

10.06.2020

To,

Office of the Divisional Forest Officer
Keonjhar Division
Odisha

Sub: Payment of advance Net Present Value (NPV) in respect of Nuagaon Iron Ore Mine

Ref: 1. LOI No. 2291/S&M/IV(Misc.)SM-66/2016(Pt-I) dated 2nd March 2020
2. Demand letter no. 2103/6F-Mining-33/2020 dated 8th April 2020

Dear Sir,

This has reference to the demand letter for payment of advance NPV in respect of Nuagaon Iron Ore mine.

Accordingly, we have made the payment against the above demand and payment details are given below:

Block Name	NPV Amount	Bank Transaction ID	Bank	Date of Payment
Nuagaon Iron Ore Mine	487131000	SBINR52020061000092730	State Bank of India	10.06.2020

Kindly acknowledge the receipt of payment.

Yours faithfully,

For and on behalf of **JSW STEEL LIMITED**

(Authorized Signatory)

Copy to: Director of Mines, Office of Directorate of Mines, Bhubaneswar, Odisha – 751001

JSW STEEL LTD

Scheme
For

MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOKING OF STREAMS

in compliance with

Condition No. 4 (I) of Stage-I approval granted vide

Letter No.8-17/2001-FC(vol), Dated.14.03.2022

of Govt. of India, Ministry of Environment, Forests

& Climage Change, New Delhi.

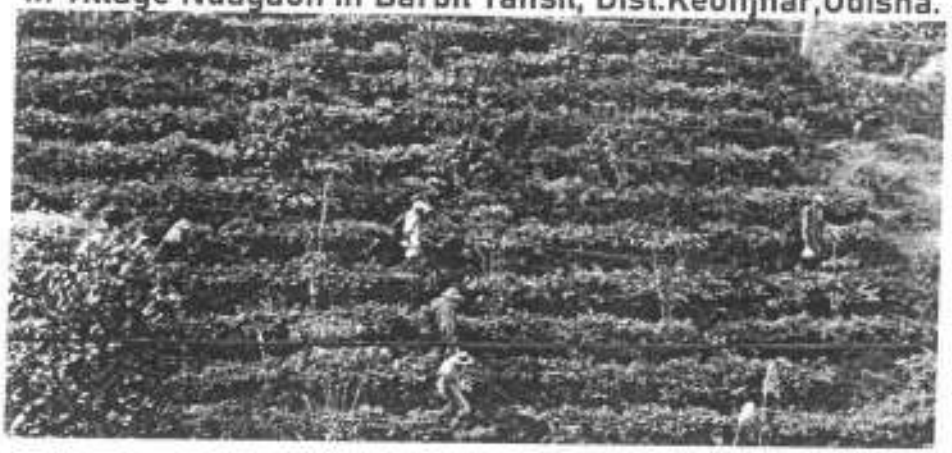
for

Diversion of 63.30 Hects of sabik kissam Forest Land in addition to 371.192 ha of forest land already diverted located within the mining lease hold area of 781.787 ha of Nuagaon Iron Ore Mines

of

M/S JSW STEEL LTD.

in village Nuagaon in Barbil Tahsil, Dist.Keonjhar,Odisha.



MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOKING OF STREAMS

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development & Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time (the "Auction Rules), issued the notice inviting tender dated 06.12.2019 to commence the auction process for grant of mining lease for Nuagoan Iron Ore Block located in Keonjhar district of Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block and M/s JSW Steel Limited was declared as the preferred Bidder under Rule 9(9)(iii) of Mineral Auction Rules, having quoted a Final Price Offer of 95.20%. Government of Odisha has awarded the Letter of Intent vide letter No 2291/S&M, Bhubaneswar dated 02.03.2020 for Grant of Mining Lease for Iron Ore in favour of M/s' JSW Steel Ltd. the successful bidder in respect of Nuagaon Iron ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects.(as per RoR) in Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi villages under Barbil Tahasil of Keonjhar district under jurisdiction of Barbil Forest Range of Keonjhar Division. M/s JSW Steel Limited under sub-rules (4) and (5) of rule 10 of the said rules, has signed the Mine Development and Production Agreement with Collector, Keonjhar district on dated 25/06/2020. The State Government under rule 10, sub-rule (5) of the Mineral (Auction) Rules, 2015 have been pleased to grant the mining lease for Iron Ore in favour of M/s JSW Steel Ltd., the successful bidder in respect of Nuagaon Iron Ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects. (as per RoR) in Nuagaon village under Barbil Tahasil of Keonjhar district for the period of 50 (fifty) years as provided under section 8A, sub-section 2 of the Mines and Minerals Development and Regulation Act, 1957 vide letter No. 5543 dated 26.06.2020. The lease deed was executed and registered on 27.06.2020.

As per section 8B (2) of the MMDR Act, 1957 read with rule 9A (4) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 the holder of the letter of intent for the said mining block shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee. Without prejudice to the generality of the provisions of section 8B (2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee and vested in favour of the holder of the Letter of Intent. This vesting order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier. In accordance with the above, The State Government issued vesting order vide letter No. 4167/SM/III(A) SM, Bhubaneswar dt. 29/05/2020. The Ministry of Forests & Environment, Govt. of India, New Delhi vide their letter F. No-8-17/2001-FC dated 21/22nd April 2004 accorded approval for diversion of 371.192 ha of forest land out of the applied 476.205 Ha land for mining of iron ore within the mining lease area of M/S K. J. S. Ahluwalia.

The Mines and Minerals (Development and Regulation) Amendment Act, 2021 which has been notified by the Central Government on 28.03.2021 amended the Section 8B. Further the MoEF&CC issued guideline vide File No.FC-11/112/2020-FC(Pt) dated 7.07.2021 align with the provisions under the two Acts, it has been decided that transfer of approval under FCA-1980 in such mining leases may be considered subject to fulfilment of the conditions. The State

Government vide letter No. 7493/FE&CC dated 21.04.2022 transferred the forest clearance over 371.192 ha granted earlier to M/s KJS Ahluwalia in favour of JSW Steel Ltd.
The Ex-Lessee M/s KJS Ahluwalia has submitted the proposal over 63.300 ha of Sabik Forest land and the FAC had considered the proposal and asked the State Government to comply some condition for grant of Stage-I clearance. The Ex-lessee did not pursue the matter and the mining lease expired on 31.03.2020. The New lessee represented the State Government to re-consider the proposal and complied the stipulated conditions. The Government of Odisha's vide letter No. FE-DIV-FLD0120-2020-16552/FE&CC dated 16.09.2021 recommended for diversion of 63.30 ha Sabik Kisam forest land in addition to 371.192 ha of forest land already diverted forest land located within the Mining Lease hold area of 767.284 ha in favour of M/s JSW Steel Ltd for Nuagaon Iron Ore Mines in Barbil Tahasil of District Keonjhar and the above proposal was considered by the Forest Advisory Committee (FAC) in its meeting held on 26.11.2021. The Stage-I approval granted vide Letter No.8-17/2001-FC(vol), Dated.14.03.2022 by the Govt. of India, Ministry of Environment, Forests & Climate Change. **Condition No.4 (i) for preparation and implementation of a plan containing appropriate mitigative measures to minimise soil erosion and choking of streams.**

2. LOCATION

The allotted ML area is bounded by latitude 22^0 06' 16.72057" to 22^0 07' 41.65495" N and longitude 85^0 25' 32.28303" to 85^0 26' 40.67115" E. The area is surrounded by the Mining Leases like Guali mines of OMC, Gandhalpada of M/s TATA, Sagasahi Mines of AMNS. The NH -20 is passing through the lease and Barbil is situated 15 KM from the mining block.

TOPOGRAPHY

The area is characterized by hilly as well as flat ground having elevation from 525m to 702m above M.S.L. The hill ranges located within the lease area are Udalbari, Guali, Topadih, Dumkahudi, Barpada, Kanhusahi, Katasahi etc. Laterite, Lateritic Iron ore, Hard Haematite etc. are recorded in the ridges and valleys are mainly covered by alluvial soil.Nuagaon iron ore block discerns a fairly wide range of rock types of the iron ore group. The area has got geomorphic trend of North-North-East to South-South-West. The strike trend of the rock type here is also conformable to the trend of hill ranges.

SOIL TYPE

Soil type in the study area varies Lateritic soil recorded in the ridges and valleys are mainly covered by alluvial soil.

3. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature beings to rise rapidly attainting a maximum in the month of May. During the summer maximum temperature can go up to 47.70C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 70 C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

4. DRAINAGE

The drainage system in this area is radial type. The drainage pattern is this area is mostly controlled by Sona River and then ultimately by River Baitarani. Drainage system of the area is controlled by two rivers namely Suna River and Karo River. Northern part is drained by Karo Nadi while southern part of the lease area is drained by Suna Nadi. Both the rivers are perennial in nature. Lease area is having a number of hills traversed by the dry nalas. Surface run-off falls finally in to the rivers through these dry nalas.

EXISTING VEGETATION

The vegetation of the applied area is composed of Sal (Shorearobusta), Saguan (Tectona grandis), Sidha (Lagerstroemia parvifloa), Sisoo (Dalbergia latifolia), Bandhan (Ougeinia oojeinensis), Char (Buchanania lanjan), Dhaura (Anogeissus latifolia), Kurum (Adina cordifolia), Asan (Terminaliatomentosa), Karanja (Pongamia pinnata), Mango (Mangiferaindica), Kendu (Diospyrosmelanoxylon), Bahada (Terminalia belerica) Jamu (Syzygiumcuminii), Kusum (Schleicheraoleosa), Gambhari (Gmelinaarborea), Mahul (Madhucaindica) etc. Sal (Shorea robusta) is the pre-dominant species.

5. LAND USE PATTERN

As per the forest clearance, about (371.192 ha+63.30 ha) 434.492 hectares of forest land will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Abstract of Existing and Proposed Land use of non-forest land recorded as forest as on 25.10.1980along with Non-Forest land involved in the project (Area in ha)

SL. No.	Pattern of Utilization	Broken up non-forest land recorded as forest as on 25.10.1980	Virgin non-forest land recorded as forest as on 25.10.1980	Proposed Land use Change of Broken up non-forest land recordedas forest as on 25.10.1980	Utilization pattern of total non-forest land recorded as forest as on 25.10.1980	Broken Non-forest land recorded as non-forest as on 25.10.1980	Virgin Non-forest land recorded as non-forest as on 25.10.1980	Total Non-forest land recorded as non-forest ason 25.10.1980	Grand Total
1	2	3	4	5	6 (3+4+5)	7	8	9 (7+8)	10 (6+9)
1	Mining with inside Road	27.881	3.439	2.280	**33.600**	0	0	**0**	**33.600**
2	Dumping	3.040	4.510	0.79	**8.340**	0	0	**0**	**8.340**
3	Sub Grade Ore Stackin gYard	14.227	3.933	(-) 3.070	**15.090**	0	0	**0**	**15.090**
4	Mines Road	0.790	---	--	**0.790**	0	0	**0**	**0.790**
5	Office, Camp, Weigh Bridge and store Room	0.880	---	---	**0.880**	0	0	**0**	**0.880**
6	Beneficiation Plant premises	3.100	---	-	**3.100**	0	0	**0**	**3.100**
7	Crusher Premises/ Ore Staking	1.500	---	-	**1.500**	1.640	0	**1.640**	**3.140**
	Total	51.418	11.882	0	**63.300**	1.64	0	**1.640**	**64.940**

6. FACTORS RESPONSIBLE FOR SOIL EROSION & CHOKING OF STREAMS

The mining activities, sub-grade stocks and overburden dumps are the major source of drainage of soil and other substances for choking of any drainage system existing down below. The forms of erosion observed in this region include mainly rill and gully. The storm water runoffs from the uplands, mine faces and OB dump slope areas carry substantial quantity of solids in the lower order streamlets and choke the higher order streams. These lower order streamlets and gullies have high erosion capacity 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 can 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 down below in the stream bed. The other mode of sediment transportation is very negligible.

7. OBJECTIVES OF THE SCHEME

The objectives are as follows: -

i) To fulfil Condition No.4 (i) of the Stage-I approval granted vide No.8-17/2001-FC dt.14.03.2022 of MoEF & CC to undertake **"Mitigative measure to minimize soil erosion & choking of stream shall be implemented within a period of 3 years with effect from the issue of Stage-II clearance in accordance with the approved plan in consultation with State Forest Department".**

ii) To prevent erosion of top soil.

iii) To prevent obstruction of existing natural water course.

iv) Proper Management of overburden deposited so as to prevent siltation in the down below streams.

v) To prevent overflow of eroded soils from the mining areas to the natural streams.

8. 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 dumping sites whereas the structural works are suggested in the lower reaches such as in the garland drain & critical points around O.B. dumps. **10 nos** of check dams have been proposed across the contour to arrest the sediment load arising from up-slopes of seasonal streams, and to prevent choking of streams followed by de-silting before unset of monsoon. The following activities are proposed to be taken up to mitigate soil erosion and choking of streams:

a. As the lease area is undulated and hilly region water flows down from the hilly area to down ward direction through the natural valley during rain. Obviously during monsoon heavy runoff is carrying out silts and sediments so as to reduce the flow velocity of water flown from overburden dump, mining pits, stock piles, haul roads as well as areas clear of vegetation. 10.nos of check dam & 5 nos of settling pits have been proposed in the approved mining plan.

b. Periodic Sediment/ silt removal/ De-silting etc will also be undertaken in those proposed/ existing check dams as well as from garland drains and subsequently biological reclamation will be made.

c. Along with the above sedimentation control measures, erosion from OB/SG dump slopes areas will be controlled by additional garland drain, loose boulder structures, settling tanks etc. The main purpose is to control soil erosion from OB dump and mineral stock piles.

9. MEASURES ALREADY ADOPTED

Details of the Existing Dump

As on date there are five waste dumps existing, within the lease area. The details of location, dimension and area etc. are furnished below:

Sl. No	Name of the Dump	Location	Area (m^2)	Area (ha)	Average Height (m)	Top RL	Bottom RL
1	Dump-27	Udalbadi	10991	1.0991	13	540	532
2	Dump-28	Udalbadi	14404	1.4404	4	545	530
3	Dump-30	Udalbadi	19421	1.9421	31	559	530
4	Dump-PD3	Katasahi	3025	0.3025	8	556	558
5	Dump-PD4	Near Katasahi Pit	19500	1.950	7	612	605

The lessee has already taken up precautionary measures to arrest the surface run-off. Presently 6677mts of retaining wall and 4171mts of garland drain constructed. The retaining wall width is 1mts and height is 1.5 mts, similarly the garland drain width of 1m and depth of 1m.

Sl No.	Quarry	Dump Location	Retaining Wall (mts)	Garland Drain (mts)
1	Guali Quarry	Subgrade stock no-5	322	250
2	Topadihi Quarry	Subgrade stoke no- 1	120	Nil
3	LP 97	Subgrade stock no-36	157	80
4	LP96	Subgrade stock no-36A	151	125
5	Udalbadi Quarry	O.B. Dump no-30	55	32

6	Udalbadi Quarry	O.B. Dump no-30	264	232
7	Udalbadi Quarry	O.B Dump no-30	165	60
8	Udalbadi Quarry	O.B DUMP 28	281	250
9	Udalbadi Quarry	O.B. Dump no-27	314	275
10	Chenaguda Quarry	Subgrade stack no-16	658	560
11	MDH Quarry	Subgrade stack no-18	240	220
12	Barpada Dump	Barpada Dump	1200	1000
13	B-Top	Subgrade stock no-35	113	Nil
14	B-Top	Subgrade stock no-35	80	45
15	B-Top	Subgrade stock no-36	101	35
16	Katasahi Quarry	Fines stock no-40	270	Nil
17	Katasahi Quarry	Subgrade stock no-10	420	350
18	Katasahi Quarry	Subgrade stock no-8	126	Nil
19	SonuKocha Quarry	Subgrade Dump	86	Nil
20	Sonukucha Quarry	Sonukucha Dump	360	355
21	Gangeiguda Quarry	Subgrade stock no-33	170	170
22	Kanhusahi Quarry	Subgrade stock no-38	77	Nil
23	Katasahi Quarry	O.B Dump no.-	70	60
24	Gangeiguda Quarry	Road Side	110	Nil
25	Katasahi Quarry	Road Side	40	Nil
26	Kanhusahi Quarry	Subgrade Stock no-	122	Nil
27	MDH Quarry	Sub-grade Dump-17	210	80
28	Repairing Chanagoda Quarry	Subgrade stack no-16	117	Nil

29	Repairing MDH Quarry	Sub-grade Dump-17	80	Nil
30	Repairing Katasahi Quarry	Sub-grade Dump no.8	108	Nil
31	Repairing B-Top Quarry	Subgrade stock no-35	90	Nil
	Total		**6677 Meters**	**4179 Meters**

10. MEASURES PROPOSED

The details of proposed mitigative measures to minimize soil erosion and choking of streams in Nuagaon Iron Ore Block of M/s JSW Steel Ltd. Are given below:

Sites for disposal of waste along with ground preparation

Total two locations have been selected for dumping during plan period of 5 years.

Proposed dump-1(near Katasahi quarry) will be made with the waste of Katasahi, Kanhusahi and Barpada block. This area has been explored in detail and found negative. Before dumping tree felling permission will be obtained from state forest department. After felling of tree, the said area will be levelled and retaining wall followed by garland drain will be created around the dump.

Proposed dump-2

Proposed dump-2 will be created by the waste of Topadihi and Dumka block. Before dumping ground, preparation will be made and subsequently, retaining wall and garland drain will be constructed in the toe of the proposed dump.

Site for disposal of mineral rejects/ Sub-grade along with ground preparation

There will be ten mineral reject/ sub grade dumps within the lease area. In case of Katasahi block additional area has been considered for sub-grade dumping. But in other cases, sub-grade dumping will be carried out over the existing sub-grade dump. For sub-grade dumping near Katasahi, tree felling order will be obtained from the State Forest department and subsequently, boulder wall will be constructed around the proposed sub-grade dump. In the other cases boulder wall will be either extended or existing boulder wall will be maintained

a. **Biological Measures**

i) **Plantation**

At the end of conceptual period, about 553.97 Ha will be covered under mining. Concurrent reclamation will be carried out depending upon the exhaust of mineral phase by phase. Out of which 116.2532ha will be reclaimed by means of back-filling, 419.3658Ha by plantation and 18.351Ha will be reclaimed by means of water reservoir. The details of reclamation of mined out land is furnished below:

(a) Back-filling and plantation

No of Back-filled Area	Area(m2)	Length(m)	Width(m)	Top RL(m)	
Back filled area -1	457000	240	1904	552	
Back-filled area-2	68656	430	160	560	
Back filled area -3	84120	344	245	560	
Back-filled area-4	102925	329	313	550	

Back filled area -5	109631	465	236	498	
Back-filled area-6	93327	265	352	498	
Back filled area -7	41730	298	140	492	
Back filled area -8	167499	730	229	510	
Back filled area -9	37644	284	133	550	
Total	**116.2532**				

(b) Bench-plantation

It has been planned to make bench plantation over546.1068ha during conceptual period.

Means of reclamation	Area(m2)	Length(m)	Width(m)	RL(m)
Bench plantation -1	2746723	2950	931	510-695m
Bench Plantation-2	94906	910	104	460-670m
Bench Plantation-3	345575	1284	269	440-550m
Bench Plantation -4	175932	810	217	430-550m
Bench Plantation -5	27000	300	90	500-550m
Bench Plantation -6	803522	2124	378	450-600m
Total	**4193658**			

The total lease area is 781.787 hects out of which 644.570 ha is forest land. As of now 422.610(371.192 earlier diverted + 51.418 broken up sabik) Ha of area broken and used for mining and allied activities. Soil erosion in this area particularly in the waste dump and sub-grade stock area are more and in the mining pit area it is lesser in extent. Soil erosion in rest of the areas is moderate since the forest canopy is having density of more than 0.3, and hence it needs protection from soil getting further eroded by drips and the natural binding of the soil due to the root system. Hence, it is proposed to undertake plantation over 116.253 ha. on the surface of backfilled area, 419.366 ha will be taken up bench plantation (block plantation model) and 14.965 ha of conceptual dump will rehabilitated with block plantation model.. It is also proposed to plant Agave Plants in degraded and poor soils along the slope & toe of plantations over a length of 3462 running meter for controlling soil erosion. The plantation in the back-filling area will be carried out as per the approved mining plan and agave plantation will be done adjoining to the retaining walls

The cost norm of Block Plantation and Agave Plantation has been provided in **Annexure –I and II**

The list of species proposed for plantation is as follows

Sl. No.	Local Name	Botanical Name	Family
1	Gamhar	*Gmelina arborea*	*Verbenaceae*
2	Teak	*Tectona grandis*	*Lamiaceae*
3	Mahula	*Madhuca indica*	*Sapotaceae*
4	Jamun	*Syzygium cumini*	*Myrtaceae*
5	Babul	*Acacia nilotica*	*Leguminoceae*
6	Neem	*Azadirachta indica*	*Meliacea*
7	Chhatian	*Alstonia scholaris*	*Apocynaceae*
8	Siris	*Albizia lebbeck*	*Leguminoceae*
9	Sissoo	*Dalbergia latifolia*	*Fabaceae*
10	Sal	*Shorea robusta*	*Dipterocarpaceae*
11	Karania	*Pongamia pinnata*	*Papilionaceae*
12	Asan	*Terminalia tomentosa*	*Combretaceae*

Planting shall be done during July in pre-dug pits of size 45 cm X 45 cm X 45 cm. A basal dose of N.P.K fertiliser shall be applied at the time of planting, besides mixing with insecticides to prevent termites & insects. Fruit bearing trees and bamboo rhizomes shall not be planted in close proximity. A minimum distance of 2.5 mt X 2.5 mt shall be maintained on every fourth plants in planting either of the species. Care should be taken to complete the planting during July while rains are still on during first or second week of July.

ii) **Weeding**

For establishment and better growth of the planted seedlings, timely weeding, soil working and manuring are necessary. It is proposed to carry out two weeding, soil working and manuring during the first year and second year of plantation and one weeding and soil working during third year. During first year and second year, first weeding and manuring shall be carried out during August-September and the second one during October-November along with soil working after rains. First weeding shall be around the plants and the second one will be done in strip. In the third year the weeding will be done around the plants, which will be carried out during August.

After each weeding, intensive soil working will be done around each plant at a radius of 0.5mtr, followed by manuring of @50grms NPK per plant in ring form.

iii) **Application of Insecticides**

The plantation site, after planting with good and healthy seedlings, may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To get rid of such insect attack, application of insecticides will be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day in the forenoon as per requirement.

b. **Structural Measures**

Vegetative means of erosion control are the most feasible and economic measures. However, as the pressure on land is increasing, it is necessary to bring even highly eroded land under-utilization. In these lands, vegetative measures are not adequate to keep down the erosion. Some structural measures are required to be taken before vegetative measures are adopted. Structural measures, therefore, serve as supplementary to vegetative measures. The objective behind building mechanical structures is to reduce the degree and length of the slope, reducing run-off and consequently, reducing soil erosion.

i) **Plan for Construction of Loose Boulder Structure**

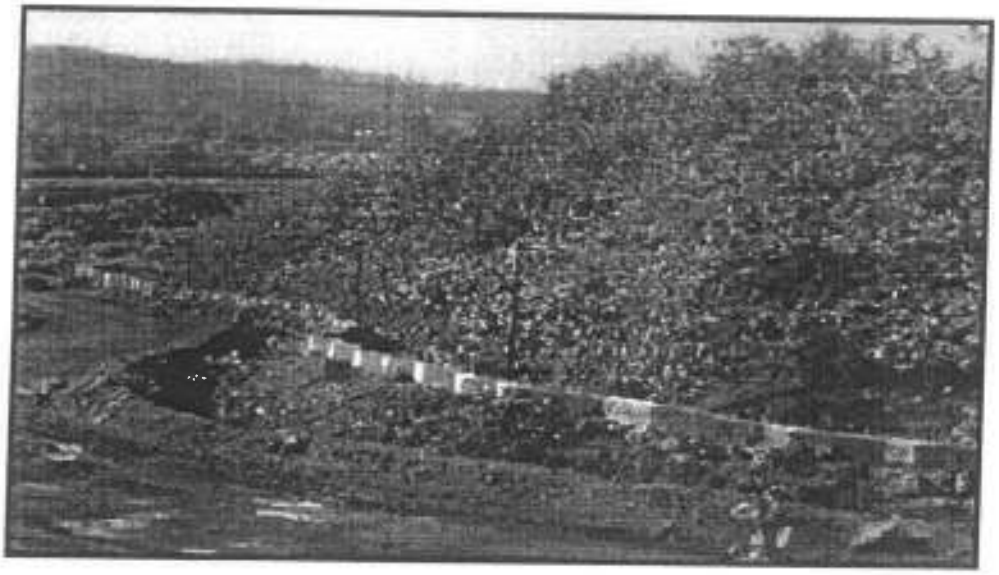
After studying the topography and the drainage pattern it has been found that there are 10 spots where the LBCD required and accordingly it has proposed to construct 10 nos. of loose boulder structure of 4m span across the existing & proposed garland drain along the dumps 5 nos settling pit will help in stabilization of silt & sediment as well as prevention of soil erosion & enrichment of vegetation & greenery development. The cost norm of LBCD has been provided in Annexure –III.

As the approved mining plan it has been proposed to construct 3462 mtsX1.5mtX1.00mt of retaining wall in different places with garland drain of 3462 mtsX1.5mtX1.00mt along the dumps & 5 nos settling pit{ (120 x 60x 3m(Near Ml pillar 95), 100 x 20m x 2m(Near Ml Pilar 105), 100 x 30 x 2 m (Near Ml Pillar 57), 10 x 8 x 2 m (Near by Waste Dump 1), 10 x 8 x 2 m (Nearby Waste Dump 1)} will help in stabilization of silt & sediment as well as prevention of soil erosion & enrichment of vegetation & greenery development.

Loose Boulder Structures

ii) Plan for Construction of Garland drain

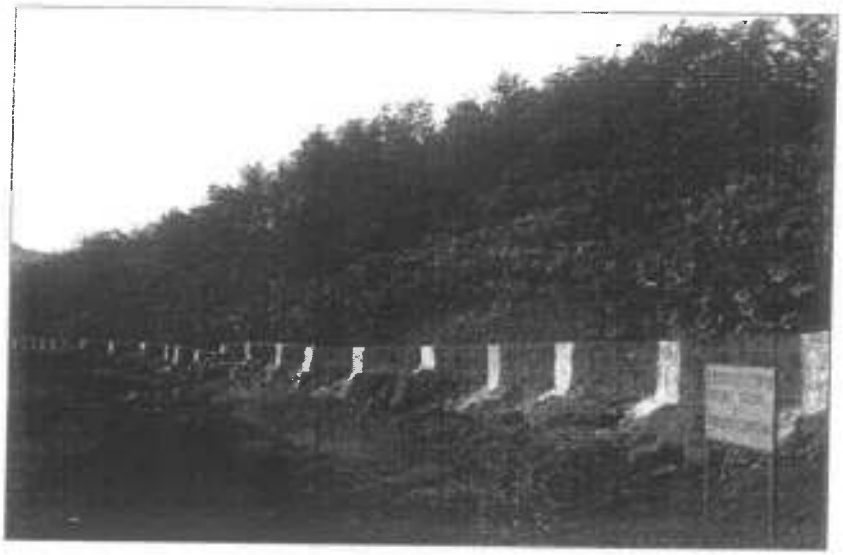
As stated above A shallow trench (1.0 m wide x 1.50 m deep) will be dug for storage of runoff accumulated for draining surface water before it is released to the agriculture land or natural water course. Details of proposed Garland drain 3462 m shall be constructed during the ensuing seven years period with location is shown in the map. The cost norm of Garland Drain has been provided in Annexure –IV. Further the User agency will take up de-siltation in existing garland drain with help of excavator.



Garland Drain around Waste Dump

iii) Construction of Retaining wall

A retaining wall is a structure designed and constructed to resist the lateral pressure of soil when there is a change in ground elevation that exceeds the angle of repose of the soil. The Retaining walls are proposed for construction over 3462 m. Also, there is a provision for maintenance of the retaining wall for the next 4 years. The cost norm of Retaining wall has been provided in Annexure- V. The existing retaining walls need to be maintained periodically.



Details of Retaining walls

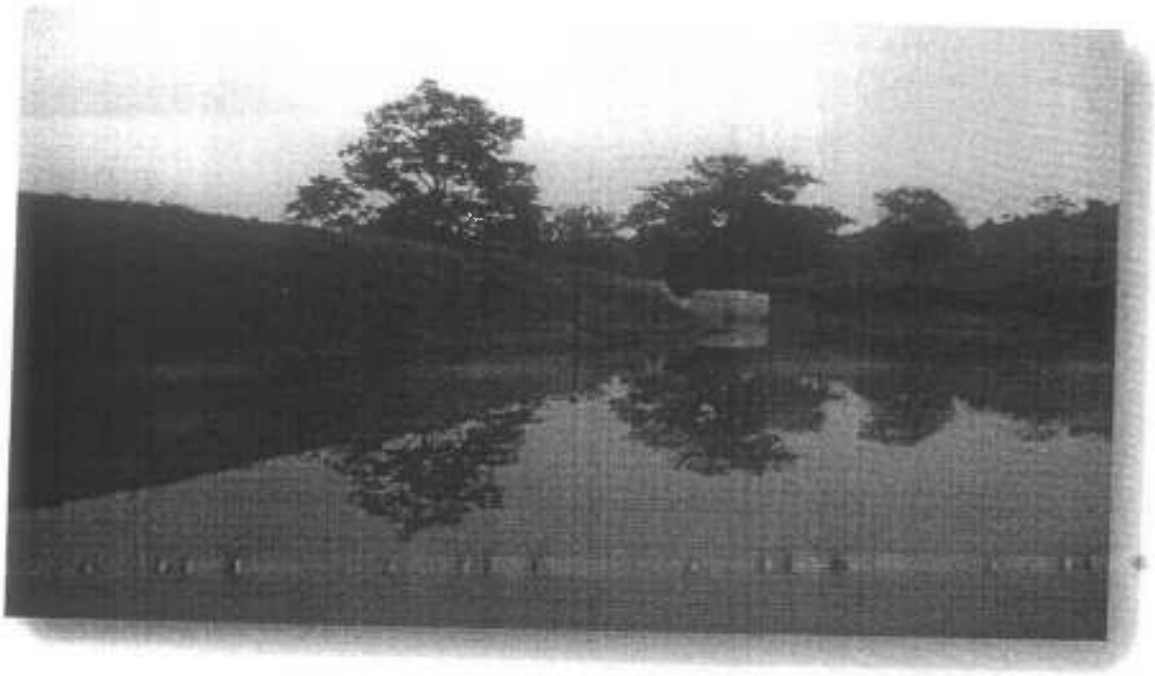
iv) Terracing of OB Dump Slope

It is proposed to construct berm & terraces on all the existing & the proposed Dumps considering the volume of OB materials &the area earmarked for dumping. The slope of individual terrace should be within the permissible range considering the angle of repose of the soil and space available, thereby maintaining the angle of repose at less than 280. The terracing will be done through the internal resources by deploying the operating mining equipment. All these operations will be carried out after sufficient deposition of OB. When OB dump will partially maturate, the work will be executed. The cost norm of Terrace Development has been provided in Annexure-VI

Terracing of OB Dumps

v) Plan for Construction of Check Dams

After studying the drainage pattern, it has been found total number of check dam required is 10 and accordingly,**10 nos**. of Check Dam will be constructed near the rain water harvesting pit. During monsoon there is heavy on-rush of water as a runoff arising from up slope/higher elevation to lower elevation. Hence, attention is to be paid to reduce the flow velocity of runoff & settle the silts/sediments flown from overburden dumps, haul roads inside the mine and areas cleared of vegetation. The check dam will be constructed near settling ponds. Details of proposed Check Dams are furnished below and location of the said coordinates is shown in the map. The cost norm of Check Dam has been provided in **Annexure –VII**



Check Dam to restrict Soil erosion *& silt flow*

vi) Plan for Construction of Settling Tanks

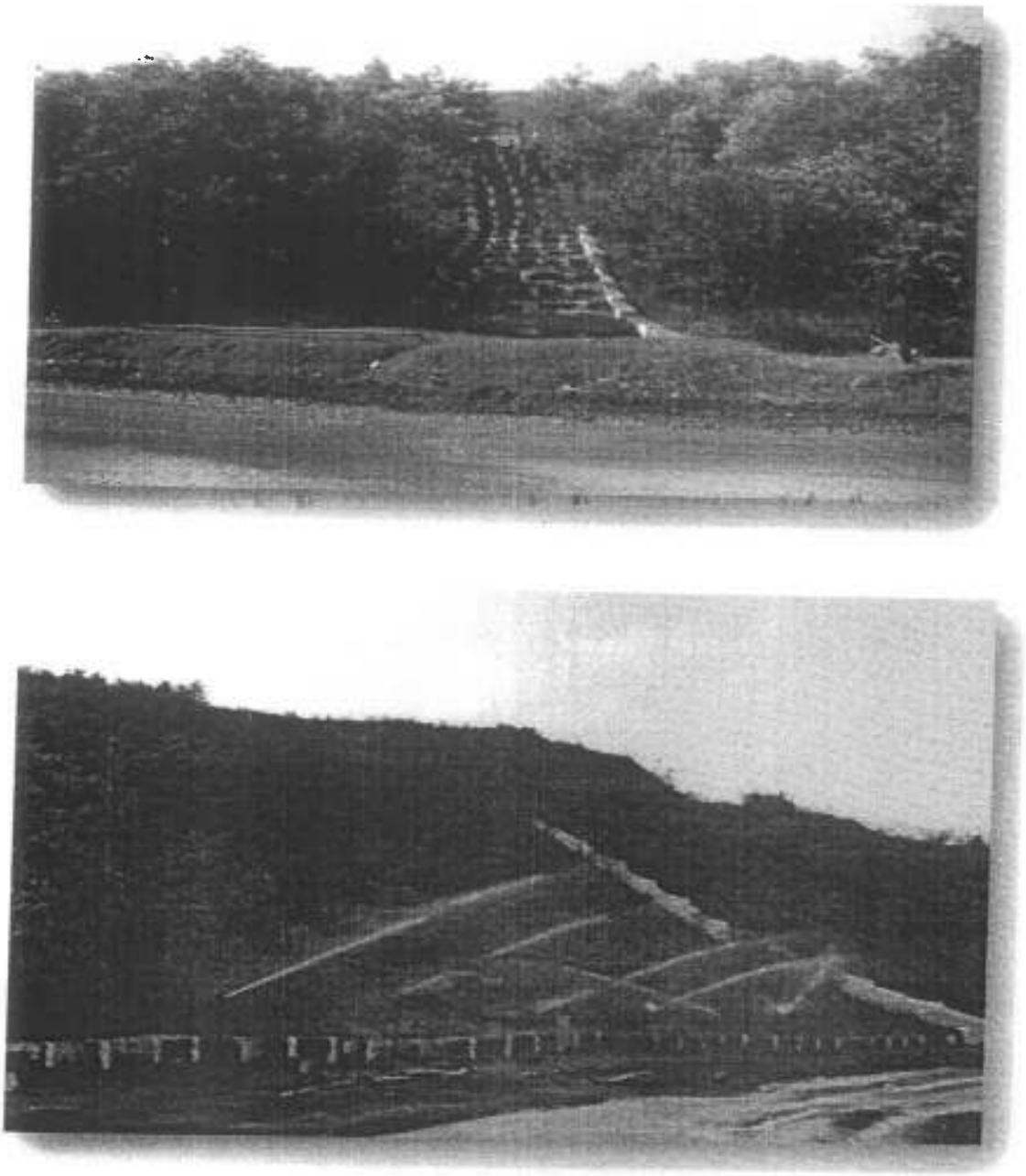
It is a process that involves separation of solid material from slurry. Sometimes, this process is called sedimentation. When waste water is treated, a large quantum of materials is filtered out of the liquid by physical barriers. Even then, the water will contain some solids which need to be removed. A settling tank is proposed to be used to protect the surface water. Although there are 5 nos of settling ponds exist that need to be de-silted every year and it has been proposed to construct 5 nos. of settling tanks. Details of proposed 5 nos. of settling Tanks are as follows: -

1. 120 x 60x 3m (Near Ml pillar 95)
2. 100 x 20m x 2m (Near Ml Pilar 105)
3. 100 x 30 x 2 m (Near Ml Pillar 57),
4. 10 x 8 x 2 m (Nearby Waste Dump 1),
5. 10 x 8 x 2 m (Nearby Waste Dump 1)

The cost norm of Settling Tank has been provided in **Annexure –VIII.**

vii) Plan for Construction of catch drain

A pyramid structure catch drain has been proposed to stream-line the flow of surface runoff from the dump to the foot of the dump, and stair of the catch drain will be placed inward to restrict flow of water. Catch drain is preferably made up of half concrete with number of stairs to reduce gully formation due to rain water wash off, so that runoff water will flow through each terrace of the dump & connect to the catch drain, the water of which goes through catch drain via settling pit to the garland drain. The catch drain will be constructed after the proposed dump height exceeds 26 m. 2 nos of catch drain have been proposed. The cost norm of Catch Drain has been provided in **Annexure –IX.**



Catch Drains

viii) Desiltation

The de-silting works of the settling tank will be taken up at regular intervals to prevent sedimentation and choking of streams. This de-silting of settling tank will provide space and base to hold the sediment laden runoff thereby allowing settling and clear water to flow down. This de-silting work will be preferably undertaken once in a year before & after monsoon. The implementation of the plans will be site specific in nature depending upon the severity of the sedimentation and choking of stream.

11. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes.

12. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi are to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages. Thus, 15% of the plantation cost has been earmarked for expenditure on this score.

13. EXECUTING AGENCY

The works in the present Scheme shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out in co-ordination with the Forest Department.

SPECIALISED CELL

Sl. No.	Name	Designation	Expertise
1.	Sri. B R K Padhi	Senior Vice President - Head Operation	30 Years' experience in Mining Mine Envt Management.
2.	Sri. Basavraj Dalgade	General Manager	20 Years' experience in Forest Envt Management.
3.	Sri. Dhananjay Kumar	Sr. Manager (Environment & Forest)	25 Years of experience in F & E
4.	Sri. Padmaraja Tumuti	DGM -Planning	25 Years' experience
5	Sri Jiten Kumar Sahoo	Manager- Forest	15 years' experience in forest

14. REQUIREMENT OF FUNDS

The total cost of implementation of mitigative measures will be Rs15,67,43,000.00/ **(Rupees fifteen crore sixty-seven lakh forty-three thousand) only.** The expenditure will be made during the next seven years period. This budget will be subject to increase in amount considering the increase in cost of materials and labour charges. The tentative annual expenditure planned for next seven years for the implementation of the mitigative measures is given in the following tables:

FINANCIAL FORECAST OF THE PROJECT

Sl. No.	Description of the Work	Fund Required (in Rs.)
1.	**Biological Measures**	
A.	ANR Plantation (1000 no./ha.) on the dumps over 14.965 ha and pit to be back filled in future over 116.253 ha. and 419.365 ha bench plantation @ Rs.2,46,454/- X 550.583 ha	135693382.68
B.	Agave Plantation at the toe of dump over a length of 3462 m. @ Rs.603750.00/- for 1000 RMT	2090183.00
	Total	**137783565.68**
2.	**Structural Measures**	
A.	**20** nos. of Loose Boulder Structure of 4mt span @ Rs.39788.00/- per each	595760.00
B.	Construction of Garland drain over a length of **3462**m @ Rs.422/- per RMT	1460964.00
C.	Construction of retaining wall over **3462** m @ Rs.1744 per RMT	6037728.00
D.	Terracing of OB dump over a length of 6924 m. @ Rs.740/- per RMT	54,00,300.00
E.	Construction of **10** no. of check dam@ Rs.3,45,386.00/- per each	3453860.00
F.	Construction of **5** no. of settling tank @ Rs.12,621.00/- per each	63105.00
G.	Construction of 5 nos. of catch drain (26 m. at dump slope) @ Rs.2,69,490.00/- per each	1347450.00
	Total	**18359167.00**
3.	De-siltation work for Garland drain, settling pond and check dam twice in a year on LS	2000000.00
4.	Maintenance of retaining walls	4000000.00
GRAND TOTAL (1 + 2 + 3 + 4)		**162142732.68** Or say **16,21,43,000.00**

(Rupees sixteen crore twenty-one lakh forty-three thousand) only

M/s JSW Steel Ltd. do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

Sri Baswaraj Dalgade
GM (Projects)
M/s JSW Steel Ltd.

Technically Approved
13/6/2017
Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Countersigned

Divisional Forest Officer
Keonjhar Division

Base Cost Norm for AR Plantation @1000 seedlings per ha (18 months old seedlings) @ 311.00/- Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide Notification No. 2433/LC dated 30.04.2022. The onetime cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1109 dated 08.11.2021.

ANNEXURE-4

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

WAGE RATE Rs- 311/- PER MANDAY

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
	0th Year (Advance work) Pre-Planting Operation					
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 & removal of debrises)	Nov/Dec	12	3732	0	3732
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311	0	311
5	Alignment and stacking of pits	Feb/Mar	1	311	0	311
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	40	12440	0	12440
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
	Total		57	17727	3600	21327
	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/Jul	7.5	2332.50	5000	7332.50
2	Transportation of 18 months old polythene bag seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedling @ Rs.6/- per Seedling. (1100 nos.)	Jul/Aug	0	0	6600	6600
3	Watering polypot seedlings at plantation site	Jul/Aug	2	622	0	622
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil perfectely around the planted seedlings.	Jul/Aug	22.5	6997.50	0	6997.50
5	Cost of Fertilizer & Insecticide (a)NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 50kg @ 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	Jul/Aug	0	0	3000	3000
6	Casualty Replacement @ 10% (100 nos.)	Jul/Aug	2.5	777.5	0	777.5
7	1st weeding & Manuring	Aug/Sept	12	3732	0	3732
8	2nd Weeding. Soil working (1mt. diametre around the plants) & Manuring	Oct/Nov	15	4665	0	4665
9	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	12	3732	0	3732
	Total		76.50	23791.50	14600.00	38391.50
	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	8	600	608
2	Casualty replacement- 10%	Jul	2.5	777.5	0	777.5
3	Cost of Fertilizer & Insecticide:- A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.5 Kg @ Rs.)50/- per kg = Rs.75/- B)Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @Rs. 2000/-	July/Aug	0	0	2875	2875
4	Weeding (Complete weeding), Manuring & Soil working (1mt. diametre around the plants)	Sep/Oct	15	4665	0	4665
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr-Mar		0	1000	1000
	Total		38.5	11973.5	4475	16448.5

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
	3rd Year Maintenance					
1	Cost of Fertilizer(Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer	July/Aug	0	0	2800	2800
2	Weeding (Complete weeding). Manuring & Soil working (1m. diametre around the plants)	Sep/Oct	15	4665	0	4665
3	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
4	Watch & Ward including watering as per requirement	Apr/Mar	18	5598	0	5598
5	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr/Mar	0	0	1000	1000
	Total		36.0	11196	3800	14996
	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	0	933
2	Watch & Ward including maintenece of vegetative fencing	Apr-Mar	18	5590	0	5598
	Total		21	6531	0	6531
	5th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	6th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, Singling out of multiple shoots	Jan/Mar	3	933.00	0	933.0
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598.0
	Total		24	7464	0	7464.0
	7th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	8th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	9th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	10th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531

Year wise Abstract of Cost Norm (showing seedling cost separately)

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	8
Sl. No	Year	No. of Mandays	Labour cost (In Rs)	Material Cost(In Rs.)	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST(In Rs)
1	2	3	4	5	6	7	8
1	0th year	57.0	17727.0	3600.0	973.00	0.00	22300.00
2	1st year	76.5	23791.5	14600.0	1918.50	55341.00	95651.00
3	2nd year	38.5	11973.5	4475.0	821.50	5031.00	22301.00
4	3rd year	36.0	11196.0	3800.0	749.00	0.00	15745.00
5	4th year	21.0	6531.0	0.0	326.00	0.00	6857.00
6	5th year	21.0	6531.0	0.0	326.00	0.00	6857.00
7	6th year	24.0	7464.0	0.0	373.00	0.00	7037.00
8	7th year	21.0	6531.0	0.0	326.00	0.00	6857.00
9	8th year	21.0	6531.0	0.0	326.00	0.00	6857.00
10	9th year	21.0	6531.0	0.0	326.00	0.00	6857.00
11	10th year	21.0	6531.0	0.0	326.00	0.00	6857.00
	Total:	358.0	111338.0	26475.0	6791.0	60372.0	204976.0

Note:

1 Priority must be given to the indigenous local species available nearby to the site of plantation.
2 10 % indigenous fruit bearing trees must be preferred to Plantation.
3 Site specific Soil conservation work like LBCD, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up
4 Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo twigs fencing may be prefered
5 Watering facilites for procurement of water & watering may be adopted as per the availability of water.
6 The Cost Norm of various items can be changed with the approval of the concerned RCCFs keeping the overall cost norm fixed for each Financial Year

A PCCF (Forest Diversion & NO, FC Act)

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

In Rupees

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	95651	22301	15745	6857	6857	7837	6857	6857	6857	6857											
1	2021-22	22300	100434	24585	18226	8335	8751	10502	9648	10131	10637	11169											234718
2	2022-23		23415	105456	25814	19137	8752	9189	11027	10130	10638	11169	11727										246454
3	2023-24			24586	110729	37105	20094	9190	9648	11578	10637	11170	11727	12313									258777
4	2024-25				25815	116265	28460	21099	9650	10130	12157	11169	11729	12313	12929								271716
5	2025-26					27105	122078	29883	22154	10133	10637	12765	11727	12315	12929	13575							285302
6	2026-27						28461	128182	31377	23262	10640	11169	13403	12313	12931	13575	14254						299567
7	2027-28							29884	134591	32946	24425	11172	11727	14073	12929	13578	14254	14967					314546
8	2028-29								31378	142321	34593	25646	11731	12313	14777	13575	14257	14967	15715				330273
9	2029-30									32847	148387	36323	26928	12318	12929	15516	14254	14970	15715	16501			346788
10	2030-31										34594	155806	38139	28274	12934	13575	16292	14967	15719	16501	17326		364227

APCCF (Forest Diversion & NO, FC Act)

COST NORM FOR AGAVE PLANTATION (FOR 5 ROWS & 40 MTRS)

Sl. No.	Name of the work	Man-day	Labour cost (₹)	Material	Total
FIRST YEAR OPERATION.					
1	Site clearance alignment and stacking	2	630.00	-	630.00
2	Cost of lime materials including transportation	0		522.00	522.00
3	Digging pits and application of lime	6	1,890.00		1,890.00
4	Cost of 200 Ac. (sucker) including transportation			2,624.65	2,624.65
5	Carriage and planting	2	630.00	-	630.00
6	Soil working and application of fertilizers (twice) and lime	8	2,520.00		2,520.00
7	Cost of fertilizer			585.60	585.60
8	Contingency			585.60	585.60
	Total:-	**18**	**5670**	**4317.85**	**9987.85**
SECOND YEAR OPERATION					
1	Casuality replacement (20%) including cost of suckers and pitting	2	630	522.2	1,152.20
2	Weeding and application of fertilizer and lime	6	1,890.00		1,890.00
3	Cost of fertilizer insecticides & lime			395.35	395.35
	Total:-	**8**	**2520**	**917.55**	**3437.55**
THIRD YEAR OPERATION					
1	Weeding, soil working and application of fertilizers	6	1,890.00		1,890.00
2	Cost of fertilizer and insecticides		0	395.35	395.35
3	Plant protection measures including material cost		0	395.35	395.35
	Total:-	**6.00**	**1,890.00**	**790.70**	**2,680.70**
FORTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	1,890.00		1,890.00
2	Cost of fertilizer and insecticides		0	395.35	395.35

3	Plant protection measures including material cost		0	395.35	395.35
	Total:-	**6.00**	**1,890.00**	**790.70**	**2,680.70**
FIFTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	1,890.00		1,890.00
2	Cost of fertilizer and insecticides		0	395.35	395.35
3	Plant protection measures including material cost		0	395.35	395.35
	Total:-	**6.00**	**1,890.00**	**790.70**	**2,680.70**
SIXTH YEAR OPERATION					
1	Weeding, cleaning, soil working and application of fertilizers	6	1,890.00		1,890.00
2	Cost of fertilizer and insecticides		0	395.35	395.35
3	Plant protection measures including material cost		0	395.35	395.35
	Total:-	**6.00**	**1,890.00**	**790.70**	**2,680.70**
	G.Total	**50.00**	**15,750.00**	**8,398.20**	**24148.20 or say 24150.00**
Cost norm for Agave fencing with five rows 01 km for 6 year		**24150 / 40**	**x 1000 =**	**603,750.00**	

Detail Estimate of Loose Boulder Structure (S.M.C)

Wage Rate- Rs. 326.00
Span – 4 mtr. Ht.= 1.3 mtr
Slope- U/S :- 1:1.5 D/S slope :- 1:2.0

1.	Levelling the un-shape surface of the selected site & layout the structure foundation L.S. 1 MD.			326.00
2.	Excavation of foundation in hard soil within initial lead of 50 mtr. including rough dressing and breaking of clods to maximum size 5 cm. to 7 cm. laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure.			
	Base with apron- 1 x 6.15 x5.00 x 0.30 =	9.225		
	Wing wall- 4 x 0.50 x 0.50 x 0.30 =	0.30	9.525	
	@ 13072.96 per 100 cum.			**1316.23**
3.	**Rough stone dry packing**			
	up to GL			
	Base with apron- 1 x 6.15 x 5.00 x 0.30 =	9.225		
	Wing wall- 4 x 0.50 x 0.50 x 0.30 =	0.30		
	Above GL			
	Super structure 1 x $\frac{5.15 + 0.60}{2}$ x 1.30 x 4.0 =	14.95		
	Wing wall- 4 x 0.50 x 0.50 x 0.50 =	0.50		
	Side wall-			
i.	2 x $\frac{0.50 + 1.80}{2}$ x 1.95 x 0.5 =	2.24		
ii.	2 x $\frac{0.5 + 1.80}{2}$ x 2.6 x 0.5 =	2.99		
iii.	2 x 0.6 x 1.8 x 0.5 =	1.08		
iv.	2 x 1.0 x 0.5 x 0.5 =	0.50		
			31.785	
	@ 1200.45 per cum			**38156.51**
			G.Total:-	**39787.74 Or 39788.00**

(Rupees Thirty nine Thousand seven Hundred eighty eight) only

Annexure-IV

Detail Estimate of construction of Garland Drain

Sl No	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	Cleaning of Jungles & bushes	1	200.00	7.00		1400.00	Sqm	8.046	11264.40
2	Earth work in hard soil in embankment roads within 50 mtr initial lead &1.50 mtr initial lift including rough dressing &breaking clods to Maximum 5.00c.m. to 7.00 c.m. & laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R Excavation	1	200.00	2.00	0.75	300.00	Cum	224.39	67317.00
3	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by the Company through contractual manner)	2	3.00	2.00	0.30	3.60	Cum	1589.23	5721.22
									84302.62 Or, 84303.00

Rate/Running metre length – Rs.421.51 or 422/-

Detail Estimate of Retaining wall of loose local Boulder with cement-Sand Patching over the surface of Boulder wall.

Sl. No.	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	2	3	4	5	6	7	8	9	10
For one K.M.Length									
1	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by our Company)	1	1000.00	(1.00+1.50)/2	1.20	1500.00	Cum		
		1	1000.00	1.50	0.30	450.00	Cum		
						1950.00	Cum	619.60	1208230
2	Irregular cement sand patches on the both side of the wall with 2" thick cement sand mortar (1:6) on top	1	1000.00	1.00		1000.00	Sqm		
		2	1000.00	1.20		2400.00	Sqm		
						3400.00	Sqm	157.50	535500.00
		Rate per one K.M. Length				Total			1743730

Cost for Running Meter length **1743.73 or 1744.00**

TERRACING OF THE DUMP SLOPE

Engagement of HEMM on the O/B dump slope for terracing
Location – Over Burden Dump
Work efficiency per hour – 3.38 running metre on the dump.
Width & height of the terrace – 5 m. & 5 m.
Rate for engagement of HEMM – Rs.2500.00/hr. i.e. Rs.2500.00/3.38 running meter i.e. Rate X running metre = Rs.739.65/- or 740.00
Therefore, terracing to be done over a length of RM is Rs.740.00/-

Annexure- VII

Detail Estimate of Concrete Structure of Check Dam

Sl No	Description of Items	No	Length	Width	Height	Qty	Rate	Amount in Rs.
1	2	3	4	5	6	7	8	9
1	Earthwork in hard solid embankment roads with in 50 mtr initial lead &1.50 mtr initial lift including rough dressing & breaking clods to Maximum 5.00c.m. to 7.00 c.m. &laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R Excavation							
	Base	1	5.00	5.50	0.50	13.75		
	Wing Wall	4	2.00	0.50	0.50	2.00		
	Appron	2	3.00	5.00	0.20	6.00		
	Cut of wall	2	5.00	0.45	0.50	2.25		
						24.00	237.19	5692.56
2	Plain cement concrete (1:4:8)							
	Base	1	4.00	5.50	0.075	1.65		
	Wing Wall	4	2.00	0.50	0.08	0.30		
	Appron	2	3.00	5.00	0.08	2.25		
	Cut of wall	2	4.00	0.45	0.08	0.27		
						4.47	6889.99	30798.30
3	Cement concrete							
	Below Ground Level							
	Base	1	4.00	5.50	0.40	8.80		
	Wing Wall	4	2.00	0.50	0.40	1.60		
	Appron	2	3.00	5.00	0.10	3.00		
	Cut of wall	2	4.00	0.45	0.50	1.80		
						15.20		
	Above Ground Level							
	Base	1	4.00	(2.00+5.00)/2	1.00	14.00		
	Wing Wall	4	2.00	0.40	1.00	3.20		
					Total	17.20		
				Grand Total		32.40	9533.78	308894
	Rate per one No Check Dam. Length=4.00 mtrHt=1.30 mtr Slope U/S=1:1.5 D/S=1:2					Total		**345385.30 Or, 345386.00**

Annexure-VIII

ESTIMATE FOR PER RMT CONSTRUCTION OF SETTLING TANK
(Length: 1m., width: 3.0m. height: 1.5m.)

Sl No	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	Earth work in hard soil in embankment roads within 50 matintial lead &1.50 mtrintial lift including rough dressing &breaking clods to Maximum 5.00c.m. to 7.00 c.m. &laying layers not exceeding 0.30 mtr depth as per specification approved by department along with proper compaction with H.R.R Excavation	1	4.00	3.00	1.50	18.00	Cum	224.39	4039.02
2	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by our Company)	1	4.00	6.00	0.20	4.80	Cum	1589.23	7628.30
3	Transportation charges for 5.00 K.M. lead by truck load from quarry to work site with all cost of , labour, T. & P. etc. all complete in all respect as per specification and direction of	As same as Item No-2				4.80	Cum	198.76	954.04
								Rate per one No Settling tank	**12621.36 Or, 12621.00**

Annexure –IX

Details & Estimate for Construction of Catch Drain (26.00 Mtr.) at Dump Slope

Sl. No	Description of Items	No.	Length	Width	Height	Qty	Unit	Rate	Amount
1	**Earth work excavation in F&P**								
	Foundation								
	Side wall both sides	2	29.000	0.400	0.400	9.280	Cum		
	Between wall	1	29.000	3.000	0.300	26.100	Cum		
					Total	**35.380**	**Cum**	237.19	8391.7822
2	**Sand Filling**	1.00	29.00	3.80	0.05	5.510	Cum	1543.5	8504.685
3	**R R Stone Masonry with Local Boulder**								
	Foundation								
	Side wall both sides	2	29.000	0.400	0.60	13.920	Cum	3522.01	49026.379
4	Rough stone Dry packing with top layer grouting								
	Floor	1	29.000	3.000		87.000	Sqm	428.4	37270.8
					Total=	**100.920**	**Cum**		
5	**Earth Filling**								
	Back filling (1/3rd of earth work)					11.793	Cum		
					Total=	**11.793**	**Cum**	100.8	1188.7344
6	**20mm thick plastering in C.M (1.6)**								
	Both sides wall	4	29.000	0.600		69.600	Sqm		
	Top	2	29.000	0.400		23.200	Sqm		
			Plastering work Total			**92.800**	**Sqm**	285.7	26512.96
7	**C.C,work(1:2:4)**								
	Wall	2.00	29.00	0.40	0.10	2.320	Cum		
	Floor	1	29.000	3.000	0.100	8.700	Cum		
					Total	**11.02**	**Cum**	9386.68	103441.21
							Total	234336.55	**234336.55**
	Add 15% for Critical Area								33253.45
						Grand Total			**269487.04 Or 269490.00**

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

Annexure-6

UNDERTAKING

I, Sri Mrutyunjay Mohapatra, authorized signatory of Nuagaon Iron Ore Block of JSW Steel Ltd.

The following undertaking are being provided in accordance with the compliance of the condition stipulated in Stage-I forest clearance over 63.30 ha vide MoEF&CC letter No. 8-17/2001-FC (Vol.), dt.14.03.2022 in respect of Nuagaon Iron Ore Mines, under Keonjhar Forest Division.

1. Condition no.A.4(i) the Lessee, JSW Steel Limited undertake to execute the financial cost mentioned in approved scheme regarding Mitigative measures to minimize soil erosion and choking of stream.
2. Condition no.A.4(ii) the Lessee, JSW Steel Limited undertake to execute the financial cost mentioned in approved scheme regarding adequate drought hardy plant species and sowing of seeds.
3. Condition no.A.4(iii) the Lessee JSW Steel Limited undertake to execute the financial cost mentioned in approved scheme regarding Construction of Check Dam, retention/toe walls to arrest sliding down of the excavated material along the contour.
4. Condition no.A.4(iv) the Lessee JSW Steel Limited undertake to exccute the financial cost mentioned in approved scheme regarding stabilize the overburden dumps by appropriate grading/benching so as to ensure that angles of repose at any given place is less than 28^0.
5. Condition no.A.4(v) the Lessee, JSW Steel Limited undertake to execute the financial cost mentioned in approved scheme regarding top soil management.
6. Condition no.A.5 the Lessee, JSW Steel Limited undertake to submit the status report to IRO of the Ministry as suggested by the IRO in its monitoring report at the interval of every six months.
7. Condition no.A.6 the Lessee, JSW Steel Limited undertake to execute the financial cost mentioned in approved scheme regarding gap planting & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40) within 100 m outer perimeter of mining lease.
8. Condition no.A.7 the Lessee, JSW Steel Limited undertake to execute the financial cost mentioned in approved scheme regarding de-silting of village tanks & other water bodies located within the 5 KM from the mine lease

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

boundary so as to mitigate the impact of siltation of such tanks/water bodies.

9. Condition no.A.8(iii) the Lessee, JSW Steel Limited undertake to maintained the Safety Zone as green belt around mining lease & regeneration shall be taken up in this area.
10. Condition no.A.8 (iv) the Lessee, JSW Steel Limited undertake to implement the scheme regarding afforestation of 1.5 times of safety zone in consultation with forest department.
11. Condition no.A.8 (v) the Lessee, JSW Steel Limited undertake to maintain the safety zone as per the prescribed norms.
12. Condition no.A.10 The Lessee JSW Steel Limited undertake to deposit the cost of tree felling to the State Forest Department.
13. Condition no.B.2 the Lessee, JSW Steel Limited undertake to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.
14. Condition no.B.3 the Lessee, JSW Steel Limited undertake to felled trees in phase manner as per requirement in the approved Mining Plan with prior permission of concerned DFO.
15. Condition no.B.4 the Lessee, JSW Steel Limited undertake to 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.
16. Condition no.B.5 the Lessee, JSW Steel Limited undertake to continue the mining in a phase manner & execute the concurrent reclamation plan as per approved mining plan & submit the annual report on implementation thereof to Nodal Officer.
17. Condition no.B.6 the Lessee, JSW Steel Limited undertake to 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.
18. Condition no.B.9 the Lessee, JSW Steel Limited undertake that no labour camp established in the forest land.
19. Condition no.B.11 the Lessee, JSW Steel Limited undertake that the layout plan of the mining plan shall not be changed without prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal.

JSW Steel Limited

Regd. Office: JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051
CIN : L27102MH1994PLC152925
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website : www.jsw.in

20. Condition no.B.12 the Lessee, JSW Steel Limited undertake that the forest land proposed to be diverted shall not be transferred to any other agency without prior approval of the Central Government.
21. Condition no.B.13 the Lessee, JSW Steel Limited undertake that no damage to the flora and fauna of the adjoining area shall be caused.
22. Condition no.B.14 the Lessee, JSW Steel Limited undertake to submit the annual self-compliance report to the State Government, concerned Regional Office and to this Ministry by the end of march every year regularly.
23. Condition no.B.15 the Lessee, JSW Steel Limited undertake to comply any other condition that the concerned Regional Office of this Ministry may stipulate, with prior approval of competent authority, in the interest of conservation, protection and development of trees & wildlife.
24. Condition no.B.16 the Lessee, JSW Steel Limited undertake to 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.
25. Condition no.B.17 the Lessee, JSW Steel Limited undertake to comply the violation of any condition of Forest Conservation Act, 1980 as prescribed in para 1.21 of Chapter 1 of Hand book of comprehensive guidelines issued by this Ministry's letter No. 5-2/2017-FC, dt.28.03.2019.

FOR JSW STEEL LTD.

Mrityunjaya Mahapatra

(Authorized Signatory)

ANNEXURE-7

JSW STEEL LTD

Scheme
For

PLANTING OF DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS WITHIN MINING LEASE TO ARREST SOIL EROSION

in compliance with

Condition No. 4 (ii) of

Stage-I approval granted vide

Letter No.8-17/2001-FC(vol), Dated.14.03.2022

of Govt. of India, Ministry of Environment, Forests

& Climage Change, New Delhi.

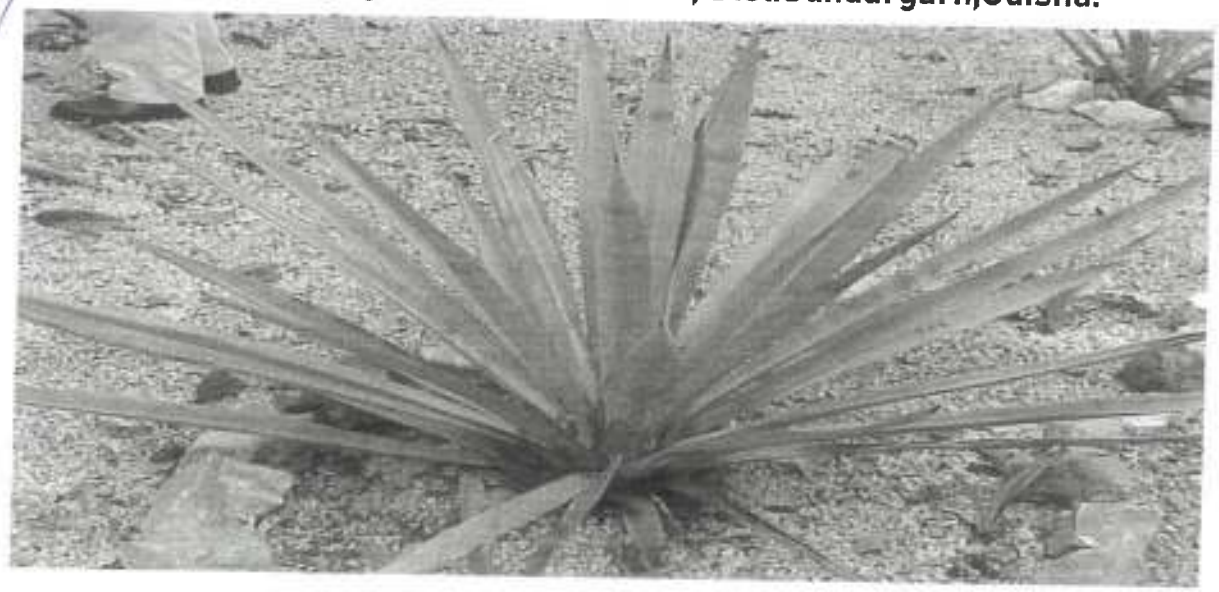
for

Diversion of 63.30 Hects of sabik kissam Forest Land in addition to 371.192 ha of forest land already diverted located within the mining lease hold area of 781.787 ha of Nuagaon Iron Ore Mines

of

M/S JSW STEEL LTD.

in village Nuagaon in Barbil Tahsil, Dist.Sundargarh,Odisha.



SCHEME FOR PLANTING OF DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS WITHIN MINING LEASE TO ARREST SOIL EROSION

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development & Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time (the "Auction Rules), issued the notice inviting tender dated 06.12.2019 to commence the auction process for grant of mining lease for Nuagoan Iron Ore Block located in Keonjhar district of Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block and M/s JSW Steel Limited was declared as the preferred Bidder under Rule 9(9)(iii) of Mineral Auction Rules, having quoted a Final Price Offer of 95.20%. Government of Odisha has awarded the Letter of Intent vide letter No 2291/S&M, Bhubaneswar dated 02.03.2020 for Grant of Mining Lease for Iron Ore in favour of M/s' JSW Steel Ltd. the successful bidder in respect of Nuagaon Iron ore block over an area of 776.969 hects. (as per DGPS)/ 781.787 hects.(as per RoR) in Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi villages under Barbil Tahasil of Keonjhar district under jurisdiction of Barbil Forest Range of Keonjhar Division. M/s JSW Steel Limited under sub-rules (4) and (5) of rule 10 of the said rules, has signed the Mine Development and Production Agreement with Collector, Keonjhar district on dated 25/06/2020. The State Government under rule 10, sub-rule (5) of the Mineral (Auction) Rules, 2015 have been pleased to grant the mining lease for Iron Ore in favour of M/s JSW Steel Ltd., the successful bidder in respect of Nuagaon Iron Ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects. (as per RoR) in Nuagaon village under Barbil Tahasil of Keonjhar district for the period of 50 (fifty) years as provided under section 8A, sub-section 2 of the Mines and Minerals Development and Regulation Act, 1957 vide letter No. 5543 dated 26.06.2020. The lease deed was executed and registered on 27.06.2020.

As per section 8B (2) of the MMDR Act, 1957 read with rule 9A (4) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 the holder of the letter of intent for the said mining block shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee. Without prejudice to the generality of the provisions of section 8B (2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee and vested in favour of the holder of the Letter of Intent. This vesting order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier. In accordance with the above, The State Government issued vesting order vide letter No. 4167/SM/III(A) SM, Bhubaneswar dt. 29/05/2020. The Ministry of Forests & Environment, Govt. of India, New Delhi vide their letter F. No-8-17/2001-FC dated 21/22nd April 2004 accorded approval for diversion of 371.192 ha of forest land out of the applied 476.205 Ha land for mining of iron ore within the mining lease area of M/S K. J. S. Ahluwalia.

The Mines and Minerals (Development and Regulation) Amendment Act, 2021 which has been notified by the Central Government on 28.03.2021 amended the Section 8B. Further the MoEF&CC issued guideline vide File No.FC-11/112/2020-FC(Pt) dated 7.07.2021 align with the provisions under the two Acts, it has been decided that transfer of approval under FCA-1980 in such mining leases may be considered subject to fulfilment of the conditions. The State Government vide letter No. 7493/FE&CC dated 21.04.2022 transferred the forest clearance over 371.192 ha granted earlier to M/s KJS Ahluwalia in favour of JSW Steel Ltd.

The Ex-lessee M/s KJS Ahluwalia has submitted the proposal over 63.300 ha of Sabik Forest land and the FAC had considered the proposal and asked the State Government to comply some condition for grant of Stage-I clearance. The Ex-lessee did not pursue the matter and the mining lease expired on 31.03.2020. The New lessee represented the State Government to re-consider the proposal and complied the stipulated conditions. The Government of Odisha's vide letter No. FE-DIV-FLD0120-2020-16552/FE&CC dated 16.09.2021 recommended for diversion of 63.30 ha Sabik Kisam Forest land in addition to 371.192 ha of forest land already diverted forest land located within the Mining Lease hold area of 767.284 ha in favour of M/s JSW Steel Ltd for Nuagaon Iron Ore Mines in Barbil Tahasil of District Keonjhar and the above proposal was considered by the Forest Advisory Committee (FAC) in its meeting held on 26.11.2021. The Stage-I approval granted vide Letter No.8-17/2001-FC(vol), Dated.14.03.2022 by the Govt. of India, Ministry of Environment, Forests & Climate Change. **Condition No.4 (i) for preparation and implementation of a plan containing appropriate mitigative measures to minimise soil erosion and choking of streams.**

2. LOCATION

The allotted ML area is bounded by latitude 22° 06' 16.72057" to 22° 07' 41.65495" N and longitude 85° 25' 32.28303" to 85° 26' 40.67115" E. The area is surrounded by the Mining Leases like Guali mines of OMC, Gandhalpada of M/s TATA, Sagasahi Mines of AMNS. The NH -20 is passing through the lease and Barbil is situated 15 KM from the mining block.

TOPOGRAPHY

The area is characterized by hilly as well as flat ground having elevation from 525m to 702m above M.S.L. The hill ranges located within the lease area are Udalbari, Guali, Topadih, Dumkahudi, Barpada, Kanhusahi, Katasahi etc. Laterite, Lateritic Iron ore, Hard Haematite etc. are recorded in the ridges and valleys are mainly covered by alluvial soil.Nuagaon iron ore block discerns a fairly wide range of rock types of the iron ore group. The area has got geomorphic trend of North-North-East to South-South-West. The strike trend of the rock type here are also conformable to the trend of hill ranges.

SOIL TYPE

Soil type in the study area varies Lateritic soil recorded in the ridges and valleys are mainly covered by alluvial soil.

3. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature beings to rise rapidly attainting a maximum in the month of May. During the summer maximum temperature can go up to 47.70C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 70 C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

4. DRAINAGE

The drainage system in this area is radial type. The drainage pattern is this area is mostly controlled by Sona River and then ultimately by River Baitarani. Drainage system of the area is controlled by two rivers namely Suna River and Karo River. Northern part is drained by Karo Nadi while southern part of the lease area is drained by Suna Nadi. Both the rivers are perennial in nature. Lease area is having a number of hills traversed by the dry nalas. Surface run-off falls finally in to the rivers through these dry nalas.

EXISTING VEGETATION

The vegetation of the applied area is composed of Sal (Shorearobusta), Saguan (Tectona grandis), Sidha (Lagerstroemia parvifloa), Sisoo (Dalbergia latifolia), Bandhan (Ougeinia oojeinensis), Char (Buchanania lanjan), Dhaura (Anogeissus latifolia), Kurum (Adina cordifolia), Asan (Terminaliatomentosa), Karanja (Pongamia pinnata), Mango (Mangiferaindica), Kendu (Diospyrosmelanoxylon), Bahada (Terminalia belerica) Jamu (Syzygiumcuminii), Kusum (Schleicheraoleosa), Gambhari (Gmelinaarborea), Mahul (Madhucaindica) etc. Sal (Shorea robusta) is the pre-dominant species.

5. LAND USE PATTERN

As per the forest clearance, about (371.192 ha+63.30 ha) 434.492 hectares of forest land will be utilized for mining, Minerals processing, Road, and green belt plantation in Safety Zone area etc. The details of land use pattern will be as follows:

Abstract of Existing and Proposed Land use of non-forest land recorded as forest as on 25.10.1980along with Non-Forest land involved in the project (Area in ha)

SL. No.	Pattern of Utilization	Broken up non-forest land recorded as forest as on 25.10.1980	Virgin non-forest land recorded as forest as on 25.10.1980	Proposed Land use Change of Broken up non-forest land recordedas forest as on 25.10.1980	Utilization pattern of total non-forest land recorded as forest as on 25.10.1980	Broken Non-forest land recorded as non-forest as on 25.10.1980	Virgin Non-forest land recorded as non-forest as on 25.10.1980	Total Non-forest land recorded as non-forest ason 25.10.1980	Grand Total
1	2	3	4	5	6 (3+4+5)	7	8	9 (7+8)	10 (6+9)
1	Mining with inside Road	27.881	3.439	2.280	**33.600**	0	0	**0**	**33.600**
2	Dumping	3.040	4.510	0.79	**8.340**	0	0	**0**	**8.340**
3	Sub Grade Ore Stacking Yard	14.227	3.933	(-) 3.070	**15.090**	0	0	**0**	**15.090**
4	Mines Road	0.790	---	--	**0.790**	0	0	**0**	**0.790**
5	Office, Camp, Weigh Bridge and store Room	0.880	---	---	**0.880**	0	0	**0**	**0.880**
6	Beneficiation Plant premise	3.100	---	-	**3.100**	0	0	**0**	**3.100**
7	Crusher Premises/ Ore Staking	1.500	---	-	**1.500**	1.640	0	**1.640**	**3.140**
	Total	51.418	11.882	0	**63.300**	1.64	0	**1.640**	**64.940**

6. PLANTATION PLANNING DURING THE LEASE PERIOD

Planning for plantation is done with the following objectives:

i) To meet the stipulation No.4 (ii) of Stage-I Forest clearance accorded vide Letter No.8-17/2001-FC (vol), Dated.14.03.2022 of MoEF&CC, GoI, New Delhi, i.e., "planting of adequate drought hardy plant species & sowing of seeds, in appropriate area within mining lease to arrest soil erosion in accordance with the approved scheme."

ii) To compensate the loss to vegetation due to operation of the mine.

iii) To prevent spread of fugitive dust generated due to mining and allied activities.

iv) To attenuate noise generated by the mine.

v) To reduce soil erosion.

vi) To stabilize the slope of external over-burden dumps.

vii) To increase the green cover and to improve aesthetics.

viii) To attract the birds, which are addressed as litmus of nature.

ix) To provide recreational value to colony inhabitants.

x) Attract Animals to re-colonize the area where the Mine is abandoned.

Development of plantation in the available areas would be carried out in a phased manner. Saplings would be planted at the rate of 1600 trees /ha in Block plantation mode. The cost norm of Block Plantation is enclosed at Annexure-II. Post planting care would be taken to replace casualties, remove dead, dying, diseased and top broken trees etc.

The details of proposed afforestation programme taken up in the area proposed for developing green belt in the approved mining plan within M/s JSW Steel Ltd. And the User Agency also proposes to take up avenue plantation in the nearby village roads are given below:

Type of plantation	Area
Block Plantation	80.0 ha.
Grass seedlings	4.958 ha
Avenue Plantation	10KM

The choice of species is based on the following parameters: (i) Drought hardy and (ii) it should prevent soil erosion. Selection of the plant species is based on the inventory of the local forest species like Neem (Azadirachta indica), Karanja (Pongamia pinnata), Asan (Terminali aalata), Kusum (Schleichera oleosa), Amla (Emblica officinalis), Mundi (Mitragyna parviflora) etc. and some soil binding grasses like Vetiveria zizanioides will be introduced. The cost norm of grass seeding is enclosed at Annexure-II. The species for green belt development will be selected in consultation with the State Forest Department.

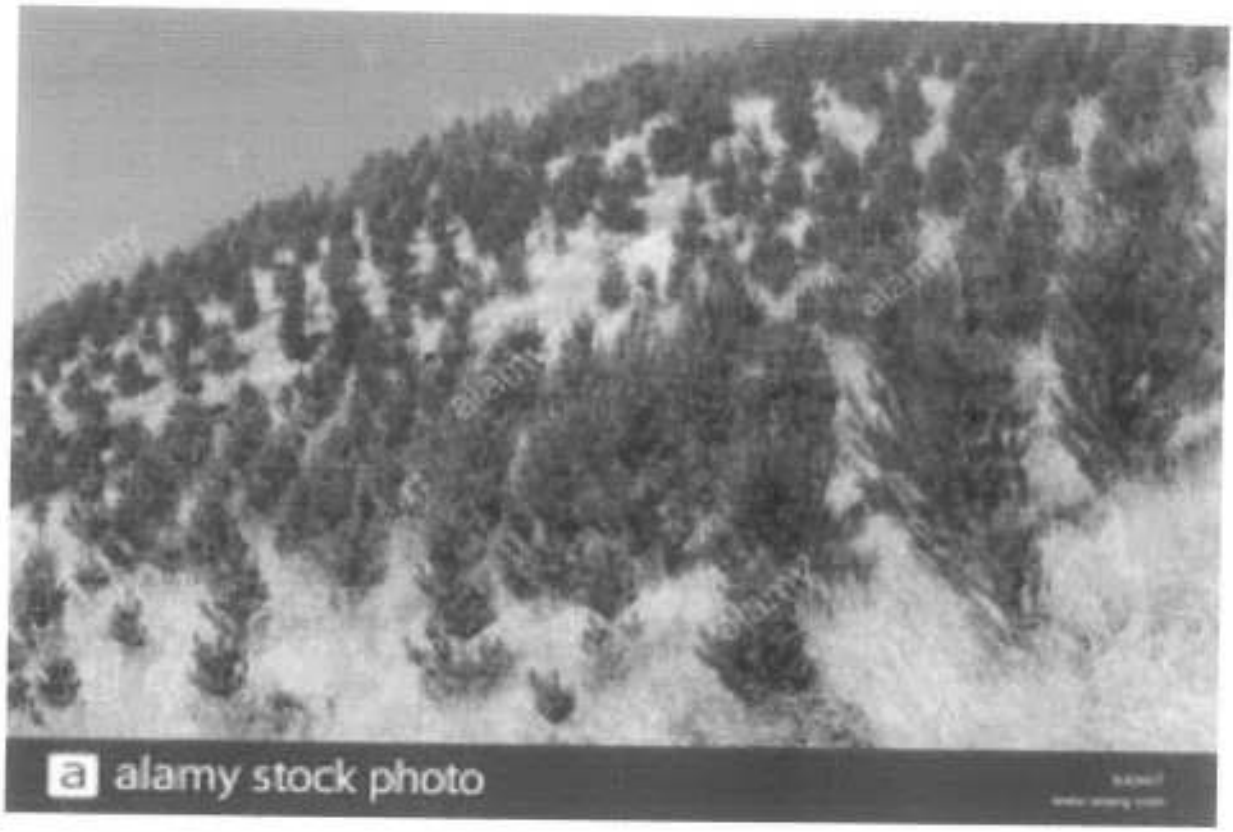
7. METHODOLOGY

It is proposed to plant the Seedlings in pits (45cm x 45cm x 45cm) at spacing of 2.5 m along contours. The pits shall be filled with a mixture of good quality soil and organic manure (cow dung, agricultural waste, kitchen waste). The saplings

shall be planted just after commencement of the monsoon to ensure maximum survival.

8. PLANTATION

Plantation on the large Over Burden dumps cannot be started till dumping activities have ceased at least in a part of the dump and the site is prepared for plantation. Once dumping is completed, a path would be cleared to the particular area so that the basic inputs (water, manure, and seedlings) can be carried to the site. Next, a layer of top soil has to be spread over the area and roughly leveled. Grass seeds would be broadcasted on the soil layer to stabilize the dump. Trenches of size 30 cm X 30 cm would be dugout on the flat top of the dumps, and the excavated materials used to form a bund on the deep side of the trenches to trap maximum water in the trenches during rains. 30 cm X 30 cm pits would be dug in the contour trenches at 2.5 m intervals. The pits would be filled with a mixture of top-soil, organic manures and phosphoric fertilizers. Saplings would be planted in these pits after monsoon has commenced in order to ensure optimum survival of the saplings.



PROPOSED PLANTATION OVER DEAD WASTE DUMP.

a. **Pre-Planting and Planting Operation**

Different operations that will be taken up for plantation are as follows:

i) **Raising of nursery**

Seedlings required for plantation shall be raised in a temporary nursery nearer to the planting site and water sources. Nursery work will be started one and half year before the year of plantation so that one and half year-old seedlings will be available for plantation. 20% extra seedlings shall be raised besides the actual requirement to compensate the casualties. Seedlings will be raised in polythene bags of 10" x 6" size following standard nursery practice.

RAISING OF NURSERY PROPOSED WITHIN M.L. AREA.

ii) **Alignment and pitting**

Alignment and pitting will be taken up in the month of March-April, Pits of size 45cm X 45cm X 45cm will be dug maintaining a spacing of 2.5mtr X 2.5mtr.

iii) **Actual Planting**

The seedling would be planted in the dugout pits of size 45cm x 45cm x 45cm with a spacing of 2.5mtr x 2.5mtr. Plantation will be taken up after first regular shower of monsoon and will be completed by the end of July. Species will be planted as per suitability of the soil condition. NPK fertilizer @50gms per plant will be applied as basal dosage 5 gm of anti-termite insecticide will also be applied to each pit while planting. Casualties, if any noticed, shall be replaced with the extra seedlings raised for the purpose. During second year also, casualty replacement will be done for which seedlings shall be raised.

For establishment and better growth of the planted seedlings, timely weeding, soil working and manuring are necessary. It is proposed to carry out two weeding, soil working and manuring during the first year and second year of plantation and one weeding and soil working during third year. During first year and second year, first weeding and manuring shall be carried out during August-September and the second one during October-November along with soil working after rains. First weeding shall be around the plants and the second one will be done in strip. In the third year the weeding will be done around the plants, which will be carried out during August.

After each weeding, intensive soil working will be done around each plant at a radius of 0.5mtr, followed by manuring of @50grms NPK per plant in ring form.

iv) **Application of insecticides**

The plantation site, after planting with good and healthy seedlings, may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To get rid of such insect attack, application of insecticides will be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day in the forenoon as per requirement.

b. **Post Plantation Care**

Post Plantation care shall be adopted to ensure maximum survival of the plants. Funds would be provided for maintenance of the plants for ten years (i.e. nine years) after the year of plantation. In the present Scheme, provision of fund would be made immediately after planting the seedlings. Watering would be done at regular interval during the dry spell. In the dry season, watering would be regularly done especially during February to June. Watering in one year planted saplings would be more frequent (10 days in a month). Manuring would be done by using organic manure (cow dung, agricultural waste, kitchen waste, etc.). Diseased and dead plants would be uprooted, destroyed and replaced by fresh saplings. Growth and survival of saplings would be regularly monitored and remedial actions would be undertaken as required.

Plantation on slope of the dumps would commence as soon as the first terrace is ready. The terraces on the slopes would be sloped inward. 30 cm X 30 cm pits would be dug at 2.5 m intervals and filled with a mixture of top soil and organic manure. Before the commencement of the monsoon, the slopes and terraces would be covered with a

layer of soil and sprinkled with water. The norm for Block plantation has been appended as **Annexure-I.**

9. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above measures under the instant Scheme, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the User Agency for proper execution of these programmes.

10. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi are to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages. Thus, 15% of the plantation cost has been earmarked for expenditure on this score.

EXECUTING AGENCY

The works in the present Scheme shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out in co-ordination with the Forest Department.

SPECIALISED CELL

Sl. No.	Name	Designation	Expertise
1.	Sri. B R K Padhi	Senior Vice President - Head Operation	30 Years' experience in Mining Mine Envt Management.
2.	Sri. Baswaraj Dalgade	General Manager	20 Years' experience in Forest Envt Management.
3.	Sri. Dhananjay Kumar	Sr. Manager (Environment & Forest)	25 Years of experience in F & E
4.	Sri. Padmaraja Tumuti	DGM -Planning	25 Years' experience in Planning & Environment
5.	Sri Jiten Kumar Sahoo	Manager- Forest	15 years' experience in forest

REQUIREMENT OF FUNDS

The total cost of the implementation of will be **₹2,14,55,500.00 (Rupees two crore fourteen lakh fifty-five thousand five hundred) Only**. The above expenditure would be made over the next seven years period. Therefore, budget provision has been kept by the user agency for implementation of the above plantation program over a period of next ten years. This budget would be subjected to increase in amount considering the increase in material cost and labour charges.

TOTAL COST OF THE PROJECT

Sl. No.	Description of the work	Funds Required (in Rs.)
1	Base Norm for 1000 plants/ ha (Year 2022-2023) over 80.0 ha x Rs. 246454.00	19716320.00
2.	Grass seeding over 4.958 ha. @ Rs.48295/- per ha.	239446.61
3.	Avenue Plantation over 10RKM @ Rs.149945/- RKM	1499450
4.	Watering Diesel Pump set fitted with Bore well @ Rs.502209/-X 16 Nos for 80.00 Ha(2022-23)	8035344.00
	Grand Total	**29490560.61 Or say 2,94,90,600.00**

(Rupees two crore ninety-four lakh ninety thousand six hundred) only.

M/s JSW Steel Ltd. do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

Sri Baswaraj Patgade
GM (Mining)
M/s JSW Steel Ltd

Countersigned

Divisional Forest Officer
Keonjhar Division

Technically Approved
13/6/2022
Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Annexure- I

Base Cost Norm for AR Plantation @1000 seedlings per ha (18 months old seedlings) @ 311.00/- Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide Notification No. 2433/LC dated 30.04.2022. The onetime cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1109 dated 08.11.2021.

ANNEXURE-4

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

WAGE RATE Rs- 311/- PER MANDAY

Sl. No	Items of work	Preferable Period of Executi	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
	0th Year (Advance work) Pre-Planting Operation					
1	Survey, Demarcation and Pillar postin	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation (Cleaning & removal of clebrises	Nov/Dec	12	3732	0	3732
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311	0	311
5	Alignment and stacking of pits	Feb/Mar	1	311	0	311
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	40	12440	0	12440
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
	Total		57	17727	3600	21327
	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/Jul	7.5	2332.50	5000	7332.50
2	Transportation of 18 months old polythene bag seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedling @ Rs.6/- per Seedline (1100 nos.)	Jul/Aug	0	0	6600	6600
3	Watering polypot seedlings at planting site	Jul/Aug	2	622	0	622
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil perfectely around the planted seedlings.	Jul/Aug	22.5	6997.50	0	6997.50
5	Cost of Fertilizer & Insecticide (a)NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 50kg @ 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	Jul/Aug	0	0	3000	3000
6	Casualty Replacement @ 10% (100 nos.)	Jul/Aug	2.5	777.5	0	777.5
7	1st weeding & Manuring	Aug/Sept	12	3732	0	3732
8	2nd Weeding, Soil working (1mt. diametre around the plants) & Manuring	Oct/Nov	15	4665	0	4665
9	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	12	3732	0	3732
	Total		76.50	23791.50	14600.00	38391.50
	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	600	600
2	Casualty replacement- 10%	Jul	2.5	777.5	0	777.5
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/-	July/Aug	0	0	2875	2875
4	Weeding (Complete weeding), Manuring & Soil working (1mt. diametre around the plants)	Sep/Oct	15	4665	0	4665
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr-Mar		0	1000	1000
	Total		38.5	11973.5	4475	16448.5

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
	3rd Year Maintenance					
1	Cost of Fertilizer(Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer	July/Aug	0	0	2800	2800
2	Weeding (Complete weeding), Manuring & Soil working 1 mt. diametre around the plants	Sep/Oct	15	4665	0	4665
3	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
4	Watch & Ward including watering as per requirement	Apr/Mar	18	5598	0	5598
5	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr/Mar	0	0	1000	1000
	Total		36.0	11196	3800	14996
	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	0	933
2	Watch & Ward including maintenece of vegetative fencing	Apr-Mar	18	5590	0	5598
	Total		21	6531	0	6531
	5th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	6th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, Singling out of multiple shoots	Jan/Mar	3	933.00	0	933.0
3	Watch & Ward	Apr/Mar	10	5598.00	0	5598.0
	Total		24	7464	0	7464.0
	7th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	8th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	9th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	10th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531

Year wise Abstract of Cost Norm (showing seedling cost separately)

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	
Sl. No	Year	No. of Mandays	Labour cost (In Rs)	Material Cost(In Rs.)	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST(In Rs)
1	2	3	4	5	6	7	8
1	0th year	57.0	17727.0	3600.0	973.00	0.00	22300.00
2	1st year	76.5	23791.5	14600.0	1918.50	55341.00	95651.00
3	2nd year	38.5	11973.5	4475.0	821.50	5031.00	22301.00
4	3rd year	36.0	11196.0	3800.0	749.00	0.00	15745.00
5	4th year	21.0	6531.0	0.0	326.00	0.00	6857.00
6	5th year	21.0	6531.0	0.0	326.00	0.00	6857.00
7	6th year	24.0	7464.0	0.0	373.00	0.00	7037.00
8	7th year	21.0	6531.0	0.0	326.00	0.00	6857.00
9	8th year	21.0	6531.0	0.0	326.00	0.00	6857.00
10	9th year	21.0	6531.0	0.0	326.00	0.00	6857.00
11	10th year	21.0	6531.0	0.0	326.00	0.00	6857.00
	Total:	358.0	111338.0	26475.0	6791.0	60372.0	204976.0

Note:

1 Priority must be given to the Indigenous local species available nearby to the site of plantation.
2 10 % indigenous fruit bearing trees must be preferred to Plantation.
3 Site specific Soil conservation work like I.BCD, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up
4 Chain link fencing can be adopoted in the CA plantation taken up outside the forest area and Bamboo twigs fencing may be prefered
5 Watering facilites for procurement of water & watering may be adopted as per the availability of water.
6 The Cost Norm of various items can be changed with the approval of the concerned RCCFs keeping the overall cost norm fixed for each Financial Year

A PCCF (Forest Diversion & NO, FC Act)

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

Matrix for AR-1000 Plants / Ha

In Rupees

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	95651	22301	15745	6857	6857	7837	6857	6857	6857	6857											
1	2021-22	22300	100434	24585	18226	8335	8751	10502	9648	10131	10637	11169											234718
2	2022-23		23415	105456	25814	19137	8752	9189	11027	10130	10638	11169	11727										246454
3	2023-24			24586	110729	27105	20094	9190	9648	11578	10637	11170	11727	12313									258777
4	2024-25				25815	116265	28460	21099	9650	10130	12157	11169	11729	12313	12929								271716
5	2025-26					27106	122078	29883	22154	10133	10637	12765	11727	12315	12929	13575							285302
6	2026-27						28461	128182	31377	23262	10640	11169	13403	12313	17931	13575	14254						299567
7	2027-28							29884	134591	32946	24425	11172	11727	14073	12929	13578	14254	14967					314546
8	2028-29								31378	141371	34593	25646	11731	12313	14777	13575	14257	14967	15715				330273
9	2029-30									32947	145387	36323	26928	12313	17929	15516	14254	14970	15715	16501			346788
10	2030-31										34594	155806	38139	28274	12934	13575	16292	14967	15719	16501	17326		364127

APCCF (Forest Diversion & NO, FC Act)

Annexure - II

COST OF GRASS SEED SOWING

Sl No	Purpose	No of Labour / Quantity of materials	Rate (Rs.)	Amount (Rs.)
1	Spreading of good top soil	03 Nos	315.00 labour	945.00
2	Adding FYM and good earth	2 TL FYM	1049.90 /TL FYM	4199.56
		2TL good earth	1049.90 /TL Good earth	
3	Cost of grass seed 500Kg/ per ha.		80/kg	40,000.00
4	Broadcasting	10 nos.	315.00 labour	3150.00
			Total	**48294.56 Or, 48295.00**

ANNEXURE-III

COST NORM FOR RAISING OF AVENUE PLANTATION (18 Months Old Seedling) (250 plants per RKM, Spacing of 4 metres between plants)

Sl .No.	Item of work	Preferable Period of Execution	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	Total Cost (Rs.)
	A. 0th Year (Advance work)					
1	Survey, demarcation, site preparation, alignment & stacking	Feb-Mar	4	1260	100	1360
2	Digging of pits (45 cmX 45 cm X 45 cm) / 50 cm diameter augur hole	Feb-Mar	10	3150	0	3150
	Total		**14**	**4410**	**100**	**4510**
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					146
	Grand Total		**14**	**4410**	**100**	**4656**
	B. 1st Year / Planting Year					
1	Cost of of transportation of seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) to the planting site@ Rs.6 per seedling (250+25=275 nos)		0	0	1650	1650
2	A. Organic compounds/ CDM/ FYM/vermicompost (125 cft. @ 0.5 cft per pit) @ Rs.25.00 per cft.=Rs. 3125/- B. Basal dose NPK/Bio-Fertilizer @ 50 gms per plant =12.5Kg @ Rs.30/-kg=Rs.375/- C. Insecticide/Bio Pesticide @5 gms per pit =1.25Kg @ Rs.150/- per kg =Rs 188/- D. Urea /DAP/Bio-fertilizer in two subsequent doses= Rs.800/-	June-July	0	0	4488	4488
3	Planting of Seedlings after careful removal from polybags including mixing of FYM/CDM,Vermicompost, Insectiside/ NPK/Bio Fertilizer and Scooping the soil and pressing the soil around the plants	July-August	6	1890	0	1890
4	Casualty Replacement @ 10%	July-August	1	315	0	315
5	1st Weeding within 0.5 mtr radius around the plant & Manuring	Aug/Sept	8	2520	0	2520

6	Weeding, Soil working (15 cm deep & 0.5 mtr radius around the plant) and application of fertilizer (Urea/DAP/Bio Fertilizer etc.)	Oct/Nov	10	3150		3150
7	Provision of soil & water conservation measures by providing circular trench in flat land & half moon trench in slope area at a distance of 0.5 mt from the plant	Sept-Oct	3	945	0	945
8	Watering 1st Dec to 31st March (4 months) (10 days per month) including labour, transportation, hire charges of tractor/tanker @ Rs.65.00 per seedling	Dec-March	0	0	16250	16250
9	Watch & Ward July to March 270 days per RKM	July-March	60	18900	0	18900
	Total		**88**	**27720**	**22388**	**50108**
10	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					2444
	Grand Total		**88**	**27720**	**22388**	**52552**
	Additional Cost towards maintenance of Fencing					
1	Gabion made up of Bamboo twigs/Agro Net /HDPE Hexagone @Rs285/- per plant					
2	Gabion made up of Iron Wire mesh @Rs1680/- per plant					
	C. 2nd Year Maintenance					
1	Transportation of 25 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/-- per seedling	Jul	0	0	150	150
2	10% casualty replacement	July-August	1	315		315
3	Weeding, Soil working and application of chemical fertilizer (NPK/DAP/Bio Fertilizer etc.)	Sept-Oct	15	4725	1600	6325
4	Watering 1st April to 15th June & 1st Dec to 31st March (195 days) including labour (5 days per month), transportation, hire charges of tractor/tanker @ Rs.55.00 per seedling	April-15th June December -March	0	0	13750	13750
5	Watch & Ward Apr-Mar (365 days) per RKM	April-March	80	25200	0	25200
	Total		**96**	**30240**	**15500**	**45740**
6	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					2244
	Grand Total		**96**	**30240**	**15500**	**47984**
	Additional Cost towards maintenance of Fencing					
1	Maintenance for Gabion made up of Bamboo twigs/Agro Net /HDPE Hexagone @Rs42/- per plant					
2	Maintenance for Gabion made up of Iron Wire mesh @Rs52/- per plant					
	D. 3rd Year Maintenance					
1	Maintenance of plants including cultural operations, weeding & soil working	Sept-Oct	10	3150	0	3150
2	Watch & Ward Apr-Mar (365 days)per	April-	80	25200	0	25200

	RKM	March				
	Total		**90**	**28350**	**0**	**28350**
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					1310
	Grand Total		**90**	**28350**	**0**	**29660**
	Additional Cost towards maintenance of Fencing					
1	Maintenance for Gabion made up of Bamboo twigs/Agro Net /HDPE Hexagone @Rs42/- per plant					
2	Maintenance for Gabion made up of Iron Wire mesh @Rs.52/- per plant					

ABSTARCT (Showing Seedling Cost Separately)

Sl.No.	Item of work	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	MELD & Other Contingency	Seedling Cost (Rs.)	Total Cost (Rs.)
1	0th year	14	4410	100	146	0	4656
2	1st year	88	27720	22388	2444	13835	66387
3	2nd year Maintenance	96	30240	15500	2244	1258	49242
4	3rd year Maintenance	90	28350	0	1310	0	29660
	Grand Total	**288**	**90720**	**37988**	**6144**	**15093**	**149945**
1	Gabion Cost including maintenance for 3 years = Rs.369/- per plant extra.						
2	Gabion made of Iron Wire Mesh including maintenance for 3 year = Rs.1784/- per plant extra						

The Cost Norm for specific item in the field may be modified with the prior approval of the concerned RCCF keeping the overall cost norm fixed for each Financial Year.

Watering Model – W-II

Watering Provision to CA Plantation

Watering Model-W-II			
Watering provision to CA Plantation			
Diesel pump set with Bore well (1 pump set + Bore well for 5 Ha Plantation), Wage rate @ Rs.311/-			
Year of Installation (0th Year)			
1	Cost of Borewell	1,50,000	
2	Cost of Diesel pump set 5HP	60,000	
3	Diesel pump set & assessories like commander, Pipes, etc.	30,000	
4	Water Storage Tanks/ Flexible pipes	15,000	
		2,55,000	
Cost of Water per Plant (2,55,000/ 5000)= Rs. 51/- Cost of Water per Ha. = Rs. 51,000/-			51,000
1st Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
2	Watering 1000 Plants (Nov-Mar.) @ 200 plants/MD with 7 days rotation 20 MD x 5 months = 100 MD x 311 =		31,100
		Total	**52,100**
2nd Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	**78,410**
3rd Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	**78,410**
4th Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	**78,410**
5th Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	**78,410**

Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	51000.0	51000.0
2	1st year	100.0	31100.0	21000.0	52100.0
3	2nd year	160	49760.0	28650.0	78410.0
4	3rd year	160	49760.0	28650.0	78410.0
5	4th year	160	49760.0	28650.0	78410.0
6	5th year	160	49760.0	28650.0	78410.0
	Total:	**740**	**230140**	**186600**	**4,16,740**

APCCF(Forest Diversion & NO, FC Act)

Matrix for Watering Model –W-II (Diesel Pumpset Fitted with Borewell) per Ha

Matrix for Watering Model-W-II (Diesel Pumpset Fitted with Borewell) per Ha

In Rupees

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	5100	52100	78410	78410	78410	78410											
1	2021-22	51000	54705	86439	90771	95307	100072											478294
2	2022-23		53550	57440	90761	95310	100072	105076										502209
3	2023-24			56228	60312	95209	100076	105076	110330									527321
4	2024-25				59039	63328	100084	105080	110330	115847								553688
5	2025-26					61992	66494	105067	110334	115847	121639							581372
6	2026-27						65092	69819	110340	115851	121639	127721						610441
7	2027-28							68348	73330	115836	121644	127721	134107					640954
8	2028-29								71763	76976	121628	127726	134107	140817				673012
9	2029-30									75351	80975	127709	134112	140817	147853			706662
10	2030-31										79119	84865	134094	140818	147853	155246		741996

AICCF (Forest Diversion & NO, FC Act)

JSW STEEL LTD

Scheme

For

TOP SOIL MANAGEMENT

in compliance with

Condition No. 4 (v) of Stage-I approval granted vide

Letter No.8-17/2001-FC(vol), Dated.14.03.2022

of Govt. of India, Ministry of Environment, Forests

& Climage Change, New Delhi.

for

Diversion of 63.30 Hects of sabik kissam Forest Land in addition to 371.192 ha of forest land already diverted located within the mining lease hold area of 781.787 ha of Nuagaon Iron Ore Mines

of

M/S JSW STEEL LTD.

in village Nuagaon in Barbil Tahsil, Dist.Keonjhar,Odisha

SCHEME FOR TOP SOIL MANAGEMENT

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development & Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time (the "Auction Rules), issued the notice inviting tender dated 06.12.2019 to commence the auction process for grant of mining lease for Nuagoan Iron Ore Block located in Keonjhar district of Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block and M/s JSW Steel Limited was declared as the preferred Bidder under Rule 9(9)(iii) of Mineral Auction Rules, having quoted a Final Price Offer of 95.20%. Government of Odisha has awarded the Letter of Intent vide letter No 2291/S&M, Bhubaneswar dated 02.03.2020 for Grant of Mining Lease for Iron Ore in favour of M/s' JSW Steel Ltd. the successful bidder in respect of Nuagaon Iron ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects.(as per RoR) in Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi villages under Barbil Tahasil of Keonjhar district under jurisdiction of Barbil Forest Range of Keonjhar Division. M/s JSW Steel Limited under sub-rules (4) and (5) of rule 10 of the said rules, has signed the Mine Development and Production Agreement with Collector, Keonjhar district on dated 25/06/2020. The State Government under rule 10, sub-rule (5) of the Mineral (Auction) Rules, 2015 have been pleased to grant the mining lease for Iron Ore in favour of M/s JSW Steel Ltd., the successful bidder in respect of Nuagaon Iron Ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects. (as per RoR) in Nuagaon village under Barbil Tahasil of Keonjhar district for the period of 50 (fifty) years as provided under section 8A, sub-section 2 of the Mines and Minerals Development and Regulation Act, 1957 vide letter No. 5543 dated 26.06.2020. The lease deed was executed and registered on 27.06.2020.

As per section 8B (2) of the MMDR Act, 1957 read with rule 9A (4) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 the holder of the letter of intent for the said mining block shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee. Without prejudice to the generality of the provisions of section 8B (2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the

like held by the previous lessee and vested in favour of the holder of the Letter of Intent. This vesting order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier. In accordance with the above, The State Government issued vesting order vide letter No. 4167/SM/III(A) SM, Bhubaneswar dt. 29/05/2020. The Ministry of Forests & Environment, Govt. of India, New Delhi vide their letter F. No-8-17/2001-FC dated 21/22nd April 2004 accorded approval for diversion of 371.192 ha of forest land out of the applied 476.205 Ha land for mining of iron ore within the mining lease area of M/S- K. J. S. Ahluwalia.

The Mines and Minerals (Development and Regulation) Amendment Act, 2021 which has been notified by the Central Government on 28.03.2021 amended the Section 8B. Further the MoEF&CC issued guideline vide File No.FC-11/112/2020-FC(Pt) dated 7.07.2021 align with the provisions under the two Acts, it has been decided that transfer of approval under FCA-1980 in such mining leases may be considered subject to fulfilment of the conditions. The State Government vide letter No-7493/ FE&CC dated 21.04.2022 transferred the forest clearance over 371.192 ha granted earlier to M/s KJS Ahluwalia in favour of JSW Steel Ltd.

The Ex-Lessee M/s KJS Ahluwalia has submitted the proposal over 63.300 ha of Sabik Forest land and the FAC had considered the proposal and asked the State Government to comply some condition for grant of Stage-I clearance. The Ex-lessee did not pursue the matter and the mining lease expired on 31.03.2020. The New lessee represented the State Government to re-consider the proposal and complied the stipulated conditions. The Government of Odisha's vide letter No. FE-DIV-FLD0120-2020-16552/FE&CC dated 16.09.2021 recommended for diversion of 63.30 ha Sabik Kisam forest land in addition to 371.192 ha of forest land already diverted forest land located within the Mining Lease hold area of 781.787 ha in favour of M/s JSW Steel Ltd for Nuagaon Iron Ore Mines in Barbil Tahasil of District Keonjhar and the above proposal was considered by the Forest Advisory Committee (FAC) in its meeting held on 26.11.2021. The Stage-I approval granted vide Letter No.8-17/2001-FC(vol), Dated.14.03.2022 by the Govt. of India, Ministry of Environment, Forests & Climate Change. **wherein it has been stipulated as per Condition No.4 (v), No damage shall be caused to the top soil and the user agency will follow the top soil management plan.**

4. DRAINAGE

The drainage system in this area is radial type. The drainage pattern is this area is mostly controlled by Sona River and then ultimately by River Baitarani. Drainage system of the area is controlled by two rivers namely Suna River and Karo River. Northern part is drained by Karo Nadi while southern part of the lease area is drained by Suna Nadi. Both the rivers are perennial in nature. Lease area is having a number of hills traversed by the dry nalas. Surface run-off falls finally in to the rivers through these dry nalas.

5. PROJECT AREA AND VEGITATION

The lease deed executed over an area of 776.969 hects. (as per DGPS)/767.284 hects. (as per RoR) and on request of JSW Steel Limited, the Director of Mines, Odisha vide letter No.7636 dated 02.11.2020 supplied the authenticated land schedule wherein the lease area changed to 776.969 ha (as per DGPS)/ 781.787 ha (as per RoR). During verification of the land schedule allotted for said Mining Lease area it is found that the total area (DGPS) over 776.969 hectare consists of 493.832 ha village forest, 4.328 ha DLC forest, 124.769 ha Sabik Forest and 154.040 ha non-forest land. Hence the Total Forest land is 622.929 ha. Out of 629.929 ha about 221.754 Ha is broken up for mining & allied purpose. So, availability of top soil is assumed to be over 383.355 ha excluding the safety zone and broken up forest land.

The vegetation of the applied area is composed of Sal (Shorearobusta), Saguan (Tectona grandis), Sidha (Lagerstroemia parvifloa), Sisoo (Dalbergia latifolia), Bandhan (Ougeinia oojeinensis), Char (Buchanania lanjan), Dhaura (Anogeissus latifolia), Kurum (Adina cordifolia), Asan (Terminaliatomentosa), Karanja (Pongamia pinnata), Mango (Mangiferaindica), Kendu (Diospyrosmelanoxylon), Bahada (Terminalia belerica) Jamu (Syzygiumcuminii), Kusum (Schleicheraoleosa), Gambhari (Gmelinaarborea), Mahul (Madhucaindica) etc. Sal (Shorea robusta) is the pre-dominant species.

6. PLAN FOR TOP SOIL MANAGEMENT

Average 0.3m thick top soil shall is available. The cumulative excavated top soil over 1150065 m3 up to the conceptual period and top soil shall be stored separately before commencement of mining activities in the proposed area and stacked separately at the

earmarked area for top soil dump. Top soil will be preserved by planting grass on slopes or top of the dump. All the overburden waste dumps will have a maximum height of 30m and slope of 28^0. As per the progress of mining and subsequent concurrent reclamation, Top soil will be used for biological reclamation. The Top soil shall be preserved as per top soil management method detailed below.

This Topsoil Management Plan has made provision for soil stripping and stockpiling procedures to minimize top soil degradation and to ensure maximum availability of suitable soil for future reclamation within M.L. area of Nuagaon Iron Ore block of M/s JSW Steel Ltd. Prior to mining topsoil is to be stripped in areas likely to be disturbed for mining operation and stored on, virgin forest land, non-mineralised outside Mining operation area and infrastructure area (including roads). A comprehensive top soil management plan has been prepared keeping in view the Conservation and regeneration of plants and afforestation in and around the sites where top soil is to be stored.

In non-mineralized area also, there is existence of very thin layer of top soil say 5 to 10 cm varying from site to site which is very difficult to slice down and it is to be stored separately for use during future reclamation. Grass seeds will be broadcast over this area to prevent erosion of the top soil.

7. OBJECTIVES

The objectives of Top soil management to be executed are as follows:

i) To meet the stipulation No.4 (v) of Stage-I Forest clearance granted by MoEF & CC, GOI, New Delhi i.e., "No damage shall be caused to the top soil and the User Agency will follow the Top soil management Plan".

ii) To identify top soil resources, and to follow stripping guidelines for optimum recovery.

iii) To identify stockpile locations and dimensions.

iv) To manage and conserve the top soil reserves by implementing biological measures.

v) To provide sufficient stable top soil for reclamation work of dumps, back filled areas and degraded lands.

8. PLAN FOR MANAGEMENT OF TOP SOIL TO BE GENERATED FROM MINING

The top soil inside 383.355 ha of virgin forest land is scanty which is present in extremely thin layers. Whatever top soil is available will be excavated during the development of unbroken patches within the mining lease. Precautionary measures will be taken so that this valuable resource is not wasted. This excavated top-soil will be utilized for concurrent reclamation works in the mine as per this plan. The top soil will be stored temporarily until it is being used for reclamation of dump and in the back filled area. There will be no top soil to be generated during plan period as the mining activities would be confined to broken up area.

FUTURE TOP SOIL GENERATION FROM MINING ACTIVITIES

Soil studies have shown that the average thickness of topsoil in the unbroken areas will be around 30 cm. The quantity of topsoil to be stripped in a phased manner from the site, which will be used during first 5 years for reclamation of the existing OB dumps, backfilled and other barren/degraded areas.

Prior to stripping, the area will be cleared by removing the weed growth. The proposed procedure for soil handling is given below which includes soil handling measures in order to optimize retention of soil characteristics (in terms of nutrients and micro-organisms) conducive to growth of plant.

9. METHODOLOGY

In accordance with the above objectives of providing sufficient stable soil for reclamation and to optimize soil recovery, the following strategies have to be followed:

i) Top soil stockpiles are to be identified outside quarry area.

ii) Stripping off the topsoil by dozer or by small shovel dumper combination rather than scrappers to minimize structural degradation;

iii) Construction of stockpiles with a "rough" surface condition to reduce erosion hazard.

iv) Improvement of drainage and promotion of re-vegetation.

v) Stabilization of Top soil surface by biological measures i.e. by sowing seeds of grass with other leguminoceae (Fabaceae) species.

vi) To utilize stripped top soil as soon as possible for reclamation in a phased manner in accordance with the reclamation plan as prescribed in the Mining Plan approved.

10. PLAN FOR MANAGEMENT OF EXCAVATED TOP SOIL

To minimize the detrimental effects of long-term storage of topsoil in stockpiles, the following procedure will be followed prior to stripping activities.

Appropriate delineation of areas for storage of top soil: A small area has been planned & accordingly the area is demarcated for storage of top soil in Nuagaon Iron Ore Block of M/s JSW Steel Ltd. According to Land Use Pattern proposed in the diversion proposal 0.908 ha. area has been earmarked for storage of top soil. Hence as per the stipulation of the Stage-I approval order, this area will be utilised for storage of Top soil within the lease area.

Dry stone wall upto a height of 1mt. will be erected around the stockpile. The cost norm of Toe wall construction has been provided in **Annexure-2.**

The topsoil stripping will be completed by using bulldozers and tippers of smaller capacity in case of good quantum. In areas where the topsoil is relatively thin, the same will be removed in such a way so as to prevent mixing of topsoil and sub-soil.

Stockpiles will have erosion control by constructing loose boulder wall with cement sand.

Permanent measures include establishment of vegetation, grass seed sowing with Leguminoceae (Fabaceae) like Green garm (Vigna radiate), Black gram (Vigna mungo), Horse gram (Macrotyloma uniflorum) and broadcasting of seeds of local shrubs / grasses will be done to mitigate soil erosion and dust emissions. The total area for sowing of grass seeds comes to approximately 2 ha. The cost norm of Grass seeding has been provided in Annexure-1.

11. Plan FOR CONSERVATION OF TOP SOIL IN BARREN LANDS

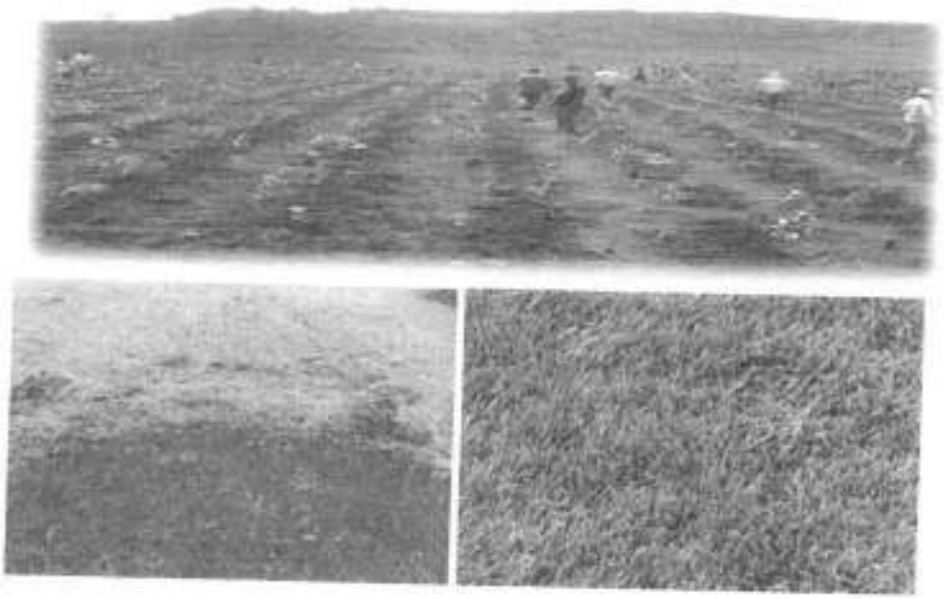
The forest land of the region is prone to soil erosion as the entire landscape will be affected due to mining & ancillary activities in the vicinity. Soil erosion

problem varies from area to area within the lease, depending on the topography, soil types, vegetation, and management interactions of the catchment. Hence, it is very important to control erosion of top soil from the area, which will result in enhancement of in-situ moisture conservation by enrichment of water table profile for more availability of water so that the top soil is conserved for supporting the growth of trees.

12. TOP Soil Conservation PLAN

Out of the 383.355ha of virgin forest land and the total quantity of the Top Soil will be 1150065 cum up to the conceptual period. However, Phase wise tree felling permission will be accorded as per the requirement. The lease period is 50 years, taking into account of plan period, 10 plan period will be there and each plan period is 5 years. Hence approximately 115000Cum of top soil may generate during each plan period.

The above top soil will be collected and stored preferably over the proposed sites for the purpose. Surface of the will be sown with grass seeds so that a mat of grass turf is made over the surface of the top soil and this will prevent erosion of the top soil by rain water and/or weathering conditions like blow of wind.



CONSERVATION OF TOP SOIL THROUGH SOWING OF GRASS SEEDS.

13. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes.

14. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi are to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages. Thus, 15% of the plantation cost has been earmarked for expenditure on this score.

15. EXECUTING AGENCY

The works in the present Scheme shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out in co-ordination with the Forest Department.

SPECIALISED CELL

Sl. No.	Name	Designation	Expertise
1.	Sri. B R K Padhi	Senior Vice President - Head Operation	30 Years' experience in Mining Mine Envt Management.
2.	Sri. Baswaraj Dalgade	General Manager	20 Years' experience in Forest Envt Management.
3.	Sri. Dhananjay Kumar	Sr. Manager (Environment & Forest)	25 Years of experience in F & E
4.	Sri. Padmaraja Tumuti	DGM -Planning	25 Years' experience
5.	Sri Jiten Kumar Sahoo	Manager- Forest	15 years' experience in forest

16. REQUIREMENT OF FUNDS

The total cost of implementation of measures for Top Soil Management will be Rs.32,16,600.00 (Rupees Thirty-Two Lakhs Sixteen Thousand Six hundred) only. This budget will be subject to increase in amount considering the increase in material cost and labour charges.

TOTAL COST OF TOP SOIL MANAGEMENT

326.00

Wage Rate Rs.315/-

Sl. No.	Description of the work	Funds Required (in Rs)
1.	Unbroken / Virgin area from where top soil can be collected =383.355 Ha. A. Stripping cost: -0.5 ha. /hr. @Rs.3800/-(Dozzer) Therefore, for 383.355 Ha. Cost =767 hrs. x Rs.3800 = Rs.2914600/- B. Loading &Transportation cost from site to top soil stockpile comes to be = 1150065m3(tonnage factor 1.6) = 1840104 mt. @ Rs.15.00/Mt .=Rs.27601560/-	30516160.00
2.	Cost for sowing of grass seeds over 2 haX10 =20 ha @ Rs.48295/- per ha. 48438.00	965900.00
3.	Cost for erection of 300 m dry toe wall around top soil stock pile @ Rs.1743.73 per RMT	5231190
	TOTAL :-	36713250.00

96876.00

36716110.00

(Rupees ~~Three crore sixty-seven lakhs thirteen thousand two hundred fifty~~) only.

Three Crore Sixty Seven Lakh Sixteen Thousand One hundred ten,

M/s JSW Steel Ltd. do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

Sri Baswaraj Dalgade
GM (Project)
M/s JSW Steel Ltd.

JSW STEEL LIMITED MUMBAI

Countersigned

Divisional Forest Officer
Keonjhar Division

Technically Approved

13/1/2021

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Annexure- 1

COST OF GRASS SEED SOWING

Wage Rate Rs 315/-

Sl No	Purpose	No of Labour / Quantity of materials	Rate (Rs.)	Amount (Rs.)
1	Spreading of good top soil	03 Nos	315.00 / labour	945.00
2	Adding FYM and good earth	2 TL FYM	1049.90 /TL FYM	4199.56
		2TL good earth	1049.90 /TL Good earth	
3	Cost of grass seed 500Kg/ per ha.		80/kg	40,000.00
4	Broadcasting	10 nos.	315.00 / labour	3150.00
			Total	48294.56 Or, 48295.00

Annexure-2

Wage Rate- Rs.315.00

Detail Estimate of Retaining wall of loose local Boulder with cement-Sand Patching over the surface of Boulder wall.

Sl. No.	Description of Items	No	Length	Width	Height	Qty	Unit	Rate	Amount
1	2	3	4	5	6	7	8	9	10
For one K.M.Length									
1	Rough Stone Dry Packing with local boulder only labour charges (Local boulder will be Supplied by our Company)	1	1000.00	(1.00+1.50)/2	1.20	1500.00	Cum		
		1	1000.00	1.50	0.30	450.00	Cum		
						1950.00	Cum	619.61	1208230.00
2	Irregular cement sand patches on the both side of the wall with 2" thick cement sand mortar(1:6) on top	1	1000.00	1.00		1000.00	Sqm		
		2	1000.00	1.20		2400.00	Sqm		
						3400.00	Sqm	157.50	535500.00
		Rate per one K.M. Length				Total			1743730

Cost for Running Meter length 1743.73

ANNEXURE-9

JSW STEEL LTD

Scheme

For

GAP PLANTING, SOIL & SOIL MOISTURE CONSERVATION ACTIVITIES TO RESTOCK AND REJUVINATE DEGRADED OPEN FORESTS (HAVING CROWN DENSITY < 0.4) WITHIN 100 M OUTER PERIMETER OF MINING LEASE

in compliance with

Condition No. 6 of Stage-I approval granted vide

Letter No.8-17/2001-FC(vol), Dated.14.03.2022

of Govt. of India, Ministry of Environment, Forests

& Climage Change, New Delhi.

for

Diversion of 63.30 Hects of sabik kissam Forest Land in addition to 371.192 ha of forest land already diverted located within the mining lease hold area of 781.787 ha of Nuagaon Iron Ore Mines

of

M/S JSW STEEL LTD.

in village Nuagaon in Barbil Tahsil, Dist.Keonjhar,Odisha.

shutterstock.com · 2130764837

SCHEME FOR GAP PLANTING, SOIL & MOISTURE CONSERVATION TO RESTOCK AND REJUVENATE DEGRADED OPEN FORESTS WITHIN 100M FROM OUTER PERIMETER OF IRON ORE MINING LEASE OF M/S JSW STEEL LTD. IN KEONJHAR DISTRICT OF ODISHA.

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development & Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time (the "Auction Rules), issued the notice inviting tender dated 06.12.2019 to commence the auction process for grant of mining lease for Nuagoan Iron Ore Block located in Keonjhar district of Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block and M/s JSW Steel Limited was declared as the preferred Bidder under Rule 9(9)(iii) of Mineral Auction Rules, having quoted a Final Price Offer of 95.20%. Government of Odisha has awarded the Letter of Intent vide letter No 2291/S&M, Bhubaneswar dated 02.03.2020 for Grant of Mining Lease for Iron Ore in favour of M/s' JSW Steel Ltd. the successful bidder in respect of Nuagaon Iron ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects.(as per RoR) in Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi villages under Barbil Tahasil of Keonjhar district under jurisdiction of Barbil Forest Range of Keonjhar Division. M/s JSW Steel Limited under sub-rules (4) and (5) of rule 10 of the said rules, has signed the Mine Development and Production Agreement with Collector, Keonjhar district on dated 25/06/2020. The State Government under rule 10, sub-rule (5) of the Mineral (Auction) Rules, 2015 have been pleased to grant the mining lease for Iron Ore in favour of M/s JSW Steel Ltd., the successful bidder in respect of Nuagaon Iron Ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects. (as per RoR) in Nuagaon village under Barbil Tahasil of Keonjhar district for the period of 50 (fifty) years as provided under section 8A, sub-section 2 of the Mines and Minerals Development and Regulation Act, 1957 vide letter No. 5543 dated 26.06.2020. The lease deed was executed and registered on 27.06.2020.

As per section 8B (2) of the MMDR Act, 1957 read with rule 9A (4) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 the holder of the letter of intent for the said mining block shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee. Without prejudice to the generality of the provisions of section 8B (2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee and vested in favour of the holder of the Letter of Intent. This vesting order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier. In accordance with the above, The State Government issued vesting order vide letter No. 4167/SM/III(A) SM, Bhubaneswar dt. 29/05/2020. The Ministry of Forests & Environment, Govt. of India, New Delhi vide their letter F.No-8-17/2001-FC dated 21/22nd April 2004 accorded approval for diversion of 371.192 ha of forest land out of the applied 476.205 Ha land for mining of iron ore within the mining lease area of M/S K. J. S. Ahluwalia.

The Mines and Minerals (Development and Regulation) Amendment Act, 2021 which has been notified by the Central Government on 28.03.2021 amended the Section 8B. Further the MoEF&CC issued guideline vide File No.FC-11/112/2020-FC(Pt) dated 7.07.2021 align with the provisions under the two Acts, it has been decided that transfer of approval under FCA-1980 in such mining leases may be considered subject to fulfillment of the conditions. The State

Government vide letter No 7493/FE&CC dated 21.04.2022 transferred the forest clearance over 371.192 ha granted earlier to M/s KJS Ahluwalia in favour of JSW Steel Ltd.

The Ex-lessee M/s KJS Ahluwalia has submitted the proposal over 63.300 ha of Sabik Forest land and the FAC had considered the proposal and asked the State Government to comply some condition for grant of Stage-I clearance. The Ex-lessee did not pursue the matter and the mining lease expired on 31.03.2020. The New lessee represented the State Government to re-consider the proposal and complied the stipulated conditions. The Government of Odisha's vide letter No. FE-DIV-FLD0120-2020-16552/FE&CC dated 16.09.2021 recommended for diversion of 63.30 ha Sabik Kisam forest land in addition to 371.192 ha of forest land already diverted forest land located within the Mining Lease hold area of 767.284 ha in favour of M/s JSW Steel Ltd for Nuagaon Iron Ore Mines in Barbil Tahasil of District Keonjhar and the above proposal was considered by the Forest Advisory Committee (FAC) in its meeting held on 26.11.2021. The Stage-I approval granted vide Letter No.8-17/2001-FC(vol), Dated.14.03.2022 by the Govt. of India, Ministry of Environment, Forests & Climate Change wherein it has been stipulated as per **Condition No.6, for preparation and implementation of a Scheme containing for gap plantation and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100m from outer perimeter of the mining lease.**

2. LOCATION

The allotted ML area is bounded by latitude 22^0 06' 16.72057" to 22^0 07' 41.65495" N and longitude 85^0 25' 32.28303" to 85^0 26' 40.67115" E. The area is surrounded by the Mining Leases like Guali mines of OMC, Gandhalpada of M/s TATA, Sagasahi Mines of AMNS. The NH -20 is passing through the lease and Barbil is situated 15 KM from the mining block.

TOPOGRAPHY

The area is characterized by hilly as well as flat ground having elevation from 525m to 702m above M.S.L. The hill ranges located within the lease area are Udalbari, Guali, Topadih, Dumkahudi, Barpada, Kanhusahi, Katasahi etc. Laterite, Lateritic Iron ore, Hard Haematite etc. are recorded in the ridges and valleys are mainly covered by alluvial soil.Nuagaon iron ore block discerns a fairly wide range of rock types of the iron ore group. The area has got geomorphic trend of North-North-East to South-South-West. The strike trend of the rock type here are also conformable to the trend of hill ranges.

SOIL TYPE

Soil type in the study area varies Lateritic soil recorded in the ridges and valleys are mainly covered by alluvial soil.

3. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature beings to rise rapidly attainting a maximum in the month of May. During the summer maximum temperature can go up to 47.70C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 70 C. The average annual rainfall as recorded at IMD observatory is 1325.16 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

4. DRAINAGE

The drainage system in this area is radial type. The drainage pattern is this area is mostly controlled by Sona River and then ultimately by River Baitarani. Drainage system of the area is controlled by two rivers namely Suna River and Karo River. Northern part is drained by Karo Nadi while southern part of the lease area is drained by Suna Nadi. Both the rivers are perennial in nature. Lease area is having a number of hills traversed by the dry nalas. Surface run-off falls finally in to the rivers through these dry nalas.

1. OBJECTIVE OF THE SCHEME

The main objective of the present scheme is to fulfil the Condition No.xxii of the Stage-I approval granted vide No. No.8-17/2001-FC(vol), Dated.14.03.2022 of MoEF & CC to undertake "gap plantation and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100m from outer perimeter of the mining lease". The steps to be followed are as under:

a) To re-stock and re-juvinate the degraded forest land by ANR plantation within 100m from the outer perimeter of the lease area.

b) To Demarcate and fence the area in ground to dispense with biotic interferences.

c) To improve the micro edaphic conditions by undertaking suitable soil and moisture conservation measures within the ANR Plantation.

d) To create awareness among the local villagers for protection and maintenance of this plantation in particular and the adjoining forest for ensuring enrichment of the ecosystem in general.

2. PROPOSED TECHNIQUE

To achieve the above objectives, it has been proposed to take up ANR plantation @ 200 plants/ha at a spacing of 2.5 mt X 2.5 mt in identified permanent gaps. The following items of works prescribed in the scheme will be taken up, the detailed expenditure statement of which is enclosed in **Annexure-I.**

To achieve the above objectives, the following items of work are mainly prescribed to be taken up:

Survey and demarcation of boundary

The identified degraded forest lands will be surveyed clearly with reference to the village maps and reserve forest boundary and demarcated by posting R.C.C. pillars at every corner/turning point of boundary line and the Scheme proposes financial implication for the same.

3. REGENERATION CLEANING AND TENDING OPERATION

The operation aims at tending (climber cutting, cleaning, double shoot cutting, pruning etc.) of the existing crop for the growth of promising principal species of the locality (Sal with associates) for ensuring better growth of the plants. It includes removal of inferior, diseased, malformed, dead, dying and defective tree growth and disposal of them by distributing it among the local VSS members. Apart from it, weed eradication is also an integral part as they interfere with the growth of both planted species and natural regeneration.

The detailed operation to be carried out is as follows-

i) Cutting of herbs and shrubs interfering with the growth of the promising species.

ii) Cutting back of top broken pole crops interfering with growth of well-formed pole crops.

iii) Cutting back of malformed and diseased species.

iv) Cutting of climbers up to hand's reach.

v) Sharp cutting of high stumps at a height of 0.5 mtr above the ground level to get a smooth stool with least damage to the cortex layer. This will promote growth of new stool shoots as well as root collar shoots of species having coppicing vigor.

vi) Singling out the coppice shoots coming out from stools and retaining two to three most promising ones.

vii) Pruning of the branches of the pole crops up to hand's reach.

During the 1st year, climber cutting, and cutting of high stumps, weeds and malformed and diseased species will be done. In the next two years, cutting back of malformed individuals and singling of coppice shoots in case of desired species will be done in the subsidiary silvicultural activities.

4. PLANTING& POST-PLANTING

The area will be re-stocked by raising plantation @ 200 plants per hectare in ANR (Assisted Natural regeneration) model. Taking into consideration, the site-specific soil condition, existing indigenous species growing there and the bonafied requirement of the local people, the species have been proposed to be planted in the area as mentioned in Point No.8 below.

The main objective of the present scheme is to raise gap plantation in degraded forest as well as to apply soil & moisture conservation measures, restock & rejuvenate degrade forest within 100 m. in the outer perimeter of Mining lease of JSW Steel Ltd. Such Plantations will act as a Transition Crop to support the main crop of the lease area.

Hence, the main objective of the present scheme is as follows: -

i) To afforest the degraded forest land and to restore the degraded forest lands by ANR model.

ii) Clearly demarcating and fencing with brush wood the area to dispense with the biotic interferences.

iii) To improve the micro edaphic conditions by undertaking suitable soil and moisture conservation measures.

iv) To protect the area against encroachment, illicit felling, fire incidences, grazing and all other forms of biotic interference.

v) To create awareness among the local villagers for protection and maintenance of plantation for ensuring enrichment of the ecosystem and replacement of the degraded areas with natural green cover.

5.

Land Schedule of the forest area within 100m from outer periphery of the Mining Lease of M/s JSW Steel Ltd. is as under-

PLOT NO	AREA(HA)	VILLAGE NAME	REMARK
21	0.414	Barapada-52	FOREST
289	0.577	Barapada-52	FOREST
372	4.179	Barapada-52	FOREST
497	3.399	Barapada-52	FOREST
342	0.027	Barapada-52	FOREST

357	0.125	Barapada-52	FOREST
373	0.019	Barapada-52	FOREST
350	0.123	Barapada-52	FOREST
347	0.435	Barapada-52	FOREST
263	0.214	Barapada-52	FOREST
261	0.145	Barapada-52	FOREST
160	0.187	Barapada-52	FOREST
22	0.576	Barapada-52	FOREST
341	0.470	Barapada-52	FOREST
336	2.709	Barapada-52	FOREST
337	1.164	Barapada-52	FOREST
245	0.871	Barapada-52	FOREST
339	0.997	Barapada-52	FOREST
244	0.585	Barapada-52	FOREST
242	3.294	Barapada-52	FOREST
335	2.250	Barapada-52	FOREST
334	1.892	Barapada-52	FOREST
333	2.708	Barapada-52	FOREST
411	0.361	Barapada-52	FOREST
377	0.283	Barapada-52	FOREST
1	3.265	Barapada-52	FOREST
289	0.577	Gandhalpada-45	FOREST
290	0.690	Gandhalpada-45	FOREST
372	4.179	Gandhalpada-45	FOREST
377	2.019	Gandhalpada-45	FOREST
376	2.885	Gandhalpada-45	FOREST
336	2.709	Gandhalpada-45	FOREST
337	1.164	Gandhalpada-45	FOREST
766	0.347	Guali-46	FOREST
470	2.463	Guali-46	FOREST
477	2.570	Guali-46	FOREST
476	1.375	Guali-46	FOREST
473	1.913	Guali-46	FOREST
718	0.679	Guali-46	FOREST
497	3.399	Guali-46	FOREST
496	2.059	Guali-46	FOREST
495	3.381	Guali-46	FOREST
512	0.357	Katesahi-53	FOREST
261	4.583	Katesahi-53	FOREST
661	2.210	Kendudihi alias paredipada-42	FOREST
404	4.502	Kendudihi alias paredipada-42	FOREST
403	0.204	Kendudihi alias paredipada-42	FOREST
21	0.414	Kolharudukela_51	FOREST
401	0.734	Nuaguan-44	FOREST
302	1.234	Nuaguan-44	FOREST
546	0.676	Nuaguan-44	FOREST
537	1.284	Nuaguan-44	FOREST
227	0.684	Nuaguan-44	FOREST
404	4.502	Nuaguan-44	FOREST
403	0.204	Nuaguan-44	FOREST
302	2.845	Tapadihi_47	FOREST

261	2.060	Tapadihi_47	FOREST
301	1.644	Tapadihi_47	FOREST
649	0.925	Tapadihi_47	FOREST
647	0.158	Tapadihi_47	FOREST
121	0.145	Tapadihi_47	FOREST
TOTAL AREA	**93.045**		

6. SELECTION OF SITE FOR GAP PLANTING

The above degraded forest land is situated in the 100m outer perimeter of the mining lease of Iron ore mining project of M/s JSW Steel Ltd. in Keonjhar District of Odisha. The proposed area has been selected considering proximity of the mining lease area. **The Nuagaon Iron Ore Mines is surrounded by the Mining Leases like Guali mines of OMC, Gandhalpada of M/s TATA, Sagasahi Mines of AMNS. The area coming under other mining leases have not been considered. In the remaining area degraded revenue forest land over 93.045Ha has been identified and gap plantation will be taken up.** The main purpose of the plantation will be to involve the local VSS. The VSS member will have a share in the usufruct in future which will cater to their need, so far as bonafide requirement of fuel wood and small timber is concerned. The topography of the site is sloppy in nature. The soil is mostly rocky / sandy loam type at patches and depth of the soil is of limited extent. The gap plantation will be carried out over an area of 93.045 Ha in 7 nos of villages as shown in the table above.

7. DESCRIPTION OF THE EXISTING VEGETATION

The proposed site for gap plantation has dense growth of weeds like Cromolena odoratum Lantama camra etc. along with sparsely available Sal with its associates. The available growth is degraded due to biotic pressure like grazing and fire wood collection.

Choice of species

As far as possible, care shall be taken to select indigenous species for plantation.

The list of species to be adopted for the plantation is as follows:

1	Amla	Emblica officinalis
2	Bamboo	Dendrocalamus strictus
3	Karanja	Pongamia pinnata
4	Asan	Terminalia alata
5	Sisoo	Dalbergia sisoo
6	Gambhar	Gmelina arborea
7	Neem	Azadirachta indica
8	Harida	Terminalia chebula
9	Bahada	Terminalia bellirica
10	Kasi	Bridelia retusa

8. RAISING OF NURSERY

Seedlings required for the plantation shall be raised in the nursery of Forest Dept which will meet the requirement. The Nursery should have a capacity of raising adequate seedlings. The selection of saplings will be undertaken in consultation with the Forest Department. All the infrastructures will be provided by

the User Agency. Work will commensurate one year before the year of plantation. About 10% extra seedlings shall be raised to compensate casualty in the nursery. Standard nursery practices shall be followed for raising seedlings in polyplots.

9. ALIGNMENT AND STACKING

Alignment, stacking and pitting will be taken up in the month of March-April, Pits of size 45cmX 45cm X 45cm will be dug maintaining a spacing of 2.5 mt x 2.5 mt @ 200 plants per hectare.

10. PLANTING

The seedlings will be planted in dug out pits of 45 cm3 maintaining a spacing of 2.5 mt between the pits @ 200 seedlings per hectare. Plantation should be taken up after first regular shower of monsoon and should be completed by end of August. NPK/DAP fertilizer @ 50 gms per plant should be given as basal dose. Anti-termite and insecticide like @ 5 gms. per plant should be applied per pit. Foreign earth shall be provided in each pit to enrich the growth of seedlings within a marked period. Casualty replacement when required during the planting year and in the second year should be undertaken for which the seedlings shall be raised.

11. WEEDING, SOIL WORKING AND MANURING

For establishment and better growth of the planted seedlings, weeding, soil working and manuring are necessary. It is proposed to carry out two weeding, soil working and manuring added with vermincompost @ 200 gm/plant during the first year and second year of plantation. Weeding and manuring for the first and second year shall be carried out during September - October Urea 70 gm & NPK 50 gm and the second one during September-October along with soil working during which 70 gms of vermi compost shall be added to the soil per plant. First weeding shall be for entire area weeding and the second weeding should be strip weeding. The weeding and of third year will be for entire area weeding which shall be carried out during August.

12. APPLICATION OF INSECTICIDES

The plantation site after planting with good seedlings may in course of time get infested with diseases owing to influx of insects and pests into the area which usually cause heavy damage to the soft, tender and avidly growing parts of the plant that affects the rate of growth and sometimes causes wide spread casualty of the seedlings. To avoid such incidences, foliar spray and ground application of insecticides at regular intervals usually on a sunny day in the fore noon shall be done.

13. FIRE LINE TRACING AND MAINTENANCE

Fire causes irreparable damage to the plantation and the forest growth during fire season and to prevent such fire out-breaks in the area, the plantation area shall be divided into suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped of forest growth to a width of 3.0 mt. during Feb-March and the cut back materials and the dry leaves stacked along these fire lines shall be burnt under direct supervision. This operation is highly essential and the scheme proposes to carry this operation for the first three years

The detailed cost estimate of various operations to be taken up in ANR plantation has been furnished in Annexure-I.

14. POINTS OF IMPORTANCE

While taking up plantation, the following vital points shall be taken up for consideration:

- All care to be taken to raise healthy seedlings of minimum 45 cm and 20% extra of the required stock be raised. Complete 1 year seedlings shall be used in case of Asan, Arjun, Phasi, Neem, Harida, Bahada, Kasi etc. However, in case of Sisoo, Gambhar, Chakunda etc 12 months old seedlings can be used. Pitting shall be invariably done during February – March. In hilly areas, pits shall be dug along the contours. Planting shall be done on the onset of monsoon and should not be delayed. The gradient of the site is 1:10 which is considered as level ground with slight undulating at places.
- Basal dose of 70 grams Urea and 50-200 gms of Vermi Compost of NPK and 5 grams of granular insecticide be applied at the time of planting. Casualty replacement, weeding and soil working, application of fertilizer and insecticides shall be taken up as per the provisions in the cost- norm at the proper time. Engaging requisite watchers as per norm who shall take up tracing of inspection path and fire line and maintenance of fence and provide watch and ward for the entire life of plantation i.e 10 years.
- All-out efforts be taken to keep the plantation free from grazing, fire and other biotic interference.

15. SOIL CONSERVATION MEASURES

The sites selected for restocking and rejuvenation by afforestation are degraded forest lands and the slope of the identified area varies from steep to moderate with undulating topography and gullies are formed due to heavy erosion. Therefore, soil conservation measure is indispensable and is to be appropriately designed. Taking into consideration the degradation of the area due to soil erosion, it has been proposed to take up Soil Conservation Measures by construction of Loose Boulder Check dam (LBCD) such as contour bunds, check dams over the area 40 nos. 4mt span.

The details of estimate of different size of Loose Boulder Structure are given in **Annexure-II.**

16. SPECIAL SOIL CONSERVATION MEASURES

To check soil erosion and the rain water draining out of the area, it has been proposed to take up special conservation measures by digging staggered trenches along the contour over the area @ 250 nos per hectare. The size of the trenches will be 2 Mtr x 0.5 Mtr x 0.5mtr. Digging of staggered trenches will be done during September of 1st year. Agave planting will also be taken up on the dugout soil of the trench for its stabilisation and to restrict the dugout soil from re-filling into the trench.

The detail of estimate of staggered trench is given in Annexure-III.

17. WATCH AND WARD

To protect the area against grazing, fire accident and other biotic interference it is proposed in the cost estimate for ANR Plantation to engage watchers for ten years from the year of plantation.

18. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programs.

19. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi are to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages. Thus, 15% of the plantation cost has been earmarked for expenditure on this score.

20. EXECUTING AGENCY

Rs. 3,21,81,600/- (Rupees three crore twenty-one lakh eighty-one thousand six hundred) only shall be deposited by the user agency on approval of the scheme to the Ad-hoc CAMPA Account through online https://parivesh.nic.in/ and the funds will be utilized for raising plantation over 93.045 ha of non-forest & open forest area and implementation will be done by the DFO, Keonjhar Forest Division on allotment by the PCCF & HoFF, Odisha, Bhubaneswar.

21. REQUIREMENT OF FUNDS

The total cost of the implementation of proposed scheme will be Rs. 3,21,81,600/- (Rupees three crore twenty-one lakh eighty-one thousand six hundred) Only, details are as under-

TOTAL COST OF GAP PLANTING, SOIL & MOISTURE CONSERVATION WITHIN 100MTR. FROM OUTER PERIMETER OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LTD TO RESTOCK AND REJUVANATE DEGRADED FOREST.

TOTAL COST OF PROJECT

S. No.	Item of Work	In Rupees
1	Base Norm for 200 plants/ ha (Year 2022-2023)	100938.00
2	Soil Moisture Conservation (SMC) (2022-2023)	37415.00
3	Fencing Bamboo Twigs & Thorns (2022-2023)	104966.00
4	**Sub-Total**	**243319.00**
5	Plantation cost over 93.045 ha (Rs. 2,43,319.00 X 93.045 ha)	22639616.35
6	Watering Diesel Pump set fitted with bore well @ Rs. 502209/-X 19 Nos for 93.045 ha (2022-23)	9541971.00
	G. TOTAL	32181587.35 Or say 32181600.00

(Rupees Three crore twenty-one lakh eighty-one thousand six hundred) only.

for JSW Steel Ltd.
B.M. DALGADE

Technically Approved
Divisional Forest Officer
Keonjhar Division

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Base Cost Norm for ANR Plantation @200 seedlings per ha (18 months old seedlings) @ 311.00/- Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide Notification No. 2433/LC dated 30.04.2022. The onetime cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1109 dated 08.11.2021.

ANNEXURE-6

Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 200 Seedlings/Ha. (18 months old seedling)						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
0th Year (Advance work) Pre-Planting Operation						
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 operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to blank space.	Jan/Feb	15	4665	0	4665
5	Alignment and stacking for digging of pits	Feb/Mar	0.5	156	0	156
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	8	2488	0	2488
	Total		28.5	8863.5	100.0	8963.5
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 perfectly.	June/Jul	1.5	466.5	1000	1467
2	Transportation of 18 months old polythene bag seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average lead of 10 Rkm) & Stacking the seedling @ Rs.6/-/ Seedling. (220 nos.)	Jul/Aug	0	0	1320	1320
3	Watering polythene bag seedlings at stacking site of plantatim	Jul/Aug	0.5	155.5	0	156
4	Conveyance of polythene bag seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil perfectly around the planted seedling.	Jul/Aug	4.5	1399.5	0	1400
5	Cost of Fertilizer & Insecticide (a)NPK/ Bio-fertilizer @ 50 gms/plant as basal dose = 10kg @ Rs.30/- per kg = Rs. 300.0 (b) Urea/Vermicompost/Mo Khata/any other fertilizer @ Rs. 150.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant= 1 kg @ Rs.150/- per kg = Rs. 150/-	Jul/Aug	0	0	600	600
6	Casualty Replacement @ 10% (20 nos.)	Jul/Aug	0.5	156	0	156
7	1st weeding & Manuring	Aug/Sept	2	622	0	622
8	2nd Weeding, Soil working (1mt. diametre around the plants) & Manuring	Oct/Nov	3	933	0	933
9	Fire line traring & Inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	8	2488	0	2488
	Total		23	7153	2920	10073
2nd Year Maintenance						

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	Transportation of 20 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0	0	120	120
2	Planting for casualty replacement	Jul	0.5	155.5	0.0	155.5
3	Cost of Fertilizer & Insecticide: A) Cost of Insecticide/ Bio- pesticide(Themet/ Forate) @ 5 gms/plant = 0.1 Kg @ Rs.150/- per kg = Rs.15/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer= Rs. 560/-	Jul	0	0	575	575
4	Weeding (Complete weeding), Manuring & Soil working, (1mt. diametre around the plants)	Sep/Oct	4	1244	0.0	1244
5	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	933	0.0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3732	0.0	3732
	Total		19.5	6064.5	695.0	6759.5
	3rd Year Maintenance					
3	Cost of Fertilizer : Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer= Rs. 560/-	Sep/Oct	0	0	560	560
4	Weeding (Complete weeding), Manuring & Soil working, (1mt. Diametre around the plants)	Aug/Sep	4	1244	0	1244
5	Fire line tracing (2 m. wide fire line over 400 m long) & Inspectinn path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3732		3732
	Total		19.0	5909.0	560.0	6469.0
	4th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732	0	3732
	Total		15	4665	0	4,665
	5th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length) &inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0	4665
	6th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length) &inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0
	7th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length) &inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0
	8th Year Maintenance					

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	Fire line tracing (2 m. wide fire line over 400 m length &inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0
	9th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length &inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0
	10th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length) &inspection path	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
	Total		15.0	4665.0	0.0	4665.0

Year wise Abstract of Cost Norm (showing seedling cost separately)

Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day (Rs)	Material Cost (In Rs.)	Monitoring Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5+6)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST
1	2	3	4	5	7	6	8
1	0th year	28.5	8863.5	100	436.50	0.00	9400.0
2	1st year	23.0	7153.0	2920	427.00	11068.00	21568.0
3	2nd year	19.5	6064.5	695	240.50	1006.00	8006.0
4	3rd year	19.0	5909.0	560	231.00	0.00	6700.0
5	4th year	15.0	4665.0	0	135.00	0.00	4800.0
6	5th year	15.0	4665.0	0	135.00	0.00	4800.0
7	6th year	15.0	4665.0	0	135.00	0.00	4800.0
8	7th year	15.0	4665.0	0	135.00	0.00	4800.0
9	8th year	15.0	4665.0	0	135.00	0.00	4800.0
10	9th year	15.0	4665.0	0	135.00	0.00	4800.0
11	10th year	15.0	4665.0	0	135.00	0.00	4800.0
	Total:	195.0	60645.0	4275.0	2280.0	12074	79274.0

Note:

1 Priority must be given to the indigenous local species available nearby to the site of plantation.

2 10 % indigenous fruit bearing trees must be preferred to Plantation.

3 Site specific Soil conservation work like LBCD, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up

4 Chain link fencing can be adopoted in the CA plantation taken up outside the forest area and Bamboo twigs fencing may be prefered to CA plantations taken up in degraded forest area.

5 Watering facilites for procurement of water & watering may be adopted as per the availability of water.

6 The Cost Norm of various items can be changed with the approval of the concerned RCCFs keeping the overall cost norm fixed for each Financial Year

A CCF (Forest Diversion & NO, FC Act)

Matrix for ANR-200 Plants / Ha

Matrix for ANR-200 Plants/ Ha

In Rupees

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
Base Norm		9400	21568	8006	6700	4800	4800	4800	4800	4800	4800	4800											
1	2021-22	9400	22646	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	8209	8621									105986
4	2024-25				10882	26215	10217	8979	6754	7092	7447	7819	8210	8619	9052								111286
5	2025-26					11426	27526	10728	9428	7092	7447	7819	8210	8621	9050	9505							116852
6	2026-27						11997	28902	11264	9899	7447	7819	8210	8621	9052	9503	9980						122694
7	2027-28							12597	30347	11827	10394	7819	8210	8621	9052	9505	9978	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

APCCF (Forest Diversion & NO, FC Act)

Cost Norms for Creation of Compensatory Afforestation with Stabilization of Soil Moisture Conservation (SMC)

Annexure-11

Cost Norms for creation of Compensatory Afforestation with Stabilization of Soil & Conservation of Moisture (1000

WAGE RATE Rs- 311/- PER DAY

Sl.No	Item of Wurks	Preferable Period of Execution	Total Cost
	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 requirment on LS	Apr/Sept.	20,215
	2nd Year		
3	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
	3rd Year		
4	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
	4th Year		
5	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
	4th Year		
6	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
	Total		32,343.0

Abstract

Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year	0.0	0.0	0.0	0.0
2	1st year	0.0	0.0	20,215.0	20,215.00
3	2nd year	0.0	0.0	3,032.00	3,032.00
4	3rd year	0.0	0.0	3,032.00	3,032.00
5	4th year	0.0	0.0	3,032.00	3,032.00
6	5th year	0.0	0.0	3,032.00	3,032.00
	Total	0.00	0.00	32,343.0	32,343.0

Different types of SMC structures may be taken up as per the scope & requirements of the plantation site out of the design & specifications of different structures annexed along this document.

A PCCF (Forest Diversion & NO, FC Act)

Matrix for (SMC)

Matrix for (SMC)

In Rupees

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		0	22287	3509	3686	3869	4064										37415
3	2023-24			0	23401	3684	3870	4062	4267									39284
4	2024-25				0	24571	3868	4064	4265	4480								41248
5	2025-26					0	25800	4061	4267	4478	4704							43310
6	2026-27						0	27090	4264	4480	4702	4939						45475
7	2027-28							0	28445	4477	4704	4937	5186					47749
8	2028-29								0	29867	4701	4939	5184	5445				50136
9	2029-30									0	31360	4936	5186	5443	5717			52642
10	2030-31										0	32928	5183	5445	5715	6003		55274

APCCF (Forest Diversion & NO, FC Act)

Fencing Model F-1

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

Fencing Model F-1

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	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
	0th Year Maintenance					
1	NIL		0	0	0	0
	1st Year Maintenance					
1	Taking an average perimeter of 250 Rmt/Ha. @ 93 BS/ mt. (Half bundle Bamboo Twigs/mt @ 120/Bundle) Labour Material : 40.60 (approx)	Sept./Oct	30	9330	14133	23463.0
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 (approx) 24' height = 3 poles 126/3 = 42 Bamboos @ 200/Bamboo	Sept./Oct		0	8400	8400.0
3	Preparation of Bamboo poles, Digging of holes of 2 ft. depth & fixing Bamboo poles @ 20 poles/ MD	Sept./Oct	6.5	2021.5		2021.5
4	Cost of Bamboo for tieing the Bamboo twigs on poles 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		0	4200	4200.0
5	Making Bamboo batten, Finishing the Batten & Tieing the same on double strand on Coir rope etc. @ Rs 11/ Rmt.	Sept./Oct	9	2799		2799.0
6	Cost of coir rope @ Rs.0.125 kg/ Rmt 500x 0.125 kg= 62.5 kg @ Rs.70/Kg	Sept./Oct		0	4375	4375.0
7	Making one Bamboo Twigs gate with Bamboo frame			0	500.5	500.5
	TOTAL		45.5	14150.5	31608.5	45759.0
	Rate per running mt. 45759/ 250= 183/Rmt					
	2nd Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	1500	7720
	Rate per running mt. 7720/ 250= 30.88 or say Rs. 31-Rmt					
	3rd Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
	Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt					
	4th Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
	Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt					
	5th Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
	Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt					

Abstract

Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)
1	0th year	0.0	0.0	0.0	0.0
2	1st year	45.5	14150.5	31608.5	45759.0
3	2nd year	20.0	6220.0	1500.0	7720.0
4	3rd year	20.0	6220.0	5675.0	11895.0
5	4th year	20.0	6220.0	5675.0	11895.0
6	5th year	20.0	6220.0	5675.0	11895.0
	Total:	125.5	39030.5	50133.5	89164.0

APCCF (Forest Diversion & NO, FC Act)

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

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

In Rupees

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	45759	7720	11895	11895	11895											
1	2021-22	0	48047	8511	13770	14458	15181											99967
2	2022-23		0	50449	8937	14459	15181	15940										104966
3	2023-24			0	57971	9384	15182	15940	16737									110214
4	2024-25				0	55620	9853	15941	16737	17574								115725
5	2025-26					0	58401	10345	16738	17574	18453							121512
6	2026-27						0	61321	10863	17575	18453	19375						127588
7	2027-28							0	64387	11406	18454	19376	20345					133968
8	2028-29								0	67606	11976	19377	20345	21362				140666
9	2029-30									0	70986	19575	20346	21362	22430			147699
10	2030-31										0	74535	13204	21363	22430	23552		155084

APCCF (Forest Diversion & NO, FC Act)

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

Watering Model – W-II

Watering Provision to CA Plantation

Watering Model-W-II			
Watering provision to CA Plantation			
Diesel pump set with Bore well (1 pump set + Bore well for 5 Ha Plantation), Wage rate @ Rs.311/-			
Year of Installation (0th Year)			
1	Cost of Borewell	1,50,000	
2	Cost of Diesel pump set 5HP	60,000	
3	Diesel pump set & assessories like commander, Pipes, etc.	30,000	
4	Water Storage Tanks/ Flexible pipes	15,000	
		2,55,000	
Cost of Water per Plant (2,55,000/ 5000)= Rs. 51/- Cost of Water per Ha. = Rs. 51,000/-			51,000
1st Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
2	Watering 1000 Plants (Nov-Mar.) @ 200 plants/MD with 7 days rotation 20 MD x 5 months = 100 MD x 311 =		31,100
		Total	52,100
2nd Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	78,410
3rd Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	78,410
4th Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	78,410
5th Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	78,410

Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	51000.0	51000.0
2	1st year	100.0	31100.0	21000.0	52100.0
3	2nd year	160	49760.0	28650.0	78410.0
4	3rd year	160	49760.0	28650.0	78410.0
5	4th year	160	49760.0	28650.0	78410.0
6	5th year	160	49760.0	28650.0	78410.0
	Total:	740	230140	186600	416,740

APCCF (Forest Diversion & NO, FC Act)

Matrix for Watering Model –W-II (Diesel Pumpset Fitted with Borewell) per Ha

Matrix for Watering Model-W-II (Diesel Pumpset Fitted with Borewell) per Ha

In Rupees

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	5100	52100	78410	78410	78410	78410											
1	2021-22	51000	54705	86439	90771	95357	100072											478294
2	2022-23		53550	57440	90761	95313	100072	105076										502209
3	2023-24			56728	60312	95709	100076	105076	110330									527321
4	2024-25				59039	63318	100364	105080	110335	115847								553688
5	2025-26					61991	86494	105067	110234	115847	121639							581372
6	2026-27						65092	69819	110335	115851	121639	127731						610441
7	2027-28							58346	73310	115836	121644	127731	134107					640964
8	2028-29								71762	76976	121628	127736	134107	140812				673012
9	2029-30									75351	80325	127709	134112	140812	147853			706662
10	2030-31										79119	84866	134094	140818	147853	155245		741996

APCCF (Forest Diversion & NO, FC Act)

ANNEXURE-10

JSW STEEL LTD

Scheme

for

DE-SILTING OF VILLAGE TANKS AND OTHER WATER BODIES LOCATED WITHIN 05 KM FROM THE MINE LEASE BOUNDARY SO AS TO MITIGATE THE IMPACT OF SILTATION OF SUCH TANKS/ WATER BODIES

in compliance with Condition No.7 of Stage-I approval granted vide Letter No.8-17/2001-FC(vol), Dated.14.03.2022 of Govt. of India, Ministry of Environment, Forests & Climage Change,New Delhi.

for

Diversion of 63.30 Hects of sabik kissam Forest Land in addition to 371.192 ha of forest land already diverted located within the mining lease hold area of 781.787 ha of Nuagaon Iron Ore Mines

of

M/S JSW STEEL LTD.

in village Nuagaon in Barbil Tahsil, Dist.Keonjhar,Odisha

SCHEME FOR DE-SILTING OF VILLAGE TANKS AND OTHER WATER BODIES LOCATED WITHIN 05 KM FROM THE MINE LEASE BOUNDARY SO AS TO MITIGATE THE IMPACT OF SILTATION OF SUCH TANKS/ WATER BODIES

1. INTRODUCTION

Government of Odisha, pursuant to the Mines and Minerals (Development & Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 as amended from time to time (the "Auction Rules), issued the notice inviting tender dated 06.12.2019 to commence the auction process for grant of mining lease for Nuagoan Iron Ore Block located in Keonjhar district of Odisha. The e-auction process was conducted in accordance with the tender document for the said mineral block and M/s JSW Steel Limited was declared as the preferred Bidder under Rule 9(9)(iii) of Mineral Auction Rules, having quoted a Final Price Offer of 95.20%. Government of Odisha has awarded the Letter of Intent vide letter No 2291/S&M, Bhubaneswar dated 02.03.2020 for Grant of Mining Lease for Iron Ore in favour of M/s' JSW Steel Ltd. the successful bidder in respect of Nuagaon Iron ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects.(as per RoR) in Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi villages under Barbil Tahasil of Keonjhar district under jurisdiction of Barbil Forest Range of Keonjhar Division. M/s JSW Steel Limited under sub-rules (4) and (5) of rule 10 of the said rules, has signed the Mine Development and Production Agreement with Collector, Keonjhar district on dated 25/06/2020. The State Government under rule 10, sub-rule (5) of the Mineral (Auction) Rules, 2015 have been pleased to grant the mining lease for Iron Ore in favour of M/s JSW Steel Ltd., the successful bidder in respect of Nuagaon Iron Ore block over an area of 776.969 hects. (as per DGPS)/781.787 hects. (as per RoR) in Nuagaon village under Barbil Tahasil of Keonjhar district for the period of 50 (fifty) years as provided under section 8A, sub-section 2 of the Mines and Minerals Development and Regulation Act, 1957 vide letter No. 5543 dated 26.06.2020. The lease deed was executed and registered on 27.06.2020.

As per section 8B (2) of the MMDR Act, 1957 read with rule 9A (4) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 the holder of the letter of intent for the said mining

block shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee. Without prejudice to the generality of the provisions of section 8B (2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee and vested in favour of the holder of the Letter of Intent. This vesting order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier. In accordance with the above, The State Government issued vesting order vide letter No. 4167/SM/III(A) SM, Bhubaneswar dt. 29/05/2020. The Ministry of Forests & Environment, Govt. of India, New Delhi vide their letter F. No-8-17/2001-FC dated 21/22nd April 2004 accorded approval for diversion of 371.192 ha of forest land out of the applied 476.205 Ha land for mining of iron ore within the mining lease area of M/S - K. J. S. Ahluwalia.

The Mines and Minerals (Development and Regulation) Amendment Act, 2021 which has been notified by the Central Government on 28.03.2021 amended the Section 8B. Further the MoEF&CC issued guideline vide File No.FC-11/112/2020-FC(Pt) dated 7.07.2021 align with the provisions under the two Acts, it has been decided that transfer of approval under FCA-1980 in such mining leases may be considered subject to fulfilment of the conditions. The State Government vide letter No. 7493/FE&CC dated 21.04.2022 transferred the forest clearance over 371.192 ha granted earlier to M/s KJS Ahluwalia in favour of JSW Steel Ltd.

The Ex-Lessee M/s KJS Ahluwalia has submitted the proposal over 63.300 ha of Sabik Forest land and the FAC had considered the proposal and asked the State Government to comply some condition for grant of Stage-I clearance. The Ex-lessee did not pursue the matter and the mining lease expired on 31.03.2020. The New lessee represented the State Government to re-consider the proposal and complied the stipulated conditions. The Government of Odisha's vide letter No. FE-DIV-FLD0120-2020-16552/FE&CC dated 16.09.2021 recommended for diversion of 63.30 ha Sabik Kisam forest land in addition to 371.192 ha of forest land already diverted forest land located within the Mining Lease hold area of 767.284 ha in favour of M/s JSW Steel Ltd for Nuagaon Iron Ore Mines in Barbil Tahasil of District Keonjhar and the above proposal was considered by the Forest

Advisory Committee (FAC) in its meeting held on 26.11.2021. The Stage-I approval granted vide Letter No.8-17/2001-FC(vol), Dated.14.03.2022 by the Govt. of India, Ministry of Environment, Forests & Climate Change. In **Condition No.7 stipulate to undertake desilting of village tanks and other water bodies located within 05 km from the mine lease boundary so as to mitigate the impact of siltation of such tanks/water bodies.**

2. LOCATION

The allotted ML area is bounded by latitude 22⁰ 06' 16.72057" to 22⁰ 07' 41.65495" N and longitude 85⁰ 25' 32.28303" to 85⁰ 26' 40.67115" E. The area is surrounded by the Mining Leases like Guali mines of OMC, Gandhalpada of M/s TATA, Sagasahi Mines of AMNS. The NH -20 is passing through the lease and Barbil is situated 15 KM from the mining block.

3. TOPOGRAPHY

The area is characterized by hilly as well as flat ground having elevation from 525m to 702m above M.S.L. The hill ranges located within the lease area are Udalbari, Guali, Topadih, Dumkahudi, Barpada, Kanhusahi, Katasahi etc.Laterite, Lateritic Iron ore, Hard Haematite etc. are recorded in the ridges and valleys are mainly covered by alluvial soil.Nuagaon iron ore block discerns a fairly wide range of rock types of the iron ore group. The area has got geomorphic trend of North-North-East to South-South-West. The strike trend of the rock type here is also conformable to the trend of hill ranges.

SOIL TYPE

Soil type in the study area varies Lateritic soil recorded in the ridges and valleys are mainly covered by alluvial soil.

4. CLIMATE

The study area is characterized by an oppressively hot summer with high humidity. Summer generally commences in the month of March. Temperature beings to rise rapidly attainting a maximum in the month of May. During the summer maximum temperature can go up to 47.70C. The weather becomes pleasant with onset on monsoon in June and remains as such upto end of October. The temperature in the month of December is lowest, i.e., 70 C. The average annual rainfall as recorded at IMD observatory

is 1200 to 1300 mm. Predominant wind direction is South-West. Area remains calm for nearly 50% of the year.

5. DRAINAGE

The drainage system in this area is radial type. The drainage pattern is this area is mostly controlled by Sona River and then ultimately by River Baitarani. Drainage system of the area is controlled by two rivers namely Suna River and Karo River. Northern part is drained by Karo Nadi while southern part of the lease area is drained by Suna Nadi. Both the rivers are perennial in nature. Lease area is having a number of hills traversed by the dry nalas. Surface run-off falls finally in to the rivers through these dry nalas.

6. RAINFALL

There is a wide variation of rainfall in the catchment area and around 10 kms radius of buffer zone of this mine. The average annual rainfall of this mine area is affected by steep hills, forest cover etc. The average annual rainfall of last 10 years comes to 1216.405 mm.

Table 1: Monthly Rainfall Data of Barbil Tahasil (in mm)
Average Rainfall = 1216.405 mm

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
2009	0.00	0.00	0.00	0.00	84.30	75.70	317.20	100.80	103.00	41.30	40.00	0.00	**762.30**
2010	11.00	3.00	0.00	0.00	14.00	95.00	134.50	159.50	111.50	18.30	0.00	25.50	**572.30**
2011	47.00	11.00	17.00	113.50	88.00	247.60	146.30	335.00	480.00	57.00	0.00	0.00	**1542.40**
2012	21.00	9.00	0.00	60.00	0.00	68.00	303.00	397.50	223.00	35.00	14.00	1.00	**1131.50**
2013	3.00	0.00	5.00	60.50	46.00	192.00	436.10	288.00	212.00	351.00	0.00	0.00	**1593.60**
2014	0.00	40.00	78.00	0.00	29.00	141.00	484.00	488.00	166.00	62.00	0.00	0.00	**1488.00**
2015	2.00	0.00	0.00	51.00	5.00	347.00	449.00	154.00	113.00	0.00	0.00	16.00	**1137.00**
2016	0.00	27.00	4.00	0.00	70.00	76.10	267.70	383.40	267.40	35.40	0.00	0.00	**1131.00**
2017	0.00	0.00	0.00	0.00	56.00	201.25	546.00	132.00	90.00	107.00	9.00	0.00	**1141.25**
2018	0.00	0.00	1.00	44.00	152.00	106.40	482.00	379.30	334.00	53.00	0.00	113.0	**1664.7**
Average	8.4	9	10.5	32.9	54.43	155.005	356.58	281.75	209.99	76	6.3	15.55	1325

7. FACTORS RESPONSIBLE FOR SILTATION

Siltation is an inherent problem with ponds, lakes and almost all types of water reservoirs world over. Siltation occurs due to deposition or settling of soil eroded from the land mass, decaying fallen leaves, grass and other vegetative materials and decomposed organic materials settled on pond bottoms. Soil erosion may be attributed as the primary factor responsible for pond siltation in this area. Higher gradient and excess rainfall are the most

common reasons of soil erosion. Erosion of Soil occurs from the waste dumps, excavated areas and naturally denuded ground surface. However, looking into the current problem of siltation of the village ponds, the major factors are the surface runoff containing silt particles entering into the pond. As the age of the ponds increases, new layers of silt accumulate on the older ones and the silt layers become thicker. Finally, the depth of the pond decreases and it loses its water storage capacity. At this time, it needs to be de-silted to recover. The best practice against siltation is to de-silt the bottom of the pond at regular intervals as well as taking adequate preventive measures.

8. SELECTION OF PONDS

For the purpose as mentioned in Condition No.(xxiv) of the Stage-I approval letter, a survey of ponds within the buffer area of 5 Kms from the lease boundary was made. Total 2 numbers of following ponds were selection for de-siltation within 5 km vicinity of the lease area.

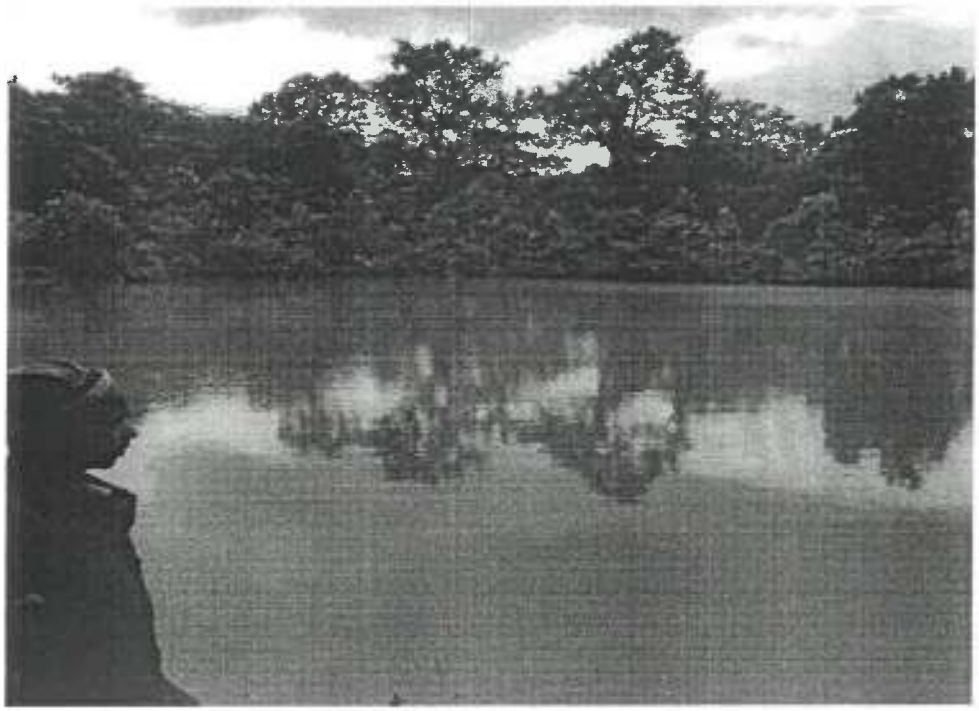
Information about the ponds proposed for desilting

Sl. No.	Name of village	Name of water bodies	GPS reading	Dimension (m) LXB
1.	Katesahi	Katesahi Pond 1	21058'00.25" 85020'11.36"	42X46
2.	Katesahi	Katesahi Pond 2	21057'14.75" 85020'11.36"	34X66
3	Barpada	Barpada Pond	21057'01.53" 850 18'51.93"	28X30
4	Guali	Guali Pond -1	21058'22.89" 850 16'57.22"	45X39
5	Guali	Guali Pond -1	21058'52.91" 850 17'19.24"	28X36
6	Nuagaon	Nuagaon Pond	21058'29.23" 850 16'51.56"	56X24
7	Panduliposi	Panduliposi Pond-1	21059'36.42" 850 16'59.77"	50X51
8	Panduliposi	Panduliposi Pond-2	21059'34.51" 850 16'58.26"	56X45

Matrix to indicate the benefits to be derived by individual Villagers from Pond renovation.

Name of the village with water bodies	Population benefited	Cattle to benefited	Irrigation to be derived	Pisciculture benefit
Katesahi Pond 1	***	**	*	*
Katesahi Pond 2	***	**	*	*
Barpada Pond	***	**	*	*
Guali Pond -1	***	**	*	*
Guali Pond -1	***	**	*	*
Nuagaon Pond	***	**	*	*
Panduliposi Pond-1	***	**	*	*
Panduliposi Pond-2	***	**	*	*

*** = Maximum benefit, **= Average benefit, *= Low benefit



WATER BODY (POND) PROPOSED FOR DE-SILTATION

WATER BODY (POND) PROPOSED FOR DE-SILTATION

9. POSSIBILITY OF SILTATION OF THE VILLAGE PONDS / WATER BODIES DUE TO MINING ACTIVITIES

The sub water shed where the mining lease falls is drained mainly by Karo River which is flowing outside the lease area. The area has a natural slope from NW to SE with well drained topography.

As far as village ponds in the proximity of the lease are concerned, it is observed that the identified village ponds are not affected from the surface runoff carrying any silt from the lease area, as these are located either far away from the working pits.

However, siltation in these identified village tanks may occur due to possible soil erosion outside the lease area beyond the sub watershed boundary. Hence, de-silting of these village ponds may be considered in subsequent phases.

10. METHODOLOGY

It is proposed to carry out the total de-siltation of the selected ponds as above every five years during summer when the ponds shall dry up exposing the silts. The dried silt shall be removed manually or mechanically based on the ground condition. In case of mechanical removal of silt, small excavators such as back-hoe / small hydraulic shovels or pay loader, depending upon the quantity of silt accumulation shall be used. For the purpose of evaluation of work required for de siltation, an estimate of de siltation in the individual ponds was made, which has been summarized in Annexure-1.

The work shall comprise: -

a) Total de-siltation in the five-year period.

b) Implementing preventive measures during the following four years to minimize re-siltation of the ponds.

c) To prevent or slowdown future siltation, the embankment stabilization by grass turfing /stone pitching, plantation of suitable species and constructing bathing ghat is also included in the de-silting and improvement plan.

It is proposed that the ponds having accumulation of over 1000 m3 shall be de-silted by mechanical means and the rest shall be handled manually. It is proposed to deploy one 0.9 m3 back hoe with one 10 tonne tipper for de-silting of the pond in a period of two-three days. The machines shall be deployed in a planned manner to complete the work in a shortest time frame. Necessary advice of BDO, Joda & Panchayat Sarpanch will be taken into account.

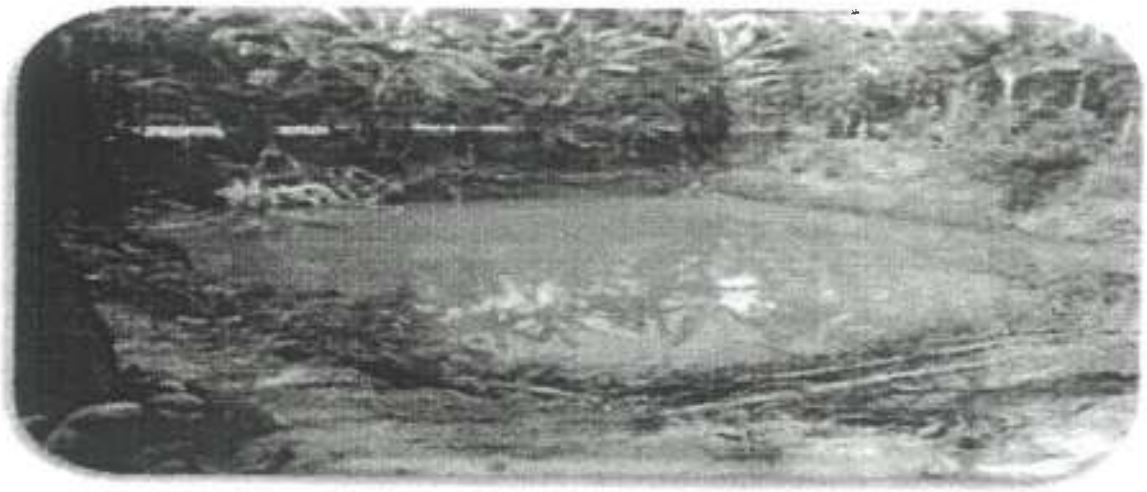
In case of smaller ponds, where the accumulation of silt is very small, the de-siltation operation shall be done manually by engaging sufficient manpower.

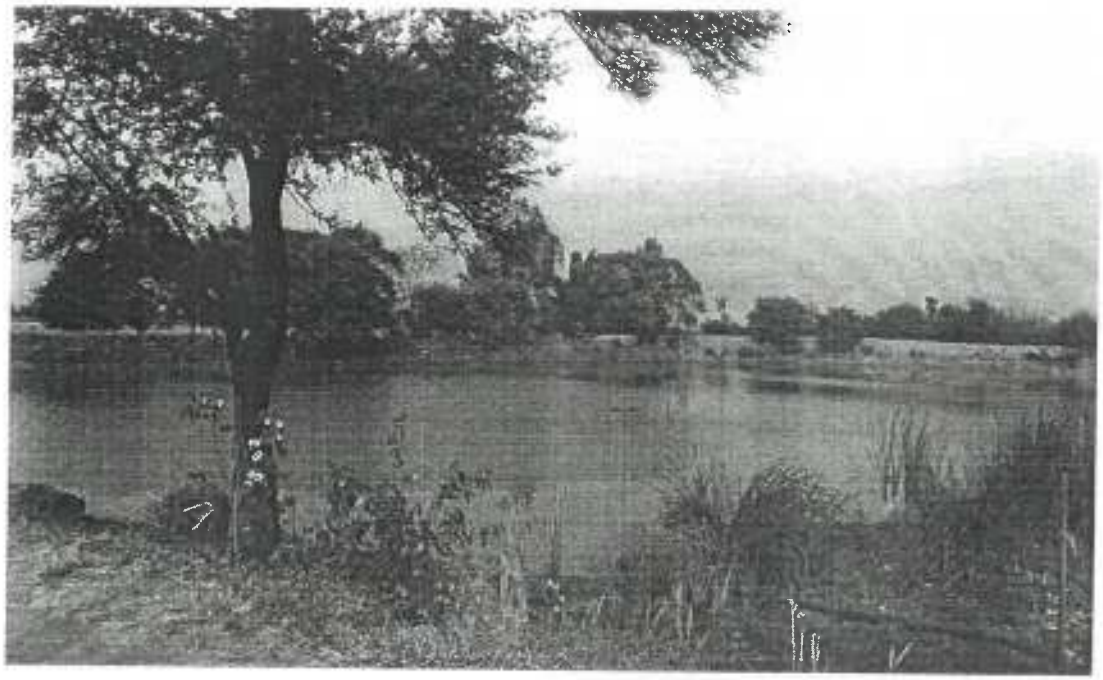
The ponds shall be allowed to dry up completely during the early summer i.e. during March and April followed by de-siltation in the above described manner.

a) 1st Year Plan & Management:

The first-year work shall also comprise the following preventive measures to minimize siltation.

- Providing embankment to the ponds where ever necessary.
- Strengthening the existing pond embankment to check external flow of surface run-off in to the pond.
- Regular removal of aquatic weeds and polythene bags / bottle thrown by villagers.
- Plantation of trees on the top of the embankment and stone pitching on the slopes to prevent bank erosion.
- Plantation of selected species like Bara, Aswatha, Lemon, Custard Apple, Guava, Papaya, Mango will be taken up.





Plantation of trees on the top of the embankment

b) Subsequent 2 Years Plan and Management: In the subsequent 2 years, the rate of siltation shall be negligible, which can be dealt by manual methods using the local labourers. This will also otherwise help in employment generation.

c) Preventive Measures & Maintenance: It is essential to take up preventive measures in order to minimize re-siltation of the ponds. Activities like pond bank strengthening and stabilization by way of earth work with stone patching, grass seeding and plantation of appropriate species shall be taken up in the first year followed by their maintenance in successive four years.

d) Dewatering of village pond: This will be carried out by engaging dewatering pump.

e) De-silting: After pumping out the water from the pond, silts are to be removed either manually by deploying labour or excavator & dumper combination.

f) Earthwork Excavation: Wherever required, soil has to be removed for deepening the pond to increase water holding capacity of the pond.

g) Bathing Ghat (separately for men and women): In the above Ponds, separate arrangement will be made for bathing by male and female of the Villages. Since the villagers are conscious from mythological point of view, a Tulsi (Ocimumsanctum) Chaura (Platform) has also to be provided where the villagers after bath can offer water to Sun God. The Detailed estimate is enclosed as Annexure-2.

Bathing Ghats

Sitting Platform on the embankment of the Pond(s) – In each Pond, a masonry platform will be provided where the villagers (age old persons and youth) can sit during summer evening. This platform will also serve the purpose of puja / karma.

11. INSPECTION, MONITORING AND EVALUATION

For successful implementation of the above mitigative measures, intensive inspection and technical guidance from concerned technical wing is required. Sufficient fuel/ conveyance charges for technical experts shall be provided by the user agency for proper execution of these programmes.

12. MOTIVATION OF PEOPLE:

As per Govt. resolution of 2011, the villagers of the adjoining village, i.e Nuagoan, Barpada, Gandhalpada, Guali, Katesahi,Kendudihi Kolharudukela, Panduliposi and Topadihi are to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the village.

13. EXECUTING AGENCY

The works in the present Scheme shall be executed by the User Agency having specialized departments headed by qualified persons with outsourced man and machinery. To facilitate this, the user agency shall establish its own executing and supervision cells along with required infrastructural facilities. In order to maintain the quality of work, in-house supervision through competent personnel shall be provided. The entire work shall be carried out in co-ordination with the Forest Department.

SPECIALISED CELL

Sl. No.	Name	Designation	Expertise
1.	Sri. B R K Padhi	Senior Vice President - Head Operation	30 Years' experience in Mining Mine Envt Management.
2.	Sri. Baswaraj Dalgade	General Manager	20 Years' experience in Forest Envt Management.
3.	Sri. Dhananjay Kumar	Sr. Manager (Environment & Forest)	25 Years' of experience in F & E
4.	Sri. Padmaraja Tumuti	DGM -Planning	25 Years' experience
5.	Jiten Kumar sahoo	Manager-Forest	15 Years' of experience in Forest

14. REQUIREMENT OF FUNDS

The total cost of this Scheme for de-silting and improvement of the selected pond in the surrounding villages is Rs. 84,49.100.00 (**Rupees eighty-four lakh forty-nine Thousand one hundred**) only

TOTAL COST OF THE PROJECT

Sl. No	Description of Job	Estimate for Village Ponds (8 Ponds)	Total fund required (Rs.)
1	Excavation, loading, unloading & carriage by mechanical means of all kinds of soil including stoneyearth ,gravel & morrum etc inter spread with boulders upto 1/2 cum size with all lifts & delifts including trimming of slopes & bed to design section &depositing the excavated materials away from work site as per the specification & directed by EIC with an initial lead of 1.00 KM from the place of excavation complete. Providing rough stone (15cm-30cm) dry packing in appron& all top four sides berm with our local boulder (boulder supplied by management). Construction of bathing ghat with local boulder Room near bathing ghat for change of clothes by women. Construction of Bench on the	7919896.00	7919896.00

	embankment for sitting		
2	Tulsi Chaura	21147.00	169176.00
3	Preparation of ramp on one sidc of the pond with slope for the village cattle to go near the water body on L.S. @ ₹ 20,000/- per pond	20,000.00	1,60,000.00
4	Provision for annual maintenance of pond for cleaning aquatic weeds from pond & cutting, of bushes from apron & berms on LS.	25,000.00	2,00,000.00
		Grand Total	**84,49,072.00** **Or say** **84,49.100.00** **0**

(Rupees eighty-four lakh forty-nine Thousand one hundred) only.

M/s JSW Steel Limited do hereby undertake to execute the item of works mentioned in this scheme in a phased manner at the project cost.

Sri Baswaraj Dalg
GM (Project)
M/s JSW Steel Limi

JSW STEEL LIMITED MUMBAI

Countersigned

Divisional Forest Officer
Keonjhar Division

Technically Approved
13/6/2022
Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Annexure-1

De-silting the Pond, Construction of Bathing Ghat & bench

Sl. No.	Items	Location	No	L	B	H	Qty	unit	Rate	Amount
1	Pumping of water by diesel pump incl. supplying diesel & lubricant @ 10hr for each pong		8				80	hours	500	**40000**
2	Desilting the pond by Excavator & Dumper combination (Loading cost Rs25/MT and Hauling Cost Rs. 25/-MT)	Katesahi Pond 1	1	46	42	1	1932	cum	50	96600
		Katesahi Pond 2	1	66	34	1	2244	cum	50	112200
		Barpada Pond	1	30	28	1	840	cum	50	42000
		Guali Pond -1	1	45	39	1	1755	cum	50	87750
		Guali Pond -2	1	36	28	1	1008	cum	50	50400
		Nuagaon Pond	1	56	24	1	1344	cum	50	67200
		Panduliposi Pond-1	1	51	50	1	2550	cum	50	127500
		Panduliposi Pond-2	1	56	45	1	2520	cum	50	126000
Total							**14193**	cum	**50**	**709650**
3	Removing weeds & bush from the bund of the pond	Katesahi Pond 1	4	44	4		176	sqm		
		Katesahi Pond 2	4	50	4		200	sqm		
		Barpada Pond	4	29	4		116	sqm		
		Guali Pond -1	4	42	4		168	sqm		
		Guali Pond -1	4	32	4		128	sqm		
		Nuagaon Pond	4	40	4		160	sqm		
		Panduliposi Pond-1	4	50.5	4		202	sqm		

Annexure-1

De-silting the Pond, Construction of Bathing Ghat & bench Pond. @ Rs. 315.00 per MD.

Sl. No.	Items	Location	No	L	B	H	Qty	unit	Rate	Amount
1	Pumping of water by diesel pump incl. supplying diesel & lubricant @ 10hr for each pong		8				80	hours	500	**40000**
2	Desilting the pond by Excavator & Dumper combination (Loading cost Rs25/MT and Hauling Cost Rs. 25/-MT)	Katesahi Pond 1	1	46	42	1	1932	cum	50	96600
		Katesahi Pond 2	1	66	34	1	2244	cum	50	112200
		Barpada Pond	1	30	28	1	840	cum	50	42000
		Guali Pond -1	1	45	39	1	1755	cum	50	87750
		Guali Pond -2	1	36	28	1	1008	cum	50	50400
		Nuagaon Pond	1	56	24	1	1344	cum	50	67200
		Panduliposi Pond-1	1	51	50	1	2550	cum	50	127500
		Panduliposi Pond-2	1	56	45	1	2520	cum	50	126000
Total							**14193**	cum	**50**	**709650**
3	Removing weeds & bush from the bund of the pond	Katesahi Pond 1	4	44	4		176	sqm		
		Katesahi Pond 2	4	50	4		200	sqm		
		Barpada Pond	4	29	4		116	sqm		
		Guali Pond -1	4	42	4		168	sqm		
		Guali Pond -1	4	32	4		128	sqm		
		Nuagaon Pond	4	40	4		160	sqm		
		Panduliposi Pond-1	4	50.5	4		202	sqm		

		Panduliposi Pond-2	4	50.5	4		202	sqm		
	Total		**32**	**338**	**4**		**1352**		**12**	**16224**
				G.Total						**765874**
5	Rough stone masonry for bathing ghat	Katesahi Pond 1	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Katesahi Pond 2	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Barpada Pond	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Guali Pond -1	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Guali Pond -2	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Nuagaon Pond	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Panduliposi Pond-1	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Panduliposi Pond-2	4	10	0.6	0.45	10.8			
			2	10	2.5	0.45	22.5			
		Total					**266.4**	**cum**	**630**	**167832**
6	20mm c p 1:4 for all ponds	All ponds	8	10	3.2		256	sqm		
		step face	160	2.5	0.2		80	sqm		
		change room floor	8	5	2		80	sqm		
		Total					**416**	**sqm**	**211.05**	**20764.64**
7	Neat cement punning	All ponds	8	10	3.2		256			
		step face	160	2.5	0.2		80			
		change room floor	8	5	2		80			
		Total					**416**	sqm	26.46	**11007.36**
8	Earth work in excavation for Change Room for 8 ponds	All ponds	1	3	0.4	0.4	0	cum		
			2	1.25	0.4	0.4	0	cum		
			1	2	0.4	0.4	0	cum		
			1	6	0.4	0.4	0	cum		
							0	cum	315	
		Bench	48	2.5	0.4	0.4	19.2	cum	315	
		Total					**19.2**	**cum**	**315**	**6048**
9	C C 1:3:6 change room for 8 ponds & benches	All ponds	1	3	0.4	0.4	3.84	cum		
			2	1.25	0.4	0.4	3.2	cum		
			1	2	0.4	0.4	2.56	cum		
			1	6	0.4	0.4	7.68	cum		
		Bench	48	0.5	0.4	0.1	0.96	cum		
		Flooring	8	5	2	0.1	8	cum		

		Total					**26.24**	**cum**	**6934.4**	**181958.66**
10	C C 1:2:4	Bathing ghat	16	10	2.5	0.05	20	cum	6720.53	**134410.6**
11	B W 1:6 for change Room of 8 ponds & benches	All ponds	1	3	0.24	3.2	18.432	cum		
			2	1.25	0.24	3.2	15.36	cum		
			1	2	0.24	3.2	12.288	cum		
			1	6	0.24	3.2	36.864	cum		
		Bench	48	0.5	0.24	0.8	36.864	cum		
		Total					**119.808**	**cum**	**8820**	**1056706.6**
12	12mm c p 1:6 for change Room of 8 ponds & benches	All ponds	1	3		3	72			
			2	1.25		3	60			
			1	2		3	48			
			1	6		3	144			
		Bench	48	0.5		0.1	2.4			
		Total					**326.4**	**sqm**	**178.6**	**58295.04**
13	20mm c p 1:6 for change Room of 8 ponds & benches	All ponds	1	3		3	72			
			2	1.25		3	60			
			1	2		3	48			
			1	6		3	144			
		Bench	48	0.5		0.1	2.4			
		Total					**326.4**	**sqm**	**189**	**61689.6**
14	Lift charge for B W 1:6 for change Room of 8 ponds	All ponds	1	3	0.24	2.4	13.824			
			2	1.25	0.24	2.4	11.52			
			1	2	0.24	2.4	9.216			
			1	6	0.24	2.4	27.648			
		Total					**62.208**	**cum**	**211.05**	**13128.998**
15	Lift charge for C P for change Room of 8 ponds	All ponds	2	3		2.4	115.2			
			4	1.25		2.4	96			
			2	2		2.4	76.8			
			2	6		2.4	230.4			
		Total					**518.4**	**sqm**	**11.65**	**6039.36**
16	Roofing with GCI sheet		8	5	3		120	sqm	211.05	**25326**
17	Carrying cutting to size & erecting strl steel of 8 ponds		8	3	5	4.5	540	kg		
		Total					**540**	**MT**	**6300**	**3402000**
18	White wash 3 coats on new surface for change room of 8 ponds	All ponds	2	3		2.4	115.2			
			4	1.25		2.4	96			
			2	2		2.4	76.8			
			2	6		2.4	230.4			
		Total					**518.4**	**sqm**	**25.2**	**13063.68**
								Sub Total		**6650018.5**
19	Cement						44	MT	11522.17	**506975.48**
20	Angle						0.54	MT	79464.68	**42910.927**
Total										**7199904.9**
Contigency @ 10%										719990.49

								Grand Total	7919895.4
									Or,
									7919896

Annexure-2

CONSTRUCTION OF TULSI-CHAURA ON THE BATHING GHAT @ Rs.3144.00

Sl. No.	Description of Items	Unit	Nos	L	B	H	Quantity	Rate	Amount
1	Earthwork in excavation	M3	1	6	0.4	0.3	0.63	211.28	140.70
2	Plain cement concrete 1:3:6	M3	1	6	0.35	0.1	0.21		
							0.21	6848.93	1520.32
3	Brick Work (1:6) (Above G.L In Super Structure)	M3	1	6	0.25	1.5	2.25	6682.65	15893.71
4	12 mm thick plaster	M2	1	6		1.5	9		
							9	155.55	1479.78
5	Applying Lime Wash	M2		Same qty as item no 4			9	19.96	189.81
								Sub total	19224.32
								Contingency 10 %	1922.43
								Total Amount (Rs.)	**21146.75 Or, 21147.00**

Co-ordinates of Diverted Pillar & its distance from Pillar to Pillar in respect of Nuagaon Iron ore Mines of M/s JSW Steel Ltd.							
Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LATITUDE	LONGITUDE	Pillar No (From)	Pillar No (To)	
PATCH-1							
F-1	321373.19	2431601.58	21° 58' 47.30844" N	85° 16' 11.65800" E	F-1	F-4	412.39
F-4	321785.56	2431597.29	21° 58' 47.32032" N	85° 16' 26.03316" E	F-4	F-6	204.47
F-6	321790.70	2431392.89	21° 58' 40.67688" N	85° 16' 26.29272" E	F-6	F-7	125.46
F-7	321788.29	2431267.45	21° 58' 36.59844" N	85° 16'26.25816" E	F-7	F-8	127.60
F-8	321660.73	2431270.33	21° 58' 36.64500" N	85° 16' 21.81072" E	F-8	F-9	151.96
F-9	321508.78	2431272.22	21° 58' 36.65064" N	85° 16' 16.51368" E	F-9	F-10	148.77
F-10	321360.52	2431274.01	21° 58' 36.65460" N	85° 16' 11.34552" E	F-10	F-11	137.78
F-11	321222.75	2431275.65	21° 58' 36.65712" N	85° 16' 06.54312" E	F-11	F-12	81.73
F-12	321265.21	2431345.49	21° 58' 38.94312" N	85° 16' 07.99500" E	F-12	F-13	71.09
F-13	321305.12	2431404.32	21° 58' 40.87020" N	85° 16' 09.36300" E	F-13	F-14	125.958
F-14	321351.64	2431521.37	21° 58' 44.69268" N	85° 16' 10.93836" E	F-14	F-15	56.292
F-15	321364.27	2431576.23	21° 58' 46.48080" N	85° 16' 11.35704" E	F-15	F-1	26.876
PATCH-2							
F-16	324318.12	2432644.77	21° 59' 22.29576" N	85° 17' 53.90592" E	F-16	F-18	238.708
F-18	324556.8	2432641.48	21° 59' 22.27524" N	85° 18' 02.22372" E	F-18	5	8.225
5	324558.79	2432633.5	85° 18' 02.29608" N	21° 59' 22.01640" E	5	1	129.939
1	324593.12	2432508.17	85° 18' 03.54132" N	21° 59' 17.95452" E	1	F-20	110.194
F-20	324698.1	2432541.66	21° 59' 19.08132" N	85° 18' 07.18776" E	F-20	F-21	79.897
F-21	324637.46	2432489.65	21° 59' 17.36808" N	85° 18' 05.09400" E	F-21	F-22	99.549
F-22	324567.27	2432419.05	21° 59' 15.04788" N	85° 18' 02.67480" E	F-22	3	55.167
3	324537.11	2432372.85	85° 18' 01.64160" N	21° 59' 13.53516" E	3	F-98	21.826
F-98	324525.68	2432354.26	21° 59' 12.92640" N	85° 18' 01.25028" E	F-98	2	164.558
2	324363.88	2432384.25	85° 17' 55.59864" N	21° 59' 13.84296" E	2	4	126.045
4	324370.79	2432510.1	85° 17' 55.79052" N	21° 59' 17.93688" E	4	F-26	77.737
F-26	324374.98	2432587.73	21° 59' 20.46192" N	85° 17' 55.90644" E	F-26	F-16	80.539
PATCH-3							
6	325017.82	2431649.89	85° 18' 18.67680" N	21° 58' 50.20464" E	6	7	31.647
7	325049.46	2431649.89	85° 18' 19.78056" N	21° 58' 50.16540" E	7	8	35.802
8	325084.21	2431641.27	85° 18' 20.99448" N	21° 58' 49.94832" E	8	9	97.9
9	325068.7	2431544.6	85° 18' 20.49156" N	21° 58' 46.80012" E	9	10	84.865
10	324992.85	2431506.54	85° 18' 17.86356" N	21° 58' 45.53544" E	10	11	4.432
11	324988.53	2431507.52	85° 18' 17.71128" N	21° 58' 45.56568" E	11	12	49.289
12	324997.75	2431555.94	85° 18' 18.01512" N	21° 58' 47.14320" E	12	6	96.069
PATCH-4							
F-34	324624.25	2431028.97	21° 58' 19.87652" N	85° 18' 05.19876" E	F-34	F-94	1.951
F-94	324626.2	2431029	21° 58' 29.87832" N	85° 18' 05.26680" E	F-94	F-35	96.192
F-35	324722.24	2431034.37	21° 58' 30.08784" N	85° 18' 08.61228" E	F-35	F-36	56.522
F-36	324724.23	2431090.86	21° 58' 31.94328" N	85° 18' 10.40020" E	F-36	F-95	52.874
F-95	324777.09	2431090.08	21° 58' 32.04840" N	85° 18' 10.50120" E	F-95	13	97.611
13	324873.47	2431074.58	85° 18' 13.86756" N	21° 58' 31.44936" E	13	15	111.586
15	324980.76	2431043.91	85° 18' 17.61588" N	21° 58' 30.88812" E	15	14	103.569
14	325083.75	2431054.76	85° 18' 21.20508" N	21° 58' 30.88092" E	14	16	151.985
16	325235.35	2431043.91	85° 18' 26.49312" N	21° 58' 30.58242" E	16	21	50.17
21	325244.4	2430994.57	85° 18' 26.82756" N	21° 58' 28.98156" E	21	17	15.36

Forest Range Officer
BARBIL

JSW STEEL LIMITED MUMBAI

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LATITUDE	LONGITUDE	Pillar No (From)	Pillar No (To)	
17	325229.06	2430995.31	85° 18' 26.29260" N	21° 58' 29.00028" E	17	F-96	31.065
F-96	325223.81	2430964.69	21° 58' 28.00368" N	85° 18' 26.12160" E	F-96	F-42	71.649
F-42	325153.6	2430950.43	21° 58' 27.51420" N	85° 18' 23.67972" E	F-42	F-44	47.946
F-44	325106.06	2430944.21	21° 58'27.29460" N	85° 18' 22.02480" E	F-44	F-45	363.34
F-45	324749.05	2430876.67	21° 58' 24.97044" N	85° 18' 09.60768" E	F-45	F-46	197.469
F-46	324796.15	2430684.9	21° 58' 18.75288" N	85° 18' 11.32344" E	F-46	F-93	49.92
F-93	324746.23	2430685.29	21° 58' 18.74748" N	85° 18' 09.58320" E	F-93	F-47	2.328
F-47	324746.43	2430682.97	21° 58' 18.67224" N	85° 18' 09.59112" E	F-47	F-92	300.669
F-92	324739.25	2430382.39	21° 58' 08.89788" N	85° 18' 09.45720" E	F-92	F-49	418.878
F-49	324320.38	2430381.04	21° 58' 08.70276" N	85° 17' 54.85848" E	F-49	F-90	47.783
F-90	324276.19	2430399.22	21° 58' 09.27768" N	85° 17' 53.31120" E	F-90	F-91	25.991
F-91	324281.34	2430424.69	21° 58' 10.10784" N	85° 17' 53.48076" E	F-91	18	40.602
18	324275.56	2430464.88	85° 17' 53.26404" N	21° 58' 11.41212" E	18	19	94.881
19	324305.73	2430554.84	85° 17' 54.28032" N	21° 58' 14.34756" E	19	20	129.449
20	324338.33	2430680.12	85° 17' 55.36788" N	21° 58' 18.43212" E	20	F-55	256.379
F-55	324594.65	2430685.61	21° 58' 18.70356" N	85° 18' 04.25984" E	F-55	F-34	344.629
PATCH-5							
F-59	326427.17	2429567.86	21° 57'46.27408" N	85° 19' 08.56092" E	F-59	F-100	23.004
F-100	326445.62	2429581.6	21° 57' 43.47578" N	85° 19' 09.23700" E	F-100	26	57.262
26	326407.84	2429624.64	85° 19' 07.88664" N	21° 57' 44.86104" E	26	F-60	48.632
F-60	326453.53	2429641.31	21° 57' 45.41976" N	85° 19' 09.49008" E	F-60	27	68.266
27	326487.51	2429582.1	85° 19' 10.69716" N	21° 57' 43.50672" E	27	F-101	262.433
F-101	326626.28	2429359.36	21° 57' 36.31500" N	85° 19' 15.61836" E	F-101	F-63	12.052
F-63	326619.92	2429349.13	21° 57' 35.97984" N	85° 19' 15.40056" E	F-63	28	55.833
28	326600.93	2429296.62	85° 19' 14.75904" N	21° 57' 34.26624" E	28	F-65	15.629
F-65	326585.8	2429300.54	21° 57' 34.38828" N	85° 19' 14.23020" E	F-65	29	37.982
29	326574.03	2429264.43	85° 19' 13.83384" N	21° 57' 33.21000" E	29	30	12.796
30	326574.47	2429251.64	85° 19' 13.85400" N	21° 57' 32.79456" E	30	31	37.748
31	326566.36	2429214.78	85° 19' 13.58508" N	21° 57' 31.59288" E	31	32	22.998
32	326587.88	2429206.66	85° 19' 14.33820" N	21° 57' 31.33692" E	32	33	7.599
33	326590.7	2429213.72	85° 19' 14.43396" N	21° 57' 31.56732" E	33	34	18.307
34	326607.28	2429205.96	85° 19' 15.01464" N	21° 57' 31.32108" E	34	35	9.602
35	326612.93	2429213.72	85° 19' 15.20868" N	21° 57' 31.57524" E	35	36	13.087
36	326625.98	2429214.78	85° 19' 15.66300" N	21° 57' 31.61448" E	36	37	60.334
37	326686.24	2429217.73	85° 19' 17.76216" N	21° 57' 31.73184" E	37	38	62.525
38	326693.79	2429155.66	85° 19' 18.04908" N	21° 57' 29.71656" E	38	39	34.293
39	326695.87	2429121.43	85° 19' 18.13476" N	21° 57' 28.60452" E	39	40	36.613
40	326732.48	2429122.19	85° 19' 19.41024" N	21° 57' 28.64196" E	40	41	55.465
41	326715.85	2429069.27	85° 19' 18.85260" N	21° 57' 26.91576" E	41	F-102	19.439
F-102	326715.1	2429049.85	21° 57' 26.28396" N	85° 19' 18.83244" E	F-102	F-81	128.708
F-81	326595.51	2429097.43	21° 57' 27.78840" N	85° 19' 14.64636" E	F-81	F-82	161.971
F-82	326436.41	2429127.79	21° 57' 28.71864" N	85° 19' 09.08976" E	F-82	F-83	127.494
F-83	326356.25	2429226.93	21° 57' 31.91328" N	85° 19' 06.25800" E	F-83	F-84	97.413
F-84	326272.83	2429277.22	21° 57' 33.51852" N	85° 19' 03.33120" E	F-84	F-103	6.271
F-103	326267.47	2429280.48	21° 57' 33.62256" N	85° 19' 03.14328" E	F-103	F-85	180.099
F-85	326186.35	2429119.68	21° 57' 28.36584" N	85° 19' 00.37776" E	F-85	F-86	19.229
F-86	326180.78	2429101.28	21° 57' 27.76536" N	85° 19' 00.19092" E	F-86	F-104	0.519

Forest Range Office
BARBIL

JSW STEEL LIMITED MUMBAI

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LATITUDE	LONGITUDE	Pillar No (From)	Pillar No (To)	
F-104	326181.1	2429100.87	21° 57' 27.75240" N	85° 19' 00.20208" E	F-104	F-105	29.223
F-105	326155.97	2429115.78	21° 57' 28.22796" N	85° 18' 59.32044" E	F-105	22	77.995
22	326191.62	2429185.15	85° 19' 00.53616" N	21° 57' 30.49632" E	22	23	16.052
23	326200.49	2429198.53	85° 19' 00.84072" N	21° 57' 30.93408" E	23	24	13.117
24	326203.35	2429211.33	85° 19' 00.93540" N	21° 57' 31.35132" E	24	25	209.166
25	326248.96	2429415.46	85° 19' 02.44668" N	21° 57' 38.00412" E	25	F-99	167.019
F-99	326282.28	2429579.12	21° 57' 43.33680" N	85° 19' 03.54504" E	F-99	F-59	145.331

COUNTERSIGNED

Divisional Forest Officer
Keonjhar Division

JSW STEEL LIMITED MUMBAI

24/08/23

Forest Range Officer
BARBIL

Co-ordinates of Safety Zone Pillar & its distance from Pillar to Pillar in respect of Nuagaon Iron ore Mines of M/s JSW Steel Ltd.							
Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
SZ1	321221.842	2431275.618	21° 58' 36.656" N	85° 16' 6.511" E	SZ1	SZ2	52.753
SZ2	321274.499	2431272.435	21° 58' 36.572" N	85° 16' 8.348" E	SZ2	SZ3	124.654
SZ3	321399.149	2431273.429	21° 58' 36.650" N	85° 16' 12.692" E	SZ3	SZ4	36.586
SZ4	321435.73	2431274.037	21° 58' 36.683" N	85° 16' 13.967" E	SZ4	SZ5	33.090
SZ5	321468.82	2431274.176	21° 58' 36.700" N	85° 16' 15.120" E	SZ5	SZ6	113.027
SZ6	321581.826	2431271.999	21° 58' 36.670" N	85° 16' 19.060" E	SZ6	SZ7	231.262
SZ7	321813.042	2431267.389	21° 58' 36.605" N	85° 16' 27.121" E	SZ7	SZ8	45.072
SZ8	321858.107	2431266.529	21° 58' 36.594" N	85° 16' 28.692" E	SZ8	SZ9	198.167
SZ9	322056.235	2431262.62	21° 58' 36.539" N	85° 16' 35.599" E	SZ9	SZ10	96.201
SZ10	322152.424	2431261.095	21° 58' 36.525" N	85° 16' 38.953" E	SZ10	SZ11	360.365
SZ11	322485.709	2431398.15	21° 58' 41.102" N	85° 16' 50.516" E	SZ11	SZ12	169.853
SZ12	322643.647	2431460.646	21° 58' 43.192" N	85° 16' 55.996" E	SZ12	SZ13	161.991
SZ13	322791.895	2431525.94	21° 58' 45.369" N	85° 17' 1.138" E	SZ13	SZ14	197.314
SZ14	322710.878	2431705.854	21° 58' 51.188" N	85° 16' 58.244" E	SZ14	SZ15	92.107
SZ15	322671.373	2431789.059	21° 58' 53.879" N	85° 16' 56.834" E	SZ15	SZ16	305.871
SZ16	322551.152	2432070.313	21° 59' 2.978" N	85° 16' 52.533" E	SZ16	SZ17	226.681
SZ17	322460.26	2432277.974	21° 59' 9.696" N	85° 16' 49.284" E	SZ17	SZ18	315.836
SZ18	322595.794	2432563.251	21° 59' 19.020" N	85° 16' 53.897" E	SZ18	SZ19	120.602
SZ19	322649.547	2432671.211	21° 59' 22.549" N	85° 16' 55.728" E	SZ19	SZ20	284.038
SZ20	322908.533	2432554.576	21° 59' 18.852" N	85° 17' 4.801" E	SZ20	SZ21	385.014
SZ21	323293.533	2432557.975	21° 59' 19.103" N	85° 17' 18.221" E	SZ21	SZ22	209.421
SZ22	323426.852	2432396.472	21° 59' 13.901" N	85° 17' 22.931" E	SZ22	SZ23	271.825
SZ23	323575.843	2432169.116	21° 59' 6.563" N	85° 17' 28.213" E	SZ23	SZ24	181.362
SZ24	323688.379	2432026.892	21° 59' 1.981" N	85° 17' 32.191" E	SZ24	SZ25	270.239
SZ25	323834.281	2431799.424	21° 58' 54.639" N	85° 17' 37.365" E	SZ25	SZ26	337.288
SZ26	323956.634	2431485.111	21° 58' 44.465" N	85° 17' 41.752" E	SZ26	SZ27	310.199
SZ27	323698.211	2431313.528	21° 58' 38.793" N	85° 17' 32.811" E	SZ27	SZ28	307.833
SZ28	323426.508	2431168.826	21° 58' 33.990" N	85° 17' 23.397" E	SZ28	SZ29	311.747
SZ29	323151.375	2431022.239	21° 58' 29.124" N	85° 17' 13.864" E	SZ29	SZ30	306.343
SZ30	322881.011	2430878.194	21° 58' 24.343" N	85° 17' 4.497" E	SZ30	SZ31	334.595
SZ31	323058.951	2430594.837	21° 58' 15.196" N	85° 17' 10.810" E	SZ31	SZ32	299.369
SZ32	323290.867	2430784.143	21° 58' 21.435" N	85° 17' 18.819" E	SZ32	SZ33	228.689
SZ33	323504.657	2430702.946	21° 58' 18.872" N	85° 17' 26.302" E	SZ33	SZ34	111.671
SZ34	323608.904	2430662.91	21° 58' 17.609" N	85° 17' 29.951" E	SZ34	SZ35	124.990
SZ35	323725.548	2430618.002	21° 58' 16.191" N	85° 17' 34.034" E	SZ35	SZ36	282.580

Forest Range Officer
BARBIL

JSW STEEL LIMITED MUMBAI

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
SZ36	323988.199	2430513.762	21° 58' 12.897" N	85° 17' 43.229" E	SZ36	SZ37	219.010
SZ37	324191.416	2430432.103	21° 58' 10.316" N	85° 17' 50.344" E	SZ37	SZ38	121.164
SZ38	324304.046	2430387.436	21° 58' 8.905" N	85° 17' 54.287" E	SZ38	SZ39	127.914
SZ39	324422.752	2430339.783	21° 58' 7.398" N	85° 17' 58.442" E	SZ39	SZ40	71.268
SZ40	324488.147	2430311.453	21° 58' 6.501" N	85° 18' 0.733" E	SZ40	SZ41	86.389
SZ41	324451.016	2430233.451	21° 58' 3.952" N	85° 17' 59.469" E	SZ41	SZ42	238.392
SZ42	324336.584	2430024.319	21° 57' 57.111" N	85° 17' 55.561" E	SZ42	SZ43	145.243
SZ43	324271.015	2429894.718	21° 57' 52.874" N	85° 17' 53.326" E	SZ43	SZ44	222.119
SZ44	324166.531	2429698.708	21° 57' 46.464" N	85° 17' 49.761" E	SZ44	SZ45	117.146
SZ45	324111.657	2429595.209	21° 57' 43.080" N	85° 17' 47.888" E	SZ45	SZ46	108.477
SZ46	324061.697	2429498.922	21° 57' 39.931" N	85° 17' 46.184" E	SZ46	SZ47	152.732
SZ47	323989.377	2429364.397	21° 57' 35.532" N	85° 17' 43.716" E	SZ47	SZ48	193.639
SZ48	323898.742	2429193.279	21° 57' 29.936" N	85° 17' 40.624" E	SZ48	SZ49	162.379
SZ49	323822.942	2429049.678	21° 57' 25.240" N	85° 17' 38.038" E	SZ49	SZ50	111.365
SZ50	323770.3	2428951.54	21° 57' 22.030" N	85° 17' 36.241" E	SZ50	SZ51	109.975
SZ51	323717.961	2428854.818	21° 57' 18.867" N	85° 17' 34.455" E	SZ51	SZ52	32.785
SZ52	323704.125	2428825.095	21° 57' 17.896" N	85° 17' 33.984" E	SZ52	SZ53	165.754
SZ53	323626.345	2428678.723	21° 57' 13.109" N	85° 17' 31.330" E	SZ53	SZ54	70.519
SZ54	323695.937	2428667.324	21° 57' 12.764" N	85° 17' 33.760" E	SZ54	SZ55	81.618
SZ55	323774.462	2428645.067	21° 57' 12.069" N	85° 17' 36.505" E	SZ55	SZ56	95.519
SZ56	323868.837	2428630.327	21° 57' 11.623" N	85° 17' 39.800" E	SZ56	SZ57	273.631
SZ57	324142.15	2428643.525	21° 57' 12.151" N	85° 17' 49.320" E	SZ57	SZ58	131.263
SZ58	324270.75	2428617.223	21° 57' 11.343" N	85° 17' 53.812" E	SZ58	SZ59	220.829
SZ59	324463.631	2428724.752	21° 57' 14.908" N	85° 18' 0.492" E	SZ59	SZ60	82.485
SZ60	324526.332	2428778.346	21° 57' 16.673" N	85° 18' 2.656" E	SZ60	SZ61	94.817
SZ61	324594.215	2428844.544	21° 57' 18.850" N	85° 18' 4.997" E	SZ61	SZ62	167.320
SZ62	324724.652	2428949.341	21° 57' 22.304" N	85° 18' 9.502" E	SZ62	SZ63	209.672
SZ63	324932.843	2428974.216	21° 57' 23.187" N	85° 18' 16.748" E	SZ63	SZ64	57.063
SZ64	324988.7	2428985.883	21° 57' 23.587" N	85° 18' 18.690" E	SZ64	SZ65	107.244
SZ65	325071.592	2429053.928	21° 57' 25.829" N	85° 18' 21.553" E	SZ65	SZ66	169.591
SZ66	325216.595	2429141.879	21° 57' 28.740" N	85° 18' 26.572" E	SZ66	SZ67	99.753
SZ67	325296.211	2429201.977	21° 57' 30.723" N	85° 18' 29.324" E	SZ67	SZ68	93.285
SZ68	325358.816	2429271.134	21° 57' 32.993" N	85° 18' 31.479" E	SZ68	SZ69	231.809
SZ69	325590.587	2429275.306	21° 57' 33.212" N	85° 18' 39.555" E	SZ69	SZ70	166.414
SZ70	325756.882	2429269.014	21° 57' 33.067" N	85° 18' 45.353" E	SZ70	SZ71	139.698
SZ71	325895.977	2429256.046	21° 57' 32.695" N	85° 18' 50.206" E	SZ71	SZ72	131.692

Forest Range Office
BARBIL

JSW STEEL LIMITED MUMBAI

	Co-ordinates				Distance		
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	Distance (metre)
SZ72	326016.13	2429202.139	21° 57' 30.986" N	85° 18' 54.414" E	SZ72	SZ73	155.274
SZ73	326147.67	2429119.632	21° 57' 28.350" N	85° 18' 59.030" E	SZ73	SZ74	38.269
SZ74	326181.049	2429100.914	21° 57' 27.754" N	85° 19' 0.200" E	SZ74	SZ75	22.266
SZ75	326187.146	2429122.329	21° 57' 28.452" N	85° 19' 0.405" E	SZ75	SZ76	69.916
SZ76	326219.956	2429184.069	21° 57' 30.471" N	85° 19' 1.524" E	SZ76	SZ77	105.096
SZ77	326266.825	2429278.135	21° 57' 33.546" N	85° 19' 3.122" E	SZ77	SZ78	101.628
SZ78	326356.155	2429229.675	21° 57' 32.002" N	85° 19' 6.254" E	SZ78	SZ79	129.313
SZ79	326436.535	2429128.379	21° 57' 28.738" N	85° 19' 9.094" E	SZ79	SZ80	162.047
SZ80	326595.649	2429097.692	21° 57' 27.797" N	85° 19' 14.651" E	SZ80	SZ81	142.814
SZ81	326728.562	2429045.441	21° 57' 26.146" N	85° 19' 19.303" E	SZ81	SZ82	88.624
SZ82	326744.254	2429132.665	21° 57' 28.987" N	85° 19' 19.817" E	SZ82	SZ83	206.776
SZ83	326883.842	2429285.215	21° 57' 33.996" N	85° 19' 24.623" E	SZ83	SZ84	229.655
SZ84	326790.432	2429495.015	21° 57' 40.784" N	85° 19' 21.288" E	SZ84	SZ85	162.730
SZ85	326758.628	2429654.607	21° 57' 45.961" N	85° 19' 20.118" E	SZ85	SZ86	284.889
SZ86	326575.562	2429872.892	21° 57' 52.992" N	85° 19' 13.655" E	SZ86	SZ87	129.584
SZ87	326472.51	2429951.457	21° 57' 55.509" N	85° 19' 10.033" E	SZ87	SZ88	339.832
SZ88	326145.899	2430045.327	21° 57' 58.445" N	85° 18' 58.613" E	SZ88	SZ89	194.532
SZ89	325966.011	2430119.374	21° 58' 0.788" N	85° 18' 52.315" E	SZ89	SZ90	183.206
SZ90	325998.737	2429939.115	21° 57' 54.939" N	85° 18' 53.525" E	SZ90	SZ91	190.279
SZ91	326027.264	2429750.986	21° 57' 48.833" N	85° 18' 54.591" E	SZ91	SZ92	309.184
SZ92	325720.413	2429713.075	21° 57' 47.491" N	85° 18' 43.911" E	SZ92	SZ93	304.066
SZ93	325418.443	2429677.435	21° 57' 46.224" N	85° 18' 33.401" E	SZ93	SZ94	159.027
SZ94	325260.505	2429658.851	21° 57' 45.563" N	85° 18' 27.903" E	SZ94	SZ95	170.483
SZ95	325091.078	2429639.908	21° 57' 44.886" N	85° 18' 22.006" E	SZ95	SZ96	366.201
SZ96	324990.174	2429991.933	21° 57' 56.294" N	85° 18' 18.353" E	SZ96	SZ97	273.040
SZ97	324916.53	2430254.854	21° 58' 4.815" N	85° 18' 15.685" E	SZ97	SZ98	319.666
SZ98	324830.519	2430562.731	21° 58' 14.794" N	85° 18' 12.568" E	SZ98	SZ99	321.728
SZ99	324750.144	2430874.258	21° 58' 24.892" N	85° 18' 9.647" E	SZ99	SZ100	277.999
SZ100	325022.792	2430928.545	21° 58' 26.755" N	85° 18' 19.129" E	SZ100	SZ101	228.144
SZ101	325246.868	2430971.435	21° 58' 28.230" N	85° 18' 26.922" E	SZ101	SZ102	229.645
SZ102	325197.796	2431195.776	21° 58' 35.506" N	85° 18' 25.126" E	SZ102	SZ103	88.160
SZ103	325178.894	2431281.886	21° 58' 38.299" N	85° 18' 24.434" E	SZ103	SZ104	67.300
SZ104	325164.349	2431347.595	21° 58' 40.430" N	85° 18' 23.901" E	SZ104	SZ105	225.052
SZ105	325116.437	2431567.488	21° 58' 47.561" N	85° 18' 22.146" E	SZ105	SZ106	82.986
SZ106	325098.736	2431648.564	21° 58' 50.191" N	85° 18' 21.498" E	SZ106	SZ107	93.720
SZ107	325078.035	2431739.969	21° 58' 53.155" N	85° 18' 20.741" E	SZ107	SZ108	263.087

Forest Range Office
BARBIL

JSW STEEL LIMITED * MUMBAI *

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
SZ108	325022.38	2431997.102	21° 59' 1.494" N	85° 18' 18.702" E	SZ108	SZ109	94.243
SZ109	325001.921	2432089.097	21° 59' 4.478" N	85° 18' 17.953" E	SZ109	SZ110	180.030
SZ110	324963.97	2432265.082	21° 59' 10.185" N	85° 18' 16.563" E	SZ110	SZ111	101.846
SZ111	324942.171	2432364.568	21° 59' 13.412" N	85° 18' 15.764" E	SZ111	SZ112	66.159
SZ112	324927.951	2432429.181	21° 59' 15.507" N	85° 18' 15.244" E	SZ112	SZ113	46.188
SZ113	324917.938	2432474.271	21° 59' 16.970" N	85° 18' 14.877" E	SZ113	SZ114	40.880
SZ114	324909.137	2432514.192	21° 59' 18.264" N	85° 18' 14.555" E	SZ114	SZ115	147.107
SZ115	324880.313	2432658.448	21° 59' 22.944" N	85° 18' 13.494" E	SZ115	SZ116	100.304
SZ116	324780.111	2432653.949	21° 59' 22.761" N	85° 18' 10.003" E	SZ116	SZ117	220.940
SZ117	324559.489	2432642.102	21° 59' 22.296" N	85° 18' 2.317" E	SZ117	SZ118	192.586
SZ118	324366.936	2432645.708	21° 59' 22.344" N	85° 17' 55.604" E	SZ118	SZ119	101.316
SZ119	324265.622	2432645.026	21° 59' 22.285" N	85° 17' 52.072" E	SZ119	SZ120	64.702
SZ120	324200.932	2432646.251	21° 59' 22.302" N	85° 17' 49.817" E	SZ120	SZ121	143.642
SZ121	324057.295	2432647.342	21° 59' 22.285" N	85° 17' 44.809" E	SZ121	SZ122	304.599
SZ122	323752.737	2432642.319	21° 59' 22.012" N	85° 17' 34.195" E	SZ122	SZ123	110.233
SZ123	323642.603	2432646.98	21° 59' 22.123" N	85° 17' 30.354" E	SZ123	SZ124	105.171
SZ124	323537.529	2432642.468	21° 59' 21.938" N	85° 17' 26.693" E	SZ124	SZ125	127.986
SZ125	323409.551	2432643.889	21° 59' 21.938" N	85° 17' 22.231" E	SZ125	SZ126	218.360
SZ126	323191.197	2432645.571	21° 59' 21.913" N	85° 17' 14.619" E	SZ126	SZ127	302.680
SZ127	322888.518	2432644.621	21° 59' 21.772" N	85° 17' 4.069" E	SZ127	SZ128	49.644
SZ128	322871.459	2432691.242	21° 59' 23.281" N	85° 17' 3.456" E	SZ128	SZ129	120.681
SZ129	322836.503	2432806.75	21° 59' 27.024" N	85° 17' 2.192" E	SZ129	SZ130	163.129
SZ130	322834.731	2432969.869	21° 59' 32.326" N	85° 17' 2.066" E	SZ130	SZ131	96.042
SZ131	322753.521	2433021.143	21° 59' 33.963" N	85° 16' 59.215" E	SZ131	SZ132	230.176
SZ132	322529.379	2432968.787	21° 59' 32.180" N	85° 16' 51.423" E	SZ132	SZ133	109.477
SZ133	322437.12	2433027.722	21° 59' 34.062" N	85° 16' 48.183" E	SZ133	SZ134	41.597
SZ134	322396.006	2433021.397	21° 59' 33.841" N	85° 16' 46.753" E	SZ134	SZ135	183.667
SZ135	322212.496	2433028.989	21° 59' 34.021" N	85° 16' 40.353" E	SZ135	SZ136	147.010
SZ136	322079.869	2432965.569	21° 59' 31.910" N	85° 16' 35.754" E	SZ136	SZ137	37.774
SZ137	322058.32	2432934.545	21° 59' 30.894" N	85° 16' 35.015" E	SZ137	SZ138	87.728
SZ138	322023.603	2432853.978	21° 59' 28.262" N	85° 16' 33.837" E	SZ138	SZ139	84.833
SZ139	322035.073	2432769.924	21° 59' 25.534" N	85° 16' 34.270" E	SZ139	SZ140	85.894
SZ140	322030.811	2432684.136	21° 59' 22.743" N	85° 16' 34.155" E	SZ140	SZ141	92.805
SZ141	321938.007	2432684.37	21° 59' 22.717" N	85° 16' 30.920" E	SZ141	SZ142	94.827
SZ142	321890.918	2432602.061	21° 59' 20.024" N	85° 16' 29.311" E	SZ142	SZ143	195.499
SZ143	321822.199	2432419.038	21° 59' 14.048" N	85° 16' 26.987" E	SZ143	SZ144	243.545

Forest Range Officer
BARBIL

Mrutyunjaya Mahapatra

JSW STEEL LIMITED * MUMBAI *

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
SZ144	321735.664	2432191.385	21° 59' 6.616" N	85° 16' 24.060" E	SZ144	SZ145	128.552
SZ145	321617.599	2432140.531	21° 59' 4.919" N	85° 16' 19.965" E	SZ145	SZ146	52.861
SZ146	321591.151	2432094.762	21° 59' 3.422" N	85° 16' 19.061" E	SZ146	SZ147	62.369
SZ147	321530.135	2432107.684	21° 59' 3.819" N	85° 16' 16.929" E	SZ147	SZ148	70.576
SZ148	321461.84	2432089.889	21° 59' 3.216" N	85° 16' 14.556" E	SZ148	SZ149	50.953
SZ149	321469.863	2432039.572	21° 59' 1.583" N	85° 16' 14.855" E	SZ149	SZ150	66.680
SZ150	321445.233	2431977.608	21° 58' 59.559" N	85° 16' 14.021" E	SZ150	SZ151	87.048
SZ151	321435.374	2431891.12	21° 58' 56.744" N	85° 16' 13.711" E	SZ151	SZ152	65.794
SZ152	321422.293	2431826.64	21° 58' 54.643" N	85° 16' 13.281" E	SZ152	SZ153	56.164
SZ153	321411.697	2431771.485	21° 58' 52.846" N	85° 16' 12.933" E	SZ153	SZ154	74.904
SZ154	321406.015	2431696.797	21° 58' 50.416" N	85° 16' 12.765" E	SZ154	SZ155	40.759
SZ155	321390.941	2431658.928	21° 58' 49.179" N	85° 16' 12.254" E	SZ155	SZ156	86.948
SZ156	321363.973	2431576.268	21° 58' 46.482" N	85° 16' 11.347" E	SZ156	SZ157	55.623
SZ157	321353.606	2431521.62	21° 58' 44.702" N	85° 16' 11.007" E	SZ157	SZ158	124.472
SZ158	321309.189	2431405.343	21° 58' 40.905" N	85° 16' 9.505" E	SZ158	SZ159	36.242
SZ159	321289.616	2431374.841	21° 58' 39.906" N	85° 16' 8.834" E	SZ159	SZ160	44.540
SZ160	321264.084	2431338.346	21° 58' 38.711" N	85° 16' 7.959" E	SZ160	SZ1	75.625

COUNTERSIGNED

Divisional Forest Officer
Keonjhar Division

JSW STEEL LIMITED MUMBAI

11/08/25

Forest Range Officer
BARBIL

Co-ordinates of ML Pillar & its distance from Pillar to Pillar in respect of Nuagaon Iron ore Mines of M/s JSW Steel Ltd.							
	Co-ordinates				Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
MLP1	321208.292	2431268.924	85°16'06.04164"	21°58'36.43320"	MLP1	MLP2	66.131
MLP2	321274.302	2431264.933	85°16'08.34384"	21°58'36.32772"	MLP2	MLP3	124.943
MLP3	321399.241	2431265.93	85°16'12.69840"	21°58'36.40620"	MLP3	MLP4	36.572
MLP4	321435.808	2431266.538	85°16'13.97280"	21°58'36.43932"	MLP4	MLP5	32.867
MLP5	321468.675	2431266.677	85°16'15.11832"	21°58'36.45588"	MLP5	MLP6	113.025
MLP6	321561.679	2431264.5	85°16'19.05780"	21°58'36.42672"	MLP6	MLP7	231.263
MLP7	321812.896	2431259.89	85°16'27.11856"	21°58'36.36156"	MLP7	MLP8	45.073
MLP8	321857.961	2431259.03	85°16'28.68960"	21°58'36.35004"	MLP8	MLP9	198.180
MLP9	322056.102	2431255.121	85°16'35.59764"	21°58'36.29568"	MLP9	MLP10	97.759
MLP10	322153.849	2431253.571	85°16'39.00504"	21°58'36.28092"	MLP10	MLP11	361.859
MLP11	322488.515	2431391.195	85°16'50.61612"	21°58'40.87740"	MLP11	MLP12	169.946
MLP12	322646.539	2431453.725	85°16'56.09964"	21°58'42.96792"	MLP12	MLP13	169.695
MLP13	322801.839	2431522.124	85°17'01.48596"	21°58'45.24816"	MLP13	MLP14	204.951
MLP14	322717.686	2431709.002	85°16'58.47960"	21°58'51.29292"	MLP14	MLP15	92.184
MLP15	322678.148	2431792.276	85°16'57.06912"	21°58'53.98572"	MLP15	MLP16	305.624
MLP16	322558.029	2432073.305	85°16'52.77216"	21°59'03.07824"	MLP16	MLP17	223.021
MLP17	322467.722	2432277.224	85°16'49.54440"	21°59'09.67452"	MLP17	MLP18	313.353
MLP18	322602.586	2432560.07	85°16'54.13440"	21°59'18.91896"	MLP18	MLP19	114.112
MLP19	322650.262	2432663.745	85°16'55.75584"	21°59'22.30692"	MLP19	MLP20	281.963
MLP20	322906.947	2432547.058	85°17'04.74900"	21°59'18.60684"	MLP20	MLP21	383.437
MLP21	323290.362	2432551.178	85°17'18.11256"	21°59'18.88044"	MLP21	MLP22	205.376
MLP22	323420.579	2432392.361	85°17'22.71372"	21°59'13.76484"	MLP22	MLP23	272.161
MLP23	323569.754	2432164.724	85°17'28.00212"	21°59'06.41832"	MLP23	MLP24	180.954
MLP24	323682.066	2432022.843	85°17'31.97220"	21°59'01.84668"	MLP24	MLP25	270.239
MLP25	323827.968	2431795.375	85°17'37.14648"	21°58'54.50448"	MLP25	MLP26	332.144
MLP26	323949.206	2431486.149	85°17'41.49276"	21°58'44.49576"	MLP26	MLP27	303.870
MLP27	323694.685	2431320.148	85°17'32.68572"	21°58'39.00684"	MLP27	MLP28	307.834
MLP28	323422.982	2431175.445	85°17'23.27172"	21°58'34.20372"	MLP28	MLP29	312.057
MLP29	323147.327	2431029.178	85°17'13.72056"	21°58'29.34840"	MLP29	MLP30	314.087
MLP30	322870.376	2430881.026	85°17'04.12548"	21°58'24.43116"	MLP30	MLP31	351.170
MLP31	323057.131	2430583.633	85°17'10.75056"	21°58'14.83104"	MLP31	MLP32	304.141
MLP32	323292.098	2430776.745	85°17'18.86496"	21°58'21.19440"	MLP32	MLP33	224.884
MLP33	323501.965	2430695.946	85°17'26.21112"	21°58'18.64380"	MLP33	MLP34	111.671
MLP34	323606.212	2430655.91	85°17'29.86008"	21°58'17.38020"	MLP34	MLP35	124.948

Forest Range Officer
BARBIL

JSW STEEL LIMITED
MUMBAI

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
MLP35	323722.817	2430611.017	85°17'33.94176"	21°58'15.96288"	MLP35	MLP36	282.525
MLP36	323985.417	2430506.797	85°17'43.13508"	21°58'12.66996"	MLP36	MLP37	219.011
MLP37	324188.635	2430425.137	85°17'50.24940"	21°58'10.08876"	MLP37	MLP38	121.165
MLP38	324301.266	2430380.47	85°17'54.19248"	21°58'08.67720"	MLP38	MLP39	127.881
MLP39	324419.942	2430332.829	85°17'58.34724"	21°58'07.17132"	MLP39	MLP40	66.590
MLP40	324481.627	2430307.746	85°18'00.50688"	21°58'06.37824"	MLP40	MLP41	79.942
MLP41	324444.407	2430236.997	85°17'59.23680"	21°58'04.06452"	MLP41	MLP42	238.452
MLP42	324329.946	2430027.813	85°17'55.32864"	21°57'57.22272"	MLP42	MLP43	145.284
MLP43	324264.36	2429898.175	85°17'53.09304"	21°57'52.98444"	MLP43	MLP44	222.047
MLP44	324159.909	2429702.229	85°17'49.52868"	21°57'46.57644"	MLP44	MLP45	117.188
MLP45	324105.015	2429598.693	85°17'47.65560"	21°57'43.19064"	MLP45	MLP46	108.455
MLP46	324055.065	2429502.425	85°17'45.95208"	21°57'40.04280"	MLP46	MLP47	152.701
MLP47	323982.76	2429367.928	85°17'43.48428"	21°57'35.64432"	MLP47	MLP48	193.667
MLP48	323892.112	2429196.785	85°17'40.39152"	21°57'30.04740"	MLP48	MLP49	162.360
MLP49	323816.321	2429053.201	85°17'37.80564"	21°57'25.35228"	MLP49	MLP50	111.327
MLP50	323763.697	2428955.097	85°17'36.00996"	21°57'22.14360"	MLP50	MLP51	110.189
MLP51	323711.256	2428858.187	85°17'34.21968"	21°57'18.97416"	MLP51	MLP52	32.615
MLP52	323697.502	2428828.614	85°17'33.75204"	21°57'18.00792"	MLP52	MLP53	176.208
MLP53	323614.817	2428673.011	85°17'30.93072"	21°57'12.91896"	MLP53	MLP54	80.973
MLP54	323694.725	2428659.923	85°17'33.72072"	21°57'12.52260"	MLP54	MLP55	81.220
MLP55	323772.853	2428637.727	85°17'36.45204"	21°57'11.82924"	MLP55	MLP56	96.742
MLP56	323868.436	2428622.799	85°17'39.78888"	21°57'11.37852"	MLP56	MLP57	273.459
MLP57	324141.574	2428636.047	85°17'49.30260"	21°57'11.90808"	MLP57	MLP58	133.108
MLP58	324271.971	2428609.317	85°17'53.85732"	21°57'11.08620"	MLP58	MLP59	224.360
MLP59	324467.936	2428718.565	85°18'00.64440"	21°57'14.70852"	MLP59	MLP60	83.480
MLP60	324531.393	2428772.806	85°18'02.83500"	21°57'16.49484"	MLP60	MLP61	94.356
MLP61	324598.923	2428838.705	85°18'05.16276"	21°57'18.66168"	MLP61	MLP62	165.244
MLP62	324727.559	2428942.427	85°18'09.60588"	21°57'22.07988"	MLP62	MLP63	207.927
MLP63	324934.052	2428966.807	85°18'16.79292"	21°57'22.94676"	MLP63	MLP64	59.235
MLP64	324992.036	2428978.918	85°18'18.80892"	21°57'23.36148"	MLP64	MLP65	109.085
MLP65	325076.351	2429048.131	85°18'21.72060"	21°57'25.64208"	MLP65	MLP66	168.907
MLP66	325220.808	2429135.663	85°18'26.72136"	21°57'28.53972"	MLP66	MLP67	100.880
MLP67	325301.325	2429196.44	85°18'29.50416"	21°57'30.54420"	MLP67	MLP68	90.449
MLP68	325361.371	2429264.083	85°18'31.57092"	21°57'32.76504"	MLP68	MLP69	229.368
MLP69	325590.709	2429267.807	85°18'39.56220"	21°57'32.96844"	MLP69	MLP70	166.008
MLP70	325756.598	2429261.519	85°18'45.34596"	21°57'32.82336"	MLP70	MLP71	136.864

Forest Range Officer
BARBIL

JSW STEEL LIMITED MUMBAI

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
MLP71	325892.907	2429249.203	85°18'50.10120"	21°57'32.47164"	MLP71	MLP72	131.692
MLP72	326013.06	2429195.296	85°18'54.30960"	21°57'30.76236"	MLP72	MLP73	154.422
MLP73	326143.839	2429113.181	85°18'58.89888"	21°57'28.13940"	MLP73	MLP74	48.029
MLP74	326185.731	2429089.69	85°19'00.36768"	21°57'27.39060"	MLP74	MLP75	30.208
MLP75	326193.769	2429118.809	85°19'00.63660"	21°57'28.34028"	MLP75	MLP76	70.101
MLP76	326226.665	2429180.712	85°19'01.75944"	21°57'30.36456"	MLP76	MLP77	99.738
MLP77	326269.08	2429270.982	85°19'03.20304"	21°57'33.31440"	MLP77	MLP78	96.073
MLP78	326352.414	2429223.175	85°19'06.12588"	21°57'31.78980"	MLP78	MLP79	129.312
MLP79	326432.369	2429121.544	85°19'08.95116"	21°57'28.51416"	MLP79	MLP80	164.843
MLP80	326594.229	2429090.328	85°19'14.60424"	21°57'27.55728"	MLP80	MLP81	150.713
MLP81	326734.443	2429035.061	85°19'19.51176"	21°57'25.81020"	MLP81	MLP82	93.804
MLP82	326749.787	2429127.602	85°19'20.01144"	21°57'28.82448"	MLP82	MLP83	211.690
MLP83	326892.692	2429283.777	85°19'24.93228"	21°57'33.95268"	MLP83	MLP84	234.045
MLP84	326797.48	2429497.58	85°19'21.53244"	21°57'40.86936"	MLP84	MLP85	163.510
MLP85	326765.61	2429657.954	85°19'20.36028"	21°57'46.07208"	MLP85	MLP86	287.645
MLP86	326580.772	2429878.351	85°19'13.83420"	21°57'53.17128"	MLP86	MLP87	131.828
MLP87	326475.936	2429958.276	85°19'10.14960"	21°57'55.73232"	MLP87	MLP88	341.242
MLP88	326147.971	2430052.535	85°18'58.68288"	21°57'58.67964"	MLP88	MLP89	207.423
MLP89	325956.181	2430131.534	85°18'51.96816"	21°58'01.17948"	MLP89	MLP90	196.882
MLP90	325991.35	2429937.819	85°18'53.26812"	21°57'54.89424"	MLP90	MLP91	184.010
MLP91	326022.063	2429756.39	85°18'54.40824"	21°57'49.00680"	MLP91	MLP92	304.650
MLP92	325719.532	2429720.523	85°18'43.87788"	21°57'47.73240"	MLP92	MLP93	304.063
MLP93	325417.565	2429684.883	85°18'33.36732"	21°57'46.46556"	MLP93	MLP94	159.036
MLP94	325259.619	2429666.298	85°18'27.86976"	21°57'45.80460"	MLP94	MLP95	166.068
MLP95	325094.741	2429646.453	85°18'22.13100"	21°57'45.10008"	MLP95	MLP96	360.880
MLP96	324997.396	2429993.956	85°18'18.60444"	21°57'56.36268"	MLP96	MLP97	273.037
MLP97	324923.753	2430256.874	85°18'15.93612"	21°58'04.88352"	MLP97	MLP98	319.617
MLP98	324837.755	2430564.704	85°18'12.81996"	21°58'14.86020"	MLP98	MLP99	316.182
MLP99	324756.493	2430870.265	85°18'09.86940"	21°58'24.76488"	MLP99	MLP100	275.418
MLP100	325027.061	2430921.722	85°18'19.28016"	21°58'26.53536"	MLP100	MLP101	232.933
MLP101	325255.84	2430965.516	85°18'27.23760"	21°58'28.04124"	MLP101	MLP102	237.347
MLP102	325205.122	2431197.381	85°18'25.38036"	21°58'35.56092"	MLP102	MLP103	88.169
MLP103	325186.218	2431283.5	85°18'24.68808"	21°58'38.35380"	MLP103	MLP104	67.294
MLP104	325171.674	2431349.204	85°18'24.15600"	21°58'40.48464"	MLP104	MLP105	225.041
MLP105	325123.765	2431569.086	85°18'22.40136"	21°58'47.61588"	MLP105	MLP106	83.017
MLP106	325106.057	2431650.192	85°18'21.75264"	21°58'50.24640"	MLP106	MLP107	93.714

Forest Range Officer
BARBIL

JSW STEEL LIMITED
MUMBAI

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
MLP107	325085.357	2431741.591	85°18'20.99592"	21°58'53.21028"	MLP107	MLP108	263.072
MLP108	325029.706	2431998.709	85°18'18.95688"	21°59'01.54932"	MLP108	MLP109	94.241
MLP109	325009.247	2432090.702	85°18'18.20808"	21°59'04.53264"	MLP109	MLP110	180.018
MLP110	324971.299	2432266.675	85°18'16.81740"	21°59'10.23972"	MLP110	MLP111	101.863
MLP111	324949.496	2432366.177	85°18'16.01892"	21°59'13.46676"	MLP111	MLP112	66.169
MLP112	324935.274	2432430.8	85°18'15.49836"	21°59'15.56268"	MLP112	MLP113	46.189
MLP113	324925.261	2432475.891	85°18'15.13188"	21°59'17.02500"	MLP113	MLP114	40.800
MLP114	324916.476	2432515.734	85°18'14.81004"	21°59'18.31704"	MLP114	MLP115	153.470
MLP115	324886.407	2432666.229	85°18'13.70376"	21°59'23.19864"	MLP115	MLP116	106.773
MLP116	324779.741	2432661.44	85°18'09.98748"	21°59'23.00460"	MLP116	MLP117	220.430
MLP117	324559.629	2432649.601	85°18'02.31912"	21°59'22.54020"	MLP117	MLP118	192.682
MLP118	324366.981	2432653.208	85°17'55.60224"	21°59'22.58808"	MLP118	MLP119	101.411
MLP119	324265.572	2432652.526	85°17'52.06740"	21°59'22.52904"	MLP119	MLP120	64.552
MLP120	324201.032	2432653.75	85°17'49.81740"	21°59'22.54560"	MLP120	MLP121	143.775
MLP121	324057.261	2432654.842	85°17'44.80512"	21°59'22.52904"	MLP121	MLP122	304.249
MLP122	323753.054	2432649.812	85°17'34.20312"	21°59'22.25508"	MLP122	MLP123	110.553
MLP123	323642.6	2432654.487	85°17'30.35076"	21°59'22.36704"	MLP123	MLP124	105.085
MLP124	323537.612	2432649.967	85°17'26.69280"	21°59'22.18200"	MLP124	MLP125	127.999
MLP125	323409.621	2432651.389	85°17'22.23060"	21°59'22.18164"	MLP125	MLP126	218.431
MLP126	323191.196	2432653.071	85°17'14.61624"	21°59'22.15716"	MLP126	MLP127	298.315
MLP127	322892.89	2432650.715	85°17'04.21872"	21°59'21.97176"	MLP127	MLP128	45.227
MLP128	322878.573	2432693.616	85°17'03.70284"	21°59'23.36136"	MLP128	MLP129	120.469
MLP129	322843.682	2432808.922	85°17'02.44140"	21°59'27.09708"	MLP129	MLP130	165.112
MLP130	322842.194	2432974.027	85°17'02.32512"	21°59'32.46396"	MLP130	MLP131	103.278
MLP131	322754.865	2433029.164	85°16'59.25936"	21°59'34.22472"	MLP131	MLP132	230.940
MLP132	322530.067	2432976.255	85°16'51.44376"	21°59'32.42256"	MLP132	MLP133	108.857
MLP133	322438.795	2433035.578	85°16'48.23868"	21°59'34.31796"	MLP133	MLP134	43.002
MLP134	322396.316	2433028.891	85°16'46.76052"	21°59'34.08468"	MLP134	MLP135	185.532
MLP135	322210.943	2433036.56	85°16'40.29564"	21°59'34.26648"	MLP135	MLP136	150.861
MLP136	322074.842	2432971.479	85°16'35.57676"	21°59'32.10072"	MLP136	MLP137	40.513
MLP137	322051.73	2432938.205	85°16'34.78440"	21°59'31.01064"	MLP137	MLP138	90.573
MLP138	322015.888	2432855.026	85°16'33.56760"	21°59'28.29336"	MLP138	MLP139	85.722
MLP139	322027.575	2432770.104	85°16'34.00824"	21°59'25.53684"	MLP139	MLP140	80.556
MLP140	322025.643	2432689.571	85°16'33.97260"	21°59'22.91784"	MLP140	MLP141	91.952
MLP141	321933.723	2432691.985	85°16'30.76752"	21°59'22.96284"	MLP141	MLP142	99.912
MLP142	321884.109	2432605.262	85°16'29.07192"	21°59'20.12532"	MLP142	MLP143	196.089

Forest Range Officer
BARBIL

JSW STEEL LIMITED
MUMBAI

Co-ordinates					Distance		Distance (metre)
PILLAR NO	EASTING	NORTHING	LONGITUDE	LATITUDE	Pillar No (From)	Pillar No (To)	
MLP143	321815.182	2432421.687	85°16'26.74164"	21°59'14.13204"	MLP143	MLP144	242.317
MLP144	321729.176	2432195.147	85°16'23.83284"	21°59'06.73584"	MLP144	MLP145	126.659
MLP145	321612.26	2432146.431	85°16'19.77672"	21°59'05.10900"	MLP145	MLP146	50.929
MLP146	321588.084	2432101.606	85°16'18.95160"	21°59'03.64308"	MLP146	MLP147	59.651
MLP147	321530.053	2432115.413	85°16'16.92336"	21°59'04.07040"	MLP147	MLP148	79.290
MLP148	321453.325	2432095.421	85°16'14.25684"	21°59'03.39252"	MLP148	MLP149	55.775
MLP149	321462.408	2432040.391	85°16'14.59488"	21°59'01.60656"	MLP149	MLP150	65.672
MLP150	321437.896	2431979.465	85°16'13.76472"	21°58'59.61720"	MLP150	MLP151	87.413
MLP151	321428.024	2431892.611	85°16'13.45476"	21°58'56.78976"	MLP151	MLP152	65.832
MLP152	321414.935	2431828.093	85°16'13.02384"	21°58'54.68772"	MLP152	MLP153	56.630
MLP153	321404.251	2431772.48	85°16'12.67356"	21°58'52.87584"	MLP153	MLP154	75.331
MLP154	321398.537	2431697.366	85°16'12.50364"	21°58'50.43180"	MLP154	MLP155	38.729
MLP155	321383.895	2431661.512	85°16'12.00756"	21°58'49.26072"	MLP155	MLP156	87.699
MLP156	321356.694	2431578.138	85°16'11.09244"	21°58'46.54020"	MLP156	MLP157	56.103
MLP157	321346.237	2431523.018	85°16'10.74972"	21°58'44.74452"	MLP157	MLP158	121.618
MLP158	321302.876	2431409.392	85°16'09.28308"	21°58'41.03472"	MLP158	MLP159	35.941
MLP159	321283.471	2431379.14	85°16'08.61852"	21°58'40.04400"	MLP159	MLP160	44.606
MLP160	321257.9	2431342.591	85°16'07.74156"	21°58'38.84628"	MLP160	MLP1	88.813

COUNTERSIGNED

Divisional Forest Officer
Keonjhar Division

JSW STEEL LIMITED MUMBAI

24/08/23

Forest Range Officer
BAHRIL

SAFETY ZONE PILLARS

Forest Range Officer
BARBIL

JSW STEEL LIMITED MUMBAI

M.L PILLARS

Forest Range Officer
BARBIL

JSW STEEL LIMITED
MUMBAI

SCHEME FOR AFFORESTATION OF 1.5 TIMES SAFETY ZONE OVER 15.00 ha OF DEGRADED FOREST LAND IDENTIFIED IN KUNAR DPF UNDER BJP RANGE OF KEONJHAR FOREST DIVISION

IN RESPECT OF

NUAGAON IRON ORE MINES

by

M/s JSW STEEL LIMITED.

in compliance with
condition No. A.8(iv) of Stage-I approval
granted vide letter No. 8-17/2001-FC (vol) dt. 14.03.2022
of MoEF&CC, Govt. of India
for diversion of 63.30 ha of Sabik Kissam Forest land in addition to 371.192 ha of forest land already diverted forest land located within the mining lease hold area of 781.787 ha of Nuagaon Iron Ore Mines
of
M/s JSW Steel Ltd in Barbil Tahasil of District Keonjhar].

CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

The Mines & Minerals (Development & Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015. Govt. of Odisha issued the notice inviting tender dated 06.12.2019 for commencement of auction process to grant the mining lease in respect of Nuagaon Iron Ore Block over an area of 776.969 s per DGPS Survey (767.284 as per RoR). M/s JSW Steel Ltd was declared as the preferred bidder under Rule 9(A)(iii) of Mineral (Auction) Rules, 2015.

The present scheme aims at preparation of a site-specific afforestation of 1.5 times safety zone scheme over 15.00 ha of degraded forest land (9.841 ha X 1.5 times) identified in Kunar DPF under BJP Forest Range of Keonjhar Division prepared at one time cost norm as per Order No-1109 dated 08.11.2021 of the PCCF, Bhubaneswar, Odisha with a maintenance period of ten years regarding Nuagaon Iron Ore Mines of M/s JSW Steel Ltd under AR model @1000 seedlings/ ha x 15.00 ha.

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR AFFORESTATION OF 1.5 TIMES SAFETY ZONE

IDENTIFICATION OF DEGRADED FOREST LAND

II (1)- Details of identified Forest land-

The identified Forest land for Afforestation of 1.5 times safety zone is situated in Kunar DPF of BJP Range in Keonjhar Forest Division.

II (2)- Character of existing vegetation of the identified site for afforestation of 1.5 times safety zone

The prevailing forest growth has been categorized under forest type- open jungle mainly sal in SoI Topo Sheet No. 73G/6 & 73G/7 The vegetation consists of Sal and its scattered associates like Jamu, Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Khair, Sidha, Harida, Bahada and Ainla.

II (3)- Working Plan prescription for the identified site for afforestation of 1.5 times safety zone

The prescribed objectives of management for the identified forest block is depicted hereunder-

1. Regenerate of the degraded forest blocks including the areas once affected by shifting cultivation, by appropriate silvicultural inputs and protection measures with people's participation.
2. Improvement of the micro-climate and micro-edaphic conditions though soil and moisture conservation measures.
3. Encouragement of natural regeneration for increasing the biodiversity in forest crop.
4. Fulfillment of the bonafide needs of the local inhabitants for fuel wood, small timber, fodder and N.T.F.P. to the extent possible depending upon the productivity of the forests to ensure their participation.

II (4)- Suitability of the identified site for afforestation of 1.5 times safety zone

The identified site in Kunar DPF is a degraded patch with existing vegetation of Sal and Sal associates. Gaps are sporadically spread over the forest block. The topography of the area is mainly undulating hilly having good depth of red boulder mixed soil conducive for plantation under AR model @1000 seedling per ha for 15.00 ha. The average maximum temperature is 40^0 to 45^0C and minimum 5^0 to 10^0 C and annual rainfall varies from 1100 mm to 1800 mm. The maximum rainfall is received during the rainy season from July to September. The identified site is situated in village Kunar. The site has been demarcated with 4 feet RCC pillars with erection of durable signboard depicting Scheme, Year, User Agency, Area etc. on it.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

III (1)- GPS COORDINATES AND GPS MAP OF THE AFFORESTATION SITE

The area has been demarcated through GPS survey and GPS survey data showing latitude and longitude of each point and their chainage with bearing is also enclosed in the map prepared thereon (Maps enclosed).

III (2) DECISION SUPPORT SYSTEM- ANALYSIS OF FOREST COVER MAP

The map of the proposed CA land was processed using DSS for analysis of Forest cover over the area. The result obtained are depicted in the DSS Analysis Certificate.

Decision Support System of degraded Forest land identified in Kunar DPF under BJP Range

Name of the site	Area identified for plantation (in ha)	MDF	Non-Forest	Open Forest
Kunar DPF	15.00	0.00	0.00	15.00

CHAPTER- IV

AGENCY RESPONSIBLE FOR AFFORESTATION OF 1.5 TIMES SAFETY ZONE

IV (1)- AGENCY RESPONSIBLE FOR PLACEMENT OF FUNDS

The user agency shall provide funds for raising afforestation of 1.5 times safety zone as per approved scheme.

IV (2)- AGENCY RESPONSIBLE FOR EXECUTION OF AFFORESTATION OF 1.5 TIMES SAFETY ZONE

The Territorial Wing of the Forest Department i.e. Divisional Forest Officer, Keonjhar Division will be assigned with the task for execution of the afforestation of 1.5 times safety zone.

CHAPTER- V

DETAILS OF WORK SCHEDULE PROPOSED FOR AFFORESTATION OF 1.5 TIMES SAFETY ZONE

A. PLANTING PLAN

Planting Plan reflects the species-specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted in the treatment map. A treatment map will invariably be prepared for Species to be planted and treatments to be applied to the different patches shown in the treatment map and planting plan. This plan will be followed when actual planting is carried out.

Species to be planted: -

1. *Sizyzium cumini* (Jamu)
2. *Adina cardifolia* (Kuruma)
3. *Anogeissus latifolia* (Dhaura)
4. *Accacia catechu* (Khair)
5. *Dalbergia sissoo* (Sissoo)
6. *Azadirrachta indica* (Neem)
7. *Gmelina arborea* (Gambar)
8. *Terminalia belerica* (Bahada)
9. *Terminalia chebula* (Harida)
10. *Pongamia pinnata* (Karanja)
11. *Emblica officinalis* (Ainla)
12. *Shorea robusta* (Sal)

B.PRE-PLANTING OPERATION

B(I)-RAISING OF PLANTATION STOCK- NURSERY-

Nursery will be raised @1100 seedlings per ha including seedlings for 10% causality replacement for 15.00 ha.

B(II)- SURVEY, DEMARCATION & PILLAR POSTING, GPS READING WITH MAPPING-

The planting area has been surveyed and demarcated with four feet height RCC pillars at inter visible distance (as per the direction of the Forest Range officer, BJP Range) with GPS coordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A GPS map in the scale of 1:4000 has been prepared along with GPS co-ordinates, forward & backward bearing, pillar to pillar distance and pillar numbers reflected in the map. A sign board has been erected at a conspicuous location with name of the site, scheme, area etc. depicted on it.

B(III)- SITE PREPARATION AND SILVICULTURAL OPERATION INCLUDING CLEARANCE OF WEED, CLIMBER CUTTING, HIGH STUMP CUTTING, SINGLING OF SHOOTS-

The clearing of the site involving removal of invasive weeds, bushes, climbers, high stumps and singling of shoots will be taken up preferably by the end of February and latest by the end of March. Pits of the dimension 45 cm x 45 cm x 45 cm. will be dug @1000 per ha. in the available gaps preferably 2 months before or at least a month before planting of seedlings.

C. PLANTING OPERATION

Planting of seedlings will be taken up in the month of July. The polythene {(size 12 x 10) (300 gauge)} covering of the balls of earth will be carefully removed before planting. Care will be taken to see that the ball of earth is not broken while doing so. The seedling with the ball of earth will then be placed firmly in the pit and buried at such a depth that the root collar is well below the surface of the soil. The soil around the plant will be well compacted with the heal as a final step so that there is a proper bond between the ball and the surrounding soil. The earth close to the collar will be slightly elevated so that rain water does not accumulate very close to the plant.

D. POST PLANTING OPERATION

D(1)-CASUALTY REPLACEMENT

The entire area will be gone over in the same order as plantation was carried out and casualties, if any, will be replaced as soon as the main plantation operation is over.

D(2)-WEEDING AND SOIL WORKING

Regular and efficient weeding will start immediately after sprouting of the stumps is complete or after the seedlings have started throwing up new buds.

D(3)-MANURING AND INSECTICIDE APPLICATION

On degraded sites urban compost or farmyard manure, wherever available, will be added to the soil while refilling the pits. As regards artificial fertilizers, the minerals required and dosage @ 50 grammes of patent mixtures like 'Gromor' or N.P.K. (2:2:1) will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Special Soil Moisture Conservation Measures will be taken up through construction of LBCD structures of dimension 10' x 10' x 5' to the tune of 15 nos. over the entire plantation site and excavation of one no diesel pump set with borewell of size 40mt x 30mt x 3mt in the plantation site.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the plantation from grazing by domestic animals using Bamboo twig Fencing. The total length of such Bamboo twig Fencing for the patch which comes to 2.64 Km. Fire line tracing will be ensured to protect the plantation from fire and watch & ward will be provided as per the approved norm for protecting the plantation from grazing with involvement of Natagotha VSS.

CHAPTER- VI
COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION

Base Cost Norm for AR Plantation @1000 seedlings per ha (18 months old seedlings) @ 311.00/- Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide Notification No. 2433/LC dated 30.04.2022. The one time cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1109 dated 08.11.2021.

ANNEXURE-4

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

WAGE RATE Rs- 311/- PER MANDAY

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
	0th Year (Advance work) Pre-Planting Operation					
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 & removal of debrises)	Nov/Dec	12	3732	0	3732
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311	0	311
5	Alignment and stacking of pits	Feb/Mar	1	311	0	311
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	40	12440	0	12440
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
	Total		57	17727	3600	21327
	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/Jul	7.5	2332.50	5000	7332.50
2	Transportation of 18 months old polythene bag seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedling @ Rs.6/- per Seedling (1100 nos.)	Jul/Aug	0	0	6600	6600
3	Watering polypot seedlings at planting site	Jul/Aug	2	622	0	622
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil perfectely around the planted seedlings.	Jul/Aug	22.5	6997.50	0	6997.50
5	Cost of Fertilizer & Insecticide (a)NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 50kg @ 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	Jul/Aug	0	0	3000	3000
6	Casualty Replacement @ 10% (100 nos.)	Jul/Aug	2.5	777.5	0	777.5
7	1st weeding & Manuring	Aug/Sept	12	3732	0	3732
8	2nd Weeding, Soil working (1mt. diametre around the plants) & Manuring	Oct/Nov	15	4665	0	4665
9	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	Total		76.50	23791.50	14600.00	38391.50
	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	600	600
2	Casualty replacement- 10%	Jul	2.5	777.5	0	777.5
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/-	July/Aug	0	0	2875	2875
4	Weeding (Complete weeding), Manuring & Soil working (1mt. diametre around the plants)	Sep/Oct	15	4665	0	4665
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr-Mar		0	1000	1000
	Total		38.5	11973.5	4475	16448.5

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
	3rd Year Maintenance					
1	Cost of Fertilizer(Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer	July/Aug	0	0	2800	2800
2	Weeding (Complete weeding), Manuring & Soil working (1m. diametre around the plants)	Sep/Oct	15	4665	0	4665
3	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
4	Watch & Ward including watering as per requirement	Apr/Mar	18	5598	0	5598
5	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr/Mar	0	0	1000	1000
	Total		36.0	11196	3800	14996
	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	0	933
2	Watch & Ward including maintenece of vegetative fencing	Apr-Mar	18	5590	0	5598
	Total		21	6531	0	6531
	5th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	6th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, Singling out of multiple shoots	Jan/Mar	3	933.00	0	933.0
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598.0
	Total		24	7464	0	7464.0
	7th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	8th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	9th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
	10th Year Maintenance					
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531

Year wise Abstract of Cost Norm (showing seedling cost separately)

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrial Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	
Sl. No	Year	No. of Mandays	Labour cost (In Rs)	Material Cost(In Rs.)	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST(In Rs)
1	2	3	4	5	6	7	8
1	0th year	57.0	17727.0	3600.0	973.00	0.00	22300.00
2	1st year	76.5	23791.5	14600.0	1918.50	55341.00	95651.00
3	2nd year	38.5	11973.5	4475.0	821.50	5031.00	22301.00
4	3rd year	36.0	11196.0	3800.0	749.00	0.00	15745.00
5	4th year	21.0	6531.0	0.0	326.00	0.00	6857.00
6	5th year	21.0	6531.0	0.0	326.00	0.00	6857.00
7	6th year	24.0	7464.0	0.0	373.00	0.00	7837.00
8	7th year	21.0	6531.0	0.0	326.00	0.00	6857.00
9	8th year	21.0	6531.0	0.0	326.00	0.00	6857.00
10	9th year	21.0	6531.0	0.0	326.00	0.00	6857.00
11	10th year	21.0	6531.0	0.0	326.00	0.00	6857.00
	Total:	358.0	111338.0	26475.0	6791.0	60372.0	204976.0

Note:

1 Priority must be given to the indigenous local species available nearby to the site of plantation.
2 10 % indigenous fruit bearing trees must be preferred to Plantation.
3 Site specific Soil conservation work like I.B.C.D, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up
4 Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo twigs fencing may be prefered
5 Watering facilites for procurement of water & watering may be adopted as per the availability of water.
6 The Cost Norm of various items can be changed with the approval of the concerned RCCFs keeping the overall cost norm fixed for each Financial Year

A PCCF (Forest Diversion & NO, FC Act)

Matrix for AR-1000 Plants / Ha

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

In Rupees

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	95651	22301	15745	6857	6857	7837	6857	6857	6857	6857											
1	2021-22	22300	100434	24585	18226	8335	8751	10502	9648	10131	10637	11169											234718
2	2022-23		23415	105456	25814	19137	8752	9189	11027	10130	10638	11169	11727										246454
3	2023-24			24586	110729	27105	20094	9190	9648	11578	10637	11170	11727	12313									258777
4	2024-25				25815	116265	28460	21099	9650	10130	12167	11169	11729	12313	12929								271716
5	2025-26					27105	122078	29883	22154	10133	10637	12765	11727	12315	12929	13575							285302
6	2026-27						28461	128182	31377	23262	10640	11169	13403	12313	12931	13575	14254						299567
7	2027-28							29884	134591	32946	24425	11172	11727	14073	12929	13578	14254	14967					314546
8	2028-29								31378	141321	34593	25646	11731	12313	14777	13575	14257	14967	15715				330273
9	2029-30									32947	148387	36373	26928	12313	12929	15516	14254	14970	15715	16501			346788
10	2030-31										34594	155806	38139	28274	12934	13575	16292	14967	15719	16501	17326		364127

APCCF (Forest Diversion & NO, FC Act)

Cost Norms for Creation of Compensatory Afforestation with Stabilization of Soil Moisture Conservation (SMC)

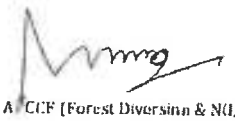
Annexure-11

Cost Norms for creation of Compensatory Afforestation with Stabilization of Soil & Conservation of Moisture (1000			
WAGE RATE Rs- 311/- PER DAY			
Sl.No	Item of Works	Preferable Period of Execution	Total Cost
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 requirment on I.S	Apr/Sept.	20,215
2nd Year			
3	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
3rd Year			
4	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
4th Year			
5	Maintenance of SMC structures @ 15 % of initial year cost	Apr/Jul	3,032
	Total		32,343.0

Abstract

Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year	0.0	0.0	0.0	0.0
2	1st year	0.0	0.0	20,215.0	20,215.00
3	2nd year	0.0	0.0	3,032.00	3,032.00
4	3rd year	0.0	0.0	3,032.00	3,032.00
5	4th year	0.0	0.0	3,032.00	3,032.00
6	5th year	0.0	0.0	3,032.00	3,032.00
	Total	0.00	0.00	32,343.0	32,343.0

Different types of SMC structures may be taken up as per the scope & requirements of the plantation site out of the design & specification of different structures annexed along this document.



ACCF (Forest Diversion & NCL FC Act)

Matrix for (SMC)

In Rupees

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	21276	3342	3510	3685	3870											35633
2	2022-23		0	22287	3509	3686	3869	4064										37415
3	2023-24			0	23401	3684	3870	4067	4267									39284
4	2024-25				0	24571	3868	4064	4265	4480								41248
5	2025-26					0	25800	4061	4267	4478	4704							43310
6	2026-27						0	27090	4264	4480	4702	4939						45475
7	2027-28							0	28443	4477	4704	4937	5186					47749
8	2028-29								0	29867	4701	4939	5184	5445				50136
9	2029-30									0	31360	4936	5186	5443	5717			52642
10	2030-31										0	32928	5183	5445	5715	6003		55274

APCCF (Forest Diversion & NO, FC Act)

Matrix for (SMC)

Fencing Model F-1

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

Fencing Model F-1

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	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
	0th Year Maintenance					
1	NIL		0	0	0	0
	1st Year Maintenance					
1	Taking an average perimetre of 250 Rmt/Ha. @ 93.85/ mt. (Half handle Bamboo Twigs/mt @ 120/Bundle) Labour Material : 40:60 (approx)	Sept./Oct	30	9330	14133	23463.0
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 (approx) 24" height - 3 poles 126/3 = 42 Bamboos @ 200/Bamboo	Sept./Oct		0	8400	8400.0
3	Preparation of Bamboo poles, Jigging of holes of 2 ft depth & fixing Bamboo poles @ 20 poles/ MD	Sept./Oct	6.5	2021.5		2021.5
4	Cost of Bamboo for Geing the Bamboo twigs row fence with double side two strand Bamboo batten (One 6" above ground and other one 4 ft" above ground) (250x2)/ 24 - 21 Bamboo @ 200/ Bamboo	Sept./Oct		0	4200	4200.0
5	Making Bamboo batten, Finishing the Batten & Tieing the same on double strand on Coir rope etc. @ Rs 11/ Rmt.	Sept./Oct	9	2799		2799.0
6	Cost of Coir rope @ Rs 0.125 kg/ Rmt 500x 0.125 kg= 62.5 kg @ Rs.70/Kg	Sept./Oct		8	4375	4375.0
7	Making one Bamboo Twigs gate with Bamboo frame			0	500.5	500.5
	TOTAL		45.5	14150.5	31608.5	45759.0
Rate per running mt. 45759/ 250= 183/Rmt						
	2nd Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	1500	7720
Rate per running mt. 7720/ 250= 30.88 or say Rs. 31-Rmt						
	3rd Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11095
Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt						
	4th Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt						
	5th Year Maintenance					
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt						

Abstract

Sl. No	Year	No. persan days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)
1	0th year	0.0	0.0	0.0	0.0
2	1st year	45.5	14150.5	31608.5	45759.0
3	2nd year	20.0	6220.0	1500.0	7720.0
4	3rd year	20.0	6220.0	5675.0	11895.0
5	4th year	20.0	6220.0	5675.0	11895.0
6	5th year	20.0	6220.0	5675.0	11895.0
	Total:	125.5	39030.5	50133.5	89164.0

APCCF (Forest Diversion & NO, FC Act)

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

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

In Rupees

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	45759	7720	11895	11895	11895											
1	2021-22	0	48047	8511	13770	14458	15181											99967
2	2022-23		0	50449	8937	14459	15181	15940										104966
3	2023-24			0	52971	9384	15187	15940	16737									110214
4	2024-25				0	55620	9853	15941	16737	17574								115725
5	2025-26					0	58401	10346	16738	17574	18453							121512
6	2026-27						0	61321	10863	17575	18453	19376						127588
7	2027-28							0	64387	11406	18454	19376	20345					133968
8	2028-29								0	67606	11976	19377	20345	21362				140666
9	2029-30									0	70986	12575	20346	21362	22430			147699
10	2030-31										0	74535	13204	21363	22430	23552		155084

APCCF (Forest Diversion & NO, FC Act)

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

Watering Model – W-II

Watering Provision to CA Plantation

Watering Model-W-II			
Watering provision to CA Plantation			
Diesel pump set with Bore well (1 pump set + Bore well for 5 Ha Plantation), Water rate @ Rs.311/-			
Year of Installation (0th Year)			
1	Cost of Borewell	1,50,000	
2	Cost of Diesel pump set 5HP	60,000	
3	Diesel pump set & assessories like commander, Pipes, etc.	30,000	
4	Water Storage Tanks/ Flexible pipes	15,000	
		2,55,000	
Cost of Water per Plant (2,55,000/ 5000)= Rs. 51/- Cost of Water per Ha. = Rs. 51,000/-			51,000
1st Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
2	Watering 1000 Plants (Nov-Mar.) @ 200 plants/MD with 7 days rotation 20 MD x 5 months = 100 MD x 311 =		31,100
		Total	**52,100**
2nd Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	**78,410**
3rd Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	**78,410**
4th Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =		49,760
		Total	**78,410**
5th Year Watering			
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=		21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.		7,650
2	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311		49,760
		Total	**78,410**

Abstract

Sl. No	Year	No. person days	labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	51000.0	51000.0
2	1st year	100.0	31100.0	21000.0	52100.0
3	2nd year	160	49760.0	28650.0	78410.0
4	3rd year	160	49760.0	28650.0	78410.0
5	4th year	160	49760.0	28650.0	78410.0
6	5th year	160	49760.0	28650.0	78410.0
	Total:	**740**	**230140**	**186600**	**4,16,740**

APCCF (Forest Diversion & NO, FC Act)

Matrix for Watering Model-W-II (Diesel Pumpset Fitted with Borewell) per Ha

In Rupees

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
Base Norm		5100	52100	78410	78410	78410	78410											
1	2021-22	51000	54705	86439	90771	95307	100072											478294
2	2022-23		53550	57440	90761	95310	100072	105076										502209
3	2023-24			56228	60312	95299	100076	105076	110330									527321
4	2024-25				59039	63328	100064	105080	110330	115847								553688
5	2025-26					61991	66494	105067	110334	115847	121639							581372
6	2026-27						65091	69819	110330	115851	121639	127721						610441
7	2027-28							68348	73313	115836	121644	127721	134107					640964
8	2028-29								71769	76976	121628	127726	134107	140812				673012
9	2029-30									75351	80975	127709	134112	140812	147853			706662
10	2030-31										79119	84866	134094	140818	147853	155246		741996

APCCF (Forest Diversion & NO, FC Act)

TOTAL COST OF PROJECT

S. No.	Item of Work	In Rupees
1	Base Norm for 1000 plants/ ha (Year 2022-2023)	246454.00
2	Soil Moisture Conservation (SMC) (2022-2023)	37415.00
3	Fencing Bamboo Twigs & Thorns (2022-2023)	104966.00
4	**Sub-Total**	**388835.00**
5	Total Plantation cost over 15.00 ha (Rs. 388835.00 X 15.00 ha)	5832525.00
5	Cost of watering for the plantation (One diesel pump set fitted with bore well for 5 ha plantation) @ Rs.502209/-X 3 Nos for 15 ha with maintenance and recurring expenditure for 5 years (2022-20323)	1506627.00
6	G TOTAL	**7339152.00 Or say 73,39,200.00**

(Rupees Seventy-three lakh thirty-nine thousand two hundred) only.

Technically Approved
13/1/2023
Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

PROVISION OF FUNDS AND FUND UTILIZATION

Rs73,39,200.00 (Rupees Seventy-three lakh thirty-nine thousand two hundred) only shall be deposited by the User Agency i.e. M/s JSW Steel Ltd on approval of the scheme to the Ad-hoc CAMPA Account and the funds will be utilized for raising of Afforestation of 1.5 times safety zone by the Divisional Forest Officer, Keonjhar Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.

Divisional Forest Officer,
Keonjhar Division

Approved.
Divisional Forest Officer
Keonjhar Division

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

Afforestation of 1.5 times safety zone will be taken up in the identified site by the Range Officer, BJP Range of Keonjhar Division. The Range Forest Officer, BJP Range will undertake field checks of the works undertaken at the identified site and will be cross checked by the Asst. Conservator of Forests, (Affn.) and Divisional Forest Officer, Keonjhar Division. GPS co-ordinates along with other required informations of Compensatory Afforestation will be uploaded in the e-Green watch Portal of NIC, MoEF, Govt. of India for the purpose of online monitoring. Annual progress of plantation involving growth of planted seedlings, survival percentage etc. will be monitored and recorded in the plantation journal by the field staffs of BJP Range and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Rourkela Circle and Chief Conservator of Forests (PP&A), O/o the Pr. Chief Conservator of Forests, Odisha, Bhubaneswar and necessary corrective measures will be followed if required so.

Divisional Forest Officer,
Keonjhar Division

CERTIFICATE ON DSS ANALYSIS FOR CA/ACA/PCA

This is to certify that DSS Analysis of land identified for CA/ ACA/ PCA and subsequent ground truthing have been done. The outcome is as mentioned below-

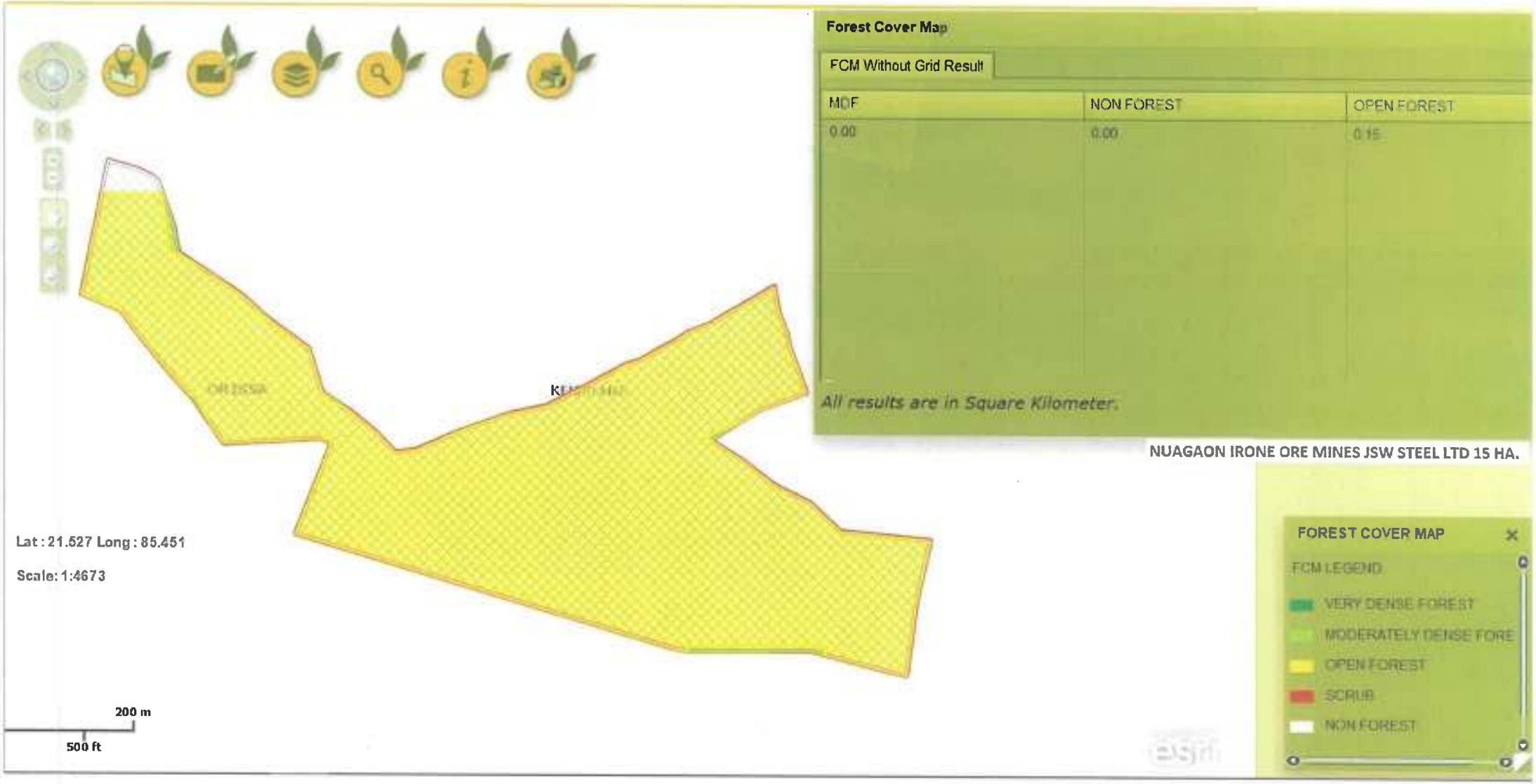
Sl. No.	Name of Range	Name of the Forest Block (RF/PRF/PF/DPF/ Revenue Forest)	Area identified for CA/ ACA/ PCA (in ha)	Classification of identified land (in ha)							Area suitable for plantation (in ha)				Plantation model (AR/ANR)	Remarks
				Very Dense Forest	Moderately Dense Forest	Open Forest	Non-forest	Scrub	Water	Total	Open Forest	Non-forest	Scrub	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	BJP	Kunar DPF	Afforestation of 1.5 times SZ	0.00	0.00	15.00	0.00	0.00	0.00	15.00	15.00	0.00	0.00	15.00	AR	15.00 ha AR@100(seedlings

Divisional Forest Officer,
Keonjhar Division.

Countersigned

13/6/2022

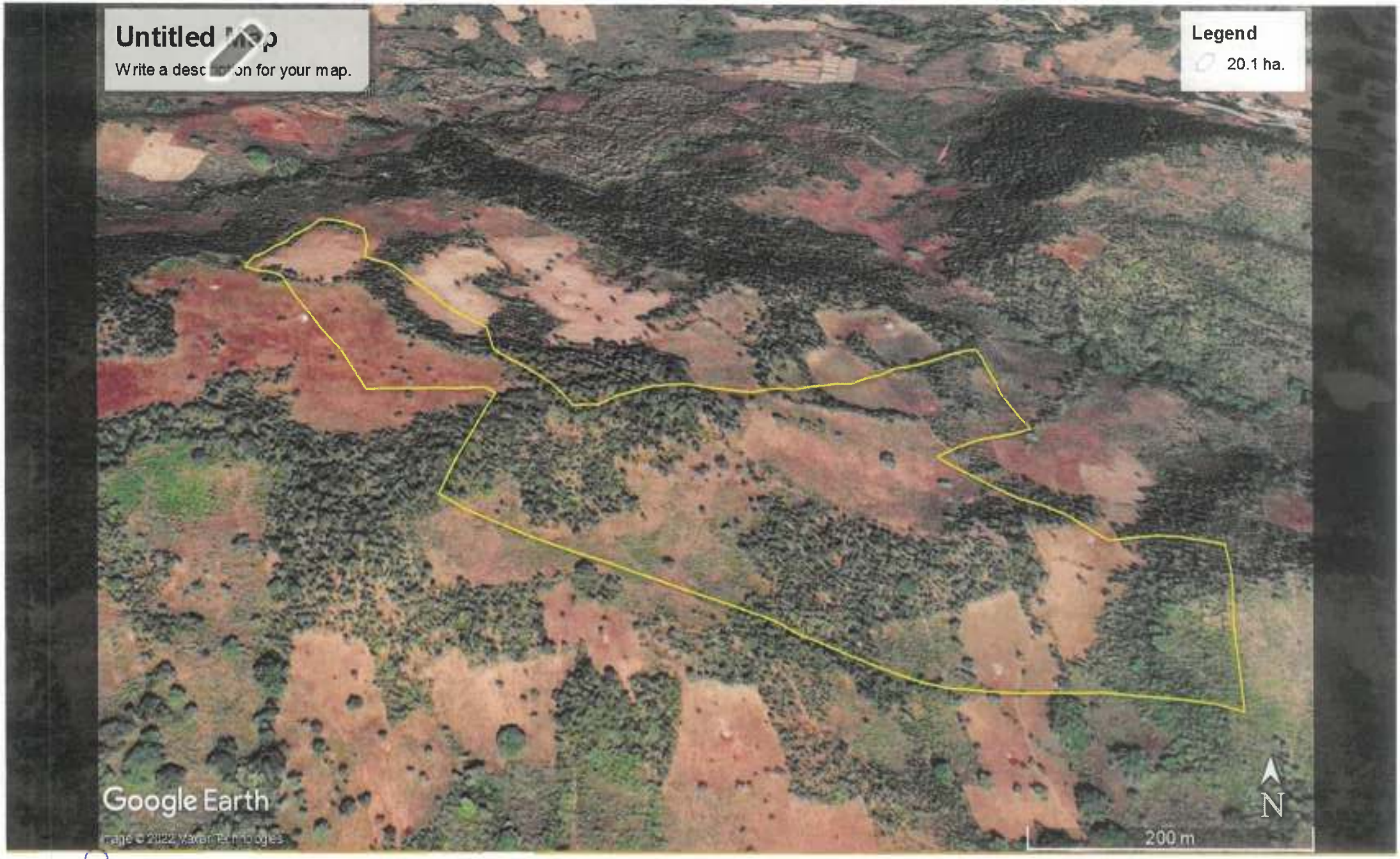
Regional Chief Conservator of Forests,
Rourkela Circle



Santosh Kr Behera

FORESTER
KANJIPANI SECTION

Range Officer
R.L.P. Range



Santosh Kr Behera

ANNEXURE-12

ENUMARATION OF TREES OVER AN AREA OF 63.300 HA. WITHIN THE DIVERTED FOREST LAND OF NUAGAON IRON ORE MINES OF M/S. JSW STEEL LTD. UNDER BARBIL FOREST RANGE OF KEONJHAR FOREST DIVISION.

NUAGAON IRON ORE MINE

M/S JSW STEEL LTD
JSW CENTRE, BANDRA KURLA COMPLEX
BANDRA (EAST), MUMBAI-400051

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1	1	Katasahi	Sal	100	2.5	Sound	
2	2	Katasahi	Sal	90	2	Sound	
3	3	Katasahi	Bhonoda	76	1		Unsound
4	4	Katasahi	Chahar	153	2		Unsound
5	5	Katasahi	Sal	94	2.5	Sound	
6	6	Katasahi	Sal	95	2.5	Sound	
7	7	Katasahi	Misc	40	1		Unsound
8	8	Katasahi	Sal	90	2	Sound	
9	9	Katasahi	Sal	70	1.5	Sound	
10	10	Katasahi	Sal	72	1.5	Sound	
11	11	Katasahi	Sal	91	2.5	Sound	
12	12	Katasahi	Sal	83	2	Sound	
13	13	Katasahi	Jamun	54	1		Unsound
14	14	Katasahi	Sal	72	1.5	Sound	
15	15	Katasahi	Sal	75	2	Sound	
16	16	Katasahi	Bhonoda	60	1		Unsound
17	17	Katasahi	Sal	88	2	Sound	
18	18	Katasahi	Sal	80	2	Sound	
19	19	Katasahi	Sal	100	2.5	Sound	
20	20	Katasahi	Sal	71	1.5	Sound	
21	21	Katasahi	Mahula	72	1.5		Unsound
22	22	Katasahi	Sal	81	2	Sound	
23	23	Katasahi	Sal	84	2	Sound	
24	24	Katasahi	Sal	78	1.5	Sound	
25	25	Katasahi	Mahula	64	1		Unsound
26	26	Katasahi	Sal	71	2	Sound	
27	27	Katasahi	Sal	95	2.5	Sound	
28	28	Katasahi	Kashi	69	2		Unsound
29	29	Katasahi	Sal	77	1.5	Sound	
30	30	Katasahi	Sal	81	2	Sound	
31	31	Katasahi	Sal	75	2	Sound	
32	32	Katasahi	Sal	83	2	Sound	
33	33	Katasahi	Bara	525	3		Unsound
34	34	Katasahi	Sal	88	2.5	Sound	
35	35	Katasahi	Misc	76	1.5		Unsound
36	36	Katasahi	Sal	90	2.5	Sound	
37	37	Katasahi	Sal	88	2	Sound	
38	38	Katasahi	Harida	62	1		Unsound
39	39	Katasahi	Bhonoda	59	1		Unsound
40	40	Katasahi	Sal	105	2.5	Sound	
41	41	Katasahi	Sal	91	2	Sound	
42	42	Katasahi	Sal	72	2	Sound	
43	43	Katasahi	Sal	78	2	Sound	
44	44	Katasahi	Sal	81	2.5	Sound	
45	45	Katasahi	Sal	112	3	Sound	
46	46	Katasahi	Sal	82	2	Sound	
47	47	Katasahi	Kendu	45	1		Unsound
48	48	Katasahi	Sal	88	2	Sound	
49	49	Katasahi	Sal	90	2.5	Sound	
50	50	Katasahi	Misc	88	2	Sound	
51	51	Katasahi	Sal	64	1		Unsound
52	52	Katasahi	Kashi	123	3	Sound	
53	53	Katasahi	Sal	55	1	Sound	
54	54	Katasahi	Sal	93	2.5	Sound	
55	55	Katasahi	Sal	102	2.5	Sound	
56	56	Katasahi	Sal	55	1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
57	57	Katasahi	Sal	96	2.5	Sound	
58	58	Katasahi	Sal	64	1.5	Sound	
59	59	Katasahi	Sal	73	1.5	Sound	
60	60	Katasahi	Sal	97	2.5	Sound	
61	61	Katasahi	Misc	35	1		Unsound
62	62	Katasahi	Sal	68	1.5	Sound	
63	63	Katasahi	Sal	75	1.5	Sound	
64	64	Katasahi	Sal	101	3	Sound	
65	65	Katasahi	Sal	83	2	Sound	
66	66	Katasahi	Bhaliya	31	1		Unsound
67	67	Katasahi	Sal	123	3.5	Sound	
68	68	Katasahi	Sal	84	2	Sound	
69	69	Katasahi	Sal	80	1.5	Sound	
70	70	Katasahi	Misc	64	1		Unsound
71	71	Katasahi	Misc	63	1		Unsound
72	72	Katasahi	Sal	78	1	Sound	
73	73	Katasahi	kumbhi	92	1		Unsound
74	74	Katasahi	Sal	91	2	Sound	
75	75	Katasahi	Sal	85	2	Sound	
76	76	Katasahi	Sal	80	1.5	Sound	
77	77	Katasahi	Sal	92	2	Sound	
78	78	Katasahi	Bhonoda	101	1.5		Unsound
79	79	Katasahi	Sal	84	2	Sound	
80	80	Katasahi	Bhonoda	84	1.5		Unsound
81	81	Katasahi	Sal	83	2	Sound	
82	82	Katasahi	Sal	110	2.5	Sound	
83	83	Katasahi	Sal	103	2.5	Sound	
84	84	Katasahi	Sal	76	2.5	Sound	
85	85	Katasahi	Sal	74	2.5	Sound	
86	86	Katasahi	Sal	81	2.5	Sound	
87	87	Katasahi	Sal	71	2	Sound	
88	88	Katasahi	Sal	83	2	Sound	
89	89	Katasahi	Sal	85	3	Sound	
90	90	Katasahi	Sal	80	2.5	Sound	
91	91	Katasahi	kumbhi	83	2.5	Sound	
92	92	Katasahi	kumbhi	106	2.5	Sound	
93	93	Katasahi	Sal	100	3	Sound	
94	94	Katasahi	Sal	82	2	Sound	
95	95	Katasahi	Sal	89	2	Sound	
96	96	Katasahi	Jamun	126	2		Unsound
97	97	Katasahi	Sal	74	2	Sound	
98	98	Katasahi	Sal	108	3	Sound	
99	99	Katasahi	Sal	85	2	Sound	
100	100	Katasahi	Sal	90	2	Sound	
101	101	Katasahi	Sal	83	2	Sound	
102	102	Katasahi	Sal	89	2	Sound	
103	103	Katasahi	Sal	74	2	Sound	
104	104	Katasahi	Sal	76	2	Sound	
105	105	Katasahi	Sal	83	2.5	Sound	
106	106	Katasahi	Sal	105	3	Sound	
107	107	Katasahi	Sal	81	2.5	Sound	
108	108	Katasahi	Sal	71	2	Sound	
109	109	Katasahi	Sal	84	2	Sound	
110	110	Katasahi	Sal	92	2.5	Sound	
111	111	Katasahi	Sal	76	2.5	Sound	
112	112	Katasahi	Sal	81	2.5	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
113	113	Katasahi	Sal	70	less 1	Sound	
114	114	Katasahi	Simili	34	2		Unsound
115	115	Katasahi	Sal	120	2.5		Unsound
116	116	Katasahi	Sal	85	2	Sound	
117	117	Katasahi	Sal	78	2	Sound	
118	118	Katasahi	Sal	75	2	Sound	
119	119	Katasahi	Sal	94	2	Sound	
120	120	Katasahi	Misc	40	less 1		Unsound
121	121	Katasahi	Sal	75	2	Sound	
122	122	Katasahi	Sal	85	2	Sound	
123	123	Katasahi	Sal	81	2	Sound	
124	124	Katasahi	Harida	101	2	Sound	
125	125	Katasahi	Sal	72	2	Sound	
126	126	Katasahi	Sal	104	2.5	Sound	
127	127	Katasahi	Sal	111	3	Sound	
128	128	Katasahi	Sal	69	less 1	Sound	
129	129	Katasahi	Sal	91	2.5	Sound	
130	130	Katasahi	Sal	83	2.5	Sound	
131	131	Katasahi	Sal	97	3	Sound	
132	132	Katasahi	Sal	95	3	Sound	
133	133	Katasahi	Sal	90	2.5	Sound	
134	134	Katasahi	Sal	72	2	Sound	
135	135	Katasahi	Sal	82	2	Sound	
136	136	Katasahi	Sal	72	2	Sound	
137	137	Katasahi	Sal	62	less 1	Sound	
138	138	Katasahi	Sal	73	2	Sound	
139	139	Katasahi	Sal	71	2	Sound	
140	140	Katasahi	Harida	46	less 1		Unsound
141	141	Katasahi	Sal	76	2	Sound	
142	142	Katasahi	Sal	98	3	Sound	
143	143	Katasahi	Sal	97	2	Sound	
144	144	Katasahi	Sal	73	2	Sound	
145	145	Katasahi	Sal	61	2	Sound	
146	146	Katasahi	Sal	73	less 1	Sound	
147	147	Katasahi	Sal	71	2	Sound	
148	148	Katasahi	Sal	90	2.5	Sound	
149	149	Katasahi	Sal	83	2	Sound	
150	150	Katasahi	Sal	82	2	Sound	
151	151	Katasahi	Sal	82	2	Sound	
152	152	Katasahi	Sal	66	less 1	Sound	
153	153	Katasahi	Sal	111	3	Sound	
154	154	Katasahi	Sal	73	2	Sound	
155	155	Katasahi	Sal	91	3	Sound	
156	156	Katasahi	Sal	85	2.5	Sound	
157	157	Katasahi	Sal	66	less 1	Sound	
158	158	Katasahi	Sal	99	3	Sound	
159	159	Katasahi	Sal	77	2	Sound	
160	160	Katasahi	Sal	75	2	Sound	
161	161	Katasahi	Jamun	201	1.5	Sound	
162	162	Katasahi	Sal	127	2.5	Sound	
163	163	Katasahi	Harida	58	less 1	Sound	
164	164	Katasahi	Sal	64	less 1	Sound	
165	165	Katasahi	Sal	118	2.5	Sound	
166	166	Katasahi	Sal	143	1.5	Sound	
167	167	Katasahi	Sal	74	2	Sound	
168	168	Katasahi	Sal	91	3	Sound	

Range O.F.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
169	169	Katasahi	Sal	70	2.5	Sound	
170	170	Katasahi	Sal	90	2.5	Sound	
171	171	Katasahi	Sal	50	less 1	Sound	
172	172	Katasahi	Sal	91	3	Sound	
173	173	Katasahi	Sal	58	1.5	Sound	
174	174	Katasahi	Sal	110	2.5	Sound	
175	175	Katasahi	Sal	120	2	Sound	
176	176	Katasahi	Sal	68	1	Sound	
177	177	Katasahi	Bhonoda	42	1	Sound	
178	178	Katasahi	Sal	92	3	Sound	
179	179	Katasahi	Bara	195	1	Sound	
180	180	Katasahi	Siddha	51	1	Sound	
181	181	Katasahi	Siddha	83	2	Sound	
182	182	Katasahi	Sal	73	2	Sound	
183	183	Katasahi	Sal	100	1	Sound	
184	184	Katasahi	Sal	50	2	Sound	
185	185	Katasahi	Sal	66	2	Sound	
186	186	Katasahi	Sal	77	3	Sound	
187	187	Katasahi	Sal	76	3	Sound	
188	188	Katasahi	Asan	64	less 1	Sound	
189	189	Katasahi	Sal	66	2.5	Sound	
190	190	Katasahi	Sal	44	2.5	Sound	
191	191	Katasahi	Sal	61	2	Sound	
192	192	Katasahi	Sal	96	2.5	Sound	
193	193	Katasahi	Sal	102	3	Sound	
194	194	Katasahi	Sal	50	1	Sound	
195	195	Katasahi	Sal	87	2.5	Sound	
196	196	Katasahi	Sal	84	2	Sound	
197	197	Katasahi	Sal	95	3	Sound	
198	198	Katasahi	Sal	104	2.5	Sound	
199	199	Katasahi	Sal	78	2	Sound	
200	200	Katasahi	Sal	88	3	Sound	
201	201	Katasahi	Sal	72	2	Sound	
202	202	Katasahi	Sal	78	2	Sound	
203	203	Katasahi	Sal	46	less 1	Sound	
204	204	Katasahi	Sal	98	2.5	Sound	
205	205	Katasahi	Sal	56	1	Sound	
206	206	Katasahi	Sal	64	2	Sound	
207	207	Katasahi	Sal	68	2.5	Sound	
208	208	Katasahi	Sal	80	2.5	Sound	
209	209	Katasahi	Sal	88	3	Sound	
210	210	Katasahi	Sal	72	2	Sound	
211	211	Katasahi	Sal	50	less 1	Sound	
212	212	Katasahi	Sal	81	2.5	Sound	
213	213	Katasahi	Sal	85	2	Sound	
214	214	Katasahi	Sal	91	3	Sound	
215	215	Katasahi	Sal	58	less 1	Sound	
216	216	Katasahi	Sal	68	2	Sound	
217	217	Katasahi	Sal	89	2.5	Sound	
218	218	Katasahi	Sal	82	2.5	Sound	
219	219	Katasahi	Sal	57	2	Sound	
220	220	Katasahi	Sal	86	2	Sound	
221	221	Katasahi	Sal	81	2.5	Sound	
222	222	Katasahi	Sal	69	2	Sound	
223	223	Katasahi	Sal	76	2.5	Sound	
224	224	Katasahi	Sal	101	3	Sound	

Dated. 5.6.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
225	225	Katasahi	Sal	62	less 1	Sound	
226	226	Katasahi	Sal	80	2.5	Sound	
227	227	Katasahi	Sal	76	2.5	Sound	
228	228	Katasahi	Sal	76	2	Sound	
229	229	Katasahi	Sal	80	2.5	Sound	
230	230	Katasahi	Sal	82	3	Sound	
231	231	Katasahi	Sal	72	2	Sound	
232	232	Katasahi	Sal	88	3	Sound	
233	233	Katasahi	Sal	64	2	Sound	
234	234	Katasahi	Sal	88	3	Sound	
235	235	Katasahi	Sal	84	2	Sound	
236	236	Katasahi	Sal	70	2	Sound	
237	237	Katasahi	Sal	76	2.5	Sound	
238	238	Katasahi	Sal	66	2	Sound	
239	239	Katasahi	Sal	81	2.5	Sound	
240	240	Katasahi	Sal	85	3	Sound	
241	241	Katasahi	Sal	86	3	Sound	
242	242	Katasahi	Sal	76	2	Sound	
243	243	Katasahi	Sal	81	2.5	Sound	
244	244	Katasahi	Sal	65	2	Sound	
245	245	Katasahi	Sal	73	2	Sound	
246	246	Katasahi	Sal	76	2.5	Sound	
247	247	Katasahi	Sal	80	2.5	Sound	
248	248	Katasahi	Sal	72	2	Sound	
249	249	Katasahi	Sal	83	2.5	Sound	
250	250	Katasahi	Sal	56	less 1	Sound	
251	251	Katasahi	Sal	82	2.5	Sound	
252	252	Katasahi	Sal	80	2.5	Sound	
253	253	Katasahi	Sal	67	2	Sound	
254	254	Katasahi	Sal	82	2.5	Sound	
255	255	Katasahi	Sal	88	3	Sound	
256	256	Katasahi	Sal	75	2.5	Sound	
257	257	Katasahi	Sal	65	2	Sound	
258	258	Katasahi	Sal	84	2.5	Sound	
259	259	Katasahi	Sal	82	2.5	Sound	
260	260	Katasahi	Sal	85	3	Sound	
261	261	Katasahi	Sal	68	2	Sound	
262	262	Katasahi	Sal	88	2.5	Sound	
263	263	Katasahi	Sal	117	2.5	Sound	
264	264	Katasahi	Sal	73	2	Sound	
265	265	Katasahi	Sal	98	3	Sound	
266	266	Katasahi	Sal	50	less 1	Sound	
267	267	Katasahi	Sal	90	2.5	Sound	
268	268	Katasahi	Sal	58	less 1	Sound	
269	269	Katasahi	Kusum	83	1.5	Sound	
270	270	Katasahi	Kusum	60	less 1	Sound	
271	271	Katasahi	Kusum	58	less 1	Sound	
272	272	Katasahi	Sal	83	2	Sound	
273	273	Katasahi	Sal	72	1.5	Sound	
274	274	Katasahi	Sal	83	1.5	Sound	
275	275	Katasahi	Sal	122	2.5	Sound	
276	276	Katasahi	Dhola	60	1		Unsound
277	277	Katasahi	Dhola	56	1		Unsound
278	278	Katasahi	Sal	158	2	Sound	
279	278 (A)	Katasahi	Sal	103	2	Sound	
280	279	Katasahi	Sal	86	1.5	Sound	

Dated. 4.5.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
281	280	Katasahi	Sal	132	3	Sound	
282	281	Katasahi	Sal	95	2.5	Sound	
283	282	Katasahi	Sal	84	1.5	Sound	
284	283	Katasahi	Pol puijamal	82	less 1	Sound	
285	284	Katasahi	Poi puijamal	78	less 1	Sound	
286	285	Katasahi	Sal	91	2	Sound	
287	286	Katasahi	Sal	66	1.5	Sound	
288	287	Katasahi	Sal	114	2.5	Sound	
289	288	Katasahi	Sal	148	2	Sound	
290	289	Katasahi	Sal	109	2.5	Sound	
291	290	Katasahi	Sal	100	2	Sound	
292	291	Katasahi	Sal	94	2.5	Sound	
293	292	Katasahi	Sal	82	2	Sound	
294	293	Katasahi	Sal	81	2	Sound	
295	294	Katasahi	Sal	87	2.5	Sound	
296	295	Katasahi	Sal	91	2.5	Sound	
297	296	Katasahi	Sal	106	2.5	Sound	
298	297	Katasahi	Sal	90	2	Sound	
299	298	Katasahi	Sal	84	2.5	Sound	
300	299	Katasahi	Sal	79	2	Sound	
301	300	Katasahi	Sal	87	2.5	Sound	
302	301	Katasahi	Sal	98	2	Sound	
303	302	Katasahi	Sal	74	2	Sound	
304	303	Katasahi	Sal	85	2	Sound	
305	304	Katasahi	Sal	81	2.5	Sound	
306	305	Katasahi	Sal	101	2	Sound	
307	306	Katasahi	Sal	63	1.5	Sound	
308	307	Katasahi	Kendu	102	1	Sound	
309	308	Katasahi	Maei	122	2	Sound	
310	309	Katasahi	Sal	76	2	Sound	
311	310	Katasahi	Sal	70	1.5	Sound	
312	311	Katasahi	Sal	88	2.5	Sound	
313	312	Katasahi	Sal	79	2	Sound	
314	313	Katasahi	Chahar	60	1	Sound	
315	314	Katasahi	Sal	84	2.5	Sound	
316	315	Katasahi	Sal	99	3	Sound	
317	316	Katasahi	Sal	90	2.5	Sound	
318	317	Katasahi	Sal	91	2	Sound	
319	318	Katasahi	Sal	113	2	Sound	
320	319	Katasahi	Sal	75	2	Sound	
321	320	Katasahi	Sal	91	2.5	Sound	
322	321	Katasahi	Sal	70	2	Sound	
323	322	Katasahi	kuruma	44	less 1	Sound	
324	323	Katasahi	Sal	87	2.5	Sound	
325	324	Katasahi	Sal	81	2	Sound	
326	325	Katasahi	Bhonoda	85	2	Sound	
327	326	Katasahi	Bhonoda	69	less 1	Sound	
328	327	Katasahi	Sal	80	2	Sound	
329	328	Katasahi	Sal	74	2	Sound	
330	329	Katasahi	Sal	74	2	Sound	
331	330	Katasahi	Sal	66	less 1	Sound	
332	331	Katasahi	Sal	300	2	Sound	
333	332	Katasahi	Sal	81	2	Sound	
334	333	Katasahi	Sal	71	2	Sound	
335	334	Katasahi	Sal	70	2	Sound	
336	335	Katasahi	Sal	101	2.5	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
337	336	Katasahi	Sal	130	2	Sound	
338	337	Katasahi	Chahar	74	less 1	Sound	
339	338	Katasahi	Sal	82	2	Sound	
340	339	Katasahi	Sal	98	3	Sound	
341	340	Katasahi	Sal	83	2.5	Sound	
342	341	Katasahi	Sal	94	3	Sound	
343	342	Katasahi	Sal	97	2.5	Sound	
344	343	Katasahi	Sal	70	2	Sound	
345	344	Katasahi	Sal	65	2	Sound	
346	345	Katasahi	Sal	77	2.5	Sound	
347	346	Katasahi	Sal	75	2	Sound	
348	347	Katasahi	Sal	89	2	Sound	
349	348	Katasahi	Sal	74	2	Sound	
350	349	Katasahi	Sal	68	2	Sound	
351	350	Katasahi	Sal	70	2	Sound	
352	351	Katasahi	Sal	69	2	Sound	
353	352	Katasahi	Sal	52	less 1	Sound	
354	353	Katasahi	Sal	105	2.5	Sound	
355	354	Katasahi	Sal	69	2	Sound	
356	355	Katasahi	Sal	102	2	Sound	
357	356	Katasahi	Sal	81	2	Sound	
358	357	Katasahi	Sal	77	2	Sound	
359	358	Katasahi	Sal	97	2.5	Sound	
360	359	Katasahi	Sal	75	2	Sound	
361	360	Katasahi	Sal	95	2.5	Sound	
362	361	Katasahi	Sal	80	2	Sound	
363	362	Katasahi	Sal	73	2	Sound	
364	363	Katasahi	Sal	104	2.5	Sound	
365	364	Katasahi	Sal	81	2	Sound	
366	365	Katasahi	Sal	91	2	Sound	
367	366	Katasahi	Sal	87	2.5	Sound	
368	367	Katasahi	Sal	88	2.5	Sound	
369	368	Katasahi	Sal	85	2	Sound	
370	369	Katasahi	Sal	91	2	Sound	
371	370	Katasahi	Sal	114	3	Sound	
372	371	Katasahi	Sal	113	2.5	Sound	
373	372	Katasahi	Dhola	90	less 1		Unsound
374	373	Katasahi	Kendu	40	less 1		Unsound
375	374	Katasahi	Sal	112	2	Sound	
376	375	Katasahi	Sal	98	1.5	Sound	
377	376	Katasahi	Sal	98	2.5	Sound	
378	377	Katasahi	Bara	306	1	Sound	
379	378	Katasahi	Sal	107	2	Sound	
380	379	Katasahi	Sal	114	3	Sound	
381	380	Katasahi	Sal	97	2.5	Sound	
382	381	Katasahi	Sal	112	2	Sound	
383	382	Katasahi	Sal	107	2	Sound	
384	383	Katasahi	Sal	113	2.5	Sound	
385	384	Katasahi	Sal	86	2	Sound	
386	385	Katasahi	Kashi	120	2		Unsound
387	386	Katasahi	Sal	63	less 1		Unsound
388	387	Katasahi	Sal	109	2.5	Sound	
389	388	Katasahi	Sal	94	2	Sound	
390	389	Katasahi	Sal	102	1.5	Sound	
391	390	Katasahi	Sal	94	2.5	Sound	
392	391	Katasahi	Sal	113	2	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
393	392	Katasahi	Sal	124	2	Sound	
394	393	Katasahi	Sal	87	2	Sound	
395	394	Katasahi	Sal	100	2.5	Sound	
396	395	Katasahi	Sal	90	2	Sound	
397	396	Katasahi	Sal	78	2	Sound	
398	397	Katasahi	Sal	120	3	Sound	
399	398	Katasahi	Sal	107	2	Sound	
400	399	Katasahi	Sal	97	2.5	Sound	
401	400	Katasahi	Sal	82	2	Sound	
402	401	Katasahi	Sal	80	2	Sound	
403	402	Katasahi	Sal	100	2	Sound	
404	403	Katasahi	Sal	114	2	Sound	
405	404	Katasahi	Kendu	36	less 1	Sound	
406	405	Katasahi	Jamun	52	less 1	Sound	
407	406	Katasahi	Sal	85	2.5	Sound	
408	407	Katasahi	Sal	75	2	Sound	
409	408	Katasahi	Sal	71	2	Sound	
410	409	Katasahi	Sal	73	2	Sound	
411	410	Katasahi	Sal	76	2.5	Sound	
412	411	Katasahi	Sal	81	2	Sound	
413	412	Katasahi	Sal	98	2.5	Sound	
414	413	Katasahi	Sal	61	less 1	Sound	
415	414	Katasahi	Sal	87	2.5	Sound	
416	415	Katasahi	Sal	111	3	Sound	
417	416	Katasahi	Sal	74	2	Sound	
418	417	Katasahi	Sal	92	2.5	Sound	
419	418	Katasahi	Sal	81	2	Sound	
420	419	Katasahi	Sal	97	3	Sound	
421	420	Katasahi	Sal	74	2	Sound	
422	421	Katasahi	Sal	68	2	Sound	
423	422	Katasahi	Sal	82	2	Sound	
424	423	Katasahi	Asan	94	1	Sound	
425	424	Katasahi	Jamun	70	1	Sound	
426	425	Katasahi	Chahar	96	1	Sound	
427	426	Katasahi	Chhen Chhena	56	1	Sound	
428	427	Katasahi	Chhen Chhena	30	1	Sound	
429	428	Katasahi	Chhen Chhena	58	1	Sound	
430	429	Katasahi	Kendu	72	1	Sound	
431	430	Katasahi	Sal	106	2	Sound	
432	431	Katasahi	Harida	54	less 1	Sound	
433	432	Katasahi	Harida	46	less 1	Sound	
434	433	Katasahi	Harida	38	less 1	Sound	
435	434	Katasahi	Harida	46	less 1	Sound	
436	435	Katasahi	Chhen Chhena	36	less 1	Sound	
437	436	Katasahi	Chhen Chhena	34	less 1	Sound	
438	437	Katasahi	Bara	300	less 1	Sound	
439	438	Katasahi	Bara	290	less 1	Sound	
440	439	Katasahi	Bara	77	less 1	Sound	
441	440	Katasahi	Bara	162	less 1	Sound	
442	441	Katasahi	Kusum	117	1	Sound	
443	442	Katasahi	Kusum	150	1	Sound	
444	443	Katasahi	Bara	290	1	Sound	
445	444	Katasahi	Sal	138	2	Sound	
446	445	Katasahi	Sal	103	3	Sound	
447	446	Katasahi	Sal	122	2.5	Sound	
448	447	Katasahi	Bhonoda	70	1	Sound	

Deep, F.G.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
449	448	Katasahi	Sal	82	2.5	Sound	
450	449	Katasahi	Sal	61	2	Sound	
451	450	Katasahi	Sal	140	2		Unsound
452	451	Katasahi	Sal	111	2.5	Sound	
453	452	Katasahi	Sal	74	1.5	Sound	
454	453	Katasahi	Sal	148	1	Sound	
455	454	Katasahi	Sal	44	1	Sound	
456	455	Katasahi	Sal	95	1	Sound	
457	456	Katasahi	Sal	172	1	Sound	
458	457	Katasahi	Mango	265	1	Sound	
459	458	B Bottom	Sal	74	2.5	Sound	
460	459	B Bottom	Sal	98	2.5	Sound	
461	460	B Bottom	Sal	81	2.5	Sound	
462	461	B Bottom	Sal	72	2.5	Sound	
463	462	B Bottom	Sal	59	less 1	Sound	
464	463	B Bottom	Sal	98	3	Sound	
465	464	B Bottom	Sal	82	2.5	Sound	
466	465	B Bottom	Sal	74	2	Sound	
467	466	B Bottom	Sal	87	2.5	Sound	
468	467	B Bottom	Sal	92	2	Sound	
469	468	B Bottom	Sal	77	3	Sound	
470	469	B Bottom	Sal	86	2.5	Sound	
471	470	B Bottom	Sal	76	2	Sound	
472	471	B Bottom	Sal	102	2.5	Sound	
473	472	B Bottom	Sal	86	2.5	Sound	
474	473	B Bottom	Sal	84	2.5	Sound	
475	474	B Bottom	Sal	72	2	Sound	
476	475	B Bottom	Sal	56	2	Sound	
477	476	B Bottom	Sal	65	2	Sound	
478	477	B Bottom	Sal	127	2.5	Sound	
479	478	B Bottom	Mango	126	less 1	Sound	
480	479	B Bottom	Sal	66	2	Sound	
481	480	B Bottom	Sal	130	4	Sound	
482	481	B Bottom	Mango	32	4	Sound	
483	482	B Bottom	Sal	142	less 1	Sound	
484	483	B Bottom	Sal	86	2	Sound	
485	484	B Bottom	Sal	119	3.5	Sound	
486	485	B Bottom	Mahula	94	2	Sound	
487	486	B Bottom	Sal	76	2	Sound	
488	487	B Bottom	Sal	80	2	Sound	
489	488	B Bottom	Sal	81	2.5	Sound	
490	489	B Bottom	Sal	76	2	Sound	
491	490	B Bottom	Sal	94	2.5	Sound	
492	491	B Bottom	Sal	112	3	Sound	
493	492	B Bottom	Sal	92	2.5	Sound	
494	493	B Bottom	Sal	87	2.5	Sound	
495	494	B Bottom	Sal	98	1.5	Sound	
496	495	B Bottom	Simili	148	2	Sound	
497	496	B Bottom	Bhonoda	82	less 1	Sound	
498	497	B Bottom	Sal	92	2	Sound	
499	498	B Bottom	Sal	83	2.5	Sound	
500	499	B Bottom	Sal	117	2.5	Sound	
501	500	B Bottom	Sal	99	2.5	Sound	
502	501	B Bottom	Sal	115	3	Sound	
503	502	B Bottom	Sal	105	3	Sound	
504	503	B Bottom	Sal	84	2	Sound	

Dated, [illegible].

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
505	504	B Bottom	Sal	105	2.5	Sound	
506	505	B Bottom	Mahula	106	2	Sound	
507	506	B Bottom	Sal	115	3	Sound	
508	507	B Bottom	Sal	103	2	Sound	
509	508	B Bottom	Sal	110	2.5	Sound	
510	509	B Bottom	Mahula	77	2	Sound	
511	510	B Bottom	Sal	113	2.5	Sound	
512	511	B Bottom	Chahar	78	2	Sound	
513	512	B Bottom	Sal	88	2.5	Sound	
514	513	B Bottom	Sal	60	less 1	Sound	
515	514	B Bottom	Chahar	70	1.5	Sound	
516	515	B Bottom	Mahula	92	less 1	Sound	
517	516	B Bottom	Sal	112	3	Sound	
518	517	B Bottom	Kusum	103	less 1	Sound	
519	518	B Bottom	Sal	98	2	Sound	
520	519	B Bottom	Sal	60	less 1	Sound	
521	520	B Bottom	Sal	85	less 1	Sound	
522	521	B Bottom	Sal	118	2.5	Sound	
523	522	B Bottom	Sal	46	less 1	Sound	
524	523	B Bottom	Sal	50	less 1	Sound	
525	524	B Bottom	Sal	43	less 1	Sound	
526	525	B Bottom	Sal	37	less 1	Sound	
527	526	B Bottom	Bara	104	less 1	Sound	
528	527	B Bottom	Mahula	88	less 1	Sound	
529	528	B Bottom	Sal	124	3	Sound	
530	529	B Bottom	Sal	66	less 1	Sound	
531	530	B Bottom	Sal	127	3.5	Sound	
532	531	B Bottom	Sal	79	2	Sound	
533	532	B Bottom	Sal	81	2	Sound	
534	533	B Bottom	Sal	116	3	Sound	
535	534	B Bottom	Sal	117	3	Sound	
536	535	B Bottom	Mahula	98	2	Sound	
537	536	B Bottom	Krushnachuda	30	less 1	Sound	
538	537	B Bottom	Krushnachuda	37	less 1	Sound	
539	538	B Bottom	Krushnachuda	30	less 1	Sound	
540	539	B Bottom	Krushnachuda	32	less 1	Sound	
541	540	B Bottom	Krushnachuda	43	less 1	Sound	
542	541	B Bottom	Krushnachuda	47	less 1	Sound	
543	542	B Bottom	Krushnachuda	34	less 1	Sound	
544	543	B Bottom	Krushnachuda	31	less 1	Sound	
545	544	B Bottom	Sal	112	2	Sound	
546	545	B Bottom	Krushnachuda	56	less 1	Sound	
547	546	B Bottom	Krushnachuda	40	less 1	Sound	
548	547	B Bottom	Chakunda	68	2	Sound	
549	548	B Bottom	Chahar	80	2	Sound	
550	549	B Bottom	Kusum	65	less 1	Sound	
551	550	B Bottom	Krushnachuda	37	less 1	Sound	
552	551	B Bottom	Krushnachuda	30	less 1	Sound	
553	552	B Bottom	Krushnachuda	34	less 1	Sound	
554	553	B Bottom	Krushnachuda	47	2	Sound	
555	554	B Bottom	Krushnachuda	56	2	Sound	
556	555	B Bottom	Putuli	43	less 1	Sound	
557	556	B Bottom	Krushnachuda	116	2	Sound	
558	557	B Bottom	Krushnachuda	44	less 1	Sound	
559	558	B Bottom	Krushnachuda	60	2	Sound	
560	559	B Bottom	Krushnachuda	76	2	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
561	560	B Bottom	Sal	118	3	Sound	
562	561	B Bottom	Sal	108	2.5	Sound	
563	562	B Bottom	Sal	80	2	Sound	
564	563	B Bottom	Sal	94	2	Sound	
565	564	B Bottom	Sal	84	2.5	Sound	
566	565	B Bottom	Gamhari	33	less 1	Sound	
567	566	B Bottom	Sal	77	2.5	Sound	
568	567	B Bottom	Sal	68	2	Sound	
569	568	B Bottom	Harida	66	less 1	Sound	
570	569	B Bottom	Sal	106	2.5	Sound	
571	570	B Bottom	Sal	108	3	Sound	
572	571	B Bottom	Sal	108	3	Sound	
573	572	B Bottom	Jamun	31	less 1	Sound	
574	573	B Bottom	Mahula	128	less 1		Unsound
575	574	B Bottom	Mahula	123	less 1	Sound	
576	575	B Bottom	Mahula	92	less 1		Unsound
577	576	B Bottom	Mango	34	1	Sound	
578	577	B Bottom	Mango	59	1	Sound	
579	578	B Bottom	Chhen Chhena	99	2	Sound	
580	579	B Bottom	Chhen Chhena	46	less 1	Sound	
581	580	B Bottom	Jamun	50	less 1	Sound	
582	581	B Bottom	Sal	106	2	Sound	
583	582	B Bottom	Sal	134	3	Sound	
584	583	B Bottom	Krushnachuda	53	less 1	Sound	
585	584	B Bottom	Krushnachuda	48	less 1	Sound	
586	585	B Bottom	Krushnachuda	51	less 1	Sound	
587	586	B Bottom	Krushnachuda	60	less 1	Sound	
588	587	B Bottom	Champa	36	less 1	Sound	
589	588	B Bottom	Sal	126	2.5	Sound	
590	589	B Bottom	Kusum	58	less 1	Sound	
591	590	B Bottom	Champa	42	less 1	Sound	
592	591	B Bottom	Mango	39	less 1	Sound	
593	592	B Bottom	Kusum	230	less 1	Sound	
594	593	B Bottom	Kusum	158	less 1	Sound	
595	593 (A)	B Bottom	Kusum	107	less 1	Sound	
596	593 (B)	B Bottom	Kusum	108	less 1	Sound	
597	594	B Bottom	Bhonoda	43	less 1	Sound	
598	595	B Bottom	Sal	85	2	Sound	
599	596	B Bottom	Sal	101	2	Sound	
600	597	B Bottom	Sal	111	3	Sound	
601	598	B Bottom	Sal	87	2	Sound	
602	599	B Bottom	Mahula	73	less 1	Sound	
603	600	B Bottom	Kusum	87	less 1	Sound	
604	601	B Bottom	Kusum	62	less 1	Sound	
605	602	B Bottom	Mahula	60	less 1	Sound	
606	603	B Bottom	Sal	78	2	Sound	
607	604	B Bottom	Sal	94	2	Sound	
608	605	B Bottom	Sal	116	2	Sound	
609	606	B Bottom	Bara	315	less 1	Sound	
610	607	B Bottom	Sal	96	2	Sound	
611	608	B Bottom	Mahula	61	less 1	Sound	
612	609	B Bottom	Mahula	100	less 1	Sound	
613	610	B Bottom	Mahula	85	less 1	Sound	
614	611	B Bottom	kuruma	124	less 1		Unsound
615	612	B Bottom	Bara	140	less 1	Sound	
616	613	B Bottom	Sal	202	3		Unsound

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
617	614	B Bottom	Chakunda	34	less 1	Sound	
618	615	B Bottom	karanj	30	less 1	Sound	
619	616	B Bottom	karanj	30	less 1	Sound	
620	617	B Bottom	Bara	180	less 1	Sound	
621	617 (A)	B Bottom	Bara	224	less 1	Sound	
622	617 (B)	B Bottom	Bara	161	less 1	Sound	
623	617 (C)	B Bottom	Bara	110	less 1	Sound	
624	618	B Bottom	Kendu	120	1.5	Sound	
625	619	B Bottom	sal	114	2	Sound	
626	620	B Bottom	sal	94	2	Sound	
627	621	B Bottom	sal	85	2	Sound	
628	622	B Bottom	sal	96	2.5	Sound	
629	623	B Bottom	sal	76	2.5	Sound	
630	624	B Bottom	sal	88	2	Sound	
631	625	B Bottom	sal	110	4	Sound	
632	626	B Bottom	sal	111	3.5	Sound	
633	627	B Bottom	sal	114	3	Sound	
634	628	B Bottom	sal	158	3	Sound	
635	629	B Bottom	sal	95	2.5	Sound	
636	630	B Bottom	sal	120	2.5		Unsound
637	631	B Bottom	sal	94	3	Sound	
638	632	B Bottom	sal	102	3	Sound	
639	633	B Bottom	sal	90	2	Sound	
640	634	B Bottom	sal	106	2.5	Sound	
641	635	B Bottom	sal	88	2	Sound	
642	636	B Bottom	sal	114	4	Sound	
643	637	B Bottom	sal	115	3	Sound	
644	638	B Bottom	sal	79	less 1	Sound	
645	639	B Bottom	sal	123	4	Sound	
646	640	B Bottom	sal	115	3	Sound	
647	641	B Bottom	sal	90	3	Sound	
648	642	B Bottom	sal	121	3	Sound	
649	643	B Bottom	sal	109	3	Sound	
650	644	B Bottom	sal	101	3	Sound	
651	645	B Bottom	sal	100	2.5	Sound	
652	646	B Bottom	sal	117	3	Sound	
653	647	B Bottom	sal	138	3.5	Sound	
654	648	B Bottom	sal	102	2	Sound	
655	649	B Bottom	sal	108	3	Sound	
656	650	B Bottom	sal	84	2	Sound	
657	651	B Bottom	sal	83	2	Sound	
658	652	B Bottom	sal	120	2.5	Sound	
659	653	B Bottom	sal	126	2.5	Sound	
660	654	B Bottom	Maei	44	less 1	Sound	
661	655	B Bottom	Sal	108	3	Sound	
662	656	B Bottom	Sal	105	2	Sound	
663	657	B Bottom	Sal	100	2.5	Sound	
664	658	B Bottom	Sal	96	2	Sound	
665	659	B Bottom	Bhonoda	62	2	Sound	
666	660	B Bottom	Sal	128	3.5	Sound	
667	661	B Bottom	Bara	298	less 1	Sound	
668	662	B Bottom	sal	89	2	Sound	
669	663	B Bottom	sal	97	2.5	Sound	
670	664	B Bottom	sal	112	2	Sound	
671	665	B Bottom	sal	87	2	Sound	
672	666	B Bottom	sal	74	2	Sound	

RFO. S. G.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
673	667	B Bottom	sal	106	2.5	Sound	
674	668	B Bottom	sal	100	2.5	Sound	
675	669	B Bottom	sal	112	3.5	Sound	
676	670	B Bottom	sal	101	2	Sound	
677	671	B Bottom	sal	124	3	Sound	
678	672	B Bottom	sal	123	3	Sound	
679	673	B Bottom	Bara	168	less 1	Sound	
680	674	B Bottom	sal	95	3.5	Sound	
681	675	B Bottom	sal	101	3.5	Sound	
682	676	B Bottom	Jori	297	less 1	Sound	
683	677	B Bottom	sal	96	2	Sound	
684	678	B Bottom	sal	95	2.5	Sound	
685	679	B Bottom	sal	125	3.5	Sound	
686	680	B Bottom	sal	102	2.5	Sound	
687	681	B Bottom	sal	87	2	Sound	
688	682	B Bottom	sal	101	3	Sound	
689	683	B Bottom	sal	98	2	Sound	
690	684	B Bottom	sal	95	2	Sound	
691	685	B Bottom	sal	104	2.5	Sound	
692	686	B Bottom	sal	98	2.5	Sound	
693	687	B Bottom	sal	127	3.5	Sound	
694	688	B Bottom	sal	128	2	Sound	
695	689	B Bottom	sal	103	2	Sound	
696	690	B Bottom	sal	86	2	Sound	
697	691	B Bottom	sal	107	3	Sound	
698	692	B Bottom	sal	130	2	Sound	
699	693	B Bottom	sal	105	2	Sound	
700	694	B Bottom	sal	121	3	Sound	
701	695	B Bottom	Mango	72	less 1	Sound	
702	696	B Bottom	Bara	171	less 1	Sound	
703	697	B Bottom	Eucally puts	36	less 1	Sound	
704	698	B Bottom	Bara	110	2	Sound	
705	699	B Bottom	Bara	160	less 1	Sound	
706	700	B Bottom	Sal	81	less 1	Sound	
707	701	B Bottom	Sal	60	less 1	Sound	
708	702	B Bottom	Sal	94	2.5	Sound	
709	703	B Bottom	Sal	90	2	Sound	
710	704	B Bottom	Sal	100	2.5	Sound	
711	705	B Bottom	Sal	74	less 1	Sound	
712	706	B Bottom	Sal	110	2.5	Sound	
713	707	B Bottom	Chakunda	36	less 1	Sound	
714	708	B Bottom	Harida	57	less 1	Sound	
715	709	B Bottom	Sal	113	2.5	Sound	
716	710	B Bottom	Sal	124	2.5	Sound	
717	711	B Bottom	Bara	409	less 1	Sound	
718	712	B Bottom	sal	109	3	Sound	
719	713	B Bottom	sal	116	2.5	Sound	
720	714	B Bottom	Bara	330	less 1	Sound	
721	715	B Bottom	Phenphona	30	less 1	Sound	
722	716	B Bottom	Sal	115	2.5	Sound	
723	717	B Bottom	Dhola	36	less 1	Sound	
724	718	B Bottom	Bhonoda	69	less 1	Sound	
725	719	B Bottom	Sal	44	less 1	Sound	
726	720	B Bottom	Chakunda	46	less 1	Sound	
727	721	B Bottom	Simili	50	less 1	Sound	
728	722	B Bottom	Chakunda	49	less 1	Sound	

Range. f.o.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
729	723	B Bottom	Neem	86	1.5	Sound	
730	724	B Bottom	Asan	43	less 1	Sound	
731	725	B Bottom	Sal	103	2	Sound	
732	726	B Bottom	sal	54	less 1	Sound	
733	727	B Bottom	Sal	124	2.5	Sound	
734	728	B Bottom	Eucally puts	30	less 1	Sound	
735	729	B Bottom	Eucally puts	41	less 1	Sound	
736	730	B Bottom	sal	106	2.5	Sound	
737	731	B Bottom	Bara	192	less 1	Sound	
738	732	B Bottom	Sal	140	2.5	Sound	
739	733	B Bottom	Sal	70	less 1	Sound	
740	734	B Bottom	Sal	111	3	Sound	
741	735	B Bottom	Sal	108	3	Sound	
742	736	B Bottom	Mahula	76	1	Sound	
743	737	B Bottom	Eucally puts	35	less 1	Sound	
744	738	B Bottom	Eucally puts	36	less 1	Sound	
745	739	B Bottom	sal	96	2	Sound	
746	740	B Bottom	Mahula	95	less 1	Sound	
747	741	Topadih	Bara	117	less 1	Sound	
748	742	Topadih	Bara	143	less 1	Sound	
749	743	Topadih	Bara	117	less 1	Sound	
750	744	Topadih	Bara	142	less 1	Sound	
751	745	Topadih	Bara	123	less 1	Sound	
752	746	Topadih	Bara	178	less 1	Sound	
753	747	Topadih	narguni	35	less 1	Sound	
754	748	Topadih	narguni	42	less 1	Sound	
755	749	Topadih	narguni	44	less 1	Sound	
756	750	Topadih	narguni	62	less 1	Sound	
757	751	Topadih	Krushnachuda	81	less 1	Sound	
758	751 (A)	Topadih	Krushnachuda	61	less 1	Sound	
759	751 (B)	Topadih	Krushnachuda	59	less 1	Sound	
760	751 (C)	Topadih	Krushnachuda	62	less 1	Sound	
761	752	Topadih	Chatian	108	less 1	Sound	
762	753	Topadih	Chatian	70	less 1	Sound	
763	754	Topadih	Krushnachuda	34	less 1	Sound	
764	755	Topadih	Dam kurude	36	less 1	Sound	
765	756	Topadih	Dam kurude	44	less 1	Sound	
766	757	Topadih	narguni	77	1.5	Sound	
767	758	Topadih	narguni	33	less 1	Sound	
768	759	Topadih	Jamun	102	1	Sound	
769	760	Topadih	Jamun	109	less 1	Sound	
770	761	Topadih	Jamun	84	less 1	Sound	
771	762	Topadih	Chakunda	35	less 1	Sound	
772	763	Topadih	Kusum	148	less 1	Sound	
773	764	Topadih	Kusum	163	less 1	Sound	
774	765	Topadih	Sishu	76	less 1	Sound	
775	766	Topadih	Sishu	35	less 1	Sound	
776	767	Topadih	Sishu	40	less 1	Sound	
777	768	Topadih	Chakunda	30	less 1	Sound	
778	769	Topadih	Chakunda	62	less 1	Sound	
779	770	Topadih	Chakunda	49	less 1	Sound	
780	771	Topadih	Chakunda	32	less 1	Sound	
781	772	Topadih	Chakunda	50	less 1	Sound	
782	773	Topadih	Chakunda	34	less 1	Sound	
783	774	Topadih	Chakunda	46	less 1	Sound	
784	775	Topadih	Chakunda	46	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
785	776	Topadih	Chakunda	54	less 1	Sound	
786	777	Topadih	Chakunda	42	less 1	Sound	
787	778	Topadih	Chakunda	39	less 1	Sound	
788	779	Topadih	Chakunda	30	less 1	Sound	
789	780	Topadih	Chakunda	35	less 1	Sound	
790	781	Topadih	Chakunda	48	1.5	Sound	
791	782	Topadih	Chakunda	45	1.5	Sound	
792	783	Topadih	Chakunda	35	less 1	Sound	
793	784	Topadih	Chakunda	34	less 1	Sound	
794	785	Topadih	Chakunda	33	less 1	Sound	
795	786	Topadih	Chakunda	42	less 1	Sound	
796	787	Topadih	Chakunda	32	less 1	Sound	
797	788	Topadih	Chakunda	48	less 1	Sound	
798	789	Topadih	Chakunda	46	less 1	Sound	
799	790	Topadih	Chakunda	49	1.5	Sound	
800	791	Topadih	Chakunda	66	less 1	Sound	
801	792	Topadih	Chakunda	41	less 1	Sound	
802	793	Topadih	Chakunda	31	less 1	Sound	
803	794	Topadih	Chakunda	45	less 1	Sound	
804	795	Topadih	Chakunda	32	less 1	Sound	
805	796	Topadih	Chakunda	32	less 1	Sound	
806	797	Topadih	Chakunda	32	less 1	Sound	
807	798	Topadih	Chakunda	32	less 1	Sound	
808	799	Topadih	Chakunda	48	less 1	Sound	
809	800	Topadih	Chakunda	30	less 1	Sound	
810	801	Topadih	Chakunda	34	less 1	Sound	
811	802	Topadih	Chakunda	30	less 1	Sound	
812	803	Topadih	Chakunda	51	less 1	Sound	
813	804	Topadih	Chakunda	30	less 1	Sound	
814	805	Topadih	Chakunda	30	less 1	Sound	
815	806	Topadih	Chakunda	50	less 1	Sound	
816	807	Topadih	Chakunda	37	less 1	Sound	
817	808	Topadih	Chakunda	40	less 1	Sound	
818	809	Topadih	Dam kurude	32	less 1	Sound	
819	810	Topadih	Dam kurude	71	less 1	Sound	
820	811	Topadih	Chatian	54	less 1	Sound	
821	812	Topadih	Chatian	138	less 1	Sound	
822	812 (A)	Topadih	Chatian	57	less 1	Sound	
823	813	Topadih	Chatian	30	less 1	Sound	
824	814	Topadih	Chatian	84	less 1	Sound	
825	814 (A)	Topadih	Chatian	60	less 1	Sound	
826	815	Topadih	Chatian	42	less 1	Sound	
827	816	Topadih	Chatian	47	less 1	Sound	
828	817	Topadih	Chatian	42	less 1	Sound	
829	818	Topadih	Chatian	30	less 1	Sound	
830	819	Topadih	Krushnachuda	65	less 1	Sound	
831	820	Topadih	Krushnachuda	80	less 1	Sound	
832	821	Topadih	Krushnachuda	50	less 1	Sound	
833	822	Topadih	Krushnachuda	45	less 1	Sound	
834	823	Topadih	Krushnachuda	38	less 1	Sound	
835	824	Topadih	Krushnachuda	34	less 1	Sound	
836	825	Topadih	Krushnachuda	42	less 1	Sound	
837	826	Topadih	Krushnachuda	37	less 1	Sound	
838	827	Topadih	Krushnachuda	47	less 1	Sound	
839	828	Topadih	Krushnachuda	30	less 1	Sound	
840	829	Topadih	Krushnachuda	61	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
841	830	Topadih	Krushnachuda	43	less 1	Sound	
842	831	Topadih	Krushnachuda	37	less 1	Sound	
843	832	Topadih	Krushnachuda	34	less 1	Sound	
844	833	Topadih	Krushnachuda	54	less 1	Sound	
845	834	Topadih	Krushnachuda	51	less 1	Sound	
846	835	Topadih	Krushnachuda	37	less 1	Sound	
847	836	Topadih	Krushnachuda	71	1.5	Sound	
848	837	Topadih	Krushnachuda	66	1.5	Sound	
849	838	Topadih	Chakunda	80	less 1	Sound	
850	839	Topadih	narguni	67	2	Sound	
851	839 (A)	Topadih	narguni	50	less 1	Sound	
852	840	Topadih	Chatian	51	less 1	Sound	
853	841	Topadih	Chatian	39	less 1	Sound	
854	842	Topadih	Sagwan	53	1.5	Sound	
855	843	Topadih	Chatian	58	less 1	Sound	
856	844	Topadih	Chatian	62	1.5	Sound	
857	845	Topadih	Chatian	40	less 1	Sound	
858	846	Topadih	Chatian	73	less 1	Sound	
859	847	Topadih	Chatian	47	less 1	Sound	
860	848	Topadih	Dam kurude	38	less 1	Sound	
861	849	Topadih	Dam kurude	30	less 1	Sound	
862	850	Topadih	narguni	58	2	Sound	
863	851	Topadih	narguni	64	less 1	Sound	
864	852	Topadih	narguni	54	less 1	Sound	
865	853	Topadih	narguni	41	less 1	Sound	
866	854	Topadih	narguni	50	less 1	Sound	
867	855	Topadih	Dam kurude	42	less 1	Sound	
868	856	Topadih	Dam kurude	32	less 1	Sound	
869	857	Topadih	Chatian	34	less 1	Sound	
870	858	Topadih	Dumuri	46	less 1	Sound	
871	859	Topadih	Krushnachuda	35	less 1	Sound	
872	860	Topadih	Chatian	76	2	Sound	
873	861	Topadih	Chatian	44	less 1	Sound	
874	862	Topadih	Chatian	43	less 1	Sound	
875	863	Topadih	Chatian	70	less 1	Sound	
876	864	Topadih	narguni	35	less 1	Sound	
877	865	Topadih	narguni	71	1.5	Sound	
878	866	Topadih	Dam kurude	40	less 1	Sound	
879	867	Topadih	narguni	54	less 1	Sound	
880	868	Topadih	Dam kurude	32	less 1	Sound	
881	869	Topadih	Chatian	82	less 1	Sound	
882	869 (A)	Topadih	Chatian	75	less 1	Sound	
883	870	Topadih	Chatian	70	less 1	Sound	
884	871	Topadih	Chatian	80	less 1	Sound	
885	872	Topadih	Krushnachuda	43	less 1	Sound	
886	873	Topadih	Sal	45	less 1	Sound	
887	874	Topadih	Sal	31	less 1	Sound	
888	875	Topadih	Sal	30	less 1	Sound	
889	876	Topadih	Sal	46	less 1	Sound	
890	877	Topadih	Sal	41	less 1	Sound	
891	878	Topadih	Sal	56	less 1	Sound	
892	879	Topadih	Sal	80	less 1	Sound	
893	880	Topadih	Kanta koli	32	less 1	Sound	
894	881	Topadih	misc	35	less 1	Sound	
895	882	Topadih	Bheru	32	less 1	Sound	
896	883	Topadih	Bheru	30	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
897	884	Topadih	Chakunda	48	less 1	Sound	
898	885	Topadih	Chatian	42	less 1	Sound	
899	886	Topadih	Chatian	58	less 1	Sound	
900	887	Topadih	narguni	67	less 1	Sound	
901	888	Topadih	narguni	46	less 1	Sound	
902	889	Topadih	narguni	37	less 1	Sound	
903	890	Topadih	narguni	46	less 1	Sound	
904	891	Topadih	Dam kurude	57	less 1	Sound	
905	892	Topadih	Chatian	73	less 1	Sound	
906	893	Topadih	Chatian	37	less 1	Sound	
907	894	Topadih	Chatian	50	less 1	Sound	
908	895	Topadih	Jori	48	less 1	Sound	
909	896	Topadih	Jori	45	less 1	Sound	
910	897	Topadih	Jori	44	less 1	Sound	
911	898	Topadih	Sal	53	less 1	Sound	
912	899	Topadih	Krushnachuda	85	less 1	Sound	
913	900	Topadih	Dam kurude	38	less 1	Sound	
914	901	Topadih	Kali Kendu	44	less 1	Sound	
915	902	Topadih	Kali Kendu	96	less 1	Sound	
916	903	Topadih	Kali Kendu	60	less 1	Sound	
917	904	Topadih	Kali Kendu	46	less 1	Sound	
918	905	Topadih	Kali Kendu	34	less 1	Sound	
919	906	Topadih	narguni	114	less 1	Sound	
920	907	Topadih	kumbhi	60	less 1	Sound	
921	908	Topadih	Sal	50	less 1	Sound	
922	909	Topadih	narguni	43	less 1	Sound	
923	910	Topadih	narguni	66	1	Sound	
924	911	Topadih	narguni	43	less 1	Sound	
925	912	Topadih	Sal	31	less 1	Sound	
926	913	Topadih	Dam kurude	31	less 1	Sound	
927	914	Topadih	Dam kurude	36	less 1	Sound	
928	915	Topadih	Dam kurude	35	less 1	Sound	
929	916	Topadih	Dam kurude	31	less 1	Sound	
930	917	Topadih	Dam kurude	41	less 1	Sound	
931	918	Topadih	Dam kurude	36	less 1	Sound	
932	919	Topadih	Dam kurude	56	less 1	Sound	
933	920	Topadih	misc	48	less 1	Sound	
934	921	Topadih	misc	30	less 1	Sound	
935	922	Topadih	Dam kurude	42	less 1	Sound	
936	923	Topadih	Chakunda	38	less 1	Sound	
937	924	Topadih	Dam kurude	39	less 1	Sound	
938	925	Topadih	Dam kurude	30	less 1	Sound	
939	926	Topadih	Dam kurude	48	less 1	Sound	
940	927	Topadih	Dam kurude	31	less 1	Sound	
941	928	Topadih	misc	39	less 1	Sound	
942	929	Topadih	Chatian	37	less 1	Sound	
943	930	Topadih	Chatian	33	less 1	Sound	
944	931	Topadih	Kali Kendu	148	1.5	Sound	
945	932	Topadih	narguni	38	less 1	Sound	
946	933	Topadih	narguni	30	less 1	Sound	
947	934	Topadih	Dam kurude	30	less 1	Sound	
948	935	Topadih	Gamhari	43	less 1	Sound	
949	936	Topadih	narguni	77	2	Sound	
950	937	Topadih	narguni	60	2	Sound	
951	938	Topadih	narguni	68	2	Sound	
952	939	Topadih	Chakunda	32	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
953	940	Topadih	Chakunda	72	less 1	Sound	
954	941	Topadih	Chakunda	47	less 1	Sound	
955	942	Topadih	Chakunda	56	1.5	Sound	
956	943	Topadih	Chakunda	58	less 1	Sound	
957	944	Topadih	Chakunda	44	less 1	Sound	
958	945	Topadih	Kali Kendu	65	less 1	Sound	
959	946	Topadih	Kali Kendu	65	less 1	Sound	
960	947	Topadih	Kali Kendu	31	less 1	Sound	
961	948	Topadih	Kali Kendu	50	less 1	Sound	
962	949	Topadih	Simili	55	less 1	Sound	
963	950	Topadih	Chatian	31	less 1	Sound	
964	951	Topadih	Chakunda	52	less 1	Sound	
965	952	Topadih	Karanj	35	less 1	Sound	
966	953	Topadih	Chakunda	72	1.5	Sound	
967	954	Topadih	Chakunda	64	less 1	Sound	
968	955	Topadih	Chakunda	78	less 1	Sound	
969	956	Topadih	Chakunda	70	1.5	Sound	
970	957	Topadih	Chakunda	50	less 1	Sound	
971	958	Topadih	Chakunda	47	less 1	Sound	
972	959	Topadih	Chakunda	66	1.5	Sound	
973	960	Topadih	Gamhari	82	1.5	Sound	
974	960 (A)	Topadih	Gamhari	64	less 1	Sound	
975	961	Topadih	Dam kurude	40	less 1	Sound	
976	962	Topadih	Dam kurude	67	less 1	Sound	
977	963	Topadih	misc	48	less 1	Sound	
978	964	Topadih	misc	62	less 1	Sound	
979	965	Topadih	misc	50	less 1	Sound	
980	966	Topadih	misc	64	less 1	Sound	
981	967	Topadih	Chatian	61	less 1	Sound	
982	968	Topadih	Chatian	82	less 1	Sound	
983	969	Topadih	Dumuri	41	less 1	Sound	
984	970	Topadih	Dumuri	64	less 1	Sound	
985	971	Topadih	Dumuri	60	less 1	Sound	
986	972	Topadih	narguni	50	less 1	Sound	
987	973	Topadih	narguni	81	less 1	Sound	
988	974	Topadih	Kashi	38	less 1	Sound	
989	975	Topadih	kumbhi	31	less 1	Sound	
990	976	Topadih	Sal	42	less 1	Sound	
991	977	Topadih	Gamhari	40	less 1	Sound	
992	978	Topadih	Chatian	41	less 1	Sound	
993	979	Topadih	Eucally puts	37	less 1	Sound	
994	980	Topadih	kumbhi	72	less 1	Sound	
995	981	Topadih	kumbhi	59	less 1	Sound	
996	982	Topadih	Chakunda	64	less 1	Sound	
997	983	Topadih	Sal	30	less 1	Sound	
998	984	Topadih	Kali Kendu	48	less 1	Sound	
999	985	Topadih	Mahula	35	less 1	Sound	
1000	986	Topadih	Gamhari	30	less 1	Sound	
1001	987	Topadih	Gamhari	34	less 1	Sound	
1002	988	Topadih	Gamhari	31	less 1	Sound	
1003	989	Topadih	Sal	60	less 1	Sound	
1004	990	Topadih	Sal	45	less 1	Sound	
1005	991	Topadih	Sal	30	less 1	Sound	
1006	992	Topadih	misc	87	less 1	Sound	
1007	993	Topadih	Sal	36	less 1	Sound	
1008	994	Topadih	misc	80	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1009	995	Topadih	Kali Kendu	288	1	Sound	
1010	996	Topadih	Simili	40	less 1	Sound	
1011	997	Topadih	Simili	33	less 1	Sound	
1012	998	Topadih	Simili	30	less 1	Sound	
1013	999	Topadih	Chakunda	53	less 1	Sound	
1014	999 (A)	Topadih	Chakunda	54	less 1	Sound	
1015	1000	Topadih	Chakunda	60	less 1	Sound	
1016	1001	Topadih	Chakunda	46	less 1	Sound	
1017	1002	Topadih	Chakunda	31	less 1	Sound	
1018	1003	Topadih	Dam kurude	43	less 1	Sound	
1019	1004	Topadih	Dam kurude	40	less 1	Sound	
1020	1005	Topadih	Chakunda	38	less 1	Sound	
1021	1006	Topadih	Chakunda	41	less 1	Sound	
1022	1007	Topadih	Chakunda	47	less 1	Sound	
1023	1008	Topadih	Chakunda	50	less 1	Sound	
1024	1009	Topadih	Gamhari	44	less 1	Sound	
1025	1010	Topadih	Gamhari	43	less 1	Sound	
1026	1011	Topadih	Chakunda	60	1.5	Sound	
1027	1012	Topadih	misc	31	less 1	Sound	
1028	1013	Topadih	Chakunda	48	less 1	Sound	
1029	1014	Topadih	Chakunda	35	less 1	Sound	
1030	1015	Topadih	Chakunda	47	less 1	Sound	
1031	1016	Topadih	Chakunda	40	less 1	Sound	
1032	1017	Topadih	Chakunda	46	less 1	Sound	
1033	1018	Topadih	Chakunda	40	less 1	Sound	
1034	1019	Topadih	Chakunda	55	less 1	Sound	
1035	1020	Topadih	Chakunda	34	less 1	Sound	
1036	1021	Topadih	Chakunda	36	less 1	Sound	
1037	1022	Topadih	Chakunda	33	less 1	Sound	
1038	1023	Topadih	Chakunda	37	less 1	Sound	
1039	1024	Topadih	Chakunda	35	less 1	Sound	
1040	1025	Topadih	Chakunda	46	less 1	Sound	
1041	1026	Topadih	Chakunda	45	less 1	Sound	
1042	1027	Topadih	Sal	37	less 1	Sound	
1043	1028	Topadih	Sal	32	less 1	Sound	
1044	1029	Topadih	Sal	60	less 1	Sound	
1045	1030	Topadih	Kusum	86	less 1	Sound	
1046	1031	Topadih	Gamhari	62	less 1	Sound	
1047	1032	Topadih	Sal	70	1.5	Sound	
1048	1033	Topadih	Kashi	44	less 1	Sound	
1049	1034	Topadih	Dam kurude	32	less 1	Sound	
1050	1035	Topadih	Chakunda	34	less 1	Sound	
1051	1036	Topadih	Chakunda	30	less 1	Sound	
1052	1037	Topadih	Chakunda	42	less 1	Sound	
1053	1038	Topadih	Chakunda	47	less 1	Sound	
1054	1039	Topadih	Chakunda	36	less 1	Sound	
1055	1040	Topadih	Chakunda	35	less 1	Sound	
1056	1041	Topadih	Chakunda	37	less 1	Sound	
1057	1042	Topadih	Chakunda	38	less 1	Sound	
1058	1043	Topadih	Chakunda	48	less 1	Sound	
1059	1044	Topadih	Karanj	30	less 1	Sound	
1060	1045	Topadih	Chakunda	45	less 1	Sound	
1061	1046	Topadih	Chakunda	45	less 1	Sound	
1062	1047	Topadih	Chakunda	37	less 1	Sound	
1063	1048	Topadih	Chakunda	36	less 1	Sound	
1064	1049	Topadih	Sal	42	less 1	Sound	

Asstt. F.S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1065	1050	Topadih	Chakunda	66	less 1	Sound	
1066	1051	Topadih	Chakunda	63	less 1	Sound	
1067	1052	Topadih	Chakunda	68	1.5	Sound	
1068	1053	Topadih	narguni	80	less 1	Sound	
1069	1054	Topadih	Karanj	33	less 1	Sound	
1070	1055	Topadih	Sal	140	1.5	Sound	
1071	1056	Topadih	Simili	35	less 1	Sound	
1072	1057	Topadih	misc	80	1.5	Sound	
1073	1058	Topadih	kumbhi	60	less 1	Sound	
1074	1059	Topadih	Sal	48	less 1	Sound	
1075	1060	Topadih	kumbhi	37	less 1	Sound	
1076	1061	Topadih	misc	32	less 1	Sound	
1077	1062	Topadih	kumbhi	55	less 1	Sound	
1078	1063	Topadih	Karanj	36	less 1	Sound	
1079	1064	Topadih	Maei	37	less 1	Sound	
1080	1065	Topadih	Maei	34	less 1	Sound	
1081	1066	Topadih	Chakunda	77	less 1	Sound	
1082	1067	Topadih	Chakunda	52	less 1	Sound	
1083	1068	Topadih	Chakunda	54	less 1	Sound	
1084	1069	Topadih	Karanj	32	less 1	Sound	
1085	1070	Topadih	Gamhari	35	less 1	Sound	
1086	1071	Topadih	Gamhari	38	less 1	Sound	
1087	1072	Topadih	Chakunda	61	less 1	Sound	
1088	1073	Topadih	Chakunda	83	less 1	Sound	
1089	1074	Topadih	Chakunda	47	less 1	Sound	
1090	1074 (A)	Topadih	Chakunda	56	less 1	Sound	
1091	1075	Topadih	Harida	43	less 1	Sound	
1092	1076	Topadih	Chakunda	76	less 1	Sound	
1093	1077	Topadih	Chakunda	48	less 1	Sound	
1094	1078	Topadih	Chakunda	34	less 1	Sound	
1095	1079	Topadih	Chakunda	50	less 1	Sound	
1096	1080	Topadih	Harida	49	less 1	Sound	
1097	1081	Topadih	Chakunda	30	less 1	Sound	
1098	1082	Topadih	Chakunda	63	less 1	Sound	
1099	1082 (A)	Topadih	Chakunda	43	less 1	Sound	
1100	1083	Topadih	Chakunda	44	less 1	Sound	
1101	1084	Topadih	Chakunda	50	less 1	Sound	
1102	1084 (A)	Topadih	Chakunda	43	less 1	Sound	
1103	1085	Topadih	Chakunda	43	less 1	Sound	
1104	1086	Topadih	Chakunda	37	less 1	Sound	
1105	1087	Topadih	Chakunda	55	less 1	Sound	
1106	1088	Topadih	Chakunda	78	1.5	Sound	
1107	1089	Topadih	Chakunda	34	less 1	Sound	
1108	1090	Topadih	Simili	45	less 1	Sound	
1109	1091	Topadih	narguni	38	less 1	Sound	
1110	1092	Topadih	Chatian	84	less 1	Sound	
1111	1093	Topadih	Jori	136	1.5	Sound	
1112	1094	Topadih	Asan	51	less 1	Sound	
1113	1095	Topadih	Kendu	32	less 1	Sound	
1114	1096	Topadih	Poi puijamal	32	less 1	Sound	
1115	1097	Topadih	Tentala	31	less 1	Sound	
1116	1098	Topadih	Dam kurude	42	less 1	Sound	
1117	1099	Topadih	Eucally puts	35	less 1	Sound	
1118	1100	Topadih	narguni	58	less 1	Sound	
1119	1101	Topadih	Bara	44	less 1	Sound	
1120	1102	Topadih	Dumuri	33	less 1	Sound	

RFO, F-G.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1121	1103	Topadih	narguni	47	less 1	Sound	
1122	1104	Topadih	Misc	36	less 1	Sound	
1123	1105	Topadih	Bara	462	less 1	Sound	
1124	1106	Topadih	Chatian	38	less 1	Sound	
1125	1107	Topadih	Simili	157	2	Sound	
1126	1108	Topadih	Tentala	48	less 1	Sound	
1127	1109	Topadih	narguni	50	less 1	Sound	
1128	1109 (A)	Topadih	narguni	43	less 1	Sound	
1129	1110	Topadih	Sal	46	less 1	Sound	
1130	1111	Topadih	misc	66	2	Sound	
1131	1112	Topadih	Dam kurude	36	less 1	Sound	
1132	1113	Topadih	Dam kurude	45	less 1	Sound	
1133	1114	Topadih	narguni	116	less 1	Sound	
1134	1115	Topadih	narguni	31	less 1	Sound	
1135	1116	Topadih	Bara	40	less 1	Sound	
1136	1117	Topadih	Mango	36	less 1	Sound	
1137	1118	Topadih	narguni	62	less 1	Sound	
1138	1119	Topadih	Simili	30	less 1	Sound	
1139	1120	Topadih	Eucally puts	57	less 1	Sound	
1140	1121	Topadih	Chatian	46	less 1	Sound	
1141	1122	Topadih	Simili	170	less 1	Sound	
1142	1123	Topadih	Simili	34	less 1	Sound	
1143	1124	Topadih	Dam kurude	52	less 1	Sound	
1144	1125	Topadih	Dam kurude	42	less 1	Sound	
1145	1126	Topadih	narguni	53	less 1	Sound	
1146	1127	Topadih	Dam kurude	54	less 1	Sound	
1147	1128	Topadih	Dam kurude	44	less 1	Sound	
1148	1129	Topadih	Dam kurude	43	less 1	Sound	
1149	1130	Topadih	Dam kurude	40	less 1	Sound	
1150	1131	Topadih	Dam kurude	52	less 1	Sound	
1151	1132	Topadih	Champa	47	less 1	Sound	
1152	1133	Topadih	Champa	35	less 1	Sound	
1153	1134	Topadih	Champa	40	less 1	Sound	
1154	1135	Topadih	Chakunda	38	less 1	Sound	
1155	1136	Topadih	Dam kurude	42	less 1	Sound	
1156	1137	Topadih	Chakunda	43	less 1	Sound	
1157	1138	Topadih	Chakunda	38	less 1	Sound	
1158	1139	Topadih	Chakunda	30	less 1	Sound	
1159	1140	Topadih	Champa	53	less 1	Sound	
1160	1141	Topadih	Champa	55	less 1	Sound	
1161	1142	Topadih	Champa	30	less 1	Sound	
1162	1143	Topadih	Champa	35	less 1	Sound	
1163	1144	Topadih	Champa	47	less 1	Sound	
1164	1145	Topadih	Chakunda	45	less 1	Sound	
1165	1146	Topadih	Champa	56	less 1	Sound	
1166	1147	Topadih	Champa	35	less 1	Sound	
1167	1148	Topadih	Champa	40	less 1	Sound	
1168	1149	Topadih	Chakunda	50	less 1	Sound	
1169	1150	Topadih	Champa	62	less 1	Sound	
1170	1151	Topadih	Chakunda	38	less 1	Sound	
1171	1152	Topadih	Champa	57	less 1	Sound	
1172	1153	Topadih	Chakunda	49	less 1	Sound	
1173	1154	Topadih	Chakunda	30	less 1	Sound	
1174	1155	Topadih	Champa	31	less 1	Sound	
1175	1156	Topadih	Chakunda	44	less 1	Sound	
1176	1157	Topadih	Champa	32	less 1	Sound	

Range O.S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1177	1158	Topadih	Champa	31	less 1	Sound	
1178	1159	Topadih	Chakunda	39	less 1	Sound	
1179	1160	Topadih	Chakunda	34	less 1	Sound	
1180	1161	Topadih	Champa	50	less 1	Sound	
1181	1162	Topadih	Chakunda	48	less 1	Sound	
1182	1163	Topadih	Champa	52	less 1	Sound	
1183	1164	Topadih	Champa	59	less 1	Sound	
1184	1165	Topadih	Chakunda	36	less 1	Sound	
1185	1166	Topadih	Champa	57	less 1	Sound	
1186	1167	Topadih	Champa	41	less 1	Sound	
1187	1168	Topadih	Champa	43	less 1	Sound	
1188	1169	Topadih	Champa	45	less 1	Sound	
1189	1170	Topadih	Champa	34	less 1	Sound	
1190	1171	Topadih	Champa	38	less 1	Sound	
1191	1172	Topadih	Champa	34	less 1	Sound	
1192	1173	Topadih	Champa	49	less 1	Sound	
1193	1174	Topadih	Champa	47	less 1	Sound	
1194	1175	Topadih	Champa	30	less 1	Sound	
1195	1176	Topadih	Champa	48	less 1	Sound	
1196	1177	Topadih	Champa	44	less 1	Sound	
1197	1178	Topadih	Chakunda	31	less 1	Sound	
1198	1179	Topadih	Champa	49	less 1	Sound	
1199	1180	Topadih	Champa	39	less 1	Sound	
1200	1181	Topadih	Champa	30	less 1	Sound	
1201	1182	Topadih	Champa	47	less 1	Sound	
1202	1183	Topadih	Champa	30	less 1	Sound	
1203	1184	Topadih	Bara	47	less 1	Sound	
1204	1185	Topadih	Bara	34	less 1	Sound	
1205	1186	Topadih	Bara	33	less 1	Sound	
1206	1187	Topadih	Chakunda	40	less 1	Sound	
1207	1188	Topadih	Chakunda	46	less 1	Sound	
1208	1189	Topadih	Chakunda	41	less 1	Sound	
1209	1190	Topadih	Chakunda	53	less 1	Sound	
1210	1191	Topadih	Chakunda	48	less 1	Sound	
1211	1192	Topadih	Chakunda	36	less 1	Sound	
1212	1193	Topadih	Chakunda	57	less 1	Sound	
1213	1194	Topadih	Chakunda	41	less 1	Sound	
1214	1195	Topadih	Chakunda	42	less 1	Sound	
1215	1196	Topadih	Chakunda	49	less 1	Sound	
1216	1197	Topadih	Chakunda	50	less 1	Sound	
1217	1198	Topadih	Chakunda	47	less 1	Sound	
1218	1199	Topadih	Chakunda	51	less 1	Sound	
1219	1200	Topadih	Chakunda	31	less 1	Sound	
1220	1201	Topadih	Chakunda	42	less 1	Sound	
1221	1202	Topadih	Chakunda	48	less 1	Sound	
1222	1203	Topadih	Chakunda	34	less 1	Sound	
1223	1204	Topadih	Chakunda	57	less 1	Sound	
1224	1205	Topadih	Chakunda	44	less 1	Sound	
1225	1206	Topadih	Chakunda	59	less 1	Sound	
1226	1207	Topadih	Chakunda	35	less 1	Sound	
1227	1208	Topadih	Chakunda	50	less 1	Sound	
1228	1209	Topadih	Chakunda	42	less 1	Sound	
1229	1210	Topadih	Chakunda	30	less 1	Sound	
1230	1211	Topadih	Chakunda	40	less 1	Sound	
1231	1212	Topadih	Chakunda	40	less 1	Sound	
1232	1213	Topadih	Chakunda	46	less 1	Sound	

Range. I. G.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1233	1214	Topadih	Chakunda	44	less 1	Sound	
1234	1215	Topadih	Chakunda	52	less 1	Sound	
1235	1216	Topadih	Chakunda	40	less 1	Sound	
1236	1217	Topadih	Chakunda	31	less 1	Sound	
1237	1218	Topadih	Chakunda	61	less 1	Sound	
1238	1219	Topadih	Chakunda	32	less 1	Sound	
1239	1220	Topadih	Chakunda	31	less 1	Sound	
1240	1221	Topadih	Chakunda	54	less 1	Sound	
1241	1222	Topadih	Chakunda	48	less 1	Sound	
1242	1223	Topadih	Chakunda	82	less 1	Sound	
1243	1224	Topadih	Chakunda	35	less 1	Sound	
1244	1225	Topadih	Chakunda	32	less 1	Sound	
1245	1226	Topadih	Chakunda	32	less 1	Sound	
1246	1227	Topadih	Chakunda	30	less 1	Sound	
1247	1228	Topadih	Chakunda	39	less 1	Sound	
1248	1229	Topadih	Chakunda	42	less 1	Sound	
1249	1230	Topadih	Chakunda	32	less 1	Sound	
1250	1231	Topadih	Chakunda	30	less 1	Sound	
1251	1232	Topadih	Chakunda	32	less 1	Sound	
1252	1233	Topadih	Chakunda	37	less 1	Sound	
1253	1234	Topadih	Chakunda	31	less 1	Sound	
1254	1235	Topadih	Chakunda	30	less 1	Sound	
1255	1236	Topadih	Chakunda	41	less 1	Sound	
1256	1237	Topadih	Eucally puts	30	less 1	Sound	
1257	1238	Topadih	Chakunda	30	less 1	Sound	
1258	1239	Topadih	Chakunda	44	less 1	Sound	
1259	1240	Topadih	Chakunda	32	less 1	Sound	
1260	1241	Topadih	Chakunda	34	less 1	Sound	
1261	1242	Topadih	Chakunda	57	less 1	Sound	
1262	1243	Topadih	Chakunda	63	less 1	Sound	
1263	1244	Topadih	Chakunda	45	less 1	Sound	
1264	1245	Topadih	Chakunda	32	less 1	Sound	
1265	1246	Topadih	Chakunda	67	1.5	Sound	
1266	1247	Topadih	Chakunda	34	less 1	Sound	
1267	1248	Topadih	Chakunda	55	less 1	Sound	
1268	1249	Topadih	Chakunda	74	less 1	Sound	
1269	1250	Topadih	Chakunda	48	less 1	Sound	
1270	1251	Topadih	Chakunda	43	less 1	Sound	
1271	1252	Topadih	Chakunda	41	less 1	Sound	
1272	1253	Topadih	Chakunda	50	less 1	Sound	
1273	1254	Topadih	Chakunda	31	less 1	Sound	
1274	1255	Topadih	Chakunda	30	less 1	Sound	
1275	1256	Topadih	Eucally puts	67	1.5	Sound	
1276	1257	Topadih	Eucally puts	57	less 1	Sound	
1277	1258	Topadih	Eucally puts	64	less 1	Sound	
1278	1259	Topadih	Eucally puts	72	less 1	Sound	
1279	1260	Topadih	Eucally puts	58	less 1	Sound	
1280	1261	Topadih	Eucally puts	33	less 1	Sound	
1281	1262	Topadih	Eucally puts	48	less 1	Sound	
1282	1263	Topadih	Eucally puts	51	less 1	Sound	
1283	1264	Topadih	Eucally puts	39	less 1	Sound	
1284	1265	Topadih	Eucally puts	65	1.5	Sound	
1285	1266	Topadih	Eucally puts	62	less 1	Sound	
1286	1267	Topadih	Eucally puts	44	less 1	Sound	
1287	1268	Topadih	Eucally puts	51	less 1	Sound	
1288	1269	Topadih	Maha Neem	70	less 1	Sound	

Deco. F. S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1289	1270	Topadih	Eucally puts	30	less 1	Sound	
1290	1271	Topadih	Maha Neem	35	less 1	Sound	
1291	1272	Topadih	Maha Neem	37	less 1	Sound	
1292	1273	Topadih	Eucally puts	66	less 1	Sound	
1293	1274	Topadih	Eucally puts	58	less 1	Sound	
1294	1275	Topadih	Eucally puts	48	less 1	Sound	
1295	1276	Topadih	Eucally puts	38	less 1	Sound	
1296	1277	Topadih	Eucally puts	68	1.5	Sound	
1297	1278	Topadih	Eucally puts	48	less 1	Sound	
1298	1279	Topadih	Neem	95	1.5	Sound	
1299	1280	Topadih	Eucally puts	49	less 1	Sound	
1300	1281	Topadih	Eucally puts	45	less 1	Sound	
1301	1282	Topadih	Eucally puts	40	less 1	Sound	
1302	1283	Topadih	Eucally puts	30	less 1	Sound	
1303	1284	Topadih	Eucally puts	30	less 1	Sound	
1304	1285	Topadih	Dam kurude	34	less 1	Sound	
1305	1286	Topadih	Eucally puts	31	less 1	Sound	
1306	1287	Topadih	Eucally puts	44	less 1	Sound	
1307	1288	Topadih	Eucally puts	30	less 1	Sound	
1308	1289	Topadih	Eucally puts	32	less 1	Sound	
1309	1290	Topadih	Eucally puts	30	less 1	Sound	
1310	1291	Topadih	Eucally puts	38	less 1	Sound	
1311	1292	Topadih	Eucally puts	37	less 1	Sound	
1312	1293	Topadih	Eucally puts	31	less 1	Sound	
1313	1294	Topadih	Eucally puts	30	less 1	Sound	
1314	1295	Topadih	Eucally puts	35	less 1	Sound	
1315	1296	Topadih	Eucally puts	35	less 1	Sound	
1316	1297	Topadih	Bahada	37	less 1	Sound	
1317	1298	Topadih	Kashi	34	less 1	Sound	
1318	1299	Topadih	Kashi	35	less 1	Sound	
1319	1300	Topadih	Bahada	41	less 1	Sound	
1320	1301	Topadih	Maei	30	less 1	Sound	
1321	1302	Topadih	Simili	60	less 1	Sound	
1322	1303	Topadih	Sal	52	less 1	Sound	
1323	1304	Topadih	Bhaliya	82	less 1	Sound	
1324	1305	Topadih	Sal	48	less 1	Sound	
1325	1306	Topadih	Jori	145	less 1	Sound	
1326	1307	Topadih	kumbhi	35	less 1	Sound	
1327	1308	Topadih	Sal	66	less 1		Unsound
1328	1309	Topadih	Misc	75	less 1	Sound	
1329	1310	Topadih	kumbhi	34	less 1	Sound	
1330	1311	Topadih	Bahada	60	less 1	Sound	
1331	1312	Topadih	Kendu	35	less 1	Sound	
1332	1313	Topadih	Kendu	31	less 1	Sound	
1333	1314	Topadih	Sal	48	less 1	Sound	
1334	1315	Topadih	Sal	143	2.5	Sound	
1335	1316	Topadih	Sal	30	less 1	Sound	
1336	1317	Topadih	Bara	350	less 1	Sound	
1337	1318	Topadih	Simili	57	less 1	Sound	
1338	1319	Topadih	Krushnachuda	70	less 1	Sound	
1339	1320	Topadih	Krushnachuda	45	less 1	Sound	
1340	1321	Topadih	Eucally puts	60	1.5	Sound	
1341	1322	Topadih	Chakunda	55	less 1	Sound	
1342	1323	Topadih	Neem	32	less 1	Sound	
1343	1324	Topadih	Krushnachuda	36	less 1	Sound	
1344	1325	Topadih	Krushnachuda	30	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1345	1326	Topadih	Misc	41	less 1	Sound	
1346	1327	Topadih	Sal	76	1.5	Sound	
1347	1328	Topadih	Dumuri	34	less 1	Sound	
1348	1329	Topadih	narguni	30	less 1	Sound	
1349	1330	Topadih	Eucally puts	30	less 1	Sound	
1350	1331	Topadih	Chatian	82	less 1	Sound	
1351	1332	Topadih	Eucally puts	34	less 1	Sound	
1352	1333	Topadih	Krushnachuda	35	less 1	Sound	
1353	1334	Topadih	Jamun	62	less 1	Sound	
1354	1335	Topadih	Jamun	34	less 1	Sound	
1355	1336	Topadih	Chatian	32	less 1	Sound	
1356	1337	Topadih	Chatian	31	less 1	Sound	
1357	1338	Topadih	Chatian	30	less 1	Sound	
1358	1339	Topadih	Eucally puts	36	less 1	Sound	
1359	1340	Topadih	Eucally puts	39	less 1	Sound	
1360	1341	Topadih	Eucally puts	30	less 1	Sound	
1361	1342	Topadih	Eucally puts	51	less 1	Sound	
1362	1343	Topadih	Eucally puts	44	less 1	Sound	
1363	1344	Topadih	Eucally puts	44	less 1	Sound	
1364	1345	Topadih	Eucally puts	33	less 1	Sound	
1365	1346	Topadih	Eucally puts	54	less 1	Sound	
1366	1347	Topadih	Eucally puts	36	less 1	Sound	
1367	1348	Topadih	Eucally puts	47	less 1	Sound	
1368	1349	Topadih	Eucally puts	46	less 1	Sound	
1369	1350	Topadih	Eucally puts	53	less 1	Sound	
1370	1351	Topadih	Eucally puts	56	less 1	Sound	
1371	1352	Topadih	Eucally puts	61	less 1	Sound	
1372	1353	Topadih	Eucally puts	56	less 1	Sound	
1373	1354	Topadih	Eucally puts	60	less 1	Sound	
1374	1355	Topadih	Eucally puts	49	less 1	Sound	
1375	1356	Topadih	Eucally puts	65	1.5	Sound	
1376	1357	Topadih	Eucally puts	42	less 1	Sound	
1377	1358	Topadih	Eucally puts	66	less 1	Sound	
1378	1359	Topadih	Eucally puts	60	1.5	Sound	
1379	1360	Topadih	Eucally puts	49	less 1	Sound	
1380	1361	Topadih	Eucally puts	30	less 1	Sound	
1381	1362	Topadih	Jamun	156	less 1	Sound	
1382	1363	Topadih	Sal	115	2	Sound	
1383	1364	Topadih	Sal	120	2.5	Sound	
1384	1365	Topadih	Sal	78	1.5	Sound	
1385	1366	Topadih	Sal	87	1.5	Sound	
1386	1367	Topadih	Sal	89	less 1	Sound	
1387	1368	Topadih	Sal	111	less 1	Sound	
1388	1369	Topadih	Sal	94	2	Sound	
1389	1370	Topadih	Sal	97	2.5	Sound	
1390	1371	Topadih	Sal	105	2.5	Sound	
1391	1372	Topadih	Sal	85	2	Sound	
1392	1373	Topadih	Sal	116	2.5	Sound	
1393	1374	Topadih	Sal	83	2.5	Sound	
1394	1375	Topadih	Sal	80	2	Sound	
1395	1376	Guali Pit	Chakunda	51	less 1	Sound	
1396	1377	Guali Pit	Chakunda	40	less 1	Sound	
1397	1378	Guali Pit	Chakunda	44	less 1	Sound	
1398	1379	Guali Pit	Chakunda	54	less 1	Sound	
1399	1380	Guali Pit	Chakunda	42	less 1	Sound	
1400	1381	Guali Pit	Chakunda	35	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1401	1382	Guali Pit	Chakunda	32	less 1	Sound	
1402	1383	Guali Pit	Chakunda	41	less 1	Sound	
1403	1384	Guali Pit	Chakunda	45	less 1	Sound	
1404	1385	Guali Pit	Chakunda	37	less 1	Sound	
1405	1386	Guali Pit	Chakunda	30	less 1	Sound	
1406	1387	Guali Pit	Chakunda	42	less 1	Sound	
1407	1388	Guali Pit	Chakunda	41	less 1	Sound	
1408	1389	Guali Pit	Chakunda	44	less 1	Sound	
1409	1390	Guali Pit	Chakunda	52	less 1	Sound	
1410	1391	Guali Pit	Chakunda	50	less 1	Sound	
1411	1391 (A)	Guali Pit	Chakunda	53	less 1	Sound	
1412	1392	Guali Pit	Chakunda	37	less 1	Sound	
1413	1393	Guali Pit	Chakunda	36	less 1	Sound	
1414	1394	Guali Pit	Chakunda	32	less 1	Sound	
1415	1394 (A)	Guali Pit	Chakunda	32	less 1	Sound	
1416	1395	Guali Pit	Chakunda	34	less 1	Sound	
1417	1395 (A)	Guali Pit	Chakunda	35	less 1	Sound	
1418	1396	Guali Pit	Chakunda	49	less 1	Sound	
1419	1397	Guali Pit	Chakunda	46	less 1	Sound	
1420	1398	Guali Pit	Chakunda	30	less 1	Sound	
1421	1399	Guali Pit	Chakunda	30	less 1	Sound	
1422	1400	Guali Pit	Kendu	32	less 1	Sound	
1423	1401	Guali Pit	Sal	58	less 1		Unsound
1424	1402	Guali Pit	Sal	33	less 1	Sound	
1425	1403	Guali Pit	Dam kurude	30	less 1	Sound	
1426	1404	Guali Pit	Kendu	32	less 1	Sound	
1427	1405	Guali Pit	Eucally puts	30	less 1	Sound	
1428	1406	Guali Pit	Kendu	30	less 1	Sound	
1429	1407	Guali Pit	Maei	64	less 1	Sound	
1430	1408	Guali Pit	Eucally puts	50	less 1	Sound	
1431	1409	Guali Pit	Eucally puts	30	less 1	Sound	
1432	1410	Guali Pit	Kendu	40	less 1	Sound	
1433	1411	Guali Pit	Jori	304	less 1	Sound	
1434	1412	Guali Pit	Sal	36	less 1	Sound	
1435	1413	Guali Pit	Chatian	72	less 1	Sound	
1436	1414	Guali Pit	Chatian	58	less 1	Sound	
1437	1415	Guali Pit	Sal	37	less 1	Sound	
1438	1416	Guali Pit	Sal	32	less 1	Sound	
1439	1417	Guali Pit	Mahula	32	less 1	Sound	
1440	1418	Guali Pit	Sal	30	less 1	Sound	
1441	1419	Guali Pit	Sal	32	less 1	Sound	
1442	1420	Guali Pit	Chatian	34	less 1	Sound	
1443	1421	Guali Pit	Chatian	55	less 1	Sound	
1444	1422	Guali Pit	Chara	41	less 1	Sound	
1445	1423	Guali Pit	Sal	58	1.5	Sound	
1446	1424	Guali Pit	Sal	30	less 1	Sound	
1447	1425	Guali Pit	Kendu	31	less 1	Sound	
1448	1426	Guali Pit	Kendu	35	less 1	Sound	
1449	1427	Guali Pit	Sal	33	less 1	Sound	
1450	1428	Guali Pit	Kendu	34	less 1	Sound	
1451	1429	Guali Pit	Maei	32	less 1	Sound	
1452	1430	Guali Pit	Sal	30	less 1	Sound	
1453	1431	Guali Pit	Maei	41	less 1	Sound	
1454	1432	Guali Pit	Asan	41	less 1	Sound	
1455	1433	Guali Pit	Sal	30	less 1	Sound	
1456	1434	Guali Pit	Sal	34	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1457	1435	Guali Pit	Sal	32	less 1	Sound	
1458	1436	Guali Pit	Kashi	172	1.5	Sound	
1459	1437	Guali Pit	Chatian	62	less 1	Sound	
1460	1438	Guali Pit	Chatian	72	less 1	Sound	
1461	1439	Guali Pit	Sal	52	less 1	Sound	
1462	1440	Guali Pit	Sal	38	less 1	Sound	
1463	1441	Guali Pit	Sal	50	less 1	Sound	
1464	1442	Guali Pit	Chakunda	49	less 1	Sound	
1465	1443	Guali Pit	Sal	42	less 1	Sound	
1466	1444	Guali Pit	Sal	31	less 1	Sound	
1467	1445	Guali Pit	Sal	48	less 1	Sound	
1468	1446	Guali Pit	Sal	40	less 1	Sound	
1469	1447	Guali Pit	Sal	33	less 1	Sound	
1470	1448	Guali Pit	Sal	32	less 1	Sound	
1471	1449	Guali Pit	Sal	30	less 1	Sound	
1472	1450	Guali Pit	Sal	56	less 1	Sound	
1473	1451	Guali Pit	Sal	45	less 1	Sound	
1474	1452	Guali Pit	Sal	38	less 1	Sound	
1475	1453	Guali Pit	Sal	34	less 1	Sound	
1476	1454	Guali Pit	Sal	61	1.5	Sound	
1477	1455	Guali Pit	Sal	32	less 1	Sound	
1478	1456	Guali Pit	Sal	34	less 1	Sound	
1479	1457	Guali Pit	Sal	42	less 1	Sound	
1480	1458	Guali Pit	Sal	48	less 1	Sound	
1481	1459	Guali Pit	Sal	30	less 1	Sound	
1482	1460	Guali Pit	Sal	30	less 1	Sound	
1483	1461	Guali Pit	Sal	39	less 1	Sound	
1484	1462	Guali Pit	Sal	30	less 1	Sound	
1485	1463	Guali Pit	Sal	34	less 1	Sound	
1486	1464	Guali Pit	Sal	40	less 1	Sound	
1487	1465	Guali Pit	Sal	92	less 1	Sound	
1488	1466	Guali Pit	Sal	37	less 1	Sound	
1489	1467	Guali Pit	Sal	39	less 1	Sound	
1490	1468	Guali Pit	Sal	33	less 1	Sound	
1491	1469	Guali Pit	Sal	36	less 1	Sound	
1492	1470	Guali Pit	Sal	39	less 1	Sound	
1493	1471	Guali Pit	Sal	35	less 1	Sound	
1494	1472	Guali Pit	Sal	45	less 1	Sound	
1495	1473	Guali Pit	Sal	35	less 1	Sound	
1496	1474	Guali Pit	Sal	32	less 1	Sound	
1497	1475	Guali Pit	Sal	44	less 1	Sound	
1498	1476	Guali Pit	Sal	32	less 1	Sound	
1499	1477	Guali Pit	Sal	34	less 1	Sound	
1500	1478	Guali Pit	Sal	45	less 1	Sound	
1501	1479	Guali Pit	Sal	36	less 1	Sound	
1502	1480	Guali Pit	Sal	41	less 1	Sound	
1503	1481	Guali Pit	Sal	35	less 1	Sound	
1504	1482	Guali Pit	Sal	31	less 1	Sound	
1505	1483	Guali Pit	Sal	37	less 1	Sound	
1506	1484	Guali Pit	Sal	42	less 1	Sound	
1507	1485	Guali Pit	Sal	49	less 1	Sound	
1508	1486	Guali Pit	Sal	37	less 1	Sound	
1509	1487	Guali Pit	Sal	38	less 1	Sound	
1510	1488	Guali Pit	Sal	31	less 1	Sound	
1511	1489	Guali Pit	Sal	33	less 1	Sound	
1512	1490	Guali Pit	Sal	35	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1513	1491	Guali Pit	Sal	36	less 1	Sound	
1514	1492	Guali Pit	Sal	30	less 1	Sound	
1515	1493	Guali Pit	Sal	40	less 1	Sound	
1516	1494	Guali Pit	Sal	33	less 1	Sound	
1517	1495	Guali Pit	Sal	42	less 1	Sound	
1518	1496	Guali Pit	Sal	42	less 1	Sound	
1519	1497	Guali Pit	Sal	39	less 1	Sound	
1520	1498	Guali Pit	Sal	40	less 1	Sound	
1521	1499	Guali Pit	Sal	40	less 1	Sound	
1522	1500	Guali Pit	Sal	38	less 1	Sound	
1523	1501	Guali Pit	Sal	37	less 1	Sound	
1524	1502	Guali Pit	Sal	33	less 1	Sound	
1525	1503	Guali Pit	Sal	42	less 1	Sound	
1526	1504	Guali Pit	Sal	36	less 1	Sound	
1527	1505	Guali Pit	Sal	41	less 1	Sound	
1528	1506	Guali Pit	Kendu	39	less 1	Sound	
1529	1507	Guali Pit	Sal	45	less 1	Sound	
1530	1508	Guali Pit	Sal	31	less 1	Sound	
1531	1509	Guali Pit	Asan	41	less 1	Sound	
1532	1510	Guali Pit	Kendu	48	less 1	Sound	
1533	1511	Guali Pit	Kendu	37	less 1	Sound	
1534	1512	Guali Pit	Sal	41	less 1	Sound	
1535	1513	Guali Pit	Asan	37	less 1	Sound	
1536	1514	Guali Pit	Sal	38	less 1	Sound	
1537	1515	Guali Pit	Sal	36	less 1	Sound	
1538	1516	Guali Pit	Sal	31	less 1	Sound	
1539	1517	Guali Pit	Sal	30	less 1	Sound	
1540	1518	Guali Pit	Sal	54	less 1	Sound	
1541	1519	Guali Pit	Sal	35	less 1	Sound	
1542	1520	Guali Pit	Sal	38	less 1	Sound	
1543	1521	Guali Pit	Sal	30	less 1	Sound	
1544	1522	Guali Pit	Sal	37	less 1	Sound	
1545	1523	Guali Pit	Sal	35	less 1	Sound	
1546	1524	Guali Pit	Sal	32	less 1	Sound	
1547	1525	Guali Pit	Asan	31	less 1	Sound	
1548	1526	Guali Pit	Sal	30	less 1	Sound	
1549	1527	Guali Pit	Sal	49	less 1	Sound	
1550	1528	Guali Pit	Sal	40	less 1	Sound	
1551	1529	Guali Pit	Sal	46	less 1	Sound	
1552	1530	Guali Pit	Sal	32	less 1	Sound	
1553	1531	Guali Pit	Sal	43	less 1	Sound	
1554	1532	Guali Pit	Sal	33	less 1	Sound	
1555	1533	Guali Pit	Sal	51	less 1	Sound	
1556	1534	Guali Pit	Sal	40	less 1	Sound	
1557	1535	Guali Pit	Sal	46	less 1	Sound	
1558	1536	Guali Pit	Sal	41	less 1	Sound	
1559	1537	Guali Pit	Karanj	36	less 1	Sound	
1560	1538	Guali Pit	Bhaliya	41	less 1	Sound	
1561	1539	Guali Pit	kuruma	64	less 1	Sound	
1562	1540	Guali Pit	Dhola	56	less 1		Unsound
1563	1541	Guali Pit	Kusum	34	less 1	Sound	
1564	1542	Guali Pit	Harida	92	2.5	Sound	
1565	1543	Guali Pit	Kendu	32	less 1	Sound	
1566	1544	Guali Pit	Mahula	135	less 1	Sound	
1567	1545	Guali Pit	Chara	35	1.5	Sound	
1568	1546	Guali Pit	Sal	64	less 1		Unsound

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1569	1547	Guali Pit	Sal	51	less 1	Sound	
1570	1548	Guali Pit	Maei	35	less 1	Sound	
1571	1549	Guali Pit	Sal	34	less 1	Sound	
1572	1550	Guali Pit	Sal	36	less 1	Sound	
1573	1551	Guali Pit	Chara	48	less 1	Sound	
1574	1552	Guali Pit	Mahula	148	2	Sound	
1575	1553	Guali Pit	Sal	36	less 1	Sound	
1576	1554	Guali Pit	Mahula	212	2	Sound	
1577	1555	Guali Pit	Mahula	160	1.5	Sound	
1578	1556	Guali Pit	Bara	120	less 1	Sound	
1579	1557	Guali Pit	Mahula	87	less 1	Sound	
1580	1558	Guali Pit	Dhola	52	less 1	Sound	
1581	1559	Guali Pit	Dhola	85	less 1	Sound	
1582	1560	Guali Pit	Bara	528	less 1	Sound	
1583	1561	Guali Pit	Bhaliya	34	less 1	Sound	
1584	1562	Guali Pit	Jamun	41	less 1	Sound	
1585	1563	Guali Pit	Mahula	192	2.5	Sound	
1586	1564	Guali Pit	kuruma	54	less 1	Sound	
1587	1565	Guali Pit	Sal	68	less 1	Sound	
1588	1566	Guali Pit	Sal	64	less 1	Sound	
1589	1567	Guali Pit	Bahada	32	less 1	Sound	
1590	1568	Guali Pit	Kusum	254	1.5	Sound	
1591	1569	Guali Pit	Bara	242	less 1	Sound	
1592	1570	Guali Pit	Mahula	196	1	Sound	
1593	1571	Guali Pit	Mahula	194	1.5	Sound	
1594	1572	Guali Pit	Bahada	32	less 1	Sound	
1595	1573	Guali Pit	Sal	37	less 1	Sound	
1596	1574	Guali Pit	Sal	32	less 1	Sound	
1597	1575	Guali Pit	Mahula	162	less 1		Unsound
1598	1576	Guali Pit	Chakunda	58	less 1	Sound	
1599	1577	Guali Pit	Chakunda	56	less 1	Sound	
1600	1578	Guali Pit	Chakunda	42	less 1	Sound	
1601	1579	Guali Pit	Maei	60	less 1	Sound	
1602	1580	Guali Pit	Bhaliya	34	less 1	Sound	
1603	1581	Guali Pit	Bhaliya	36	less 1	Sound	
1604	1582	Guali Pit	Kendu	30	less 1	Sound	
1605	1583	Guali Pit	Mahula	207	less 1	Sound	
1606	1584	Guali Pit	Sal	52	less 1	Sound	
1607	1585	Guali Pit	Chatian	60	less 1	Sound	
1608	1586	Udalbadi	kuruma	88	1.5	Sound	
1609	1587	Udalbadi	kuruma	74	less 1	Sound	
1610	1588	Udalbadi	Eucally puts	70	1.5	Sound	
1611	1589	Udalbadi	Eucally puts	71	less 1	Sound	
1612	1590	Udalbadi	Eucally puts	70	less 1	Sound	
1613	1590 (A)	Udalbadi	Eucally puts	60	less 1	Sound	
1614	1591	Udalbadi	Eucally puts	69	less 1	Sound	
1615	1592	Udalbadi	Eucally puts	61	1.5	Sound	
1616	1593	Udalbadi	Eucally puts	52	1.5	Sound	
1617	1594	Udalbadi	Eucally puts	52	1.5	Sound	
1618	1595	Udalbadi	Eucally puts	85	2	Sound	
1619	1596	Udalbadi	Chakunda	30	less 1	Sound	
1620	1597	Udalbadi	Eucally puts	62	1.5	Sound	
1621	1597 (A)	Udalbadi	Eucally puts	43	less 1	Sound	
1622	1598	Udalbadi	Eucally puts	53	2	Sound	
1623	1599	Udalbadi	Eucally puts	38	less 1	Sound	
1624	1600	Udalbadi	Eucally puts	36	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1625	1601	Udalbadi	Eucally puts	32	less 1	Sound	
1626	1602	Udalbadi	Eucally puts	45	less 1	Sound	
1627	1602 (A)	Udalbadi	Eucally puts	45	less 1	Sound	
1628	1603	Udalbadi	Eucally puts	49	less 1	Sound	
1629	1604	Udalbadi	Eucally puts	36	less 1	Sound	
1630	1605	Udalbadi	Eucally puts	36	less 1	Sound	
1631	1606	Udalbadi	Eucally puts	30	less 1	Sound	
1632	1607	Udalbadi	Eucally puts	34	less 1	Sound	
1633	1608	Udalbadi	Eucally puts	39	less 1	Sound	
1634	1609	Udalbadi	Eucally puts	64	less 1	Sound	
1635	1610	Udalbadi	Eucally puts	48	less 1	Sound	
1636	1611	Udalbadi	Eucally puts	38	less 1	Sound	
1637	1612	Udalbadi	Eucally puts	35	less 1	Sound	
1638	1613	Udalbadi	Eucally puts	72	less 1	Sound	
1639	1614	Udalbadi	Eucally puts	52	less 1	Sound	
1640	1615	Udalbadi	Eucally puts	63	1.5	Sound	
1641	1616	Udalbadi	Eucally puts	56	less 1	Sound	
1642	1617	Udalbadi	Eucally puts	48	less 1	Sound	
1643	1618	Udalbadi	Eucally puts	57	less 1	Sound	
1644	1619	Udalbadi	Eucally puts	47	less 1	Sound	
1645	1620	Udalbadi	Eucally puts	54	1.5	Sound	
1646	1621	Udalbadi	Eucally puts	76	1	Sound	
1647	1622	Udalbadi	Eucally puts	52	less 1	Sound	
1648	1623	Udalbadi	Eucally puts	36	less 1	Sound	
1649	1624	Udalbadi	Eucally puts	38	less 1	Sound	
1650	1625	Udalbadi	Eucally puts	33	less 1	Sound	
1651	1626	Udalbadi	Eucally puts	32	less 1	Sound	
1652	1627	Udalbadi	Eucally puts	31	less 1	Sound	
1653	1628	Udalbadi	Neem	58	less 1	Sound	
1654	1629	Udalbadi	Eucally puts	42	less 1	Sound	
1655	1630	Udalbadi	Eucally puts	36	less 1	Sound	
1656	1631	Udalbadi	Eucally puts	32	less 1	Sound	
1657	1632	Udalbadi	Eucally puts	32	less 1	Sound	
1658	1633	Udalbadi	Eucally puts	54	1.5	Sound	
1659	1634	Udalbadi	Eucally puts	45	less 1	Sound	
1660	1635	Udalbadi	Eucally puts	41	less 1	Sound	
1661	1636	Udalbadi	Eucally puts	47	less 1	Sound	
1662	1637	Udalbadi	Eucally puts	33	less 1	Sound	
1663	1638	Udalbadi	Eucally puts	43	less 1	Sound	
1664	1639	Udalbadi	Eucally puts	34	less 1	Sound	
1665	1640	Udalbadi	Eucally puts	32	less 1	Sound	
1666	1641	Udalbadi	Eucally puts	44	less 1	Sound	
1667	1642	Udalbadi	Eucally puts	35	less 1	Sound	
1668	1643	Udalbadi	Eucally puts	35	less 1	Sound	
1669	1644	Udalbadi	Eucally puts	41	less 1	Sound	
1670	1645	Udalbadi	Eucally puts	46	less 1	Sound	
1671	1646	Udalbadi	Eucally puts	38	less 1	Sound	
1672	1647	Udalbadi	Eucally puts	48	less 1	Sound	
1673	1648	Udalbadi	Eucally puts	58	less 1	Sound	
1674	1649	Udalbadi	Eucally puts	42	less 1	Sound	
1675	1650	Udalbadi	Eucally puts	30	less 1	Sound	
1676	1651	Udalbadi	Eucally puts	38	less 1	Sound	
1677	1652	Udalbadi	Eucally puts	40	less 1	Sound	
1678	1653	Udalbadi	Eucally puts	61	1.5	Sound	
1679	1654	Udalbadi	Eucally puts	34	less 1	Sound	
1680	1655	Udalbadi	Eucally puts	38	less 1	Sound	

Range Off.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR							
SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1681	1656	Udalbadi	Eucally puts	44	less 1	Sound	
1682	1657	Udalbadi	Eucally puts	31	less 1	Sound	
1683	1658	Udalbadi	Eucally puts	35	less 1	Sound	
1684	1659	Udalbadi	Eucally puts	41	less 1	Sound	
1685	1660	Udalbadi	Eucally puts	42	less 1	Sound	
1686	1661	Udalbadi	Eucally puts	35	less 1	Sound	
1687	1662	Udalbadi	Eucally puts	31	less 1	Sound	
1688	1663	Udalbadi	Eucally puts	30	less 1	Sound	
1689	1664	Udalbadi	Eucally puts	33	less 1	Sound	
1690	1665	Udalbadi	Eucally puts	30	less 1	Sound	
1691	1666	Udalbadi	Eucally puts	35	less 1	Sound	
1692	1667	Udalbadi	Eucally puts	34	less 1	Sound	
1693	1668	Udalbadi	Eucally puts	32	less 1	Sound	
1694	1669	Udalbadi	Eucally puts	31	less 1	Sound	
1695	1670	Udalbadi	Eucally puts	32	less 1	Sound	
1696	1671	Udalbadi	Eucally puts	36	less 1	Sound	
1697	1672	Udalbadi	Eucally puts	44	less 1	Sound	
1698	1673	Udalbadi	Eucally puts	38	less 1	Sound	
1699	1674	Udalbadi	Eucally puts	31	less 1	Sound	
1700	1675	Udalbadi	Eucally puts	43	less 1	Sound	
1701	1676	Udalbadi	Eucally puts	32	less 1	Sound	
1702	1677	Udalbadi	Eucally puts	44	less 1	Sound	
1703	1678	Udalbadi	Eucally puts	38	less 1	Sound	
1704	1679	Udalbadi	Eucally puts	36	less 1	Sound	
1705	1680	Udalbadi	Eucally puts	53	1.5	Sound	
1706	1681	Udalbadi	Eucally puts	49	less 1	Sound	
1707	1682	Udalbadi	Eucally puts	35	less 1	Sound	
1708	1683	Udalbadi	Eucally puts	37	less 1	Sound	
1709	1684	Udalbadi	Eucally puts	30	less 1	Sound	
1710	1685	Udalbadi	Eucally puts	39	less 1	Sound	
1711	1686	Udalbadi	Eucally puts	30	less 1	Sound	
1712	1687	Udalbadi	Eucally puts	36	less 1	Sound	
1713	1688	Udalbadi	Eucally puts	42	less 1	Sound	
1714	1689	Udalbadi	Eucally puts	43	less 1	Sound	
1715	1690	Udalbadi	Eucally puts	39	less 1	Sound	
1716	1691	Udalbadi	Eucally puts	52	less 1	Sound	
1717	1692	Udalbadi	Eucally puts	49	less 1	Sound	
1718	1693	Udalbadi	Eucally puts	43	less 1	Sound	
1719	1694	Udalbadi	Eucally puts	48	less 1	Sound	
1720	1695	Udalbadi	Eucally puts	41	less 1	Sound	
1721	1696	Udalbadi	Eucally puts	47	less 1	Sound	
1722	1697	Udalbadi	Eucally puts	30	less 1	Sound	
1723	1698	Udalbadi	Eucally puts	34	less 1	Sound	
1724	1699	Udalbadi	Eucally puts	40	less 1	Sound	
1725	1700	Udalbadi	Eucally puts	43	less 1	Sound	
1726	1701	Udalbadi	Eucally puts	46	less 1	Sound	
1727	1702	Udalbadi	Eucally puts	45	less 1	Sound	
1728	1703	Udalbadi	Eucally puts	37	less 1	Sound	
1729	1704	Udalbadi	Eucally puts	32	less 1	Sound	
1730	1705	Udalbadi	Eucally puts	43	less 1	Sound	
1731	1706	Udalbadi	Eucally puts	39	less 1	Sound	
1732	1707	Udalbadi	Eucally puts	37	less 1	Sound	
1733	1708	Udalbadi	Eucally puts	36	less 1	Sound	
1734	1709	Udalbadi	Eucally puts	54	less 1	Sound	
1735	1710	Udalbadi	Eucally puts	43	less 1	Sound	
1736	1711	Udalbadi	Eucally puts	44	less 1	Sound	

Range Officer

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1737	1712	Udalbadi	Eucally puts	36	less 1	Sound	
1738	1713	Udalbadi	Eucally puts	34	less 1	Sound	
1739	1714	Udalbadi	Eucally puts	35	less 1	Sound	
1740	1715	Udalbadi	Eucally puts	47	less 1	Sound	
1741	1716	Udalbadi	Eucally puts	54	less 1	Sound	
1742	1717	Udalbadi	Eucally puts	60	less 1	Sound	
1743	1718	Udalbadi	Eucally puts	37	less 1	Sound	
1744	1719	Udalbadi	Eucally puts	40	less 1	Sound	
1745	1720	Udalbadi	Eucally puts	34	less 1	Sound	
1746	1721	Udalbadi	Eucally puts	45	less 1	Sound	
1747	1722	Udalbadi	Eucally puts	46	less 1	Sound	
1748	1723	Udalbadi	Eucally puts	54	less 1	Sound	
1749	1724	Udalbadi	Eucally puts	55	less 1	Sound	
1750	1725	Udalbadi	Eucally puts	33	less 1	Sound	
1751	1726 (A)	Udalbadi	Eucally puts	37	less 1	Sound	
1752	1726	Udalbadi	Eucally puts	42	less 1	Sound	
1753	1727	Udalbadi	Eucally puts	33	less 1	Sound	
1754	1728	Udalbadi	Eucally puts	44	less 1	Sound	
1755	1729	Udalbadi	Eucally puts	47	less 1	Sound	
1756	1730	Udalbadi	Eucally puts	44	less 1	Sound	
1757	1731	Udalbadi	Eucally puts	36	less 1	Sound	
1758	1732	Udalbadi	Eucally puts	31	less 1	Sound	
1759	1733	Udalbadi	Eucally puts	58	less 1	Sound	
1760	1734	Udalbadi	Eucally puts	80	1.5	Sound	
1761	1735	Udalbadi	Eucally puts	76	2	Sound	
1762	1736	Udalbadi	Eucally puts	60	less 1	Sound	
1763	1737	Udalbadi	Eucally puts	41	less 1	Sound	
1764	1738	Udalbadi	Chakunda	30	less 1	Sound	
1765	1739	Udalbadi	Eucally puts	39	less 1	Sound	
1766	1740	Udalbadi	Eucally puts	56	less 1	Sound	
1767	1741	Udalbadi	Eucally puts	44	less 1	Sound	
1768	1742	Udalbadi	Eucally puts	67	less 1	Sound	
1769	1743	Udalbadi	Eucally puts	47	less 1	Sound	
1770	1744	Udalbadi	Eucally puts	41	less 1	Sound	
1771	1745	Udalbadi	Eucally puts	59	less 1	Sound	
1772	1746	Udalbadi	Eucally puts	43	less 1	Sound	
1773	1747	Udalbadi	Eucally puts	46	less 1	Sound	
1774	1748	Udalbadi	Eucally puts	38	less 1	Sound	
1775	1749	Udalbadi	Eucally puts	51	less 1	Sound	
1776	1750	Udalbadi	Eucally puts	34	less 1	Sound	
1777	1751	Udalbadi	Chakunda	32	less 1	Sound	
1778	1752	Udalbadi	Eucally puts	50	less 1	Sound	
1779	1753	Udalbadi	Eucally puts	46	less 1	Sound	
1780	1754	Udalbadi	Chakunda	38	less 1	Sound	
1781	1755	Udalbadi	Neem	42	less 1	Sound	
1782	1756	Udalbadi	Chakunda	39	less 1	Sound	
1783	1757	Udalbadi	Eucally puts	56	less 1	Sound	
1784	1758	Udalbadi	Eucally puts	60	less 1	Sound	
1785	1759	Udalbadi	Eucally puts	34	less 1	Sound	
1786	1760	Udalbadi	Eucally puts	50	less 1	Sound	
1787	1761	Udalbadi	Chakunda	34	less 1	Sound	
1788	1762	Udalbadi	Chakunda	42	less 1	Sound	
1789	1762 (A)	Udalbadi	Chakunda	40	less 1	Sound	
1790	1762 (B)	Udalbadi	Chakunda	35	less 1	Sound	
1791	1763	Udalbadi	Eucally puts	61	less 1	Sound	
1792	1764	Udalbadi	Eucally puts	68	1.5	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR							
SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1793	1765	Udalbadi	Eucally puts	100	less 1	Sound	
1794	1766	Udalbadi	Eucally puts	80	1.5	Sound	
1795	1767	Udalbadi	Chakunda	30	less 1	Sound	
1796	1768	Udalbadi	Chakunda	30	less 1	Sound	
1797	1769	Udalbadi	Eucally puts	50	less 1	Sound	
1798	1770	Udalbadi	Jori	52	less 1	Sound	
1799	1771	Udalbadi	Eucally puts	66	less 1	Sound	
1800	1772	Udalbadi	Eucally puts	57	less 1	Sound	
1801	1773	Udalbadi	Eucally puts	50	less 1	Sound	
1802	1774	Udalbadi	Eucally puts	68	less 1	Sound	
1803	1775	Udalbadi	Eucally puts	72	1.5	Sound	
1804	1775 (A)	Udalbadi	Eucally puts	68	less 1	Sound	
1805	1776	Udalbadi	Eucally puts	55	less 1	Sound	
1806	1777	Udalbadi	Eucally puts	57	less 1	Sound	
1807	1778	Udalbadi	Eucally puts	73	less 1	Sound	
1808	1778 (A)	Udalbadi	Eucally puts	68	less 1	Sound	
1809	1778 (B)	Udalbadi	Eucally puts	52	less 1	Sound	
1810	1779	Udalbadi	Eucally puts	30	less 1	Sound	
1811	1780	Udalbadi	Eucally puts	36	less 1	Sound	
1812	1781	Udalbadi	Eucally puts	55	less 1	Sound	
1813	1782	Udalbadi	Eucally puts	30	less 1	Sound	
1814	1783	Udalbadi	Eucally puts	37	less 1	Sound	
1815	1784	Udalbadi	Eucally puts	52	less 1	Sound	
1816	1785	Udalbadi	Eucally puts	31	less 1	Sound	
1817	1786	Udalbadi	Eucally puts	32	less 1	Sound	
1818	1787	Udalbadi	Eucally puts	35	less 1	Sound	
1819	1788	Udalbadi	Eucally puts	48	less 1	Sound	
1820	1789	Udalbadi	Eucally puts	38	less 1	Sound	
1821	1790	Udalbadi	Eucally puts	47	less 1	Sound	
1822	1791	Udalbadi	Eucally puts	30	less 1	Sound	
1823	1792	Udalbadi	Eucally puts	30	less 1	Sound	
1824	1793	Udalbadi	Eucally puts	72	less 1	Sound	
1825	1794	Udalbadi	Eucally puts	44	less 1	Sound	
1826	1795	Udalbadi	Eucally puts	30	less 1	Sound	
1827	1796	Udalbadi	Chatian	43	less 1	Sound	
1828	1797	Udalbadi	Eucally puts	43	less 1	Sound	
1829	1798	Udalbadi	Eucally puts	30	less 1	Sound	
1830	1799	Udalbadi	Eucally puts	42	less 1	Sound	
1831	1800	Udalbadi	Eucally puts	47	less 1	Sound	
1832	1801	Udalbadi	Eucally puts	46	less 1	Sound	
1833	1802	Udalbadi	Chatian	87	less 1	Sound	
1834	1803	Udalbadi	Eucally puts	58	less 1	Sound	
1835	1804	Udalbadi	Eucally puts	70	1.5	Sound	
1836	1804 (A)	Udalbadi	Eucally puts	72	less 1	Sound	
1837	1805	Udalbadi	Eucally puts	96	less 1	Sound	
1838	1806	Udalbadi	Eucally puts	54	less 1	Sound	
1839	1807	Udalbadi	Eucally puts	59	less 1	Sound	
1840	1807 (A)	Udalbadi	Eucally puts	54	less 1	Sound	
1841	1808	Udalbadi	Eucally puts	58	less 1	Sound	
1842	1808 (A)	Udalbadi	Eucally puts	49	less 1	Sound	
1843	1809	Udalbadi	Eucally puts	60	1.5	Sound	
1844	1809 (A)	Udalbadi	Eucally puts	44	less 1	Sound	
1845	1810	Udalbadi	Eucally puts	50	less 1	Sound	
1846	1810 (A)	Udalbadi	Eucally puts	54	less 1	Sound	
1847	1811	Udalbadi	Eucally puts	61	less 1	Sound	
1848	1812	Udalbadi	Eucally puts	64	less 1	Sound	

Daeo, f.s.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR							
SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1849	1813	Udalbadi	Eucally puts	74	less 1	Sound	
1850	1814	Udalbadi	Eucally puts	41	less 1	Sound	
1851	1815	Udalbadi	Eucally puts	60	less 1	Sound	
1852	1816	Udalbadi	Eucally puts	57	less 1	Sound	
1853	1816 (A)	Udalbadi	Eucally puts	68	less 1	Sound	
1854	1817	Udalbadi	Eucally puts	47	less 1	Sound	
1855	1818	Udalbadi	Eucally puts	51	less 1	Sound	
1856	1819	Udalbadi	Eucally puts	46	less 1	Sound	
1857	1820	Udalbadi	Eucally puts	58	less 1	Sound	
1858	1821	Udalbadi	Eucally puts	80	1.5	Sound	
1859	1822	Udalbadi	Eucally puts	60	less 1	Sound	
1860	1823	Udalbadi	Eucally puts	34	less 1	Sound	
1861	1824	Udalbadi	Eucally puts	68	2	Sound	
1862	1825	Udalbadi	Eucally puts	32	less 1	Sound	
1863	1826	Udalbadi	Eucally puts	55	less 1	Sound	
1864	1826 (A)	Udalbadi	Eucally puts	52	less 1	Sound	
1865	1827	Udalbadi	Eucally puts	62	1.5		Unsound
1866	1828	Udalbadi	Eucally puts	50	less 1	Sound	
1867	1829	Udalbadi	Eucally puts	55	less 1	Sound	
1868	1830	Udalbadi	Eucally puts	44	less 1	Sound	
1869	1830 (A)	Udalbadi	Eucally puts	41	less 1	Sound	
1870	1831	Udalbadi	Eucally puts	58	less 1	Sound	
1871	1832	Udalbadi	Eucally puts	84	less 1	Sound	
1872	1833	Udalbadi	Eucally puts	70	less 1	Sound	
1873	1834	Udalbadi	Eucally puts	63	less 1	Sound	
1874	1835	Udalbadi	Karanj	40	less 1	Sound	
1875	1836	Udalbadi	Bahada	56	less 1	Sound	
1876	1837	Udalbadi	Kendu	31	less 1	Sound	
1877	1838	Udalbadi	Karanj	32	less 1	Sound	
1878	1839	Udalbadi	Karanj	33	less 1	Sound	
1879	1840	Udalbadi	Karanj	34	less 1	Sound	
1880	1841	Udalbadi	Karanj	45	less 1	Sound	
1881	1841 (A)	Udalbadi	Karanj	30	less 1	Sound	
1882	1842	Udalbadi	Eucally puts	45	less 1	Sound	
1883	1843	Udalbadi	Chakunda	48	less 1	Sound	
1884	1843 (A)	Udalbadi	Chakunda	40	less 1	Sound	
1885	1844	Udalbadi	Eucally puts	55	less 1	Sound	
1886	1845	Udalbadi	Eucally puts	72	2	Sound	
1887	1846	Udalbadi	Eucally puts	54	less 1	Sound	
1888	1847	Udalbadi	Eucally puts	47	less 1	Sound	
1889	1848	Udalbadi	Eucally puts	50	less 1	Sound	
1890	1849	Udalbadi	Karanj	36	less 1	Sound	
1891	1850	Udalbadi	Eucally puts	32	less 1	Sound	
1892	1851	Udalbadi	Eucally puts	64	1.5	Sound	
1893	1852	Udalbadi	Eucally puts	53	less 1	Sound	
1894	1853	Udalbadi	Eucally puts	47	less 1	Sound	
1895	1854	Udalbadi	Eucally puts	58	less 1	Sound	
1896	1855	Udalbadi	Eucally puts	48	less 1	Sound	
1897	1856	Udalbadi	Eucally puts	60	1.5	Sound	
1898	1857	Udalbadi	Eucally puts	46	less 1	Sound	
1899	1858	Udalbadi	Eucally puts	62	less 1	Sound	
1900	1859	Udalbadi	Eucally puts	30	less 1	Sound	
1901	1860	Udalbadi	Dam kurude	31	less 1	Sound	
1902	1861	Udalbadi	Maei	130	1.5	Sound	
1903	1862	Udalbadi	Maei	128	less 1	Sound	
1904	1863	Udalbadi	Eucally puts	32	less 1	Sound	

Dated, F.S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1905	1864	Udalbadi	Karanj	30	less 1	Sound	
1906	1865	Udalbadi	Eucally puts	32	less 1	Sound	
1907	1866	Udalbadi	Eucally puts	59	less 1	Sound	
1908	1867	Udalbadi	Eucally puts	52	less 1	Sound	
1909	1868	Udalbadi	Eucally puts	33	less 1	Sound	
1910	1869	Udalbadi	Eucally puts	32	less 1	Sound	
1911	1870	Udalbadi	Eucally puts	30	less 1	Sound	
1912	1871	Udalbadi	Eucally puts	138	less 1	Sound	
1913	1872	Udalbadi	Chakunda	55	less 1	Sound	
1914	1873	Udalbadi	Eucally puts	57	less 1	Sound	
1915	1874	Udalbadi	Eucally puts	52	less 1	Sound	
1916	1875	Udalbadi	Neem	50	less 1	Sound	
1917	1876	Udalbadi	Neem	48	less 1	Sound	
1918	1877	Udalbadi	Eucally puts	65	less 1	Sound	
1919	1878	Udalbadi	Eucally puts	71	less 1	Sound	
1920	1878 (A)	Udalbadi	Eucally puts	64	less 1	Sound	
1921	1879	Udalbadi	Eucally puts	57	less 1	Sound	
1922	1879 (A)	Udalbadi	Eucally puts	54	less 1	Sound	
1923	1880	Udalbadi	Eucally puts	61	less 1	Sound	
1924	1881	Udalbadi	Eucally puts	74	1.5	Sound	
1925	1882	Udalbadi	Chakunda	32	less 1	Sound	
1926	1883	Udalbadi	Eucally puts	55	less 1	Sound	
1927	1884	Udalbadi	Eucally puts	61	less 1	Sound	
1928	1884 (A)	Udalbadi	Eucally puts	60	less 1	Sound	
1929	1885	Udalbadi	Eucally puts	60	1.5	Sound	
1930	1885 (A)	Udalbadi	Eucally puts	42	less 1	Sound	
1931	1886	Udalbadi	Eucally puts	64	less 1	Sound	
1932	1887	Udalbadi	Eucally puts	46	less 1	Sound	
1933	1888	Udalbadi	Eucally puts	35	less 1	Sound	
1934	1889	Udalbadi	Eucally puts	62	less 1	Sound	
1935	1890	Udalbadi	Eucally puts	50	less 1	Sound	
1936	1891	Udalbadi	Eucally puts	60	less 1	Sound	
1937	1892	Udalbadi	Eucally puts	68	1.5	Sound	
1938	1892 (A)	Udalbadi	Eucally puts	65	less 1	Sound	
1939	1897	Udalbadi	Eucally puts	92	1.5	Sound	
1940	1898	Udalbadi	Eucally puts	40	less 1	Sound	
1941	1899	Udalbadi	Eucally puts	59	less 1	Sound	
1942	1899 (A)	Udalbadi	Eucally puts	57	less 1	Sound	
1943	1899 (B)	Udalbadi	Eucally puts	61	less 1	Sound	
1944	1900	Udalbadi	Eucally puts	50	less 1	Sound	
1945	1901	Udalbadi	Eucally puts	45	less 1	Sound	
1946	1902	Udalbadi	Eucally puts	55	less 1	Sound	
1947	1903	Udalbadi	Eucally puts	47	less 1	Sound	
1948	1904	Udalbadi	Eucally puts	55	less 1	Sound	
1949	1904 (A)	Udalbadi	Eucally puts	50	less 1	Sound	
1950	1905	Udalbadi	Eucally puts	61	less 1	Sound	
1951	1905 (A)	Udalbadi	Eucally puts	43	less 1	Sound	
1952	1906	Udalbadi	Eucally puts	44	less 1	Sound	
1953	1907	Udalbadi	Eucally puts	30	less 1	Sound	
1954	1908	Udalbadi	Eucally puts	44	less 1	Sound	
1955	1909	Udalbadi	Eucally puts	42	less 1	Sound	
1956	1910	Udalbadi	Eucally puts	48	less 1	Sound	
1957	1911	Udalbadi	Eucally puts	52	less 1	Sound	
1958	1912	Udalbadi	Eucally puts	54	less 1	Sound	
1959	1913	Udalbadi	Eucally puts	44	less 1	Sound	
1960	1914	Udalbadi	Eucally puts	52	less 1	Sound	

RRO, F.S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
1961	1915	Udalbadi	Eucally puts	51	less 1	Sound	
1962	1916	Udalbadi	Eucally puts	55	less 1	Sound	
1963	1917	Udalbadi	Eucally puts	50	less 1	Sound	
1964	1918	Udalbadi	Eucally puts	56	less 1	Sound	
1965	1919	Udalbadi	Eucally puts	45	less 1	Sound	
1966	1920	Udalbadi	Eucally puts	41	less 1	Sound	
1967	1921	Udalbadi	Eucally puts	80	less 1	Sound	
1968	1921 (A)	Udalbadi	Eucally puts	66	less 1	Sound	
1969	1922	Udalbadi	Eucally puts	32	less 1	Sound	
1970	1923	Udalbadi	Eucally puts	72	1.5	Sound	
1971	1924	Udalbadi	Eucally puts	43	less 1	Sound	
1972	1925	Udalbadi	Eucally puts	44	less 1	Sound	
1973	1926	Udalbadi	Eucally puts	37	less 1	Sound	
1974	1927	Udalbadi	Eucally puts	58	less 1	Sound	
1975	1928	Udalbadi	Eucally puts	40	less 1	Sound	
1976	1929	Udalbadi	Eucally puts	48	less 1	Sound	
1977	1930	Udalbadi	Eucally puts	45	less 1	Sound	
1978	1931	Udalbadi	Eucally puts	31	less 1	Sound	
1979	1932	Udalbadi	Eucally puts	72	1.5	Sound	
1980	1932 (A)	Udalbadi	Eucally puts	44	less 1	Sound	
1981	1933	Udalbadi	Eucally puts	61	1.5	Sound	
1982	1934	Udalbadi	Eucally puts	50	less 1	Sound	
1983	1935	Udalbadi	Eucally puts	47	less 1	Sound	
1984	1936	Udalbadi	Eucally puts	54	less 1	Sound	
1985	1937	Udalbadi	Eucally puts	40	less 1	Sound	
1986	1938	Udalbadi	Eucally puts	48	less 1	Sound	
1987	1939	Udalbadi	Eucally puts	39	less 1	Sound	
1988	1940	Udalbadi	Eucally puts	43	less 1	Sound	
1989	1941	Udalbadi	Eucally puts	46	less 1	Sound	
1990	1941 (A)	Udalbadi	Eucally puts	41	less 1	Sound	
1991	1942	Udalbadi	Eucally puts	54	less 1	Sound	
1992	1942 (A)	Udalbadi	Eucally puts	46	less 1	Sound	
1993	1943	Udalbadi	Eucally puts	45	less 1	Sound	
1994	1944	Udalbadi	Eucally puts	40	less 1	Sound	
1995	1945	Udalbadi	Eucally puts	41	less 1	Sound	
1996	1946	Udalbadi	Chakunda	60	less 1	Sound	
1997	1947	Udalbadi	Chakunda	54	less 1	Sound	
1998	1948	Udalbadi	Chakunda	52	less 1	Sound	
1999	1959	Udalbadi	Eucally puts	47	less 1	Sound	
2000	1960	Udalbadi	Eucally puts	50	less 1	Sound	
2001	1960 (A)	Udalbadi	Eucally puts	35	less 1	Sound	
2002	1961	Udalbadi	Eucally puts	65	less 1	Sound	
2003	1962	Udalbadi	Eucally puts	46	less 1	Sound	
2004	1963	Udalbadi	Eucally puts	47	less 1	Sound	
2005	1964	Udalbadi	Eucally puts	63	less 1	Sound	
2006	1964 (A)	Udalbadi	Eucally puts	35	less 1	Sound	
2007	1964 (B)	Udalbadi	Eucally puts	37	less 1	Sound	
2008	1965	Udalbadi	Eucally puts	57	less 1	Sound	
2009	1966	Udalbadi	Eucally puts	50	less 1	Sound	
2010	1967	Udalbadi	Eucally puts	38	less 1	Sound	
2011	1968	Udalbadi	Eucally puts	45	less 1	Sound	
2012	1969	Udalbadi	Eucally puts	36	less 1	Sound	
2013	1970	Udalbadi	Eucally puts	62	2	Sound	
2014	1971	Udalbadi	Eucally puts	40	less 1	Sound	
2015	1972	Udalbadi	Eucally puts	38	less 1	Sound	
2016	1973	Udalbadi	Eucally puts	52	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED.
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2017	1973 (A)	Udalbadi	Eucally puts	44	less 1	Sound	
2018	1974	Udalbadi	Eucally puts	42	less 1	Sound	
2019	1975	Udalbadi	Eucally puts	35	less 1	Sound	
2020	1976	Udalbadi	Eucally puts	40	less 1	Sound	
2021	1977	Udalbadi	Eucally puts	52	less 1	Sound	
2022	1978	Udalbadi	Eucally puts	62	less 1	Sound	
2023	1979	Udalbadi	Eucally puts	45	less 1	Sound	
2024	1980	Udalbadi	Eucally puts	38	less 1	Sound	
2025	1981	Udalbadi	Eucally puts	72	less 1	Sound	
2026	1981 (A)	Udalbadi	Eucally puts	53	less 1	Sound	
2027	1982	Udalbadi	Eucally puts	46	less 1	Sound	
2028	1983	Udalbadi	Eucally puts	68	1.5	Sound	
2029	1984	Udalbadi	Eucally puts	75	1.5	Sound	
2030	1985	Udalbadi	Eucally puts	53	less 1	Sound	
2031	1986	Udalbadi	Eucally puts	38	less 1	Sound	
2032	1987	Udalbadi	Eucally puts	45	less 1	Sound	
2033	1988	Udalbadi	Eucally puts	38	less 1	Sound	
2034	1989	Udalbadi	Eucally puts	58	less 1	Sound	
2035	1990	Udalbadi	Eucally puts	50	less 1	Sound	
2036	1991	Udalbadi	Eucally puts	34	less 1	Sound	
2037	1992	Udalbadi	Eucally puts	90	1.5	Sound	
2038	1993	Udalbadi	Eucally puts	42	less 1	Sound	
2039	1994	Udalbadi	Eucally puts	60	1.5	Sound	
2040	1995	Udalbadi	Eucally puts	43	less 1	Sound	
2041	1996	Udalbadi	Eucally puts	112	less 1	Sound	
2042	1997	Udalbadi	Eucally puts	55	less 1	Sound	
2043	1997 (A)	Udalbadi	Eucally puts	61	less 1	Sound	
2044	1998	Udalbadi	Eucally puts	30	less 1	Sound	
2045	1999	Udalbadi	Eucally puts	42	less 1	Sound	
2046	2000	Udalbadi	Eucally puts	62	less 1	Sound	
2047	2001	Udalbadi	Eucally puts	45	less 1	Sound	
2048	2001 (A)	Udalbadi	Eucally puts	45	less 1	Sound	
2049	2002	Udalbadi	Eucally puts	58	less 1	Sound	
2050	2003	Udalbadi	Eucally puts	53	less 1	Sound	
2051	2003 (A)	Udalbadi	Eucally puts	43	less 1	Sound	
2052	2004	Udalbadi	Eucally puts	30	less 1	Sound	
2053	2005	Udalbadi	Eucally puts	68	1.5	Sound	
2054	2006	Udalbadi	Eucally puts	31	less 1	Sound	
2055	2007	Udalbadi	Eucally puts	45	less 1	Sound	
2056	2008	Udalbadi	Eucally puts	36	less 1	Sound	
2057	2009	Udalbadi	Eucally puts	76	1.5	Sound	
2058	2010	Udalbadi	Eucally puts	42	less 1	Sound	
2059	2011	Udalbadi	Eucally puts	51	less 1	Sound	
2060	2012	Udalbadi	Eucally puts	54	less 1	Sound	
2061	2013	Udalbadi	Eucally puts	44	less 1	Sound	
2062	2014	Udalbadi	Eucally puts	39	less 1	Sound	
2063	2015	Udalbadi	Eucally puts	44	less 1	Sound	
2064	2016	Udalbadi	Eucally puts	43	less 1	Sound	
2065	2017	Udalbadi	Eucally puts	34	less 1	Sound	
2066	2018	Udalbadi	Eucally puts	55	less 1	Sound	
2067	2019	Udalbadi	Eucally puts	60	less 1	Sound	
2068	2020	Udalbadi	Eucally puts	36	less 1	Sound	
2069	2021	Udalbadi	Eucally puts	53	less 1	Sound	
2070	2022	Udalbadi	Eucally puts	76	less 1	Sound	
2071	2023	Udalbadi	Eucally puts	36	less 1	Sound	
2072	2024	Udalbadi	Eucally puts	64	1.5	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR							
SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2073	2024 (A)	Udalbadi	Eucally puts	62	less 1	Sound	
2074	2025	Udalbadi	Eucally puts	36	less 1	Sound	
2075	2025 (A)	Udalbadi	Eucally puts	35	less 1	Sound	
2076	2026	Udalbadi	Eucally puts	67	less 1	Sound	
2077	2027	Udalbadi	Eucally puts	58	less 1	Sound	
2078	2028	Udalbadi	Eucally puts	31	less 1	Sound	
2079	2029	Udalbadi	Eucally puts	55	less 1	Sound	
2080	2030	Udalbadi	Chakunda	36	less 1	Sound	
2081	2031	Udalbadi	Chakunda	42	less 1	Sound	
2082	2032	Udalbadi	Chakunda	44	less 1	Sound	
2083	2033	Udalbadi	Chakunda	33	less 1	Sound	
2084	2034	Udalbadi	Chakunda	35	less 1	Sound	
2085	2035	Udalbadi	Chakunda	31	less 1	Sound	
2086	2036	Udalbadi	Chakunda	33	less 1	Sound	
2087	2037	Udalbadi	Chakunda	36	less 1	Sound	
2088	2038	Udalbadi	Eucally puts	40	less 1	Sound	
2089	2039	Udalbadi	Chakunda	32	less 1	Sound	
2090	2040	Udalbadi	Eucally puts	30	less 1	Sound	
2091	2041	Udalbadi	Eucally puts	33	less 1	Sound	
2092	2042	Udalbadi	Eucally puts	50	less 1	Sound	
2093	2043	Udalbadi	Eucally puts	52	less 1	Sound	
2094	2043 (A)	Udalbadi	Eucally puts	38	less 1	Sound	
2095	2044	Udalbadi	Eucally puts	59	less 1	Sound	
2096	2045	Udalbadi	Eucally puts	38	less 1	Sound	
2097	2046	Udalbadi	Eucally puts	40	less 1	Sound	
2098	2046 (A)	Udalbadi	Eucally puts	41	less 1	Sound	
2099	2047	Udalbadi	Eucally puts	58	less 1	Sound	
2100	2048	Udalbadi	Eucally puts	64	1.5	Sound	
2101	2049	Udalbadi	Eucally puts	50	less 1	Sound	
2102	2050	Udalbadi	Eucally puts	47	less 1	Sound	
2103	2051	Udalbadi	Eucally puts	55	less 1	Sound	
2104	2052	Udalbadi	Eucally puts	65	1.5	Sound	
2105	2053	Udalbadi	Eucally puts	42	less 1	Sound	
2106	2054	Udalbadi	Eucally puts	44	less 1	Sound	
2107	2055	Udalbadi	Eucally puts	40	less 1	Sound	
2108	2056	Udalbadi	Eucally puts	56	less 1	Sound	
2109	2057	Udalbadi	Eucally puts	58	less 1	Sound	
2110	2058	Udalbadi	Eucally puts	41	less 1	Sound	
2111	2059	Udalbadi	Eucally puts	35	less 1	Sound	
2112	2060	Udalbadi	Eucally puts	31	less 1	Sound	
2113	2061	Udalbadi	Eucally puts	55	less 1	Sound	
2114	2062	Udalbadi	Eucally puts	52	less 1	Sound	
2115	2063	Udalbadi	Eucally puts	41	less 1	Sound	
2116	2064	Udalbadi	Eucally puts	66	1.5	Sound	
2117	2065	Udalbadi	Eucally puts	46	less 1	Sound	
2118	2065 (A)	Udalbadi	Eucally puts	39	less 1	Sound	
2119	2066	Udalbadi	Eucally puts	42	less 1	Sound	
2120	2067	Udalbadi	Eucally puts	60	less 1	Sound	
2121	2068	Udalbadi	Eucally puts	45	less 1	Sound	
2122	2069	Udalbadi	Eucally puts	41	less 1	Sound	
2123	2070	Udalbadi	Eucally puts	42	less 1	Sound	
2124	2071	Udalbadi	Eucally puts	43	less 1	Sound	
2125	2072	Udalbadi	Eucally puts	56	less 1	Sound	
2126	2073	Udalbadi	Eucally puts	38	less 1	Sound	
2127	2074	Udalbadi	Eucally puts	42	less 1	Sound	
2128	2075	Udalbadi	Eucally puts	59	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2129	2076	Udalbadi	Eucally puts	31	less 1	Sound	
2130	2077	Udalbadi	Eucally puts	31	less 1	Sound	
2131	2078	Udalbadi	Eucally puts	48	less 1	Sound	
2132	2078 (A)	Udalbadi	Eucally puts	44	less 1	Sound	
2133	2078 (B)	Udalbadi	Eucally puts	31	less 1	Sound	
2134	2079	Udalbadi	Eucally puts	50	less 1	Sound	
2135	2080	Udalbadi	Eucally puts	53	less 1	Sound	
2136	2081	Udalbadi	Eucally puts	72	less 1	Sound	
2137	2082	Udalbadi	Chakunda	50	less 1	Sound	
2138	2083	Udalbadi	Eucally puts	56	less 1	Sound	
2139	2084	Udalbadi	Eucally puts	43	less 1	Sound	
2140	2085	Udalbadi	Eucally puts	44	less 1	Sound	
2141	2086	Udalbadi	Chakunda	63	less 1	Sound	
2142	2087	Udalbadi	Chakunda	34	less 1	Sound	
2143	2088	Udalbadi	Eucally puts	36	less 1	Sound	
2144	2089	Udalbadi	Eucally puts	78	1.5	Sound	
2145	2090	Udalbadi	Eucally puts	56	less 1	Sound	
2146	2091	Udalbadi	Eucally puts	59	1.5	Sound	
2147	2092	Udalbadi	Eucally puts	66	less 1	Sound	
2148	2093	Udalbadi	Eucally puts	48	less 1	Sound	
2149	2094	Udalbadi	Eucally puts	68	less 1	Sound	
2150	2095	Udalbadi	Eucally puts	50	less 1	Sound	
2151	2095 (A)	Udalbadi	Eucally puts	47	less 1	Sound	
2152	2095 (B)	Udalbadi	Eucally puts	36	less 1	Sound	
2153	2096	Udalbadi	Eucally puts	32	less 1	Sound	
2154	2097	Udalbadi	Eucally puts	46	less 1	Sound	
2155	2098	Udalbadi	Eucally puts	32	less 1	Sound	
2156	2099	Udalbadi	Eucally puts	52	less 1	Sound	
2157	2100	Udalbadi	Eucally puts	64	1.5	Sound	
2158	2101	Udalbadi	Eucally puts	62	1.5	Sound	
2159	2102	Udalbadi	Eucally puts	50	less 1	Sound	
2160	2103	Udalbadi	Eucally puts	56	1.5	Sound	
2161	2104	Udalbadi	Eucally puts	48	less 1	Sound	
2162	2105	Udalbadi	Eucally puts	33	less 1	Sound	
2163	2106	Udalbadi	Eucally puts	61	less 1	Sound	
2164	2106 (A)	Udalbadi	Eucally puts	54	less 1	Sound	
2165	2107	Udalbadi	Eucally puts	36	less 1	Sound	
2166	2108	Udalbadi	Eucally puts	57	less 1	Sound	
2167	2109	Udalbadi	Eucally puts	50	less 1	Sound	
2168	2110	Udalbadi	Eucally puts	40	less 1	Sound	
2169	2111	Udalbadi	Eucally puts	33	less 1	Sound	
2170	2112	Udalbadi	Eucally puts	45	less 1	Sound	
2171	2113	Udalbadi	Eucally puts	42	less 1	Sound	
2172	2114	Udalbadi	Eucally puts	41	less 1	Sound	
2173	2115	Udalbadi	Eucally puts	38	less 1	Sound	
2174	2116	Udalbadi	Eucally puts	48	less 1	Sound	
2175	2117	Udalbadi	Eucally puts	37	less 1	Sound	
2176	2118	Udalbadi	Eucally puts	45	less 1	Sound	
2177	2119	Udalbadi	Eucally puts	45	less 1	Sound	
2178	2120	Udalbadi	Eucally puts	46	less 1	Sound	
2179	2121	Udalbadi	Chakunda	32	less 1	Sound	
2180	2122	Udalbadi	Chakunda	54	less 1	Sound	
2181	2123	Udalbadi	Eucally puts	72	1.5	Sound	
2182	2124	Udalbadi	Eucally puts	52	less 1	Sound	
2183	2125	Udalbadi	Eucally puts	35	less 1	Sound	
2184	2126	Udalbadi	Eucally puts	44	less 1	Sound	

Range. F.S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2185	2127	Udalbadi	Eucally puts	30	less 1	Sound	
2186	2128	Udalbadi	Jori	115	less 1	Sound	
2187	2129	Udalbadi	Eucally puts	38	less 1	Sound	
2188	2130	Udalbadi	Eucally puts	70	less 1	Sound	
2189	2131	Udalbadi	Eucally puts	41	less 1	Sound	
2190	2132	Udalbadi	Eucally puts	68	less 1	Sound	
2191	2133	Udalbadi	Chakunda	38	less 1	Sound	
2192	2134	Udalbadi	Chakunda	47	less 1	Sound	
2193	2135	Udalbadi	Chakunda	44	less 1	Sound	
2194	2136	Udalbadi	Chakunda	32	less 1	Sound	
2195	2137	Udalbadi	Maei	114	less 1	Sound	
2196	2138	Udalbadi	Kashi	30	less 1	Sound	
2197	2139	Udalbadi	Eucally puts	58	less 1	Sound	
2198	2140	Udalbadi	Eucally puts	41	less 1	Sound	
2199	2141	Udalbadi	Eucally puts	40	less 1	Sound	
2200	2142	Udalbadi	Eucally puts	44	less 1	Sound	
2201	2143	Udalbadi	Eucally puts	43	less 1	Sound	
2202	2144	Udalbadi	Eucally puts	42	less 1	Sound	
2203	2145	Udalbadi	Chakunda	41	less 1	Sound	
2204	2146	Udalbadi	Chakunda	37	less 1	Sound	
2205	2147	Udalbadi	Chakunda	37	less 1	Sound	
2206	2148	Udalbadi	Chakunda	44	less 1	Sound	
2207	2149	Udalbadi	Chakunda	31	less 1	Sound	
2208	2150	Udalbadi	Chakunda	44	less 1	Sound	
2209	2151	Udalbadi	Eucally puts	46	less 1	Sound	
2210	2152	Udalbadi	Chakunda	46	less 1	Sound	
2211	2153	Udalbadi	Chakunda	50	less 1	Sound	
2212	2154	Udalbadi	Chakunda	35	less 1	Sound	
2213	2155	Udalbadi	Chakunda	39	less 1	Sound	
2214	2156	Udalbadi	Chakunda	46	less 1	Sound	
2215	2157	Udalbadi	Eucally puts	55	less 1	Sound	
2216	2158	Udalbadi	Chakunda	35	less 1	Sound	
2217	2159	Udalbadi	Chakunda	40	less 1	Sound	
2218	2160	Udalbadi	Chakunda	37	less 1	Sound	
2219	2161	Udalbadi	Chakunda	38	less 1	Sound	
2220	2162	Udalbadi	Chakunda	44	less 1	Sound	
2221	2163	Udalbadi	Chakunda	46	less 1	Sound	
2222	2164	Udalbadi	Chakunda	41	less 1	Sound	
2223	2165	Udalbadi	Chakunda	31	less 1	Sound	
2224	2166	Udalbadi	Chakunda	36	less 1	Sound	
2225	2167	Udalbadi	Chakunda	41	less 1	Sound	
2226	2168	Udalbadi	Chakunda	30	less 1	Sound	
2227	2169	Udalbadi	Chakunda	38	less 1	Sound	
2228	2169 (A)	Udalbadi	Chakunda	34	less 1	Sound	
2229	2170	Udalbadi	Chakunda	30	less 1	Sound	
2230	2171	Udalbadi	Chakunda	30	less 1	Sound	
2231	2172	Udalbadi	Chakunda	34	less 1	Sound	
2232	2173	Udalbadi	Chakunda	32	less 1	Sound	
2233	2174	Udalbadi	Chakunda	54	less 1	Sound	
2234	2174 (A)	Udalbadi	Chakunda	50	less 1	Sound	
2235	2175	Udalbadi	Chakunda	42	less 1	Sound	
2236	2176	Udalbadi	Chakunda	50	less 1	Sound	
2237	2177	Udalbadi	Chakunda	60	less 1	Sound	
2238	2178	Udalbadi	Chakunda	66	less 1	Sound	
2239	2179	Udalbadi	Chakunda	57	less 1	Sound	
2240	2180	Udalbadi	Chakunda	45	less 1	Sound	

Asstt. C.F.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2241	2181	Udalbadi	Chakunda	46	less 1	Sound	
2242	2181 (A)	Udalbadi	Chakunda	43	less 1	Sound	
2243	2182	Udalbadi	Chakunda	42	less 1	Sound	
2244	2183	Udalbadi	Chakunda	31	less 1	Sound	
2245	2184	Udalbadi	Eucally puts	38	less 1	Sound	
2246	2185	Udalbadi	Eucally puts	46	less 1	Sound	
2247	2186	Udalbadi	Eucally puts	45	less 1	Sound	
2248	2187	Udalbadi	Eucally puts	55	less 1	Sound	
2249	2188	Udalbadi	Eucally puts	58	less 1	Sound	
2250	2189	Udalbadi	Eucally puts	68	less 1	Sound	
2251	2190	Udalbadi	Eucally puts	36	less 1	Sound	
2252	2191	Udalbadi	Eucally puts	51	less 1	Sound	
2253	2192	Udalbadi	Eucally puts	39	less 1	Sound	
2254	2193	Udalbadi	Eucally puts	48	less 1	Sound	
2255	2194	Udalbadi	Eucally puts	84	less 1	Sound	
2256	2195	Udalbadi	Eucally puts	30	less 1	Sound	
2257	2196	Udalbadi	Eucally puts	43	less 1	Sound	
2258	2197	Udalbadi	Eucally puts	39	less 1	Sound	
2259	2198	Udalbadi	Eucally puts	47	less 1	Sound	
2260	2199	Udalbadi	Eucally puts	32	less 1	Sound	
2261	2200	Udalbadi	Eucally puts	30	less 1	Sound	
2262	2201	Udalbadi	Eucally puts	34	less 1	Sound	
2263	2202	Udalbadi	Eucally puts	30	less 1	Sound	
2264	2203	Udalbadi	Eucally puts	32	less 1	Sound	
2265	2204	Udalbadi	Eucally puts	32	less 1	Sound	
2266	2205	Udalbadi	Eucally puts	38	less 1	Sound	
2267	2206	Udalbadi	Eucally puts	41	less 1	Sound	
2268	2207	Udalbadi	Eucally puts	68	less 1	Sound	
2269	2208	Udalbadi	Eucally puts	58	less 1	Sound	
2270	2209	Udalbadi	Eucally puts	72	less 1	Sound	
2271	2210	Udalbadi	Eucally puts	53	less 1	Sound	
2272	2211	Udalbadi	Eucally puts	54	less 1	Sound	
2273	2211 (A)	Udalbadi	Eucally puts	51	less 1	Sound	
2274	2212	Udalbadi	Eucally puts	44	less 1	Sound	
2275	2213	Udalbadi	Eucally puts	63	1.5	Sound	
2276	2214	Udalbadi	Eucally puts	48	less 1	Sound	
2277	2215	Udalbadi	Eucally puts	54	less 1	Sound	
2278	2216	Udalbadi	Eucally puts	49	less 1	Sound	
2279	2217	Udalbadi	Eucally puts	32	less 1	Sound	
2280	2218	Udalbadi	Eucally puts	34	less 1	Sound	
2281	2219	Udalbadi	Eucally puts	31	less 1	Sound	
2282	2220	Udalbadi	Eucally puts	30	less 1	Sound	
2283	2221	Udalbadi	Eucally puts	35	less 1	Sound	
2284	2222	Udalbadi	Eucally puts	52	less 1	Sound	
2285	2223	Udalbadi	Eucally puts	40	less 1	Sound	
2286	2224	Udalbadi	Eucally puts	46	less 1	Sound	
2287	2225	Udalbadi	Eucally puts	35	less 1	Sound	
2288	2226	Udalbadi	Eucally puts	31	less 1	Sound	
2289	2227	Udalbadi	Eucally puts	35	less 1	Sound	
2290	2228	Udalbadi	Eucally puts	87	2	Sound	
2291	2229	Udalbadi	Eucally puts	50	less 1	Sound	
2292	2230	Udalbadi	Eucally puts	37	less 1	Sound	
2293	2231	Udalbadi	Eucally puts	35	less 1	Sound	
2294	2232	Udalbadi	Eucally puts	48	less 1	Sound	
2295	2233	Udalbadi	Eucally puts	50	less 1	Sound	
2296	2234	Udalbadi	Eucally puts	66	1.5	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2297	2235	Udalbadi	Eucally puts	31	less 1	Sound	
2298	2236	Udalbadi	Eucally puts	64	1.5	Sound	
2299	2237	Udalbadi	Eucally puts	40	less 1	Sound	
2300	2238	Udalbadi	Eucally puts	33	less 1	Sound	
2301	2239	Udalbadi	Eucally puts	42	less 1	Sound	
2302	2240	Udalbadi	Eucally puts	68	less 1	Sound	
2303	2241	Udalbadi	Eucally puts	35	less 1	Sound	
2304	2242	Udalbadi	Eucally puts	54	less 1	Sound	
2305	2243	Udalbadi	Eucally puts	32	less 1	Sound	
2306	2244	Udalbadi	Eucally puts	41	less 1	Sound	
2307	2245	Udalbadi	Eucally puts	40	less 1	Sound	
2308	2246	Udalbadi	Chatian	63	less 1	Sound	
2309	2247	Udalbadi	Eucally puts	44	less 1	Sound	
2310	2248	Udalbadi	Sal	46	less 1	Sound	
2311	2249	Udalbadi	Eucally puts	36	less 1	Sound	
2312	2250	Udalbadi	Eucally puts	40	less 1	Sound	
2313	2251	Udalbadi	Eucally puts	37	less 1	Sound	
2314	2252	Udalbadi	Maei	30	less 1	Sound	
2315	2253	Udalbadi	Sal	34	less 1	Sound	
2316	2254	Udalbadi	Chatian	72	less 1	Sound	
2317	2254 (A)	Udalbadi	Chatian	67	less 1	Sound	
2318	2255	Udalbadi	Eucally puts	32	less 1	Sound	
2319	2256	Udalbadi	Eucally puts	30	less 1	Sound	
2320	2257	Udalbadi	Eucally puts	58	less 1	Sound	
2321	2258	Udalbadi	Sal	116	less 1	Sound	
2322	2259	Udalbadi	Eucally puts	38	less 1	Sound	
2323	2260	Udalbadi	Eucally puts	57	less 1	Sound	
2324	2260 (A)	Udalbadi	Eucally puts	48	less 1	Sound	
2325	2261	Udalbadi	Eucally puts	59	less 1	Sound	
2326	2262	Udalbadi	Eucally puts	50	less 1	Sound	
2327	2263	Udalbadi	Eucally puts	40	less 1	Sound	
2328	2264	Udalbadi	Eucally puts	52	less 1	Sound	
2329	2265	Udalbadi	Eucally puts	36	less 1	Sound	
2330	2266	Udalbadi	Eucally puts	74	less 1	Sound	
2331	2266 (A)	Udalbadi	Eucally puts	62	less 1	Sound	
2332	2267	Udalbadi	Eucally puts	35	less 1	Sound	
2333	2268	Udalbadi	Eucally puts	45	less 1	Sound	
2334	2269	Udalbadi	Eucally puts	46	less 1	Sound	
2335	2270	Udalbadi	Eucally puts	67	less 1	Sound	
2336	2271	Udalbadi	Eucally puts	56	less 1	Sound	
2337	2272	Udalbadi	Eucally puts	51	less 1	Sound	
2338	2273	Udalbadi	Eucally puts	36	less 1	Sound	
2339	2274	Udalbadi	Neem	60	less 1	Sound	
2340	2275	Udalbadi	Neem	57	less 1	Sound	
2341	2276	Udalbadi	Neem	50	less 1	Sound	
2342	2277	Udalbadi	Neem	48	less 1	Sound	
2343	2278	Udalbadi	Eucally puts	72	2	Sound	
2344	2279	Udalbadi	Eucally puts	70	less 1	Sound	
2345	2280	Udalbadi	Eucally puts	69	less 1	Sound	
2346	2281	Udalbadi	Neem	35	less 1	Sound	
2347	2282	Udalbadi	Neem	31	less 1	Sound	
2348	2283	Udalbadi	Eucally puts	48	less 1	Sound	
2349	2284	Udalbadi	Neem	32	less 1	Sound	
2350	2285	Udalbadi	Eucally puts	53	less 1	Sound	
2351	2285 (A)	Udalbadi	Eucally puts	48	less 1	Sound	
2352	2286	Udalbadi	Eucally puts	30	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2353	2287	Udalbadi	Eucally puts	35	less 1	Sound	
2354	2288	Udalbadi	Eucally puts	55	less 1	Sound	
2355	2289	Udalbadi	Eucally puts	40	less 1	Sound	
2356	2290	Udalbadi	Chakunda	30	less 1	Sound	
2357	2291	Udalbadi	Chakunda	52	less 1	Sound	
2358	2292	Udalbadi	Chakunda	42	less 1	Sound	
2359	2293	Udalbadi	Eucally puts	35	less 1	Sound	
2360	2294	Udalbadi	Eucally puts	33	less 1	Sound	
2361	2295	Udalbadi	Dam kurude	53	less 1	Sound	
2362	2296	Udalbadi	Dam kurude	36	less 1	Sound	
2363	2297	Udalbadi	Dam kurude	40	less 1	Sound	
2364	2298	Udalbadi	Dam kurude	34	less 1	Sound	
2365	2299	Udalbadi	Dam kurude	58	less 1	Sound	
2366	2300	Udalbadi	Eucally puts	41	less 1	Sound	
2367	2301	Udalbadi	Eucally puts	32	less 1	Sound	
2368	2302	Udalbadi	Dam kurude	64	less 1	Sound	
2369	2303	Udalbadi	Eucally puts	34	less 1	Sound	
2370	2304	Udalbadi	Eucally puts	34	less 1	Sound	
2371	2305	Udalbadi	Chakunda	40	less 1	Sound	
2372	2306	Udalbadi	Chakunda	37	less 1	Sound	
2373	2307	Udalbadi	Neem	34	less 1	Sound	
2374	2308	Udalbadi	Chakunda	39	less 1	Sound	
2375	2309	Udalbadi	Eucally puts	36	less 1	Sound	
2376	2310	Udalbadi	Chakunda	30	less 1	Sound	
2377	2311	Udalbadi	Neem	30	less 1	Sound	
2378	2312	Udalbadi	Chakunda	30	less 1	Sound	
2379	2313	Udalbadi	Neem	34	less 1	Sound	
2380	2314	Udalbadi	Chakunda	34	less 1	Sound	
2381	2315	Udalbadi	Chakunda	43	less 1	Sound	
2382	2316	Udalbadi	Chakunda	31	less 1	Sound	
2383	2317	Udalbadi	Chakunda	36	less 1	Sound	
2384	2318	Udalbadi	Chakunda	47	less 1	Sound	
2385	2319	Udalbadi	Neem	61	1.5	Sound	
2386	2320	Udalbadi	Chakunda	49	less 1	Sound	
2387	2321	Udalbadi	Chakunda	35	less 1	Sound	
2388	2322	Udalbadi	Chakunda	37	less 1	Sound	
2389	2323	Udalbadi	Neem	45	less 1	Sound	
2390	2324	Udalbadi	Neem	51	less 1	Sound	
2391	2325	Udalbadi	Neem	40	less 1	Sound	
2392	2326	Udalbadi	Neem	50	less 1	Sound	
2393	2327	Udalbadi	Neem	48	less 1	Sound	
2394	2328	Udalbadi	Neem	43	less 1	Sound	
2395	2329	Udalbadi	Neem	30	less 1	Sound	
2396	2330	Udalbadi	Neem	44	less 1	Sound	
2397	2331	Udalbadi	Neem	59	less 1	Sound	
2398	2332	Udalbadi	Neem	43	less 1	Sound	
2399	2333	Udalbadi	Neem	62	less 1	Sound	
2400	2334	Udalbadi	Neem	36	less 1	Sound	
2401	2335	Udalbadi	Neem	51	less 1	Sound	
2402	2336	Udalbadi	Neem	56	less 1	Sound	
2403	2337	Udalbadi	Neem	38	less 1	Sound	
2404	2338	Udalbadi	Neem	36	less 1	Sound	
2405	2339	Udalbadi	Neem	44	less 1	Sound	
2406	2340	Udalbadi	Neem	53	less 1	Sound	
2407	2341	Udalbadi	Neem	54	less 1	Sound	
2408	2342	Udalbadi	Chakunda	46	less 1	Sound	

Range O.F.S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2409	2343	Udalbadi	Chakunda	53	less 1	Sound	
2410	2344	Udalbadi	Chakunda	43	less 1	Sound	
2411	2345	Udalbadi	Neem	35	less 1	Sound	
2412	2346	Udalbadi	Neem	36	less 1	Sound	
2413	2347	Udalbadi	Chakunda	30	less 1	Sound	
2414	2348	Udalbadi	Chakunda	46	less 1	Sound	
2415	2349	Udalbadi	Chakunda	45	less 1	Sound	
2416	2350	Udalbadi	Chakunda	30	less 1	Sound	
2417	2351	Udalbadi	Chakunda	33	less 1	Sound	
2418	2352	Udalbadi	Chakunda	46	less 1	Sound	
2419	2353	Udalbadi	Chakunda	35	less 1	Sound	
2420	2354	Udalbadi	Chakunda	34	less 1	Sound	
2421	2355	Udalbadi	Chakunda	33	less 1	Sound	
2422	2356	Udalbadi	Chakunda	52	less 1	Sound	
2423	2357	Udalbadi	Chakunda	43	less 1	Sound	
2424	2358	Udalbadi	Neem	34	less 1	Sound	
2425	2359	Udalbadi	Chakunda	32	less 1	Sound	
2426	2360	Udalbadi	Chakunda	44	less 1	Sound	
2427	2361	Udalbadi	Chakunda	32	less 1	Sound	
2428	2362	Udalbadi	Neem	34	less 1	Sound	
2429	2363	Udalbadi	Chakunda	42	less 1	Sound	
2430	2364	Udalbadi	Chakunda	30	less 1	Sound	
2431	2365	Udalbadi	Chakunda	33	less 1	Sound	
2432	2366	Udalbadi	Chakunda	30	less 1	Sound	
2433	2367	Udalbadi	Neem	34	less 1	Sound	
2434	2368	Udalbadi	Neem	42	less 1	Sound	
2435	2369	Udalbadi	Neem	34	less 1	Sound	
2436	2370	Udalbadi	Neem	32	less 1	Sound	
2437	2371	Udalbadi	Neem	42	less 1	Sound	
2438	2372	Udalbadi	Neem	43	less 1	Sound	
2439	2373	Udalbadi	Neem	48	less 1	Sound	
2440	2374	Udalbadi	Neem	44	less 1	Sound	
2441	2375	Udalbadi	Neem	37	less 1	Sound	
2442	2376	Udalbadi	Neem	56	less 1	Sound	
2443	2377	Udalbadi	Neem	58	less 1	Sound	
2444	2378	Udalbadi	Neem	41	less 1	Sound	
2445	2379	Udalbadi	Neem	58	less 1	Sound	
2446	2380	Udalbadi	Neem	51	less 1	Sound	
2447	2381	Udalbadi	Neem	34	less 1	Sound	
2448	2382	Udalbadi	Chakunda	52	less 1	Sound	
2449	2383	Udalbadi	Chakunda	33	less 1	Sound	
2450	2384	Udalbadi	Chakunda	32	less 1	Sound	
2451	2385	Udalbadi	Chakunda	49	less 1	Sound	
2452	2386	Udalbadi	Chakunda	33	less 1	Sound	
2453	2387	Udalbadi	Chakunda	45	less 1	Sound	
2454	2388	Udalbadi	Chakunda	32	less 1	Sound	
2455	2389	Udalbadi	Chakunda	32	less 1	Sound	
2456	2390	Udalbadi	Chakunda	32	less 1	Sound	
2457	2391	Udalbadi	Chakunda	41	less 1	Sound	
2458	2392	Udalbadi	Chakunda	31	less 1	Sound	
2459	2393	Udalbadi	Chakunda	30	less 1	Sound	
2460	2394	Udalbadi	Chakunda	30	less 1	Sound	
2461	2395	Udalbadi	Chakunda	34	less 1	Sound	
2462	2396	Udalbadi	Chakunda	40	less 1	Sound	
2463	2397	Udalbadi	Chakunda	41	less 1	Sound	
2464	2398	Udalbadi	Chakunda	37	less 1	Sound	

Asst. F.O.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR							
SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2465	2399	Udalbadi	Chakunda	30	less 1	Sound	
2466	2400	Udalbadi	Chakunda	33	less 1	Sound	
2467	2401	Udalbadi	Chakunda	31	less 1	Sound	
2468	2402	Udalbadi	Chakunda	30	less 1	Sound	
2469	2403	Udalbadi	Chakunda	31	less 1	Sound	
2470	2404	Udalbadi	Neem	30	less 1	Sound	
2471	2405	Udalbadi	Chakunda	30	less 1	Sound	
2472	2406	Udalbadi	Chakunda	35	less 1	Sound	
2473	2407	Udalbadi	Chakunda	30	less 1	Sound	
2474	2408	Udalbadi	Chakunda	30	less 1	Sound	
2475	2409	Udalbadi	Chakunda	30	less 1	Sound	
2476	2410	Udalbadi	Chakunda	35	less 1	Sound	
2477	2411	Udalbadi	Neem	47	less 1	Sound	
2478	2412	Udalbadi	Neem	39	less 1	Sound	
2479	2413	Udalbadi	Chakunda	44	less 1	Sound	
2480	2414	Udalbadi	Chakunda	41	less 1	Sound	
2481	2415	Udalbadi	Chakunda	31	less 1	Sound	
2482	2416	Udalbadi	Chakunda	30	less 1	Sound	
2483	2417	Udalbadi	Neem	31	less 1	Sound	
2484	2418	Udalbadi	Chakunda	34	less 1	Sound	
2485	2419	Udalbadi	Chakunda	41	less 1	Sound	
2486	2420	Udalbadi	Neem	31	less 1	Sound	
2487	2421	Udalbadi	Chakunda	36	less 1	Sound	
2488	2422	Udalbadi	Chakunda	33	less 1	Sound	
2489	2423	Udalbadi	Neem	38	less 1	Sound	
2490	2424	Udalbadi	Neem	30	less 1	Sound	
2491	2425	Udalbadi	Chakunda	38	less 1	Sound	
2492	2426	Udalbadi	Neem	30	less 1	Sound	
2493	2427	Udalbadi	Chakunda	46	less 1	Sound	
2494	2428	Udalbadi	Neem	37	less 1	Sound	
2495	2429	Udalbadi	Chakunda	45	less 1	Sound	
2496	2430	Udalbadi	Chakunda	31	less 1	Sound	
2497	2431	Udalbadi	Chakunda	35	less 1	Sound	
2498	2432	Udalbadi	Chakunda	36	less 1	Sound	
2499	2433	Udalbadi	Chakunda	34	less 1	Sound	
2500	2434	Udalbadi	Neem	42	less 1	Sound	
2501	2435	Udalbadi	Chakunda	33	less 1	Sound	
2502	2436	Udalbadi	Chakunda	36	less 1	Sound	
2503	2437	Udalbadi	Chakunda	35	less 1	Sound	
2504	2438	Udalbadi	Chakunda	37	less 1	Sound	
2505	2439	Udalbadi	Maei	38	less 1	Sound	
2506	2440	Udalbadi	Chakunda	30	less 1	Sound	
2507	2441	Udalbadi	Neem	41	less 1	Sound	
2508	2442	Udalbadi	Neem	38	less 1	Sound	
2509	2443	Udalbadi	Neem	32	less 1	Sound	
2510	2444	Udalbadi	Neem	34	less 1	Sound	
2511	2445	Udalbadi	Chakunda	31	less 1	Sound	
2512	2446	Udalbadi	Chakunda	42	less 1	Sound	
2513	2447	Udalbadi	Chakunda	43	less 1	Sound	
2514	2448	Udalbadi	Chakunda	33	less 1	Sound	
2515	2449	Udalbadi	Chakunda	41	less 1	Sound	
2516	2450	Udalbadi	Chakunda	32	less 1	Sound	
2517	2451	Udalbadi	Chakunda	41	less 1	Sound	
2518	2451 (A)	Udalbadi	Chakunda	37	less 1	Sound	
2519	2451 (B)	Udalbadi	Chakunda	30	less 1	Sound	
2520	2452	Udalbadi	Chakunda	34	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2521	2453	Udalbadi	Chakunda	51	less 1	Sound	
2522	2454	Udalbadi	Chakunda	35	less 1	Sound	
2523	2455	Udalbadi	Chakunda	53	less 1	Sound	
2524	2456	Udalbadi	Neem	30	less 1	Sound	
2525	2457	Udalbadi	Chakunda	46	less 1	Sound	
2526	2458	Udalbadi	Chakunda	30	less 1	Sound	
2527	2459	Udalbadi	Chakunda	42	less 1	Sound	
2528	2460	Udalbadi	Chakunda	34	less 1	Sound	
2529	2461	Udalbadi	Chakunda	36	less 1	Sound	
2530	2462	Udalbadi	Chakunda	41	less 1	Sound	
2531	2463	Udalbadi	Chakunda	35	less 1	Sound	
2532	2464	Udalbadi	Chakunda	31	less 1	Sound	
2533	2465	Udalbadi	Chakunda	32	less 1	Sound	
2534	2466	Udalbadi	Chakunda	30	less 1	Sound	
2535	2467	Udalbadi	Chakunda	49	less 1	Sound	
2536	2468	Udalbadi	Chakunda	39	less 1	Sound	
2537	2469	Udalbadi	Chakunda	41	less 1	Sound	
2538	2470	Udalbadi	Chakunda	31	less 1	Sound	
2539	2471	Udalbadi	Chakunda	33	less 1	Sound	
2540	2472	Udalbadi	Chakunda	31	less 1	Sound	
2541	2473	Udalbadi	Chakunda	36	less 1	Sound	
2542	2474	Udalbadi	Chakunda	40	less 1	Sound	
2543	2475	Udalbadi	Chakunda	38	less 1	Sound	
2544	2476	Udalbadi	Chakunda	42	less 1	Sound	
2545	2477	Udalbadi	Chakunda	38	less 1	Sound	
2546	2478	Udalbadi	Chakunda	30	less 1	Sound	
2547	2479	Udalbadi	Chakunda	36	less 1	Sound	
2548	2480	Udalbadi	Chakunda	36	less 1	Sound	
2549	2481	Udalbadi	Chakunda	40	less 1	Sound	
2550	2482	Udalbadi	Chakunda	41	less 1	Sound	
2551	2483	Udalbadi	Chakunda	34	less 1	Sound	
2552	2484	Udalbadi	Chakunda	54	less 1	Sound	
2553	2485	Udalbadi	Chakunda	52	less 1	Sound	
2554	2486	Udalbadi	Chakunda	30	less 1	Sound	
2555	2487	Udalbadi	Chakunda	46	less 1	Sound	
2556	2488	Udalbadi	Chakunda	41	less 1	Sound	
2557	2489	Udalbadi	Chakunda	37	less 1	Sound	
2558	2490	Udalbadi	Chakunda	33	less 1	Sound	
2559	2491	Udalbadi	Chakunda	33	less 1	Sound	
2560	2492	Udalbadi	Chakunda	40	less 1	Sound	
2561	2493	Udalbadi	Chakunda	33	less 1	Sound	
2562	2494	Udalbadi	Chakunda	36	less 1	Sound	
2563	2495	Udalbadi	Chakunda	32	less 1	Sound	
2564	2496	Udalbadi	Chakunda	43	less 1	Sound	
2565	2497	Udalbadi	Chakunda	30	less 1	Sound	
2566	2498	Udalbadi	Chakunda	39	less 1	Sound	
2567	2499	Udalbadi	Chakunda	34	less 1	Sound	
2568	2500	Udalbadi	Chakunda	38	less 1	Sound	
2569	2501	Udalbadi	Chakunda	44	less 1	Sound	
2570	2502	Udalbadi	Chakunda	30	less 1	Sound	
2571	2503	Udalbadi	Chakunda	51	less 1	Sound	
2572	2504	Udalbadi	Chakunda	30	less 1	Sound	
2573	2505	Udalbadi	Chakunda	45	less 1	Sound	
2574	2506	Udalbadi	Chakunda	33	less 1	Sound	
2575	2507	Udalbadi	Chakunda	32	less 1	Sound	
2576	2508	Udalbadi	Chakunda	30	less 1	Sound	

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2577	2509	Udalbadi	Chakunda	30	less 1	Sound	
2578	2510	Udalbadi	Chakunda	38	less 1	Sound	
2579	2511	Udalbadi	Chakunda	44	less 1	Sound	
2580	2512	Udalbadi	Chakunda	39	less 1	Sound	
2581	2513	Udalbadi	Chakunda	31	less 1	Sound	
2582	2514	Udalbadi	Chakunda	41	less 1	Sound	
2583	2515	Udalbadi	Chakunda	35	less 1	Sound	
2584	2516	Udalbadi	Chakunda	30	less 1	Sound	
2585	2517	Udalbadi	Chakunda	30	less 1	Sound	
2586	2518	Udalbadi	Chakunda	32	less 1	Sound	
2587	2519	Udalbadi	Chakunda	45	less 1	Sound	
2588	2520	Udalbadi	Chakunda	32	less 1	Sound	
2589	2521	Udalbadi	Chakunda	32	less 1	Sound	
2590	2522	Udalbadi	Chakunda	30	less 1	Sound	
2591	2523	Udalbadi	Chakunda	32	less 1	Sound	
2592	2524	Udalbadi	Chakunda	43	less 1	Sound	
2593	2525	Udalbadi	Chakunda	32	less 1	Sound	
2594	2526	Udalbadi	Chakunda	44	less 1	Sound	
2595	2527	Udalbadi	Chakunda	33	less 1	Sound	
2596	2528	Udalbadi	Chakunda	34	less 1	Sound	
2597	2529	Udalbadi	Chakunda	32	less 1	Sound	
2598	2530	Udalbadi	Chakunda	30	less 1	Sound	
2599	2531	Udalbadi	Sal	30	less 1	Sound	
2600	2532	Udalbadi	Chakunda	31	less 1	Sound	
2601	2533	Udalbadi	Chakunda	30	less 1	Sound	
2602	2534	Udalbadi	Chakunda	30	less 1	Sound	
2603	2535	Udalbadi	Chakunda	32	less 1	Sound	
2604	2536	Udalbadi	Chakunda	31	less 1	Sound	
2605	2537	Udalbadi	Chakunda	37	less 1	Sound	
2606	2538	Udalbadi	Chakunda	30	less 1	Sound	
2607	2539	Udalbadi	Chakunda	30	less 1	Sound	
2608	2540	Udalbadi	Chakunda	41	less 1	Sound	
2609	2541	Udalbadi	kumbhi	45	less 1	Sound	
2610	2542	Udalbadi	Chakunda	34	less 1	Sound	
2611	2543	Udalbadi	Chakunda	32	less 1	Sound	
2612	2544	Udalbadi	Chakunda	32	less 1	Sound	
2613	2545	Udalbadi	Chakunda	31	less 1	Sound	
2614	2546	Udalbadi	Chakunda	38	less 1	Sound	
2615	2547	Udalbadi	Eucally puts	34	less 1	Sound	
2616	2548	Udalbadi	Chakunda	61	less 1	Sound	
2617	2549	Udalbadi	Chakunda	40	less 1	Sound	
2618	2550	Udalbadi	Chakunda	38	less 1	Sound	
2619	2551	Udalbadi	Neem	32	less 1	Sound	
2620	2552	Udalbadi	Chakunda	45	less 1	Sound	
2621	2552 (A)	Udalbadi	Chakunda	42	less 1	Sound	
2622	2553	Udalbadi	Karanj	30	less 1	Sound	
2623	2554	Udalbadi	Chakunda	30	less 1	Sound	
2624	2555	Udalbadi	Chakunda	42	less 1	Sound	
2625	2556	Udalbadi	Chakunda	51	less 1	Sound	
2626	2557	Udalbadi	Chakunda	30	less 1	Sound	
2627	2558	Udalbadi	Chakunda	30	less 1	Sound	
2628	2559	Udalbadi	Chakunda	40	less 1	Sound	
2629	2560	Udalbadi	Chakunda	35	less 1	Sound	
2630	2561	Udalbadi	Chakunda	50	less 1	Sound	
2631	2562	Udalbadi	Chakunda	53	less 1	Sound	
2632	2563	Udalbadi	Chakunda	54	less 1	Sound	

Range. F. S.,

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2633	2564	Udalbadi	Chakunda	51	less 1	Sound	
2634	2565	Udalbadi	Chakunda	34	less 1	Sound	
2635	2566	Udalbadi	Chakunda	54	less 1	Sound	
2636	2567	Udalbadi	Chakunda	39	less 1	Sound	
2637	2568	Udalbadi	Chakunda	30	less 1	Sound	
2638	2569	Udalbadi	Chakunda	32	less 1	Sound	
2639	2570	Udalbadi	Chakunda	30	less 1	Sound	
2640	2571	Udalbadi	Chakunda	34	less 1	Sound	
2641	2572	Udalbadi	Chakunda	30	less 1	Sound	
2642	2573	Udalbadi	Chakunda	31	less 1	Sound	
2643	2574	Udalbadi	Chakunda	33	less 1	Sound	
2644	2575	Udalbadi	Chakunda	30	less 1	Sound	
2645	2576	Udalbadi	Chakunda	35	less 1	Sound	
2646	2577	Udalbadi	Chakunda	38	less 1	Sound	
2647	2578	Udalbadi	Chakunda	34	less 1	Sound	
2648	2579	Udalbadi	Chakunda	38	less 1	Sound	
2649	2580	Udalbadi	Chakunda	33	less 1	Sound	
2650	2581	Udalbadi	Chakunda	32	less 1	Sound	
2651	2582	Udalbadi	Chakunda	53	less 1	Sound	
2652	2583	Udalbadi	Chakunda	31	less 1	Sound	
2653	2584	Udalbadi	Chakunda	33	less 1	Sound	
2654	2585	Udalbadi	Chakunda	36	less 1	Sound	
2655	2586	Udalbadi	Eucally puts	48	less 1	Sound	
2656	2586 (A)	Udalbadi	Eucally puts	42	less 1	Sound	
2657	2586 (B)	Udalbadi	Eucally puts	36	less 1	Sound	
2658	2586 (C)	Udalbadi	Eucally puts	37	less 1	Sound	
2659	2587	Udalbadi	Chatian	43	less 1	Sound	
2660	2588	Udalbadi	Mahula	30	less 1	Sound	
2661	2589	Udalbadi	Sal	58	less 1	Sound	
2662	2589 (A)	Udalbadi	Sal	48	less 1	Sound	
2663	2590	Udalbadi	kuruma	64	less 1	Sound	
2664	2591	Udalbadi	Sal	49	less 1	Sound	
2665	2592	Udalbadi	Sal	35	less 1	Sound	
2666	2593	Udalbadi	Sal	30	less 1	Sound	
2667	2594	Udalbadi	Sal	41	less 1	Sound	
2668	2595	Udalbadi	Sal	40	less 1	Sound	
2669	2596	Udalbadi	Sal	49	less 1	Sound	
2670	2597	Udalbadi	Sal	36	less 1	Sound	
2671	2598	Udalbadi	Harida	68	less 1	Sound	
2672	2599	Udalbadi	Sal	30	less 1	Sound	
2673	2600	Udalbadi	Sal	59	less 1	Sound	
2674	2601	Udalbadi	Sal	45	less 1	Sound	
2675	2602	Udalbadi	Sal	31	less 1	Sound	
2676	2603	Udalbadi	Sal	43	less 1	Sound	
2677	2604	Udalbadi	Sal	39	less 1	Sound	
2678	2605	Udalbadi	Harida	66	less 1	Sound	
2679	2606	Udalbadi	Sal	47	less 1	Sound	
2680	2607	Udalbadi	Sal	39	less 1	Sound	
2681	2608	Udalbadi	Sal	31	less 1	Sound	
2682	2609	Udalbadi	Mahula	34	less 1	Sound	
2683	2610	Udalbadi	Harida	44	less 1	Sound	
2684	2611	Udalbadi	Sal	57	less 1	Sound	
2685	2612	Udalbadi	Sal	34	less 1	Sound	
2686	2613	Udalbadi	Sal	35	less 1	Sound	
2687	2614	Udalbadi	Sal	35	less 1	Sound	
2688	2615	Udalbadi	Sal	30	less 1	Sound	

Range. f. s.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2689	2616	Udalbadi	Sal	37	less 1	Sound	
2690	2617	Udalbadi	Sal	41	less 1	Sound	
2691	2618	Udalbadi	Mahula	32	less 1	Sound	
2692	2619	Udalbadi	Sal	43	less 1	Sound	
2693	2620	Udalbadi	Sal	44	less 1	Sound	
2694	2621	Udalbadi	Sal	47	less 1	Sound	
2695	2622	Udalbadi	Sal	136	1.5	Sound	
2696	2623	Udalbadi	Sal	30	less 1	Sound	
2697	2624	Udalbadi	Sal	33	less 1	Sound	
2698	2625	Udalbadi	Sal	35	less 1	Sound	
2699	2626	Udalbadi	Sal	42	less 1	Sound	
2700	2627	Udalbadi	Sal	44	less 1	Sound	
2701	2628	Udalbadi	Sal	31	less 1	Sound	
2702	2629	Udalbadi	Sal	45	less 1	Sound	
2703	2630	Udalbadi	Sal	35	less 1	Sound	
2704	2631	Udalbadi	Sal	31	less 1	Sound	
2705	2632	Udalbadi	Sal	37	less 1	Sound	
2706	2633	Udalbadi	Eucally puts	31	less 1	Sound	
2707	2634	Udalbadi	Chatian	33	less 1	Sound	
2708	2635	Udalbadi	Sal	30	less 1	Sound	
2709	2636	Udalbadi	Eucally puts	31	less 1	Sound	
2710	2637	Udalbadi	Chatian	31	less 1	Sound	
2711	2638	Udalbadi	Chatian	54	less 1	Sound	
2712	2639	Udalbadi	Chakunda	31	less 1	Sound	
2713	2640	Udalbadi	kumbhi	79	less 1	Sound	
2714	2641	Udalbadi	Eucally puts	43	less 1	Sound	
2715	2642	Udalbadi	Eucally puts	30	less 1	Sound	
2716	2643	Udalbadi	Eucally puts	30	less 1	Sound	
2717	2644	Udalbadi	Eucally puts	46	less 1	Sound	
2718	2645	Udalbadi	Eucally puts	44	less 1	Sound	
2719	2646	Udalbadi	Simili	40	less 1	Sound	
2720	2647	Udalbadi	Sal	170	2	Sound	
2721	2648	Udalbadi	Chakunda	51	less 1	Sound	
2722	2649	Udalbadi	Chakunda	43	less 1	Sound	
2723	2650	Udalbadi	Chakunda	44	less 1	Sound	
2724	2651	Udalbadi	Chakunda	47	less 1	Sound	
2725	2652	Udalbadi	Sal	209	1.5	Sound	
2726	2653	Udalbadi	Sal	178	1.5	Sound	
2727	2654	Udalbadi	Mahula	39	less 1	Sound	
2728	2655	Udalbadi	Kendu	182	2	Sound	
2729	2656	Udalbadi	Eucally puts	55	less 1	Sound	
2730	2657	Udalbadi	Eucally puts	68	less 1	Sound	
2731	2658	Udalbadi	Eucally puts	42	less 1	Sound	
2732	2659	Udalbadi	Eucally puts	32	less 1	Sound	
2733	2660	Udalbadi	Eucally puts	33	less 1	Sound	
2734	2661	Udalbadi	Bara	381	less 1		Unsound
2735	2662	Udalbadi	Eucally puts	36	less 1	Sound	
2736	2663	Udalbadi	Chakunda	53	less 1	Sound	
2737	2663 (A)	Udalbadi	Chakunda	42	less 1	Sound	
2738	2664	Udalbadi	Chakunda	41	less 1	Sound	
2739	2665	Udalbadi	kuruma	44	less 1	Sound	
2740	2666	Udalbadi	kuruma	30	less 1	Sound	
2741	2667	Udalbadi	Sal	160	2	Sound	
2742	2668	Udalbadi	Sal	142	1.5	Sound	
2743	2669	Udalbadi	Eucally puts	33	less 1	Sound	
2744	2670	Udalbadi	Karanj	32	less 1	Sound	

RAEO, F.C.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2745	2671	Udalbadi	kumbhi	30	less 1	Sound	
2746	2672	Udalbadi	Dhola	31	less 1	Sound	
2747	2673	Udalbadi	Chakunda	42	less 1	Sound	
2748	2674	Udalbadi	Chatian	60	less 1	Sound	
2749	2675	Udalbadi	Chatian	44	less 1	Sound	
2750	2676	Udalbadi	Chatian	36	less 1	Sound	
2751	2677	Udalbadi	Eucally puts	30	less 1	Sound	
2752	2678	Udalbadi	Eucally puts	34	less 1	Sound	
2753	2679	Udalbadi	Sal	180	2	Sound	
2754	2680	Udalbadi	Dam kurude	64	1	Sound	
2755	2681	Udalbadi	Dam kurude	66	less 1	Sound	
2756	2682	Udalbadi	Dam kurude	43	less 1	Sound	
2757	2683	Udalbadi	Dam kurude	36	less 1	Sound	
2758	2684	Udalbadi	narguni	56	less 1	Sound	
2759	2685	Udalbadi	Eucally puts	30	less 1	Sound	
2760	2686	Udalbadi	Eucally puts	37	less 1	Sound	
2761	2687	Udalbadi	Chakunda	34	less 1	Sound	
2762	2688	Udalbadi	Chatian	32	less 1	Sound	
2763	2689	Udalbadi	Eucally puts	56	less 1	Sound	
2764	2690	Udalbadi	Eucally puts	35	less 1	Sound	
2765	2691	Udalbadi	Eucally puts	37	less 1	Sound	
2766	2692	Udalbadi	Sal	32	less 1	Sound	
2767	2693	Udalbadi	Eucally puts	56	less 1	Sound	
2768	2694	Udalbadi	Eucally puts	44	less 1	Sound	
2769	2695	Udalbadi	Eucally puts	30	less 1	Sound	
2770	2696	Udalbadi	Harida	30	less 1	Sound	
2771	2697	Udalbadi	Dam kurude	31	less 1	Sound	
2772	2698	Udalbadi	Jori	106	1.5	Sound	
2773	2699	Udalbadi	Sal	168	1.5		Unsound
2774	2700	Udalbadi	Sal	82	less 1		Unsound
2775	2701	Udalbadi	Sal	140	1.5	Sound	
2776	2702	Udalbadi	Sal	148	2	Sound	
2777	2703	Udalbadi	Sal	142	less 1	Sound	
2778	2704	Udalbadi	kumbhi	37	less 1	Sound	
2779	2705	Udalbadi	Sal	167	1.5	Sound	
2780	2706	Udalbadi	Sal	129	1.5	Sound	
2781	2707	Udalbadi	Sal	72	less 1	Sound	
2782	2708	Udalbadi	kumbhi	30	less 1	Sound	
2783	2709	Udalbadi	Chatian	36	less 1	Sound	
2784	2710	Udalbadi	Eucally puts	32	less 1	Sound	
2785	2711	Udalbadi	Eucally puts	50	less 1	Sound	
2786	2712	Udalbadi	Eucally puts	34	less 1	Sound	
2787	2713	Udalbadi	Eucally puts	44	less 1	Sound	
2788	2714	Udalbadi	Eucally puts	45	less 1	Sound	
2789	2715	Udalbadi	Eucally puts	38	less 1	Sound	
2790	2716	Udalbadi	Eucally puts	40	less 1	Sound	
2791	2717	Udalbadi	Eucally puts	31	less 1	Sound	
2792	2718	Udalbadi	Eucally puts	47	less 1	Sound	
2793	2718 (A)	Udalbadi	Eucally puts	45	less 1	Sound	
2794	2718 (B)	Udalbadi	Eucally puts	37	less 1	Sound	
2795	2719	Udalbadi	Eucally puts	50	less 1	Sound	
2796	2720	Udalbadi	Chatian	30	less 1	Sound	
2797	2721	Udalbadi	Eucally puts	40	less 1	Sound	
2798	2722	Udalbadi	Eucally puts	55	less 1	Sound	
2799	2723	Udalbadi	Eucally puts	33	less 1	Sound	
2800	2724	Udalbadi	Eucally puts	43	less 1	Sound	

RAEO, F.S.

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED,
AT: NUAGAON, GUALI, DIST: KEONJHAR

SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2801	2725	Udalbadi	Eucally puts	33	less 1	Sound	
2802	2726	Udalbadi	Chakunda	30	less 1	Sound	
2803	2727	Udalbadi	Chakunda	36	less 1	Sound	
2804	2728	Udalbadi	Chakunda	30	less 1	Sound	
2805	2729	Udalbadi	Chakunda	34	less 1	Sound	
2806	2730	Udalbadi	Chakunda	46	less 1	Sound	
2807	2731	Udalbadi	Chakunda	40	less 1	Sound	
2808	2732	Udalbadi	Chakunda	30	less 1	Sound	
2809	2733	Udalbadi	Chakunda	30	less 1	Sound	
2810	2734	Udalbadi	Chakunda	46	less 1	Sound	
2811	2735	Udalbadi	Chakunda	31	less 1	Sound	
2812	2736	Udalbadi	Chakunda	40	less 1	Sound	
2813	2737	Udalbadi	Chakunda	30	less 1	Sound	
2814	2738	Udalbadi	Chakunda	36	less 1	Sound	
2815	2739	Udalbadi	Chakunda	30	less 1	Sound	
2816	2740	Udalbadi	Chakunda	33	less 1	Sound	
2817	2741	Udalbadi	Chakunda	35	less 1	Sound	
2818	2742	Udalbadi	Eucally puts	31	less 1	Sound	
2819	2743	Udalbadi	Chakunda	34	less 1	Sound	
2820	2744	Udalbadi	Chakunda	34	less 1	Sound	
2821	2745	Udalbadi	Chakunda	32	less 1	Sound	
2822	2746	Udalbadi	Chakunda	30	less 1	Sound	
2823	2747	Udalbadi	Chakunda	45	less 1	Sound	
2824	2748	Udalbadi	Chakunda	40	less 1	Sound	
2825	2749	Udalbadi	Chakunda	40	less 1	Sound	
2826	2750	Udalbadi	Chakunda	34	less 1	Sound	
2827	2750 (A)	Udalbadi	Chakunda	32	less 1	Sound	
2828	2751	Udalbadi	Chakunda	32	less 1	Sound	
2829	2752	Udalbadi	Chakunda	30	less 1	Sound	
2830	2753	Udalbadi	Chakunda	35	less 1	Sound	
2831	2754	Udalbadi	Chakunda	36	less 1	Sound	
2832	2755	Udalbadi	Chakunda	41	less 1	Sound	
2833	2756	Udalbadi	Chakunda	30	less 1	Sound	
2834	2757	Udalbadi	Chakunda	30	less 1	Sound	
2835	2758	Udalbadi	Chakunda	34	less 1	Sound	
2836	2759	Udalbadi	Eucally puts	31	less 1	Sound	
2837	2760	Udalbadi	Eucally puts	38	less 1	Sound	
2838	2761	Udalbadi	Eucally puts	35	less 1	Sound	
2839	2762	Udalbadi	Eucally puts	40	less 1	Sound	
2840	2763	Udalbadi	Eucally puts	34	less 1	Sound	
2841	2764	Udalbadi	Eucally puts	30	less 1	Sound	
2842	2765	Udalbadi	Eucally puts	44	less 1	Sound	
2843	2766	Udalbadi	Eucally puts	33	less 1	Sound	
2844	2767	Udalbadi	Eucally puts	36	less 1	Sound	
2845	2768	Udalbadi	Eucally puts	32	less 1	Sound	
2846	2769	Udalbadi	Eucally puts	57	less 1	Sound	
2847	2770	Udalbadi	Eucally puts	46	less 1	Sound	
2848	2771	Udalbadi	Eucally puts	30	less 1	Sound	
2849	2772	Udalbadi	Eucally puts	30	less 1	Sound	
2850	2773	Udalbadi	Eucally puts	35	less 1	Sound	
2851	2774	Udalbadi	Eucally puts	31	less 1	Sound	
2852	2775	Udalbadi	Eucally puts	49	less 1	Sound	
2853	2776	Udalbadi	Eucally puts	48	less 1	Sound	
2854	2777	Udalbadi	Eucally puts	47	less 1	Sound	
2855	2778	Udalbadi	Eucally puts	50	less 1	Sound	
2856	2779	Udalbadi	Eucally puts	50	less 1	Sound	

Asstt. R.O.,

Forest Section Officer
Guali

SPECIES WISE ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR							
SL.NO.	TREE NO.	AREA	NAME OF TREE	GIRTH (CM)	APPROX. HEIGHT	NATURE	NATURE
2857	2780	Udalbadi	Eucally puts	30	less 1	Sound	
2858	2781	Udalbadi	Eucally puts	64	less 1	Sound	
2859	2782	Udalbadi	Eucally puts	52	less 1	Sound	
2860	2783	Udalbadi	Eucally puts	30	less 1	Sound	
2861	2784	Udalbadi	Eucally puts	30	less 1	Sound	
2862	2785	Udalbadi	Eucally puts	33	less 1	Sound	
2863	2786	Udalbadi	Eucally puts	46	less 1	Sound	
2864	2787	Udalbadi	Eucally puts	57	less 1	Sound	
2865	2788	Udalbadi	Eucally puts	78	less 1	Sound	
2866	2789	Udalbadi	Eucally puts	74	less 1	Sound	
2867	2790	Udalbadi	Eucally puts	34	less 1	Sound	
2868	2791	Udalbadi	Eucally puts	38	less 1	Sound	
2869	2792	Udalbadi	Dam kurude	47	less 1	Sound	
2870	2793	Udalbadi	Eucally puts	48	less 1	Sound	
2871	2794	Udalbadi	Eucally puts	30	less 1	Sound	
2872	2795	Udalbadi	Eucally puts	33	less 1	Sound	
2873	2796	Udalbadi	Eucally puts	30	less 1	Sound	
2874	2797	Udalbadi	Sal	54	less 1	Sound	
2875	2798	Udalbadi	Eucally puts	38	less 1	Sound	
2876	2799	Udalbadi	Eucally puts	40	less 1	Sound	
2877	2800	Udalbadi	Eucally puts	46	less 1	Sound	
2878	2801	Udalbadi	Eucally puts	50	less 1	Sound	
2879	2802	Udalbadi	Eucally puts	36	less 1	Sound	
2880	2803	Udalbadi	Eucally puts	56	less 1	Sound	
2881	2804	Udalbadi	Chatian	44	less 1	Sound	
2882	2804 (A)	Udalbadi	Chatian	40	less 1	Sound	
2883	2805	Udalbadi	Eucally puts	43	less 1	Sound	
2884	2806	Udalbadi	Eucally puts	30	less 1	Sound	
2885	2807	Udalbadi	Eucally puts	69	less 1	Sound	
2886	2808	Udalbadi	Eucally puts	44	less 1	Sound	
2887	2809	Udalbadi	Eucally puts	30	less 1	Sound	
2888	2810	Sonukucha	Chakunda	75	1.5	Sound	
2889	2811	Sonukucha	Mango	75	1.5	Sound	
2890	2812	Sonukucha	Chakunda	60	1	Sound	
2891	2813	Sonukucha	Misc	35	1	Sound	
2892	2814	Sonukucha	Mango	100	2	Sound	
2893	2815	Sonukucha	Mango	65	1	Sound	
2894	2816	Sonukucha	Misc	270	2.5	Sound	
2895	2817	Sonukucha	Misc	45	1	Sound	
2896	2818	Sonukucha	Chakunda	75	1	Sound	
2897	2819	Sonukucha	Kathal	120	1.5	Sound	
2898	2820	Sonukucha	Misc	35	1	Sound	
2899	2821	Sonukucha	Chakunda	38	1	Sound	
	Total =				2899		

Forest Section Officer
Guali

SPECIES WISE ABSTRACT OF ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

Sl. No.	Name of Species	Botanical Name	(30-59) CM		(60-89) CM		(90-119) CM		(120-149) CM		(150-179) CM		>180 CM		Total		Grand Total
			Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	
1	Asan	Terminallia Tomentosa	6		1		1								8	-	8
2	Bara	Ficus Bengalensis	5		1		5		5		6		16	2	38	2	40
3	Bhaliya	Semecarpus anacardium L.F	4	1	1										5	1	6
4	Bheru	Chloroxylon swietenia DC	2												2	-	2
5	Bahada	Terminalia Belerica (Gaertn)	7	1	7	3		1							14	5	19
6	Chara	Buchanania Lanzan Spreng	3		5		1					1			9	1	10
7	Chakunda	Cassia siamea lam	553		35										588	-	588
8	Bahada	Michelia champaca L	37		1										38	-	38
9	Chatian	Alstonia scholaris	49		25		2		1						77	-	77
10	Kanta koli	Ziziphus oenoplia	1												1	-	1
11	Dhola	Anogeissus latifolia	3	2	1	1		1							4	4	8
12	Maei	Isoberlinia doka	9		2		1		3						15	-	15
13	Dumuri	Ficus racemosa	4		2										6	-	6
14	Eucally puts		671		131	1	5		1						808	1	809
15	Gamhari	Gmelina Arborea	10		3										13	-	13
16	Harida	Terminalia chebula	10	1	3	1	2								15	2	17
17	Jamun	Syzygium Cumini	5	1	3		2			1	1		1		12	2	14
18	Jori	Ficus religiosa L	4				2		2				2		10	-	10
19	Kashi	Bridelia Retusa	5			1			1	1	1				7	2	9
20	kuruma	Adina cordifolia (Roxb) hook f.e	4		4					1					8	1	9
21	Kali Kendu	Diospyros Macrophylla L	6		3		1		1				1		12	-	12
22	karanj	Pongamia pinnata	18												18	-	18
23	Kathal	Artocarpus heterophyllus							1						1	-	1
24	Kendu	Diospyros Melanoxylon	17	2	1		1		1				1		21	2	23
25	Krushnachuda	May-flower tree	41		13		1								55	-	55
26	Kumbhi	Careya arborea	10		5		1	1							16	1	17
27	Kusum	Scheichera oleosa	3		6		4		1		3		2		19	-	19
28	Maha Neem	Azadirachta indica	2		1										3	-	3
29	Mahula	Madhuca longifolia	6		8	2	6	1	3	1	1	1	5		29	5	34
30	Mango	Mangifera indica	5		3		1		1				1		11	-	11
31	Narguni	Vitex negundo	28		13		2								43	-	43
32	Neem	Azadirachta indica	67		4		1								72	-	72
33	Phenphona	Oroxy lum indicum bent	1												1	-	1
34	Dam kurude	Gardenia latifolia A iton	51		5										56	-	56
35	Poi Puijamla		1		2										3	-	3
36	Putuli		1												1	-	1
37	Sagwan	Tectona grandis L.F	1												1	-	1
38	Sal	Shorea robustacaerth F	201	1	295	5	217		45	3	7	1	3	1	768	11	779
39	Siddha	Lagerstroemia parviflora roxb	1		1										2	-	2
40	Simili	Bombax ceiba L	11	1	1				1		2				15	1	16
41	Sishu	Dalbergia sis soo roxb	2		1										3	-	3
42	Tentala	Tamarindus indica L	2												2	-	2
43	Misc		13	3	8	3							1		22	6	28
Grand Total			1880	13	595	17	256	4	67	7	21	3	33	3	2,852	47	2,899

Forest Section Officer
Guali

CLASS & SPECIES WISE ABSTRACT OF ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR AT VILLAGE BALADIHI, TEHESIL KOIRA, DIST. SUNDARGARH, ODISHA

SL. No.	NAME OF SPECIES	CLASS OF SPECIES	(30-59) CM		(60-89) CM		(90-119) CM		(120-149) CM		(150-179) CM		(180)CM Above		Total		GRAND TOTAL
			S	US	S	US	S	US	S	US	S	US	S	US	S	US	
1	Bahada	1st Class	7	1	7	3		1							14	5	19
2	Champa	1st Class	37		1										38	-	38
3	Gamhari	1st Class	10		3										13	-	13
4	Sal	1st Class	201	1	295	5	217		45	3	7	1	3	1	768	11	779
5	Sishu	1st Class	2		1										3	-	3
6	Asan	2nd Class	6		1		1								8	-	8
7	Jamun	2nd Class	5	1	3		2			1	1		1		12	2	14
8	Kashi	2nd Class	5			1			1	1	1				7	2	9
9	Kuruma	2nd Class	4		4					1					8	1	9
10	Kali Kendu	2nd Class	6		3		1		1				1		12	-	12
11	Kendu	2nd Class	17	2	1		1		1				1		21	2	23
12	Mango	2nd Class	5		3		1		1				1		11	-	11
13	Siddha	2nd Class	1		1										2	-	2
14	Tentala	2nd Class	2												2	-	2
15	Bara	3rd Class	5		1		5		5		6		16	2	38	2	40
16	Bhaliya	3rd Class	4	1	1										5	1	6
17	Bheru	3rd Class	2												2	-	2
18	Chara	3rd Class	3		5		1					1			9	1	10
19	Chakunda	3rd Class	553		35										588	-	588
20	Chatian	3rd Class	49		25		2		1						77	-	77
21	Kanta koli	3rd Class	1												1	-	1
22	Dhola	3rd Class	3	2	1	1		1							4	4	8
23	Maei	3rd Class	9		2		1		3						15	-	15
24	Dumuri	3rd Class	4		2										6	-	6
25	Eucally puts	3rd Class	671		131	1	5		1						808	1	809

Forest Section Officer
Guali

CLASS & SPECIES WISE ABSTRACT OF ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR AT VILLAGE BALADIHI, TEHESIL KOIRA, DIST. SUNDARGARH, ODISHA

SL. No.	NAME OF SPECIES	CLASS OF SPECIES	(30-59) CM		(60-89) CM		(90-119) CM		(120-149) CM		(150-179) CM		(180)CM Above		Total		GRAND TOTAL
			S	US	S	US	S	US	S	US	S	US	S	US	S	US	
26	Harida	3rd Class	10	1	3	1	2								15	2	17
27	Jori	3rd Class	4				2		2				2		10	-	10
28	karanj	3rd Class	18												18	-	18
29	Kathal	3rd Class							1						1	-	1
30	Krushnachuda	3rd Class	41		13		1								55	-	55
31	Kumbhi	3rd Class	10		5		1	1							16	1	17
32	Kusum	3rd Class	3		6		4		1		3		2		19	-	19
33	Maha Neem	3rd Class	2		1										3	-	3
34	Mahula	3rd Class	6		8	2	6	1	3	1	1	1	5		29	5	34
35	Misc	3rd Class	13	3	8	3							1		22	6	28
36	Narguni	3rd Class	28		13		2								43	-	43
37	Neem	3rd Class	67		4		1								72	-	72
38	Phenphona	3rd Class	1												1	-	1
39	Damkurude	3rd Class	51		5										56	-	56
40	Poi Puijamla	3rd Class	1		2										3	-	3
41	Putuli	3rd Class	1												1	-	1
42	Sagwan	3rd Class	1												1	-	1
43	Simili	3rd Class	11	1	1				1		2				15	1	16
Grand Total			1,880	13	595	17	256	4	67	7	21	3	33	3	2,852	47	2,899

Forest Section Officer
Guali

SPECIES WISE ABSTRACT OF ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR

Sl. No.	Name of Species	Botanical Name	(30-59) CM		(60-89) CM		(90-119) CM		(120-149) CM		(150-179) CM		>180 CM		Total		Grand Total
			Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	Sound	Unsound	
1	Asan	Terminallia Tomentosa	6		1		1								8	-	8
2	Bara	Ficus Bengalensis	5		1		5		5		6		16	2	38	2	40
3	Bhaliya	Semecarpus anacardium L.F	4	1	1										5	1	6
4	Bheru	Chloroxylon swietenia DC	2												2	-	2
5	Bahada	Terminalia Belerica (Gaertn)	7	1	7	3		1							14	5	19
6	Chara	Buchanania Lanzan Spreng	3		5		1					1			9	1	10
7	Chakunda	Cassia siamea lam	553		35										588	-	588
8	Bahada	Michelia champaca L	37		1										38	-	38
9	Chatian	Alstonia scholaris	49		25		2		1						77	-	77
10	Kanta koli	Ziziphus oenoplia	1												1	-	1
11	Dhola	Anogeissus latifolia	3	2	1	1		1							4	4	8
12	Maei	Isoberlinia doka	9		2		1		3						15	-	15
13	Dumuri	Ficus racemosa	4		2										6	-	6
14	Eucally puts		671		131	1	5		1						808	1	809
15	Gamhari	Gmelina Arborea	10		3										13	-	13
16	Harida	Terminalia chebula	10	1	3	1	2								15	2	17
17	Jamun	Syzygium Cumini	5	1	3		2			1	1		1		12	2	14
18	Jori	Ficus religiosa L	4				2		2				2		10	-	10
19	Kashi	Bridelia Retusa	5			1			1	1	1				7	2	9
20	kuruma	Adina cordifolia (Roxb) hook f.e	4		4					1					8	1	9
21	Kali Kendu	Diospyros Macrophylla L	6		3		1		1				1		12	-	12
22	karanj	Pongamia pinnata	18												18	-	18
23	Kathal	Artocarpus heterophyllus							1						1	-	1
24	Kendu	Diospyros Melanoxylon	17	2	1		1		1				1		21	2	23
25	Krushnachuda	May-flower tree	41		13		1								55	-	55
26	Kumbhi	Careya arborea	10		5		1	1							16	1	17
27	Kusum	Scheichera oleosa	3		6		4		1		3		2		19	-	19
28	Maha Neem	Azadirachta indica	2		1										3	-	3
29	Mahula	Madhuca longifolia	6		8	2	6	1	3	1	1	1	5		29	5	34
30	Mango	Mangifera indica	5		3		1		1				1		11	-	11
31	Narguni	Vitex negundo	28		13		2								43	-	43
32	Neem	Azadirachta indica	67		4		1								72	-	72
33	Phenphona	Oroxylum indicum bent	1												1	-	1
34	Dam kurude	Gardenia latifolia Aiton	51		5										56	-	56
35	Poi Puijamla		1		2										3	-	3
36	Putuli		1												1	-	1
37	Sagwan	Tectona grandis L.F	1												1	-	1
38	Sal	Shorea robustacaerth F	201	1	295	5	217		45	3	7	1	3	1	768	11	779
39	Siddha	Lagerstroemia parviflora roxb	1		1										2	-	2
40	Simili	Bombax ceiba L	11	1	1				1		2				15	1	16
41	Sishu	Dalbergia sis soo roxb	2		1										3	-	3
42	Tentala	Tamarindus indica L	2												2	-	2
43	Misc		13	3	8	3							1		22	6	28
Grand Total			1880	13	595	17	256	4	67	7	21	3	33	3	2,852	47	2,899

Forest Section Officer
Guali

Forest Range Officer
BARBIL

CLASS & SPECIES WISE ABSTRACT OF ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR AT VILLAGE BALADIHI, TEHESIL KOIRA, DIST. SUNDARGARH, ODISHA

SL. No.	NAME OF SPECIES	CLASS OF SPECIES	(30-59) CM		(60-89) CM		(90-119) CM		(120-149) CM		(150-179) CM		(180)CM Above		Total		GRAND TOTAL
			S	US	S	US	S	US	S	US	S	US	S	US	S	US	
1	Bahada	1st Class	7	1	7	3		1							14	5	19
2	Champa	1st Class	37		1										38	-	38
3	Gamhari	1st Class	10		3										13	-	13
4	Sal	1st Class	201	1	295	5	217		45	3	7	1	3	1	768	11	779
5	Sishu	1st Class	2		1										3	-	3
6	Asan	2nd Class	6		1		1								8	-	8
7	Jamun	2nd Class	5	1	3		2			1	1		1		12	2	14
8	Kashi	2nd Class	5			1			1	1	1				7	2	9
9	Kuruma	2nd Class	4		4					1					8	1	9
10	Kali Kendu	2nd Class	6		3		1		1				1		12	-	12
11	Kendu	2nd Class	17	2	1		1		1				1		21	2	23
12	Mango	2nd Class	5		3		1		1				1		11	-	11
13	Siddha	2nd Class	1		1										2	-	2
14	Tentala	2nd Class	2												2	-	2
15	Bara	3rd Class	5		1		5		5		6		16	2	38	2	40
16	Bhaliya	3rd Class	4	1	1										5	1	6
17	Bheru	3rd Class	2												2	-	2
18	Chara	3rd Class	3		5		1					1			9	1	10
19	Chakunda	3rd Class	553		35										588	-	588
20	Chatian	3rd Class	49		25		2		1						77	-	77
21	Kanta koli	3rd Class	1												1	-	1
22	Dhola	3rd Class	3	2	1	1		1							4	4	8
23	Maei	3rd Class	9		2		1		3						15	-	15
24	Dumuri	3rd Class	4		2										6	-	6
25	Eucally puts	3rd Class	671		131	1	5		1						808	1	809

Forest Section Officer
Guali

Forest Range Officer
BARBIL

CLASS & SPECIES WISE ABSTRACT OF ENUMARATION OF STANDING TREES OVER 63.300 HA OF DIVERTED FOREST LAND IN RESPECT OF NUAGAON IRON ORE MINES OF M/S JSW STEEL LIMITED, AT: NUAGAON, GUALI, DIST: KEONJHAR AT VILLAGE BALADIHI, TEHESIL KOIRA, DIST. SUNDARGARH, ODISHA

SL. No.	NAME OF SPECIES	CLASS OF SPECIES	(30-59) CM		(60-89) CM		(90-119) CM		(120-149) CM		(150-179) CM		(180)CM Above		Total		GRAND TOTAL
			S	US	S	US	S	US	S	US	S	US	S	US	S	US	
26	Harida	3rd Class	10	1	3	1	2								15	2	17
27	Jori	3rd Class	4				2		2				2		10	-	10
28	karanj	3rd Class	18												18	-	18
29	Kathal	3rd Class							1						1	-	1
30	Krushnachuda	3rd Class	41		13		1								55	-	55
31	Kumbhi	3rd Class	10		5		1	1							16	1	17
32	Kusum	3rd Class	3		6		4		1		3		2		19	-	19
33	Maha Neem	3rd Class	2		1										3	-	3
34	Mahula	3rd Class	6		8	2	6	1	3	1	1	1	5		29	5	34
35	Misc	3rd Class	13	3	8	3							1		22	6	28
36	Narguni	3rd Class	28		13		2								43	-	43
37	Neem	3rd Class	67		4		1								72	-	72
38	Phenphona	3rd Class	1												1	-	1
39	Damkurude	3rd Class	51		5										56	-	56
40	Poi Puijamla	3rd Class	1		2										3	-	3
41	Putuli	3rd Class	1												1	-	1
42	Sagwan	3rd Class	1												1	-	1
43	Simili	3rd Class	11	1	1				1		2				15	1	16
Grand Total			**1,880**	**13**	**595**	**17**	**256**	**4**	**67**	**7**	**21**	**3**	**33**	**3**	**2,852**	**47**	**2,899**

Forest Section Officer
Guali

Forest Range Officer
BARBIL

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE) & CHIEF WILDLIFE WARDEN, ODISHA

Government of Odisha, Forest, Environment & Climate Change Department

PRAKRUTI BHAWAN, PLOT NO.1459, SAHEED NAGAR, BHUBANESWAR- 751007
Phone: 0674-2602250, Website: www.wildlife.odisha.gov.in, Email: odishawildlife@gmail.com

No. 1834 / CWLW-FDWC-FD-0125-2021
Bhubaneswar, Dated the 25th February, 2022

To

M/s JSW Steel Limited,
JSW Centre Bandra Kurla Complex,
Bandra West, Mumbai – 400051

Sub: Approval of Site Specific Wildlife Conservation Plan for Nuagaon Iron Ore mines of M/s JSW Steel Ltd. in Keonjhar Forest Division of Keonjhar District

Sir,

It is to intimate that you have to implement one Site Specific Wildlife Conservation Plan for the above project in compliance to Standard ToR No.16 & 18 for Mining project and ToR No.26 (i) to (iii) as per Recommendation of CSIR-NEERI Report on "Carrying Capacity Study for Environmentally Sustainable Iron & Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj districts of Odisha State" prescribed by MoEF&CC, IA Division vide their letter in F.No.J-11015/66/2020-IA.II(M) dt 29.12.2020 while considering the expansion proposal of the above project.

The Site Specific Wildlife Conservation Plan in respect of the above project is hereby approved with financial forecast of ₹899.198 lakh (Rupees eight crore ninety-nine lakh nineteen thousand eight hundred) only for implementation of activities in project impact area as detailed in the approved plan. The total cost of ₹899.198 lakh (Rupees eight crore ninety-nine lakh nineteen thousand eight hundred) only may kindly be deposited in State CAMPA fund for implementation of activities in project impact area by the DFO, Keonjhar Division and DFO, Bonai Division as per jurisdiction.

It is further requested to take note of the following conditions for future compliance.

- The Plan may be revisited after 5 years and the User Agency will give undertaking to contribute towards the revised cost of the Conservation Plan till the project period, if any.
- Should there be need for Site Specific Wildlife Conservation Plan after expiry of the present plan period, the User agency shall submit another such plan at least one year before the expiry of the present Conservation Plan and deposit the outlay amount upon its approval. In case of delay, it will be dealt as per law for violations of Forest (Conservation) Act, 1980/ Environment (Protection) Act, 1986.
- The User Agency shall give an undertaking to bear the differential cost in case of enhancement of wage rate during implementation of the Plan.

Yours faithfully

Encl: Copy of approved SSWLCP

Principal CCF (WL) & CWLW, Odisha

Memo No. 1835 /dt 25/02/2022

Copy forwarded for information and necessary action to the -

1. Special Secretary to Government of Odisha, FE&CC Department, Bhubaneswar
2. Principal Chief Conservator of Forests, Odisha
3. Regional Chief Conservator of Forests, Rourkela Circle with reference to his memo No.3704 dt 14.12.2021
4. DFO, Keonjhar/ Bonai Division alongwith a copy of the approved SSWLCP

Principal CCF (WL) & CWLW, Odisha

N

B. INTERVENTIONS FOR THE PROJECT IMPACT AREA OF NUAGAON IRON ORE MINES OF M/S. JSW STEEL LTD. TO BE IMPLEMENTED BY DFO IN KEONJHAR FOREST DIVISION.

Wage rate @ Rs. 315/- per manday

Sl. No	Interventions	Unit	Rate (in Rs.)	Amount in lakh
1.	**WILDLIFE HABITAT IMPROVEMENT**			
a.	Plantation in Uliburu RF. Lakraghat RF and Siddhamatha RF alongside the small nalas and flow streams of Karo Nadi and Topadiha nala - 1000 nos. plants of Elephant and Sloth Bear fruit and fodder species @ 2,34,718/- per hectare rate for 25 Ha. (Jack fruit. Siali, Bara, Aswastha)	25 Ha.	2,34,718	58.6795
b.	**Fire Protection and Management**			
	Provision for fire fighting squad with basic fire fighting equipment vehicle POL ETC. located at the proximities of forest areas will be selected to assist in fire control activities.	10 Nos	7,00,400	70.04
	Provision to procure strategic tools such as 10 nos of **fire blower** @ Rs.50,000/- each	10 Nos	50,000	5.00
	Provision for Fire drills should be conducted involving the grass root level forest officers, local villagers, VSS members and fire fighting personnel on different aspects of detection communication, transport and fire fighting at site.	10 Yrs	20,000	2.00
	Provision for cattle population immunization at regular intervals.	10 Yrs	50,000	5.00
2.	**SOIL CONSERVATION MEASURES**			
	a. Provision to erect **check dams** in the catchment area of each Nala, over the small drainage channels, particularly in Karo Nadi, Suna Nadi& other tributaries falling in Karo river and Suna river. 1 Mtr Span – 100 Nos. 2 Mtr Span 50 Nos. 3 Mtr Span – 20 Nos.	170 Nos	LS	16.50
	b. Provision of 15 Nos of **Sub Surface Dykes** around 3 different RFs (5 Nos in each RF) for Rs. 1.50 Lakhs per dyke	15 Nos.	1.50	22.50
	c. Provision for 2 Kms of **Graded Earthen Bunds** is kept for conservation of Soil from erosion at a Lump sum cost of Rs. 5.00 Lakhs/ Kms.	2 Kms	5.00	10.00

3.	**WILDLIFE PROECTION AND ANTI-DEPREDATION**			
	a. Fencing of Unguarded open wells 10 Nos. @ Rs. 20,000/- each	10 nos	20,000	2.00
	b. Supply of warning & wading system to prevent elephant intrusion along with maintenance of same at 20,000/- per annum	2 nos.	16,00,000	32.00
	c. Provision for a Rescue van with Animal trap crates.	1 Nos.	LS	15.00
4.	**MAN ANIMAL CONFLICT MITIGATION**			
	a. Provision for augmentation of staff strength by creation of a new cadre of Anti-poaching/Anti depredation squad consisting of 5 members @ Rs. 13,14,620/- per year	5 members	13,24,400	132.44
	b. Provision for a Grain Store House having plinth area 450 qft. @ Rs. 4,90,000/- per each per village for 10 strategic villages victim to crop raiding & house damage to store food grain.	10 nso.	4,90,000	49.00
	c. Provision for supply of Metallic grain bin 30 nos. per village to store food grain for 10 villages @ Rs. 3500/- per piece. 300 nos.	10 village	3500	10.50
	d. Provision for Elephant proof trench of size $\frac{3m \times 1m}{2} \times 2.5\ m$. across the entry path of elephant to the villages to prevent house and grain raiding @ Rs. 5,36,374.00 per KM at strategic locations over 2 KM.	2 KM	5,36,374	10,72348
	e. Provision for installation of solar power street lights to cover small hamlets	20 nos.	25,000	5.00
	f. Provision of metallic radium painted sign board at 2 elephant road crossing site @10 nos. each point totaling to 20 Nos. to avoid road accidents and casuality of elephants and road blockades	20 Nos.	L.S. Rs. 30,000/-	6.00
	g. Provision for Corpus Fund	10 Yrs	1,00,000	10.00
5	Provision for Concrete Manchan -cum- Semi watch tower on hillocks and tall trees to watch the movement of elephants and to alert the villagers about elephant movement.	1 no.	10,00,000	10.00
6.	Hitech GIS Laboratory		L.S.	10.00
7.	Monitoring, evaluation mechanism research and training		L.S.	10.00
	Total		492.390	522.88698
	Add 20%		98.480	104.577396
	Grand Total		590.870	**627.464376 or 627.464**

Rupees five crore ninety lakh eighty seven thousand only

(Rupees six crore twenty seven lakhs forty six thousand four hundred only.

Countersigned

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Divisional Forest Officer
Keonjhar Division

C. FINANCIAL FORECAST FOR INTETVENTIONS PROPOSED TO BE UNDER TAKEN IN THE PROJECT IMPACT AREA OF NUAGAON MINES OF M/S JSW LTD. IN BADBIL TAHASIL OF KEONJHAR DISTRICT PERTAINING TO BONAI FOREST DIVISION.

Wage rate @ Rs. 315/- per manday

Sl. No.	Particulars	Unit	Rate (in Rs.)	Amount (in lakh)
1	**Fire protection**			
	i) Deployment of a Fire fighting squad consisting of 10 members for 5 fire months@ Rs. 7,00,400/- per annum. for 10 years.	1 unit	7,00,400.00	70.04
	ii) Protection equipments of fire fighting equipments : (Field tents, sleeping bags, file blower etc.)		L.S.	12.00
2	**Anti-depredation and Protection measures**			
	i) Provision for Paddy harvester to be supplied to be villages for early harvesting of paddy and store in safe place to avoid damage of paddy in corn field (Four cylinder 30 HP power paddy harvester).	3 nos.	20,00,000.00	60.00
	ii) Provision for establishing bulk massaging system for immediate message spreading from field to all grass-root level forest Officials ROs, ACFs & D.F.O Bonai including the maintenance cost of Rs. 4000 per year over the plan period	2 unit.	2,20,000.00	4.40
	iii) Provision of Solar lighting facilities to villages in the impact area to reduce human-elephant conflict. 1) For small hamlets normal size 50 nos. @ Rs. 30,000/- per each = Rs. 15,00,000/-	50 Nos.	30,000.00	34.00
	2) For thick populated large villages highmast solar light 20 nos. @ Rs. 95,000/- each = Rs. 19,00,000/-	20 nos.	95,000.00	
	iv) Provision for long rechargeable flash light torchers 20 nos. to be supplied to the strategic villages/VSS members/ elephants trackers to wade away elephants.	20 nos.	15,000.00	3.00

Sl. No.	Particulars	Unit	Rate (in Rs.)	Amount (in lakh)
	v) Provision for camera traps and equipments etc.	25 nos.	50,000.00	12.50
	vi) Procurement of two wheeler vehicles with POL for elephant squad	5 Nos.	2,20,000.00	11.00
	vii) Supply of warning and wading system to prevent elephant intrusion along with maintenance of same @ Rs. 10,000/- per annum	1 unit	16,00,000	16.00
	viii) Provision for metallic radium painted sign board at 2 elephants road crossing sites @ 10 nos. each point, totaling to 20 nos. at strategic locations to avoid accident and casualty of elephants	20 nos.	LS 30,000/- eah	6.00
	ix) Awareness campaign for main animal conflict @ Rs. 50,000/- per annum.			5.00
	x) Provision for Concrete Manchan -cum- Semi watch tower on hillocks and tall trees to watch the movement of elephants and to alert the villagers about elephant movement.	1 no.	10,00,000	10.00
3	**Support activities**			
	i) **Corpus funds.**		LS	8.00
	ii) **Provision for cattle immunization camps in the villages near the wildlife habitats.**		LS	5.00
	Total			**256.94**
	20% cost escalation			51.388
	Grand Total			**308.328**

(Rupees three crore eight lakhs thirty two thousand eight hundred) only.

Countersigned

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

Divisional Forest Officer
Bonai Division

CHAPTER-V

Financial implication and monitoring :
Total financial implecation of the proposal with cash flow statement for 10 years for both Keonjhar & Bonai Division are furnished below :

The life of this mining has been estimated to be 31.614 years. But this plan is proposed for a period of 10 years. After completion of this plan period the same can be evaluated and further steps taken depending on requirement. However, if necessary interim revision of this plan can be taken up depending on the actual requirements.

Regular monitoring and evaluation shall be done by the field officers and RCCF, Rourkela at the time of implementation for which fund has been kept in this plan. Year wise data shall be maintained to assess the trend of man-animal conflict due to implementation of this project and if required interim revisions can be made in consultation with the project proponent. The project proponent shall be give undertaking to prepared new plan one year before expiry of this plan. The PP shall under take to provide necessary assistance as where and when required to mitigate the advours impact generated causing man-animals conflict and degradation of habitat. The PP shall handover the tools, masonaries, vehicles as narrated in the interventions of project area in this plan.

ABSTRACT

CUMULATIVE TOTAL OF FINANCIAL FORECAST OF ACTIVITIES TO BE UNDERTAKEN IN KEONJHAR FOREST DIVISION & BONAI DIVISION GRAND TOTAL (A+B+C)

(in lakhs)

A) PROJECT AREA	Interventions to be implemented by project proponent at the project costs in the project area	
B) PROJECT IMPACT AREA (KEONJHAR DIVISION)	590.864 590.870	899.198 **899.192**
C) PROJECT IMPACT AREA (BONAI DIVISION)	308.328	

(Rupees eight crore ninety-nine lakhs nineteen thousand two hundred) only.

Rupees eight crore ninety/nine lakhs nineteen thousand eight hundred only

Approved

Divisional Forest Officer
Bonai Division

Divisional Forest Officer
Keonjhar Division

Principal Chief Conservator of Forests
(Wildlife) & Chief Wildlife Warden
Odisha, Bhubaneswar

Countersigned

Regional Chief Conservator of Forests
Rourkela Circle, Rourkela

ANNEXURE-14

FORM NO.II
(for projects otherthan linear projects)
Government of Odisha
Office of the District Collector, Keonjhar

No. 2093 Dt. 16.12.2017

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) dt.3rd August, 2009 wherein the MoEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers(Recognition of Forest Rights Act), 2006 ('FRA' for short) on the forest land proposed to be diverted for non-forest purposes, it is certified that **631.544** hectares of forest land proposed to be diverted in favour of **M/s Kamaljeet Singh Ahluwalia** for the purpose of mining activities in **Nuagaon Iron Ore Mines** in Keonjhar District falls within jurisdiction of Nuagaon,Guali,Koharudukela,Katesahi,Topadihi, Penduliposi,Kendudihi,Gandhalpada and Bhuyanharpada village in Barbil Tahasil

It is further certified that

(a) the complete process of identification and settlement of rights under the FRA has been carried out for the entire **631.544** hectares of forest land proposed for diversion. A copy of records of all consultations and meetings of the Forest Rights Committee(s), Gram Sabha(s), Sub-Division Level Committee(s) and the District level Committee are enclosed as annexure- 1 to annexure- 22

(b) the proposal for such diversion (with full details of the project and its implications, in vernacular/local language) have been placed before each concerned Gram Sabha(s) of forest dwellers who are eligible under the FRA.

(c) the each of concerned Gram Sabha(s), 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 the purpose and the details of proposed diversion. Copy of Gram Sabha Resolutions of village- Nuagaon,Guali,Koharudukela,Katesahi,Topadihi,Penduliposi,Kendudihi, Gandhalpada and Bhuyanharpada village is enclosed as annexure- 14,15,16,17,18,19, 20,21&22

(d) the discussion and decisions on such proposals had taken place only when there was a quorum of minimum 50% of the members of Gram Sabha present.

(e) No such facilities managed by Government requiring diversion of forest land u/s 3(2) of the Forest Rights Act, 2006 exist over the forest land proposed for diversion.

(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.

(Dr.N. Thipendra Naik)
Collector, Keonjhar

Memo No. 2094 /Rev Dt 18.12.2017

Copy of the Certificate along with related documents (Annexure 1 to 22) forwarded to the S.D.O. Keonjhar Division for information & necessary action.

14.12.17
Addl. D.M. Magistrate
Keonjhar

JSW STEEL LIMITED * MUMBAI *

78

F.No. J-11015/1156/2007-IA.II (M)

Government of India

Ministry of Environment, Forest and Climate Change

Impact Assessment Division

***

Indira Paryavaran Bhavan,
Prithvi Wing, 2nd Floor, Aliganj,
Jor-Bagh Road, New Delhi-110 003

Dated:05th August, 2021

To,

M/s JSW Steel Limited
1ST floor, plot no. 3, Forest Park,
Near ShishubhawanChhak, Khordha
Bhubaneswar-751009

Subject: : Environmental Clearance (EC) for Nuagoan Iron ore mine of M/s JSW Steel Limited for expansion in Iron Ore production from 5.62 Million TPA to 7.99 Million TPA (ROM) along with existing 2.0 Million TPA Beneficiation plant and Crusher and Screen Plants in the mine lease area of 603.666 Ha [FC available 476.205 +non forest area 127.461 ha] out of total lease area 767.284 located in the village(s) of Nuagon, Guali, Topadihi, Barapada and Katasahi, Tehesil-Barbil, Keonjhar District, Odisha - EC (Auction mine) regarding.

Sir,

This has reference toonlineproposal no.IA/OR/MIN/7226/2007of M/s JSW Steel Limited for expansion in Iron Ore production from 5.62 Million TPA to 7.99 Million TPA (ROM) along with existing 2.0 Million TPA Beneficiation plant and Crusher and Screen Plants in the mine lease area of 603.666 Ha [FC available 476.205 +non forest area 127.461 ha] out of total lease area 767.284 located in the village(s) of Nuagon, Guali, Topadihi, Barapada and Katasahi, Tehesil-Barbil, Keonjhar District, Odisha. The mine lease area located between Latitude 21°57'11.09"N to 21°59'34.32"N and Longitude 85°16' 6.04" E to 85° 19' 24.93" E. The mine lease area falls under the Survey of India Toposheet No 73 G/5 and falls in Seismic Zone-II. The PP presented the KML file during the presentation to indicate the location of mine lease on Google Earth/DSS.

2. M/s JSW Steel Limited has made an online application vide proposal no: IA/OR/MIN/7226/2007 dated 31.08.2020 and submitted the Form-2 and EIA report under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at schedule no. 1(a) Mining of Minerals and 2(b) Mineral Beneficiation under Category "A" of the schedule of the EIA Notification, 2006 as the mining

lease area is greater than 100 ha and appraised at Central level. The proposal was considered under the Ministry's Notification S.O. 1224(E). dated 28th March, 2020.

3. The proposal was considered in 28th EAC meeting held during 24th-26th February, 2021 wherein the Committee returned the proposal in the present form due to short comings in the EIA/EMP report, PP submitted the online application on 26.03.2021. Ministry raised the EDS on 31.05.2021 to submit the compliance of all the ADS points sought by EAC in the meeting held during 24th-26th Feb, 2021. PP submitted the information on 04.06.2021. The proposal was considered in 31st EAC meeting held during 9th-15th June, 2021. Wherein PP submitted the following:-

Details submitted by Project proponent.

5. **The details of the ToR are furnished as below:**

Date of application	Proposal No	Consideration	Details	Date of accord
26.06.2018	IA/OR/MIN/75586/2018	September 28-29, 2018	TOR in the name of M/s Kamaljeet Singh Ahluwalia.	12.10.2018
18.07.2020	IA/OR/MIN/164100/2020	Transfer of EC/TOR Not required to refer the Expert Appraisal Committee as per the EIA Notification, 2006.	Transfer of TOR in the name of M/s JSW Steel Ltd.	20.08.2020

6. **Details of Mine lease.**

S.no	Grant of PI/mine lease/ Order	Date of the grant	Name of the Minerals	Period of Grant		Granted by	Mine lease area in Ha
				From	To		
1	Transfer of mining lease vide Order no 11541/MG	01.12.1984	Iron Ore	-	03.03.1999	State Govt.Odisha	767.284
2	Vesting Order vide 4167/SM	29.05.2020	Iron Ore	2 years		State Govt.Odisha	767.284 Ha (As per ROR)/ 776.969 Ha (As per DGPS)
3	Grant of mining lease vide Order no	26.06.2020	Iron Ore	50 years		State Govt.Odisha	767.284 Ha (As per ROR)/

	5443/SM					776.969 Ha (As per DGPS)

7. Details of executed Mine leases.

S.no	Date of grant of Lease execution	Period of Grant		Details
		From	To	
1	Date of entering into original lease deed.	04.03.1999	31.03.2020	Registered on 08.05.2015 vide registered No.11031500236 in the name of M/s Kamaljeet Singh Ahluwalia
2	Date of entering into original lease deed	27.06.2020	26.06.2070	INOD010B09537439185, M/s JSW Steel Limited

8. Land use details:

S No	Particulars	Details
1	Total land	767.284 ha
2	Involvement of Forest land if any	639.823
3	Agriculture land exists within the project site	74.445
4	Gazing land exists within the project site	Nil
5	Waste land	39.242
6	Built-up area	11.455
7	Water bodies	2.319
8	Others	Nil
9	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	Beyond that surface right area there is no such requirement of land acquisition even in private plots like homesteads, agriculture, etc. However, if any such requirement arises in future, then and there, the acquisition will be as per the LA and R&R 2013.
10	Existence of habitation & involvement of R&R, if any	NA
11	Elevation of the project site	525m to 702m above MSL
13	Water body exists within the project site as well as study area	KalmangNala. KaroNadi and Topadihinala-are adjacent. Sunanadi, Teherei, Suna, Samij, Karo, Kakarpani, Kundurunala lies in 10km radius.
14	Existence of ESZ/ESA / national park / wildlife Sanctuary / biosphere Reserve / tiger reserve / elephant reserve etc. if any within the study area	Nil

9. **Details of Mine Plan**

S.no	Mining Plan along with the Conceptual Plan Approved By	Letter no	Dated of Approval	For a period		Details
				From	To	
1	Indian Bureau of Mines	MP/A/18-ORI/ BHU/2020-21	12.10.2020	5 years 12.10.2020-11.10.2025		776.969 Ha (As per DGPS)/767.284 Ha (As per ROR) in the name of M/s JSW Steel Limited.

10. The Project Proponent submitted that the mining activity will be carried out by open cast mechanized method with drilling and blasting. The water table lies at a depth 480 MRL. Mining operation in the existing pits are above the ground water table as the ultimate mine working depth in the present scheme period is 520 m aMSL, present working depth is 525 aMSL. The ultimate pit limit in Katasahi Block is 432RL, Topadihi block is 438RL and at Guali Block is 450RL, so mining depth will not intersect the ground water table. The PP submitted that the total geological reserve is 417.947 Million Tonnes and Mineable reserve as 346.998 Million Tonnes.

11. PP submitted that there are presently six numbers of working blocks i.e. Barapada Block (pit Chanaguda, B Top & B Bottom), Katasahi Block (Pit Katasahi), Topadihi Block (Pit Sonukocha, Kaliakocha, Gangeiguda and Topadihi), Dumka Block (Pit MDH and D Top), Kanhusahi Block (Pit Kanhusahi) and Guali Block (Pit Guali). The height of the benches at Barpada block-10m and other blocks 6m and Bench Width- Barpada block-15m and other blocks-12m.overall slope will be 37.5°. The life of the iron ore mine is estimated to be 44 years. The total waste generated will be 22.753 Million m^3. Presently there are 4 waste dumps within the lease area. The rejects generated from the beneficiation plant is in the form of filter cake. This can be disposed of with the waste material after making it dry. The mined out iron ore will be processed in the processing plant, crushing and screening units helps in processing of usable iron ore. After processing, ore is employed for commercial purpose and in steel based industries and in proponent's steel plant.

12. The Project Proponent submitted that nearest Village is Barbil – 15 Km (NE), Koida – 7.3 km (SE) and Odisha-Jharkhand State Boundary is at a distance of 4.2Km (NW). PP also submitted that Reserve / Protected Forests near project are: Karo R.F 0.6 Km (W), Lakhraghat R.F-0.6 Km (N), Sidhhamath R.F-1.3 Km (E), Uliburu R.F-1.5 Km (N), Mendhamaruni R.F- 1.8 Km (SSW), Karampada R.F- 4.3 Km (NW), Baitarani R.F-4.7 Km (E), Kathamala R.F-5.3 Km (SW), Bhabaniparath R.F-8.3Km(S).

13. The Project Proponent submitted that the total water requirement will be 1225KLD comprising 13KLD for domestic use, 220KLD for dust suppression, and 972KLD for Beneficiation Plant make up water, and 20KLD for Greenbelt and plantation. The water requirement is met from bore well. In this regard ground water permission has been obtained from CGWA. NOC of CGWA for ground water drawl of 1225 cum/day of water obtained vide File No. 21-4(92)/SER/CGWA/2008-1831 dated 03.11.2017 in the name of M/s KJS Ahluwalia and is valid for five years from the date od issuance of this order. PP also submitted that there will be no process effluent. About 95-97 % of the water from the beneficiation plant will be recovered and re circulated. No waste water will be discharged outside the plant and hence it is a "Zero discharge Plant".

14. The Project Proponent submitted it has been planned to develop green belt within safety zone area over 2.05Ha. About 2.50Ha over the dump and 3.35Ha over the exhausted benches. Hence, during plan period, a total of 7.90Ha will be covered under plantation. At the end of the life of the mine, 654.936Ha covering backfilled mined out area, safety zone, bench plantation etc will be covered under plantation. Local native species in consultation with forest department will be used for plantation.

15. The Project Proponent submitted that there is no National Parks, Biosphere Reserve, Wildlife Corridors, and Tiger/Elephant Reserves/ Critically Polluted area/Aravaliwithin the study area of 10 km radius. PP submitted that there is 639.823Ha forest land. PP reported that there are Schedule-I species like Yellow Monitor, Elephant and Sloth Bear and PP submitted the Site-Specific Wildlife Conservation plan approved vide letter no: 1WL-C-FC-386/08 dated 28.01.2009 by PCCF (Wildlife) and Chief Wild Life Warden in the name of M/s Kamaljeet Singh Ahluwalia. In this regard an amount of Rs. 2, 58, 00, 000 /- is deposited towards Site Specific Wildlife Conservation Plan and an amount of Rs. 1, 53, 45, 680 /- deposited towards Regional Wildlife Conservation Plan.

16. **If forest land exist in the Mine lease area.**

S.No	Area under the forest land involved in Mine lease area	Proof of submission of application	Area obtained under Stage-I FC	Details	Area obtained under Stage-II FC	Details
1	639.823 Ha	-	-	-	476.205 ha	F. No 8-

						17/2001-FC, Dtd. 22.04.2004
2	639.823 Ha	FP/OR/MIN/50899/2020 dated 14.10.2020 over 626.295 ha and NPV advance amount of Rs. 48,71,31,000 already paid to Govt.	-	-	-	-

17. The primary baseline data for specific micro-meteorology data, ambient air quality, waste quality, noise level, soil and flora & fauna has been collected during Summer Season. The Monitoring results of ambient air, surface water, soil, ambient noise and ground water for the month of March to May, 2018 have been reported and no major divergence was observed with respect to concentration values of various parameters of collected samples. PP also submitted the Comparison of Baseline Environmental Monitoring data of Summer (March to May' 2018) and Post Monsoon season covering (October to December'2020) at Nuagaon Mining Lease Area and the results of Baseline data collected for Air, Surface Water, Ground Water, Noise and Soil for two different seasons data for two seasons are of in compliance with the respective standards of all parameters for both study periods.

Period					
AAQ parameters at 8 locations	Pollutant	Min, µg/m^3	Max, µg/m^3	98 %le, µg/m^3	Standard, µg/m^3
	PM2.5	24.1	39.9	38.0	60
	PM10	51.4	82.6	80.5	100
	SO2	3.3	6.8	6.4	80
	NOx	7.0	15.8	14.9	80
AAQ modelling (Incremental GLC)	Pollutant	Baseline Concentration, µg/m^3	Incremental Concentration, µg/m^3	Total GLC, µg/m^3	Standard
	PM2.5	38.4	3.0	42.0	60
	PM10	81.5	6.0	88.0	100
	SO2	6.5	2.0	9.0	80
	NOx	15.2	12.0	28.0	80
Noise level at 8 locations	Day Time: 45.6 - 54.0 Leq dB (A) Night Time: 38.6 to 44.1 Leq dB (A)				
Ground water quality at 5 locations	PH varied from 6.56-7.23, Total hardness varied from 1 to 78.7 mg/l, Total dissolved solids varied from 16-92 mg/l, Chloride from 6.4-17.6 mg/l, SO 4 varied from 11.9 - 34.5 mg/l, Fluoride 0.1 to 0.23 mg/l. The water quality of the collected ground water samples was found to be within the prescribed permissible limits of IS: 10500:2012 Norms for Drinking in the absence of an alternative source.				
Surface water quality at 5 locations	pH varied from 7.02-7.25, DO varied from 5.3 mg/l to 6.3 mg/l, BOD varied from 2.0 mg/l to 24.0 mg/l and COD varied from 4.0 mg/l to 79.7 mg/l. Surface water is not used for drinking and not potable.				

Soil quality at 6 locations	pH values were ranging between 3.66-4.68 and Electrical Conductivity values were ranging between 10.83-36.61µmhos/cm. Soils are generally clay loam, Slit Clay to silt loam type.
Traffic assessment study findings	Traffic and Transportation Study for estimating the impact of Nuagaon Iron Ore mines of KJSA on the Joda-Barbil Road Network of Odisha was carried out by CSIR-Central Road Research Institute (CRRI). Based on the Study, it was observed that average V/C ratio of the study road network is 0.29 based on the widening of NH 215 from Two Lane to Four Lane divided Carriageway. After expansion additional 20 tucks/hour will be add in the existing traffic on the road which will have very negligible impact. The V/C ratio will remain in Category "B".
Flora and fauna	Schedule-I species like Yellow Monitor, Elephant and Sloth Bear and PP submitted the Site-Specific Wildlife Conservation plan approved vide letter no: 1WL-C-FC-386/08 dated 28.01.2009 by PCCF (Wildlife) and Chief Wild Life Warden

18. **Public Hearing:**

Details of Advertisement given	Advertisement was published in major dailies (namely The Times of India and Dharitri) on 05.02.2019
Date of Public Consultation	08.03.2019
Venue	Barpada Ground, Barpada village of Keonjhar District
Presiding Officer	Additional District Magistrate, Keonjhar.
Major Issues Raised	Employment to locals and Environmental protection measures.
No of People Attended	500

19. **Public hearing action plan as per MoEF&CC O.M. dated 30/09/2020**

The Project Proponent has purposed a budget of Rs. 1452.43 Lakhs for undertaking various activities and it will be implemented within 3 years.

20. The Project Proponent has submitted that Mining operations are in the lease for the last 6 decades. Small habitations in Nuagaon village are located in this lease area for a long time. However, the mining & allied activities at present and also in the conceptual period will be confined to this granted surface rights area. Beyond that surface right area there is no such requirement of land acquisition even in private plots like homesteads, agriculture, etc. However, if any such requirement arises in future, then and there, the acquisition will be as per the LA and R&R 2013.

20. The Project Proponent submitted the latest Certified Compliance report certified by MOEF&CC, Bhubaneswar vide Lr No 101-391/EPE/546 dated 23.03.2021 and Certified Closure Report on the compliance observations accorded by MOEF&CC, Bhubaneswar vide Lr No 101-391/EPE/593 dated 25.03.2021. As per the Certified Compliance and Certified Closure from Regional Office, MOEF&CC the project is put up under the Complied/in process of Complied Category.

21. The Project Proponent submitted the Past Production details vide no 3357/Mines, dated 31.07.2018 for the period 1990-91 to 2017-18. Proponent has informed that there is a court case under section 15 of EP Act 1986 in JMFC, Barbil with case number 88/2013, under subjudice with relevance to excess production in the past. For excess production, in pursuance of the Supreme Court order dated 02.08.2017 in CWP no. 114/2014, the DDM, Joda has raised the demand notices no. 6112 Dated 13.12.2017 towards environmental clearance matter, M/s Kamaljeet Singh Ahluwalia (earlier lease) has deposited Rs 1072,60,31,101/- as directed. Besides, in pursuance of the Supreme Court order dated 02.08.2017 in CWP no. 114/2014, the DDM, Joda has raised the demand notices no. 5136 Dated 23.10.2017 towards forest matter, the project proponent has deposited Rs 2,33,57,557/- as directed.

22. The Project Proponent submitted that there are two cases pending for proposed Nuagaon mine at Odisha High Court with order no. WP (C) 24918/2020 & WP (C) 17630/2020. The first one is regarding the refund of excess stamp duty paid during the time of registration of lease deed. And other one is Extension of the earlier order dated 21.12.2016 passed by Odisha High Court in W.P. (C) No. 22382 of 2016 by virtue of which the ex-lessee was operating on Sabik forest land, till now no order has been passed.

23. The Project Proponent submitted the NOC obtained from the previous lessee in a Non-judicial Stamp paper of Rs 100 bearing F 874040 dated 12.10.2020

i. That we have no objection, if the Final EIA Report prepared by us & accredited consultant along with all other documents/proceedings including Public Hearing for expansion of Iron ore production submitted by JSW. We allow JSW to relay and possess these documents and related proceedings & correspondence with statutory bodies.

ii. By furnishing the NOC, we relinquish all claims/rights/ownership/interest over these documents/proceedings and undertake not to make any claim in future on MoEF&CC or any other Govt agency in this regard.

24. PP also submitted that we certify that the information and data provided in the EIA report and submitted by the Ministry are factually correct and Project Proponent is fully accountable for the same. The Consultant, M/s Vimta Labs Limited will undertake and involved in the EIA process after the meeting of 28th EAC held on 25.02.2021.

25. The Project Proponent submitted that the total capital cost of the project is Rs. 50 Crore. PP videLr No. JSW/S/O/2021/140 Dated: 15/06/2021 submitted the revised EMP cost as Rs 6.75 Crores as Capital EMP Cost and 2.30 Crores as Recurring Cost. PP reported that the total man power is 709 persons comprising 116 persons on direct basis and 593 persons on contractual basis.

26. The proposal for Environmental Clearance was considered in the 31st EAC meeting held during 9th - 15th June, 2021 and 32nd EAC meeting dated 28 June, 2021 to 1 July,2021. Based on the documents submitted and presentation made by the Project Proponent and the Consultant, the Committee **recommended** the proposal for grant of Environmental Clearance of M/s JSW Steel Limited for expansion in Iron Ore production from 5.62 Million TPA to 7.99 Million TPA (ROM) along with existing 2.0 Million TPA Beneficiation plant and Crusher and Screen Plants in the mine lease area of 603.666 Ha [FC available 476.205 +non forest area 127.461 ha] out of total lease area 767.284 Ha located in the village(s) of Nuagon, Guali, Topadihi, Barapada and Katasahi, TehesilBarbil, Keonjhar District, Odisha with the specific conditions along with the recommendation of CSIR-NEERI Report on Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining on carrying capacity study in addition to the standard conditions applicable for non- coal mining projects.

27. The Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and hereby accords the above mentioned Environmental Clearance as recommended by EAC during its 31st EAC meeting held during 9th - 15th June, 2021and 32nd EAC meeting dated 28 June, 2021 to 1 July,2021 (corrigendum minutes) for grant of Environmental Clearance of M/s JSW Steel Limited for expansion in Iron Ore production from 5.62 Million TPA to 7.99 Million TPA (ROM) along with existing 2.0 Million TPA Beneficiation plant and Crusher and Screen Plants in the mine lease area of 603.666 Ha [FC available 476.205 +non forest area 127.461 ha] out of total lease area 767.284 Ha located in the village(s) of Nuagon, Guali, Topadihi, Barapada and Katasahi, Tehesil-Barbil, Keonjhar District, Odishasubject to compliance of the terms & conditions and the environmental safeguards mentioned below:-

A. <u>SPECIFIC CONDITIONS</u>

1) The new lessee, after obtaining Letter of Intent (LoI), shall obtain approval under the FCA-1980 following due procedure, for non-forestry use of forest land falling in such mining lease for continuing mining operation beyond two years during which it has deemed to have acquired rights to undertake mining operation. In case, approval under the FCA-1980 is not obtained within the stipulated time of two years of commencement of lease by the new lessee, the mining operation shall be stopped till such approval has been obtained.

2) While obtaining approval under the provisions of FCA-1980 as per clause (b) above, the new lessee shall pay the Net Present Value (NPV) for the total forest area located within the mining lease, along with any other amount due as per guidelines issued

by Government of India from time to time. However, on the date of issuance of LoI, the state government shall realize a lump sum amount at the rate of Rs 7.50 lakh per ha (for the total forest area within the mining lease) from the new LoI holder. This amount shall be deposited into the account of CAMPA, which will be adjusted against actual compensatory levies payable on the forest land, at the time of approval as per clause (b) above.

3) The budget of Rs. 1452.43 Lakhs to address the concerns raised by the public including in the public hearing to be completed within 3 years from the date of start of mining operations. PP shall comply all action plans made for public hearing concerns and make regular maintenance and record the progressive activity outcomes.

4) The Project Proponent shall undertake the adequate plantation in peripheral zone as well as gap plantation with the seedling of 6-8 ft height with at least 90% survival rate to control the dust at source and should be completed within 3 years from the date of commencement of mining operations. Causalities of the previous year should be replaced other than the saplings proposed to be planted every year.

5) PP shall construct garland drains with protective bunds around excavated area, to avoid entrance of surface run off into pit and mixing with ground water. Furthermore, PP shall make garland drains/storm water drains along with siltation/settling tanks at regular interval around the active mine pits through proper plan which follow the natural slope of surface run off and/or to avoid its mixing with groundwater.

6) Appropriate mitigative measures should be taken to prevent pollution of the Karo River and the SunaNadi in consultation with the State Pollution Control Board.

7) The conservation plan in consultation with the Forest Department shall be implemented and compliance of the same shall be submitted to IRO of MoEF&CC before 1st July of every year.

8) Project proponent shall furnish a certificate from DFO regarding satisfactory compliance of site specific wildlife conservation plan prepared by earlier lessee.

9) No mining activities will be allowed in the part of forest land involved in the lease area i.e. 163.618 Ha (639.823 Ha - 476.205Ha) for which the forest clearance is not available.

B. <u>Recommendation of CSIR-NEERI Report on "Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj districts of Odisha State</u>:

The Committee has also deliberated the various specific recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha. There are recommendation which needs to be implemented by the State Govt. of Odisha and Project Proponent. Based on detailed deliberations on the recommendations of the carrying capacity study report, the Committee has also **recommended the following specific conditions *viz.***

1) Project Proponent and Department of Steel & Mines, Govt. of Odisha shall ensure the implementation of recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha.
2) Department of Steel & Mines, Govt. of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.

3) Project Proponent shall construct the cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road with minimum 300 m inside the mine. This should be done within one year for existing mines and new mine should have since beginning. The Department of Steel & Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested. **This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition**.

4) The Committee observed that as per the recommendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. **This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition**.

5) Project Proponent shall monitor the environmental quality parameters as per EC and CTE/CTO conditions, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable Acts.

6) Project Proponent shall ensure the compliance of Suggested Ore Transport Mode (SOTM) with association of the State Government of Odisha. All existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years.

7) The State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha. Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to Regional office of the MoEF&CC.

8) Project Proponent shall develop the parking plazas for trucks with proper basic amenities/ facilities inside the mine. This should be done within one year for existing mines and new mines should have since beginning. **This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.**

9) Department of Steel & Mines shall ensure the construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. This shall be completed within 2 Years.

10) Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Re-suspension" shall be adopted by PWD / NHAI/ Mine Lease Holders within a time Period of 3 months for existing roads. **This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.**

11) In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.

12) R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel & Mines, Individual Mine Lease Holders.

13) The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region.

Responsibility: Dept. of Steel & Mines, Govt. of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines, Govt. of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.

14) State Govt. of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.

15) **Mining Operations/Process Related:** Project Proponent shall implement the following mitigation measures: (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operated with dust extractors or equipped with water injection system. (ii) After commencement of mining operation, a study should be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders. (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders. (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC,

Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.

16) **Air Environment Related:** Project Proponent shall implement the following mitigation measures: (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the CPCB in this regard. (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM10, PM2.5, SO_2, NO_x and CO monitoring. Location of air quality monitoring 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 (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity. (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM10, PM2.5, SO_2, NO_x and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate), Responsibility: Individual Mine Lease Holders and SPCB.

17) **Noise and Vibration Related:** Project Proponent shall implement the following mitigation measures: (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders

should be implemented. (ii) Appropriate 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. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.

18) **Water/Wastewater Related:** Project Proponent shall implement the following mitigation measures: (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro-geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality

monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls. (xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.

19) **Land/ Soil/ Overburden Related:** Project Proponent shall implement the following mitigation measures: (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately. (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site (s) only and should not be kept active for long period. The dump height should be

decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc. (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil. OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.

20) **Ecology/Biodiversity (Flora-Fauna) Related:** Project Proponent shall implement the following mitigation measures: (i) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (ii) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees

which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (iii) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded. (iv) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation. (v) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (vi) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.

21) **Socio-Economic Related:** Project Proponent shall implement the following mitigation measures: (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region. (ii) Land outees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation. (iii) The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas" of these blocks well as other blocks of the district.

While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

22) **Road Transport Related:** Project Proponent shall implement the following mitigation measures: (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM10 should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel & Mines.

23) **Occupational Health Related:** Project Proponent shall implement the following mitigation measures: (i) 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 periodically. (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed. (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer).

C. STANDARD CONDITIONS

I. Statutory compliance

1) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.

2) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors before commencing the mining operations.

3) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors.

4) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

5) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.

6) State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.

7) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of

the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.

8) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred. PP needs to apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

9) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

10) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

11) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in

suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

11) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.

12) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

13) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease including upstream and downstream. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

14) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.

15) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.

16) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.

17) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

18) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

19) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.

20) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining plan

21) The Project Proponent shall adhere to approved mining plan, inter alia, including, total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden & dump management, O.B& dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life; etc.).

22) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

VI. Land reclamation

23) The Overburden (O.B.), waste and topsoil generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB / waste dumps / topsoil dump like height, width and angle of slope shall be governed as per the approved Mining Plan and the guidelines/circulars issued by D.G.M.S. The topsoil shall be used for land reclamation and plantation.

24) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to

the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.

25) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

26) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.

VII. Transportation

27) No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers. [If applicable in case of road transport].

28) The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

29) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

30) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

31) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

IX. Public hearing and human health issues

32) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.

X. Corporate Environment Responsibility (CER)

33) The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.

XI. Miscellaneous

34) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.

35) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

36) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC &its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.

37) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall

directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.

38) The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.

39) In pursuant to Ministry's O.M No 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Hon'ble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause vs Union of India, the mining lease holder shall after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

40) The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

41) Concealing factual data failure to comply with any or submission of false/ fabricated data and of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

28. 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 there under and also any other orders passed by the Hon'ble Supreme Court of India/High Court and any other Court of Law relating to the subject matter.

29. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

30. This issues with the approval of Competent Authority.

Yours faithfully,

(Pankaj Verma)
Scientist 'E'

Email- pankaj.verma@nic.in
Tel./Fax- 011-24695264

Copy to:

1. **The Secretary**, Ministry of Mines, Government of India, ShastriBhawan, New Delhi.
2. **The Secretary,** Department of Environment, Government of Odisha, Secretariat, Bhubaneswar.
3. **The Secretary**, Department of Mines and Geology, Government of Odisha, Secretariat, Bhubaneswar.
4. **The Secretary**, Department of Forests, Government of Odisha, Secretariat, Bhubaneswar.
5. **The Chairman**, Central Pollution Control Board, PariveshBhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
6. **Regional Officer**, Ministry of Environment, Forest and Climate Change, Integrated Regional Office, A/3, Chandersekharpur, Bhubaneswar – 751023
7. **The Chairman**, Odisha State Pollution Control Board, PariveshBhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneshwar-751012.
8. **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
9. **The Member Secretary**, Central Ground Water Authority, 18/11, Jam Nagar House, Man Singh Road, New Delhi-110011.
10. **The District Collector**, Keonjhar District, State of Odisha.
11. **Guard File.**
12. **MoEF&CC website/PARIVESH Portal.**

Pankaj Verma

(PankajVerma)
Scientist 'E'