EXECUTIVE SUMMARY

OF

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR

PUBLIC HEARING

OF

Ari Dongri Iron Ore Mining Project

(Expansion of Iron Ore Mining Lease Area from 106.60 ha to 138.96 ha and Production Capacity from 0.705 MTPA to 1.405 MTPA)

At

Village: Kachche, Tehsil: Bhanupratappur,
District: Uttar Bastar Kanker (Chhattisgarh)

APPLICANT

M/s. Godawari Power & Ispat Ltd.

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1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

GPIL is the Flagship Company of Hira Group of Industries; Raipur formely named Ispat Godawari Ltd. (IGL) which was incorporated in 1999 to setup an integrated steel plant with captive power generation. Today GPIL is an end to end manufactures of various steel items.

The company crossed Rs. 1000 crore marks in turnover during 2007-08 and has seen an all-round growth in the performance of the company, backed by higher volume of production and better price realization.

The growth drivers are still on, with further plans to improve the operating margins by entering into backward integration through mining of iron ore and coal and venturing into value added manufacturing facilities by setting up iron pelletisation plant to convert iron ore fines into pellets which is used as a raw material for making sponge iron and replacement of sized iron ore.

Godawari Power & Ispat Ltd. Commenced production of its sponge iron division on 18th April 2001 and its division namely steel and power became fully operational with the expansion plan.

The present source of Iron supplied is from Orissa sector and NMDC (Bailadila) and existing Kachche Ari- Dongri Iron Ore Mines.

1.2 TYPE OF PROJECT

M/s. Godawari Power & Ispat Ltd. has proposed for Expansion of Iron Ore Mining Lease from 106.60 ha to 138.96 ha {Existing ML Area : 106.60 + Proposed Additional ML Area : 32.36 ha.} to achieve the iron ore total production capacity of 1.405 MTPA from existing mining lease of 106.60 ha. (0.705 MTPA) and additional Mining Lease area of 32.36 ha. (0.7 MTPA).

As per EIA Notification dated 14th September 2006, as amended time to time , this project falls under Category "A", Project or Activity 1(a) – 3 and therefore requires Environmental Clearance from MoEF, New Delhi.

1.3 NEED FOR THE PROJECT

- GPIL is having an existing Steel Plant at Siltara Industrial Area, Siltara, District Raipur (Chhattisgarh). Environmental Clearance obtained from MOEF for the

following capacities vide letter no. J-11011/179/2009 – IA.II (I) dated 25th Aug 2009.

- Iron Ore requirement for the existing capacity is being partially met from existing Ari Dongri Iron ore Mine (ML area 106.60 ha) with production capacity of 0.705 MTPA at District: Kanker, State Chhattisgarh.
- M/s. Godawari Power & Ispat Ltd. has proposed for Expansion of Iron Ore Mining Project Lease from 106.60 ha to 138.96 ha {Existing ML Area: 106.60 + Proposed Additional ML Area: 32.36 ha.} to achieve the requirement of Iron Ore for DRI Plant setup in Chhattisgarh State as such the mineral will be for captive use .

1.4 BRIEF DESCRIPTION OF THE PROJECT

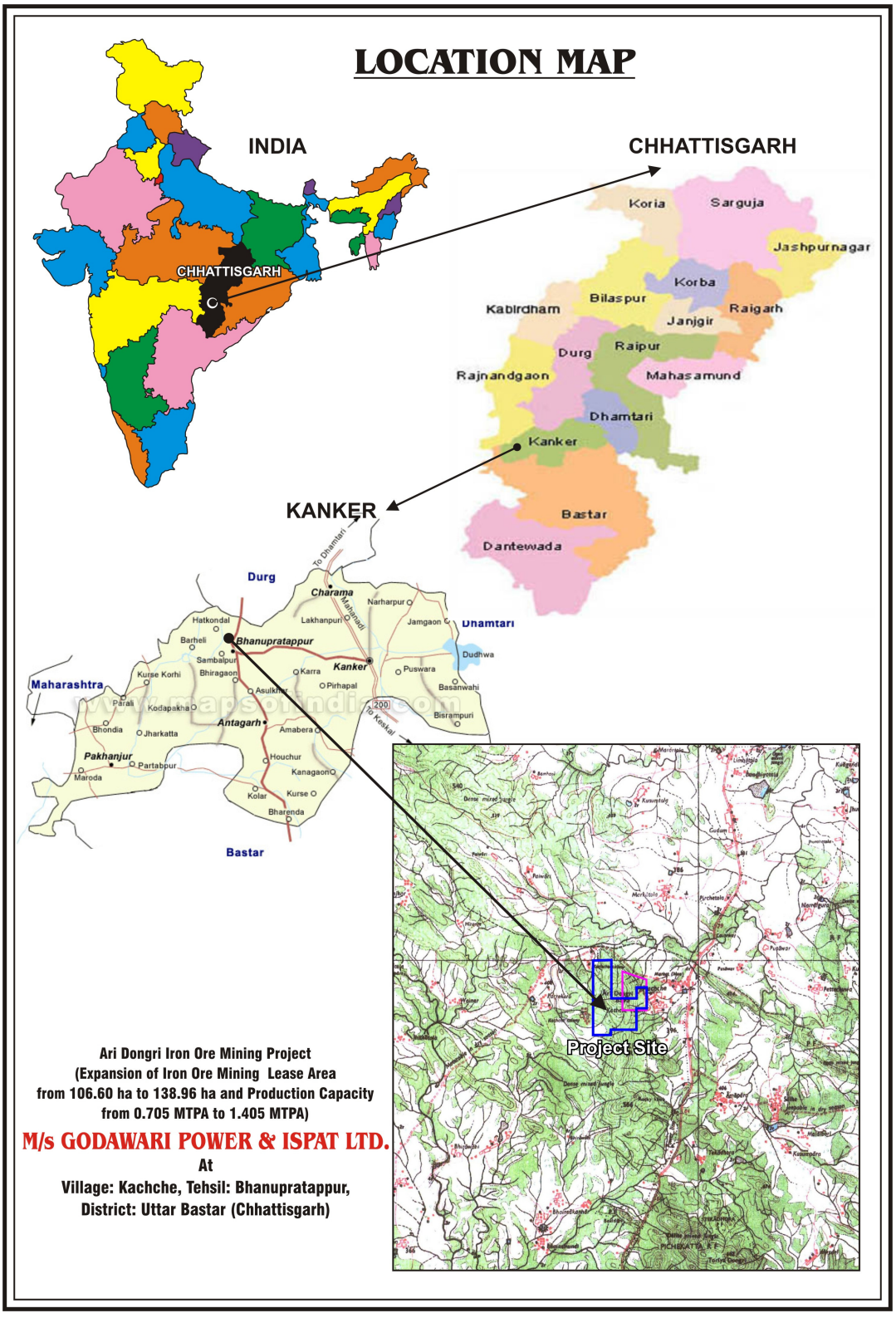
TABLE - 1
BRIEF DESCRIPTION OF THE PROJECT

S. No.	Particulars	Details
A.	**Nature of project**	Iron Ore Mining Project
B.	**Size of project**	
(i)	Mining Lease area	Expansion of Iron Ore Mining Lease (Existing ML Area: 106.60 + Additional ML Area: 32.36 ha)
(ii)	Proposed Enhancement in Iron Ore Production capacity	Iron Production Capacity from 0.705 MTPA to 1.405 MTPA (Existing Production (106.60 ha): 0.705 MTPA + Proposed Production (32.36 ha): 0.7 MTPA)
C.	**Project Location**	
(i)	Village	Kachche
(ii)	Tehsil	Bhanupratappur
(iii)	District	Uttar Baster
(iv)	State	Chhattisgarh
(v)	Latitude & Longitude	20° 24’ 27.00” to 20° 24’ 54.00” N 81° 03’ 56.00” to 81° 04’ 14.00” E
(vii)	Toposheet No.	64 H/2, 64 H/3, 64 D/15
D.	**Details of Environmental Settings of the Area**	
(i)	Nearest Village	Kachche Village ~2.5 km, in East Direction form Mine Site
(ii)	Nearest Town/District Headquarter	Kanker, ~ 61 km, SE direction from Mine Site
(iii)	State Highway	SH-9 ~ 1.0 km, in East direction from Mine Site
(iv)	Railway Station/Railway Line	Dalli Rajhara ~ 20 km, NE direction from Mine Site
(v)	Airport	Raipur ~ 165 km, NE direction from Mine

		Site	
(vi)	Ecological Sensitive Areas (National Park, Wild Life Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/ Elephant Reserves)	No National Park, Wildlife Sanctuary, Biosphere Reserve, Wildlife Corridor falling with the study area of mine site.	
(vii)	Reserved / Protected Forest within 10km radius	**Forest**	**Distance w.r.t ML Area**
		Kachche RF	Mine Lease is within forest area
		Rajobidih RF	~ 5.0 km, E
		Khande PF	~ 8.4 km, NE
		Naghu RF	~8.5 km, WNW
		Pichekatta RF	~ 5.0 km, SSE
		Mardel PF	~ 7.5 km, SSE
		Ranwahi PF	~9.0 km, SSE
		Unochapani RF	~ 8.0 km, SE
		Magardha RF	~ 6.5 km, ENE
		Limodih PF	~ 9.5 km, ENE
(ix)	Nearest River/Dam	Khandri Nadi ~ 8.5 km, south direction from Mine Site	
(x)	Seismic Zone	Zone – II [as per IS 1893 (Part-I): 2002]	
E.	**Cost Details**		
(i)	Total Project Cost	Rs. 8.76 Crores/-	
(ii)	Cost for Environmental Protection Measures	➢ Capital Cost - Rs.0. 80 Crores/- ➢ Recurring Cost - Rs. 30 Lacs / annum	
F.	**Requirements for the project**		
(i)	Water requirement	25 KLD. But we are engaged in practicing dust bloc technology, which reduces the water requirement for dust suppression. Hence there will be no additional water requirement for this mines.	
(ii)	Manpower requirement	Existing: 800 Persons (65 Departmental + Contractual Basis) Additional requirement: 221 Persons	
(iii)	Power requirement	Existing: 200KVA No additional power required for the proposed Expansion. Source: State Grid	

Source: *Site Visit & Pre-Feasibility Report*

1.5 LOCATION MAP



1.6 PROJECT DETAILS

1.6.1 Mining Lease Status

- Mining Lease granted in favour of M/s. Godawari Power & Ispat Ltd. for 106.60 ha vide letter no. 5163/2005-M.IV dated 06/09/2005.
- Approval of Mining Plan for ML area 106.60 ha was granted on 24.07.2006 vide letter no. KNK/FE/MPLN-939/NGP dated 24.07.2006.
- Commercial production from Mines started from 10th April 2009.
- M/s. Godawari Power & Ispat Ltd. (GPIL) applied for Mining Lease (32.36 ha) at Kachche, Tehsil: Uttar Baster, District: Kanker (Chhattisgarh) to state Govt., Chhattisgarh on 04.05.2009
- Letter from Department of Mineral Resources, Mantralaya, Govt of Chhattisgarh to Ministry of Mines, Govt of India regarding grant of ML grant in favour of GPIL vide letter no. F3-3/2010/12 dated 4th Feb 2010.
- Concurrence of Central Government received from Ministry of Mines, Govt. of India regarding ML grant in favour of GPIL vide letter no. 5/33/2010 – M.IV dated 31st Aug 2010.
- LOI issued by Department of Mineral Resources, Mantralaya, Govt. of Chhattisgarh in favour of GPIL for 32.36 ha vide letter no. F 3-31-/12 dated 8th Oct. 2010.
- Approval of Mining Plan & Progressive Mine Closure Plan by IBM, MCCM Central Zone was granted on vide letter no. 314 (3)/2010-MCCL (CZ)/MP-35 dated 23rd May 2011.

1.6.2 Mining Details

TABLE - 2
MINING DETAILS

S. No.	PARTICULARS	DETAILS
1.	Method of Mining	Mechanized Opencast Mining with drilling & blasting by using expanding cement and manual loading of Ore
2.	Iron Ore Production per year	Iron Production Capacity from 0.705 MTPA to 1.405 MTPA (Existing Production (106.60 ha): 0.705 MTPA + Proposed Production (32.36 ha): 0.7 MTPA) Once both the mines are fully developed
3.	Total Mineable Reserves	32.36 ha: 2.43 million tonnes 106.60 ha: 4.089 million tonnes
4.	Life of Mine	8 years

5.	No. of Benches Proposed	6
6.	Bench Height	6.0 m
7.	Bench Width	12.0 m
8.	Elevation Range	32.36 ha: 410 m AMSL to 595 m AMSL
9.	Ground Water Table	Below 405 m RL
10.	Ultimate Working Depth of Mining	460 m RL
11.	Overall Pit Slope	45^0
12.	Stripping ratio	1:0.9
13.	Number of Working Days	300 days
14.	Number of shifts per day	1
15.	Total waste generation till the end of life of mine	1.145 million tonnes

Source: *Approved Mining Plan with Progressive Mine Closure Plan*

1.6.3 Method of Mining

- The Applied mining leases fall in forest compartment no. 608. The mining lease area is 32.36 hectares. Mechanized Opencast Mining with drilling & blasting by using expanding cement is proposed.
- Removal of waste rock will be done simultaneously in a systematic manner to get adequate exposure of iron ore faces.
- Drilling will be done by DTH drill machine. Instead of blasting with explosive, lessee proposes to develop crack by using expanding cement and then excavated by back hoel.
- The entire transportation of ore from the area will be done by road. The nearest railway loading point from the proposed area is Kusumkasa, which is located on Durg-Rajhara broad gauge line of S.E Rly. The distance from the proposed mine to Kusumkasa Railway Station is about 30 km.

1.6.4 Extent of Mechanization

TABLE – 3

EXTENT OF MECHANIZATION

S. No.	Equipment Name	Number	Size/Capacity
1.	Jack Hammer	4	-
2.	Wagon drill	2	57 mm dia
3.	Air Compressor	1	450 cfm
4.	Excavator	3	1.2 Cu.m
5.	Dozer with ripper	2	-
6.	Rear dumper	5	20 tonnes
7.	Tipper	10	10 tonnes

Source: *Approved Mining Plan with Progressive Mine Closure Plan*

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 PRESENTATION OF RESULTS (AIR, NOISE, WATER & SOIL)

Baseline study of the study area was conducted during Winter Season, 2012-13.

The concentration of PM_{10} at all the 8 AAQM stations ranges between 46.50 to 76.28 µg/ m3, SO_2 ranges between 6.73 to 10.76 to µg/m3 and NO_2 ranges between 10.67 to 19.20 to µg/m3.

Ambient noise levels were measured at 8 locations around the mining project. Noise levels varies from 50.11 to 64.10 Leq dB(A) during day time and during night time noise levels ranges from 40.22 to 50.45 Leq dB(A).

The ground water analysis for all the 8 sampling stations shows that pH varies from 6.09 to 7.00, total hardness varies from 163.93 mg/l to 479.18 mg/l and total dissolved solids varies from 216.00 mg/l to 571.00 mg/l.

The analysis results for soil shows that pH value ranges from 6.29 to 7.79. It means soil is slightly alkaline in nature and texture of soil is Silty Clay. The concentration of Nitrogen & Phosphorus has been found to be good in amount whereas Potassium has been found average in the soil samples.

2.2 BIOLOGICAL ENVIRONMENT

Flora: Tree species which are most commonly found in the study area are: *Jamun* (*Sygygium cumini),* Neem *(Azadirachta indica)*, Sagwan *(Tectona grandis),* Amla (*Emblica Officinalis*), Babul (*Acacia Arabica*), Shishum (*Dalbergia Latifolia),* Aam (Mangifera indica), Pipal *(Ficus Infectoria)* etc.

Fauna: Animals which are most commonly found in the study area are: Parrot *(Rosennged parakeet), Koel (Eudynamis scolopaceus),* Squirrel *(Funumbuls palmarum)*, Common garden lizard (*Calotes vesicolor*), Common Langur *(Presbytis intellis)*, Common Mouse (*Mus musculus)*, House Lizard (*Hemidactylus sp)*, etc.

2.3 SOCIO-ECONOMIC ENVIRONMENT

The population as per 2001 Census records is 22910 (for 10 km radius buffer zone). Scheduled Caste fraction of the population of study area (10 km) is 6.14 % and Scheduled Tribe is 65.55% and Percentage of literacy is 75.74 %. Total no. of household in the area is 4429.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

- **Impact on air -** The key air emissions from the mining activities (drilling, blasting, loading, haulage and transportation) are particulate matter. Use of proper mitigation measures will be taken like water sprinkling during transport activities & green area development along the road sides to control pollution.
- **Impact on water environment** - There will be no outside discharge of liquid effluent from the mining project site; therefore no significant impact on surface water bodies is anticipated due to mining operations. Mining in the area will be done well above the water table therefore impact on ground water regime is also not anticipated.
- **Impact of noise** - Major noise generating sources of the mining activity are drilling, blasting and vehicles used for transportation of Iron Ore. The proposed plantation will also check propagation of noise in the surrounding areas. All the vehicles that will be used for transportation will be maintained regularly and checked for Pollution under Control.
- **Impact on land environment** – Opencast mining activities may alter the landscape of the lease area but will not have any effect on the surface features of the surrounding areas. Topsoil removed from the mine will be stacked separately & simultaneously used for plantation purpose/ Greenbelt Development.

4.0 POST PROJECT ENVIRONMENTAL MONITORING PROGRAM

Environmental Monitoring Programme will be conducted for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by MOEF & Consent to Operate issued by SPCB. Six monthly compliance reports will be submitted on regular basis, to MoEF, New Delhi on 1st of June & 1st of December. Quarterly compliance Report for conditions stipulated in Consent to Operate will be submitted to SPCB on regular basis. Details of the Environmental Monitoring schedule, which will be undertaken for various environmental components, are detailed below:

TABLE- 4
POST PROJECT MONITORING

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Meteorological Data	Daily
2.	Ambient Air Quality at project site	Quarterly/ Half Yearly
3.	Water Quality	Quarterly/ Half Yearly
4.	Noise Level Monitoring	Quarterly/ Half Yearly
5.	Soil Quality	Half Yearly/Yearly
6.	Health Check- up	As per the guideline

5.0 ADDTIONAL STUDIES

The Additional Studies as per Terms of References vide MoEF letter no. J-11015/384/2012-IA II (M) dated 5th March 2013 are covered in Draft EIA/EMP Report.

6.0 PROJECT BENEFITS

The proposed project activity will help in combating the growing demand of cement in the market & hence will help in the economic growth of the country. GPIL is already actively involved in the CSR activities at its other project sites. Infrastructure development in the nearby villages, creation of educational facilities, empowering women through self help groups, gainful employment for rural, health awareness programmes & surgical camps, assistance to social forestry programmes will be taken up by the company.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Quality Management

- Drilling & Blasting will be carried out by using expanding cement instead of explosives to reduce generation of dust and noise level.
- All the vehicles that will be used for transportation i.e. trucks, tippers, and dumpers will be maintained regularly and a certificate of Pollution under Control will be obtained from competent agency.
- Periodical water spraying on the haul roads will be done.

- Green Belt will be developed around the mine pit boundary and all along the haul roads. Plantation will be done near mine office, workshop and over backfilled area.

7.2 WATER QUALITY MANAGEMENT

- Garland drains will be made all along the periphery of pits to prevent the water carrying the wash-offs entering the mine pit.
- The water collected into the garland drains will flow towards a sump. The dust/ soil will be allowed to settle in the sump and clear water will be utilized for afforestation and wetting of haul roads to arrest dust generation.
- Disposal of waste water from workshop will be treated by oil water separator before its use for plantation
- The domestic effluent generated from the mine office, will be discharged in soak pits via septic tanks.
- Rain water harvesting will be practised in the lease area.

7.3 Noise Management

- Drilling & Blasting will be carried out by using expanding cement instead of explosive which will help in reducing noise.
- Adequate silencers will be provided to modulate the noise generated by the machines like diesel engines.
- Earmuff will be provided to all operators and employees.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- Plantation will be done to minimize the propagation of noise.
- Periodical monitoring will be done.

7.4 SOLID WASTE MANAGEMENT

- **106.60 ha**: The quantity of top soil removed and OB waste generated during the first five years is about 0.080 million tonne of top soil and 16.37 million tonne of overburden. During the entire life of mine 20.77 million tonne of OB waste will be generated.
- **32.36 ha:** The quantity of top soil removed and OB waste generated during the first five years is about 0.065 million tonne of top soil and 0.283 million tonne of

overburden. During the entire life of mine 1.145 million tonne of OB waste will be generated.

During the mine operation, the top soil or the overburden in the lease area is being stack separately for plantation purpose. The same will be done for the proposed expansion project.

7.5 LAND RECLAMATION

- **106.60 ha:** The mining operations will affect the present landuse of the ML area. The total lease area is 106.60 ha. At the end of life of mine total excavated area will be 33.30 ha. 7.58 ha area will be covered under Plantation / Greenbelt development. 14.01 ha area will be covered under dump which will be used for Plantation.
- **32.36 ha:** The mining operations will affect the present landuse of the ML area. The total lease area is 32.36 ha. At the end of life of mine total excavated area will be 8.69 ha will be converted into water reservoir & 1.11 ha area will be covered under Plantation / Greenbelt development 3.88 ha area will be covered under dump which will be used for Plantation.

7.6 GREENBELT DEVELOPMENT AND PLANTATION PROGRAMME

- **106.60 ha:** At the end of life of mine, out of total ML area i.e. 106.60 ha, 21.59 ha will be covered under Greenbelt. The trees will be planted @ 2500 trees per ha of land.
- **32.36 ha:** At the end of life of mine, out of total ML area i.e. 32.36 ha, 1.11 ha will be covered under Greenbelt (other than dump and backfilled area). Plantation will be done on OB dump area of 3.88 ha thus total areas comes to 4.99 ha. The trees will be planted @ approx. 2500 trees per ha of land.

7.7 SOCIO-ECONOMIC ENVIRONMENT

GPIL is already actively involved in the CSR activities at its other project sites and will initiate either by providing or by improving the facilities in the area under like housing, education, health, medical services, occupation, water supply, sanitation, communication, transportation & road infrastructure for uplifting the living standards of local communities.