PREFEASIBILITY REPORT

FOR

PRIOR ENVIRONMENTAL CLEARANCE

PROJECT

22 MW THERMAL POWER PLANT
CAPTIVE TO CRAFT PAPER MILL
AT
VILLAGE PRAKASHA, TEH. SHAHADA
DIST. NANDURBAR (MS)

PROPONENT

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DECEMBER 2017

1. Executive summary

M/s Genus Paper Products Ltd (GPBL) is a part of Kailash Group of Industries located at Okhla Industrial area Phase1, New Delhi.

GPBL is engaged in business paper, coal, power, apparels and electronics. GPBL, after conducting market survey with respect to liner board/kraft paper, have decided to locate a kraft paper mill at village Prakasha of Nandurbar district in Maharashtra. Capacity of the proposed plant will be 300,000 tonnes per annum .It has been resolved by the proponent that the proposed plant will be self-sufficient in power/energy requirement. Hence a coal based thermal power plant of 22 MW has been included in the project proposal.Addl. Chief Secretary (Industries), Mumbai has conveyed the concurrence of State Government vide letter D.O. No. HPC-2017/CR-175/Ind-8 dated 28-07-2017. GPBL has received NOC from Prakasha Gram Panchayat. Kraft paper mill does not require “environmental clearance” as per MOEF & CC, GOI notificationSept. 14, 2006 Sr. 5(i). Also environmental clearance for 22 MW thermal power plant is normally issued by SEAC Maharashtra but Prakasha village is located on border of Gujarat & Maharashtra which is why the project falls in interstate boundary project and as category “A”.

Project -Thermal power plant :

Thermal power plant will be located within the land (40.5 ha) acquired for GPBL kraft paper project.

Coal based thermal power plant with air cooled condensersystem and adequate stack height and ESP (99.97% efficiency) is proposed. Imported coal with low ash and sulphur content will be used @ 340 TPD. Ten days coal storage is proposed. Water for plant will be drawn from the quota (3000 m^3/day) allotted to the paper mill. Source will be Prakasha barrage on Tapiriver. Conventional water treatment plant with two days storage is proposed. De-mineralized water from reverse osmosis for boiler makeup is proposed. Two boilers of 60 T/hour each are proposed. Dry ash handling and storage in dedicated silos is proposed before it is sent to cement plant / brick manufacturing unit.

There would be a common effluent treatment plant both for kraft paper unit and thermal power plant and treated effluent will be used as process water in the proposed kraftpaper mill.

2. Introduction of the project/background information

i (a)Identification of proponent &project :

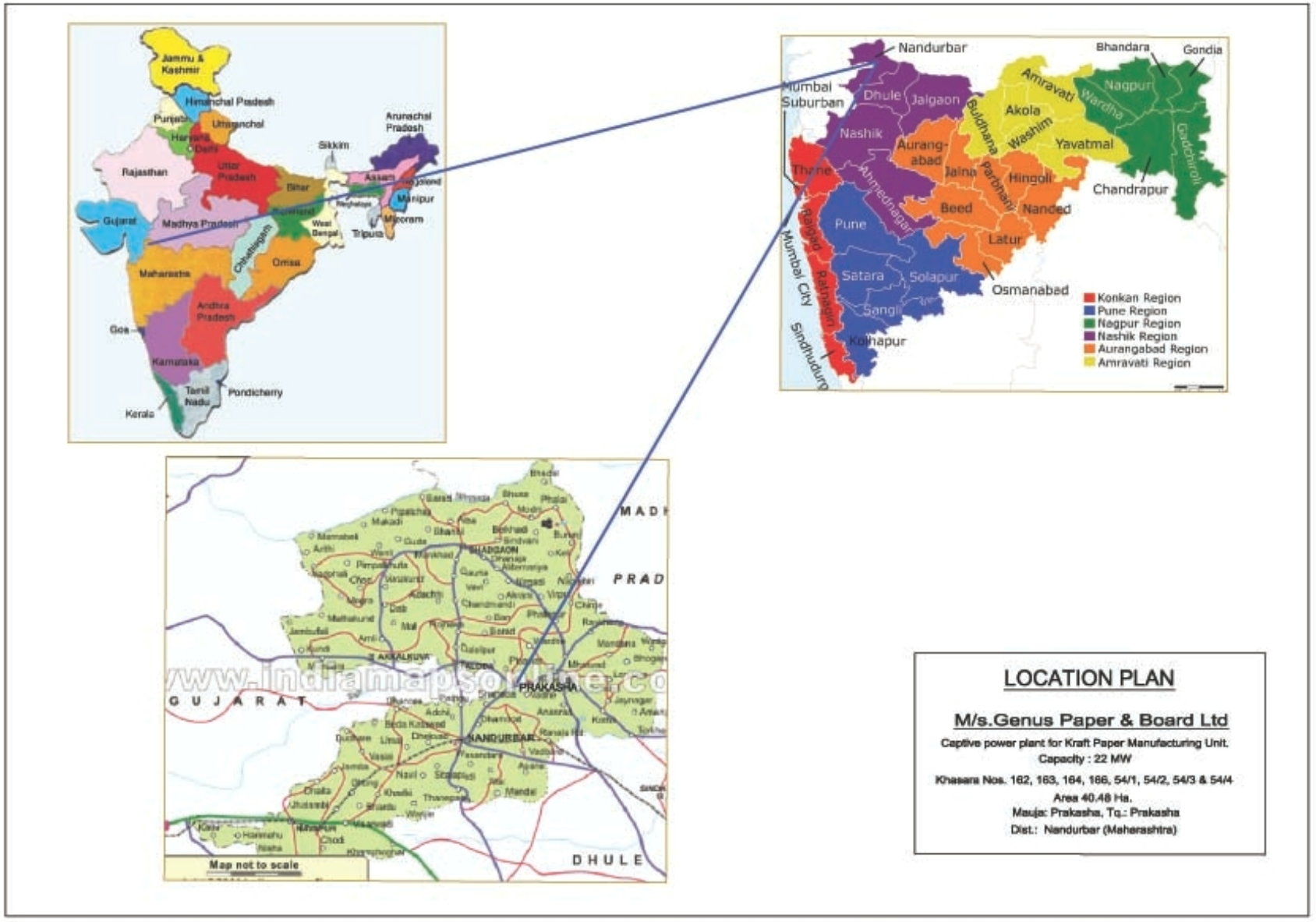
M/s Genus Paper Products Ltd (GPBL) is the flagship company of Kailash Group of companies. Kailash group is engaged in diversified business covering paper, coal, power, apparels, electronics etc. Main product of GPBL is kraft paper. Kraft paper is used in production of corrugated box. Market survey has indicated sustained demand for multilayered/liner board all over the country. Therefore, GPBL has now proposed to locate a kraft paper mill at village Prakasha, in Shahada tehsil of Nandurbar district in Maharashtra. This greenfield project will meet the requirement/ demandof the region. GPBL has decided to be self-sufficient in power requirement for the proposed kraft paper project.Accordingly detailed project report (DPR) prepared by the consultant for this paper mill project has kept a provision of one 22 MW coal based power plant which will be an integral part of this kraft paper mill project.

i (b) Purpose of prefeasibility report:

Project on kraft paper manufacture from waste paper without de-inking does not require environmental clearance as per relevant MOEF & CCnotification 2006 Sr. 5(i). Environmental clearance to the proposed captive thermal power plant of 22 MW could have been granted by the State Committee if not located within 10 km of interstate boundary.

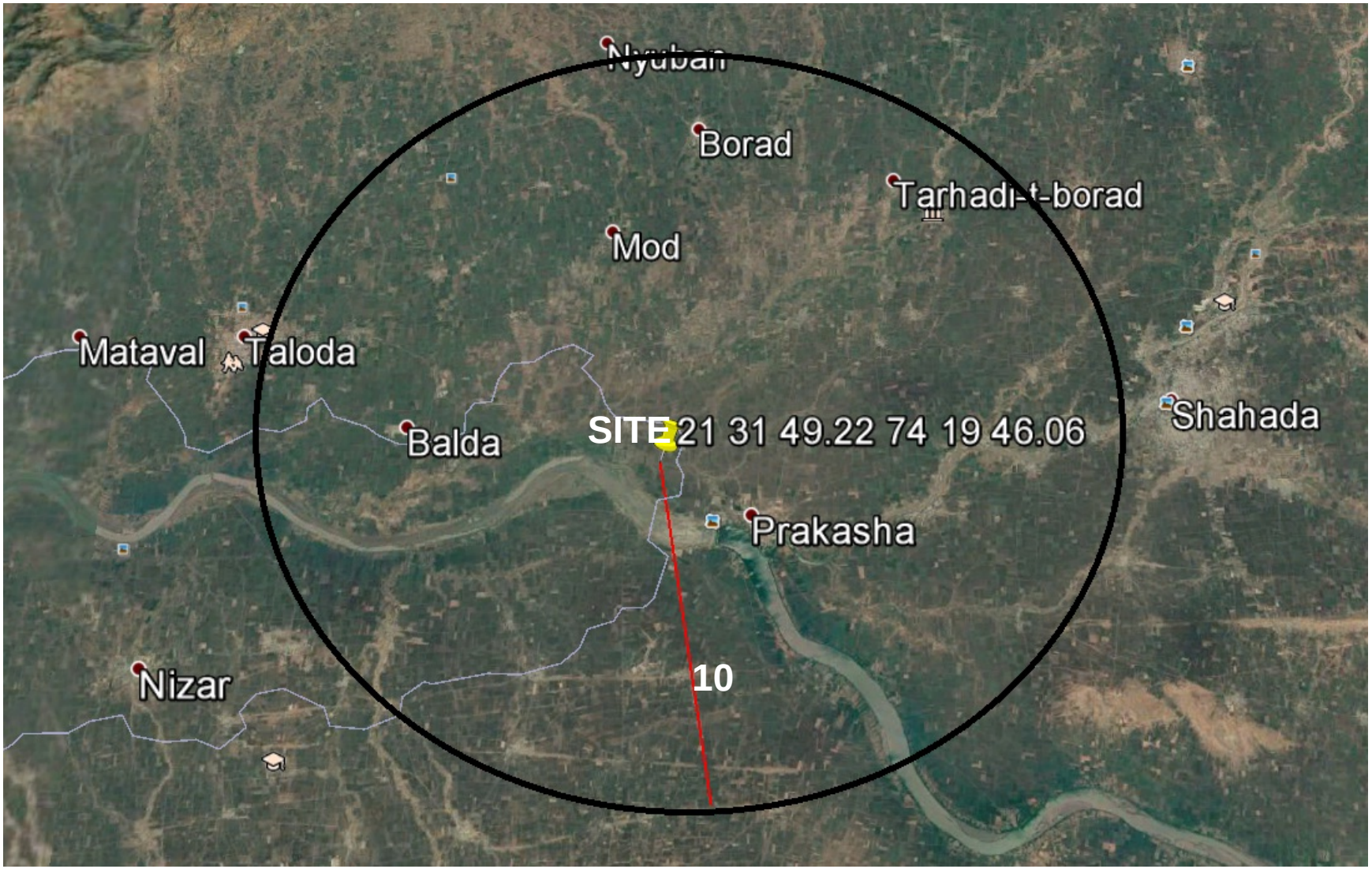
- Geographical location of Prakasha village is shown in **Figure 1.**Location of lease is also depicted onGoogle imagery **Figure 2**and on Survey of India topo sheet no. 46 K/6 as **Figure 3**. Both these figures show that site is proximity to Gujarat state and hence categorized as“A” category project.

FIGURE 1



LOCATION MAP

FIGURE 2



GOOGLE IMAGERY

FIGURE 3

LOCATION – TOPOSHEET NO 46 K/6

ii) Brief description of nature of project viz. 22 MW thermal power plant:

In a thermal power plant, chemical energy in the fuel coal is converted into electrical energy.Water is the working fluid. Steps are a) chemical energy is converted to heat energy by burning coal in boiler, b) heat energy converts water to high pressure & temperature-steam in boiler, c) steam is admitted to turbine through pipes, d) steam expands in turbine after it passes through a number of nozzles and heat energy is converted to kinetic energy, e) turbine shaft rotates after steam passes over blades, shaft rotates when kinetic energy is convertedto mechanical work and f) generator coupled to turbine converts mechanical work to electrical energy. Exhausted steam from turbine is cooled and recycled.

Essential logistics for power generation needa) coal handling plant including crusher, b) conveyors to transfer processed coal to bunkers c) boiler, d) water demineralization & softening plants e) steam cooling system including cooling tower & recycle system, f) ash(fly & bottom) handling plant etc.

iii) Need for the project:

Captive power plant for this kraft paper mill will be in national interest. Every industry is trying to be self- sufficient in energy requirement. It will also ensure reliable and quality supply of power to the project which is crucial for viability of the project.

iv) Employment generation:

Proposed captive power plant will generate additional employment in addition to that in the kraft paper mill. Skilled and semi –skilled manpower will be required.

3 Project description

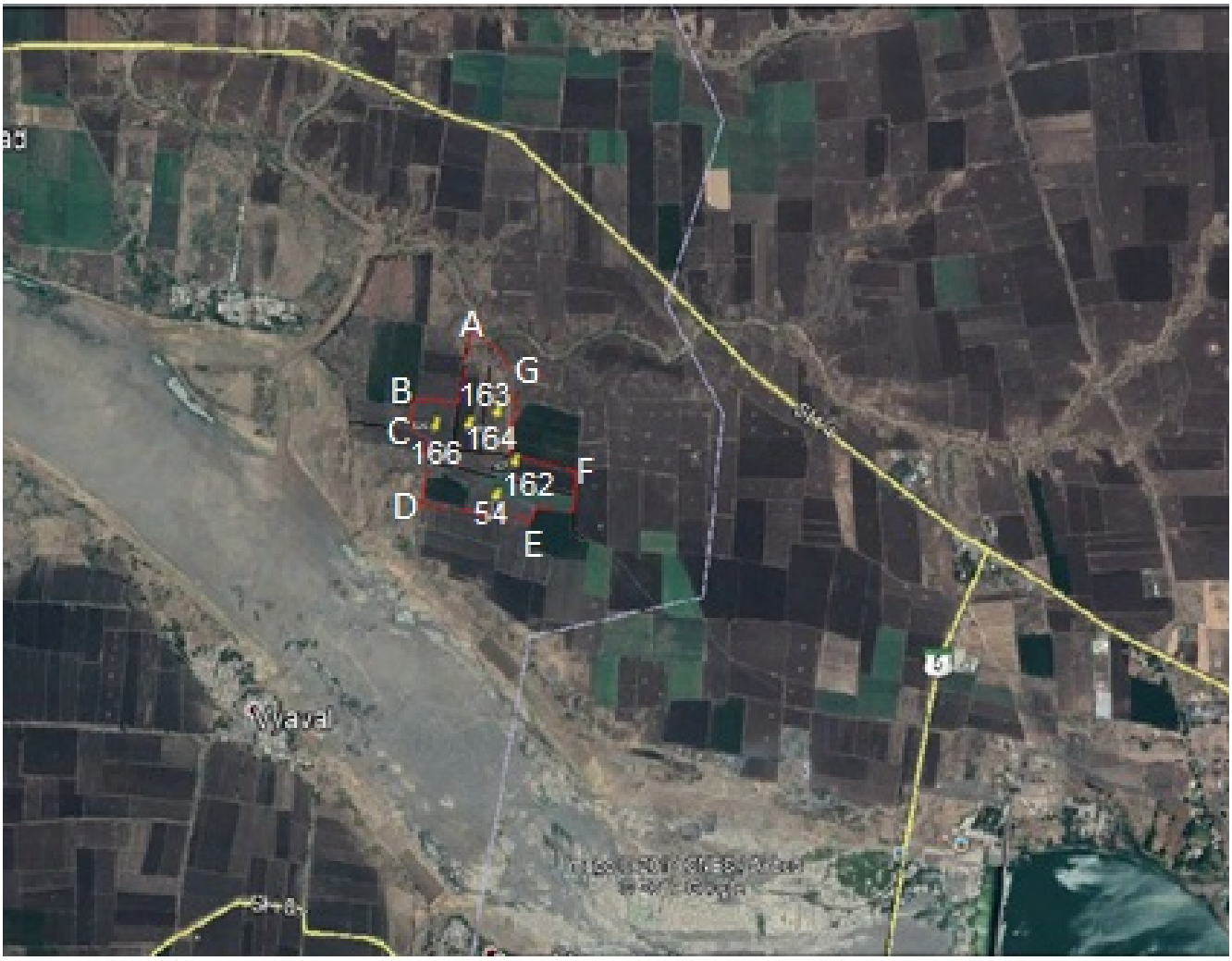
i) **Type of project-** Proposed 22 MW coal based thermal power plant (TPP) will be captive to the proposed kraft paper unit.

ii) **Location –**Location map with coordinates are shown in**Figure 4.**This figure shows the proposed kraft paper mill and the TPP configuration.

iii) **Alternate sites-**Present site was finalized in preference to other sites for logistics of the project. Land owners of Khasra numbers are 162, 163, 164, 166, 54/1, 54/2, 54/3 & 54/4 have agreed to part with their land. Khasra map is shown in **Figure 5**.

Site is environmentally compatible because there are no sensitive areas within 10 km radius from this site.

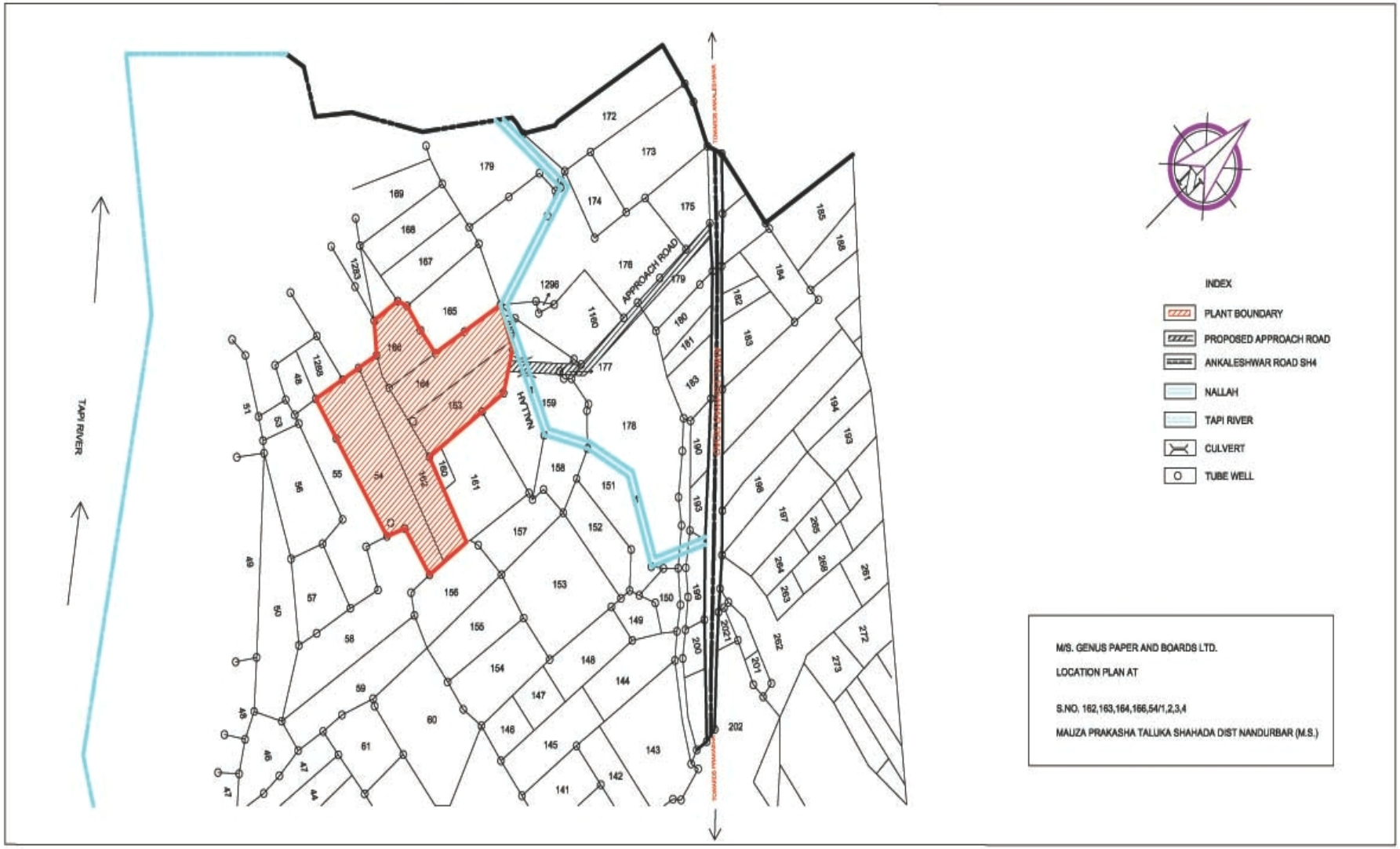
FIGURE 4



Location	Latitude	Longitude	Location	Latitude	Longitude
A	21°31'47.07"N	74°19'37.31"E	E	21°31'26.01"N	74°19'45.03"E
B	21°31'39.16"N	74°19'30.04"E	F	21°31'31.90"N	74°19'50.31"E
C	21°31'36.46"N	74°19'29.70"E	G	21°31'42.15"N	74°19'42.85"E
D	21°31'17.84"N	74°19'31.47"E			

LOCATION MAP WITH COORDINATES

FIGURE 5



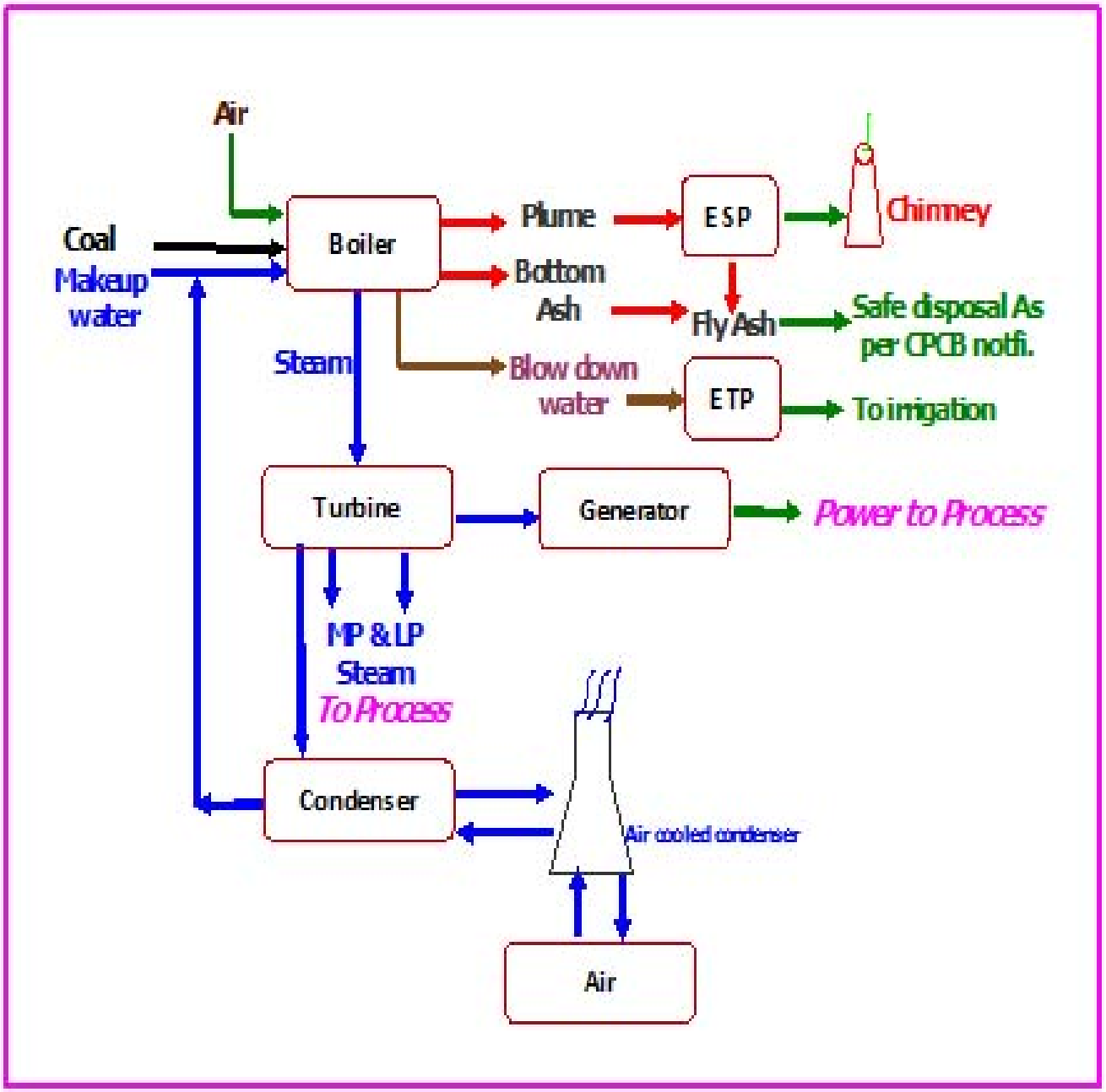
KHASARA MAP

iv) **Size and magnitude of operation:** TPP will have rated capacity of 22 MW. It will consist of two boilers of 60 T/hour capacity each.

v) Process details:

Coal from coal handling plant and required boiler make-up water enters the boiler and the following power generation process is shown in **Figure 6**.

FIGURE 6



POWER GENERATION PROCESS

vi) **Raw material:** Input material to TPP is coal and water.

Coal requirement- Total 340 T/dayor @ 170 T/day/boiler

Fresh water requirement will be about 800 m^3/d for power plant.

Sources :

Coal – Open market from nearest portHazira / Daheja / Mumbai ports.Coal will be delivered by covered trucks.10 days stock pile will be maintained.

Water – Prakasha barrage. Dedicated pipe line will be laid by State Irrigation Department. Conventional water treatment plant, a demineralization plant/softener /R.O. plant will be provided.

A 2- days water reservoir (6000m^3capacity) common for paper and power plant will be provided.

Description	Unit	Capacity
Water intake	m^3/day	3,000
Water intake pump	m^3/hr	150

vii) Resource optimization:

Thermal power plant has been designed with air cooling system to optimize water consumption. Furtherboiler blow down will be used in kraft paper plant. Wastewater from miscellaneous sources will be diverted to ETP whose treated effluent will be used for gardening.

viii) Availability

Water :There is Prakasha barrage on the river Tapi.Tapi is a perennial river. Project proponent has requested State Irrigation Departmentfor supply of water and the proposal is under active consideration.

Energy: Project proponent has included a 22 MW captive thermal power plant.

ix) Waste quantities :

Gaseous emissions :

Stationery sources will be a bi-flue chimney which will release coal combustion products viz a sulphur dioxide @ 70 kg/hr per stack, based on 0.5% sulphur content in coal. Particulate matter emission rate will be about @ 1.38 kg/hr based on 8% ash content.

Adequate stack height and high efficiency ESP is proposed. It has been decided to limit sulphur dioxide as per latest CPCB norms and also to ensure particulate matter as per the regulations.

Wastewater - Sources :

Wastewater will be boiler blow down. Blow down will be transferred to kraft paper mill for use in process.

Sanitary waste from toilet blocks will be about @ 25-30 L/d/worker. Sewage treatment plant also using wastewater from canteen is proposed.

Solid waste:

Ash generation will be about 27 T/day. Bottom ash will be 5.4 T/day and fly ash will be 21.6 T/day.Dry ash handling is proposed. Ash will be stored in silos and will be made available to local cement/brick manufacturer as per demand or for agriculture since ash is known to protect the crop from pests.

4 Site analysis :

i)Connectivity : Nearest all season road to the site is about 1 km.

ii) Land: All land proposed to be acquired is private agricultural land. Main crop is cotton, jowar and sugarcane. Soil is black cotton soil.Two crops per year are possible.There are no water bodies.

iii) Topographically area is plain. Nearest village is Prakasha at 3 km to east.

iv) River Tapi flows at 3 km from eastto west. There is a barrage at 3.5 km.There are no sensitive ecosystems.

v) Presently there is no infrastructure over the site.

vi)Soil classification:Soils of this area have originated from Deccan trap basalt. They are medium deep soils. Soils are loamy, mixed isohyperthermic.

vii)Climatic data: Average annual rainfall in the area is 645 mm/year. Minimum and maximum temperature are respectively 16 & 41 ℃.

viii) Social infrastructure *per se is* absent.

5 Planningbrief:

i) It is proposed to put up a kraft paper mill near village Prakasha in Nandurbar district. Capacity of the mill will be 300,000 tonnes per year multi layered kraft paper. State government has agreed in principle vide letter from Addl. Chief Secretary dated 28-07-2017 to locate the mill over 40.5 ha land.
   A coal based power plant of 22 MW will be installed in order that the unit is self - sufficient in power requirement.
ii) Project will not have any impact on population and there will not any influx of people.
iii) Land use planning:
   Project land use will be – power plant – 3.4 ha; kraft paper plant -14.2 ha; store yards /roads/drains etc.- 8.0 ha; vacant – 2.8 ha and green belt- 12.1ha.
iv) Assessment of infrastructure demand:
   There would be a)a workshop,b)stores, c)weighbridge, d) fire-fighting unit, e)dispensary for first aid, f)rest room, g) sub-station for distribution of electricity etc.
   Social demands / requirements will be assessed during EIA survey.
v) Communication, transportation and public relations will be required.

6.Proposed infrastructure

i) Industry – 17.6ha;
ii) There will not be any residential colony
iii) Non processing area-8.0 ha;
iv) Vacant space – 2.8 ha and
v) Green belt- 12.1 ha.

vi) Drinking water and process water requirement will be met from a dedicated pipe line from Prakasha barrage. Water will be treated in a conventional water treatment plant for use in boilers after de mineralization / R.O. unit and in a softening plant for condenser cooling.

vii) Sewerage

Plant complexarea will have sewerage and effluent treatment plant for paper mill and the power plant to ensure complete reuse of treated waste water and zero discharge. Sanitary waste will be segregated and treated.

viii) Industrial waste management:

As above in vii

ix) Solid waste management :

Ash will be stored in silos since dry ash handling is proposed. It will be disposed of to fly ash brick / cement manufacturing unit. Sludge from WTP will be used as fuel or egg tray manufacturer. Out through of waste paper will be disposed of to authorized vendor.

Power requirement:

Captive power plant of 22 MW is for meeting energy of paper mill.

7. Rehabilitation and Resettlement (R & R) Plan

i) Policy for R & R issues are not envisaged because land owners have willingly agreed to part with their land.

8. Project schedule & cost estimates:

i) Construction will start only after E.C. is received. Tentative time schedule is given below:

Land acquisition	0-6 months
Financial tie-up	9-15 months
Environmental Clearance	3-15 months

Start of project activities	Zero date
Project implementation from Zero date	28 months
Ordering of long delivery plants	1st /2nd months
Commencement of civil construction	6th months
Start of Delivery of plant & machinery	13th months
Start of Erection of plant & machinery	12th months
Start-up and mechanical trial	25th months
Commercial production	28th months

ii) Estimated project cost, economic viability:

Particulars	Rs. crores
Land	3
Building	23
Plant & Machinery/equipment	72
Erection & installation cost	3
Total Project cost	101

Financial analysis :

Profitability for the first five years is presented below;

Particulars	I year	II year	III year	IV year	V year
Income from sales	652	789	926	926	926
Profit Before Interest, Depn and Tax	151	188	225	224	223
Profit Before Tax*	88	125	163	165	166

Figures in crores Rs * For overall project including Kraft Paper

IRR is around 23.2% indicating the comfortable viability of the project.

9. Analysis of proposal:

Parent Group of Genus Paper & Boards Ltd. viz. The Kailash Group has been leading the market for kraft paper. It is in possession of a most advanced technology for production of “kraft” paper. It includes triple layer wire with calendaring process. Thus product has more glazy and smooth finish. Special quality papers High BF Test liner, Kraft liner, White Top liner, Fluting Korean Shade liner Kraft will be produced. Customers of Genus Paper & Boards Ltd. are M/s Samsung, Godrej, Voltas, L.G., Parle etc and other local and MNCs.

Raw materials are recycled fibre (waste paper) grades of old corrugated cuttings(OCC), New Corrugated cuttings (NCC) New Double line Kraft Corrugated Cuttings (NDLKC), Sack Kraft, Kraft Container Board(KCB) andmixed waste paper (MWP).

It has proposed a kraft paper mill of 300,000 TPA capacityand captive power plant of 22 MW capacity.

Location of paper mill and thermal power plant will help generation of revenue to the state by way of goods and service tax & income tax, employment to local people and infrastructure development & other benefits by way of CSR activities. This mega project will also help in generation of many ancillary units in nearby area like hotels, restaurants, logistics, real estate etc.to meet the requirement of this project.