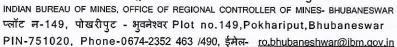


भारत सरकार, खान मंत्रालय

GOVERNMENT OF INDIA, MINISTRY OF MINES







File No. MP/A/21-ORI/BHU/2021-22

Date: 11.01.2022

सेवामे- Shri Debabrata Behera, Managing Director,

M/s Kashvi Power & Steel Pvt Ltd, Plot No 1234/P, Govinda Prasad, Bomikhal, Bhubaneswar-751010

Email: groupkashvi@gmail.com

विषय:Approval of Mining Plan of Dholta Pahar Iron Ore Block along with Progressive Mine Closure Plan (PMCP), over an area of 60.508 ha in Sundargarh district of Odisha State, submitted by M/s Kashvi Power & Steel Pvt Ltd under Rule 16 of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

संदर्भ:- i) Your letter No. KPSL/DHO/2021-22/09 dated 07.12.2021 received on 14.12.2021.

- ii) This office letter of even no. dated 14.12.2021.
- iii) This office letter of even no. dated 23.12.2021.
- iv) Your letter No. KPSL/DHO/2021-22/13dated 30.12.2021.

महोदय,

In exercise of the power delegated to me vide Gazette Notification No. S.O. 1857(E) dated 18.05.2016, I hereby <u>Approve</u> the Mining Plan including Progressive Mine Closure Plan of Dholta PaharIron Ore Block over an area of 60.508 ha in Sundargarh district of Odisha State, submitted by M/s Kashvi Power & Steel Pvt Ltd under Rule 16 of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016. This approval is subject to the following conditions:

- I. The Mining Plan is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.
- II. The proposals shown on the plates and/or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.
- III. It is clarified that the approval of aforesaid Mining Plan does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Act, 1957, or the Mineral Concession Rules, 2016 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under, the Occupational Safety, Health and Working Conditions Code, 2020 and Rule & Regulations made there under.

File No. MP/A/21-ORI/BHU/2021-22

- IV. Indian Bureau of Mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.
- V. At any stage, if it is observed that the information furnished, data incorporated in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.
- VI. If this approval conflicts with any other law or court order/ Direction under any statute, it shall be revoked immediately.
- VII. Validity of excavation proposal of this document shall expire within 5 (five) financial year from execution of the mining lease.
- VIII. The pre-feasibility report considered for reserve/resource estimation as per UNFC is submitted by the preferred bidder / lessee which is prepared based on the current data as reported and it may not establishes the future economic viability of mining project, which may be affected by the market dynamics and other related factors.
 - IX. Drone survey to be carried out after issue of the standard operating procedure for carrying out the drone survey by the Indian Bureau of Minesand the data shall submitted in the specified form to this office before commencement of mining operation.
 - X. Copy of the Lease deed, MDPA signed and performance security deposited to the State Government to be submitted before commencement of mining operation.

Encl: - One copy of Mining Plan

भवदीय
BABULAL Dipitally signed by
GURJAR Date: 2022:01:11
GURJAR Date: 2022:01:11
(बाबुलाल गुर्जर)
क्षेत्रीय खान नियंत्रक
भारतीय खान ब्यूरो, भुवनेश्वर

Copy for kind information to:-

- 1. The Director of Mines, Directorate of Mines, Government of Odisha, Heads of the Department Building, Bhubaneswar—751001, Odisha along with one copy of Mining Plan by **REGISTERED PARCEL**.
- 2. ShriPradeeptMohapatra, World Consultany Services, At-Telengapentha, Dist-Cuttack, Odisha-754001. Email: pmohapatra_07@yahoo.com

BABULAL BRIEDLAN POPULAR SALVAGORUM BABULALUM BRIEDLAN B

Lessee copy

TEXT

Baken

MINING PLAN

(Submitted under Rule 16(1) of MCR 2016)

ALONGWITH

PROGRESSIVE MINE CLOSURE PLAN

(Submitted under Rule, 23 of MCDR, 2017)

in respect of

DHOLTA PAHAR BLOCK

FOR IRON ORE OVER AN AREA OF 60,508HA NEAR DENGULA VILLAGE, KOIRA TAHASIL OF SUNDARGARH DISTRICT, ODISHA

	LAND DETAILS		CATEGORY
MINERAL	RESERVE FOREST	NON-FOREST	OF PROPOSED MINE
IRON ORE	60.508HA	NIL	'A' FULLY MECHANISED

THE IRON ORE BLOCK HAS BEEN ALLOTTED THROUGH AUCTION
AS PER MMDR AMENDMENT ACT, 2015)

M/S. KASHVI POWER AND STEEL PVT LTD

(APPLICANT)

PLOT NO 1234/P, GOVINDA PRASAD, BOMIKHAL, BHUBANESWAR

Email: groupkashvi@gmail.com

Mob: 9437094843

Prepared By

SRI PRADEEPT MOHAPATRA, MSc in Geology (Qualified person)

WORLD CONSULTANCY SERVICES

Piot No -766, Konark Centre Office Premises, Beside NH- 16, 2nd Floor, Above Usha International, Telengapentha, Cuttack - 754001 Email id: pmohepatra_07@yahoo.com Phone No: 9438149715 Brace Leg Har of Order of 11. 81. 80.31

MINING PLAN

(Submitted under Rule 16(1) of MCR 2016)

ALONGWITH

PROGRESSIVE MINE CLOSURE PLAN

(Submitted under Rule, 23 of MCDR, 2017)

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	LAND DETAILS		CATEGORY	
IRON ORE	RESERVE	NON COBERT	OF	
	FOREST	NON-FOREST	PROPOSED MINE	
	60.508HA	NJL		
		141	FULLY MECHANISED	

HE IRON ORE BLOCK HAS BEEN ALLOTTED THROUGH AUCTION AS PER MMOR AMENDMENT ACT, 2015).

M/S. KASHVI POWER AND STEEL PVT LTD

(APPLICANT)

PLOT NO 1234/P, GOVINDA PRASAD, BOMIKHAL, BHUBANESWAR

Email: groupkashvi@gmaif.com

Mob: 9437094843

Prepared By

SRI PRADEEPT MOHAPATRA, MSc in Geology

(Qualified person)

WORLD CONSULTANCY SERVICES

Plot No -766, Konark Centre Office Premises, Beside NH- 16, 2nd Floor, Above Usha International, Telengapentha, Cuttack - 754001

Email id: pmohapatra_07@yahoo.com

Phone No: 9438149715

DEBABRAT Date: 2021.12.30

Page 1 of 75

PRADEEPT Date: MOHAPATR 2021.12.30 10.19.24 +05'\$0'

PART: A Index

CHAPTER	PARTICULARS	PAGE NO.
	INTRODUCTORY NOTE	3-4
	MINING PLAN AT A GLANCE	5 5 6 6 C
CHAPTER 1	GENERAL INFORMATION	7 . 9
CHAPTER 2	GEOLOGY & EXPLORATION	10 - 30
CHAPTER 3	MINERAL PROCESSING	31 - 33
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CHAPTER 5	SUSTAINABLE MINING	44 - 49
CHAPTER 6	PROGRESSIVE MINE CLOUSER PLAN	50 - 53
CHAPTER 7	FINANCIAL ASSURANCE/ PERFORMANCE SURETY	54 - 56
CHAPTER 8	REVIEW OF PREVIOUS PROPOSALS	57 – 60
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DEBABRAT Date: 2021.12.30

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PRADEEPT Date: MOHAPATR 2021.12.30

INTRODUCTORY NOTE

BACKGROUND

Pursuant to the Mines and Minerals (Development and Regulation) ACT, 1957 and The Minerals (Auction) Rules 2015, Govt of Odisha issued the notice inviting tender dated 07.07 2021 for commencement and auction process to grant the mining Lease for Dhotta Pahar iron ore Block located in Koira Tahasil of Sundargarh district of Odisha. The e-auction process was conducted in accordance with the tender document and the mineral auction rule, 2015 for said mineral block and M/s Kashvi Power & Steel pvt Ltd was declared as the preferred Bidder under Rule 9(9) (iii) or Rule 10(A) of Auction Rules having quoted a final price offer of 126.55%

Further, M/s Kashvi Power & Steel pvt Ltd has made payment of Re 6,99,89,687 (Rupees Six crore Ninety Nine takhs Eighty Nine thousand Five hundred Eighty seven only) through treasury challen on dated 21.10 2021 against the first installment being twenty percent of the upfront money. Accordingly, the Government of Odisha has issued letter of Intent (copy enclosed as Annexure-III) under Rule 10(2) of Mineral Auction Rules 2015 to M/s Kashvi Power & Steel pvt Ltd for grant of Mining Lease for Dhotta Pahar Block for Iron ore over an area of 60.508Ha near Dengula village, Koira Tahasil of Sundargarh district of Odisha for a period of 50 years.

This letter of intent is valid subject to the provision of the Act and the Rules made there under as amended from time to time and M/s Kashvi Power & Steel pvt Ltd shall be designated as the Successful Bidder and the subsequently granted the mining lease only upon satisfactory completion of all the requirements under the Act and Rules made there under.

(A) M/s Kashvi Power & Steel pvt Ltd shall be considered to be successful bidder upon

- (i) Continuing to be in compliance with all the terms and conditions of eligibility.
- (li) Payment of second installment being twenty percent of the upfront payment.
- (iii) Furnishing an irrevocable and unconditional performance security to the state govt from an acceptable Bank and Payable at Bhubaneswar. Odisha pursuant to the Auction Rule.
- (iv) Satisfying the conditions specified in clause (b) of sub-section (2) of section 5 of the Act with respect to Mining Plan.

(B) Signing of Mine Development and Production Agreement (MDPA)

M/s Kashvi Power & Steel pvt Ltd shall sign the Mine Development and Production Agreement (MDPA) with the Government of Odisha upon obtaining all consents, approvals, permits, NOC and the like as may be required under applicable laws for commencement of Mining operation

(C) Grant of Mining Lease

Subsequent to signing of the MDPA, M/s Kashvi Power & Steel pvt Ltd shall make payment of the third installment being the sixty percent of the upfront value and thereafter Government of Odisha shall grant the said Mining Lease

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DEBABRAT Date: A REHERA 2021.12,30 PRADEEPT MOHAPATR

MOHAPATR 2021,12,30

Date:

Α

Hence, it is worth mentioning here that the successful bidder i.e. M/s Kashvi Power & Steel pvt Ltd is required to obtain following statutory clearances for signing of MDPA and grant of Mining Lease.

Name of the statutory clearances	Authority from which clearances to be obtained	Status of statutory destances
Approvatiof Mining Plan	Indian Bureau of Mines, GOI	: s under processifer approval
i orest Clearance	Min stry of Environment and Ferest, GOI	On the application the advest character has
i	İ	been suomitted on at 27, 12-202
Environment Clearance	Ministry of Environment, Forest &	EC And ical on and TOR will de satismitted
	C imate Change GOI	shortly.
Surface Right	Collector Sundargar*	After execution of the lease surface right
	İ	will be granted
Consent to Establish	State Pollution Cuntrol Board, Odisha	After yelling approved mining plan, EC and
		FC, order from SPCB für Consent to
		Established will be cotained
Consent to Operate	State Pollution Control Board, Odisha	After getting approved reining plan, FC, FC
		and CTE order from SPCB for Consent to
		Operate will be obtained

As part of the statutory clearance, this Mining Plan and Progressive Mine Closure Plan is prepared under Rule 16(1) of MCR, 2016 and Rule 23 of MCDR, 2017 respectively for a period of 5 years from the date of opening of the mine for grant of Mining Lease in favor of M/s Kashvi Power & Steel pvt Ltd UTILIZATION OF IRON ORE

M/s Kashvi Power & Steel pvt Ltd is a part of Kashvi group and one of the growing company in Odisha. Kashvi Power & Steel Private Limited operates as a manufacturer of spongeiron, billet and ingots and exporter of minerals. Onese based Kashvi group was founded by Mr. Debabrata Behera, a first generation entrepreneur. Mr Behera has more than two and half decades of experience in the business of iron one trading and exporting, manufacturing of sponge iron, billet and ingots. Iron one produced from the Dholta Pahar block will mostly be utilized in their sponge iron plant. However, as per the market demand, part of the iron one may be sold to the consumers.

Annexure - I

MINING PLAN/ REVIEW OF MINING PLAN AT GLANCE

		Ma Keeb O
	Name of the lessee	virs_Nashv_Hower onsteet Ltgs://a //s A//
2	IBM Registration no.	IBM/7815/2011
3	Address of lessee	Pot No 1234/P Govingar Prasad
	- :— :— — :-	Bomikhal Bhubaneswar
4	Name of Mine	Dholtapahar Iron Gre Block
_ 5	Mine code	Not Obtained
6	Lease area in nects.	BD <u>508</u>
7.—	Forest area	60 508 Ha.
B 9	Name of Mineral	Iron Ore
	Lease pariod from – to	LOI issued vide no 8725/IV(B) SM- 52/2021/SM Bhubaneswar dated 29.10.2021 50years W E F date of execution of lease deep
10	Plan proposal cenod.	Syear wielf date of execution of lease deed
11	Mineral Reserve(111, 121&122) in tonnes	111-0
		121-0
		122- 23921613
		Total-23921513
12	Mineral	211-0
	Resource(211,221,222,331,332,333&334) in	221-0 — — —
	tonnes	722-0
		330
		332-23921613
		333-0
		324-0
		Tota -23921613
. 13	Total (reserve resource) in tonne	2392:6*3
14 _	Reserve estimation as on	Date-Date of execution of lease deed
15	Explored area in ha	G1 - 0
		G2- 50 508
_		G3-0
		Explored and found Non-mineral zed area
		- 20 00 <u>B</u>
_		Un – explored area -Nii
40	F	Total – 60.508
16	Exploration proposal Year wise No. of Bore Holes	1st year - 21nos
		2nd year – 21 nos
		3rd year = n1
		4th year - nil
		5th year - nil
7	Production processa Rom in tonnes	1st year + 1999999
_	i — — — —	2nd year - 1999999
		3rd year - 2000000
		4th year - 1999999

DEBABRAT Date: 2021.12.30

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PRADEEPT Date: MOHAPATR 2021.12.30

		Sth year - 2000000
18	OB/Waste handing proposal CUM	1st year - 73250 2nd year 282550
		3rd year = 338600
		4th year – 234550
	•	5th year - 479700
19	Present EC permission in tonnes	Since t is a resh loase, the essee will
		obtain EC before Execution of the fcase /
20	Present forestic earance area in ha	Since it is a fresh lease, the lessee will
		obtain FC before Execution of the lease
		deed
21	Plantation Proposal in five years in numbers	1st year - 230
		2nd year - 230
		3rd year - 1126
	_	41h year - 230
		5th year - 230
	·	Total Plantation- 2045
22	Plantation Proposal in five years (na)	1st year - 0.25
		2nd year - 0.25
		3/d year – 1 52
	<u> </u>	4;h year - 0 25
	<u></u>	5th year - 0.25
		Total Area- 2 52
23	Back filling proposal in hectares in five years(years wise)	Not Applicable
24	Check Dams numbers in five years	3nos_
25	Garland drain in meters five years(years wise)	. 1st year - 320
		2nd year – 105
_	<u> </u>	3rd year = 0 <u>0</u>
		4th year <u>- 0.0</u>
75	C-Wi	5th year - 0.0
25	Settling ponds (Numbers)(years wise)	1st year 2
		2ng year 1
		3rd year – D
_		4:* year = 0
		5th year – 0
27	Total Area out to use in mining and allied activity	29,352
	at end of five years in ha	
28_	Bank Guarantee Amount Rs	Not Applicable
29	Valiaity of 8G up to	Not Applicacie

CHAPTER 1 GENERAL INFORMATION

1.1 : Leage Details		•
IBM Registration Number:	6M/7815/2011	
Lcase Code:	Not allotted since Lease dee	ed has not been executed:
Mine Code:	Not Allotted	Chi 31
Name of Lessee:	Kashy Power and Steel Pvt	11
Address of Lessee:		asac, Bomikha, Bhubancawaii கி
Type of Lessee :		asad, Borniki a. Enucaneswae
Name of Mining Lease:	Pvi Limited company Dholta Pariar Iron ore Block	
State:	Daisha	
District:	Sundargarh	Trans
Tehsil/ Taluk/ Mandal:	Kora .	
Village:	Near Dengula village	
Lease Area (Ha):	160 608	
Forest Area (Ha):	60.508	
Name of Minorals:	Irch	
Name of associated minerals:	Nil	
Type :	Auction Block	
Five Year Block (Financial Year)	. ,	he execution to 5" year
Type of working:	, of the lease deed)	
Nature of Use:	Non-captive	
Category of Mine:	Category A —	— — i
.1.1: Initial/subsequent Lease grant		
плинанамизеднени сезав физи	uetans	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Lease deed execution Lease
Grant	From To	execution Léase date registration date
Of issued vide no 8725/IV(B) SM-	50 Years fro	data Legiatranion pate
	ate of Execution — Date of Execu	
	the Lease deed of the Lease o	eec APP-ROVED
1.1.2: Mining Plan Submission Criter	la Details	
rps of document	Mining Plan	
eason/s for modification	Not Applicable	·
eriod for which modification is		
oposed	Not Applicable	1112
Ol Number:	8725/SM/IV(B)SM-52/2021	Order
ate:		शेक्षित जात नियंत्रक
	28 10.2021	Regional Controller of Minus भारतीय साथ स्थारी
2: LAND OWNERSHIP DETAILS - F		Indian Durezo of Mines
No. Village Taluka Area	(Ha) Khasra Nof	Type Type Tell nubenestication of Land
1	Compartment No	
	notest kuata	Reserve Fores: Govt and
.3: EXISTING LEASE -		
Date of Execution		No: Applicable
3.1: Approval of earlier Mining Plan	<u>& its Subsequent Review in Ch</u>	ronological Order -
il. No. Letter no.		riod Type Of Approved
_	Date From	To Document
Not applicable as this in	ase is yet to be executed.	
	sasa la yer to de executed.	
,		4
,		PRADEEPT Date:
,		PRADEEPT Date: MOHAPATR 2021.12.30

1.3.3: Transfer of Lease St. No. Transfer of lease deed Number	e Area Subsequent to Gran		DateMining	od Afea over which come Plan le Propared (1994)
SI. No Transfer of leas	<u>e Area Subsequent to Gran</u>	Vot Applicable		原图 /// [34]
		<u>ıt</u>		1.31.39
		Name of Transferor	Nature of) Granted through auction	olock transferred, other than through auction for captive use
		ot Applicable		<u> </u>
.3.4: Statutory Complia ease deed.	nces: The Preferred bidde	r will obtain alt	the statutory clears	nce before execution of
Applicable				
Letter No				
Date				
Validity				
ROM Mineral in tonne:				
Roll Milleret in Long.	3			
l.3.4.1: Environment Cla of lease deed.	earance – The Preferred b	idder will obtai	n Environment claa	rance before execution
Applicable				
Letter No	_ :			
Date				
Validity				
ROM Mineral in tonn;			_	
	- The Proferred bidder will	i obtain SPCB A	Approvals before ex	ecution of lease deed.
Letter No				
Date				
Validity				
ROM Mineral in tonnes				
ROM Mineral in tonnes		ll obtain Forest	Clearance before e	xecution of lease dead.
ROM Mineral in tonnes	: - The Preferred bidder wi	ll obtain Forest	Clearance before e	xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance		li obtain Forest	Clearance before e	xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance Applicable		ll obtain Forest	Clearance before e	xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance Applicable Letter No		li obtain Forest	Clearance before e	xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance Applicable Letter No Date		ll obtain Forest	Clearance before e	xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance Applicable Letter No Date Validity Area (Ha)	- The Preferred bidder wi	ll obtain Forest	Clearance before e	xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance Applicable Letter No Date Validity Area (Ha)	- The Preferred bidder wi			xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance Applicable Letter No Date Validity Area (Ha) 3.4.4: Land Acquisition Total Area acquired/pur Total Amount Paid (INR	Details -	Not Applic	яbіе	xecution of lease dead.
ROM Mineral in tonnes 3.4.3: Forest Clearance Applicable Letter No Date Validity	Details -	Not Applie	яbіе	xecution of lease dead.

\ BEHERA | 14,40,24 +05 50

10.19.24 v03:50'

A

1.3.5.1: Location of Boundary Pillars - (add additional Row for subsequent pillars)

Pillar No.	Pillar Latitude (dd:mm:ss:ss)	Pillar Longitude (do mai sales)
1	N21°50 11.13955'	E85°10'43,73375°4
2	N21°50 34,088511	E85*10'43 53749' (\$\frac{1}{2}\)
5	N21'50 34 57854'	E85*11'14.28145' \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
4	N21°50 12 910541	E85°01'14,6343'0" /\$ 4\}"
5	N21/56'12 19012'	E85'10'58.24071'.///
ь	N21"50"12 06361"	E85°10'57'8'987'

1.3.6: Owner/Nominated Owner Datails-

	Name	PAN of Nominated Owner	Address of Nominated Owner	Mobil B Numb ar	Émail	Please attach Minutes of Board Resolution in case of Nominated Owner
i	Debabiala Behera	AAZF82915N	Kashvi Power & Stagt (P) Ltd Plot No. 1234/P. Comvile Prasad Bornikhat, Hhubaneswar	09370044 (85	groupkashw@gmæil.com	(Copy of Board resolution and Certificate of Incorporation is enclosed as Annexure-VI & VIII respectively).

1.3.7: Qualified Person Details as per (OAHCEM) MCR, 2016— Copy of Certificate and Experience attached as Annexure-XIV

SI Pra		PAN of QP	Address	Mobile no.	Qualificati on	Experience in years as prescribed under the rule	Email
ı w	Pradeept Monapalva	AUGPM 5786.I	World Consultancy Services, O/o Konark Construction and Engineering Ltd. At Pol-Telengapentha Cuttack , Odisha 75007	E43814971\$	M Sc Geology	-8	pmehapaira_07@yahoo our

DEBABRAT Date:

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PRADEEPT Date: MOHAPATR 2021,12,30 10 19.24 +03'\$0'

CHAPTER 2 GEOLOGY & EXPLORATION

2.1: GEOLOGY

2.1.1: Topography -

Terrain Exhibits a rugged terrain represented by stoop rising hit ranges (Dhoita pahar) with officevening steep garges and narrow valleys

RELIEF

Highest Level (m) from MSL	Lowest Level (m) from MSL	Average Level (m) from MS.
842m	574r+	759m
Drainage Pattern	Order of Stream	Minimum Olstance of Stream from Lease Area (m)
Dendritic	3 rd crider	Sarkunda Nadi, 2km
		Kurahi Nadi – 4.5km

2.1.2: Details of Physiographic features and infrastructures available in and around the lease/ block area.

Oescription	Location if existing Within the lease/block area	Distance from boundary periphery in kms, if existing outside the lease/block area. (within 5.00Kms)	Remark If any
River/Nalfah/Reservoir	Not applicable	2.50	Few ephemeral first order nalas originate at mid contours of the main hill in the intervening valleys that follows the natural gradient feeding to the regional Karo and Sarkanda Nadi draining the area. The Sarkanda Nadi is named as Kurarhi Nadi in the downstream.
Public roads (Tar road, cart road)	Not applicable	Koira- Road -4kms	The area can be approached from Korra by fair-weather road. Koira-Tensa road is 4km, away from the block. The nearest Rly station Barsuan is at a distance of 22 km from Dengula.
Railway track	Not applicable	Not available within 5km	Barsuan Railway station is at a distance of 22km from the block
Human settlements	Not applicable	Not available within 5km	Dengula Village, 6km
Archaeological monuments/ places of worships/ public utilities etc.	Not applicable	Not available within 5km	
Wild (ife sanctuaries/ national parks	Not applicable	Not available within 5km	'
Coastal Regulation Zone (CRZ)	Not applicable	Not available within 5km	
Power transmission lines/telephone lines	Not applicable	Not available within 5km	•••
Firing range	Not applicable	Not available within 5km	
Ordinance factory	Not applicable	Not available within 5km	i
grazing land/ burlat ground or cremation ground	Not applicable	Not available within 5km	
Any other specify			***

	DEBABRAT	Date:
		2021.12.30
_	A BEHERA	-144034-0534

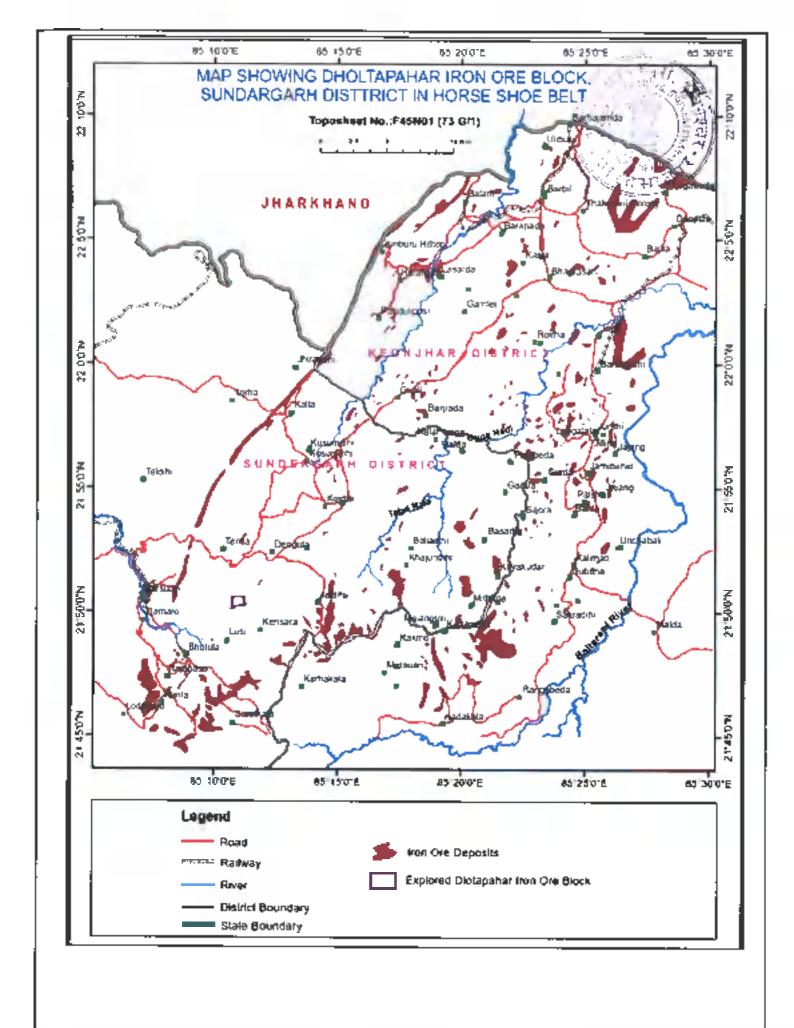
Particulars	Distance from I	case boundary in kms 🔧 🦄
Nearby village	Dengula	7.200
Nearest Railway station	Barsuan-22 Km.	F 47
Nearest Port	Jharsuguda-170km	1 20
Distance of SH/NH from lease area	N 1 520 -13 Km	

2.1.3: Regional Geology -

Regional Geology-

Dholta Pahar Block under discussion forms a part of the Singbhum-Keonjhar-Bonai group of iron ore is located in the western Ifank of the eastern limb of the horse shoe shaped Bohalsynchronium which was recognized by Jones I H. C. in 1934. The pre Cambrian schistose rock in which the whole clari of the deposits are nested and which includes schist, tuffs, phyllife, basic rock, BHQ/BHJ have been classified as Iron Ore Series (IOS). The iron bearing formation of the Bonar range are correlated with similar iron bearing formation e.g. Baitadila iron ore senes in Madhya Pradesh and Bellary Hospet group of iron ore deposits of Karnataka. The regional stratigraphic successions of the pre Cambran rocks have undergone revision by various geologists like J. A. Dunn, S. N. Sarkar, A. K. Sahaetc. The latest revised one is by S. N. Sarkar and A. K. Saha (1977), along with hitherto and widely accepted. Sequence given by Dunn (1941) is as below.

Regional Strategraphic Succession South of copper bell thrust zone in Singhbhum, North Mayurbhan, and North Keanjha
End of Singhbhumprogenic cycle (c. 850 M Y)
Newer Dolerite
Mayurbhanj Cranite
Gabbro-Andrihosite
Ultramafic intrusion
Unconformity
Dhanjori GroupJagannathpur Lavas, DhanjoriŞimilpai Lavas
Unconformity
Chaibasa formation
Unconformity
Singhbhum Grande
Iron ore orageny
Iron ore group
Unconformity_
Older metamorphic gneiss
O M group
Older meta-norphic group
-



2.1.4: Local Geology & Structure -

2.1.4.1 Local Geology

The area under exploration forms a part of the Iron Ore Super Groupfeatured in the SW timb, close to inner edge of the closureof Horse Shoe Sync inotium represented by quartzite, variegated shale, and varieties of iron gres like HLO, SUO, blue dust, limonitic are overfained by laterite, float area concealed under soil and alluvial cover at places. Basing on mutual relationship of the involved lithounits,geo-spatial dispositions and structural setup, the local stratigraphy of the area can be suggested as follows.

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Sc I	20 or tillings
! atente	The state of the s
Shale	上海 美国 医五
Iron Ore Super Group	出海衛 差。 勝鶴
Variegated Shale	N. W. W. E. 18 37
BHJ/BHQ/BHC with iron ore	1 2 mor in more
Base not seen	THE ELL GO
A	The state of the s

2.1.4.2: Structure -

In general the Iron Ore Super Group represented by the Bonar-Keonjhar Belt in Koira basin is disposed in the form of an 'Omega' and referred to as --Horse shoe synctinonium! (Jones, 1934). This belt is 60 km long and 25 km wide extending from south of Malangtoti in Keonjhar district up to Chakradharpur in West Singhbhum district (Jharkhand). The structural fabrics in the above, feebly metamorphosed volcano-sedimentary litho-sequence indicate at least two phases of deformation and folding. The earlier phase is the most prominent and resulted in formation of two synclines. intervened by an anticline trending NNE-SSW with a low north-north easterly plunge. The western limb is slightly everturned to the east and dip westerly (65°-75°) whereas, the eastern limb is a normal one with moderate to low (30°-45°) westerly dip. This phase of folding is affected by a later NW-SE to WNW-ESE trending fold axis resulting in broad warps and formation of structural domes and basins in the area. The western syncline known as Koira syncline, due to steep dip and overturned nature of its limb forms a deeper basin with thick sequence of younger shales in the core region. On the other hand, the eastern synctine known as Barnebar synctine is a shallower basin and exposes younger. litho members within the core region as outliers. The Upper shalle unit within the Koira syncline is more or less. continuous. The following structural elements have been recorded during pourse of exploration.

Bedding:

Bedding is represented by compositional banding in BHQ/BHJ/BHC and shale. The beds strike in NNE-NE to SSW-SW. dipping at 20° - 55° to NW. Variation in strike noticed in, iron ore band of BHQ& BHJ is due to tight folding. The underlying morpho structures depict the structural configuration of the overlying BIF which has been altested from BHs data

Fold:

BHQ/BHJ exhibit symmetrical and asymmetrical mesoscopic light folding which are sympathetic to the regional fold. pattern. Penecontemperaneous folds observed in **BHJ** exhibit plunge at an angle of 45° in S18°W direction. The morphostructure is also validated from the cross sections

Joints:

The rock types of the area are traversed (i) Stoke joint & (ii) Dip joint

J1=N20°E - \$20°W/70°SE (Strike joint)

J2=N70°VV - \$70°E/80°NE (Dip joint)

2.1.4.3: Lithology, Petrographic & Mineralogical Description for Major, Associated & Indicator Minerals

The main rock types such as Laterite, Hemalite, shale, BHJ found in the Dholfa Pahar Iron ore Block of M/s Kashvil Power and Steel Pvt Ltd are of iron ore series of Singhbhum. The disposition of various litho units are explained below:

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Banded Haematite Jasper / Banded Haematite Quartzite (Banded Haematite Chert (BiF))

The BHJ/BHQ/BHC represents siliceous members of the BIF. But only exposures of BHJ are delineated on the juriance in the southern part while BHQ and BHC mark the sub-surface limit of the iron ore barids and are interested in the boreholes located in the eastern part. Megascopically, the BHJ/BHQ comprises alternate acceptance like wavy familiar to 2.5cm thickness) of haematite and dark brown to red jasper/quartzite/chert. Sedimentally Hagures like wavy familiar to 2.5cm thickness) of haematite and dark brown to red jasper/quartzite/chert. Sedimentally Hagures like wavy familiar to 2.5cm thickness) of haematite and dark brown to red jasper/quartzite/chert. Sedimentally Hagures like wavy familiar to 2.5cm thickness) of haematite and dark brown to red jasper/quartzite/chert. Sedimentally Hagures like wavy familiar to 2.5cm thickness) of haematite and dark brown to red jasper/quartzite/chert. Sedimentally Hagures like wavy familiar to 2.5cm thickness. Though Banded Haematite Chert are not found on the surface but occurs as small bands in few borehotes like BH. 11.12 &13. The general strike of BHJ/BHQ variesfrom NE-SW to NW-SE with dip of 25° to 30° due NW and NE. Such swinging of strike may be attributed to the regional folding which are also deciphered in the sub-surface signifying intensities of deformation. The BHQ and BHJ encountered in the bottom of BHs follows the regional fold patterns as deciphered from the bore hole data. BHQ/BHJ/BHC usually provides the basement of iron ore deposits As all the three units are considered as non ore bearing sil ceous BIF, these have been depicted as BHQ in section and plans.

Shale:

Shale of different hues though not exposed but intersected in boreholes varying in thickness from less than half meter to maximum of 58 4m Shale has been intersected at subsurface in the boreholes present in the NE and NW part of the block, which mainly represents the variety region of the area. It is represented by a finely laminated rock withdifferent hues varying frompurple to white and yellow. Banded from Formation is overlain and underlain by shale in few boreholes ferruginous shale with or without lateritisation has been encountered. I monitisation of shale at places has given rise topatchy occurrence of limonite at dept. Theinfluence areas of the boreholes where shale has been encountered in the subsurface, have been considered as non-mineralized zones.

Iron ore:

Detailed surface geological mapping and correlation of the litho-units encountered in the boreholes implies the iron ore in the area occur as stratiform deposits of regular habit being affected by multiphase deformations and cataclasis. The ore bands represented by Hard Laminated Ore (HLO). Soft Laminated Ore (SLO). Blue Dust Lateritic Ore of varied trickness and the associated litho types like variegated shalehave also been pene-contemporaneously distorted with synformal anticlines, and artiformal synclines along with sympathetically sheared and folded underlying BHO units. All the lithotypes have suffered from weathering and erosion rendering accumulation of high grade float are in the residuum.

Soft laminated haematite constitute the major iron one horizons in the area which are mostlymasked by float ore.HLO though not exposed but has been encountered in the borehole cuttings. Few isolated exposures of SLO have been delineated in the central ridge that extends for a length of 414m and width of 130m. Nevertheless, thick bands of SLO were intersected in most of the boreholes at different depths as revealed from the lithologs HLO encountered only in 2 BHs (DIOP-1 & 5) has a gradational contact with SLO. Being dense and compact, it contains more Fe. Blue Dust is powdery form of one encountered at depth in few poreholes it contains lensoidal lumps of iron are. Its colour varies from dark grey to bluish grey. Blue Dust is terminated against BHQ or shale in the boreholes and the one is of very high grade. Later tic one has been encountered at subsurface in some boreholes at shallow levels The general strike of iron ore in this occurrence is NNE-SSW with 20° - 40° dip towards west with local swings.

Iron ore float zone overlying in situ laminated ore occur widely in the scarp & slopes in the SE & SW parts of Dholtapanar and comprises laterite. SLO and BHJ. The thickness of float varies from 0.5 to 2m. Size of the floats varies from boulder to gravelyhigh have been partially stabilized by a ferruginous lateritic soil.

Laterite:

Major parts of the area particularly the higher contours are capped by laterite. Due to sub tropical weathering and afferation of the involved I the units, both ferruginous and aluminous latentes have been developed either on the surface. or at shallow depth levels. The laterile has been developed mostly over the shale unit or low grand iron pres of the large. and depending upon the composition of the shale, those rich in alumina has given rise to alloging the larger than a mose rich in iron graded to ferruginous latente. Even at certain depths, enrichment of iron renders the latents to be considered. as lateritic iron ore. Ferruginous laterite with few patches of atuminous laterite occupies most of the high tands capping. the BIF. A thick latentic profile of 13.2mhas been encountered in the bore hole (BH-4).

Solf Alluvium:

The row lying areas, hala banks etclare filled up with alloy at soil derived from the insitu erosion of the litho units.

2.1.4.4: Mode of Occurrence& Controls of Mineralization -

- (i) Lithological control: Iran ore has a strong Mhological control as deposits are hosted by BIF at higher level and formed by supergene enrichment process.
- (ii) Structural control: Structural features play a vital role for enrichment of iron ore. Thickening of the ore band is more. pronounced in the central region which pinches into both sides & follows the bottom profile of BHJ & BHQ as the case may be The iron ore bodies are conformable to the regional fold & resultant strike.

2.1.4.5: Extent of Weathering/ Alteration—

The weathering has led to the formation or Laterite, which is highly errand in nature, hence irregular/discontinuous pockets of Laterite is a common feature in the iron are deposits.

2.1.4.6: Nature/Form of Mineral -

Massive ore, fnable ore, float ore

2.1.4.7: Extent of Mineralization -

Drilling:

from one in the block occur as bedded strat form deposit of regular habit with intercalations of shale and BIF, representing BHJ/BHQ/BHC. Since it is a stratiform type of regular habit, boreholes plans have been done at 200 m X 100 m grid. spacing to comply the provisions of General Exploration of MEMC Rule-2015, accommodating the DIOP senes holes. dolled in 2006-08. The borehole locations are shown in the geological map of the Block. Dry core drilling was adopted by TO bits and as per onliers site report, virtually there was negligible loss in core recovery during core drilling. The core recovery has been recorded for all ore types are found to be 100% A total of 19 vertical boreholes were drilled by rigil KME-300 series& LTE-575 in the block, out of which 5 BHs were drilled during FIS 2006-08 and 14 BHs were drilled during 2017-18 for cumulative drilling meterage of 982.5 m. These boreholes are drilled at strike intervals of 200m and 100m specing along dip direction. Depth of boreholes varies from 19.5m (8H-12) to 82 00m(8H-9) The Borehole 8H-10, BH-11, BH-13 & BH-14 were shifted to 100m north of N200/ W400,74m north of N400/W400, 22m south of N500 and 50m north of \$100 grid location respectively due to sleep scarp sections and high gradient lines. These BH points were located in the escarpment, which are quite steep and inhospitable for platform and inaccessible. The borehole BH- 5, BH -9, DIOP -4 & DIOP- 5 have been shifted 12m south of N100/E400. 14 m south of N300/E200, 14 m south of N100/E 200 and 10m north of N100/W200 respectively due to vegetation (fall & thick trees) on the grid points. Due to escarpment and steeps'ope at grid location \$200, the bore hole could not be accomplished. So a pit of 2mx 2m x 2.5m had been excavated to ascertain existence of are body which revealed existence of insitu SUO below a 2m thick iron ore float zone. The boreholes were closed either in BHJ/BHQ/BHC or after thick shale horizon where there is least possibility of further continuation of iron are. Based on the findings of the borehole data, but of total area of 0.605 sq km of the block mineralised area comprises 0.405 sq km and non mineralised area 0.2 sq km.

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Results of drilling:

The overburgen comprises of laterite, shale and sollattains maximum thickness of 51.4 m (DIOP 2), though it contains 18.6 m high gracepowdery ore. Basing on the observations of the litholog of bore holes and assay log of the BH 5, 8, 128. 13 non-mineralised zone area has been demarcated in which mineralle ore zone has not been interesting out of the total area of 0.605 sq km, the mineralised area is found to be 40.50ha, while 20.008 ha is non-mineralised.

Mineralisation details

The maximum thickness of one bodies intersected at + 55% Fe cut off is 20.75 m in (8M-3) and minimum thickness is 0.6m in (8H-4) having average iron content of 61.863% Fe. The maximum thickness of low grade one zone (45 < 55% Fe) intersected in the boreholes is 13.6m(DIQP-4) and minimum thickness of 0.7m (DIQP-1) having average iron content of 49.251%. Variegated shale and BHJ are found in the toot wall side, which limits the mineralization where as lateritised shaleoccurs as overburden. The one types includes soft laminated types towards top and grades in to hard, aminated while blue dust is localised in the bottom horizon. The one bodies are often capped by laterite on surface. Though outcrops of soft laminated one, and float one are exposed on the surface but soft laminated one and blue dust constitutes the bulk thickness of the one zone as evidenced from drill cores.

Co-relation of the involved litho units encountered in the BHs indicates that the geometry of the horizons follows the substratum morpho-structure riel the ferro-arenaceous facies of rocks have undergone deformation of different magnitude giving rise to anticlinal synclinonium with development of sub-pariners in which the supergene enrichment of iron ore has taken place in shape of type fold patterns. Maximum enrichment has taken place in the axial zone particularly in the east-central part of the area and derth of supply of sediments accompanied by the accumulated stress given rise to pinching of the ore bodies on either side following the fold geometry.

2.1.4.8: Deposit Type (as per MEMC Rule) -

Iron ore occurs as Bedded deposit of homogenous nature with regular metasedimentary type without significant structural deformations iron are

Strike / Trand of the Ore Body INNE to SSW

Amount of dip of Orebody: 20 to 55

Dip Direction of the Ore Body, NW

Plunge of Mineral Body (degree) (if any): BHJ exhibit plunge at an angle of 45°

Direction of plungs: S18°W.

2.2: Exploration -

2.2.1: Summary of The Previous Exploration (for fresh grant)

Name of the Agency -

Directorate of Geology, Govt of Odisha

2.2.1.1: Geological Mapping -

The area under exploration has been explored by detailed geological mapping, drilling and sampling in line with the MEMC, Rules 2015. Detailed geological mapping on 1 2000 scale was carried out over an area of 0 605 sq km and the lithorunits exposed in the mapped area comprise soft laminated one, BHJ/BHQ, float, laterile and sor. In order to facilitate geological mapping and fixation of boreholes, a base line was laid in N45°V/- S45°E direction across the general strike with the help of theodolite taking 0/0 point on the Borehole No. DIOP-1 of FIS 2006-07 & 2007-06 and off set grid lines were laid at 50 m interval at right langles to the paseline to facilitate large scale geological mapping Contouring of the entire area was carried out at 2m interval with the help of dumpy level & prismatic compass

S1. No	Year	Scale	Area Covered (Hect/km²)
1	2006-07	1.2000	0 605sq.km

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1.2.1.5 Pitting	No
2.1.4: Geochemical Survey	Max (m) Avg (m) Avg (m) Avg (m)
Si No. Type of Sample No of Samples Analysis report Area Covered if Nil	No of Samples No of Samples Analysis report Afea Covered (Galker)
2.1.5 Pitting - o. of pits: Vear	Note Note
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Note – As per Geological Report provided by State Govt Total 366 samples are analysed by Wet-cum-Instrument method in the Departmental Government Laboratory of the Directorate of Mines. Out of which 23 check samples of difficult or various are types (High grade are zones as well as low grade are zones) of different boreholes were analysed in the NABL accredited Laboratories of M's Earth & Environment Laboratory, Bhubaneswar

2.2.1.11: Petrology & Mineralogical Studies - Not carried out

SI. <u>No.</u>	Type of Sample	Drawn	Sample Analyzed	Report
2.1.12: Benefici	ation Studies - Not carried	out		
\$I. No.	Type of Beneficiation	n Num	ber of Samples	Altach

2.2.1.13: Bulk Density Study as per M (EMC) Rules, 2016 and SOP of CGPB – Method adopted for calculating bulk density of ore and waste

5 core samples of various ore types were subjected to builk dansity determination in the Laboratories of M/s Superintendence Company of India (Private) Ltd. an ISO 9001: 2000 certified laboratories by following the procedure for bulk density determination of by Bureau of Indian Standards —ISI 5842 (1986) Viz: The weight of the empty container wasdetermined. The length, width and height of the container were measured and the volume was calculated. The sample was discharged carefully within the container in such a manner as to minimize the breakage. In filling the container, due care was taken to avoid obvious segregation of lumps and fines. The container was shaked for light packing of the materials with due care. Again the filled in container was reweighed and the bulk density was calculated according to the following formula—

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PRADEEPT Date:

Bulk density =M1-M0 /V

M1= Mass of the container and the sample

MO= Mass of the empty container

			if the container		
The but	lk density test of the r	anura, air dhed mater	ial was carried out t	NICE TO CIVECK THE	accuracy level.
LLÆ MO	Nature of	gipta: all aller		Bulk De	nsity Established
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2.1.14: Are	a Covered under Ex	ploration -			
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_ <u>-</u>	yed as Non-minural 26 a to be explored*	d T 200			60 SCB
Are	a to be explored*	60 5	08 C8	0	60 SCB 60 508
Area will b .2.2: Sumn	a to be explored* Total se explored under Grany of the Previous	60 5 60 5 1 level during plan p Exploration (Before	08 C8		60 SCB
Area will b .2.2: Summ lame of Ag .2.2.1: Geo	a to be explored* Total se explored under Grany of the Previous pency:	60 5 60 5 1 level during plan p Exploration (Before	08 C8	- Nat Applicable s	60 SCB 60 508
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PRADEEPT Date: MOHAPATR 2021.12.30

		SPACING	
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rea Covered Under Trenching	-Not Applicable		
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SI. S≘ i ran de S≘ i Tempete i Tranco Tra	Ih of _ the Unit _ Average nch _ Exposed _ Grade (%)	Running From Vocers Longillote (m)	From To calify do Langitude
2.2.7: EXPLORATORY Drilling	- Not Applicable		
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2.2.2.9: SAMPLING -Not Applica	ble		
2.2.2.10: Chemical Analysis – N	ot Applicable		
2.2.2.11: Petrology & Mineralog		d our	
c.x.x. i i . randiogy & mineralog			mple Petrographic Study
SI. No. Type of Sample	Number of Sample Drawn	 Number of Sa Analyzec 	
		·	
2.2.2.12: Beneficiation Tast -No	t Carned out		
SI. No.	Type of Beneficiat	ion	Number of Samples
			Mulliper of garribles
			Nullider of dampies
2.2.2,13; Bulk Density – Not Ap	plicable		
	Number of	Minerals	Bulk Density Established
2.2.2,13; Bulk Density - Not Ap Sl. No. Rack Types			
SI. No. Rack Types	Number of Samples	Minerals	Bulk Density Established (t/m²)
SI. No. Rock Types 2.2.2.14: Area Covered under E	Number of Samples	Minerals	Bulk Density Established (t/m²)
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha)	Number of Samples	Minerals	Bulk Density Established (t/m²)
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G 2 (Ha)	Number of Samples	Minerals	Bulk Density Established (t/m²)
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha)	Number of Samples	Minerals	Bulk Density Established (t/m²)
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G 2 (Ha) G3 (Ha) G4 (Ha)	Number of Samples	Minerals	Bulk Density Established (t/m²)
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G 2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to ' % inst	Number of Samples xploration – Not Applic	Minerals	Bulk Density Established (t/m²)
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G 2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to ' % inc G1 from G2, G3 & G-	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In Area	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G1
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % ind G1 from G2, G3 & G- G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In Area	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G4
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % ind G1 from G2, G3 & G-	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In Area	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to 5 5 interest of 64 G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to 5 5 interest of 64 G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % interest of G1 from G2. G3 & G-G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % interest of G1 from G2. G3 & G-G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % interest of G1 from G2. G3 & G-G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % ind G1 from G2, G3 & G- G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3 Area in G4
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % interest of G1 from G2. G3 & G-G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3 Area in G4
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to 5 5 interest of 64 G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3 Area in G4
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % integration G2. G3 & G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to % integration G2. G3 & G4	Number of Samples xploration – Not Applic rease in Remaining Real Area Area % In An G2	Minerals sable (Since it is a Fre	Remaining Remaining Area in G2 Area in G4
SI. No. Rock Types 2.2.2.14: Area Covered under E G1 (Ha) G2 (Ha) G3 (Ha) G4 (Ha) G1+G2+G3+G4 (Ha) Year Area convertee to 5 5 interest of 64 G4	Number of Samples xploration - Not Applic rease in Remaining Re	Minerals sable (Since it is a Fre	Bulk Density Established (t/m²) sh Grant) Remaining Remaining Remaining Area in G2 Area in G3 Area in G4

2.2.3: ORE BODY GEOMETRY & GRADE -

				٠. ا			Chemical p	aaramejer:	3	
St. No.	Name of the ore band	General Strike / Trend	Dip Qf Mineral Body	Average Strike Longth (m)	Wildth	Average Depth (m)	Name of the radical	Min Grade {%}	Max Grade	Avg. Grade (%)
							. <u>Fe</u> 5.0 ₇	48 57 0.22	67 (7) 42 52	58 3 48
1	fron Ore	NE-SW	20°- 40°NW	BDD	750	50	Al ₂ O ₃	0.G1 0.12	38 8 20 82	0.133
								0,002 0.002	7 £ 15	0/004 0.002

2.2.4: Reserve / Resource Estimation Method -

2.2.4.1: Methodology •

Resource / Reserve Estimation Method Section area method

Methodology -

The cross sectional area method of resource estimation was adopted for the ore zone intersected in the boreholes. The correlation of bore holes with respect to each cross section line is shown in Plates (IV A to D). All total 4 section lines were prepared at 200 m interval incorporating the BMs. Lithological correlation of boreholes have been done with some assumptions vizi (a) Continuation of surface geology following the profile pattern with the initial intersected ore zone of borehole (b) Matching of high grade ore zones - i.e. +55%. Fe content top and bottom surface of two successive boreholes. (c) If the low grade zone – i.e 45% to <55% Fe iron ore band or shale is continuous, similar method as above. has been followed, (d) If ore zone is not intersected in the adjacent barehale (22 m) apart, the 50% influence we 50m dip. influence of the ore body or as the case may be have been taken from the borehole, in which the orebody intersected (e) Correlation has been made for intercalated ore zones or shale or BHC band if any, which are intersected in the boreholes. The influence length has been calculated as per disposition of the section lines. The resource has been estimated up to 672 m RL from the surface for section lines AA' to DD' The geometry of the ore zones of different grades and ore types. has been reconstructed by correlation of the available borehole intersection data. In case of small intercalations of shale within a continuous high grade ore zone, at has been included in the ore zone taking Fe value as zero for shale white calculating the weighted average. The area along individual cross sections is calculated graphically considering nature of ore bodies by using Auto-CAD software. The tonnage has been calculated by considering the bulk density determined for various types of ore, maximum being 3-32 for Blue dust, 3-02for HLO, 2-95 for SLO (+55% Fe) - 2-56 for SLO (+45% Fe). and 2.45 for lateritic ore.

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51. No.	Cross section/Block	ArrayBlock area	Influence	Recovery (%)	Volume (m1)	Bulk Density 	Resource Quantity (I)	Evel of Paploration	Type of	of the radical	Grade (%)	Method used for resource estimation
	100004	CE13	200	8	(4)(6)	3.55	1904036	G	DRU:		55 to 55 % Fe	Score a Available
	loge less	25.65	007	33	062220	\$ 7	10tc/95	75	. 453.51	.!	45555	Section Area Metrod
	44(810)		700		g	201	ت	3	-CREST	ء.	455.00	Sectional Area May not
	0.00,00	î.	007	:	נ	11.	د	3	77.0	- 1	48.64	Secondal Appa Medical
	AACIATERING CREE	o.	700		e e	745	£3	G	FORIST	ė	47 to 55% oc	Second Area Volted
	46141047 CRU		202			\$	->		LDH:SI	. i		Sectional Area Ve;For
	0.00	1667	2000	ę	UNDOKO	2.56	758154	[3]	FORFST	٤	4510.55% 16	Sectional Area Michael
		481	Z#E	33	1331780	295.	3427276		134651	<u>-</u>	51 %554 475 kg	Sections Area Moting
	63",410,	168	202	92	147780	3.62	245296	3	POREST	2	185% lc	Sectional Area Methad
	128796	3077	23.5	2	2592HC	3.	175,7210	ð.	IONESI	<u> </u>	155% le	Sections And Metros
	(IRO DE DE CAL)	٠	587	:	a	20.5	ō	3	POREST	£	45 to 55% to	Specional Area Method
	UB1/134/ODC	35	2002	्र	7200	2.95	21343	0	10/11/01	2		Gret and Any falthou
	- Contract	4667	202	22	342000	3.	215354	 G	10401	•	05 (0.05% re	Sections Area Method
	louri va	10983	202	2	3992261	7.05	1884037	O	TS IFO3	.2	35% liv	Sections Assertabled
	lonif pa	7	202	7	6453	332	15549	73	280.		a) \$600+	Section: Area Methad
	(00,80)	5787	565	2	245000	5.52	206833	5	:03FST		45.55.46	Section And Method
	1503118118003	57	7007	£.	10520	3.5	50724	G	5380)	2	0.400000	Sections Area Merigan
	CC1-LOAT 03E;	7,	700	ч ч	D9621	36.7	20000	. 75	1,0315	.9		Sections Area Manual
	00000	4969	300	S .	017978	2.55	2241174	G	10387	,a	75 to \$5% to	Section Assamption
	iosion	nart.	2007	8	738:00	67	111760	3	-03EV		95.850-	Sections Area Minist
	101/PH 3;		200	8	0	8	J	<u> </u>	103851	ė.	4.3835	Section 4 Acra Method
	Metac	1762	8	3	467430	=	156:16.3	3	10,401	'n	4,400-	sediens Wealfallood
	DD JAHA NCOST;	153	200	8	27600	245	07.790	3	STAD	9.	45 to 52 % Hp.	Sectional Area Method
	(III)	330	700	40	:8400	7.65	54280	(3)	TORBIT	70		Sectional Area Meterol
	TOTAL											

Note: As per genogical report the recovery percentage considered for ... SLO. HLO and Latentic one is 90%
... BD is 80%
... Float one is 40%

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DEBABRAT Date:
A BEHERA MADO A 405'30'

2.2.4.3: Mineral Resource Estimate for Conversion to Mineral Reserve -

As per the bare hale results, there will be no blockage of iron are during life of the mine.

2.2.4.4: Threshold value & Cut off Parameters -

	Threshold	45% Fe
7	Gut off grade	 55%F≘

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2.2.4.5: Mining Factors or Assumptions -

SINo	Satient features	Descriptor
1:	Method of Mining	/ utly Mochanized (FM)
2:	Proposed production	2.0 Million Tones
3)	Type of ore	Laterilio for mig. Hard Laminated ore. Soft Laminated ore, Blue dust
4:	Proposed Means of raising	To ing. Blasting excavation screening, crushing, loading etc.
5;	Proposed Sanch height and width	Preign From Wight – More than the neight
6;	Proposed Stripping ratio (l/m3) (Ore: OR)	1028
7;	Over all slope	2B 375
8;	Transportation ord to the stacking yard	Through dumper
6)	Nature of overburden/interprden	Generally consists of Bell, shale, and takening
10	Dr ling	10mm dia or Ihole
**1	Blasling	Deep hole blasting using sturry/Emulsion, explosives & NONEL8 Electric Detonator

2.2.4.6: Metallurgical Factors or Assumptions

The metallurgical characterization of any ore is critical in terms of describing or identifying any factors that may have a negative impact on product quality and recovery. Frequently Metallurgical recoveries are based on historical data or test work based on limited sample sites that do not always reflect the natural variability in most one bodies. If the metallurgical inputs are not properly considered, inaccurate recoveries may be used resulting in either lower or higher plant recoveries, thus potentially impacting on the accuracy of the reporting of Mineral Reserves.

Metallurgical considerations include the metallurgical process or method, equipment plant capacity, efficiencies, and personnel requirements. In this regard the nature, scope, and representativeness of metallurgical test work will be undertaken and the recovery factors will be used.

2.2.4.7: Cost & Revenue Factors

The financial viability of a project is a critical factor – in order for a Mineral Reserve to be declared, the project must be economically feasible, proving the deposit is mineable. The commodity prices have been declared and are relevant to the product quality and volume to be sold/ usable and related to the market

Iron are produced from the black will be used in the own plant of preferred bidder. However, as per the market demand, considering the feasibility of the project the preferred bidder will sell material to different buyers.

During use a detail market condition will be taken into consideration. Detail capital and operating costs, revenue inputs, royalties, and cut-off grades will be taken into consideration. The method used to estimate the commodity price profiles used for cut-off grade calculation, economic analysis and project valuation including applicable taxes, inflation indices, and exchange rates will be taken into consideration. The product price assumptions are reasonable based on the average sale price of iron one. A detail cost on transportation treatment, penalties, marketing, and other costs will be taken into consideration during the evaluation of project. A detailed cash flow analysis includes a summary of taxes, royalties, and other government levies. However, all the data/ figures of cash-flow statement are tentative. It may vary depend upon the market condition.

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PRADEEPT Date:

2.2.4.8: Market Assessment

There will not be any marketing issue of iron ore. Since the preferred bidder has its own plant. However, the consideration of the supply, demand, and stock situation for iron ore and its consumption trends, and factors likely to affect supply and demand will be studied during the operation

2.2.4.9: Other Modifying Factors -

Legal factor

There is no legal issues exist that could negatively affect the project. The preferred bidder will obtain all the statutory clearances before operating the mines.

Environmental factor

The preferred bidger will take necessary Environment clearances from SEIAA, Odisha. Duning the process of obtaing Environment Clearance, Environment Impact Assessment study will be conducted and accordingly. Environment Management Plan will be prepared.

Social Factor

Local environmental away and processes will be taken into account. Information that materially increases or decreases the risk that the necessary legal rights will be obtained and will be publicly disclosed. It is recognized that the legal environment may change over time and that such changes may have an impact on the Mineral Reserve estimate to obstacles anse or are eliminated, the Mineral Reserve estimates must be adjusted accordingly.

Government Factor

E1/Economist

All the necessary permission will be obtained from the competent authorities to run the mine.

2.2.4.10: Classification

Justification of Mineral Resource (332)

Detailed geologica sludy and general
explination has been made Rough
asimates of tonnage and grades are.
known General idea about forest frion-
forest and and use status is known
Economic Viab ty categories however
cannol in general be defined from the
Genlogical Study because of the lack of
detal inecessary for an Economic Viability
evaluation. The resource quantities
estimated may indicate that the deposit is
of introduc economic interest, i.e. in the
range of economic to potentially economic
(E-3)

F3 (Pre-feasibility study) The area under investigation is well with a
the existing mining be li The geographical
conditions are favourable infrastructures
ke public utilibes, reads & railways and
manpower exists in the area. Geological
slucy under $G/2$ slage has been carried
out and can be sufficient for deciding
whether a Pre-feasibility Study and
Defailed Exploration are warranted. Frence
the Heasibility axis can be F-3.

G2 (General exploration)	code
The present work is under	332
General Exponsion which	
PYOIVES initia Cermeation of	
the pre deposit Large scale	
mapping (1:2000 scale) and	
contour surveying are carries	
out at 2 m interval. Core	
sampling at 1 milinterval have	
been donc Borcholds are	
widely spaced (200mX100m)	
longage, grade and mineral	
content estimated with	
reasonable love of	
confidence. Hence the present.	
exploration in the geological	
axis may be put under G-2	
category	
Based or the inputs of the	!
General Exploration, and	ı
assessment thereof, the	i
resource thus estimated can	
be categorized as indicated	
resource (GZ slage) of UNFO	
as per Minerals (Evidence and	
Mineral Content) Rules, 2015	
which follows UNFC and	
CRISCO norms.	

JUSTIFICATION OF MINEABLE RESERVE (122)

E1 (Economic)

Exploration

Intal 19 bareholes within the black have been taken consideration far est mation resources under G2 calegories. The depth of the bore note where the mineralization has ppen considered as the depth of indicated ore zone (GZ) infowover, the thickness of the are addy is variable from spotion to section. The geological map has peer prepared on a scale of 1/2000 Based on the borehole data, and suiface geology, indicated resource has been est maled

Mining report/mining plan. Pre-feasibility study conducted. The details of proposed mining method and bonch parameter, deployment equipment manbower. and infrastructure have been envisaged in this mining plan.

3. Specific end - use grades of reserves (above economic cut - off grado).

Threshold value of iron are has been kept at 45%Fo where as the out off grade has been kept at 55%Fe based on the GR provided by the state Gov. The end use product of the mines lie 5-18 mm, 10-30mm and fines (spreeding and crushing materials; containing 155% Fe will be utilized in the own plant of lessee.

Specific knowlądge forestinon-forest and other land ⊔s¢ data.

Reserve Forcst: - 60 508 Ha. 5. Cost Benefit Analysis

Cost analysis has been carried out in the pre-feasibility study report Therefore, the reserve of numbers has seer kept under E1 sategory

F2 (Pre-leasibility study)

Geological information has been detaled Part of the clock, area has been explored in detail through bore hule and by exposures in the existing quarry. The evel of exploration in this pain is high and hance la is under G2 calegory.

Pre-Leasibility study has been undertaken based on the following lactors

1. Mirting:

The details of processed mining method and banch parameter deployment of equipment, managewor, and infrastructure have been envisaged in this mining plan,

2. Processing:

Mineral processing with be done by doplying crushing and spiece plant to oblain the product ile, 5-18 mm, 10-30mm (and fines

Costing:

Cost analysis has been counsel out in the "Content; Rules, 2015 which follows he feasibility study record.

4 PStatutory Clearances

vide number. 8725/SM 28.10 2021 has been granted by Govt of Od shall The preferred blader will oblain recessary statulinry disprance to start the hining operation

Since the resource has peen established nder G2 category, a pre-feasibility study has been conducted the mineable reserve has been established uniter FD calogory.

GZ |General baptoration)

122

The present with in Under General Exploration which havoves mital delineation of the by அன்னர் புரைவு contour surveying are cathied but at 2 m interval. Core sampling at 1 m. interval have been done. Botenbles are widely space: (200mX100m) longuijo, grade and mineral content estimated with reasonable, evol of configence. herce the present exploration in the geological axis may be but under G-2 category Based, on the inputs of the General ans. Explaration. assessment thereof the resource thus estimated can be entegorized as indicated. resource (GZ slade) of UNFC as por Minerals (Evidence and Mineral

UNFC and CRISCO norms

Refer Annexure No - XV for Pre- Feasibility report

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2.2.4.11: Calculation of blocked resources - NII

2.2.4.12: Calculation of Reserves -

		Sartlenni Arra (Blank	Acces (Del)		1					in amen		
\$1. No.	Crass section/Block	area (sq mitt)	Ē	Recovery(%)	(m)	[stm]	Quentley (t)	UNFC	Tared of the second	radkal	Grade (%)	Mathed used for resource shimples
	10.00	4537	282	8	34156	2,	1200067	122	1 :0%5	4.	41,858.18	Scot on Asset Method
	(1000)	2004	200	9	461330	2.95	1366790	777	-08157		455%	Soci cral Assor Markage
	MAGTUI	٥	193		J	3.07	٥	007	! ! (5.0)		4.00	Section And Market
	AA (H.7)	53	3			3.32		122	FREST	. ÷	3,4464	Secretal & collisional
	1,000,000,000,000	EJ	ĕ		:3	2.02		3	FREST		41,800,000	Sed on And Mared
	A41,9,041,0611	E:	, , ,	:	: 5	2.95	j .,	3	FCR54	<u>.</u>		Sectional Area Method
	30.32.00	1967	8	36	200000	35.	PSTROV	: ::::::::::::::::::::::::::::::::::::	PORSST	2	45 to 55% 74	perhanal Area Melinad
	(215)	7396	200	98	1331280	28.	3927276	77.	151404	٤	1883 h	Secheratorea Mercod
	101+) 88	158	00,	5	144.000	207	167959	3	FOREST	٤.	1888 IC	Sechenal ones Malford
	i industria	8000	H	ច្ច	52.92 Rd	12.	175.210	ŝ	15)HC)		1202.00	, Sectional Previous Petrop
	SHI AT FREE CIDENT	D	87			7.45		221	TOBEST	-	45 00 50 % -0	Sectional Array Matrix
	33',6104" 033	8	8	ន	1007	8	2320	122	15 JUC:	,ē		Sectional Area Verbud
	08.50	4557	8	3	SAUUSO	97.7	22,0050	122	103F5T	.÷	45 himshile	Settional Grea Method
	logel so	10037	8	8	0857783	5.	583<097	771	.04b0: `		135 35 4	Sett prolifero Method
_	(61-15)	47	8	05	836	10	55549	344	-03.57	ŗ	1888.4	Sectional Section Method
	ige1.77	61%	1992	alc	243050	110	806803	3	- 545	į.	-558.40	Sections Area Method
_	(C)(O)(I) (I) (O)(C)	7)	505	93	20220	245	80274	64	1080	! . = .	41,402,0132	Sections April Method
	CC (0.0A) Only	275	8	낚	72560	28.7	712737	227	Tenastr	<u>.</u>	ļ 	Sections And Method
	,00,100	4948	707	ĸ	B76240	44.5	27,242,74	223	FOREST	-	45.855.855	sections Area Method
		ORST	8	36	208100	767	08/76/	192	LOREST.	2	438.6	Sections Area Migrad
	10101	r	ě			337	.,	777	FDREST	٠	1255	Pethona Area Mehoda
	(08) 00	292.	8		487360	2	1551635	777	10,000	4	+55% lc	Section at Area Motivada
	CBDD STORING	150	200	9.0	37,700	3.45	35156	:23	13000	•	54 8400 to Ca	Sectional Area Motivial
	1500 1800 (500	733	2007		18400	.95	3-4-2-HB	777	100651	±	45.5% lo	Sectional area Verbod
	TOTAL				•		1000000					

SLO, HLO and Lateribe are is 90% Note:- As per geological report the recovery percentage considered for --

BD is 80%

Float ore is 40%

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PHADEEPT Date: MOHAPATR 2021,12.30

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2.2.4.13				1/2	311	1/3
Mineral				Iron Ore	30000	7.10
Reserves/ Resources estimated as				1.11.2021	65	- A -
UNIT of estimation				Torines	4 4 4 3 5	S
				T CHAIRS .	1	5 5
	Code		Quantity	2	3. 6477 C S	rada /
Classi*ication	Cone		, 1-		S Commence	A Non-
		Forest	Non-Forest;	Total	Forest	Forest
A. Minnral Reserve		23921614	No.	23921614	*45%Fc	
1 Proved Minera Reserve (A)	11 Ugo situr	1 11 11 11 11 11 11 11 11 11 11 11 11 1	- Nil	N.	<u> </u>	Nil.
		I	Nil .	— <u>N</u> I	N 1	Nil
	"Hitilidat"	<u></u>	Ni.	N.I	<u> </u>	l "ii
2. Probatic Mineral Reserve (A)		Nil	No.	%; —	- \ \ \ \ \ \ \ \ \ \ \ \ \ \	- : "
3. Probable Minoral Reserve (A)		16449530		. <u>N.I.</u> .	•55%Fe	. '' ''
	, 12 <u>2 (in siti</u> n)	7182332	, —	— <u>NI</u>	45-55%Fe	Nil
	122 (Float)	290752	. ` .	N I	NII	- Nil
B. Remaining Resources		No.	- Nii	— NII	Nil	Ni:
1. Fessibility Mineral Resource (B)	211((1) 5((4)	<u> </u>	h .	Nil	Nil.	Ni
	' -	<u> </u>	h .	Nii	NII	N
	211(lica:)	:	NI -		Ni ¹	- N-
2. Prefeasibility Muteral Resource (A)	22: -		41	\\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		, N
3. Professibility Mineral Resource (B)	222	N .	Nil .	Mil.	Ni Ni	N N
4. Measured Mineral Resource (B)	33.	, N:	<u> No</u>	Nil	N N	_ ` <u>N</u>
5. Indicated Minoral Resource (B) 6. Interned Mineral Resource (B)		- NI _[$-\frac{NII}{NII}$	_ <u>Nil</u>	. N	- N -
7. Reconnalasance Mineral Resource (B)	3.34	· ——	. Nil i	Ni —	— »	N N
Folal Mineral Resources (A+B)					•	
" Additional lables may be added for a	stagisted mine	23921514		23921614	145%Fe	
2.2.5: Future Exploration Proposal -	asonielen wille	1613				
2.2.5.1: Geological Mapping -						
SI. No. Year		Scale		Area	Covered	ha)
1 1 <u>si year</u>	_	1 2000			60 509	
2 2 ^{al} year		1.2000			60.509	
2.2.5.2: Ground Geophysical Survey	 Not propose 	d				
Si. No. Type of Survey S	pacing (m)	Total line (km	i) Area Co	overed (ha)	Latitude	Longitude
	,	1 11111		,,		Longitudi
2.2.5.3: Pitting - Not proposed						
Number of pits						
	-					
	Length of Pit (i	- 1	Pit De	pth of Pit	Latitude	Longitude
No. typs		_	· · · · · · ·	(m)		
			:			
2.2.5.3: TRENCHING - Not Propos	sed					
Number of Trenches -						
2.2.5.4.1 -SPACING						
		SPACING				
Min (m)	·	Max (m)			Avg (m)	
		11122 (117			2481111	

101001 0000

2.2.5.4.2 Area Covered Under Trenching - Not Applicable

Co-ordinates -

l				Latitud	de		Lor	ngitude	V. Serie
	SI. No.	Tiendi IO	Langth gi Tranch jm j	Width of Trendly [m]	Depth of Tranch ITI	Litho Unit Average Exposed Grane (%)	Running Meters (m)	Fram Longitude	To Latitieda Lungitudo
						:		1	r ! — —

2.2.5.5: EXPLORATORY Drilling -

2.2.5.5.1:Core/Non-care Drilling -

ą.			in Farosi ar	P.1			In Non-F	Omat Area		_ =	₽	
9.	Year	No. of horeligies	rotal mir	Type of barehole	Orgi interval	No of anionesica	Total	Type of borehole	Gript Interval	Total	Total Mb	Attachmen t
		246 NO 1	900 chipping and un	Care .	100m	: I			- —	1. 1	100 or upto end or	t
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31	ing Mineral (sold)	core	1CCm			<u> </u>	_ : ! !	J. Hill Vinder Strate (1)
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28 J	300 or coto and of the Minervolvinos	Co/e	100-	-	:	i	İ	gat to more as
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2.2.5.6: Exploratory Mining - Not Proposed

	SI. No.	year	Pit ID	Length in mtrs	Width in mtrs	Depth in mtrs		Volume (m²)
-							•	

2.2.5.7: SAMPLING -

). 	Туре of Sample	Number of Samples proposed	Area Covered (na)	Latilude	Longitude
_			1.0u	312549 7441	2416469 CC\$3
-			. 00	317823 8722	. 24164C1 BB98I3
			1.00	317334 3684	2416529,1200
			1 00	3*2408 4965	2415462,0006
		Meter-wise sample to be carried out in ore zone. Tentatively	1 33	312452 5826	¹ 2415394.9193
-1			1 00	312556 7528	2416327 7617
		12600nos or samples will be	1 22	312630,8809	2416260 6422
	Core/RC drill sample	analysed if ore zone persists. In	1.00	312193 1208	2416522 1114
		the non-maneralised zone	1.90	312489 6333	2416253 6336
_		composite samples will be of 1-	1.00	312563 7915	2416186 5141
		10m will be considered for	1.00	012637 8896	2416119 3947
		analysis of samples	1.00	312051 7241	2416514 9378
			. CC	312125 8522	2416447 8185
			1.00	312199 9803	2416380 6993
			1.GC	312274 1085	2416313 5796
			1.00	312346 2356	2416246 4601
			00	312422 3647	2416179.3403
-			1 00	312495.4928	2416112.2212
9 5			1 00	312570 6938	2416045.0359
-			1,00	311910.4765	24 16507,9293
			1_00	312429.3734	2415038.0931
			1,00	312504.3901	741597 <u>0 16</u> 91
			1 00	312577,6297	2415903 6542
			1 00	J11843 3570	2415433 A011
			1 00	311917,4852	2416366 5B17
-			100	311991 6365	2416299 5394
-			1 00	312065 7414	2416232 44ZB

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		6	A CONTRACTOR
25	1 CC	312138 8698	2419185.8448
29_		312213,8572	24: 6058,2939
30		3 2288 1258	7418081 0644
31	<u> </u>	312362.2036	1 2415969 9650
32	1 00	312436.382%	724 6558 8455
22	1.00	317795 2335	-247 189 9451
34	1 00	311918 8023	2416183 0432
35	1 33	311930 8892	2416083 2662
36	1 30	312080 0134	2415950 2289
3/]	1.00	312154 5655	2415883 7102
39	1 00	311863 5475	2416009 1057
39	100	311938 2197	7415942 6170
40	1.00	312012 8918	2415878 C983
41	1 CC	311796 4259	2415935 GG51
42	1.CC	311871.0980	2415855 4864

2.2.6.8: Petrology & Mineralogical Studies – A detail petrological and mineralogical study will be conducted once the mining operation is started

SI. No.	Type of Sample	Number of Sample proposed
	1	remined of Demple proposed
	Late: t s iron ore	2
2	Irard Laminated ore	·— ·— ·
		
	Solf Lam nated ore	2
<u> </u>	Biue dust	-
_ ,	— <u>orās ar</u> asi	<u> </u>

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CHAPTER 3:

.1: Mineralo Si No. Va .2: Complet	Ore/Mineral						18 44
2: Complet	as of the ROM.			<u>Iren</u> ar	e	W. 300	10,-1
: 2: Complet	a) or the nom	ore/ Miner	ral: Not carried o	ut.		100	area Sala
	Hematile	`e !	Approx. Mineral	% Gangu	o Mineral/s	Name Aleger	s. Gapgice Mineral
		livsis of th	ne ROM Ore/Mine	ral Refer Pane N	n.12 of 6	enlogical Por	and thenwere
SIN		.,	Radicais	di itoroi i aga ii	D-12 Q1 Q		John (Allexure -)
1	_	F	e at +55 Cutoff			W: <u>%</u> -51.863%	
			Silica			2 892%	
3	A 4:		Alumina			3 133%	
.3: Crushing <u>.3.1: Priman</u>							
St. No.	Type of Cr	usher	Make	Capacity of C	rusher	Feed Size	Product Siz
			<u> </u>	(tph)_			(mm)
1	Jaw Crushe	r,C120 .	Metso/Sandvix	350		0-800	0.80
2	Jaw Crus	her	Metso/Sandvik	250		9-500	0-80
.3.2: Second	lary Crushing:						
SI. Na.	Type of		Make	Capacity of Cr	usher	Feed Size (mm)	Product Size (mm)
1	: Cone	+ Cr	Metso/Sandvik	350		0.80	5-18 C-5mm
2	Cone	: Cr	Metso/Sandvik	250		6-80	5 18 0-5mm
.3.3: Tertian	Crushing; NIL						
61 N-	Tuna at C			Capacity of Cru	sher	Feed Size	Product Size
.4.1: Dry Gr			Make	(tph)	0	(mm)	(mm)
A: Grinding	Section: NIL	Stages			Mill	(mm) luct Size harge(mm)	(mm) Type of screen
A: Grinding A:1: Dry Gr S.N	Section: NIL inding:		Makeofthe Fe	ed Flow Feed Rate Size (tph)	Mill	luct Size	Type of
A: Grinding A:1: Dry Gr S:N	Section: NIL inding: TypeofMill Aperture Size (Stages	Makeofthe Fe mill	ed Flow Feed Rate Size (tph)	Mill Disc	luct Size harge(mm) Classifier/S	Type of
A: Grinding A.1: Dry Gr S.N able continue	Section: NIL inding: TypeofMill TypeofMill Aperture Size (mm), I	Stages	Makeofthe Fe mill	ed Flow Feed Rate Size (tph) (mm)	Mill Disc	luct Size harge(mm) Classifier/S	Type of screen
A: Grinding A:1: Dry Gr S:N	Section: NIL inding: Typeofffill Aperture Size (mm), I	Stages of Screen/C Lapplicable	Makeofthe Fe mill Classifier	ed Flow Feed Rate Size (tph) (mm)	Mill Disc	luct Size harge(mm) Classifien/S	Type of screen
A: Grinding A.1: Dry Gr S.N able continue S.N Make A.2: Wet Gr N.N Type o	Section: NIL inding: Typeofffill Aperture Size (mm), I	Stages of Screen/c	Makeofthe Fe mill Classifier Is Class the Feed Flow	ed Flow Feed Rate Size (tph) (mm) sifier/Screen unde	Mill Disc rsize	luct Size harge(mm) Classifien/S	Type of screen craenoversize ph)

	ory Process Screening		ication:					
5.N	Type of acreen/ classifiers	Stages	Make	Capacity (Aperture Size of Screen/Classifier (mm), if any	r - Feed Size	Product Size (man)	Codmy draint
1	Dry screen	Two	Sanvik /Metso	250	30.10	0-300	0-10, 5-18,	+55 to +55 % Fe
2	Dry screen	-	/Horizon	200	30.10	0-300	10-30, 30+ ' 0-10, 5-18, 10-30, 30+	+55 to +65 % Fe
	Dry screen	_		1#C	30 IU	0.300	0-10, 5-18, 10-30, 30+	+55 to +65 % Fe
.5.2	Other Oper	stions: Not	Applicable				1212,00	
SN	Type of equipment reperation	Stages if applicable	Маке	Capacity (tph)	Feed Size Pr (Nim)	roduct Size (mm)	Product-Mid (tp#), if available	Product-Tail (tph)
.5.3:	Product Qu	ality:						
	Products	Wt%	In to	nnes	Size(range)mm		CompleteChemica	Analusis
	Reject		+	000	(0-10)mm	+-	45 55% F	
	Type of Scrubbers twashers continued.	Stages, if applicable		Capacity(tph) FeedSize(Fresh Water f	Requirement		ductquality(ii applicable) water(l/h)
\$.N	Screening a Type of screening of screening and screening a	en Stages. s applicat	if Mak	e Capacity (lph)	Aperture Si Classifier (m	ize Of Screen m),if applicat	il Feed Sizo ole (mm)	Product Size (mm)
.N	beuntinoo Product Iqqa N)	quality	Water	Requiremen (I/h)	t Fresh Wa	ler Requiren (I/h)	ent Recircula Water (IA	
6.3:	Gravity Sep		t Applicate			(,,,,,	Tractor que	•)
.N T	ype of separ (jig,table, sp	ators Stag	:	ake Capac	ily(tph) Feed	(Size(mm)	Product (Conc) (tph)	Product- Mid(tph),if available
able .N	continued . Product-1 (tph)	reil wat	er Requir (Vh)	ement	Fresh Wate	r Requirem (l/h)	Recir	culated r (Vh)
6.4: I.	Magnetic Se Type of me separat (magnetic in	ignetic or s	ot Applica	Make	Capacily I (tph)		roduci- Produ lag(lph)	ict-Mid (tph),if available
ble o	ommoca							

T# 10 74 AC1301

					11.	
St. Product non-Mag(No.	tph) Water Requirement (I/h)	Fresh Wate	r Require (l/h)	ement I	Recirculated	water up)
3.6.5: Flotation: Not App	licable				150	25/
Type off lotation S. equipment N		e Capacity (tph)	Feed Size (mm)	Produc Float (†)		t noπ-Float
able continued						
S.N Water Require	ment(Vh) FreshV	VaterRequirem	ent(l/h)	Recirci	latedwater((/h)
.6.6: Other Operations:	Not Applicable					
3.N Type of equipment foperation	Stages, if Make Ca applicable	pacity(tph) Fee (m)		Product- Conc(tpi	1) (1	duct-Mid ph},if ailable
able continued.						
S.N Product-Tail (tph)	WaterRequirement (l/h)		Requirer I/h)	nent R	ecirculațedw	rater(l/h)
.6.7: Product Quality (w		ntonnes	Size/rai	nge)mni	Completech	emical.
Concentrate			DIEG(I'd	.841	VOMIPIOLOCI	
Sub-grade Rejects						
	lity (Dry cum Wet Proces	salng) Not Applic	able			
Products	WI %	In tonnes	Size (rang	ge) mm	Complete anal)	
Concentrate						
Sub-grade Rejects				· I		
-	tailing/ rejects:-Not Apple	icable .				
	ethod for tailing or relect (4		ant with de	etan:		
	ling pand, taxis affect of s	ach tai ings, proc	ess adopte	o; be		
c) Any other data (if avail						
9: Overall water require	iment of mining and min	eral processing				
ndicate quantity, source : themical analysis of water	of supply, disposal of water	er and extent of re	cyc ing ar	31	200 cum/day ; Water Balance Attached as A	Chart
.10: Flow sheets and ch	àrts				Auacheo as A	Inexple - Y
Vater at balance chart of r Attach flow sheet of benef Any other data (if applicat	mineral processing plant(s ficiatio <u>n of plant(s)</u> fic)) (each stage of p	rocess)	· -	Attach as Anne Not Applicable Not Applicable	
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REHERA MARIA	-133				MOHAPATR	2021.12.30

MOHAPATR 2021.12.30

Chapter 4: MINING OPERATIONS

4.1: MINING METHOD (Opencast)

4.1.1: Existing Method of Mining- Not Applicable since it is a fresh lease

Specify in the space below

Not Applicable

4.1.2: Proposed Method of Mining- Mechanized/Manual

Specify in the space below:

Deployement of HEMM with deep hole drilling & blasting

During the plan period, it has been Proposed to produce 2.0 MTPA iron oe per annum. The mine will be developed by opencast mining method with mechanized means deploying machinery like wagon drill machine, rock breaker, hydraulic / diesel operated shovel, dumper/tipper etc.

Justification of site selection for Mining:

As per borehole result from BH-1, BH= 3, BH-14, DIOP -1, 2, 3, 4 & 5, there exist sufficient reserve of iron are to obtain the production @ 2.0 MTPA during plan period. Further considering the topography and accessibility the proposed area is suitable for immediate development within the block

Strategy for Development :

It has been planned develop the area in a such a way by which both high grade and low grade iron ore production can be obtained for suitable blending purpose to make the material usable. The height and width of the proposed benches has been kept 10 and 15 meter respectively.

Haul Road:

The layout of roads for haulage of ore/ waste and access to different installation in the mine will be developed complying with the statutory regulations stipulated in the Metalliferrous Mines Regulations, 1961. Overburden and Mineral reject will be transported to the respective site of dumping and stacking located in the lease area. Fifteen meter wide haul road will be developed in the lease area as per need at a gradient up to 1:16.

Site Services:

As far as day to day mine operation is concerned, the infrastructure such as site office, weigh bridge, rest shed. First-aid centre, blasting shed security house, magazine, guard house etc will be established. before mining operation in the lease area.

Machineries to be deployed.

The mine will be operated in a three shift basis. Process of excavation and loading of overburden/waste. will be done by deploying hydraulic excavators and dumpers. Excavators of 0.9 - 2 m³ capacities will be deployed for excavation & loading of ROM ore and dumpers of 25t capacity shall be deployed for transportation of ore and OB. Hard iron ore will be loosened through drilling & blesting. For the purpose, OTH drill of 115mm dia, compressor of 450cfm etc will be used during ensuing scheme period to achieve the targeted production. For maintenance of OB dumps dozers will be deployed. Loading & unloading of sorted & sized are is loaded by mechanized method.

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Date.

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Transportation

Ore will be transported from quarry site to screen and crushing site for processing by use of 25 ton dumpers and waste materials will be dispatched from quarry to dumping site by using same capacity, dumpers. From the stock yard saleable material will be despatch by using dumper of different capacities.

Reasons for proposed changes - Not Applicable

4.2: Operational Parameters -

4.2.1: Inventory of Existing Pils & Dumps-

4.2.1.1: PITS

S. No. Pit ID Pit Status Area Covered by Pit (Ha) Pit Oimension (m x m x m)

4.2.1.2: DUMPS & STACK

4.2.1.2.1: DUMP DETAILS

Not Applicable since it is a fresh lease

4.2.1.2.2: STACK DETAILS

Not Applicable since it is a fresh lease

4.2.1.3: DETAILS OF STABILIZED DUMPS .-

Not Applicable since it is a fresh lease

4.2.2: Opencast Mining

4.2.2.1: Berich Parameters

	! " -	Per Harches - User Bucker (n)	the Sonction - Ower Burgers		Hersoner,	Reiches in Beiches in Mineral (m)	Sending	Skorali Sispe of Pil (segree)	Benches	Number of Banches in Dear Burder	-11	Was Dash 9 Withhigh (m)	Wester	Mer Signe Angle of Irbin Roads Included	Pitari-riti se Deve Operani Si Produci ron Pitari	
	-9	bm	Mario Indona albu	25-37	_ ''	13-1	78-3r ²	37%	41		2	25		1.16	1993599 (Piale no. 1914);	/Pere mo- Wilding
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94.0	1.3	ļ <u>"</u>			.5	Išn.	2B-32 ⁰	1/2	N1		į	40	Jum .	1 16	2000000 (Plate no- V(Fi)	IP also no. V(Sy)
į	ʻan ∤		<u> </u>	-	ıc	15/7	e9 37°	7729	Mái			_ a3		1 16	1999090 (Ptate 10) (MHII)	(Praid no Wil)
i.	Ыħ	 	 	. <u>.</u>	ıu	Itn	23,37°	3/	Na			50			2000000 (Flam co (Va))	:Pe.a :ro- v:50

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flar(x)very	Me.5 888 848 848 848	%55I		MAIN 27% MN 27%	1		\$ 25 P. S. S. S. S. S. S. S. S. S. S. S. S. S.	800.		Main. cess MR	 Z		N 2 8 8	Ē		i
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Waste Chantry (I)	92300	22	146500	83	64335	00124	98286		677200		Ē	469100	- Parace	ź	M41400	0040974
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Top Soli visure (Length & Vádin a treight) (m.)	7	Ž	; ;	. 	7		ż	 z	- !	ž	. <u>.</u>		. F	l _ Ē		-
Mick Denady of Michael (802) (Ionna ⁻¹)	10 (1998) 198 5.0 (1998) 198 6.0 (1998) 198 1.0 (1998) 198 5.006 (1998) 198	Franciscoper 2.15	i	FLOORING SIZE SICH-COMP, CON- DI-ANNING SIZE LID CHARMAN 200 SICH-CHARMAN 200			10.00 SAMP 10.0 subject 10.0 su	Heal (cabble) 2.95		FIG. 147, NAV. 202. SIG. 147, NAV. 202. ED. 157, NAV. 203. LG. 145, NAV. 203. SIG. 145, NAV. 203. SIG. 145, NAV. 203.	90 to 19-900 to 199 to		H. O. (1985/40) = 1,100 B.O. (1985/40) = 2,40 B.O. (2884/40) = 1,10 I.O. (2684/40) = 2,00 O. O. A. (1985) = 2,00	Contraction and	· ·	
Buk Density of Osmburger (BD1) Purple ¹)			į	8	~		2	14		^	"	 	~	13		
Direction	O. S. W. S. Market B. Mark			Mot Mit	Pil N		No ve Depth	p.e/A		Description			5.6 VVV & Cepth ward			-01AL
Bengi	835-8:3	25	. 	0.9 €.6	G :	T i	CEH-087	330		773 BG0	:		340 SH	:		•
<u>e</u>	Proceed Userry (Install	Prepage Querry (1000)	•	basoccifi (Llent) (mato	Distraction Conf.	-!	Descriptions of the control of the c	Proposed Courty (Fluid)		Proposed Duenty (media)	Proposition Charles (Proposition)		Prepasee Duany Lifsh.,	Probased Guary (Hoet)		
Year	1		j		•		*			4			<u>'</u> a	-· !	i	
in 2				F4			·	'		_		_	_ ,		į	

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DEBABRAT COST. 12.30 A RELIEDA COST. 12.30

Tentalive Calculation Summany

	PRODUCTION	MINERAL		
	MAIN	REJECT	ROM	WASTE
YFAR	(in Tonne)	(in Tonne)	(in Tonne)	(in Tonne)
151	1525464	474535	1999595	146500
ZND	1448139	551860	1599995	565,00
3RD	. 539315	460685	2000000	627200
4ТН	1479551	520447	999999	469100
STH	1623056	370944	2000000	20%.76
GRAND TOTAL	7621525	2378471	9666666	2749300

Copy of the recovery test report in finsitu and Float Ore zone and bulk density report attached as Junaxure - IV

Total ROM Quantity (t)	9655656	9666666
Total ROM Volume (m³)	3464495	3464495
Total Waste Quantity (t)	2789330	2799300
Total Waste Volume (m²)	0496561	1399650
Total Topsoil Volume (m³)	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Ē.
Pit ID	Ouary-	Total
S.No.	-	

Note. 40% of waste will be unlized for road maintenance both inside and outside the lease. Necessery permission will be obtained from competent authority for क्षेत्राच खान निवंत्रक Regional Consoller of Mines भारतीय खान जुशि Indian Bureau of Mines भुजनेश्वर/Bhubaneswar taking the waste outside the lease.

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Oate

DEBABRAT

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eport eport ent Study Repo	Mak Va voiB		plan po (Ref Ar Resour propos VVII be plan pe VVII pe plan pe Not Ap Not Ap Not Ap Ouring penduo	conducted a strod priexure- V) rice assessmined conducted a stroc conducted a stroc producted a stroc conducted a strock	however is entirecoveran period Ifter the during story Study	ving the or G1 leve rist dy ring the ucy will
eport		Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No	VVII be plan po (Ref Ar Resour propos VVII be plan pe olan pe	conducted a strod price assessmited accorducted a stroc conducted a stroc proposed plan period fited. Rain water I Biod versity	however is entirecoveran period Ifter the during story Study	or G1 leve 'study ring the 'ing the
eport -		Yes/No Yes/No Yes/No Yes/No Yes/No	plan po (Ref Ar Resour propos VVII be plan pe VVII pe plan pe Not Ap Not Ap Not Ap Ouring penduo	eriod	however is entirecoveran period Ifter the during story Study	or G1 leve 'study ring the 'ing the
	DIT:	Yes/No Yes/No Yes/No Yes/No Yes/No	plan po (Ref Ar Resour propos VVII be plan pe VVII pe plan pe Not Ap Not Ap Not Ap Ouring penduo	eriod	however is entirecoveran period Ifter the during story Study	or G1 leve 'study ring the 'ing the
		Yes/No Yes/No Yes/No Yes/No Yes/No	(Ref A Resour propos VVII be plan pe VVII be plan pe Not Ap Not Ap Not Ap Ouring pendue	nniexure- V) rice assessmit ed curing pla conducted a prioc conducted a prioc pricable plicable plan period / itec. Rain water i Biod versity	ent recoversinger the during the first file during the during state of the during state of the first file of the f	r study ring the ring the
	DIT	Yes/No Yes/No Yes/No Yes/No	VVII be plan pe loan p	conducted a croc conducted a croc propole plan period / tec. Rain water I Biod versity	ffer the duiter the duiter the duiter for the duite	ring the
	or	Yes/No Yes/No Yes/No Yes/No	plan pe Will be blan pe Not Ap Not Ap Not Pro Ouring bonduc	criod conducted a gridd proable planable plan period fi ted. Rain water t	fter the du fter the du c lowing st Harvesting Study	ring the
	рг. — . — —	Yes/No Yes/No Yes/No	Not Ap Not Ap Not Pro Ouning conduct	er od proaple plicable pposed_ plan period / tec. Rain water i Biod versity	c lowing st Harvesting Study	ucy will
ent Study Repo	or	Yes/No Yes/No	Not Ap Not Ap Not Pro Duning conduct	proable plicable pposed_ plan period / tec. Rain water i Biod versity	Harvesting Study	-
		Yes/No Yes/No	Not Ap Not Pro Outing pandue	plicable pposed_ plan period / ited. Rain water l Blod versity	Harvesting Study	-
		Yes/No	Not are During pandue	pposed plan period / tec. Rain water i Biod versity	Harvesting Study	-
	_		Outing sanduc	plan period fi tec. Rain water t Biod versity	Harvesting Study	-
	_	Yes/No	- - - -	Blod versity	Study	
	_	Y-96/No	- - - -			
	1	F86/No	: 'Ref As	Spa decond		
			. PL 01 15 P			
		Yes/No	Resour	idexure (V) : 66 assessme 26 during pla	ent balk dei	ns ty study
				D P D	po.104.	
usinfify (t) — Quan	OM Qu ntity (LI S: Nt II	ROM Dantity Dant (1) 25275	Mineral	Ore to OB Ratii RoM Quantity Waste Quantity 1:0 073	/ 'Grade /I: —	s Range (%
		48139	551860 +	1:0.283		: Ic +55 % Fe
	1 —	39315	460684	1:0.339		la +65 % Fe
469133 7 1999	0000 14	79551	520447	1.0.235		20 +65 % Fo
24 1400 200 0	ეეეე 15	29056	370944			20 165 % 16
799300 9999	9997 76	21236	2357096	1:0.280		 (a) 165 % Fe
plicable						
ilon Area Heg cude (π/) ol Dun	gnt Voltne r mp (m²)	Butto F	Dump Recordantly Sale.	Propose f Waste able Guardd eral (t) (A-S	Range	
			,			
1	10	2.42	3rd	4"	54	Total
	1999999	1999999	· —	1950900		5959997
:		_				7621236
Jantity (t)		0	0	· . · — —	0 0	J 236
dump	D	Q	Ğ.— —	- ·	2	
<u> </u>	1525176	1448130	1530344	1470551		TED4030
	1998999	1999999	2000000			7621236 9999997
	D 4-					
	ьа д е 38	01.75		PRAI	DEEPT	Date:
	799300 ggg plicable I on Area He cade (\tau') Dail (c) Jantity (t) during	799300 999997 76 plicable Avg	799300 999997 7621235 plicable Avg	799300 99997 7621236 2357096 ; plicable Avg He grit Volume Dump Hamiling Guarity Min Jul (A)	799300 999997 7621236 2357096 1:0.280 plicable Average Average Proposed Recovery Proposed Recovery Waste Cuartify	Total Dump Cantity C

4.4: Machine Calculation 4.4.1: Machina Requirement Summary Number of Average Working Days in One Year (A) 300 Number of Shifts per Day (B) Material Handling Required per Day (t) ((D)=Largest of (Q1 Q5)/(A)) 986**6**mt Material to be Handled per Shift (i) ((E)=(D)/(B)) 4833mt Handling Required per Hour (t) ((F)=(E)/8 hours) 372mt Effective Shift Time 6 Hrs 30 min. 4.4.2: Shovel / Excavator Requirement Effective Shift Time: 6 Hrs 30 min.

												-
SI No Type	Bucket Capacily (ოზ)(A)	Bucket Fill Factor (B)	Swell Factor (C)	Tonnage Factor (t /m²) (U)	Machine Utilization Factor (%)	Efficiency (%) (□)	PH	Total Hours (H) = Number of working days x Number of shifts/day x Effective shift hours	Yeary handling by one Excavator (t) (t)=(G x H)	Maximum handling of the material by this machine during the clock period (f, (J))	Number of excevator machines required (K) = (J / I)	Standby excevator (L)
1 Excevator	2	9.0	97	2.4	ac .	8C	50 a63	378C	466202.1	794°400	5.282 (say 6)	<u>†</u> 2

4.4.3: Dumper Requirement

F	flective Shift	Time:	,l		Hrs		'		mins					
Şi N o	Fourse Number Fot working days (VV) Number of	Capab- ry of Dumpe rs (t) (B)	Speed of the dump er (KMP HF(t)	Lead Distance (KM)	Time laken to cover cistance ip minujest ii) = minj x 80	Queuin 9 Losdin g Time at Shovel (min) (w)	Queun g Unicadi ng Time during unicadi ng (min) (v)	Total Time 10 comple te one 00plyil c=(h+	No af Treps (hn= (807 m)	Total transport afon per hour ni B Kivot	Yearly handwy by one dumper (iv) = A x TPH	by Ilva	lumber of dumpers vil be (xi) ={ x (xx)	Siand
1	2780	75	10	32	19.2	10	6] 35 2 i	17	47.5	164476	2941400	17.68 (58y 18)	6

4.4.4: Drill Machine Requirement

۱		Effective	Snift Time		61	hrs					30 m				
l	S 45	Type of Dist	Depth of Hotel unduring Suc- grade Ording (m)	Spacing (M)	Buiden (m)	Bulk Densily of Waster (or 2)	Burk Cancity of Mineral (Sm²)	Yeld pe: Holo (II)	Yield per Meter (tim)	Annua I Target Kngwg (II	Outing Aequirem eni per Day (m)	Onfing Recurieme or par 5hé IImy	taia ol Julieto per Hours Julieto	Required Number of Or Is Impor	Sran a by Dul
	1	Pries male OTH	_ "	3 25	2.5	22	31i	2a1 31 2	21 93	17400	288	133	l	2	-

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4.4.5: Machine Deployment Details 4.4.5.1: Excavator & Loading Equipment St.No. Type

SI.No.	Турс	Make	Capacity	No of Equilyments
	Exceptor	Hitashi	20	THE PARTY
H	- <u></u>	Valvo	23	3-1
2	Excayto <u>r for plant fe</u> eding	komastu	0.9	5.4
1		SDLG	3 <u>.0</u>	2
		Liugung		3
3	aader	Cat	4.5	2+1
4	<u></u>	Sandvik (D1550)	10mm Dia	2+1
5	<u>Cumper</u>	volvc	25MT	15+â
- 6	Water tanker	Volve	20000 Litre	T - 2
7	Mobile Crushing unit	T I SANDVIK/METSO	250 TPH 150TFH	(Stand by:
	Fix Crushing unit	SANDVIK/METSO	350TPH	1000 2041
8	Mocre Screen plant	SANDV K/VE*SO/ 11 Forzon SANDV K/MFTSO/ Horzon	260TPH 2001PH 150TPH	1
9	Dozer	Cal	264 HP	2
10	Grader	Kamatsu 705	260 UP	1 - 1
11	Hock Breaker	-ilachi	25Mr	· ·
12	Ambulance	1 — -		T - 1
[Staff bus	Force		1 . —- —
-'4	Camper	Manipora		:
. 2	Bolero	Manindra		_ 4 —

4.4.5.2: Dozers Details

S.No.	Туре	Make	Capacity (m ³)	No. of Equipments
	Dozer	CAT	260HP	2
4.4.5.3: Orilling Details				

S.No.	Туре	Make	Capacity (t)	Diameter of Hola (mm)
		Sandy k		
	DTH	(01550)		119
4 E Dinastina D.				

4.5 Blasting Requirement:

4.5.1 Blasting & Explosive Requirement in Waste/Development

5 M	Drill Patter Spacing (Holes (M	n / Burden y of Holes) Imi		Yield per Moles in Waste [m³]	Frequency of Blasting in a Week	Maximum Number of Holes Blasted in a Round	Charge per Hole (kg)	Charge por Round [kg]	Explosive Requirement Per Month in Cevelopment (kg)	Powder Factor In Development / Waste (kg/t)	⊒ep(h of hole
•	3.25	2.5	2	40	2.5	70	: 22.5	1575	3150	4.94	5

4.5.2 Blasting & Explosive Requirement in Mineral / Ore

Type of Explosive	Type of Explosives used / to be Used
Class 2	Slurry and emulsion (25mm and 83mm DiaCatridge explosive)
Class 6 (Div-III)	Electric Defonator, Delay Detonator Relay and NONEL
Class 6 (Div-II)	Detonating Fuse

5.N.	CUMVannum	Total ROM proposed to be handled in CUM day	Spacing of Holes (m)	Burden of Hotes (m)	Numb er of Rows	Yield per Holes in ROM Zone (m²)	Frequenc y of Blasting in a Week	Maximum Number of Moles Blagged in a Round	No of Holes Required to be Glassed per Round	Charge per Hole (kg)
<u> </u>	415771	1386	3.25	25	3	B1	2	70	52	50

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								6	3		
T I. I.		,						0.7	N.	12.	1
S.N.	continued							14	21	172	1
). P4.	Charge per Round (kg)	Explosive Requirement Per Month for ROM Zone Blasting (*g)	Ore (kg/t)	Por Shoot Poulde	ing Shoo	oting R	Use of lockbro aker	Capacit y	Second Blastin Regulter	ig: A H	inte
1	3500	28000	4B	· — ::		. ' -	1	25VI 1			
		r Deploymen	it						-		-
1.6.1:	Manager	ial									
ir. No	Particula	ars		mber of sons in fil1	Number Persons Shift 2	in Per	mber o rsons in ift 3		in!	Total No Persons day). P
		Mines Mana	ger +					_2		2	_
:	Min.ng F	ng neor				;		<u> </u>		1	-
	2"º Class	Mines Mana	ger 1		1 -	—	_	+;	-	3	
	Geolog s	t		_	· —	— <u></u>		+2		2 —	_
	Surveyor					— ·		7 2			_
		sa Engineer	1		1 —		. –	+ 1 —	i		
		Erig neer/El	lectrical 1.1	_							
	, superviso	or .	! '		1	774				3	
6.2:	Supervis	ory		Numbero							
lo	Foreman Vining Ma	Person 2	— ·	Personin 22 44		сг n Sh —— -	T 4	rson in neral S <u>init</u>		al Number son per Da	-
b):	SKIIII W	orkers / Ope	Number								
Sr N		articulars o led — -	Peisons Shift 1		mber (rsans in Sh	h Perso Shift	ons in	Number Persons General St	of n h fi	Tota No. Persons day	c c
1	Op	orkers / perators	50	50						100	
.No		led Workers	N. A. Land								
_	in Shi	er of Perso ft 1	ons Number Persons 2	of in Shift	Number Persons in	Sh f. 3	Number (n Genors	of Persons II Shift	Total II per da	no of Pers V	son
	į 10 [—]		10 -				10		30		
			•								
	Unskilled										
No	in Shift 5		Number of in Shift 2	² 0180F5 -	Number of in <u>Shift 3</u> 0	- - -		n of Perso e <u>ral Sh</u> ift		rsons per c	lay
0.0	Others Sp	ecifu						N			
	Particula	Number o		umber 86555 n.		.mper (50 <u>ns in</u> 5		Number Persons General Sh	of n ift		-
	<u>:</u>	Persons i	1 <u>-F</u> (52	_
	security	2'	· + 21		. ,10						
	security Guality	2'	1 1 1 1		.		_			, 10	
N _	security Guality W.B	5 4	21 - 5 - 4		 4					10	
N 	security Guality W.B. No of Pen	5 4 sons Engage	21 5 4						_		
N 	security Guality WiB No of Person	5 4 sons Engage	21 5 4 ed per Day	s in N.	umber of Pe Shift 3		Number of Genera		Tota- I	12 No ol Pers	ירם
N 	security Guality WiB No of Person	5 4 sons Engage	21 5 4 ed per Day	s in N.	umber of Pe					12 No ol Pers	ons
8.7: lumb	security Guality WiB No of Person	5 4 Sons Engage	21 5 4 ed per Day	s in N.	umber of Pe		n Genera		per da	12 No ol Pers	ere:
8.7: lumb i Sh	security Guality WiB No of Person	5 4 sons Engage Sons Number Shift 2	21 5 4 ed per Day	s in V.	umber of Pe	2	n Genera	Sr ft	per da	12 No Cl Pers	5075

101001 0500

No of Shifts per Day ((A) = Machine Requirement Summary (B)):

Average Daily Employment per Shift ((B) - (fotal Number of Person per Day) / (A))

Material to be Handled por Shift ((C) = Machine Requirement Summary (E);



4.6.8: Supervision

SI No.	Particulars	Qualification	Requirement / Proposed	In Position / Existing Strength	(-i Shortage / [+) Excess	Remarks
1	Mining Foreman	Foreman Competency Certificate	5	·	NII	
3	Mining Mate	Mate / Blasier Competency Certricale	 		NIL	

4.7: Waste Management

4.7.1: Existing Dump

SI. No.	Dump Id	Type of Dump	Area (ha)	Height (m)	Total Dump Quantily (m²)	Existing Dump Location
i				NIL		

4.7.2: New Dump

St. No.	Year	Durnp (d	Type of Dump	Proposed Area (ha)	Height (m)	Total Dump Quantity (m²)	New Dump Location	
1	14		Waste		0.512 3.5	3.5	43950	2416412M-2416492N 311933H-312309E
2	2**			1.23	4	169530	2416349N-2416533N 311872E-312049E	
3	3′°	Waste Dump-1		1.25	4	203160	2416342N-2416534N 311868E-312075E	
4	4' ⁿ			1.20	9	140730	2015342N-2416534N 311866C 312075E	
5	6' ⁿ			0.912	10	282420	7415342N-2416534N - 311966E-312075E	
TOTAL				'	:	839790	OTTIONE STEATSE	

Note: 40% of generated waste will be utilized for road maintenance.

4.7.3: Existing Stack Nil

SI. No.	Stack ID	Type of Stack	Area (ha)	Height (m)	Total Stack Quantity (t)	Existing Stack Location
1 .	_		N/	ı		

7.4: New Stack

S). No.	Year	Stack ID	Type of Stack	Proposed Area (ha)	Max. Height (m)	Total Stack Quantity (t)	New Stack Location
1	151	Stack-1	Ore stack	5.5	3	1650QC	2416059N-2416269N 312041E-312371E
¹_	l L	Stack-1	Ore slack	3.94	3	118200	2416070N-2415349N 312041E-312347E
2	2 NATE -	Stack-2	Ore stack	160	3	48000	2415926N-2416063N 311916E-312120E
3		Slack-3	Ore slack	1.39	3	41700	2415920N-2416082N 312127E-312302E
۷		Stack-4	Ove stack	2 32	3	69600	2416000N-2416217N 312215E-312440 E
1		Stack-1	Ore stack	3.06	3	91800	241600N 2416349N 312 418-312317E
2_		Stack-2	Ore stack	1 50	3	48000	2415926N-2416063M 311816E-312120€
3	3'"	Stack-3	Ore stack	1 25	3	38400	2415920N-2416066N 312138E-312289E
4		Slack-4	Ore stack	1 35	3	40500	2416017N-2416208N 312252E-312400E
5		Stack-&	Ore Stack	167	3 7	50100	2416207N-2416385N 31244E-312544E

-				
DE	RΔ	RR	ΔТ	Date

							and the same of th
1		Stack-1	Ore stank	2.19	3	55700	2416081N-2416331N 312041.E-312314E
	4"	Stack-2	Ore stable	1.60	3	40000	2415926N-2416063N - 311916E-312120E
2		Stack-3	Ore stack	4 17	3	125100	24%928N-2418223N 332130F-312400E
3		Stack 4	Ore stack	0.664	3	19920	24161629-241631 8 9 3124806-3125836
1		Stack-1	Ore stack	1 92	3	57500	2416089N-2415325N 512014F 312292E
	5"	Stack-2	Ore stack	1 60	3	: 48000	7415926N-2416063N 311916E-312120L
2		Slack-3	Ore stack	6.7	3	12360U	2419960N 2416400N 317104E-312500E
3		Slack-4	One stack	C 004		19920	2416162N- 2419315N 3124805- 312583F

4.8: Mineral Waste Handling To Utilize As Minor Mineral:- Not Applicable

SI. No.	Yéar	Dump ld	Type of Dump	Proposed Area (ha)	Quantity Handled (t)	Quantity Recovered (t)	Name Of Mirror Mineral	Alternative Waste Utilization (m²)

4.8: Use of Minerals

5.N	Propose d Use OI Mineral	Name Of Minera	Rolevany Use Of Mineral	Physical Specific	ations		Chemical Specification	ns
1	Captive use in Own	Iran	IJRI and	Constituer DRI Conte Size 15 - 200 min	Sinter grai (C-10)mm 5.0% Mgs	Constituents Fe 5:C + ALC CaD + MgO	DRI Grade 50% Fe to 63.5% Fe 2% Max 2% Mex	Santer grade 60 0 to 80 50% 5% Max
	industry B: Oirect Selling	Ore :	SINT€R	- 100 Mesrj	25% Max	P S	0 07% Mgs 0 03% May	0.07% Max 0.07% Max

DEBABRAT Date:

Chapter 5: SUSTAINABLE MINING

5.1: Sustainable Mining and SOF Implementations in Compliance of Rule 35 of MCDR 2017

Compliance of Vishakha Committee Guidelines for prevention of women harassment at weekplace: Not implemented

5.2.1: YEAR 1 Details of Work Proposed durin the Affected Segment	Cumulative Work done / Measures Taken		
5.2.1.1: Area to be Developed for	or Recreation		
Area (Ha)		Aréa (Ha)	С
5.2.1.2; Area for Water Storage	& Recharge Facility	_	
Area (Ha)	0	Area (Ha)	C
5.2.1.3; Efforts Made towards He	ousing for Local Communities		
Number of Houses	. <u>0</u>	Number of Houses	0
5.2.1.4; Efforts Made towards Pr	roviding Transport to Local Commun	ilties	
Number of Beneficiaries		Number of Benefic aries	3
5.2.1.5: Efforts Made towards Pr	roviding Healthcare to Local Commu	milies	
Number of Beneficiaries	a	Number of Beneficianes	0
5.2.1.6: Efforts Made towards Pr	roviding Hygiene & Sanitation to Loc	al Communities	
Number of Beneficianes	0	Number of Beneficiaries	0
5.2.1.7: Efforts Made towards Si	kili Development Programs to Local i	Communities	
Number of Beneficiaries	C	Number of Benefician	es 0
5.2.1.8: Efforts Made to Promote	Education & Knowledge Based Init		· —
Number of Beneficiaries	D	Number of Benefician	ies 0
5 5 4 5 C			

	_				-
5.2,1.9: Communication Facilities P	rovided to	Local Communities			
Number of Beneficiaries	O			Number of Beneficiaries	0
5.2.1.10: Any Other Steps Taken for	r Improving	the Spcio-Economic	Standa	ard of Local Communities	
Number of Beneficianes	0			Number of Beneficiaries	0
5.2.1.11: Adoption of ODF					<u> </u>
Number of Tollets Built inside the	4	Number of Toilets	0	Number of Seneficiaries	50 -
Lease Area:		Built outside the			"
5.2.1,12: Awareness Program amon	ng Mine Wo	Lease Area rkers for Swatchate			
Number of Swatchata Programmes	0			Number of Swatchata	0
DIDOGGA A					

	Lease Area		
5.2.1.12: Awareness Program among	Mine Workers for Swatchate		
Number of Swatchata Programmes proposed.	0	Number of Swatchata Programmes Held	0

5.2.	<u>1.13:</u>	Efforts	for	green	Ė	nerg:	Ł

5.2: CSR (NITIATIVES

Total energy consumption (KWh) 20 Green energy 0 consumption (% of (otal) Total water consumption (KLD) 200 Water recycled 0 (% of total)

DEBABRAT	Date.
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		10	
5.2.2: YEAR 2		Winds	A A
Details of Work Proposed during the Affacted Segment	the Year / Measures Planned for	Cumulative Work done	/ Micasures Take
5.2.2.1: Area to be Developed for	Recreation		
Area (Ha)	[0]	Area (Ha)	Ne
5.2.2.2: Area for Water Storage & Area (Ha)		4 (1)	The contract of the contract o
5.2.2.3: <u>Efforts Made towards Hou</u>	IBIGG for Local Communities	Area (Ha)	Nil
Number of Houses	_		-
	Viding Transport to Local Commu	Number of House	s Nil
Number of Beneficiaries	0	Number of Beneficiaries	Nil
5.2.2.5: Efforts Made towards Pro	viding Healthcare to Local Comm		
Number of Beneficiaries	0	Number of	This is a second
or continuales	L	Beneticaries	Nil
5.2.2.8: Efforts Made towards Pro-	viding Hygiene & Sanitation to Lo	cal Communities	
Number of Beneficiaries	С	Number of Beneficiaries	Nil
5.2.2.7: Efforts Made towards Skil	Development Programs to Local	Communities	
Number of Beneticiaries	0	Number of Beneficiaries	Nil
5.2.2.8: Efforts Made to Promote E	ducation & Knowledge Based Ini		
Number of Beneficiaries	0		Laur
-4v. or application	l l	Number of Beneficiaries	Nal
5.2.2.9: Communication Facilities	Provided to Local Communities		-
Number of Beneficiaries	C	Number of Beneficianes	Nii
5.2.2.10; Any Other Steps Taken for	or Improving the Socio-Economic	Standard of Local Comm	nunities
Number of Beneficianes	O	Number of	Nil
		Beneficiaries	1411
5.2.2.11: Adoption of ODF			
Number of Tailets Built inside the Le	ase 2 Number of	0 Number of	50
kréa:	Tailets Built outside the	Beneficiaries	33
	Lease Area.		
EBABRAT Date:		PRADEË	PT Date:
BEHERA 1040-24 - 05130	Page 45 of 75	MOHAP	DOCE.

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Number of Beneficiaries 5.2.3.9; Communication Facilities Property of Beneficiaries 5.2.3.10; Any Other Steps Taken for Number of Beneficiaries DEBABRAT Date:	improving the		Slanda	Number of Seneticiaries rd of Local Communi Number of Beneficianes	200 ties 10 Date:
5.2.3.9: Communication Facilities Processing Services 5.2.3.10: Any Other Steps Taken for	200 improving the		Standa	Seneticiaries rd of Local Commun Number of	ties
5.2.3.9: Communication Facilities Processing Services 5.2.3.10: Any Other Steps Taken for	200		Slanda	Seneticiaries	
5.2.3.9; Communication Facilities Pr	4-	al Communities			200
5.2.3.9; Communication Facilities Pr	4-	al Communities			
	100			Number of Beneficiaries	.00
5.2.3.8: Efforts Made to Promote Ed	ucation & Kno	wiedge Based Init	tiatives		
Number of Beneficiaries	30			Number of Beneficiaries	3C
5.2.3.7: Efforts Made towards Skill D	Jevelopment F	rograms to Local	Commu		
Number of Beneficiaries	300			Number of Beneficianes	300
5,2.3.8: Efforts Made towards Provide	ding Hygiene	Sanitation to Lo	cal Com	Benelicianes <u>Munities</u>	
Number of Beneficiaries	203			Number of	200
5.2.3.5: Efforts Made Jowards Provide	ding Healthca	re to Local Commi	unities	Banel oaries	
Number of Beneficiaries	30			Number of	30
5.2.3.4: Efforts Made towards Provide	_	t to Local Commu	nities	Number of Houses	5
6.2.3.3: Efforts Made towards Housi Number of Houses	ing for Local S	-ommunities		Number of Newson	E
		haman a street		. 4 4 (1 10)	
Area (Ha)	3	л		Area (Ha)	Nii
5.2.3.2: Area for Water Storage & Re	echarne Feeill	÷1.			
Area (Ha)	Э			Area (Ha)	Nil
Affected Segment 5.2.3.1: Area to be Developed for Ro		a.va riamiau iyi (
6.2.3: YEAR 3 Datails of Work Proposed during th	e Year / Maas		he		
Total water consumption (KLD)	200	Water recycled (% of total)	-3		
5.2.2.14: Water & recycled use		T (ut As (O(St))			
Total energy consumption (KWh)	23	Green energy consumption (% of total)	0		
5.2.2.13: Efforts for green energy				Programmes Held:	
	0			Number of Swatchata	Nil
Number of Swalchata Programmes proposed		HO IOI DHOICHALA			
	io Mine Works	ore for Swatchata			- 13
Number of Swalchata Programmes	io Mine Works	are for Swatchata			1. O. S.

			100	W. C. S. S. S. S. S. S. S. S. S. S. S. S. S.
lumber of Torlets Built inside the Lease rea	2	Number of Tailats Built outside the Lease Area.	5 Number of Beneficiaries	128
.2.3.12; Awareness Program among h	Ine Work	ers for Swatchata		A A
lumber of Swatchata Programmes roposed .2.3.13; Efforts for green energy	2		Number of Swat Programmes He	
olal energy consumption (KWh)	25	Gréen energy consumption (% of total)	0	
.2.3.14: Water & recycled use				
ctal water consumption (KLD)	200	Water recycled (% of total)	10	
etalls of Work Proposed during the Y	ear / Meas			
the Affected Segment i.2.4.1: Area to be Developed for Recre	eatlon	Ci	mulative Work done / Me	asures Taken
rea (Ha)	0 007		Area (Ha)	0 307
	-	-	7.700 (1.0)	3 801
.2.4.2: Area for Water Storage & Rech	arge Facil	ity		
rea (Ha)	0.10		Area (Ha)	0.10
.2.4.3: Efforts Made towards Housing	for Local (Communities		
lumber of Houses	5	oommanilea,	No combined to the control of the co	. 10
.2.4.4: Efforts Made towards Providing	1 ~	 rt to Local Commun	Number of Hause Itles	s 1C
lumber of Beneficiaries	30	1	Number of	60
			Beneficiaries	00
2.45. FW				
.2.4.5: Efforts Made towards Providing	д Нва <u>ң</u> һсв	re to Local Commu	nities	
lumber of Beneficianes	150		Number of Seneficiaries	350
			DO-TETIONAL TEX	
2.4.6: Efforts Made towards Providing	Hygigge	<u>& Şanitation to Loca</u>	al Communities	
umber of Beneficiaries	100	7	Number of	400
			Beneficianes	
	alopment l	Programs to Local C	ommunities	
2.4.7; Efforts Made towards Skill Deve				70
2.4.7; Efforts Made towards Skill Devi umber of Beneficiaries	40		Number of Beneficiaries	70

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20C	Number of	Stand	Number of Beneficianes and of Local Commi	400
200 Oving th	e Socio-Economic	Stand	Beneficiaries ard of Local Commi	in the state of th
oving th	Number of	Stand	Beneficiaries ard of Local Commi	in the surities
20	Number of	Stand	Number of	
20	Number of		Number of	
O-				P.V
O.			Beneficiaries	
Ů		6	- Number of	450
	Toilets Built outside the Lease Area:	5	Number of Beneficianes	150
a Works	ers for Swatchata			
2	7		Number of	4
			Swatchata Programmes Held	
			riografilites Haid	
6	Green energy consumption (% of total)	0		
03	Water recycled (% of total)	10		
r/ ient	Ci	mulat	ive Work done / Mea	sures Taken
noi				
0 10			Area (Ha)	0.167
16 Facili	t <u>v</u>			
0.10			Area (Ha)	C 23
Local (Communities			
			Number of Houses	10
ranspor	t to Local Commun	ities		
		_	Number of	90
lealthca	re to Local Commu	nities	benelicianę\$	
	Page 48 of 75			Date.
	on 10 on 10	(% of total) con ton ton ton ton ton ton ton	(% of total) r/ Comulation 0 10 the Facility 0.10 r Local Communities cransport to Local Communities lealthcare to Local Communities	Cumulative Work done / Moanent Comulative Work done / Moanent Comulative Work done / Moanent Comulative Work done / Moanent Area (Ha) Area (Ha) Area (Ha) Area (Ha) Number of Houses Cansport to Local Communities Number of Beneficianes Communities Communities

	_			PRADEE	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
raposed Project Affected Families Skil raposed Number of Project Affected F	lled and Abs	sorped		-	
rapased Number of Person Likely to g	et Indirect 6	mployment		1	+ L
Proposed Number of Person for Skill Tr Proposed Number of Person Likely to g		noloumen*		Not A	Applicable
Proposed Number of Person for Altoma	ite Arrange	ment for Sustainable	Liveliho	:00	
roposed Number of Project Affected P	ersons(PA)	2)			
3.3: REHABILITATION & RESETTLES Par	itent of A ticular	FFECTE <u>D PERSON</u>	IS:- Not	Applicable	!
: 3. DCUADU PATION & COA					
Fotal water consumption (KLO)	200	Water recycled (% of total)	10		
2.2.5.14: Water & recycled use		or lotal,		_	
Fotal energy consumption (KWh)	25	Green energy consumption (% of total)	78		
5.2.5.13: Efforts for green energy					
o aposeo				Swatchata Programmes Held:	
Number of Swatchata Programmes oroposed:	2			Number of	13
5.2.5.12: Awareness Program among	Mine Wor	Lease Area: kers for Swatchala			
Area.		Toilets Built outside the		Beneficiaries	
Number of Toilets Built inside the Leas	e 0	Number of	10	Number of	30
5.2.5.11: Adoption of QDF	23			Number of Beneficiaries	55
Number of Benefic ares	25	THE GOLD-ECONOM	ie stant		
5.2.5.10: Any Other Steps Taken for		the Socio-Econom	ic Stans	Beneficiaries	
Number of Beneficiaries	100			Number of	500
5.2.5.9: Communication Facilities Pr	ovided to L	ocal Communities		Beneficianes	
Number of Beneficiaries	100	7		Number of	300
5.2.5.8: Efforts Made to Promote Edu	ication & K	Inowledge Based (nillative	Benefiçiaries <u>\$</u>	
Number of Beneficianes	40			Number of	110
5.2.5.7: Efforts Made towards Skill D	evelopmen	Il Programs to Loc	<u>at</u> Comi		A 10 PC
Number of Beneticiaries	50			Number of Beneficiaries	450
5.2.4.6; Efforts Made towards Provid	ling Hygjer	te & Sanitation to L	.oca) Co	mmunities	
					15
Number of Beneficiaries	108			Number of Beneficianies	450

	Chapter 6: PRO	OGRESSIVE N	INE CLOSURE	PLAN	175 F27575
6.1: Status of Land:					1192 4 34
Total Area	Degradeo	Total m	ned out area Rock Roha editated	airred and	Other Areas Registrated
Total area under (excavation in the lease Area (in the law) Area (Sim I sammed Stack	Mined out Area Reda med but rol rehabit (in heet)	Mined out Area fully Richabilitated from Reclaimed area (in free!)	Area under Water Reservor Duns dered Rehabilisted in Pocij	Sisting Virging Sisting Waste Sump
NII N NII	""			Nat Apalicable	
6.2: Progressive Reclan 6.2.1: Back-filling: Not P		on Plan			,
Quantity of Waste / Fill M		(m ^d)			
Availability of Top Soil for		··· <u>·</u> —	-		
Spread Area (m²)	<u> </u>				
	Year Wito Proposal				
Sr No Year	PiLID ; Area im	<u>f) Tor</u> NOT APPLIC		tom RL Es	stimated Expenditure (INR
6.2.2: Water Reservoir	: Not Proposed				
Average Rainfall of The	Area (mm)				
Proposed Area under V	•		+		
6.2.2,1; Preparations I	or Ground Water Re	charging: -N	ot Proposed		
6.2.2.1.1: Drilling Hole					
	Year		Propo:	sed no of Ho	oles to be Drilled
·	275 -				
	3'0 -				
	5 th				
£ 1 2 4 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		d . No . Bo			
6.2.2.1.2:Preparation of	Andrea Glave Rei	<u>a :- N</u> ot Propo		roposed Area	of Bod (Label)
	18"		-	- CPOSE G FOE	OLDER (CXIII)
	2 nd		<u> </u>		·
	3'5				
	4 ⁺				
Please specify, if others	5 th				
6.2.2.2: Protective measi		thning meter)			
6.2.2.2.1 Fencing:-				_	
Year +	Proposed Fencing	ength (m)	Co-ordina		Co-ordinates to
1 ^u	439 (Around the Safetyzone	of Magazine)	E= 31 N= 24		E= 31 1905 N= 24 16533
Z=0	573		E= 31	1905	N = 312478
3'3	: 3,3		N = 24	1785	N = 2416536 E+ 312668
			<u> </u>	15842 1905	N = 2415886 E = 311787
	565_		N = 24	18533	N = 2416417
5 ⁿ	651_		E= 3* N = 24		E = 312655 N = 2416537
TERARRAT Date:			<u>.</u> .		DEEPT Date:

DEBABRAT Pate: 2021.12.30 A REHERA 14.40.24 105'30'

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PRADEEPT Date:
MOHAPATR 2021.32.30

15" Second Seco	Ital		(A		- Marin 1977 -
15 346 N - 2416441 E - 317026 E 312249 346 N - 2416098 N - 2416399 254 N - 2416061 N - 2416274 254 N - 2416061 N - 2416274 254 N - 2416309 N - 2416274 257 N - 2416300 N - 2416274 287 100 N - 2416300 N - 2416407 349 Maintenance Maintenance Maintenance Maintenance 418 Maintenance Maintenance Maintenance Maintenance 418 Maintenance Maintenance Maintenance 419 Maintenance Maintenance Maintenance 410 Maintenance Maintenance Maintenance 511 70 N - 2416411 N - 2416450 250 N - 2416411 N - 2416450 250 N - 2416065 N - 2416277 250 N - 2416065 N - 2416277 250 N - 2416065 N - 2416277 250 N - 2416338 N - 2416398 380 105 N - 2416338 N - 2416398 380 Maintenance Maintenance Maintenance 511 Maintenance Maintenance Maintenance 511 Maintenance Maintenance Maintenance 523 Green Belt Development 523 Cumulative work done (upto end of previous block of five years)-NIL Total Expenditure Incurred up to Last Year (INR) C23.2: Year Wise Proposal (Gap Filling Plantation) Sr. No Green Belt Area Proposed Number of Expected Estimar No Year Green Belt Area Proposed Number of Expected Estimar Sr. Vear Covered Number of Expected Estimar No Covered Covered Number of Expected Estimar C23.2: Year Wise Proposal (Gap Filling Plantation) Number of Expected Estimar No Covered Covered Number of Expected Estimar C23.2: Year Wise Proposal (Gap Filling Plantation) Number of Expected Estimar C23.2: Year Wise Proposal (Gap Filling Plantation) Number of Expected Estimar C23.2: Year Wise Proposal (Gap Filling Plantation) Number of Expected Estimar C23.2: Year Wise Proposal (Gap Filling Plantation) Number of Expected Estimar C23.2: Year Wise Proposal (Gap Filling Plantation) Number of Expected Estimar C23.		Proposed wall	reuðiu (m)			©o-ordinates to
18		65				the state of the s
Section Sect		- · · · · · · ·				
254 E=24*6309 E=312007 254 N=2416061 N=2416274 280 100 V=2416340 N=2416403 3*3 Maintenance Maintenance Maintenance 4TH	1 ^{s-}	246			li b	
254						
2ND 100 N=2416340 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416403 N=2416406 N=2416406 N=2416406 N=2416450 N=2416450 N=2416450 N=2416450 N=2416450 N=2416450 N=2416450 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416377 N=2416378 N=2416398 N=24		554				
2ND Maintenance Maintenance Maintenance 4TH Maintenance Maintenance Maintenance 5TH Maintenance Maintenance Maintenance 6TH Maintenance Maintenance Maintenance 6TH Maintenance Maintenance Maintenance Maintenance 6TH Maintenance Maintenance Maintenance 6TH Maintenance Maintenance Maintenance 6TH Maintenance Maintenance Maintenance Maintenance 7TH Proposed Bund Length (m) Co-ordinates from Co-ordinates to E = 311933 E = 311930 15T 70 N = 7416411 N = 7416450 6E = 7416310 F = 312010 7E = 311937 F = 311855 7E			_ :			
Maintenance Maintenance	n ND					
ATH Maintenance Maintenance Maintenance		·				· ·
Maintenance Maintenance Maintenance Maintenance	— 3 19					
Year Proposed Bund Length (m) Co-ordinates from Co-ordinates to Proposed Bund Length (m) Co-ordinates from E = 311973 E = 311930				Mainte <u>nan</u> ce	::	Maintenance
Year Proposed Bund Length (m) Co-ordinates from Co-ordinates to	5'"	Maintena Maintena	ince	Maintenance		Maintenance
Strict Feat	2.2.2.3: Garland (Drains				
ST TO			Length (m)	Co-ordinates fro	om (Co-ordinates to
151 70					, ,	
E=74*6310 F= 312010 250 N-2416065 N= 2416277 E=3*1937 E= 311856 2***O 105 N= 2416338 N= 2416398 3***O Maintenance Maintenance Maintenance		70				
250 N-2416065 N=2416277 E=311856 2 ^{NO} 105 N=2416338 N=2416398 3 ^{RO} Maintenance Maintenance Maintenance 5 ^{TII} Maintenance Maintenance Maintenance 5 ^{TII} Maintenance Maintenance Maintenance 2.2.3: Green Belt Development 2.3.1: Cumulative work done (upto end of previous block of five years)-NIL Total Expenditure Sr. No Incurred up to Last Year (INR) 2.3.2: Year Wise Proposal (Gap Filting Plantation) Sr. Year Green Belt Area Proposed Number of Expected Estimation Green Belt Area Proposed Number of Expected Estimation Year Green Belt Area Proposed Plants Survival Expendition	151		· i		· ,	
2 ND 105 N = 2416338 N = 2416398 3 ND Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Mainte		D.C.	. i			
2 No		<u></u>	<u> </u>			
Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance	a NO					
Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Maintenance Ma	200				i _	N = 2416398
Maintenance Maintenance Maintenance Maintenance 2.3: Green Belt Development 2.3.1: Cumulative work done (upto end of previous block of five years)-NIL Total Expenditure Sr. No Incurred up to Last (Ha) Plants Year (INR) Sr. Year Wise Proposal (Gap Filting Plantation) Sr. Year Green Belt Area Proposed Number of Expected Estimates No Year Location (s)						Maintenance
.2.3: Green Belt Development .2.3.1: Cumulative work done (upto end of previous block of five years)-NIL Total Expenditure Sr. No Incurred up to Last (Ha) Plants Year (INR) .2.3.2: Year Wise Proposal (Gap Filling Plantation) Sr. Year Green Belt Area Proposed Number of Expected Estimates No Year Location (s)				<u>Maintenance</u>		Maintenance
.2.3.1: Cumulative work done (upto end of previous block of five years)-NIL Total Expenditure Sr. No Incurred up to Last Year (INR) -2.3.2: Year Wise Proposal (Gap Filting Plantation) Sr. Year Green Belt Area Proposed Number of Expected Estimates No Year Location (%)	5'''	Mainten:	ánce	Maintenance		Maintenance
No rear Location (s) to be Covered Plants Survival Expendi	7 7 7 16 160		<u> </u>		<u> </u>	
C-4	-		Area Proposed			
1 ^{el} zone(Mi B) 0 25 230 85% 30000	r. Your	Green Belt Location (s)	Area Proposed to be Covered	Plants	Surviva	Expenditure
2 2 4 (MLB) 3,25 30000	r. lo Year	Green Belt Location (*) Safety zone(MLB)	Area Proposed to be Covered (Ha)	Plants Proposed	Surviva Rate (%	Expenditure
	Year	Green Belt Location (%) Safety zone(MLB) Safety zone (MLB)	Area Proposed to be Covered (Ha) 0 25	Plants Proposed 230	Survival Rate (<u>%</u> 85%	Expenditure (INR)
	1 1 ^{el} 2 2 ^{eq}	Green Belt Location (*) Safety zone(MLB) Safety zone (MLB) Safety zone (MLB and Magazine)	Area Proposed to be Covered (Ha) 0 25 0.25	Plants Proposed 230 230	Surviva Rate (% 85% 86%	Expenditure (INR) 30000
5 Safety 0.25 230 85% 30000 2.4: Use of shallow pits:-Not Applicable	1 1 ^{el} 2 2 ^{-a} 3 3 ^{ra}	Green Belt Location (%) Safety zone(MLB) Safety zone (MLB) Safety zone (MLB and Magazine) Safety zone(MLB)	Area Proposed to be Covered ———————————————————————————————————	Plants Proposed 230 230 1726 230	Surviva Rate (% 85% 85% 85%	Expenditure (INR) 30000 30000

	2: Year Wis	se Proposa	I: Not An	plicable					o Maria	7
Sr. No	Ī ·	Tot Pit ID Are	al ! sa Prop	h	Suitable F Crops	Area Proposed fo Grass (Ha)	ir Expo	Proposed enditure (NR)	location (s)	Remar
.2.5:	PISCICULTU	JRE:- Not Ap	plicable						A.B 112 (F2 (II)	1/2
		ndîture incu		n Date JINR	?)				1 1 1 1	200
.2.5.	2: Cumulat	ive work do	ne as on	Date: No	t Applica	ble				
	Sr. No		Pit ID	. —	_	rea (m²)	_	Exper	diture (INR	ti
							!		,	_
.2.5.	3: Year Wis	e Proposal	: Not Apr	olicable						
_	Sr. Na		Year		Pit ID	Arca	<u>(m²)</u>	Estimated	Expanditur	e (INF
	2 —						_			
2.5.4	1: Source o	f Water for	Piscicult	ture: Not A	Applicabl	e	-	<u>. </u>	_	
2.5.5	5: Whether	the quality	of water	has been	_ assesse	d & found	to be s	uitable 🕇		
r Pis	sciculture									
2.6:	Recreation	al Facility-	Not Appl	licable		_				
		enditure Ir			five vear	block) (18	JR)	_		_
						-				
2.6.2	2: Cu <u>mulati</u>	ve work do	ne as on	Date: Not	Applicat	ble				
_ :	Sr. No	P	it ID	Are	a (m²)		Exp	enditure (II	NR)	
		. — —	_					citoitata (ii	,	
		·				_				
2.6.3	: Year Wis	e Proposal	: : Not App							
	Year W <u>is</u> Year		Recreat	licable		vered (Ha	·	<u>-</u>	Estima	
	_	Type o		licable		vered (Ha	·	ocation		
r No	Year —————	Type o	f Recreat Facility	licable ional		vered (Ha	·	<u>-</u>	Estima	
No 2.7: D	Year —————	Type o	f Recreat Facility Development	olicable ional	Area Co	Langer	(±) Le	ocation	Estima Expenditur	re (IN
. No	Year ump Area Sta	Type o	f Recreat Facility Developmen	onal Autorit Terroration	Area Co	Langer of Garana Eraman)	= . 51000 S10001 ared 1HII;	Versed of State Last on	Estima Expenditure Esperaiure (NS)	re (IN
7 No 2.7: D	Year ump Area Sta	Type o	f Recreat Facility Development	ional A.+ 1gs Fragmont Terropa pro	Area Co	Langer of Garana Cramon) 70	Sires Sissort and 1948; No.	Welled of Station	Estima Expenditure Expenditure (N9)	re (IN
No. 2.7: D	Year ump Area Sta Year 1ST YHAR	Type o	Facility Development Temples	onal Autorit Terroration	Area Co	Langer of Garana Eraman)	= . 51000 S10001 ared 1HII;	Malheuler Statutualun	Estima Expenditure Expenditure (N9) NA	re (IN
2.7: D	Year ump Area Sta Year 1St YEAR YEAR SHO YEAR	Type of	Facility Development Tematics	ional A-+ rgs Haghior Terropa pr. 4	Area Co	Cartana Garana To To 105	Signal and Hall	Welled or Statulation NA NA	Estima Expenditure Estimated Expenditure (NS) NA NA	re (IN
2.7: D	Year ump Area Sta Year 1ST YEAR WID YEAR SHID YEAR	Type o	Facility Development	ional A.+ 1gs Fragmont Terropa pro	Area Co	Langer of Garana Gramani 70 105 Nill	Sister and the property of the	Malheuler Statutualun	Estima Expenditure Expenditure (N9) NA	re (IN
7 No	Year ump Area Sta Year 1S: YHAR YEAR SHIT YEAR SHIT YEAR	Type of	Facility Development Tomates 1	ional Autography Technology 4 4 9 10	Area Co	Carper of Garana Carper of Carper of	Signal and Hall	Welled or Statulation NA NA	Estima Expenditure Estimated Expenditure (NS) NA NA	re (IN
2.7: D	Year ump Area Sta Year 1SE YEAR YEAR SHO YEAR SHO YEAR SHO YEAR SHO YEAR Other Form	Type of Sumple	Tevelopment 1	olicable ional Area: - No	Area Co	Carper of Garana Carper of Carper of	Sister and the property of the	Warred or Statulation NA NA NA	Estimated Expenditure (NS) NA NA NA	re (IN
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2.7: D	Year ump Area Sta Year 1ST YEAR NO YEAR SHO YEAR OTH YEAR OTHER FORM Complative	Type of Sumple S	Tevelopment Temates 1 1 1 1 1 1 1 1 1 1 1 1 1	ional Attached ional Attached ional Area: - No	Area Co	Cartana Cartana Cartana 70 105 Nil	Sister and the property of the	Melineuler Statulusium NA NA NA NA	Estima Expenditure Expenditure (N9) NA NA NA NA	re (IN
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2.8: (2.8.1 Sr. N	Year ump Area Sta Year 1ST YEAR NO YEAR SHO YEAR OTH YEAR OTHER FORM Complative	Type of Sumple S	Tevelopment Temates 1 1 1 1 1 1 1 1 1 1 1 1 1	Area: - No	Area Co	Langer of Garana Grams of TO TO TO TO TO TO TO TO TO TO TO TO TO	Sister and the property of the	Melineuler Statulusium NA NA NA NA	Estimated Expenditure (NS) NA NA NA NA	re (IN

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21.	, No –	_ _	<u>Ye</u> ar 157 YE4		Work Pro	posals	Estim	ated Exp	nditure	(INR)	45
	<u>,</u> –	;	2ND YEA						1		1
	3 _	_ i	BD YEA	1		-			1. 19	1 1	17
	4		 41H YL A	\R		!			100	7 70.3	
	5	'	5TH YEA		_			.—		- x1	
.9: TOP!	BOIL MAN	IAGEN		t Applicable	ę						
2.9.1: Cur	nulative W		ne as on D	ate							
SI. No	. G	Top S engrate		Top Soll U	tilized (m³		psoil	Total exp			urrei
. —		C. INC. MAIN	<u> </u>	_		T 300	ed (***)	as	on dal	ie (z)	
		_				+ -	_	_		_	
			-Not Appli oil Genera		Zassail	l lastimo al	T		-	-14-	
Yea	ir	Tohe	oli Genera (A)	iteo (iir) -	Topsail (m²)	Utilized (B)	Topsoil S (m³) [A		Espen:	limate diture	
15						1-7	10.10	+		GILO. L	Į II
2"			-					-			
3				_ :			i				
4				_ ;							
5:)						. —				
				BETT BILL A	حاجه مناه						
.10: TAII	LINGS DA	IAM MA	NAGEME	NT:-Not Ap	phicable						
.10: TAII	Year	lγ	Total	Measu	ires	Yearly	Disposal		adimo	Steur	-tura
.10: TAII	Year general	ly tion	Total capacity of	Measu Propose	res ed for Uti	Ilization of	Tailing	ta '	ailing Dam	Struc	
Year	Year	ly tion ing	Total	Measu Propose	res ed for Uti dic Ta			ta and		Stat	bility
Year 1 ⁴	Year general of Taili	ly tion ing	Total capacity of Tailing Pon	Measu Propose d Perlo	res ed for Uti dic Ta	Ilization of ailing (m²)	Tailing I Tailing Po	ta and	Dam	Stat	bility
Year 1 ⁴ 2 rd	Year general of Taili	ly tion ing	Total capacity of Tailing Pon	Measu Propose d Perlo	res ed for Uti dic Ta	Ilization of ailing (m²)	Tailing I Tailing Po	ta and	Dam	Stat	bility
Year 1" 2" 3"	Year general of Taili	ly tion ing	Total capacity of Tailing Pon	Measu Propose d Perlo	res ed for Uti dic Ta	Ilization of ailing (m²)	Tailing I Tailing Po	ta and	Dam	Stat	bility
Year 1" 2" 3" 4"	Year general of Taili	ly tion ing	Total capacity of Tailing Pon	Measu Propose d Perlo	res ed for Uti dic Ta	Ilization of ailing (m²)	Tailing I Tailing Po	ta and	Dam	Stat	bility
Year 1 1 2 7 6 3 7 6 4 1	Yearl general of Taili (m²) (,	ly kion ing A)	Total capacity of Tailing Pon (m²)	Measu Propose d Perlo Desil1	ed for Util	Illzation of ailing (m²;	Tailing I Tailing Po (****) (A-)	BI D	Dam esign	Stat	bility
Year 1" 2" 3" 4" 5ih	Yeari general of Taili (m²) (i	tion ing A)	Total capacity of Tailing Pon (m²)	Measu Propose d Perlo	ares ad for Util dic T: ing RY OF LE	ASE PERIO	Tailing Tailing Pr Tailing Pr (****) (A-	PTUAL ST	Dam esign	Stal Stu	dies
Year 1" 2" 3" 4" 5ih	Yearl general of Taili (m²) (,	tion ing A)	Total capacity of Tailing Pon (m²)	Measu Propose Desilt	res ed for Util dic T: ing RY OF LE/	Illzation of ailing (m²;	Tailing Tailing Pr Tailing Pr (****) (A-)	PTUAL ST	Dam esign	Stai Stu	dies
Year 1" 2" 3" 4" 5" 11 LAN	Yeari general of Taili (m²) (i	tion ing A) LEASE	Total capacity of Tailing Pon (m²)	Measu Propose Desilf	res ed for Uti dic T: ing RY OF LE/	ASE PERIO	Tailing Tailing Pr Tailing Pr (****) (A-	PTUAL ST	Parm PBign (AGE) reas Rec Renabilit	Stal Stu	ollity dies
Year 1" 2" 3" 4" 5" 11 LAN	Yeari general of Taili (m²) (i	tion ing A) LEASE	Total capacity of Tailing Pon (m²)	Measu Propose Desilf	res ed for Uti dic T: ing RY OF LE/	ASE PERIO	Tailing Tailing Pr Tailing Pr (****) (A-	PTUAL ST	Parm PBign (AGE) reas Rec Renabilit	Stal Stu	ollity dies and
Year 1" 2" 3" 4" 5" 11 LAN	Yeari general of Taili (m²) (i	tion ing A) LEASE	Total capacity of Tailing Pon (m²)	Measu Propose Desilf	res ed for Uti dic T: ing RY OF LE/	ASE PERIO	Tailing Tailing Pr Tailing Pr (****) (A-	PTUAL ST	Parm PBign (AGE) reas Rec Renabilit	Stal Stu	ollity dies
Year 1" 2" 3" 4llh 5llh 11 LAN	Yeari general of Taili (m²) (i	tion ing A) LEASE	Total capacity of Tailing Pon (m²)	Measu Propose Desilf	res ed for Uti dic T: ing RY OF LE/	ASE PERIO	Tailing Tailing Pr Tailing Pr (****) (A-	PTUAL ST	Parm PBign (AGE) reas Rec Renabilit	Stal Stu	ollity dies
Year 1" 2" 3" 4 5 11 LAN	Yearl general of Taili (M²) (i	tion ing A)	Total capacity of Tailing Pon (m²)	Measure Propose de Perlo Desilf	RY OF LE	ASE PERIO	Tailing Portain (A.) Tailing Portain (A.)	PTUAL ST	Dam esign (AGE)	Stai Stu	ollity dies
Year 1" 2" 3" 4" 5" 11 LAN	Yearingerveral genveral of Tailinger (M*) (i O USE OF Total Area De Start (i) appun 1 458	tion ing A) LEASE	Total capacity of Tailing Pon (m²)	Measu Propose Desilf	RY OF LE/ Total mi Rang 200 paletti gradu Rang 200 paletti gradu Rang 200 paletti gradu Rang 200 paletti gradu Rang 201 paletti gradu Rang 201 paletti gradu Rang 201 paletti gradu	ASE PERIO	Tailing Tailing Pr Tailing Pr (****) (A-	PTUAL ST	Perign Perign	Stal Stu	ollity dies
Year 1" 2" 4 5 11 LAN	Yeari general of Taili (M*) (i M*) (i	LEASE graded ust Suret	Total capacity of Tailing Pon (m²) AREA AT	Measu, Propose d Perlo Desilf THE EXPII Non Degraded area 9844	RY OF LE/ Total mi Recommended to the series of the serie	ASE PERIO AND Rehabilited Income Repair to the property of t	Tailing Tailing Po Tailing Po (****) (A- GONCE GONCE Construct Constr	Slattii 262 Wesse du iip Renabiltaled du iip Renabiltaled du iip Fedi	Parm PBign (AGE) reas Rec Renabilit	State abilitated Area and a second a second and a second and a second and a second and a second	Separation of the second secon
Year 1" 2" 3" 4" 5" 11 LAN	Yearingeneral of Tailingeneral of Tailin	tion ing A) LEASE	Total capacity of Tailing Pon (m²)	Measu Propose Desilf	RY OF LEA	ASE PERIO	Tailing Tailing Pr Tailing Pr (****) (A-	PTUAL ST	Parmies (Control of the Control of t	Stal Stu	ollity dies.
Year 1" 2" 4 5 11 LAN	Yearingerveral of Tailingerveral	LEASE graded ust Suret	Total capacity of Tailing Pon (m²) AREA AT	Measu, Propose d Perlo Desilf THE EXPII Non Degraded area 9844	RY OF LE/ Total mi But of participation of the state of	ASE PERIO AND Rehabilited Income Repair to the property of t	Tailing Tailing Po Tailing Po (****) (A- GONCE GONCE Construct Constr	Statuti 262 W8526 Other A Other 1 436	Parm Parm Parm Parm Parm Parm Parm Parm	State State Area and a second	dies Copraction of Capture Tanna (B)

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Chapter 7: FINANCIAL ASSURANCE/ PERFORMANCE SURETY (AREA PUT TO USE)

7.1 YEAR 1-5 (Separate form for each year as below)

1st year

SI. No.	Particular	Area put to use at Start of Year (Fa; (A)*	Additional Requirement (ha) (B)*	Total (118) (C = A + B)
1	Area under Mining	000	4.082	4.082
2	Topse stacking	000 :	0.000	0.003
3	Overburger/Waste Dumping	0.00		0 394
- 4	Mineral Storage	0.00	7.767	7.767
5	Infrastructure (Workshop, Administrative Building,Magazine with safety zone, Parking Plaza and safety zone (0.00	4.096	4,096
6	Roads	0.00	4.291	4 291
	Railways	C 00	0 000	0.000
8	Tailing Pond	0.00	0.000	3 030
9	Effluent Treatment Plant	0.00	0 000	0.000
.C	Mineral Separation Plant	<u> </u>	0.957	0.957
:1	Township Area	0.00	0.000	0 000
12	Others to Specify(Check Dam)	00 0	0.098	0 098
	Total	0.00	21.685	21.685

2nd year

SI. No.	Particular	Area put to use at Start of Year (ha)	Additional Requirement (na) (B)*	Total (ha) (C = A + 8)
_1	Area under Mining	4.082	3 257	7 339
2	Topsoil stacking	0.000		
3	Overburden/Waste Dumping	0.354	1 160	1 554
4	Mineral Storage	7 767	(-)1.357	6.41
5	Infrastructure (Workshop Admin strative Building,Magazine with safety zone, Parking Plaza and safety zone ;	4.096	0.764	4 8E
_ಕ	Roads	4 291	(-)0 023	4.26B
7	Rai ways	0.000	0.000	. 0
8	Tailing Pond	D 000 1	0000	C
9_	Effluent Treatment Plant	0.000	0.000	С
10	Mineral Separation Plant	0.957	0 000	0.967
11	Township Area	0.000	0 000	
12	Others to Specify(Check Dam)	0 098	2 000	
	Total	21.685	3.801	25.486

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3rd year

SI. No.	Particular	Area put to use at Start of Year (ha)	Additional Requirement (^a) (B)*	Total (ha) (C = A + B)
. 1	Area under Mining	7.339	3.787	11.126
2	Fopsoil stacking	c	С	
3	Overburden/Waste Dumbing	1 554	0.590	2.144
4	Mineral Storage	6 4 1	(-)0.829	5.581
5	Infrastructure (Workshop Administrative Building Magazine with safety zone, Parking Plaza and safety zone.)	4 86	(-}1.536	3.324
6	Roads	4 268	- 1.350	5.91B
7	Ra Iways	0	σ	3
8	Tailing Pond	· ·		
9	Effluent Freatment Plant	<u>c</u> .	o -†	<u> </u>
_10	Mineral Separation Plant	0.957	·	0.957
11	Township Area	C	0 :	0
12	Others to Specify(Check Dam)	0.098	0	0.098
	Total	26.486	0.662	26.148

4^{III} y<u>ear</u>

ŞI. No.	Particular	Area put to use at Start of Year (ha:	Additional Requirement (ha) (B)*	Total (ha) (C = A + B)
	Area under Mining	11.126	0.754	11.88
2	1 cosoil stacking	o i	<u> </u>	
3	Overburger/Waste Dumping	2.144	0.565	2.709
4	Mineral Storage	5.581	0.664	6.245
5	nfrastructure (Workshoo) Administrative Building,Magazine with safety zone, Parking Plaza and <u>safety zone.</u>)	3.324	σ	3.324
6	Rcads	2.518	ū	2.918
7	Railways	0	0	
9	Tailing Pond	0 -		a
9	Effluent Treatment Plant	0	0	Ð
10	Mineral Separation Plant	0.957		0.957
1.	Township Area	0	0	۵
12	Others to Specify(Check Dam)	0.098	0	C.098
	Total	26.148	1.983	28.131

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5th year

SI. No.	Particular	Area put to use at Start of Year (ha) (A)*	Additional Requirement (ha) (B)*	Total (ha) (C = A + B)
4	Area under Mining	11.88	1.326	13.206
2	Lopsoil stacking	· c —	- o <u>T</u>	0 10 4
3	Overburden/Waste Durnding	2.709	0	2.709 / 1/2
4	Mineral Storage	6.245 .	; [0.205	6.040
5	nfrastructure (Workshop, Administrative Building,Magazine with safety zone, Parking Plaza and safety zone.)	3.324	0	3 374
6	Roads	7.918	ລ	2.918
7	Rai ways	0		
8	Taing Pond			
9	Effluent Treatment Plant	ο	·	_ с
10	Mineral Separation Plant	0.957		0.957
11	Township Area	C	o —	5
12	: Others to Specify(Check Dam)	0.398	Q	C.09B
	Total	28.131	1.121	29.252

7.2 FINANCIAL ASSURANCE: Not Applicable

Category-A Mining Lease

	Amount of		
Total Area Proposed to be put to use in hect	Bank Guarantee (Lac	Valid till (dd/mm/yyyy)	Upload copy of Bank Guarantee
Minera: block granted through auction therefore B	NR) - Gus not applicable		!

7.3 PERFORMANCE SECURITY:-

Lease Category (A/B)	Total Resources in tonnes for calculation of Performance Surety*	Existing Performance security amount in Rs	Valid till (dd/mm/yyyy)	Upload copy of existing Performance Security
Α !	23921614	349947933 (To be paid)	For five years	

APPROVED

क्षेत्रीय स्थान निषंत्र**क**

Regional Controller of Mines

भारतीय खान व्यूरी

Indian Bureau of Mines भुवरेशकर Uhubaneswar

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Chapter 8: Review of Previous Proposals (Not applicable for fresh grant)

8.1: General

8.1.1: LEASE AREA UTILISATION

8 .1.1:	LEASE AREA UTILISATION			1. 2. 2. Carried St.
\$1. N o.	Type of land use (in ha)	Area at the beginning of the proposal period	Area proposed under activity	Actual Area utilized in the Deviation for proposal deviation
13:	Minng		i	
_z	Minera Storage	!	1	
_ î	Minera_Beneficiation_plant		i	·
4		<u> </u>	+-	
[6]	Taring Pond	;		
6	Radways	i		
- ⁷ 8	Roads Infrastructure (Workshoo, administrative building etc.)		 	-;+
9_	OB/waste dumo	⊥	-	i i i i
	Topiso.lipreservationOthers	1		
1.2_	lots area public vse	-+	<u>i</u>	
13	Excavated_area_ecta med		_ :	
14	Waste dump area reclaimed			

8.1.2: SDF and CSR Expenditures:Not proposed in previous Approved Mining Plan.

3.1.2: SDF and CSR Expenditures:Not proposed in previous Applicate Management					Reasons
Activity	Proposa		Achievement	Deviation	for _devi <u>ati</u> on_
				!	ı
Total experioditure incurred tot	i ,	ŀ		'	1
implementation of SDF at mine level	i			1	i
ingudrg	!	I		i	
- Environment Protection	'!	1			!
CSR & Other wettere activities in	,			!	I
peripheral langa	i .			'	
(Explanation): Expendence is not over and	1			1	;
above the statutory leves impused by the			I	i	
Government: However, THIS EXCHUDES	1 !		I		1
CONTRIBUTION TO DMF & NMET and is				-	
over and comove the statutory lowes	! .		i	1	
imposed by the Government)	<u>'</u>		— -	—	i
CSR (Corporate Social				i	1
Restrict to a condition of the re-ne			i		
Respons (billity) spending at the rnine	i			!	
leve in Proposal Period (as per	1		!		
Companies Act, 2013 or otherwise)					

8.2: Technical Details

8.2.1: Exploration		A - bi-wa mank	Deviation	Reasons for deviation	n
Particulars	Proposals	Achievement	T		_
Number of Borcholes/ Pits/ Trendres			1		
Boreholes Metorage (II Boreholes		•	1	·	_
selected_in_first row)_(m)		 			_
Gric	_		-1	H	
GAS Upgrazation during Proposal	-		1	I	
Period East per guidelines of MEMC Ruli	e ¦		!	1	
2019)				I	
AreaCO reverted under G1 from G2/G3					

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8.2.2: Mine Development (Opence	est Dump	Mining)			/	4 2 2	
Particulars	f	roposed	4	Actual) (1) (3)	eviation	fieds ins fac deviation
8.2.2.1: Generation of Ore/Waste V	Yhile Deve	looment					deviation
Ore					I	10 m	
Waste							7
Generated Waste while ROM							EC for 1.5
recovery							obtained on
Oumping Site (For Surface)	:		- !				03 01,2020.
Removal of waste/ over burden in							Before to
cubic meters Generated Waste while ROM					<u> </u>		this the EC
recovery							was 0.8MTPA.
Dumping site of waste/ overburgen		-	—				7
Parity of the desired overholder.							i
8.2.2.2: Excavation							
Lateral extent		_					
Vertical exteni	<u> </u>					J	
0.7.2.68:u:	-1 81-1 8					_	
8.2.3: Mining operation: Dump Mil							
Particulars	Proposi	als A	chieveme	nt Deviat	ion Rea	sons for de	Pylation
Handling of Material							
Waste Generated post recovery					\neg		
Dumping site for waste							
8.2.4: Zero Waste Mining:-Not App	4icable		_	•			
Particulars	Prop	osals	Achieve	ment De	eviaion F	leasons for	deviation
Alternative use / Disposatiof Waste	· .	Nil :			:		
Generated (excluding top soil) 8.2.5: Backfilling: Not Applicable				!			
Particulars			Τ	. —	T =	Ress	ons for
- Fartichiata	Pro	posals	Aci	levement	Deviation		iation
Site (Co-ordinates)]		
Area			<u> </u>		†		
ОерИз	 						
Volume Backfilled (CuM)			· .			 	
Backfilled Area available for						Ţ —	
Reclamation and Rehabilitation Backfilled Area Reclaimed and							
Rehabilitated						İ	
Balance Backfilled Area						 	
8.2.6: Production of Mineral(s):	, –						
Particulars		Propo	osals	Achievemer	ni Deviation	ni	ons for
8.2.8.1: ROM					_:		
8.2.6.2: Cleaned Ore							:
Opencest							··
Dump Mining		N.	<u> </u>	NA	NA	:	
Recovery from Mineral Rejects of	Tailiane					- ·	
Total	1 20111172		- $+$			· ·	
		└				<u>:</u>	
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	Proposals	Achievement Devi	tion Reas	ons for devi	ation
Generation of mineral reju	ects				. Agr
Opencast	i i				762
Dump mining	!			1	7/
Other recovery				1000	
Stacking of mineral rejects/				1 -14	
sub-grade ni nera					
Blending of minural reject / sub-grade					
2.8: Environment Complia	nces				
articulars	Proposals	Achievement		Deviation	Reason: for deviatio
	 able				Geviatio
eneration					1
Dization					
acking (Dumo (d)					
eclamation					
	a i Banahan i Banisi i India		. . ———		
2.8.2: Afforestalion (Dump:	STORUCIOSI BECKIII 60 /	area etc.):- Not Applica	piė		
		 			
		<u> </u>			
2.8.3: Afforestation (Green	Belt)				
——— I		-			
——— -					
		-			***
	<u> N</u> o <u>Ртара</u>	sal			
onetruction of garland drains		sal			
onstruction of check dams onstruction of garland drains onstruction of retaining walls		sal		i	
onstruction of garland drains onstruction of retaining walls 2.8.4: Tallings:- Not Applica		sal			
onstruction of garland drains onstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration	ble	sal	······································		
onetruction of garland drains onstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration ilization (Auto 1/1 from produc	ble	sal			
onetruction of garland drains onstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration (Auto 1:1 from productions)	ble	sal			
onstruction of garland drains onstruction of retaining walls 2.8.4; Tallings:- Not Applica eneration (Auto 1/1 from productions) Sposal 3; Socio-Economic Review	ble				
enstruction of garland drains enstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration (Auto 1:1 from productions). Socio-Economic Review 3.1: Rehabilitation & Rese	ble		Deviation	Reasons fo	
enstruction of garland drains enstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration dization (Auto to I from product sposal 3: Socio-Economic Review 3.1: Rehabilitation & Rese articulars	ttlement for Project Af	fected People	ngi Deviation		
enstruction of garland drains enstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration dization (Auto 1/1 from product sposal 3: Socio-Economic Review 3.1: Rehabilitation & Rese articulars o of Project Affected People dage of PAP for whom aftern	ttlement for Project Af	fected People Proposals Actu	Deviation	Reasons fo	
onstruction of garland drains onstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration ilization (Auto 1/1 from product sposal 3: Socio-Economic Review 3.1: Rehabilitation & Rese articulars to of Project Affected People age of PAP for whom aftern estained livelihood	ttlement for Project Af	fected People Proposals Actu	Deviation	Reasons fo	
enstruction of garland drains enstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration ilization (Auto 1/1 from product sposal 3: Socio-Economic Review 3.1: Rehabilitation & Rese articulars to of Project Affected People bage of PAP for whom aftern stained livelihood of project affected families	ttlement for Project Af	fected People Proposals Actu	Deviation	Reasons fo	
onstruction of garland drains onstruction of retaining walls 2.8.4: Tallings:- Not Applica eneration itization (Auto 1:1 from product sposal 3: Socio-Economic Review 3.1: Rehabilitation & Rese articulars to of Project Affected People age of PAP for whom aftern	ttlement for Project Af	fected People Proposals Actu	pal Deviation	Reasons fo	

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affected families)	1 60
8.3.2; Grievance Redressal	The state of the s
Grievances Received	
Grievanoos Redressed	16 3
8.3.3: Welfare and socio-economic development programs for local communities	(表面)
8.3.3.1: Support for Orinking Water & Agriculture	K
No. of Water Storage Tanks constructed	100000000000000000000000000000000000000
Orinking Water Facilities provided (Bore wells/ Pumps	
etc)	
Irrigation Support provided (Canals/ Pumos etc.)	<u> </u>
No. of Water tanks De-silted Water Treatment fac lities provided (A/NA)	
Amount of Water treated (in kill) (if selected A in above)	
8.3.3.2: Support to Health & Medical Services	
No of persons identified from Occupations inealth	
diseases	
No of Health Camps/ Medicine Camps Organized	
8.3.3.3: Support to Skill development & Education	
Vocational Training Provided/ Support Provided	
No. of employees undergone Vocational training	—· : ——· ··
No. of other persons undergone Vocational training	
Number of Literacy & Education Camps held/ Supported	
8.3.3.4: Support to Transportation Services & Infrastructure	
Expenditure on Transportation Services & Infrastructure Road development (m) in the peripheral area (not lease	
acea)	
No of Public transport support provided	
(Amb <u>ulance/Buses/ School Vansield)</u>	
8.3.3.5; Swatchata Programs: Creating/providing sanitation and healthy condition	in and around the mine
Adoption of QDF within mining lease area	
No. of Toilets ou It in the Lease Area	<u> </u>
Adoption of ODF in nearby villages	i
No of Toilets built in the villages	
Provision for greenage recreational facility (Within Lease Area/ Outside)	·
Recreational Area Type (Pichio Spey tracks/Park Etc)	- , — —
Area covered (For within Lease Area on y)	!
Awareness program among Mine workers for Swalchata	·
No of SwatchchtaProgrammes held	
7	

CHAPTER 9: IMPACT ASSESSMENT (FOR FRESH GRANT)

9.1: BASELINE INFORMATION

Whether Area falls under Forest	(Yes)
Whether Area falls under Wildlife Sanctuary	(No)
Whether Area falls under Coastal Regulation Zone (CRZ)	(No)
Whether Area falls under Defense , and	(No)
Any Other Clearance (specify)	(No)

Any Significant Objections from any Agency Involved in Stakeholder's Consultation - No

9.2: ENVIRONMENT PARAMETERS-

Air Environment:

The principal objective of the Ambient Air Quality Monitoring (AAQM) is to assess the existing ambient air quality in and around the project area. The ambient air quality depends upon the emission sources, meteorological conditions and the background concentration of specific contaminants.

The following parameters were analyzed at the selected locations in the study area.

- Particulate Matter (PM10).
- Particulate Matter (PM2.5).
- Sulphur Dioxide
- Oxides of Nitrogen.
- Carbon Monoxide

Water Environment:

Major parameters for surface water (IS:2296)

SI.No	Parameter	Unit
1	рН	· -
2		,
3	DOE	
4	cop	mg/
5	Arsenic .	}
б	Fluoride	j mg/:
7	Total Disso ved Sol d	mg/l
В	Heavy metals Fe, Ni Cd	mg/l

Major parameters for Ground water (IS:10500)

SI,No	PHYSICAL	Unit
	PH	
<u>2</u>	Total Hardness	
·— <u>3</u> — —	F upride	i mg//
	Chloride	mg/l
5	Tota Dissolved solios	mg/l
⁵ — ↓	Turbid ty	mg/l
7	hieavy metals	mg/l

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Noise Environment

Noise monitoring will be done during the baseline environmental study period. 24 hrs continuous monitoring will be carried out and average noise level for day and night will be produced.

9.2.1: Environmental Monitoring-

Base line study already covered	Study area	Data Collection interval	Information collected from and purpose
Ambient Air Quality	Two in predominant down in direction within 500m c	n ward wind direction of the ML area. (Co	on within 500m of the ML area, and one intinuous imphiloring)
Surface water (Quarterly)	Water sample analysis (Quarterly)	from two differen	nt sampling locations in buffer zone
Ground water (6 monthly)	Ground Water sample ar two buffer zone; analysis	nafysis from three i as per IS 10500.	different locations, one in the core and
Noise level (Monthly)	Two different locations in buffer and One location in core zone.		Core and buffer zone to assess the Noise level.
Soil quality (Annual)	Two different locations in zone.(Once in a year)	core and buffer (Core & Buffer

9.2.1.1: Ambient Air Quality-

Core Zone (Quarterly Monitoring Planned)	Yes Two nos.
LOCATION	E= 319261 N= 2412315
	E= 319094 N= 24119:1
Buffer Zone (Quarterly Monitoring Plannes)	Yes, 5NOS in predominant down ward wind
	direction
LOCATION	(TENSA) F = 316432.N= 2416006
	(RAIKELA) E= 31/651 N= 24:5763
	(DENGULA) E= 320945,N= 2415770
	(TENTULIDIHI) E= 322137,N= 2415692
	(KENSARA)E= 320641, N = 2409708

9.2.1.2: Water Quality-

Core Zone (Quarterly Monitoring Planned)	. No
Buffer Zone (Quariery Mondoring Planned)	Three hos for surface water and three hos for ground water Ground Water (TENSA) E = 316432.N= 2416006 (RAIKELA) E= 317651,N= 2415763 (DENGULA) E= 320945,N= 2415770 Surface Water (SW1) E= 316393 N= 2413099 (SW2) E= 314698 N= 2409863 (SW3) E= 319177.N= 2410724

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9.2.1.3; Noise Level-

And the second s	
Core Zone (Quartery Monitoring Planned)	Two nos.
LOCATION	E= 319261,N= 2412315 E= 319094,N= 2411911
Buffer Zone (Quarterly Monitoring Planned)	Five no.
LOCATION	(TENSA) E = 316432,N= 2416036 (RAIKELA) E= 317551,N= 2415763 (DENGULA) E= 320945,N= 2415770 (TENTULIDIHI) E= 322137,N= 2415692 (KENSARA)E= 320641 N= 2409706

9.3: IMPACT ASSESSMENT

9.3.2: LAND ENVIRONMENT

9.3.2.1: BASE / PRESENT STATUS Pre Mining Use	Area(Ha)
Barren / Waste land with small bushes & shrubs	7400(110)
Land under Agriculture / Grops	
Land covered with Plants	
Land under Grass Cover	
Land under Public Infrastructure / Utilities (water bodies, roads, railways, electric lines	
telephone lines etc.)	
Land under Habitation	
Land under Monuments & places of Historica' importance	
Degraded by Pits & Excavation	
Degraded by Dumps & Material Staking	
Covered under Mine Infrastructure (plants, shades, buildings etc.)	Nil
Land under Forest	60.508
Historically, Culturally & Ecologically Important Places	7 - 7
Airy Other, please specify be ow	Nif
Date of Observation	•

9.3.2.2: ANTICIPATED IMPACT	
Post Mining Use	Area(Ha)
Degradation by Excavation	14.630
Degradation by Dumps & Material Staking	9.131
Covered under Plants, Shades & Buildings	4 182
Covered by Roads & Approaches	3.595
Any Other, please specify below (Safety zone)	2.335
Area left undisturbed	26.635

9.3.2.3: MITIGATION MEASURES

9.3,2.3.1: Backfilling -

Not Applicable during plan period.

9.3.2.3.2: Area proposed to be covered by Plantation in Backfilled Area -

Not Applicable during plan period

9.3.2.3.3: Proposed Area under Agriculture -

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No agricultural land in core zone. However, agricultural land in buffer area will be preserved from sittation by retaining walk, check dams, garland drain and settling ponds

9.3.2.3.4: Proposed Area to be converted to Grazing Land -

Not Applicable during plan period

9.3.2.3.5: Ground Water Recharging -

Rain water harvesting pond and roof top rain water harvesting management plan are being implemented

9.3.2.3.6: Green Belt Development *

The total ML area comes under reserve forest. Presently the entire area is covered with dense forest. The plan period will visualize gap plantation based on the dominance and suitability of area.

9.3.2.3.7: Agriculture

Not Applicable during plan period

9.3.3; Air Environment

9.3.3.1: Climate & Meteorology (Please provide average of 10 years).

Temperature (*	(C)		Average Rainfall
		Relative Humidity (%)	(mm)
Maximum	М ուղար	66% - Max	
48	9	38 % ⋅ Min	1325

9.3.3.2: Air Quality Details for Base line Information / Present Status

S Station Name Season PM10 Excess (µg/m3) 2	PM2 5 (µg/m3) PM2 5 (xcess (µg/m3) 2	SO: SO: Value Excess (µg/m3 (µg/m3))	NOx Value (µg/m3	NOx Excess (µg/m3)	Date of Observation	Action
---	--	---	------------------------	------------------------------	------------------------	--------

The ambient air quality analysis will be produced after conduction of baseline studies. 8 no. of locations will be selected in predominant wind direction and environmentally sensitive areas.

9.3.3.3: Impact Assessment & Mitigation Measures

9.3.3.3.1: Anticipated Impact (Give details on Prediction of fugitive dust emissions due to mining activities, crushing & cleaning plants, loading & unloading, transportation by rail, road or conveyor)

Si no	Particulars	Unit	TSP (g/s)	NOx (g/s)	CO (g/s)
1	Mining				
<u>a)</u> .	Excavation	370 TP-	2.11	:	
b)]	Oriling	1 in 5 days	0.05	; I	_
3	Crushing	370 1₽₩	0.41	!	
4	Screening	370 TPH	D.4	<u> </u>	
5	Transportation by road	0.06 g/s per vehicle	0.6	0.348	0.15

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9.3.3.3.2: Mitigation Measure Give details on measures to reduce the emissions of pollutants during mining, loading, unloading, transportation, drilling, blasting, crushing etc. to maintain the air quality

CRITERIA	MITIGATION MEASURES	600
	MITIGATION MEASURES	
	 Drilling with dust extractors, usage of sharp of 	Inll bis and use of water jet for
	dousing the cuttings.	1 25 A . To .
	 Usage of Drill bits in good condition 	Travers.
Drilling Operation	 Proper maintenance of drills. 	े जिल्लास्य प्रभाग
	 Provision of PPE's including nose mask to operation 	the workers engaged in the
	Proposed new drills will also be fitted with du	ish autenetias eisers in aller mürk
_	wetting provision.	ast extraction system aroug with
	 Controlled blasting method will be practiced by 	y controlled and delay explosion
	 To control ground vibrations and arrest fly roc 	ks, advanced initiation system of
Blasting Operation	NONEL is being used for blasting, etc.	
and a per enter	 Ground vibrations are also being monitored ar 	nd the results are well within the
	погть.	
	Blasting with safe and optimum blast design working will be followed:) patterns for future enhanced
	working will be followed.	
Extraction of ore	Use of sharp teeth for shovels and other soil e	excavation equipment, and their
and waste by	periodical replacements	
Excavator,	 Provision of dust filters / mask to workers w. 	orking at highly dust prone and
Loading operation.	affected areas, etc.	
	♣ Regular water sprinkling is being carried out:	by mobile water tankers on the
	mine benches, mine haul, loading and unload suppressions	ing points and transfer for dust
Iron ore/wastę	 Fixed - auto water sprinkling arrangement sy: 	stem on the main haut road (or
transportation,	effective dust suppression.	
movement of	 Provision for wheel wash system will be implen 	
vehicles	 Ensuring that all mineral trucks are covered by 	
	 No overloading of trucks by having Quick Disp. 	atch system ar the weigh bridge
	cum dispatch gate. Besides, this system is also	
	 Provision of additional fixed - auto water spreffective dust suppression 	inkling arrangement system for
<u> </u>	◆ Dry fogging system for crusher & screen pl	ants and hoods over the help
	Conveyors are provided.	
Crushing	 All the conveyor belts of hooded with GI sheets 	
&screening	 Loading & unloading points are equipped with 	h water sprinkling arrangement
operation	System.	
-	 Fixed Sprinkling system has been provided along The proposed additional symbols assessing a 	
	 The proposed additional crushers, screening penclosure all around the loading and discharge 	plant will also be provided with

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9.3.4: Water Environment-

9.3.4.1: RAIN WATER

9.3.4.1.1; Base / Present Status (Details of Rivers, Springs, Lakes, Reservoirs & Drains up to First Order in Study Area)

The project area is having undulating hilly terrain and poor permeability. The depth of water level below ground level varies depending on the local topography, geology & hydrological conditions. The nearest surface water source is Kuradi River which is flowing 6.3 km away from the western side of the mining lease. Kuradi River is the major 1st order drainage system of the area.

9.3.4.1.2: Anticipated Impact (Impact on Surface Water Bodies / Groundwater Table Regime / Streams / Lake / Springs due to Mining, to be Assessed from Hydro-geological StudyGive details about impact on vegetation)

The effluent from workshop and HEMM will be passed through Oil and Grease tank, equalization tank and filtration tank. The treated water will be used in dust suppression and green belt area. No effluent will be discharged outside the lease area. No anticipated impact on natural water corresp.

Garland drains & retaining walls will be constructed all around the dumps and plantation of native species will be carried out on the dump stopes to minimize erosion. A settling pond will be constructed to arrest silt and sediment flows from mining area during rain fall and the water so collected is being utilized for the mine area, roads, green belt development etc.

The mining area is devoid of any vegetation. Shrubs and bushes are sporadically distributed in the lease area. There will be no impact on vegetation due to proposed mining activities.

9.3.4.1.3; Mitigation Measure (Possibilities of Rain Water Harvesting & Artificial Recharge with In the Mining Lease)

200 cum/day ground water is required for mining activities. To compensate the drawl of ground water Rain water harvesting structures and roof top rain water harvesting will be constructed

9.3.4.2: WATER BODY

9.3.4.2.1: Base / Present Status* (Water Bodies Existing & Water Bodies likely to be created due to Mining Activities & their Water Holding Capacity)

At present there is no existing water body, the mining activity will be carried out in such a manner which won't create any crater for water body creation.

<u>9.3.4.2.2: Anticipated Impact (Ingress of Sea Water, Particularly for Mining Projects in Coastal Areas)</u>
Not anticipated, Area not within CRZ

9.3.4.2.3: Mitigation Measure (Steps to Minimize Impact on Water Table if Mining Intercepts Groundwater Regime)

Water table BGL is 5.30m-7.30m so there is very less probability in puncture of water table.

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9.3.4.3: WATER BALANCE

9.3.4.3.1: Base / Present Status (Water Balance (Withdrawal of Surface Water & Release of Mine Drainage Water) Water Requirement & Waste Water Generation from various Activities of Mine, Including Beneficiation)

At present 200 cum/day water is required for mining operations. The required quantity will be drawn from ground water sources.

SI. No	Purpose	Ground Water (KLD)	Recycled STP &ETP (KLD)	Total from all source	
1	Dust Suppression	131	11.5	142.5	
2 _	Domestic Use	24.5		24.5	
3	P antalion	16.3	8.2	24.5	
4	FTP & Workshop, Wheel Washing System	8.5		85	
	Total	180.3	19.7	200	

The area expenences high rainfall, the site will generate above volume of run offs during such rainy periods. The surface run off from the uncovered site would contain high concentration of suspended matter and eroded matter which will be checked through retaining wall, check dams and setting ponds.

9.3.4.3.2: Anticipated Impact (Impact of Water Draw) on Surface & Groundwater Resources Impact on Surface & Groundwater Quality due to Discharges from Mining, Tailings Pond, Workshop, Township, & Leachate from Solid Waste Dumps etc.)

The effluent from workshop and HEMM will be passed through Oil and Grease tank, equalization tank and filtration tank. The treated water will be used in dust suppression and green belt area. No effluent will be discharged outside the lease area. No enticipated impact on natural water course.

Garland drains & retaining walls will be constructed all around the dumps and plantation of native species will be carried out on the dump slopes to minimize erosion. A settling pond will be constructed to arrest silt and sediment flows from mining operations and dumps and the water so collected is being utilized for the mine area, roads, green belt development etc.

9.3.4.3.3: Mitigation Measure (Construction of Check Dams, Sedimentation Ponds, Settling Tanks, Retaining Walls etc. with Design & Site Features for Control of run-off Mine Water Treatment for Meeting the Prescribed Standard Waste Water Treatment for Township Sewage, Workshop(s), Tailing Pond Overflow etc)

- Wash off/runoff from the mine workings is and will be regulated using various runoff management structures.
- Presently, during rainy season, the water collected in the mine area is drained to the sump floor of each quarry.
 The sump acts as a good rainwater recharge structure and the collected rainwater normally seeps into the ground within few days.

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 Retarning Wall of 765 m, garland drain of 425 m, check dam of 112m & 3 no of settling pends will be constructed in and around the dump and at strategic points of quarnes

Year	Retaining	well	Gartano	drain	Check da	า	Setting pond(2gos)
1 st year	<u>L(m_W(m)</u> 685 1	. H(m) 2	U(m) J W(<u>m</u> 320 1		(m) W(m) 430	D <u>(m)</u> 15	(££m) W(m) D(m)
2 ^{mp} year 3 ^m year 4 ^m year 5 ^m year	130 1	? 	105	Main:	Maintenanbo enanbe enanbe enanbo	-	2ros 21

9.3.5: NOISE

9.3.5.1: Critical Locations Identified within Lease Area *

No critical locations identified within lease area.

9.3.5.2: Give Detail about Prediction of Noise Level by using Mathematical Modeling at Different Locations Identified *

Noise level monitoring will be carried out continuously for 24 hours with one hour interval starting at 06.00 hrs to 06:00 hrs next day. During each hour, Leq were directly computed by the instrument based on the sound pressure levels. Lday (Ld), Lnight (Ln) and Ldn values were computed using corresponding hourly Leq of day and night respectively.

Noise levels recorded at each station with a time interval of about 60 minutes are computed for equivalent noise levels.

Equivalent noise level is a single number descriptor for describing time varying noise levels. The equivalent noise level is defined mathematically as Leq= 10 Log L / $T\Sigma$ (10Ln/10)

Where, L = Sound pressure level at function of time dB (A).

T = Time interval of observation.

Mathematically Ldn is given by
Ldn = 10 Log {1/24 (16 x 10(Ld/10) + 8 x 10(Ln/10))}
Where Ld = A weighed equivalent for day time period (5am-10 pm)
Ln = A weighed equivalent for night time period (10 pm to 6 am)

9.3.5.3: Measures to Minimize the Impact on Receiving Environment *

The safety zone has been planted with green belt for noise attenuation.

Every noise generating equipment is fixed with acoustic enclosures.

9.3.5.4: Noise Details for Base / Present Status

SI. No	Station Name	Season		Noise A! Day Time:		Noise At Night Time:	Excess Noise at Night	Date of Observation
-----------	-----------------	--------	--	-----------------------	--	-------------------------	-----------------------------	------------------------

The noise monitoring report will be produced after conduction of baseline studies, 6 no. of locations will be selected in environmentally sensitive areas and equivalent noise level will be monitored..

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9.3.5.5: Impact Assessment & Mitigation Measures

9.3.5.5.1: Anticipated Impact (Give details on Impact on ambient noise level due to rock excavation, transportation, processing equipment's 8 ancillaries)

Blasting drilling, movement of vehicles, crushing, screening also produce considerable magnitude of noise. The main sources of noise and expected levels are given below:

SI. No	Source	Inside cabin	Noise level in dB(A) at 10m from source.					
1	Shovel/Excavator	84 91	59 58	12 San San San San San San San San San San				
2	Dumpers/Tippors	87 56	75-85	1				
3	: Dril	B8 95	75-83	11. 2/ 8 12				
4	Dozer	BO 92	65-70	原型 (
5	Crushing & Screening	BS-95	75 85	NA 8541 2 2 4 4 5				

Prolonged exposure to a high noise level is harmful to the human auditory system and can create mental fatigue, increase bloud pressure, robellious attitude, annoyance and carelessness, which may lead to neglect of work and also result in accidents

Noise Levels	Adverse Effects
20-50 dB(A)	Speech impairment and annoyance
50 90 dB(A)	Hearing impairment for eight hour exposures
90-115 dB(A)	Partial deafness and nervous irritability
> 115 d8(A)	Permanent deafness
Impulsive noise (>90dB)	Frightens livestock grazing in the hearby areas

For every doubling of distance, the sound level reduces by 6 decibels (dB), and adequate green belt coverage will reduce it further hance noise will hardly reach nearby villages.

9.3.5.5.2; Mitigation Measure (Give details on measures for noise abatement including point source & line source)

- Planting trees at various places within the lease area to act as acquisic barriers.
- Proper and regular maintenance of vehrcles, machinery and other equipment. All HEMM are monitored for any abnormal sound and rectified with due precaution by maintenance personnel.
- Providing in-built mechanism for reducing sound emissions.
- Providing Sound proof operator's cabin for equipment's like dumpers, shovel, tippers, etc.
- The safe blasting practices are done and the vibrations and noise are recorded in daily basis by vibrometer.
- The Noise levels are being controlled by maintaining equipment properly, Green belt development.
- Existing DG's are provided with Acoustic sound proof and proper maintenance is carried out.
- Regular no se monitoring is carried out and the observations are within limits.
- Providing workers with earmufts & earplugs, as a protection from exposed to higher noise level.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.
- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.

9.3.6: VIBRATION

9.3.6.1: Vibration Details for Base / Present Status

\$.no	Station	5¢əsən	Oistance from Blasting Site(m)	Peak Particle Velocity(mm/sec)	Air over Pressure(DB)	Frequency (Hz)	Date of Observation		
Blastir	Blasting vibration study will be carried out from a national institution during baseline period and the details will								
be pro									

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9.3.6.2.1: Anticipated Impact (Give details on impact of vibrations including damage to materials/structures due to blasting)

Depending upon type of structure and dominant frequency, the peak particle velocity (PPV) should not exceed respective frequency.

Type of Structure	Commant excitation frequency							
	<8 HZ	8-25 HZ	>25 HZ					
(A) Buildings/Structures not belonging to the owner			201					
 Damestic houses/structures (Kuchha, brick and cement) 	5	10	15.7					
2. Industrial building	10	20 💮	125					
3. Objects of historical importance and sensitive structures	2	5 7	1242713					
[3] Building belonging to owner with limited span of life								
1. Domestic houses/structures (Kuchcha, brick & cement)	16	15	25					
2. Industrial building (RCC and framed structures)	. 15	25	30					

9.3.6.2.2: Mitigation Measure (Give details on measures for noise abatement including point source & line source)

- In loose and fractured rock mass, explosive added with additives may be used.
- Proper burden and spacing should be maintained according to the bench height.
- Length of stemming column should be greater than 0.6 times the burden. For better protection, it may be taken as greater than or equal to the burden.
- Angular hole may be drilled in conformity with the slope of the bench.
- As far as possible, holes should be located beyond weak zones.
- Burden and spacing should be marked by a responsible person with the help of a surveyor, taking the
 condition of the face and fractures into consideration.
- Before loading, blasting officials will always check the hole depths and ensure that the holes are drilled as per the blast design.
- All loose pieces of rock from the blasting site will be cleared before charging.
- Stemming of holes is very important. All the holes should be properly stemmed using 6-8 mm size stone chips along with drill cuttings.

9.3.7: SOCIO-ECONOMIC ENVIRONMENT

9.3.7.1: Demographic Profile

9.3.7.1.1; Anticipated Impact (Give details about Impact on the cropping pattern & crop productivity In the core zone)

There is no agricultural land within core zone.

9.3.7.1.2: Mitigation Measure (Give details about compensation for loss of land & crops) Not Applicable.

9.3.7.2: Traditional Skills & Source of Livelihood-

9.3.7.2.1: Base / Present Status (Give details about present status on traditional skills & source of livelihood)

Name	No of HH	TOTPop	Per/ HH	TOT Work Pup	Working Pop %	Tat Work Male	Tot Working Female	Main Work Pop	Maln Cultivator	Person	Main HH Per	Non Work Per	Non-Working Pop%
Tensa	376_	1617	. 4	442	27	379	63	297	29	1	8	1175	73
Tentuldih	_115	475_	_ 4	151	32	134	17	149	85	a	C	324	58
Font gram	376	1568	4	618	39	452	166	260	32	29	9	950	61
Kensara	21	72	3	53	74	25	28	5	1	a	9	19	26

Agriculture and allied activities like setting of forest products were the main source of fivelihood of inhabitants of the area. The mining operation became a prominent intervention in the livelihood system of local population in this region. Thus at present the livelihood of this region is mining and allied activities.

9.3.7.2.2: Anticipated Impact (Give details about positive & negative impacts on present status of livelihood in the area)

It is seen that shifting of occupation among the local population is mostly lowards mining and its related work. Mining leads to fivelihood gain through creation of employment opportunities in the region. Loss of cultivable land and forest land due to mining activities which invites change in their native profession and may envisage involuntary migration of population to other region for livelihood.

9.3.7.2.3: Mitigation Measure (Give details about training to locals for employment in the project training for making them self-employable or elsewhere)

This working mine has brought tremendous benefits in the area like:

- Direct employment opportunities for more than 259 persons.
- Indirect employment for more than 250 persons through various service related activities connected with the project operations
- Improvements in infrastructure in the area like Infrastructure development Road Network, Water supply to villages through Water tankers & overhead tanks with pipe lines, Electricity facilitation, Healthcare, Education, Other Social Welfare activities
- Improvement of the general living standard of the people in the vicinity.
- Generation of self-employment through self-help groups.
- Improvement in per capita income.
- Benefits from CSR activities, vocational training, adaptation of educational institutes and villages.

This working mining project has immensely benefitted this region in the field of potential employment, improved per capita income, improved social welfare, education, medical healthcare systems communication, infrastructural build-up, etc.

9.3.7.3: Economic Profile of the Population in Core & Buffer Zone

9.3.7.3.1: Base/ Present Status(Give details about economic profile of the population in core & buffer zone)

In the core zone no habitation exists. Hence, economic profile of population within core zone is not envisaged. In buffer zone, this project will help in direct employment opportunities for 259 persons and indirect employment for more than 250 persons through various service related activities connected with the project operations.

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9.3.7.3.2: Anticipated Impact (Give details about Impact on community resources such as grazing [and]

There will be no impact on any community resources.

9.3.7.3.3: Mitigation Measure (Give details about employment opportunities & access to other amenities such as education, health care facilities to be extended to locals, addressing local unemployment, tourism or recreation opportunities, efforts for sustainable development of the local community)

As about 500 persons will be engaged directly and indirectly, which will increase their financial status. Regular health care camps, will decrease disease and improve their health conditions construction of infrastructure like roads will attract tourism and hotel industry, vocational training and better educational facilities will bring sustainable development in the area.

9.3.7.4: Human Settlement in Core & Buffer Zone

9.3.7.4.1: Base / Present Status (Give details about human settlement in core & buffer zone)

There is no human settlement within the core zone. In buffer zone within 5 km radius the following villages with human settlement are given:

Матре	No of HH	TOT Pop	Per/ HH	TOT Work Pop	Working Pop %	Tot Work Male	Tot Working Female	Main Work Pop	Main Cultivator	Main Agri Person	Main HH Per	Non Work Per	Non-Warking Pop%
Tensa	376	1617	4	442	27	379	63	797	29	1	8	1175	73
Tentuld h	125	475	4	151	32	134	17	149	85	. 0		374	68
Tantigram	376_	1568	_4	618	39	452	166	260	32	29	9	950	51
Kensara	. 21	72	3	53	74	25	28	5	1	0	۵	19	26

9.3.7.4.2: Anticipated impact *(Give details about any displacement of human settlements during the life of the mine)

There is no settlement within the lease area. So, displacement or rehabilitation and resettlement is not envisaged

9.3.7.4.3: Mitigation Measure (Give details about rehabilitation & resettlement of land ousters & displaced people)

Not applicable

9.3.7.5: Health Profile of Population In Core & Buffer Zone

9.3.7.5.1: Base / Present Status (Give details about health profile of population in core & buffer zone)

The area is endemic to malaria Malnutrition among children, and child mortality is high due to traditional treatment.

9.3.7.5.2: Anticipated Impact (Give details about any adverse impact on the general health condition of the population in core & buffer zone)

Stagnation of water may cause breeding ground for mosquitoes and other vector borne disease carriers. Expose to dust may cause respiratory diseases.

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9.3.7.5.3: Mitigation Measure *[Give details about avenues like dispensaries, hospitals, maternity homes if any to be created]

Regular dewatering of pits drains will reduce mosquito breeding, regular sprinkling of water will reduce dust emission. Health checkup camps for workers and nearby villages will reduce the chance of health related problems and will create awareness towards health care hygiene and nutrition.

9.3.7.6: Historically, Culturally & Ecologically Important Places in Core & Buffer Zone-

9.3.7.6.1: Base / Present Status (Give details about historically, culturally & ecologically important places in core & buffer zone)

There are no historically, culturally & ecologically important places in core & buffer zone of the prince.

9.3.7.6.2: Anticipated Impact *(Give details about risk grofiling)

Not applicable

9.3.7,6,3; Mitigation Measure (Give details about public health benefits 16g, clean water to aboriginal community), measure for safeguard against damage etc.)
Not applicable

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4 10:19:24 +05:30*

PRADEEPT MOHAPATRA (QUALIFIED PERSON)

CERTIFICATE FROM QUALIFIED PERSON

The provisions of the Mineral Conservation and Development Rules 2017 have been observed in the preparation of Mining Plan for Choltapahar Iron Ore Block over an area of 60.508 Ha... of Sri Debabrat Behera, in Sarkanda Reserve Forest, ps-Koire under Sundargarh district Odisha. State and whenever specific permissions are required, the applicant will approach the concerned authorites of Indian Bureau of Mines.

The information furnished in the Mining Plan is true and correct to the best of our knowledge.

PRADEEPT Date:
MOHAPATR 2021.12.30
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Pradeept Mohapatra (Qualified Person)

Place: Cuttack Date: 30.12.2021



KASHVI POWER & STEEL PVT. LTD.

Regd. Office : 1234-F. Gobindprasad, Bornkhal, Bhubaneswar - 751910. Odisha, india Tel/Fax | 0674-2549944, E-mail : groupkashvi@gmail.com CIN : D401000R2009PTC011341

CONSENT LETTER/ UNDERTAKING /CERTIFICATE FORM THE LESSEE

1.0 The Mining Plan in respect of Dholta Pahar Iron Ore Block over an area of 60.508Ha of M/s Kashvi Power and Steel pvt Ltd, near Dengula Village, P.S/Tahasil-Koira, District Sundargarh, State Odisha under rule 16 of MCR 2016 has been prepared by qualified person Shri Pradeept Mohapatra. M.Sc (Geology) having professional experiences of more than five years of working in the field of mining after obtaining the Degree as per Rule 15 of MCR, 2016.

This is to request the Regional Controller of Mines, Indian Bureau of Mines, Bhubaneswar, to make any further correspondence regarding any correction of the Mining Plan with the said qualified person at his address below:-

Sri Pradeept Mohapatra

World Consultancy Cervices
Plot No -766,
Konark Centre Office Premises, Beside NH- 16,
2nd Floor, Above Usha International,Telengapentha,
Cuttack = 754001
Mob: 9438149715 / 7978724154

E mail: pmohapatra_07@yahoo.com

I hereby undertake that all modification/ updating as made in the said Mining Plan by the said qualified person be deemed to have been made with my knowledge and consent and shall be acceptable on me and binding in all respects.

2.0 It is certified that the CCOM Circular No-2/2010 will be implemented and complied with when an authorized agency is approved by the State Government.

Head Office : Kashvi Mati, 4th Floor, Mining Road, Keonjhar, Odisha, Tel : 06766-253175



KASHVI POWER & STEEL PVT. LTD.

Regt Office: 1234-P. Gobindprasad, Bornikhal, Bhubaneswar - 751010, Odisha, India Tel/Fax: 0674-2549944, E-mail: groupkashi@gmail.com CIN: U401000R2009PTG011341

3.0 It is certified that the Progressive Mine Closure Plan in respect of Dholta Pahar Iron ore block over an area of 60.508 Ha, near Dengula Vitlage, P.S/Tahasil- Koira, District Sundargarh, State Odisha compties with all Statutory rules, Regulations, Orders made by the Central or State Government, Statutory organization, Court etc. which have been taken into consideration and wherever any specific permission is required the will approach the concerned authorities.

The information furnished in the Progressive Mine Closure Plan is true and correct to the best of my knowledge and records.

4.0 The provisions of Mines Act, Rules and Regulations made there under have been observed in the preparation of Mining Plan over an area of 60.508Ha, near Dengula village P.S/Tahasil- Koira District- Sundargarh, State-Odisha belonging to Dholta Pahar Iron ore block, and where specific permissions are required, the applicant will approach the D.G.M.S. Further standards prescribed by D.G.M.S. in respect of miners' health will be strictly implemented.

Kashvi Power And Sleet Pvt. Ltd.:

Detacher Much Managing Director Managing Director

M/s Kashvi Power & Steel Pvt Ltd.

Place: Bhubaneswar

Date: 07.12.2021