अपर प्रधान मुख्य वनसंरक्षक (वन्यजीव) पूर्व, नागपूर यांचे कार्यालय.

लक्ष्मीसंचार बि.एस.एन.एल. बिल्डींग ११८ बटालीयनच्या बाजुला कस्तुरचंद पार्क जवळ रेल्वे स्टेशन रोड,नागपूर
फोन-०७१२-२५६०९५३, फॅक्स २५५२५१८, ई मेल- apccfwlnagpur@mahaforest.gov.in

ISO CERTIFIED 9001 : 2015

क्रमांक कक्ष-१(ब)/सर्व्हे/२०२२-२३/ ९१८ नागपूर, दिनांक २० / ०३ /२०२३.

प्रति,

प्रधान मुख्य वनसंरक्षक (वन्यजीव),

महाराष्ट्र राज्य, नागपूर

विषय :- Diversion of 99.95 ha. forest land for Guguldoh Manganese Ore Block for mining in Village Manegaon Tal. Ramtek Dist. Nagpur.FP/MH/42236/2019 & Proposal for obtaining recommendation of NBWL under Section 38 (O)(g)(1) of Wildlife Act, 1972 for the Project Guguldoh Manganese Ore Block, Th-Ramtek in Nagpur District State Maharashtra.

संदर्भ :- १. आपले कार्यालयीन पत्र क्र. कक्ष-२३(२)/वजी/सर्व्हे/प्र.क्र.९८(२०२२-२३)/२६००,दिनांक १४/१२/२०२२.

२. संचालक, चंद्रपुर वन अकादमी, प्रशासन विभाग आणि व्यवस्थापन,चंद्रपूर यांचे कडील पत्र क्र. कक्ष-२/योजना/२७४२ दिनांक ०८/१२/२०२२.

३. आपले कार्यालयीन पत्र क्र. कक्ष-२३(२)/वजी/सर्व्हे/प्र.क्र.९८(२०२२-२३)/३०५४,दिनांक २४/०१/२०२३.

४. या कार्यालयाचे पत्र क्र. कक्ष-१(ब)/सर्व्हे/२०२२-२३/११३७ दिनांक ०३/०२/२०२३.

५. आपले कार्यालयीन पत्र क्र. कक्ष-२३(२)/वजी/सर्व्हे/प्र.क्र.९८/४२३९/२०२२-२३, दिनांक १७/०२/२०२३ १७/०२/२०२३.

६. मुख्य वनसंरक्षक (प्रादेशिक), नागपुर यांचे कार्यालयीन पत्र क्रं. कक्ष-१०/जमीन/प्र.क्र.८७०/२०२२-२३/ १९८४, दिनांक १५ मार्च २०२३

विषयांकीत प्रकरणी चा प्रस्ताव राज्य वन्यजीव मंडळाच्या १९ व्या बैठकीमध्ये मंडळासमोर चर्चेसाठी आलेला होता. सदर प्रस्तावावर मंडळाने खालीलप्रमाणे निर्णय दिला होता.

" नामांकीत आणि या क्षेत्रात तज्ञ असलेल्या संस्थेकडुन संपुर्ण उपशमन आराखडा तयार करुन संपुर्ण प्रस्ताव सादर करण्याची सुचना केली आणि सर्व पुर्ततांनंतर प्रस्तावावर विचार करण्याचे ठरविले. "

वरील बाबीचे अनुषंगाने आपण संदर्भ पत्र क्र. १ अन्वये प्रस्तावासोबत वन्यजीव विषयक उपशमन-उपाययोजना प्रकल्प यंत्रणेने सहपत्रीत उपशमन उपाययोजनांची तांत्रिक तपासणी होणे गरजेचे असुन, भारतीय वन्यजीव संस्था, डेहरादून, निरी नागपूर किंवा चंद्रपूर वन अकादमी या क्षेत्रात तज्ञ असलेल्या इतर तज्ञांकडुन (Wildlife and We Protection Foundation यांनी Chhattisgarh राज्यात) उपशमन-उपाययोजना पूरेशा आहेत किंवा कसे, याबाबत पडताळणी करणे आवश्यक आहे, असे संचालक, चंद्रपुर वन अकादमी, प्रशासन विभाग आणि व्यवस्थापन,चंद्रपूर यांना कळविले होते. सदर बाबीचे अनुषंगाने, प्रकल्प यंत्रणेने चंद्रपूर वन अकादमी यांचे कडुन उपशमन उपाययोजना आराखडयाची तांत्रिक तपासणी करुन, संचालक, चंद्रपुर वन अकादमी यांनी संदर्भ पत्र क्र. २ अन्वये आपले कार्यालयास सादर केलेला आहे.

सदर प्रकरणी आपण संदर्भ क्र. ३ अन्वये सदर उपशमन उपाययोजना आराखडयाबाबत या कार्यालयाचे अभिप्राय सादर करण्याबाबत कळविले होते. त्याअनुषंगाने या कार्यालयाने संदर्भ पत्र क्र. ४ अन्वये उपशमन उपाययोजना आराखडयामध्ये आर्थिक व भौतिक उदिदष्टे अंतर्भुत करुन सुधारीत त्रृटी विरहित उपशमन उपाययोजना आराखडा या कार्यालयास सादर करणेबाबत मुख्य वनसंरक्षक (प्रादेशिक), नागपूर यांना कळविण्यात आले होते.

सबब मुख्य वनसंरक्षक (प्रादेशिक), नागपूर यांनी उपवनसंरक्षक, नागपूर वनविभाग, नागपूर यांचे कार्यालयाकडून सुधारीत त्रृटी विरहित उपशमन उपाययोजना आराखडा प्राप्त करुन घेवून संदर्भिय पत्र क्रं. ६ अन्वये या कार्यालयास सादर केलेला आहे. तरी मुख्य वनसंरक्षक (प्रादेशिक), नागपूर यांचे कार्यालयाकडून प्राप्त झालेल्या सुधारीत त्रृटी विरहित उपशमन उपाययोजना आराखडयास हे कार्यालय सहमत असून आरखडयाच्या ३ प्रति यासोबत माहिती व उचीत कार्यवाहीस्तव सादर करण्यात येत आहे.

(बी.एस.हुडा)
अपर प्रधान मुख्य वनसंरक्षक
(वन्यजीव) पुर्व,नागपूर.

का.प्र.
23/12/23

प्रतिलिपी :- मुख्य वनसंरक्षक (प्रादेशिक),नागपूर यांना संदर्भ पत्र क्र. ६ अन्वये माहितीस अग्रेषित.

प्रतिलिपी :- प्रकल्प यंत्रणा, मेसर्स शांती जीडी ईस्पात ॲन्ड पॉवर प्राय. लिमिटेड, राजीव गांधी कॉम्पलेक्स, बाल आश्रम कॅम्पाउंड, कचेरी चौक रायपूर. -४९२००१ यांना माहिती व उचित कार्यवाहीस अग्रेषित.
Email. sgdiplmining@gmail.com

सत्यमेव जयते
महाराष्ट्र शासन
वन विभाग

मुख्य वनसंरक्षक (प्रादेशिक), नागपूर वनवृत्त, नागपूर यांचे कार्यालय

(बि.एस.एन.एल. लक्ष्मी संचार इमारत, कस्तुरचंद पार्क समोर, नागपूर 440 001.)
(Land Line No - 0712-2564569, Email-id : ccftnagpur@mahaforest.gov.in)

क्र.कक्ष-10/जमीन/प्र.क्र.870/2022-23/ 1984 दिनांक : 15 मार्च 2023

प्रति,
अपर प्रधान मुख्य वनसंरक्षक (वन्यजीव), पुर्व,
नागपूर.

विषय:- Proposal for diversion of 99.95 ha. protected forest land for Manganese Ore Mining and allied works in Gugualdoh Block in Nagpur District of the State of Maharashtra.

संदर्भ:- 1) प्रधान मुख्य वनसंरक्षक (वन्यजीव),म.रा.नागपूर यांचे पत्र क्र कक्ष-23(2)/वजी/सर्व्हे/प्र.क्र.98/4239, दिनांक 17/02/2023.
2) आपले कडील पत्र क्र कक्ष-1(ब)/सर्व्हे/853, दिनांक 21/02/2023.
3) उपवनसंरक्षक नागपूर वनविभाग, नागपूर यांचे कार्यालयाचे पत्र क्र कक्ष-11/वनसंवर्धन/प्र.क्र. 459/1590, दिनांक 10/03/2023.

विषयांकित प्रकरणी प्रकल्प यंत्रणेने "चंद्रपुर वन अकादमी" यांचेकडुन उपशमन उपाययोजना आराखडा सादर केले असता संदर्भिय पत्र क्र 1 व 2 अन्वये वन्यजीव विषयक उपशमन उपाययोजना आराखड्यामध्ये आर्थिक व भौतिक उद्दिष्टे अंतर्भुत करून सुधारित त्रुटी विरहीत उपशमन उपाययोजना आराखडा सादर करणेबाबत कळविलेले होते.

त्याअनुषंगाने उपवनसंरक्षक नागपूर वनविभाग, नागपूर यांनी संदर्भिय पत्र क्र 3 अन्वये प्रकल्प यंत्रणेने नांमाकित व तज्ञ असलेल्या "चंद्रपुर वन अकादमी" यांचेकडुन वन्यजीव विषयक उपशमन उपाययोजना आराखडा सादर केला असुन वन्यजीवांकरिता आर्थिक तरतुद रू. 81,63,000/- प्रस्तावित केली आहे. विषयांकित रू.81.63 लाख उपशमन उपाययोजना आराखड्यास वन्यजीव विभागाचे मंजुरीकरिता सादर करण्यात येत असुन उक्त निधीचा विनियोग वन्यजीवांचा वावर असलेल्या कॉरीडोर मध्ये करण्यात येईल असे नमुद कलेले आहे.

करिता अहवाल पुढील आवश्यक कार्यवाहीस सादर करण्यात येत आहे.

सहपत्र:- वरिलप्रमाणे

(एस.रमेशकुमार)
मुख्य वनसंरक्षक (प्रा),
नागपूर वनवृत्त, नागपूर

प्रतिलिपी:- उपवनसंरक्षक, नागपूर वनविभाग, नागपूर यांना माहितीस्तव.
प्रतिलीपी:- मेसर्स शांती जीडी ईस्पात ॲन्ड पॉवर प्राय.लिमिटेड, राजीव गांधी कॉम्पलेक्स, बाल आश्रम कम्पाउंड, कचेरी चौक, रायपुर-492001 यांना माहितीस अग्रेषित.

उपवनसंरक्षक (प्रादेशिक), नागपूर वनविभाग, नागपूर यांचे कार्यालय

(वनभवन, नविन प्रशासकीय ईमारत, शासकीय मुद्रणालयाजवळ, झिरो माईल्स, सिव्हील लाईन्स, नागपूर- 440 001.)
(Land Line No - 0712-2564569, Email-id : ccftnagpur@mahaforest.gov.in).

विषय:- Proposal for diversion of ९९.९५ ha. protected forest land for Manganese Ore Mining and allied works in Gugualdoh Block in Nagpur District of the State of Maharashtra.

क्र.कक्ष-11/वनसंवर्धन/प्र.क्र.459/2022-23/ 1590 दिनांक :10/03/2023

प्रति,
मुख्य वनसंरक्षक (प्रादेशिक),
नागपूर वनवृत्त.

संदर्भ:- १) प्रधान मुख्य वनसंरक्षक (वनबल प्रमुख), म.रा. नागपूर यांचेकडील पत्र क्र. कक्ष-२३(२)/वजी/सर्व्हे/प्र.क्र.९८/४२३९, दिनांक १७/०२/२३
२) अपर प्रधान मुख्य वनसंरक्षक (वन्यजीव), पुर्व नागपूर यांचेकडील पत्र क्र. कक्ष१/(ब)/सर्व्हे/८५३,दि.२१/०२/२०२३.
३) आपलेकडील पत्र क्र. कक्ष१०/जमीन/प्र.क्र.९७०/२०२२-२/५३४१, दिनांक २७/०२/२०२३.
४) मेसर्स शांती जीडी ईस्पात ॲन्ड पॉवर प्राय.लिमिटेड, रायपूर यांचेकडील पत्र क्र. डब्युएलएमपी/२०२३,दि. १०/०२/२०२३.

उपरोक्त संदर्भिय पत्र क्र 1 व 2 अन्वये Proposal for diversion of 99.95 ha. protected forest land for Manganese Ore Mining and allied works in Gugualdoh Block in Nagpur District of the State of Maharashtra चा प्रस्ताव राज्य वन्यजीव मंडळाच्या 19 व्या बैठकीमध्ये मंडळासमोर चर्चेसाठी आलेला होता. सदर प्रस्तावावर मंडळाने खालीलप्रमाणे निर्णय दिलेला होता.

"नामांकित आणि या क्षेत्रात तज्ञ असलेलया संस्थेकडून संपुर्ण उपशमन आराखडा तयार करुन संपुर्ण प्रस्ताव सादर करण्याची सुचना केली आणि सर्व पुर्ततानंतर प्रस्तावावर विचार करण्याचे ठरविले".

वरिल बांबीचे अनुषंगाने प्रकल्प यंत्रणेने "चंद्रपूर वन अकादमी" यांचेकडून उपशमन उपाययोजना आराखडा सादर केले असता सदर आराखडयामध्ये आर्थिक व भौतिक उदिदष्टे अंतर्भुत करुन सुधारित त्रुटी विरहीत उपशमन उपाययोजना आराखडा सादर करणेस्तव कळविण्यात आलेले होते.

त्याअनुषंगाने प्रकल्प यंत्रणेने नामांकित व तज्ञ असलेल्या "चंद्रपूर वन अकादमी" कडून वन्यजीव विषयक उपशमन उपायोजना आराखडा सादर केला असुन वन्यजीवांकरिता आर्थिक तरतूद रु. 81,63,000/- प्रस्तावित केलेली आहे. विषयांकित रु. 81.63 लाख उपशमन उपाययोजना आराखडयास वन्यजीव विभागाचे स्तरावरून मंजुरी करीता सादर करण्यात येत आहे. उक्त निधीचा विनियोग वन्यजीवांचा वावर असलेल्या कॉरीडोर मध्ये करण्यात येईल.

करिता सदर अहवाल पुढील आवश्यक कार्यवाहीकरिता आपणाकडे सादर करण्यात येत आहे.

सहपत्र:- वरिलप्रमाणे

(डॉ. भारत सिंह हाडा)
उपवनसंरक्षक,
नागपूर वनविभाग, नागपूर..

प्रतिलीपी:- अपर प्रधान मुख्य वनसंरक्षक तथा केंद्रस्थ अधिकारी, म.रा. नागपूर यांना माहितीस सविनय सादर
प्रतिलीपी:- अपर प्रधान मुख्य वनसंरक्षक (वन्यजीव पुर्व), नागपूर यांना माहितीस सविनय सादर
प्रतिलीपी:- मेसर्स शांती जीडी ईस्पात ॲन्ड पॉवर प्राय.लिमिटेड, राजीव गांधी कॉम्पलेक्स, बाल आश्रम कम्पाउंड, कचेरी चौक, रायपुर-492001 यांना माहितीस अग्रेषित.

SHANTI G.D. ISPAT & POWER PRIVATE LIMITED

CIN : U23201CT1994PTC008192

REF: 01/SGDIPL/GMOB/WLMP/2023
Camp Nagpur, Dated 10th February, 2023

To,

The Deputy Conservator of Forests (Territorial), Nagpur
Shri Laxmi Sanchar, BSNL Building 2nd Floor, Near KP Ground
Nagpur – 440 001.
Email: dycfnagpur@mahaforest.gov.in

Subject: ***Financial Provision of Wildlife Mitigation Plan for the Proposal for Diversion of 99.95 Forest Land for Guguldoh Manganese Ore Block for Mining in Village Manegaon (Rithi), Tehsil/Taluka Ramtek, District Nagpur for Manganese Ore Mining and Allied Activities by M/s Shanti G. D. Ispat and Power Pvt. Ltd., Raipur – Regarding.***

Reference:
1. ***The PCCF (WL) Letter No. Kaksh-23(2)/Vaji/Survey/Pra.Kra. 98 (2022-23)/3054/2022-23, dated 24.02.2023.***
2. ***The APCCF Letter No. Kaksh-1(V)/Survey/2022-23/9936, dated 03.02.2023.***

Dear Sir,

A total of Rs. 81,63,000/- (Rs. Eighty-One Lakh Sixty-Three Thousand Only) Financial Provision has been envisaged for the Wildlife Mitigation in the Project Area. Details of Financial Provisions are enclosed as **Annexure – 1**.

Wildlife Mitigation Plan for Guguldoh Manganese Ore Block has been prepared by Dr. Manas Badge, Ph.D. from the Forest Research Institute, Dehradun, Natural Resources Management Consultant, Nagpur. In compliance to the instruction of the Principal Chief Conservator of Forests (Wildlife), vide their Letter No. कक्ष- २३ (२) /वजी/सर्व्हे/प्र.क्र. ९८ (२०२२- २०२३)/ १६०२/२०२२- २३, dated 19.09.2022 and कक्ष- २३ (२) /वजी/सर्व्हे/प्र.क्र. 100 (२०२२- २०२३)/ 2019/२०२२- २३, dated 21.10.2022 the Wildlife Mitigation Plan of Guguldoh Manganese Ore Block has been technically verified by the Chandrapur Forest Academy of Administration, Development and Management, vide their Letter No. Desk-2/Plan/2022-23/2742, dated 08.12.2022.

SHANTI
DEFINED BY GROWTH

Head Office: 402, 504, Rajiv Gandhi Complex, Kutchery Chowk, Raipur 492001 (C.G.)
T 0771 4243000/01/02
F 0771 4243031
E 15mw.project@gmail.com
W www.shantigd.com

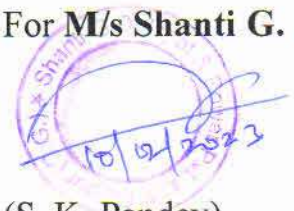
Site Address : Village-Mahuda, Tehsil - Champa, Dist.- Janjgir-Champa (C.G.)

The Technical Verification and Wildlife Management Plan are enclosed as **Annexure – 2 (a) & (b)**.

For information and necessary action, please.

Sincerely yours

For **M/s Shanti G. D. Ispat and Power Pvt. Ltd.**



(S. K. Pandey)
President & CEO

Mobile: +91-9425204308, 9131422230
Email: sgdiplmining@gmail.com

Enclosures:

1. **Annexure – 1:** Details of Financial Provision for the Mitigation Plan (in 6 copies)
2. **Annexure – 2 (a) & (b):** Technical Verification and Wildlife Management Plan (in 6 copies, colour prints, spiral binding)

Annexure - 1

The Financial Provisions for Mitigation on Wildlife due to the Proposed Mining and Allied Activities in Guguldoh Manganese Ore Block

Village Manegaon, Tehsil/Taluka Ramtek, District Nagpur, State Maharashtra
Area: 105 Hectares
(99.95 Ha Forest Land including 38.55 Ha WII-EVL Low Suitability Corridor and 5.05 Ha Government Land)

User Agency: M/s Shanti G. D. Ispat and Power Pvt. Ltd.

INTRODUCTION:

Guguldoh Manganese Ore Block has been awarded to M/s Shanti G. D. Ispat and Power Pvt. Ltd. by the Government of Maharashtra through e-Auction, pursuant to the Mines and Minerals (Development and Regulation), 1957 (the "Act") and the Mineral (Auction) Rules, 2015 (the "Rules").

Wildlife Mitigation Plan for Guguldoh Manganese Ore Block has been prepared by Dr. Manas Badge, Ph.D. from the Forest Research Institute, Dehradun, Natural Resources Management Consultant, Nagpur. In compliance to the instruction of the Principal Chief Conservator of Forests (Wildlife), vide their Letter No. कक्ष- २३ (२) /वजी/सर्व्हे/प्र.क्र. ९८ (२०२२- २०२३)/ १६०२/२०२२- २३, dated 19.09.2022 and कक्ष- २३ (२) /वजी/सर्व्हे/प्र.क्र. 100 (२०२२- २०२३)/ 2019/२०२२- २३, dated 21.10.2022 the Wildlife Mitigation Plan of Guguldoh Manganese Ore Block has been technically verified by the Chandrapur Forest Academy of Administration, Development and Management, vide their Letter No. Desk-2/Plan/2022-23/2742, dated 08.12.2022.

FINANCIAL PROVISIONS:

The Financial Provisions for the Mitigation of Impact on Wildlife due to the proposed Mining and allied activities in Guguldoh Manganese Ore Block have been envisaged on **Page No. 21 of the Wildlife Mitigation Plan** as under:

Sr. No.	Particulars	Cost (Rs.)					
	Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
1	Chain link Fence (3m) (@ Rs. 242.21 per running meter for 5,780 m)	1,400,000	-	-	-	-	**1,400,000**
2	Chain link Fence (1m) (@ Rs. 87.72 per running meter for 5,700 m)	500,000	-	-	-	-	**500,000**
3	Cattle trench along the mine boundary (departmental HEMM)	200,000	-	-	-	-	**200,000**
4	Nursery development and maintenance	200,000	50,000	50,000	50,000	50,000	**400,000**
5	Plantation on per	-	200,000	200,000	200,000	200,000	**800,000**

Sr. No.	Particulars	Cost (Rs.)					
	Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
	ha land around mine						
6	Soil moisture conservation works	50,000	50,000	50,000	50,000	50,000	**250,000**
7	Preparation of water hole (5 water holes)	200,000	200,000	-	-	-	**400,000**
8	2% of the project cost for wildlife management	550,000	850,000	1,000,000	733,000	550,000	**3,683,000**
9	Awareness and training of JFM and Biodiversity committee for wildlife protection and fire control measures	100,000	100,000	100,000	100,000	100,000	**500,000**
Total		**3,200,000**	**1,450,000**	**1,400,000**	**1,133,000**	**950,000**	**8,133,000**

In addition to above, the Chandrapur Forest Academy of Administration, Development and Management has given additional recommendation for the Wildlife Mitigation Plan in their **Technical Verification of Mitigation Plan on Page Nos. 9 and 10** as under:

Sr. No.	Particulars
A	Promotion of Grasses within the Project area
B	Spreading of Bamboo and Neem Seeds on the Soil Dump
C	Maintenance of proper Fencing till the completion of the Project
D	Discarding of Alien Invasive Species and Promoting Local Indigenous Species
E	Development of Artificial Bird Nests

Financial Provisions on the additional recommendation given by the Chandrapur Forest Academy of Administration, Development and Management have been envisaged as under:

Sr. No.	Particulars	Cost (Rs.)
A	Promotion of Grasses within the Project area	5,000
B	Spreading of Bamboo and Neem Seeds on the Soil Dump	5,000
C	Maintenance of proper Fencing till the completion of the Project	10,000
D	Discarding of Alien Invasive Species and Promoting Local Indigenous Species	5,000
E	Development of Artificial Bird Nests	5,000
Total		**30,000**

A total of Rs. 81,63,000/- (Rs. Eighty-One Lakh Sixty-Three Thousand Only) Financial Provision has been envisaged for the Wildlife Mitigation in the Project Area.

*****

Annexure - 2 (a)

Government of Maharashtra
Chandrapur Forest Academy of
Administration, Development & Management, Chandrapur
Mul Road, Chandrapur - 442401 (MS)
E-mail :principalcfrc@gmail.com, drichandacademy@mahaforest.gov.in Contact No :07172-255519

No.:- Desk-2 /Plan/2022-23/ 2742 Chandrapur, Date : 08/12/2022

To,

The principal chief conservator of forest (wildlife)
Office of the P.C.C. of forests (HoFF)
Maharashtra state, van bhavan, Nagpur.

Sub.:- Technical assistance to verify the mitigation plan submitted to principal chief conservator of forest (wildlife) regarding Divertion Of 99.95 Hectares Forest Land For The Auctioned Guguldoh Manganese Ore Block For Mining Lease In Village Manegaon, Tahsil Ramtek, Dist. Nagpur, State Maharashtra.

Ref. :- 01 SGDIPL/MINING/GMOB/CFA/2022 RAIPUR DATED 28/10/2022

Respected Sir,

With reference to the subject cited above. The undersigned have gone through the mitigation plan already submitted for, consideration to the PCCF (wildlife). The mitigation plan is verified by this office. In the wildlife mitigation plan proposed by the user agency M/s Shanti G. D. Ispat and Power pvt. Ltd. have taken every aspect into account and it may be implemented. In addition to that some additional measures are recommended for your perusal.

The technical verified mitigation plan is attached herewith for your consideration

Encl. - Copy as above.

Director
Chandrapur Forest Academy of
Administration, Development &
Management, Chandrapur

Copy forwarded to - Shanti G. D. Ispat & Power Private Limited Raipur (C.G.) for information.

TECHNICAL VERIFICATION OF MITIGATION PLAN FOR GUGULDOH MANGANESE ORE BLOCK

Submitted by

Chandrapur Forest Academy Of Administration, Development & Management

Mul Road, Chandrapur – 442401,

TECHNICAL VERIFICATION OF WILDLIFE MITIGATION PLAN FOR GUGULDOH MANGANESE ORE BLOCK

User Agency: M/s Shanti G. D. Ispat and Power Private Limited, Raipur (C.G.)

Introduction

The Government of Maharashtra has issued letter of intent (LOI) for the grant of mining lease for manganese ore in Guguldoh Block, Village Manegaon, Tahsil Ramtek, District Nagpur, State Maharashtra on 105.00 hectares area for period of 50 years, vide the government of Maharashtra, Industries, Energy and Labour Department Letter No, MMN-0518/C.R.30/Industry-9, dated 05-06-2018 in pursuance to the Mines and Minerals (Development and Regulation) Act,1957 (the "Act") and Mineral (Auction) Rules, 2015 (the "Auction Rules").

Out of 105 Hectares area, 99.95 Hectares area falls under forest and rest of 5.05 Hectares area is Government Land.

The user Agency applied for clearance for non forest use under FC, Act. 1980 As per the user agency, the Project will support the infrastructure growth of the country as minerals are the raw material for Steels and it is said that.

- Project involves mining of important mineral Manganese required for the development of ancillary. The National Steel Policy seeks to increase per capita steel consumption to the level of 158 kg by 2030-31 from existing level of around 61 kg. Manganese ore is the basic source to provide manganese as a key input in production of iron and all types of steel.

- Create employment potential in this area as the most of the habitant are landless and depend on the forest resources, with the availability of employment pressure on the adjoining forest will reduce to substantial extent.
- Government exchequer will be benefited through contribution through Premium/ Royalty/DMF/NMET /GST and other revenue to the State Government.
- Overall socio-economic development is envisaged through company's contribution towards Corporate Social Responsibility.
- Mine void could be the source of irrigation for more agricultural land around enhancing production and adding income to the farmers.
- Contribution of the User Agency towards wildlife management would help in creating awareness on joint forest management committee/biodiversity conservation committee

Impact of Mining Project on Biodiversity:

In general, the mining operation is destructive in nature. The clearing of vegetation is one of the most significant impacts of mining on biodiversity. Loss of vegetation cover occurs not only in the mined area but also in areas affected by associated activities such as dumping of overburden, deposition of tailings, development of infrastructure for transport and service corridors (railway lines, roads, pipelines, conveyers, etc.) and surface facilities (offices ,workshops, vehicle parks, storage depots and warehouses, etc) in the proposed project area. A total of 36,964 trees have been enumerated; out of these 6,794 trees are of scheduled species and remaining 30,170 are of nonscheduled species.

The excavation of the substrate materials and creation of the mine voids may alter the soil profile, hydrology, topography and nutrient status of the substrate. These secondary factors have the potential to result in lethal effects on the local biodiversity. At the landscape level, environmental impacts

occurs generally in the form of alteration of land form features and fragmentation of biological habitats that may cause isolation of populations of floral and faunal species.

Fragmentation of habitat into patches of insufficient size quality may not be able to meet species requirements and also cause loss of connectivity due to reduction in species mobility between supportive habitats.

Mining operations also cause air pollution effects that are manifested as dust generation and subsequent increase in Suspended Particulate Matter (SPM) in the environment particularly, in case of opencast mining. Mining processes may also have serious implications for the aquatic environment as the clearing vegetation, removal of soil, extraction of large quantities of water, disposal of waste through water systems often lead to soil erosion, increased sedimentation load and alteration of watercourses.

Objectives of Mitigation To Address Issues of Wildlife Conservation

Due to the mining operation, 99.95 ha of forest area will not be available for use by the wild animals till the mining is completed and mine closure plan is completed. The objectives of the mitigation plan for the project area will therefore be;

- Ensure wildlife safety especially during mining.
- Ensure ecological restoration of the mined out area.
- To provide safe spill over corridors for wildlife from impact area to relatively rich neighboring forest areas.
- Ensure wildlife habitat restoration during and post mine closure plan.
- Strict compliances and monitoring of environment mitigation measures especially air, water and noise during the course of mining operation.
- Lawful compliances of Wild Life (Protection) Act, 1972 under section 83 (o) (1) (g) as well as compliance of the conditions imposed under

Environmental Clearance issued to the project by the Ministry of Environment, Forest and Climate Change, Government of India.

Strategies for Mitigation of the Adverse Impacts on Wildlife

In order to reduce the impact of the proposed manganese ore mining project of M/S Shanti G. D. Ispat and Power Pvt. Ltd. in Guguldoh Manganese Ore Block on environment and around wildlife areas, following strategies of mitigation measures are suggested. The financial provision to be made available for implementation of following measures so that habitat must be developed in a gradual process, side by side with the mining operation.

1. Strategies within the Project Area:

- **Soil moisture conservation:** The mining activity in the proposed area will involve clearing of vegetation. As per the tree enumeration report around 36,964 trees are present on the project site. The Mining activity will also involve removal of top soil. Due to removal of vegetation cover and top soil, moisture in the soil tends to reduce. The strategy will be to conserve as much moisture as possible.
- **Preventive steps for the animals not to fall in the mine pits:** The mine pits are dug with very steep slopes. It is necessary to take preventive steps so that, the wild animals/domestic animal do not fall in the mine pits. Therefore, proper fencing around the mine is proposed to prevent wild life from falling in to the mine pits. Another fence is prescribed on the inner side of the safety zone of 7.5 m (green belt). Cattle trench around the mine outside the lease hold boundary would help in this direction besides fencing.
- **Restoration of soil dump:** Slope instability and erosion is one of the major issue faced by the mining activity. The best solution to reduce this is stabilizing the slope. In nature, vegetation is the best way to reduce the risk of slope failures and erosion. One of the most useful

and environment friendly method for slope stabilization, is bioengineering, with respect to this topic, entails the use of living plants and other auxiliary materials for stabilization.

2. **Strategies for the Area Outside of the Project Boundary:**

- **Improving forest cover:** The wildlife habitat in the impact area should be developed so as to compensate for the biotic pressure which has been shifted from the project area to the surrounding of the project area. This can include assisted natural regeneration of soil.
- **Moisture conservation:** Plantation of native species should be carried out along 50m buffer from the mine boundary. This will help in moisture conservation and may strengthen the wildlife corridor.
- **Provision of water for the wild animals by creation of water body:** Water is the most important for survival of all wild animals. A habitat having abundant food for wildlife will be of no use if water is not available close by. A good wildlife habitat should have well distributed water points. Animal's dependence on water and the way they replenish their water varies with the nature of habitat and the species. Therefore, it is suggested that the user agency in association with the forest department must identify strategic locations for development of water bodies.
- **Forest fire prevention:** Fire hazard needs to be prevented for survival of forest as well as wildlife. Steps should be taken for prevention of forest fire. The user agency must create awareness among the villagers by taking meetings. The work of fire protection can be entrusted to village Eco-development Committee as done in buffer zone of Kanha Tiger Reserve.
- **Reduction of chemical use around the area:** Special effort should be made to create awareness amongst the farmers/cultivators to

reduce the use of chemical in farming and adopt eco-friendly natural farming to create sustainable habitat for movement of wildlife.

- **Establishment of Joint Forest Management and Biodiversity Committee:** No project is successful without the involvement of the locals. The sense of ownership of the forest and its resources amongst the villagers is very important. In order to make the plantation management and biodiversity committees in the nearby villages should be formed.
- **Nursery development:** It is proposed to enhance the 50 m. buffer along the mine boundary by carrying out plantation of native trees and shrubs by the user agency with help of forest department. This activity must be done simultaneously with the mining operation so that by the end of mining operation good forest cover is developed in the buffer area of the mine.

ANALYTICAL STUDY

Finding of the Chief Conservator of Forests (Territorial), Nagpur

- Clearing of vegetation will have impact on wildlife habitat till the reclamation programmed at the mine closure is completed.
- Biodiversity will have negative impact for temporary period due to clearing of vegetation for the purpose of mining of mineral.
- Environmental impact especially dust and noise generation from transportation and blasting.
- Disturbance to wild life and their usage of habitat which affect the corridor movement.

Recommendations given by ACF (APU), pench tiger reserve, Nagpur on 18th December 2021 in the Report on Biodiversity Impact Assessment and Wildlife Mitigation Measures:

- Establishment of dedicated nursery of important native scheduled and Non-Scheduled tress for plantation simultaneously on progressively reclaimed mined out areas and OB dumps. This nursery should also provide fruits saplings to village dwellers for plantation.
- Preventive measures for safety of wildlife from the mine pit by compounding with proper fencing.
- Plantation in the 7.5 meter safety zone along the proposed mine lease boundary will allow regeneration of native species. Additional plantation may be restored as green belt to reduce the noise and arrest airborne dust. Green belt may be developed with species as per CPCB norms.
- Controlled blasting may be recorded, vibration and sound should be monitored and record should be maintained.
- Specific measures such as sedimentation of water leachates from the OB dumps/ waste telling dumps should be ensured within lease area before it is discharged to the natural streams to avoid contamination of natural water.
- The user agency should invest in trainings of the biodiversity management committee members and joint forest management team in the adjoining villages.

The Project is recommended ACF (APU), pench tiger reserve, Nagpur on 18th December 2021 for the Following Reasons:

- Project area does not fall in the Protected Area, National Park, Wildlife Sanctuary and Eco-Sensitive Zone.
- Out of 105 ha. Total land (99.95 Ha. Forest land and 5.05 ha. Government land) involved in the project. An area of 38.55 ha falls under the low suitability pinch location which may be under low to very low impact level as per the publication of the report of Wildlife

Institute of India, Deharadun "Tiger Corridors of Eastern Vidarbha Landscape."

The project is recommended by ACF (APU), pench tiger reserve, Nagpur on 18th December 2021with following mitigation measures:

- No mining/no blasting/ no transport allowed from 6 pm. to 6 am.
- As per the study of WII published under "Tiger Corridor of Eastern Vidarbha Landscape," the low suitability pinch location is situated in the western part of the proposed mining project. Hence, the western side of the boundary of the proposed mining lease shall be properly fenced with 2.5 meter chain link fencing to avoid incident of trapping of wildlife.
- Additional plantation should be done in the safety zone of 7.5 meter around lease boundary within lease area without cutting the existing trees to control and arrest dust and reduce noise level.
- Controlled blasting with minimum duration during day time with keeping record for inspection.
- Water sprinkling should be done in the haul roads and approach roads during the mining operation.
- 2% of the project cost may be provided to forest department for wildlife management.
- A rescue vehicle with all related equipment should always be available at the project sites.
- Stabilization of Over Burden/ waste/ tailing/rejects/ dumps to reduce erosion.
- Proper sedimentation of the mined-out water within lease area to avoid contamination of main stream.
- All other required treatment for the water should be carried before releasing in main stream.
- Strict compliance of conditions imposed under environment and forest clearances.
- Priority may be given for land under compensatory afforestation in corridor areas.
- A committee should be set-up for regular monitoring of these mitigation measures where local officers of forest and environment department may be placed as members.

ADDITIONAL RECOMMENDATION FOR THE WILDLIFE MITIGATION PLAN

We agree with the mitigation plan submitted by the user agency. In the Wildlife Mitigation Plan proposed by the user agency M/s Shanti G. D. Ispat and Power Pvt. Ltd. have taken every aspect into account and it should be implemented. In addition the activities proposed in the plan the following additional measures are recommended:

A) Promotion of Grasses within the project area:

When open cast mining in the project area starts, in the contour stepping of the dug-up areas be planted with soil binding grasses like Khus, vetivera etc which holds the soil from eroding. The Grass cover is required for the protection of soil from erosion. Grassland provides essential ecosystem services that include water catchment, biodiversity, water bodies, etc.

B) **Spreading of bamboo and neem seeds on the soil dump:**

When the open cast mining starts, the soil dug is placed as soil dumps at the side. Soil dumps where the soil is loose and may be easily eroded out. Soil erosion is the denudation of the upper layer of the soil, which is a natural process caused by the dynamic activity of erosive agents, viz. temperature, air and water. The soil erosion led to increase pollution and sedimentation in streams and rivers. Soil erosion can be prevented by Spreading of bamboo and neem seeds and soil binding grasses on the soil dump before on set of monsoon. Bamboo and neem are good soil binder. Therefore, this activity is proposed.

C) Maintenance of Proper Fencing till the Completion of Project:

Preventive steps have been proposed so that wild animals do not fall in the mine pits. Proper fencing will prevent wildlife from falling into the mine pits. It is observed that estimate is prepared and attached to the proposal but maintenance of fencing is not included in the estimate till the end of the project. So the fencing needs to be maintained . Specifically, the chain link fencing of the 38.55 ha area of low suitability pinch area of corridor in the western part of the project area falling under the "Tiger Corridors of Eastern Vidarbha Landscape" of WII should be taken care of.

D) Discarding of Alien Invasive Species and Promoting Local Indigenous Species:

The species of plants that are endemic and native to a place should be considered for plantation in the project area and also along the corridors. Planting of Exotic and alien species should be avoided. Discarding of invasive Alien species and promoting local indigenous species is proposed to maintain biodiversity. Native species are indigenous to a given region or ecosystem and its presence in that region is the result of only local natural evolution. The invasive species causes substantial ecological, environmental and economic damages, so it may be discarded and only indigenous species should be planted.

E) Development of Artificial Bird Nests:

A bird nest is the spot in which a bird lays and incubates its eggs and raises its offspring. Different birds make their nest using different materials. Some gather sticks, grass and leaves while other use tree branches. In this proposed project total of 36,964 trees are to be marked for felling. Due to the mining operation forest area will be deforested and the habitat of the birds would be destroyed so some bird nests should be developed artificially in the adjoining areas of the project.

Director
Chandrapur Forest Academy of Administration, Development & Management, Chandrapur

Annexure - 2 (b)

Wildlife Mitigation Plan for Guguldoh Manganese Ore Mine

Submitted to: Deputy Director (Pench Tiger Reserve) & DCF (T) Nagpur

Prepared for: Obtaining recommendations of National Wildlife Board and approval of National Tiger Conservation Authority

Prepared by: Dr. Manas Badge (PhD), Natural Resources Management Consultant, Nagpur

Date: 20.11.2021 Place: Nagpur

Contents

1.0 Introduction

The Government of Maharashtra had auctioned the Guguldoh Manganese Ore Block for Mining Lease. M/s Shanti G.D. Ispat& Power Pvt. Ltd, Raipur had participated in the auction. On offering the highest price M/s Shanti G.D. Ispat& Power Pvt. Ltd was declared preferred bidder by the Government of Maharashtra. The Government of Maharashtra has issued letter of intent (LOI) for the grant of Mining Lease for Managenese Ore in Gugaldoh Manganese Block in village Manegon (Rith) in RamtekTaluka, Nagpur District of Maharashtrs on 105.00 ha area for a period ofn 50 years vide Government of Maharashtra , Industries, Energy and Labour Department Letter no. MMN-051/C.R./ Industries -9 dated 05/06/2018 in pursuance to the Mines and Minerals (Development and Regulation) Act, 1957 (the Act) and Mineral (Auction) Rules, 2015 (the " Auction Rules)

The area for which LOI is 105 Ha. The project envisages mining of Manganese Ore @ 3,06,065 tonnes of Manganese Ore at Peak Production Level with corresponding removal of 85221 m^3 of overburden by conventional mechanized mining methodology using drilling and blasting, excavators and tippers.

Table 1: Salient features of the project:

SN	Particulars	Details
1.	Applied Mining Leas Area	105 Ha
2.	Location	Latitude: 21°25'53.06"N to 21°26'19.36"N Longitude: 79°24'04.29"E to 79°25'31.55"E Village: Guguldoh Taluka: Ramtek District: Nagpur State: Maharashtra (Annexure 1)
3.	Land ownership	5.05 Ha: Government Revenue Land 99.95 Ha: Forest Land (Annexure 2)
4.	Toposheet No.	55 0/7
5.	Proposed production capacity	3.06,065 Tonnes/annum on Manganese Ore at peak production
6.	Geological reserve	4,40,185 Tonnes
7.	Minable reserve	4,40,185 Tonnes
8.	Life of mine	5 years
9.	Project capital cost	Rs. 18.34Crores
10.	Protected area around proposed project	Pench Tiger Reserve
11.	Wildlife Corridor	Low Pinch observed in study report of WII in its publication Tiger Corridor of Eastern Vidarbh Landscape in Pench-Navegao-Nagzira Tiger Corridor (Figure 1)
12.	Distance from Pench Tiger Reserve core zone	9.10 km
13.	Distance from Pench Tiger Reserve buffer zone	4.65 km

1.1 Pench Tiger Reserve

PenchTiger Reserve is located in Central India.It is one of the premier tiger reserves of India and the first one to straddle across two states – Madhya Pradesh and Maharashtra.It covers a total area of around 1015 km^2, of which 758 km^2 is in Madhya Pradesh and 257 km^2 is in Maharashtra.

Pench Tiger Reserve belongs to the Indo-Malayan phytogeographical region. Ecologically, Pench is categorized as a tropical moist deciduous (TMD) tiger habitat. Floristically, Pench Tiger Reserve can be classified, according to Champion and Seth (1968) as:

- Tropical Moist Deciduous Forests:
  - Type 3B/C1c Slightly moist teak forests
- Tropical Dry Deciduous Forests:
  - Type 5A/C1b Dry teak forests
  - Type 5A/C3 Southern dry mixed deciduous forests

1.2 Wild Life Presence of Pench Tiger Reserve

The area has always been rich in wildlife habitat. The high habitat heterogeneity favors good population of Chital and Sambhar. The area is especially famous for large herds of Chital, Sambar, Nilgai, Gaur (Indian Bison) and wild boar. The key predator is the tiger followed by leopard, wild dogs and wolf in Pench Tiger Reserve. Out of the 58 species of mammals, the important ones include sloth bear, chousingha, barking deer, jackal, fox, palm civet, small Indian civet, jungle cat, hyena and porcupine. There are over 325 species of resident and migratory birds including the Malabar Pied Hornbill, Indian Pitta, Osprey, Grey Headed Fishing Eagle, White Eyed Buzzard etc. Other fauna includes 50 species of fishes, 13 species of amphibians, 33 species of reptiles, 105 species of Butterflies, moths and large numbers of other insects. Vultures are also seen in many parts of core area.

1.3 Wildlife Presence of Project Area

Besides occasional citing of tiger and leopard wild animal are frequently seen as found in trap camera exercise by the department includes Chital (Axis axis), sambar (Cervus unicolor), gaur (Bos gaurus), nilgai (Boselaphustragocamelus), wild pig (Susscrofacristatus), Indian muntjac (Muntiacusmuntjac) and chowsingha (Tetracerosquadricornis), Chital, sambar, nilgai and wild pigs are found in conflict with agriculture causing conflicts.

The common hanuman langur (Semnopithecus entellus) and rhesus macaque (Macacamulatta) represent the primate fauna of the area. Common mongoose (Urvaedwardsii) and black-naped hare (Lepusnigricollisnigricollis) also shows their presence.

1.4 Tiger Corridor and its Importance

Wildlife Corridors/ tiger corridor can be defined as a linear habitat, embedded in a dissimilar matrix, that connects two or more large blocks of habitat and that is proposed for conservation on the premise that it will enhance or maintain the viability of specific wildlife populations in the habitat blocks

These wildlife corridors serve as 'links' to allow the wildlife populations to migrate to the 'sources', where the population can survive and breed. Together, they provide the habitats upon which the

conservation of much of the flora and fauna in developed landscapes ultimately depends. Although corridors may have intrinsic habitat value, their salient wildlife value is that they connect more substantive patches of habitat. The dispersal of populations over distant habitats enhances the chances of survival of species due to a reduction in competition for food and space. If species are not restricted to smaller areas then the localized extinction of a population will not occur due to an outbreak of epidemics as well as natural calamities such as floods or forest fires. In the long run, the chances of extinction of populations due to excessive inbreeding are also reduced. The loss of wildlife corridors also results in a steep escalation in human-wildlife conflict. Some wildlife corridors are of immense importance as they are crucial for the long-term survival of wildlife, including threatened species such as the Indian tiger (*Panthera tigris*).

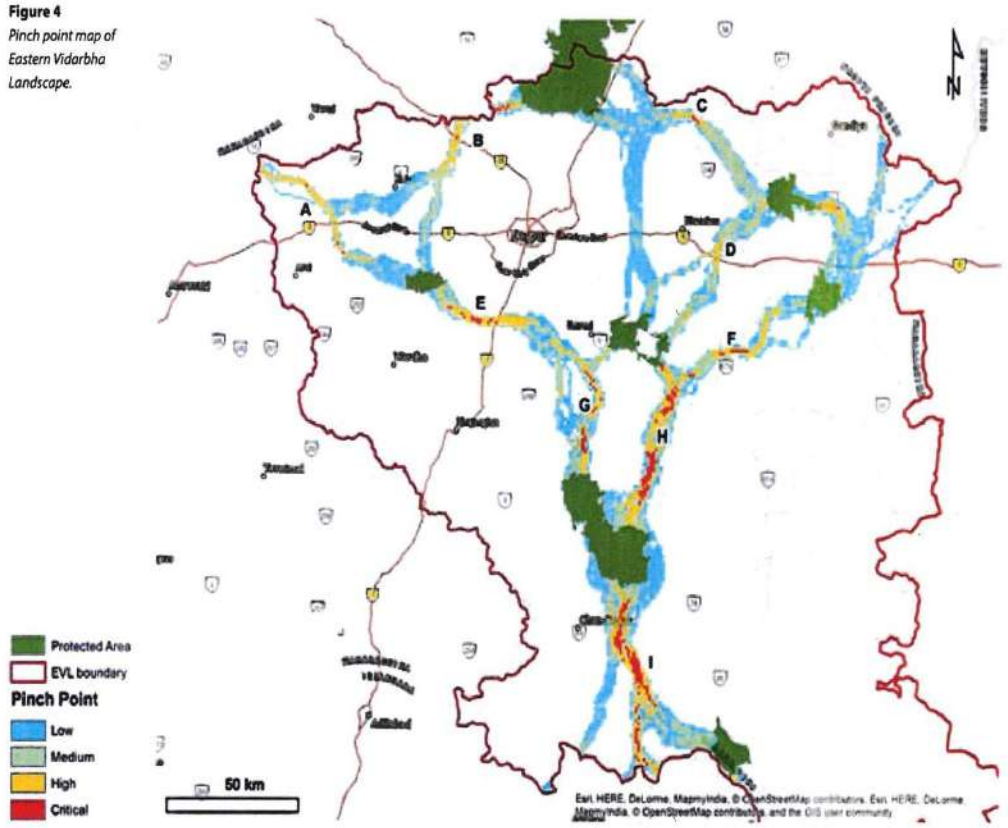
Areas linking one tiger reserve or protected area with another tiger reserve or protected area are not diverted for ecologically unsustainable uses, except in public interest and with approval of the National Board for Wildlife and on advice of the National Tiger Conservation Authority as per Section 38 O (1) (g) of the Wildlife (Protection) Act, 1972.

1.5 Tiger Corridor of India

India is committed to secure the livelihoods of its citizens while simultaneously minimizing its impact on its wildlife conservation goals.The National Tiger Conservation Authority in collaboration with the Wildlife Institute of India has published a document titled "**Connecting Tiger Populations for Long-term Conservation**", which has mapped out 32 major corridors across the country, management interventions for which are operationalised through a Tiger Conservation Plan, mandated under section 38V of the Wildlife (Protection) Act, 1972.

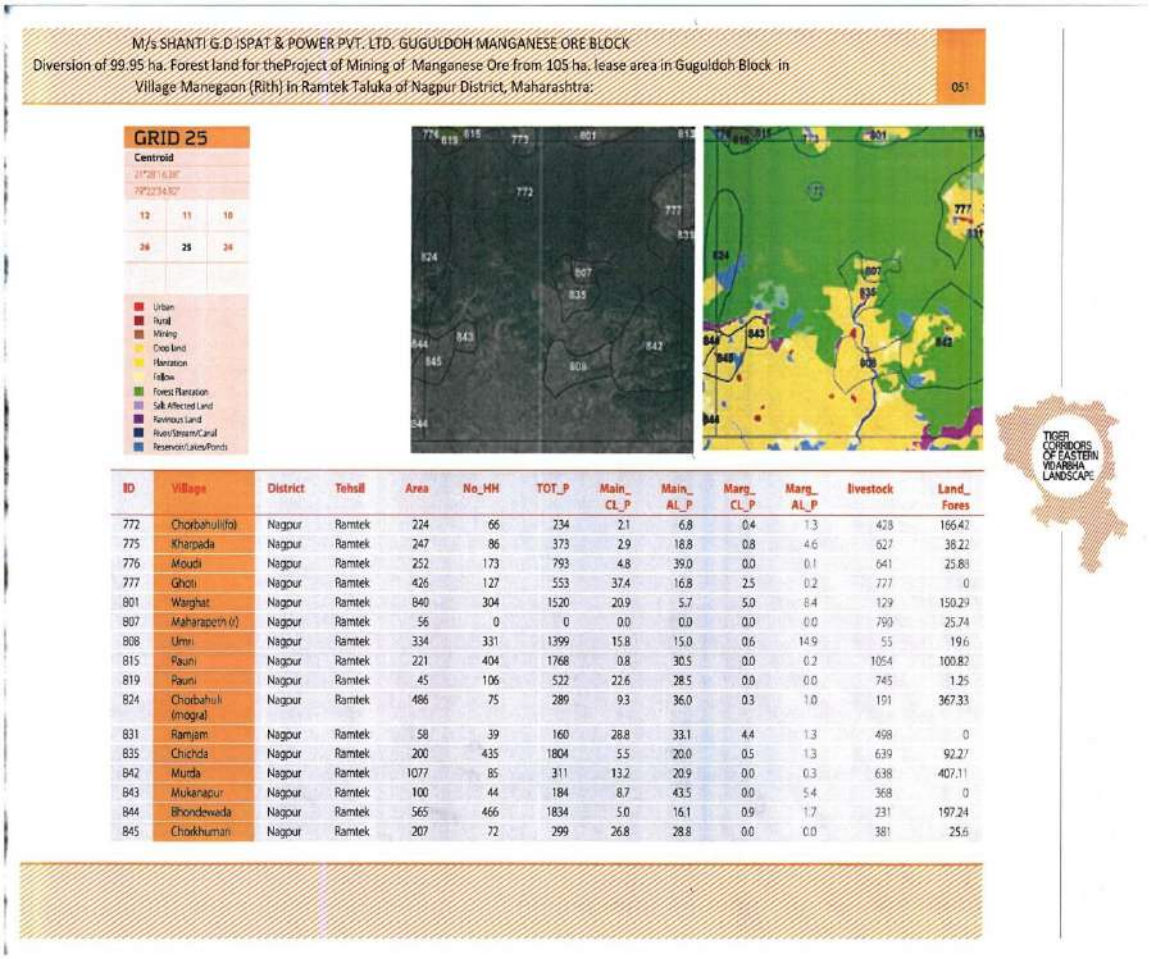
Proposed project area does not fall in well established 32 corridors of country. However, WII and NTCA in its publication of Atlas of Tiger Corridor of Eastern Vidarbh Land scape indicated connectivity between Navegaon –Nagzira-Pench Tiger Reserve in their study and prepare following atlas of this corridor

Figure 4
Pinch point map of Eastern Vidarbha Landscape.



1.6 Documentation of Tiger Corridor in project area

Wildlife Institute of India and NTCA on behalf of Government of Maharashtra documented the tiger corridor connecting NavegaonNagzira-Pench Tiger under their publication 'Tiger Corridor of Eastern Vidarbha Landscape'. Project area falls in Grid No. 51"38'16.38 and 79"22'34.92 with a pinch point as shown in following Table.


M/s SHANTI G.D ISPAT & POWER PVT. LTD. GUGULDOH MANGANESE ORE BLOCK
Diversion of 99.95 ha. Forest land for theProject of Mining of Manganese Ore from 105 ha. lease area in Guguldoh Block in Village Manegaon (Rith) in Ramtek Taluka of Nagpur District, Maharashtra:

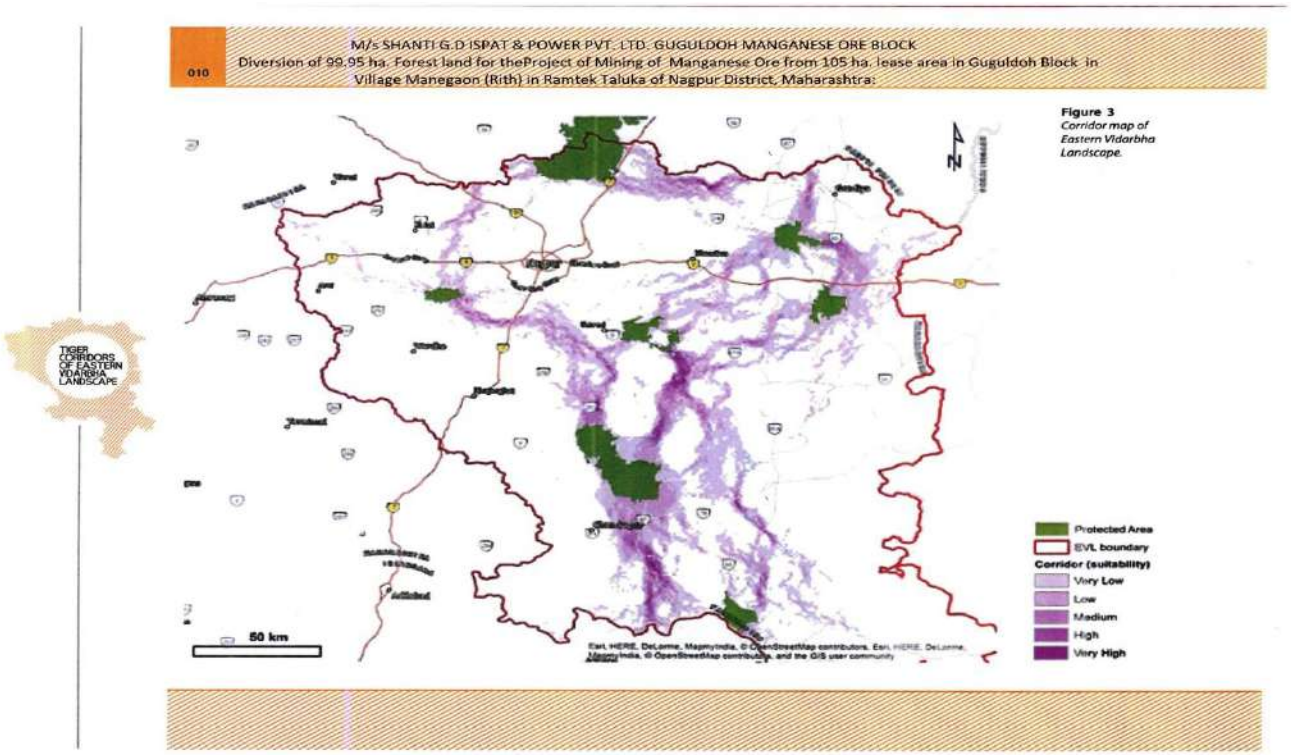
051

GRID 25
Centroid

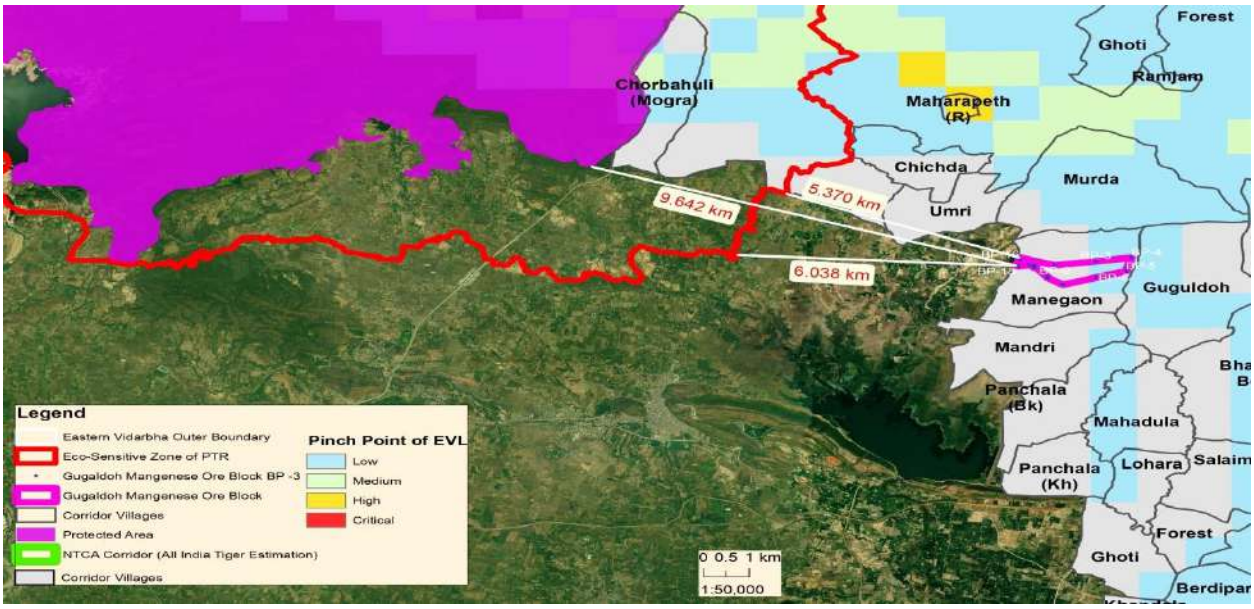
ID	Village	District	Tehsil	Area	No_HH	TOT_P	Main_CL_P	Main_AL_P	Marg_CL_P	Marg_AL_P	livestock	Land_Fores
772	Chorbahuli(fo)	Nagpur	Ramtek	224	66	234	2.1	6.8	0.4	1.3	428	166.42
775	Kharpada	Nagpur	Ramtek	247	86	373	2.9	18.8	0.8	4.6	627	38.22
776	Moudi	Nagpur	Ramtek	252	173	793	4.8	39.0	0.0	0.1	641	25.88
777	Ghoti	Nagpur	Ramtek	426	127	553	37.4	16.8	2.5	0.2	777	0
801	Warghat	Nagpur	Ramtek	840	304	1520	20.9	5.7	5.0	8.4	129	150.29
807	Maharapeth (r)	Nagpur	Ramtek	56	0	0	0.0	0.0	0.0	0.0	790	25.74
808	Umri	Nagpur	Ramtek	334	331	1399	15.8	15.0	0.6	14.9	55	19.6
815	Pauni	Nagpur	Ramtek	221	404	1768	0.8	30.5	0.0	0.2	1054	100.82
819	Pauni	Nagpur	Ramtek	45	106	522	22.6	28.5	0.0	0.0	745	1.25
824	Chorbahuli (mogra)	Nagpur	Ramtek	486	75	289	9.3	36.0	0.3	1.0	191	367.33
831	Ramjam	Nagpur	Ramtek	58	39	160	28.8	33.1	4.4	1.3	498	0
835	Chichda	Nagpur	Ramtek	200	435	1804	5.5	20.0	0.5	1.3	639	92.27
842	Murda	Nagpur	Ramtek	1077	85	311	13.2	20.9	0.0	0.3	638	407.11
843	Mukanapur	Nagpur	Ramtek	100	44	184	8.7	43.5	0.0	5.4	368	0
844	Bhondewada	Nagpur	Ramtek	565	466	1834	5.0	16.1	0.9	1.7	231	197.24
845	Chorkhumari	Nagpur	Ramtek	207	72	299	26.8	28.8	0.0	0.0	381	25.6

TIGER CORRIDORS OF EASTERN VIDARBHA LANDSCAPE

Pinch point studies represent areas where movement would be funneled and thus may be particularly important to keeping a linkage viable. Following map indicate that the location of project occupies low pinch impact area (light blue) colour indicating less probability of compromising the connectivity.



The project area falls in revenue village Manegaon Rith with populated villages viz Gugaldoh and Murda. However in the study grid village Manegon and Gugladoh do not show any pinch points.



1.7 Socio Economic Status of the area

Area is covered with forest and surrounded by agriculture fields and therefore economy mostly dependent on agriculture and NTFP and some labour work in forests around. There are no employment opportunities for the village youth around. Nearest town which influence the socio-economic conditions of the cluster.

The village Manegon is unhabitated village with very few household. The adjoin villages are Gugualdoh and Murda along with significant cattle population. The project site witness grazing by the castles from the nearby villages. With the incoming of mine, alternative employment opportunities would be development which will help is reduction of pressure on forest for livelihood.

Area is backward in terms of socio-economic parameter and there is lot of scope for interventions with reference to livelihood, natural resources management, joint forest management and development of organic/ natural farming. There is no possibility of other industries other that mining as the area is rich in major mineral of Manganese.

1.8 Wildlife interactions in the area

As the proposed project area falls in the wildlife corridor, cases of human wildlife conflicts especially attacks on livestock have been registered in the area and the presence of wildlife in the area is confirmed through the photos from the camera trap installed in the area by the forest department. The details of human wildlife conflict and the wildlife movement in the area are presented in the Annexure 4.

2.0 Need of the project

Being finite and non-renewable, minerals are valuable natural resources. Minerals constitute the important raw materials for many core sector industries like steel, cement, power etc. India is a fast growing nation and the mining sector is an important segment of Indian economy.

India is 3rd largest producer of crude steel in the world. India's comparatively low per capita steel consumption and expected growth in consumption due to growing infrastructure construction, automobile and railway sectors has offered scope for growth.

India's capacity has increased to 134.6MT in 2017-18. The National Steel Policy, 2017 aspires to achieve 300MT of steel making capacity by 2030-31. The National Steel Policy seeks to increase per capita steel consumption to the level of 158kg by 2030-31 from existing level of around 61kg.

Manganese ore is the basic source to provide manganese as a key input in production of iron and all types of steel.

In view of the target set forth by National Steel Policy, the demand for Manganese based alloys requirement and as a consequence the Manganese Ore is bound to increase.

The anticipated rapidly growing demand for Manganese Ore has motivated the Project Proponent to apply for the mining lease for undertaking Manganese Ore Mining project. The constraints of availability of High Grade Manganese Ore coupled with demand of 8.33 million tones of ROM based on metallurgical calculations of steel making would put tremendous pressure on the Manganese Ore mining sector.

Therefore, implementation of the Manganese Ore mining project by the Project Proponent at Guguldoh is in line with the targets set by National Steel Policy 2017.

3.0 Impact of proposed project on biodiversity

The clearing of vegetation is one of the most significant impacts of mining on biodiversity. Loss of vegetation cover occurs not only in the mined area but also in areas affected by associated activities such as dumping of overburden, deposition of tailings, development of infrastructure for transport and service corridors (railway lines, roads, pipelines, conveyers) and surface facilities (offices, workshops, vehicle parks, storage depots and warehouses). In the proposed project are total of 36,964 have been enumerated; out of these 6,794 trees are scheduled species and remaining 30,170 trees are of non-scheduled species (Table 2). The major scheduled tree species in the area are teak, saja, bija, and haldu.

Table 2:Summary of the Tree Enumeration

S.N.	Species	Girth Class									
		31-45	**46-60**	**60-75**	**76-90**	**91-105**	**106-120**	**121-135**	**136-150**	**>150**	**Total**
1.	Teak (*Tectona grandis*)	1,166	1,035	544	233	93	39	20	7	4	**3,141**
2.	Saja (*Terminalia tormentosa*)	863	612	318	159	81	24	12	3	8	**2,080**
3.	Bija (*Pterocarpus marsupium*)	122	117	111	74	57	33	20	11	16	**561**
4.	Haldu (*Adina cordifolia*)	251	214	172	99	87	44	58	20	67	**1,012**
5.	Others	10,345	8,881	5,003	2,790	1,557	838	352	194	210	**30,170**
	Total	**12,747**	**10,859**	**6,148**	**3,355**	**1,875**	**978**	**462**	**235**	**305**	**36,964**

The excavation of the substrate materials and creation of the mine voids may alter the soil profile, hydrology, topography, and nutrient status of the substrate. These secondary factors have the potential to result in lethal effects on the local biodiversity. At the landscape level, environmental impacts occur generally in the form of alteration of land form features and fragmentation of biological habitats that may cause isolation of populations of floral and faunal species (Brown and Dunne 1988, Banerjee 2004).

Fragmentation of habitat into patches of insufficient size quality may not be able to meet a species' requirements may and also cause loss of connectivity due to reduction in species mobility between supportive habitats.

Mining operations also cause air pollution effects that are manifested as dust generation and subsequent increase in Suspended Particulate Matter (SPM) in the environment particularly in case of opencast mining. Mining processes can also have serious implications for the aquatic environment as the clearing of vegetation, removal of soil, extraction of large quantities of water, disposal of waste through water systems often lead to soil erosion, increased sedimentation load and alteration of watercourses.

The most serious environmental impact of mining revolve around access to mineral reserves in areas recognized as habitat of significant conservation values and biodiversity richness or areas of special cultural significance.

Plate 1: Photos of existing vegetation in the project area

4.0 Sustainable Mining: Right Key for mitigation of negative impacts of mining

Mineral development has a close interface with the issues of environment, development, welfare of local (indigenous) communities and poverty alleviation and its sustainability is crucial for the promotion of inclusive growth.

Institute for Studies in Industrial Development under its report on 'Sustainable Development- Emerging Issues in India's Mineral Sector' has identified the following elements for Sustainable Mining:

- Scientific Mining
  - Mine planning
  - Methods of mining
  - Level of mechanization
  - Technology upgradation
  - Availability, depletion and conservation of mineral resources
  - Mine closure planning and target-setting
  - Progressive implementation of mine closure plan and commitment to rehabilitation
- Environmental protection and mitigation
  - Land use
  - Water use and efficiency
  - Energy use and efficiency
  - Waste minimization
  - Tailings management
  - Air pollution, liquid effluents and solid wastes
  - Dust management
  - Noise and vibration control
  - Biodiversity loss and mitigation
  - Environmental compliance and voluntary activities
  - Conformity to environmental management standards (eg. ISO-14001)
- Community stakeholder engagement
  - Policy on and extent of stakeholder involvement in mining operations
  - Mechanisms of stakeholder participation/consultations in decision-making
  - Procedures for attending to stakeholder grievances and concerns
  - Engagement procedures and principles in respect of indigenous people (adivasis)
  - Policy on business ethics
  - Approach to bribery and competition
  - Resettlement of communities affected by mining project
- Local socio-economic development in mining project areas
  - Policy on and procedure for assessing socio-economic impact of miningoperations in a project area
  - Mechanisms and procedures for preparing and implementing area developmentplans and projects
  - Plans for generating local community income
  - Investments in community and mineral wealth distribution
  - Contribution to local employment
  - Level of commitment to education, training and skill development
  - Contribution to the development of physical infrastructure in mining area
- Transparency and Accountability
  - Policy on and approach to public disclosure of key elements of enterprise performance

- Nature and effectiveness of the reporting system

5.0 Integrating Biodiversity Enhancement with Mining Activity

5.1 During Project Development

In the early stages of exploration, impacts on biodiversity are limited, although theycan become more significant as exploration progresses. At a macro-level, however,assuming exploration efforts identify economically viable mineral deposits, the initialchoice of exploration area can have a profound long-term influence on the impactson biodiversity. Therefore even at this very early stage it is critically important tohave some appreciation of likely long-term interfaces with biodiversity. At this stage, companies should begin to develop an appreciation of the overall biodiversity importance of the area within which exploration is being undertaken by reviewing legal provisions relating to biodiversity and mapping the occurrence of protected areas.

Following practices are proposed for limiting impacts on biodiversity during explorationinclude:

- Limiting land clearing by using technologies and mining practices that minimizehabitat disturbance; Keeping mandatory safety zone of 7.5 meter is sound practice to create green belt to reduce noise and arrest dust from getting airborne outside the work area,
- Avoiding road building wherever possible by using existing tracks – Incidentally mine area is well connected to pucca road and hence no new road is required to be constructed for transportation of ore. ;
- Using lighter and more efficient equipment to reduce impacts on biodiversity;
- Positioning drill holes and trenches away from sensitive areas;
- Capping or plugging of drill holes to prevent small mammals from becomingtrapped;
- Removing and reclaiming roads and tracks that are no longer needed;
- Using native vegetation to revegetate land cleared during exploration.

5.2 During Mining Operation

The major potential impacts of ancillary infrastructure occur during design andconstruction, although a number of operational considerations are also relevant tobiodiversity. The potential impacts associated with water and sanitationinfrastructure are also present during operations and were dealt with earlier. Whilethe major impacts occur during construction, the continuingpresence of physical barriers can present a threat to migratory animal species.

Biodiversity may also be affected by maintenance activities,particularly weed and pest control. This can be minimized by implementing anintegrated pest management or integrated vector management approach for all pestmanagement activities. This advocates the use of alternative approaches to chemicalcontrols in the first instance.

The primary impacts on biodiversity result from land clearance for the pit, access routes, and progressive expansion into new areas. Typically, mines undergo many expansions in area and capacity, generating a sequence of events that can be the equivalent of new mines being started, so there may

also be a requirement to conduct a new Environmental and Social Impact Assessment or update the initial ESIA.

5.3 During Closure

Achievable objectives and targets for biodiversity re-establishment are essential togive the company a framework on which to base its rehabilitation program and toprovide measurable standards against which regulatory authorities and otherstakeholders can determine whether the company has met all necessaryrequirements prior to mine closure and lease relinquishment.

The establishment of closure targets and objectives is not a one-shot desk-based exercise; it should be developed through a dynamic and iterative process involving mining stakeholders. When setting biodiversity objectives and targets, the following aspects should always be taken into account:

- Relevant regulatory requirements and other guidelines
- Effective consultation with key stakeholders
- Competing interests need to be understood and reconciled
- All available information on biodiversity
- Technical limitations
- Pre-mining land uses and the extent of biodiversity degradation
- Whether mitigation or enhancement is intended
- Post-mining land tenure and land uses
- Minimizing secondary impacts
- Other opportunities for biodiversity improvement

6.0 Mitigation Measures for Environmental Impact

- Control water and air pollution: The water accumulated within the mining area is likely to be muddy due to presence of large amount of dust and soil. Strategy will be developed to check the mixing of contaminated water with nearby water source. Mining activity involves use of Heavy Earth Moving Machinery (HEMM) and vehicles. The movement of vehicles laden with ore caused air pollution because of dust flying in the area. Care will be taken to cover these trucks with tarpolin to avoid dust getting airborne and frequent water sprinkling on haul roads, loading and unloading points and crusher sites.
- Control of Noise pollution: Operation of heavy machinery and blasting in the mining area produces large amount of sound which may cause disturbance to wild animals. Periodic maintenance of these machines is important to control the noise levels. No mining, blasting or transportationwill be allowed from 6 pm to 6 am.Control Blasting may be resorted and need to be monitoring on daily basis and keep record for surveillance. Development of green belt along the project area is an effective strategy to control the noise pollution. It is suggested that a green belt of 7.5m must be developed along the boundary of the mining area. No mining operation must be carried out in this zone; rather dense plantation of evergreen trees must be

carried out. This will provide a natural screen between the mine and the adjoining area thus reducing the nuisance caused by noise and dust in the vicinity of the mine.

- Waste Management: Mining process involves movement of large number of work force and vehicles within the mining area, a large quantity of waste and garbage is generated in the mining area. The garbage includes solid waste such as over burden, mine waste, sub-grade ore, some amount of bio degradable waste and hazardous waste such as used oil, used batteries, oily sludge, filter materials containing oil are likely to be generated within the project area. These materials will create pollution leading to various health problems for wild animals. So, proper handling & management is suggested to avoid such contamination/pollution.

7.0 Mitigation Measures for Impact on Wildlife and Biodiversity

7.1 Objectives of mitigation to address issues of wildlife conservation

Due to the mining operation 99.95 ha of forest(add additional adjoining areas keeping 50 meter buffer) area will not be available for use by the wild animals till the mining is completed and mine closure plan is satisfactory completed. The objective for the project area will therefore be:

- Ensure wildlife safety especially during mining.
- Ensure ecological restoration of the mined out area.
- To provide safe spill over corridors for wildlife from Impact Area to relatively rich neighboring forest areas.
- Ensure wild life habitat restoration during and post mine closure plan
- Strict compliances and monitoring of environment mitigation measures especially air, water and noise.
- Lawful compliances of Wild Life Protection Act under section 83 (O) (1) (g) as well as compliances of the conditions imposed under Environment Clearance issued to the project by Ministry of Environment, Forest and Climate Change, GOI.

7.2 Strategies to mitigate the adverse impacts on wildlife

In order to reduce the impact of the proposed Manganese Ore mining projects of M/s Shanti G.D. Ispat & Power Pvt. Ltd, Raipur at Guguldoh on environment and around wildlife areas, following mitigation measures are suggested. The financial provision to be made available for implementation of following measures is given in Annexure 3

Habitat must to be developed as a gradual process side by side with the mining activity.

Strategies within the project area:

- Soil moisture conservation: Mining activity in the proposed area will involve clearing of vegetation. As per the tree enumeration report (Annexure 4) around 36,964 trees are present in different blocks on the project site. The mine has been divided into five blocks (Annexure 5). Mining activity will also involve removal of top soil. Due to removal of vegetation cover and top

soil, moisture in the soil tends to reduce. The strategy will be to conserve as much moisture as possible.

- Preventive steps for the animals not to fall in the Mine Pits: The mine pits are dug with very steep slopes. It is necessary to take preventive steps so that, the wild animals/ domestic animals do not fall in the mine pits. Therefore chain link fencing around the mine of height 3 meter is proposed to prevent wild life from falling into the mine pit. Another chain link fence of one meter height is prescribed on the inner side of the 7.5m green belt. Cattle trench around the mine outside the leasehold boundary would help in this direction besides chain link fencing.
- Restoration of soil dump: Slope instability and erosion is one of the major issue faced by the mining activity. The best solution to reduce this is stabilizing the slopes. In nature, vegetation is the best way to reduce the risk of slope failures and erosion. One of the most useful and environment friendly method for slope stabilization is bioengineering. Bioengineering, with respect to this topic, entails the use of living plants and other auxiliary materials for stabilization of hill slopes. For the purpose of slope stabilization, fast growing species having colonizing behavior, deep root systems and simple propagation have to be chosen. Geo-synthetic fabrics are also proposed for slope stabilization. These are porous and flexible material that increases the stability of slopes or any earthen structures. The most commonlyused geo-synthetic fabric is called geotextile. Geotextiles are woven or non-woven synthetic polymers made of polyester, polyamide orpolypropylene and polyethylene. These materials are highly resistant to biological and chemical degradation. One of the natural fiberscommonly used as geotextile is jute.Plantation of agave along the slopes and adopting method of plantation of bigger trees developed in gunny bags would certainly help in reducing the soil erosion/ gully formation and ensure stability. The user agency has already prepared and submitted closure plan (Annexure 6) and reclamation plan (Annexure 7) for the proposed project area.

Strategies for area outside project boundary

- Improving Forest cover: The wildlife habitat in the impact area should be developed so as to compensate for the biotic pressure which has been shifted from the project area to the surrounding of the project area. This can include Assisted Natural regeneration, Soil & Moisture conservation. Plantation of native species (Annexure 5) will be carried out along 50m buffer from the mine boundary. This will help to strengthen the wildlife corridor.
- Provision of water for the wild animals by creation of water body. Water is the most important for survival of all wild animals. A habitat having abundant food for wildlife will be of no use if water is not available close by. A good wildlife habitat should have well distributed water points. Animals' dependence on water and the way they replenish their water varies with the nature of habitat and the species. Therefore it is suggested that the user agency in association with the forest department must identify strategic locations for development of water holes.
- Forest Fire prevention: Fire hazard needs to be prevented for survival of Forest as well as Wildlife. Steps will be taken for prevention of forest fire. The user agency must create awareness among the villagers by taking meetings. The work of fire protection can be entrusted to village Eco-development Committee as done in buffer zone of Kanha Tiger Reserve

- Make special efforts to create awareness amongst the farmers/ cultivator to reduce the use of chemical in farming and adopt ecofriendly natural farming to create sustainable habitat for movement of wild life.
- Establishment of Joint Forest Management and Biodiversity Committees: No project is successful without the involvement of the locals. The sense of ownership of the forest and its resources amongst the villagers is very important. In order to make the make the plantation successful it is suggested to involve the locals. This can be done by establishing Joint Forest Management and Biodiversity Committees in the nearby villages. This will also help to understand the indigenous knowledge of the locals and accordingly the plantation of locally important trees and shrubs can be carried out.
- Nursery development: It is proposed to enhance the 50m buffer along the mine by carrying out plantation of native trees and shrubs. This activity must be done simultaneously with the mining, so that by the end of mining operation good forest cover is developed in the buffer. To carry out the plantation it is suggested to develop the nursery in the nearby area, and also involve the locals by giving them employment opportunity for developing and maintaining the nursery.

8.0 Example of Reclamation of Manganese Ore Mine

A study carried out by Juwarkar A. A. et.al., 2016 in the Gumgaon Manganese Ore Mine shows how a mined out area can be successfully restored by adopting eco-restoration practices.

The Gumgaon manganese mine which has been successfully restored is under Manganese Ore India Limited (MOIL). The mine is partly opencast and partly underground. It is located in Gumgaon, 40 km away from Nagpur city, central India. The Gumgaon mines are perfect example of manganese mining sites can be recovered and converted into carbon sinks, if appropriate management strategies are adopted.

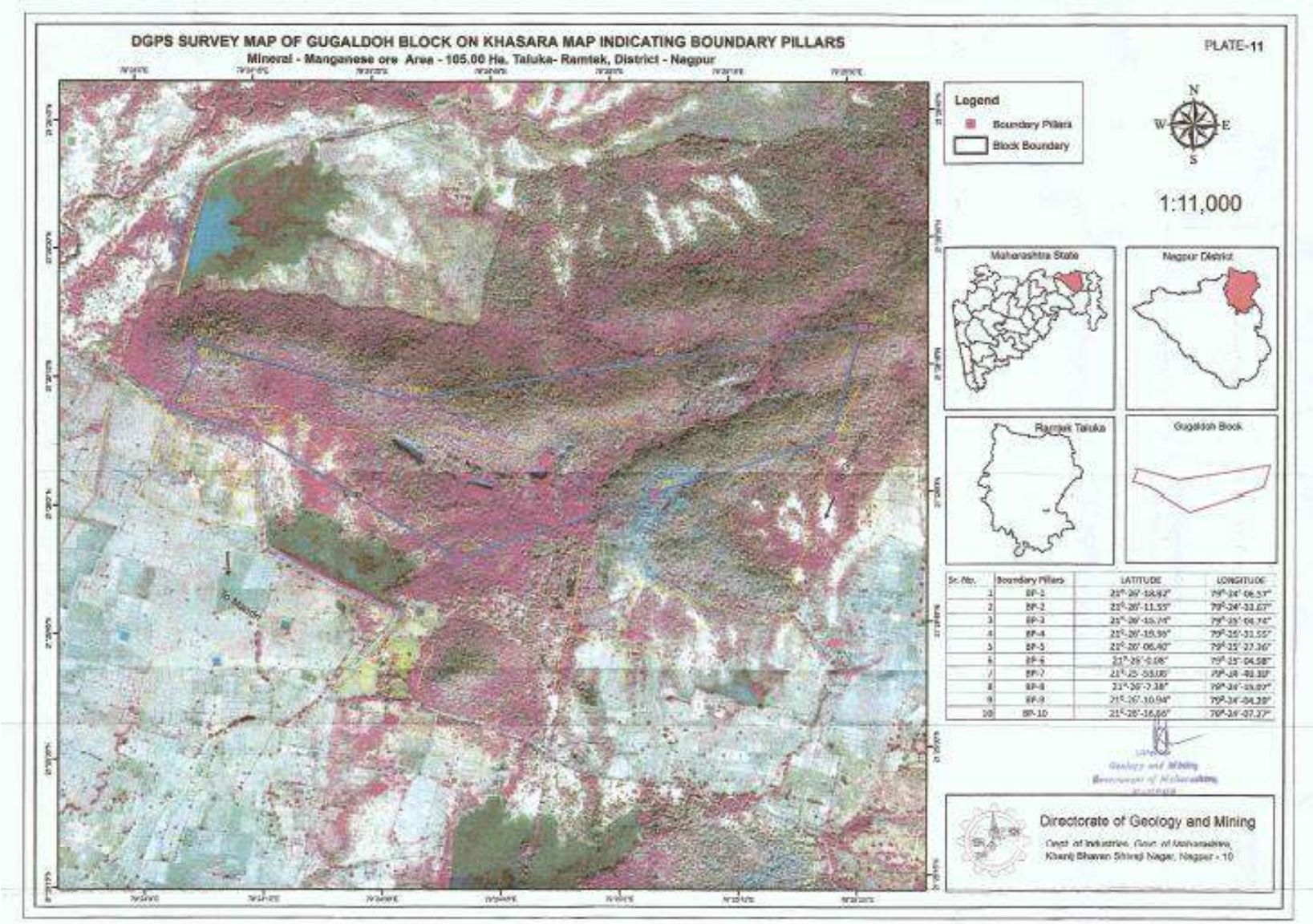
The aim of eco-restoration program was to promote ecofriendly environment through ecosystem interactions, species diversityand improvement in soil nutrient cycling. The plantation program facilitated the development of microbial population, N-fixing bacteria and mycorrhizal association, which are fundamental for maintaining the soil quality by mediating the processes of organic matter turnover and nutrient cycling. Plantation alone is not sufficient for restoration of mined area; itshould be supplemented with application of organic amendments indicating addition of top soil and soil organisms in any eco-restoration program. The plant-animal interactions also improved the ecosystem structure with respect to frequency, density and diversity of both the communities. Successful restoration of floristic diversity in manganese mine spoil dump facilitated the natural process of speciation and also became a source of germplasm of various species. It improved the environmental conditions of the local area, including the economical aspects.

Reclamation must go beyond planting a new landscape byconsidering the land as an integrated system that functions above andbelow the ground. Ecological restoration provides an insight of theecological

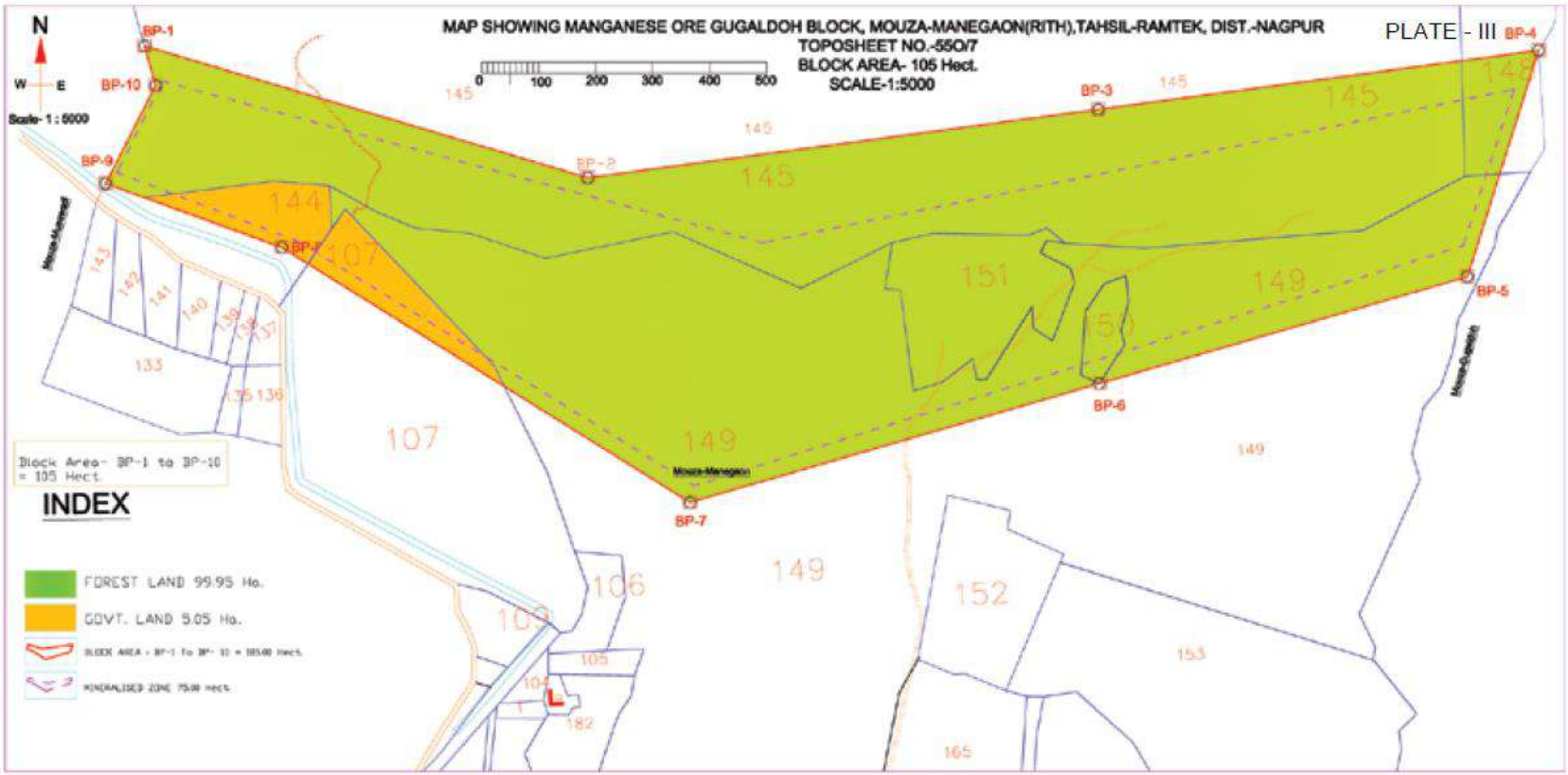
processes and helps to understand many structural aspectsand function of ecology viz., dominance, invasion, conservation,succession, competition, ecosystem dynamics and equilibrium.

Plate 2: Gumgaon Mine before and after ecological restoration

Annexure 1: Location of Gugulhoh Manganese Ore Mine on Google Earth



Annexure 2: Existing Land Ownership of GuguldohMangnese Ore Mine



Annexure 3: Financial Provision for Mitigation of Impact on Wildlife due to Mining Activity

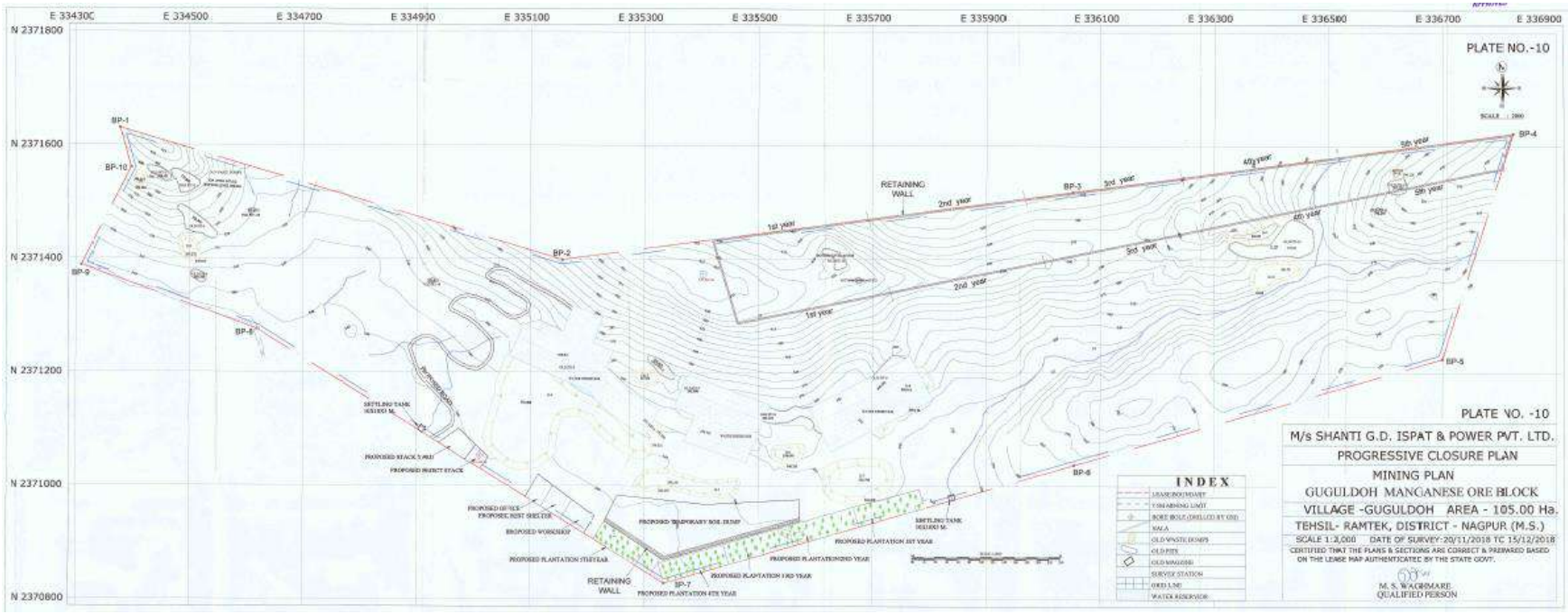
SN	Particulars	Cost (Rs.)					
		1st Year	2nd Year	3rd Year	4th Year	5th Year	**Total**
1	Chain link Fence (3m) (@ Rs. 242.21 per running meter for 5780m)	1,400,000					**1,400,000**
2	Chain link Fence (1m) (@ Rs. 87.72 per running meter for 5700m)	500,000					**500,000**
3	Cattle trench along the mine boundary (departmental HEMM)	200,000					**200,000**
4	Nursery development and maintenance	200,000	50,000	50,000	50,000	50,000	**400,000**
5	Plantation on per ha land around mine		200,000	200,000	200,000	200,000	**800,000**
6	Soil moisture conservation works	50,000	50,000	50,000	50,000	50,000	**250,000**
7	Preparation of water hole (5 water holes)	200,000	200,000				**400,000**
8	2% of the project cost for wildlife management	550,000	850,000	1,000,000	733,000	550,000	**3,683,000**
9	Awareness and training of JFM and Biodiversity committee for wildlife protection and fire control measures	100,000	100,000	100,000	100,000	100,000	**500,000**
						Total	**8,133,000**

Annexure 4: Presence of Wildlife in the project area- Letter of Range Officer Ramtek

Annexure 5: Issues to be addressed during Plantation and Species to be planted

Issues to be Addressed	Species to be Planted
1. Soil and water conservation measures 2. Full protection from grazing and fire 3. Safe disposal of run off 4. Grassland development 5. Afforestation 6. Contour bunding, trenching	*DalbergiaSissoo, Albizzialebbek, Accasia catechu, Acacia niloteca, Azadirachtaindica, Agave americana, Agave sisalana, Eulaliopsisbinata, Dendrocalamusstrictus, Madhucaindica, Acacia auriculiformis, Bombaxceiba, Soymidafebrifuga, Cleistanthuscollinus, Albizzia lebbek, Agave spp., Cassia siamea, Hardwickiabinata, Azadirachtaindica, Acacia nilotica, Derris indica, Dalbergiasisoo,Tamarindusindica, Eulaliopsisbinata, Ailanthus excelsa, Acacia catechu.*

Annexure 6: Closer Plan for the proposed Manganese Ore Mine at Guguldoh



Annexure 7: Reclamation Plan for the proposed Manganese Ore Mine at Guguldoh