FORM-1

On

PROPOSED MODIFICATION CUM EXPANSION (1 x 600 m^3 BLAST FURNACE & 1 x 110 m^2 SINTER PLANT) OF 1.6 MTPY STAINLESS STEEL PLANT

OF

M/s. JINDAL STAINLESS LTD.

AT-KALINGANAGAR INDUSTRIAL COMPLEX, JAJPUR DISTRICT, ODISHA

Prepared by:-

FEBRUARY 2015

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

(An Enviro Engineering Consulting Cell)

Plot No.-108, District Centre, Chandrasekharpur, Bhubaneswar-16,
Phone No. : 0674-2744594, 3250790, Fax: 0674 – 2744594
E-mail-visiontekin@yahoo.co.in , visiontekin@gmail.com
Visit us at - www.vcspl.org

ISO 14001:2004
ISO 9001: 2008
OHSAS 18001:2007

FORM-1

APPLICATION FORM-1
(AS PER EIA NOTIFICATION 2006 & REVISIONS THEREOF)

<table>
<tr><th>S. No</th><th>Item</th><th>Details</th></tr>
<tr><td>1</td><td>Name of the Project</td><td>Proposed modification cum expansion (1 X 600m³ Blast Furnace & 1 X 110 m² Sinter Plant) of 1.6 MTPY Stainless Steel Plant.</td></tr>
<tr><td>2</td><td>S. No. in the schedule</td><td>3 (a) Metallurgical Industries</td></tr>
<tr><td>3</td><td>Proposed capacity / area / length / tonnage to be handled/command area /lease area / number of wells to be drilled.</td><td>Proposed plant capacity:
<table><tr><th>Particulars</th><th>Install Capacity</th></tr><tr><td>Blast Furnace</td><td>1 X 600m³</td></tr><tr><td>Sinter plant</td><td>1 X 110m²</td></tr></table></td></tr>
<tr><td>4</td><td>New / Expansion / Modernization</td><td>Expansion Project</td></tr>
<tr><td>5</td><td>Existing capacity/Area etc.</td><td><table><tr><th>Particulars</th><th>Install Capacity</th></tr><tr><td>COBP</td><td>1 X 0.425 MTPA</td></tr><tr><td colspan="2">Steel Melt Shop (SMS)</td></tr><tr><td>EAF</td><td>2 X 100 T, 40/50 MVA</td></tr><tr><td>AOD</td><td>1 X 150 T</td></tr><tr><td>LF</td><td>1 X 150 T</td></tr><tr><td>Slab Caster</td><td>1 x 1 Stand</td></tr><tr><td colspan="2">Hot Strip Mill</td></tr><tr><td>Re heating Furnace</td><td>1 X 300 TPH</td></tr><tr><td>HSM</td><td>1.6 MTPA</td></tr><tr><td>Hot Rolled plate facility</td><td>1 X 100,000 TPY</td></tr><tr><td colspan="2">Cold Rolling Mill</td></tr><tr><td>DRAP line</td><td>1 X 8,25,000 TPY</td></tr><tr><td>WRAP</td><td>1 X 4,50,000 TPY</td></tr><tr><td colspan="2">Ferro Alloy Plant</td></tr><tr><td>Cr- Briquette Plant</td><td>2 X 33 TPH</td></tr><tr><td>Fe Alloy Plant</td><td>2 X 60 MVA + 3 X 27.6 MVA</td></tr><tr><td colspan="2">Captive Power Plant</td></tr><tr><td>Coal Based</td><td>2 X 125 MW</td></tr><tr><td>Fe- Cr WHRB</td><td>1 X 13 MW</td></tr><tr><td>Oxygen Plant</td><td>1 X 420 TPD</td></tr></table></td></tr>
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6	Category of project i.e. 'A' or 'B'	'A'
7	Does it attract the general condition? If Yes, please specify.	No
8	Does it attract the specific condition? If Yes, please specify.	No
9	Location	Kalinganagar Industrial Complex
	Plot/Survey/Khasra No.	Khurunti 234, Gadapur – 296
	Village	Duburi
	Tehsil	Danagadi
	District	Jajpur
	State	Odisha
10	Nearest railway station/airport along with distance in kms.	Sukinda Road – 1 km, Jakhapura – 5.28 km, Jajpur Keonjhar Road – 12 km
11	Nearest Town, City, District Headquarters along with distance in	Duburi- 7 km District Head quarter Jajpur- 35 km
12	Village Panchayats, Zilla Parishad, Municipal corporation, Local body (complete postal addresses with	Tehsil-Danagadi District- Jajpur, Odisha-755026
13	Name of the Applicant	**Mr. Tarun Khulbe**
14	Registered Address	Jindal Stainless Limited O.P. Jindal marg, Hisar- 125005
15.	Address for correspondence:	**Jindal Stainless Limited,** Kalinga Nagar Industrial Complex, Duburi, Danagadi, Jajpur, Odisha.
	Name	**Mr. Tarun Khulbe**
	Designation (Owner / Partner / CEO)	**Sr. VP, Projects**
	Address	**Jindal Stainless Limited,** Kalinga Nagar Industrial Complex, Duburi, Danagadi, Jajpur, Odisha.
	Pin code	755 026
	E-Mail	tarun.khulbe@jindalsteel.com info.jajpur@jindalstainless.com
	Telephone No.	Mob: +91 8527763456/9938250200 Landline: 06726 – 605008
	Fax No.	06726 – 266006
	Details of Alternative sites examined, if any. Location these sites should be shown on a topo sheet	Nil
17.	Interlinked Projects	No, rather an integrated project.

18.	Whether separate application of Interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not applicable
20.	If no, reason	There is no proposal as such.
21.	Whether the proposal involves approval/clearance under; if yes, details of the same and their status to be given. (a) The Forest Conservation)Act,1980 (b) The Wildlife protection)Act,1972 (c) The C.R.Z Notification, 1991?	 No No No
	Whether there is any a government Order/policy relevant/relating to the site?	No
23.	Forest land involved(hectares)	Nil
24.	Whether there is any litigation pending Against the project and/or land in which the project is propose to be set up? (a)Name of the court (b)Case No. (c) Orders/directions of the court, if any and its relevance with the proposed modification cum expansion project.	There is no any litigation pending against the project and land.
25	Project cost	500 Crores.
26	Inter- State Boundary	Nil

"I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost.

Date: Jajpur

Place: 16.02.2015

For Jindal Stainless Limited,

(Authorised Signatory)

Tarun Khulbe
Sr. VP(Projects)
Jindal Stainless Ltd.
O.P. jindal Marg
HIsar-125005, Haryana

NOTE:

1. The projects involving clearance under Coastal Regulation Zone Notification, 1991 shall submit with the application a CRZ map duly demarcated by one of the authorized agencies, showing the project activities, w.r.t CRZ (at the stage of EC). Simultaneous action shall also be taken to obtain the requisite clearance under the provisions of the CRZ notification, 1991 for the activities to be located in the CRZ.
2. The projects to be located within 10km of the National Parks, Sanctuaries, Biosphere, Reserves, migratory Corridor of Wild Animals, the project proponent shall submit the map duly authorized by Chief Wildlife Warden showing these features vis-a vis the project location and the recommendations or commends of the Chief Wildlife Warden thereon (at the stage of EC).
3. All correspondence with the Ministry of Environment & Forest including submission of application for ToR/ Environmental clearance, subsequent clarifications, as may be required from time to time, participation in the EAC Meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorized signatory should also submit a document in support of his claim of being an authorized signatory for the specific project.

4. Capacity corresponding to sectoral activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.,)

N.B

1. The full name, designation and signature of the project proponent/authorized signatory should be mentioned.
2. The above highlighted points should also be noticed by the project proponent/Authorized Signatory.

(II) ACTIVITY

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S.No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	The Proposed expansion will be implemented over 80 Acre within the existing plant premises of total land of 1240 Acre.
1.2	Clearance of existing land, vegetation and buildings?	No	The land is flat terrain without many Undulations. No clearance of land, vegetation and buildings is envisaged. Greenbelt developed on periphery of the plant.
1.3	Creation of new land uses?	No	The site is located in Industrial area only. Hence no new land use other than industrial activity will be created in the vicinity.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	No	The soil testing/investigation studies will be carried out before commencement of constructional activities.
1.5	Construction works?	No	Construction work will be done in the Acquired land as per the schedule. Details are given in the enclosed project report.
1.6	Demolition works?	No	Not required
1.7	Temporary sites used for construction works or housing of construction workers?	No	Temporary Shed / Tents with toilet facilities and bore well for water supply for construction workers will be made available.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Most of the structures in the plant will be above the ground. However excavations will be involved for foundations.
1.9	Underground works including mining or tunneling?	No	No mining/ tunneling will be involved
1.10	Reclamation works?	No	Not required.
1.11	Dredging?	No	Not required.
1.12	Offshore structures?	No	Not required.

1.13	Production & manufacturing processes?	Yes	**Installation of 1 X 600 m³ Blast Furnace** The blast furnace is envisaged to operate with sized iron ore, sinter, coke, coal dust, fluxes and additives. The furnace will produce 600,000 tpy of gross hot metal. Coke will be supplied from existing recovery type coke oven battery complex. The blast furnace will be provided with coal dust injection facility to reduce the requirement of coke. It will also be supplied with humidified and oxygen enriched air blast. The hot metal produced will be generally sent to the steel melting shop. Surplus hot metal will poured in two double strand pig casting machines. The liquid slag will be granulated at the cast house slag granulation unit. The BF top gas will be cleaned in the dust catcher and gas cleaning system and distributed for further consumption to the stoves, runner drying, ,Reheating furnaces in Mills, sinter plant etc. **Installation of 1 X 110 m² Sinter Plant** The sinter plant complex envisaged receipt of crushed fuel & flux, iron ore fines, BF returns fines flue dust and RMP and proportioning unit. The sinter plant will consist of the following main technological units: • Fuel and flux crushing unit • Flux screen unit • Proportioning unit • Primary mixing room • Secondary mixing room • Sintering and cooling unit • Waste gas de-dusting unit • Main exhaust fan unit • Cold sinter screening unit • Plant de-dusting units

1.14	Facilities for storage of goods or materials?	Yes	Goods & Material shall be stored in covered yard and open yard. Raw materials for plant will be stored in covered shed and on concreted floor, wherever so required.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	There will be zero effluent generation/discharge as the process waste/surplus water will be re-circulated into the process. Solid waste and waste water management plans are given in PFR report. Details enclosed in **Annexure-4.**
1.16	Facilities for long term housing of operational workers?	No	Not required
1.17	New road, rail or sea traffic during construction or operation?	No	No New road, rail or sea traffic will be envisaged. The existing roads may handle this minor increase in traffic.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Not required
1.19	Closure or diversion of existing Transport routes or infrastructure leading to changes in traffic movements?	No	Not envisaged
1.20	New or diverted transmission lines or Pipelines?	No	Not required
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	Not required
1.22	Stream crossings?	No	Not required. No stream exists in site.
1.23	Abstraction or transfers of water form ground or surface waters?	Yes	The plant would require 144 m^3/hr of water for operation of its total plant facilities. The total water requirement will be met from the water supplied to the existing plant i.e. 1484 m^3/hr.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Not applicable
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Vehicles will be provided by company for transport of personnel / workers during construction / operation. Raw materials will be transported by roads through trucks and through rail during operation.

1.26	Long-term dismantling or decommissioning or restoration works?	No	Not required
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not applicable
1.28	Influx of people to an area in either temporarily or permanently?	Yes	During construction phase local labour will be deployed. There will be temporary involvement of people at project site but they all are associated with the project construction. When the project will be on the verge of completion, operation personnel will be employed and the personnel for such operational activity will be of permanent nature. Construction people will quit the site once the construction is over. During operation of the proposed modification cum expansion project, preference will be given to the local people for employment.
1.29	Introduction of alien species?	No	Only natural species will be planned under green belt development plan in consultation with Local DFO.
1.30	Loss of native species or genetic diversity?	No	There will be no loss of native species or genetic diversity.
1.31	Any other actions?	No	Not required.

2.Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S.No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities/ rates, wherever possible) with source of
2.1	Land especially undeveloped or agricultural land (ha)	Yes	80 Acres of land is envisaged for the proposed modification cum expansion within the existing plant of total land 1240 Acre possessed of management from Odisha Industrial Infrastructure Development Corporation (IDCO) if at Kalinganagar Industrial Complex, Jajpur of Odisha. The acquired land is situated in industrial area namely Kalinganagar Industrial Complex. The acquired land is barren and almost flat terrain without any undulation.

2.2	Water (expected source & competing users) unit: KLD	Yes	The plant would require 144 m³ /hr of water for operation of its total plant facilities. The total water requirement will be met from the water supplied to the existing plant i.e. 1484 m³/hr.
2.3	Minerals (MT)	Yes	Details are enclosed in **Annexure -III**
2.4	Construction material–stone, aggregates, sand / soil (expected source – MT)	Yes	Stone chips, sand and other construction material will be sourced from local market.
2.5	Forests and timber (source – MT)	No	Not applicable
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Around 31 MW power will be required for the proposed modification cum expansion project, which will be sourced from Captive Power Plant.
2.7	Any other natural resources (use appropriate standard units)	Yes	Not required.

3.Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S.No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	Yes	HSD will be used for fueling the material handling mobile equipments/machineries, which will be used from existing plant facilities.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not applicable
3.3	Affect t h e welfare of people e.g. by changing living conditions?	Yes	The proposed modification cum expansion project will generate employment (both direct and indirect) and business to the local people during construction and operation phase. There will not be any displacement of habitants due to establishment of proposed modification cum expansion project.
.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Vulnerable groups of people are not present in the near Vicinity of the area. There are no hospitals in the vicinity of the plant. Nearest hospital is 7 km from the plant site. Hence there will not be any adverse impact due to this project.
3.5	Any other causes	No	Not applicable

5. **Production of solid wastes during construction or operation or decommissioning (MT/month)**

S.No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with
4.1	Spoil, overburden or mine wastes	No	Not applicable. No mining activity in the project.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	Only small amount of municipal waste will be generated which will be used as manure in green belt area. Canteen waste and Sludge.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	**Used oil- 0.3 KL/**annum used oil will be stored in closed drums and will be given to authorized re-processors.
4.4	Other industrial process wastes	Yes	Details of Solid Waste Management are given in **Annexure-IV.**
4.5	Surplus product	No	The products have good demand and hence no chances of any surplus.
4.6	Sewage sludge or other sludge from effluent treatment	Yes	Sludge will be composted and can be used as manure for green belt development.
4.7	Construction or demolition wastes	Yes	The construction wastes will be used in land filling.
4.8	Redundant machinery or equipment	No	Not applicable
4.9	Contaminated soils or other materials	No	There will not be any soil contamination as hazardous waste such as used paints, used oils, used containers and other materials will be disposed off properly as per Hazardous Waste Management Rules, 1989 and amendment thereof.
4.10	Agricultural Waste	No	No agricultural waste will be generated.
4.11	Other Solid Waste	No	No other solid wastes likely to be generated.

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S.No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Gaseous emission will be from combustion process.
5.2	Emissions from production processes	Yes	Gaseous emission will be from combustion process.

5.3	Emissions from materials handling including storage or transport	Yes	There will be emission from raw material handling, conveying, feeding point to furnace and product handling. Water sprinkling/dry fog system will be done to suppress fugitive emission. Internal roads will be made black topped. Fixed type water sprinklers will be provided at suitable intervals to suppress fugitive emission at roads.
5.4	Emissions from construction activities including plant and equipment	Yes	During transportation and handling of construction materials, water sprinkling arrangement will be provided to suppress fugitive emission.
5.5	Dust or odors from handling of materials including construction materials, sewage and waste	Yes	Dust emission due to handling of construction materials and construction waste will be minimized by adopting adequate dust suppression system.
5.6	Emissions from incineration of waste	No	There will not be any generation of incinerable hazardous waste hence incineration is not required.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Not applicable
5.8	Emissions from any other sources	No	Not applicable

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S.No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
6.1	From operation of equipment e.g.engines, ventilation plant, crushers	Yes	Noise will be generated during construction, erection, welding, fabrication and operation of motor, compressor, DG set etc. Advanced technology will be adopted to attenuate noise to maximum extent.
6.2	From industrial or similar processes	Yes	Noise of 70-75 dB (A) will be generated during operation. There will be some heat stress at furnaces and tapping area due to exposure to thermal radiation. The workers will be provided heat resistance hand gloves and aprons and duty will be rotated to minimize exposure.
6.3	From construction or demolition	Yes	There will be generation of noise during construction which is temporary in nature and will be within bearable limit. Further noise prone activities will be restricted to a possible extent in order to have minimum noise impact.

6.4	From blasting or piling	No	Not applicable
6.5	From construction or operational traffic	Yes	Noise during construction and of operational traffic will be minimized by suitable measures and using vehicles meeting CPCB norms of emission and regular maintenance of the vehicle will be done.
6.6	From lighting or cooling systems	No	Not applicable.
6.7	From any other sources	No	Not applicable

7.Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S.No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	Used oil, used resins will be stored in closed drums. The hazardous waste will be handled as per the Hazardous waste (Management & Handling) Rules, 1989 and Amendments thereof. Therefore, there will be no chance of contamination of land or water bodies.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of ischarge)	No	Zero discharge norms are planned with no risk of contamination.
7.3	By deposition of pollutants emitted to air into the land or into water	Yes	The incremental ground level concentrations of air pollutants (dust) are likely to be well within the permissible limits. Hence, no impact on air is envisaged. ESP and Bag filter will use for control of air pollutants emitted from stacks. Hence, no risk of contamination of air, land, or water is envisaged.
7.4	From any other sources	No	Nil
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	Ambient Air Quality will be well within NAAQS norm. Hence no pollutant build up is expected.

8.Risk of accidents during construction or operation of the Project, which could affect human health or the environment:

S.No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	HSD/ FO being considered as hazardous waste will be stored in MS tanks with Dyke wall arrangement. The mitigative measures for this will be covered under Risk assessment and Disaster Management Plan during EIA Study. Adequate fire protection measures to be taken up.
8.2	From any other causes	No	Nil
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The proposed area does not come under any flood and Seismic zone. Hence the area is not sensitive to any possible earthquake.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or Planned activities in the locality:

S.No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data.
9.1	Lead to development of supporting utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: i. Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) ii. Housing development iii. Extractive industries iv. Supply industries v. Other	Yes	Employment opportunity and business opportunity will enhance the economic standard of people. There will be overall development of the region with respect to transportation, communication, education, health etc and other socio-economic aspects. There will be growth of supply and extractive industries which will improve the socio-economic of the region.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	Adequate Pollution Control measures will be taken to mitigate any adverse impact caused by the upcoming project.
9.3	Set a precedent for later developments	Yes	With the improvement in the socio- economic status of the people in the area, later developments are expected.

9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	Yes	No cumulative effects are expected.

III)	**Environmental Sensitivity**		
S.No.	**Area**	**Name/ Identity**	**Aerial distance (within 15 km.) Proposed modification cum expansion project location boundary**
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Non	This area is not protected under any International Conventions, National or Local Legislation for their ecological, landscape cultural or other related value.
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	No	Bramhani River- 7.5 km S
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	Non	The proposed modification cum expansion project area is not used by any protected, important or sensitive species of flora or fauna for breeding, nesting, foraging resting over winter migration.
4	Inland, coastal, marine or underground waters	Yes	The ground water level is Moderate to good at project
5	State, National boundaries	Yes	Nil
6	Routes or facilities used by the public for access	Non	No such route is within proposed modification cum expansion project area.
7	Defense installations	Non	Not existing
8	Densely populated or built-up area	Yes	Duburi- 7 km
9	Areas occupied by sensitive man-made land uses *(hospitals, schools, places of worship, community*	Yes	Hospitals, schools, places of worship, community facilities are present within 15 km radius.
10	Areas containing important, high quality or scarce resources *(ground water resources,*	Non	Not existing
11	Areas already subjected to pollution or environmental damage. *(Those where existing*	No	Not applicable

12	Areas susceptible to natural hazard which could cause the project to present environmental problems (*Earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic*	No	The area is Low risk zone of Seismic intensity not sensitive to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions.

(IV). PROPOSED TERMS OF REFERENCE FOR EIA STUDIES

The proposed TOR will include the process description with respect to capacity, production facilities, product mix, and other technological aspects etc. Details of the Raw materials and fuels inventory, their characterization and their sourcing will be discussed. Utility requirement that includes water, fuel, electricity etc will be discussed.

Baseline Data Collection:

- For Impact Prediction and Assessment, the details of most of the baseline data have been collected during the study period of 03 months.
- There was elaborate data collection with respect to geology, geomorphology, hydrogeology, drainage pattern; land use pattern etc. and the subsequent satellite map are being prepared with a 10 km radius buffer zone.
- Details of the micro-meteorological data has been collected with respect to hourly wind speed & wind direction, humidity, temperature, cloud cover, rainfall data etc. The corresponding frequency distribution of wind behavior with wind rose diagram is being prepared. This will form the meteorological data input to Air Quality Prediction Model.
- Surface water analysis has been done in eight different sampling locations in core zone and buffer zone as per the parameters in IS 10500.
- Similarly the ground water sampling and analysis was done at eight different locations in the core zone and buffer zone.
- The average noise quality both in day and night has been monitored in six different sampling locations in core zone and buffer zone.
- The soil testing at six different locations of core zone and buffer zone has been carried out.
- All the procedure of collection of sample, frequency of collection, analysis procedure etc has been done as per CPCB norms.
- The existing ground level concentration of suspended particulate Matter (SPM), Respiratory Particulate Matter (RPM), Sulfur Dioxide (SO_2), Nitrogen Oxide (NOx) and Carbon Monoxide (CO) have been analyzed during the study period at twelve different locations in the core zone and buffer zone including at least one in the down wind direction. The air sampling location and others have been chosen studying the wind rose and using standard procedures.
- Details of ecological survey has been taken up with respect to flora and fauna including avifauna and aquatic fauna with an emphasis on endangered species in the core zone as well as in the buffer zone.
- Socio-economic data of the region has been collected with respect to literacy, economic status, occupation, living standard, health etc of the local population. There are detailed data collections about infrastructure facilities like transportation, communication, education, health etc.
- Detailed survey of the 15 Km region around the project will be conducted to find out any location of sensitive areas like wild life sanctuaries, historical & archeological sites, defense installation etc.

Environmental Impact Identification, Prediction and Assessment

- Different environmental impact areas will be identified and expressed in matrix form.
- Qualitative prediction of impact will be done with respect to land use, ecology, and noise and socioeconomic.
- Details of water and wastewater inventory will be prepared to find out their impact on the environment.
- Inventorization of solid wastes both hazardous and non-hazardous in nature will be done to predict and assess their impact on environment.
- Detailed information about stacks with respect to height, diameter, flue gas, temperature, velocity and flow and their inter stack distances will be provided.
- Emission inventory with respect to PM, SO_2, NOx will be calculated.
- Micro -Meteorological data along with stack and emission inventory data will be input to the air quality prediction modeling software.
- Quantitative prediction of air pollutants in the form of incremental ground level concentration (GLC) will be done by Air Quality Prediction Modeling Software (ISC-AEROMOD-ISCST) developed by USEPA.
- Maximum resultant GLC will be calculated at locations taking into consideration of background GLC and predominant wind direction.
- Subjective impact assessment using matrix method will be carried out to calculate the total impact score without mitigation measures.

Environmental Management Plan

- Taking note of adverse impacts on environment due to project a comprehensive EMP will be considered in detail.
- Company will take all measures to procure the latest plant machineries well equipped with pollution control measures. Details of all the pollution equipments with their working efficiency will be discussed.
- EMP at constructional phase will be discussed.
- The comprehensive EMP will analyze all the possibilities of the optimum use of resources in the form of raw material, water, fuel and energy, process optimization for more production and less waste generation, preventive maintenance to minimize leakage & spillage and above all the waste utilization plan. The EMP at operational stage will cover all the details in the fields of air, water, solid waste, noise, ecology and the socio-economic aspects.
- With respect to air quality management, details of the air pollution control measures at different points will be discussed.
- Details with regards to design aspects, collection efficiency and emission norms from the attached stacks of Air Pollution Equipments (APC) will be analyzed.
- Disposal management of the solid waste and effluents generated from these APC equipments will be discussed.
- Fugitive dust emissions from the different storage & transfer points and the haul road emissions and their detailed control aspects will be covered.

- Considering water as an important and valuable utility, company will formulate a water management plan for minimum use of the fresh water.
- Waste water management dealing with treatment methodologies and recycling/reuse of treated waste water will be analyzed.
- Company's plan for storage of storm water in the monsoon in water harvesting ponds and the use of the same water in lean season will be discussed.
- Company's intention to achieve zero discharge norms with a comprehensive water and waste water management plan will be evaluated.
- Details of the solid waste inventorisation, their characterization and their usage potentiality will be discussed.
- Company's plan for recycling solid waste in plant process and reuse of the solid waste for different purposes will be examined. Company will not generate any process hazardous waste.
- Noise control devices with different equipments at design stage, protective measures at work zone sites and supply of protective gears to affected personnel will be thoroughly discussed.
- Realizing the need for the greenbelt cover as a very good sink for pollutants and the aesthetical aspects the company will go for a comprehensive plantation programme as per MoEF Norms.
- Company's detailed plan for green belt development with respect to allocation of area, fund allocation, selection of the species and maintenance plan will be adequately covered.
- Company's peripheral development plan that includes development in infrastructure, health, education and socio-cultural aspects will be emphasized.
- Details of the EMP cell with respect to monitoring laboratory, technical man power and fund allocation will be discussed.
- Details of the monitoring programme with respect to pollutant parameters. Monitoring schedule and reporting as per statutory requirement will be covered.
- Safety and disaster management plan with onsite emergency plan to deal with the unforeseen accidents will be covered.
- Beneficial aspects of project with respect to direct and indirect employment, business opportunities and peripheral development will be discussed.
- Trickledown effect of all the project benefits to affected local populace will be analyzed.
- Taking in to consideration of the environmental degradations due to the project implementation and the consequent environmental management plan followed by the post project benefits, the subjective assessment with a Total Impact Score will be analyzed to draw a summary conclusion.

Taking the aforesaid facts and figures in to considerations, we request the hon'ble committee to grant the Terms of Reference for the proposed modification cum expansion project in order to prepare REIA & EMP for Environmental Clearance.

ANNEXURE-I

PRODUCTION CAPACITIES

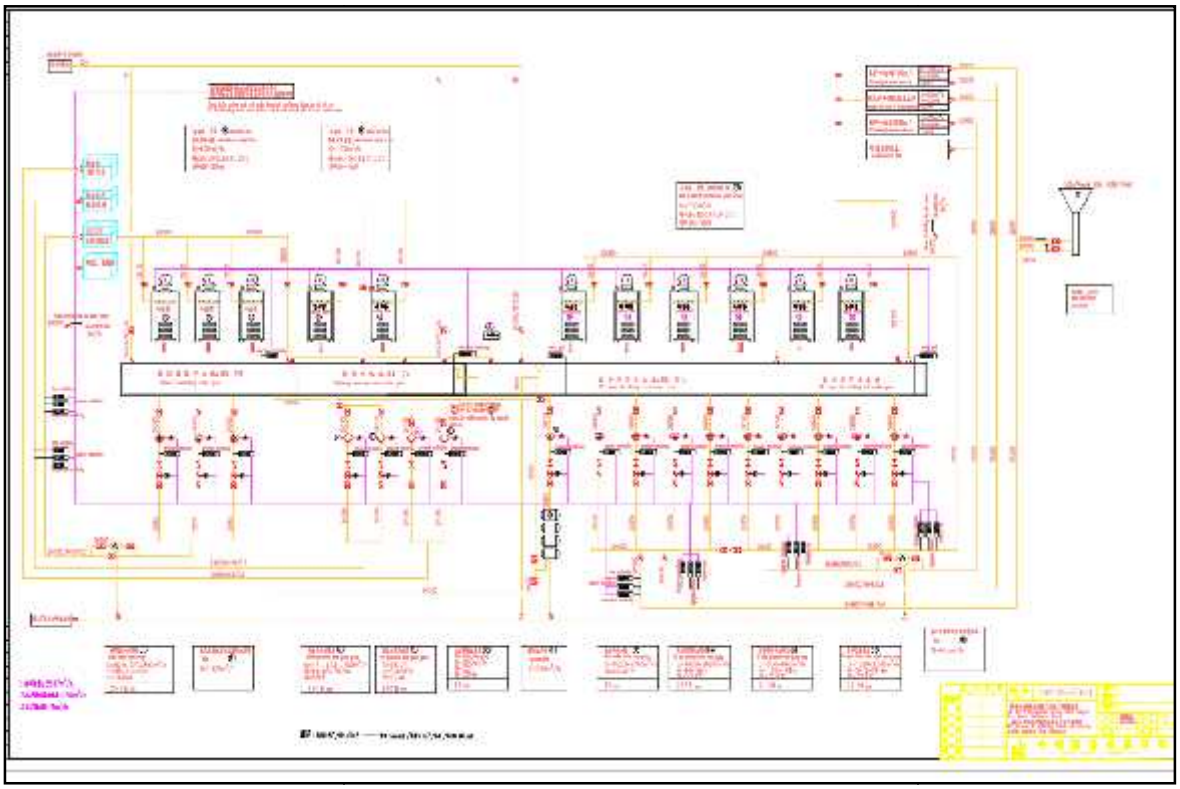
Sl. No.	Particulars		Capacity (Installed/to be installed)
	Existing	**Expansion**	
1	--	Sinter Plant	1X 110 m²
2	--	BF	1 X 600 m³
3	COBP	--	1 X 0.425 MTPA
4	**Steel Melt Shop (SMS)**		
a.	EAF	--	2 X 100 T,100/50 MVA
b.	AOD	--	1 X 150 T
c.	LF	--	1 X 150 T
d.	Slab Caster	--	1 X 1 Strand
5	**Hot Strip Mill**		
a.	Reheating Furnace	--	1 X 300 TPH
b.	HSM	--	1.6 MTPA
c.	Hot rolled plate facility	--	1 X 100,000 TPY
6	**Cold Rolling Mill**		
a.	DRAP Line	--	1 X 8,25,000 TPY
b.	WRAP	--	1 X 4,50,000 TPY
7	**Ferro Alloy Plant**		
a.	Cr- Briquette Plant	--	2 X 33 TPH
b.	Ferro Alloys Plant	--	2 X 60 MVA + 3 X 27.6 MVA
8	**Captive Power Plant**		
a.	Coal based	--	2 X 125 MW
b.	Fe- Cr WHRB	--	1 X 13 MW
9	**Oxygen Plant**	**--**	**1X 420 TPD**

ANNEXURE-II

WATER REQUIREMENT

S N	Particulars	UoM	Circulating	Fresh Makeup	Drainage
1	BF Clean Circulating Water System	m3/hr	3,937	68	13
2	Blast Furnace Blower Circulating Water System	m3/hr	1,450	24	5
3	Clean Circulating Water System of Sintering Machine	m3/hr	130	28	0
4	Turbid Circulating Water System of Blast Furnace Slag Granulating	m3/hr	1,400	24	-18
	TOTAL		6,917	144	0.0

WATER BALANCE



ANNEXURE-III

RAW MATERIAL REQUIREMENT

Sl no	Raw materials	Qty in MTPA	Source	Mode of Transportation
1	Coke	0.3	Internally form our own coke oven plant	Road
2	PCI coal for BF	0.1	Import	Rail/Road
3	Coal for SP	0.07	Talcher / Imports	Road/Rail
4	Iron ore lump for BF	0.5	Koida/ Barbil / Daitari (OMC) / Joda / Keonjhar / Outside Odisha	Road/Rail
5	Iron ore fines for SP	1	As above	Road/Rail
6	River sand for BF	0.02	Locally	Road
7	Lime stone	0.07	Odisha / Rajasthan / Import	Road/Rail
8	Dolomite	0.09	Jharkhand / Rajasthan / Chattishgarh	Rail/Road
9	Dunite	0.008	Salem	Rail/Road
10	Quartz	0.004	Andhra Pradesh / Chattishgarh	Rail/Road
11	Quick lime	0.15	Rajasthan / Imports	Rail/Road
12	Burnt lime	0.07	Rajasthan / Imports	Rail/Road
13	Manganese ore	0.004	Joda / Koida / Barbil / Andhra Pradesh / MOIL / Imports	Road/Rail

ANNEXURE-IV

SOLID WASTE MANAGEMENT (Existing & Expansion)

Sl. No.	Item	Item	Source	Quantity TPA	Remarks
1	Ferro Alloys Plant	FeCr slag	Furnace	1.2MT/T FeCr	50% Slag is reprocessed to Zigging Plant and after Material recovery is utilized for land filling while 50% pure slag is granulated and utilized for Land filling for Low laying areas within and outside Plant. Storage is done at designated location within the Plant
		Bag house dust	Furnace	50kg/T Fecr	Recycled in Chrome Briquettes .
2	Captive Power Plant	Ash	Coal	Depends on Coal quality. With Current utilization of 60% domestic and 40% Imported flyash generation is around 900tons/day	1. Nearly 85% of total ash generated is taken either by Fly ash brick manufacturers or used for filling low land areas (with proper statutory clearance). 2. Around 15 % is dumped to ash pond in the form of slurry. Evacuated yearly from there and used to fill low land areas.
3	Coke Oven and By-product Plant	Tar Sludge	Decanter	6.8 mt/day at full load	Used at CRMHS for coal blending
		Filter Cake	Filter Press, ETP	0.8 mt/day at full load	Used for briquette production which is fed into SAF.
		Bag Filter dust	De-dusting units	40 mt/month	Used at CRMHS for coal blending
4	Steel Melting Shop	AOD Bag Filter Dust	AOD	1,159 mt/month	Used for briquette production which is fed into SAF.
		EAF Bag Filter Dust	EAF	1,586 mt/month	Used for briquette production which is fed into SAF.

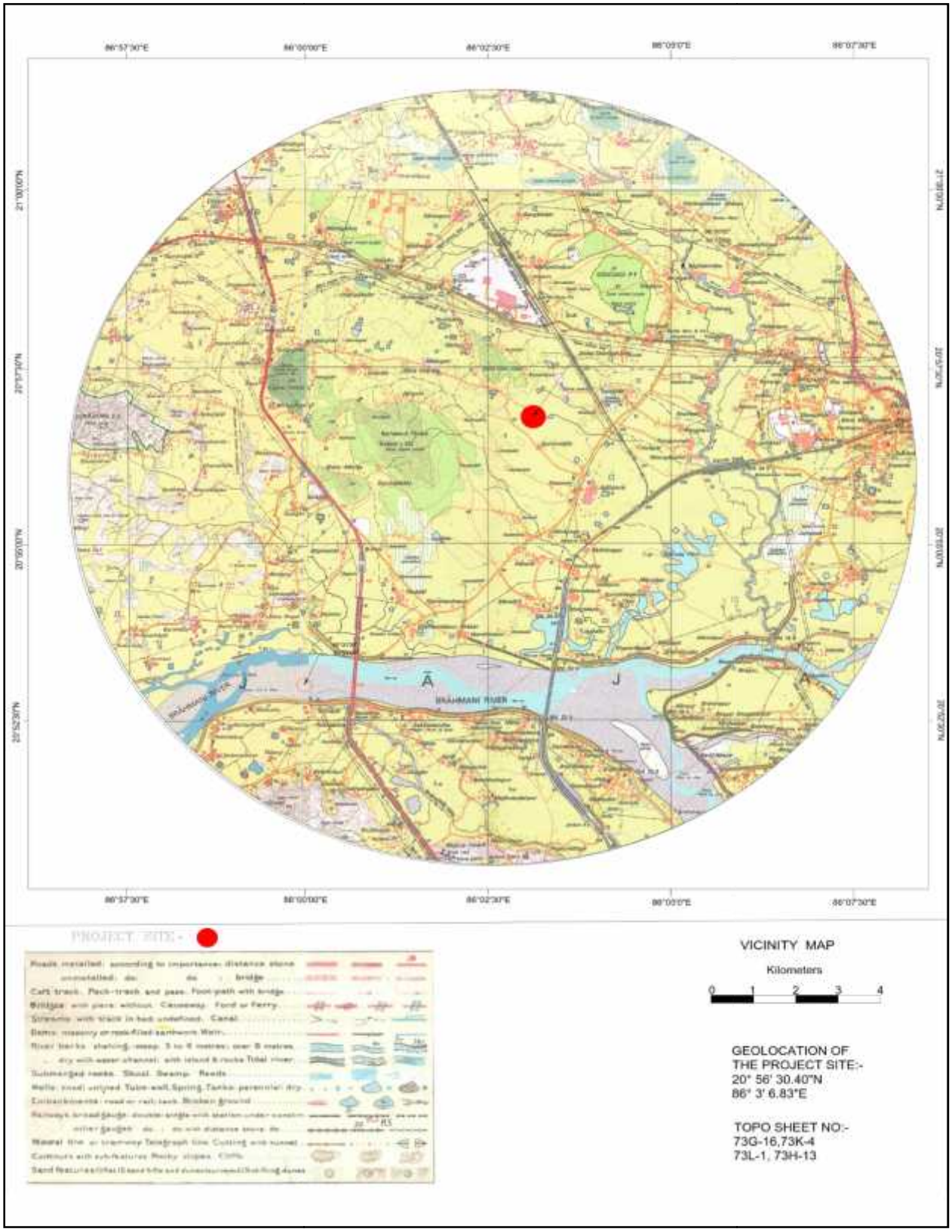
5	Hot Strip Mill	Roll grinding sludge	Roll grinding machine	20 mt/month	Used for briquette production which is fed into SAF.
		Scale	Furnace and Mill	980 mt/month	Used for briquette production which is fed into SAF.
		Filter Cake	HSM Utility	90 mt/month	Used for briquette production which is fed into SAF.
6	Cold Rolling Mill	Mill scale	DCW Quench water settling pit.	500 mt/month	Used for briquette production which is fed into SAF.
		Steel dust from dust collector	Dust collector unit of shot blaster (HAPL)	90 mt/month	Used for briquette production which is fed into SAF.
		Grinding sludge	Roll Grinding Shop	1.5 mt/month	Used for briquette production which is fed into SAF.
		Filter cake	Neutralisation's Filter Press.	2,170 mt/month	Used for briquette production which is fed into SAF.
		Filter cake	Neolyte Recovery (CAPL).	30 mt/month	Used for briquette production which is fed into SAF.

WASTE WATER MANAGEMENT (Existing & Expansion)

Process Unit	Waste water qty (m^3/d)	Source	Waste water characteristics	Waste water management
Ferro Alloys Plant				
Captive Power Plant	1550	CT Blowdown	Hardness (ppm): 520-600 TDS (ppm): 950-1000 pH: 7.9-8.3	500 m^3/d treated and used in process, 1050 m3/d used for ash slurry making
Coke Oven and By-product Plant	480	Ammonia Distillation Column	pH, TSS, BOD, COD, Phenol, Cyanide	The Waste water generated is treated in BOD Plant/ PETP at Coke Oven and the treated water is used for hot coke quenching process
Steel Melting Shop	50	Scale pit		Treated at HSM and taken back for reuse.
Hot Strip Mill	450	Back Wash from SMS and CRM	Suspended particles	450 m^3/d water from SMS and CRM treated by filter press.
Cold Rolling Mill	400	Backwash	Hardness: 200	Treated at HSM and 175m^3/d reused at CRM, 200m3/d reused at HSM, 25m^3/d reused at SMS.
	500	Process	Hardness (ppm): 10,000-13,000 TDS (ppm): 20,000-22,000 pH: 7.5-8.5	Treated at ETP and reused as follows: 100 m^3/d reused at Ferro Alloys Jigging plant, 200 m3/d reused for slab and slag quenching, 200 m^3/d reused at CRMHS for dust suppression

ANNEXURE-V

PROJECT SITE



Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

Plot No.-108, District Centre, Chandrasekharpur, Bhubaneswar-16, Tel.: 91-2744594, 3250790, Fax : 91-6742744594
E-mail : visiontekin@gmail.com, visiontekin@yahoo.co.in, Visit us at : www.vcspl.org

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ISO 14001:2004
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OHSAS 18001:2007