

# PRE FEASIBILITY REPORT FOR GEOTECHNICAL INVESTIGATIONS AND SURVEY WORKS ALONG THE DAM ALIGNMENT FOR KALPASAR PROJECT

## 1. Brief

Government of Gujrat, Kalpasar Department proposes to construct world's biggest artificial fresh water reservoir in Gulf of Khambhat region, Gujarat, India. The Gulf of Khambhat Development Project (Kalpasar) is a multipurpose mega project comprising the construction of a dam for a length about 60.0 km out of length about 30.0 km in gulf and 30.0 km length is extended on both flanks upto nearest road crossing between village Kalatalav in dist. Bhavnagar on western coast and village Aladar in dist. Bharuch on eastern coast of Gulf of Khambhat respectively. This dam is contemplated to meet the increasing demands of water supply for irrigation and drinking, rail & road transport, land reclamation etc.

Kalpasar Dept., Government of Gujarat has entrusted work of Geotechnical Investigation along the Dam Alignment in area of Gulf of Khambhat to GSPC as deposit work. GSPC has appointed EIL for technical/PMC services in connection to the above referred job.

## 2. Introduction of the project and background summary

- i. *Identification of project and project proponent. In case of a mining project, a copy of mining lease/ letter of intent should be given.*
  - **Geotechnical Investigations and survey works along the dam alignment** area of Gulf of Khambhat for Kalpasar Project of Govt. Of Gujarat.
- ii. *Brief description of nature of the project.*
  - **Geotechnical Investigations and Survey Works** to be carried out for initiating detailed design work for construction of Kalpasar dam.
  - This involves drilling of 43 numbers of boreholes (along the proposed dam total length – 60 Km), which shall be carried out in the Gulf of Khambhat in water depth varying from 0.0 meter to 30.0 meter w.r.t. M.S.L. in Gulf, inter tidal regions and on land.
  - Approx. bore hole depth are between 15 meter to 200 meter.
- iii. *Need for the project and its importance to country and /or region.*
  - Creation of a freshwater reservoir in Gulf of Khambhat.
- iv. *Demand – supply gap.*

N.A., as this is only Geotechnical Investigation work.
- v. *Export possibility.*

N.A.
- vi. *Domestic/ export markets.*

N.A.
- vii. *Employment generation (Direct & Indirect) due to the this work*

Man power - Direct (10 – 15 nos) skilled man power



### 3. Project Description

- a. *Type of project including interlinked and interdependent projects, if any.*  
Bhadbhut Barrage-Narmada Diversion Canal (NDC) to Kalpasar Reservoir.
- b. *Location (map showing general location, specific location, and project boundary and project site layout) with coordinates.*  
Refer Annexure-II attached herewith.
- c. *Details of alternate sites considered sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.*  
NIOT, Chennai has geophysical examined 21 Survey lines for the Kalpasar dam alignment, out of these dam alignment L-3 has been selected for Geotechnical Investigation work.
- d. *Size or magnitude of operation.*  
Geotechnical studies are a temporary operation which lasts for three to four months.
- e. *Project description with process details (a schematic diagram/ flow chart showing the project layout, components of the project etc. should be given).*  
Refer Annexure-I and Annexure-II attached herewith.
- f. *Raw material required along with estimated quantity, likely source, marketing area of final product/s, mode of transport of raw material and finished product.*  
N.A.
- g. *Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.*  
i. Drilling – No raw material will be used in Geotechnical bore hole investigation works except Diesel, Bentonite etc.
- h. *Availability of water, its source, energy/ power requirement and source should be given.*  
Drilling  
For boring/frilling sea water may be used with the help of water pump onboard and submersible pump.  
Power requirement: 7.5 KV (Generator to be used for drilling rig desk & for illumination purposes)
- i. *Quantity of wastes to be generated (liquid and solid) and scheme for their Management/disposal.*  
NA. As these studies are of temporary in nature and do not involve any permanent structures.
- j. *Schematic representations of the feasibility drawing which gave information of EIA purpose*  
NA.



#### 4. Site Analysis

- a. *Connectivity.*
  - i. Onland locations - Well connected through road and offshore locations – From Ghogha, Bhavnagar (western coast) and from Dahej, Bharuch (eastern coast).
- b. *Land form, Land use and Land ownership.*

No land shall be taken on lease or permanently as these geotechnical studies are of temporary nature.
- c. *Topography (along with map).*

Attached herewith as Annexure-II.
- d. *Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including which are under CRZ)), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.*

Necessary approvals have been obtained from regional forest departments on western and eastern coast of the dam alignment.  
No CRZ applicability as this work is only for geotechnical investigation and survey work having temporary in nature.
- e. *Existing infrastructure.*

The work is carried out in Gulf and inter-tidal area. There is no permanent structure available except existing road, rail network on land and Ghogha & Bhavnagar Port for off-shore connectivity.
- f. *Soil classification.*

Investigation is carried out in Gulf and Inter-tidal zone.
- g. *Climatic data from secondary sources.*

Moderate diverse climatic conditions.
- h. *Social infrastructure available.*

Yes, on Land :- Bhavnagar on western coast and Dahej, Bharuch on eastern coast.

#### 5. Planning brief

- a. *Planning concept (type of industries, facilities, transportation etc), Town and Country Planning/ Development Authority classification.*
  - i. Drilling of 43 no. of marine/inter-tidal/land boreholes along the proposed dam length for taking samples for geotechnical studies for Kalpasar dam project, using a bore hole drilling rig.
- b. *Population Projection.*
  - i. During drilling temporary set up will be installed.
  - ii. No accommodation at site as this is a temporary activity.



- c. *Land use planning (breakup along with green belt etc).*  
This is a temporary activity.
- d. *Assessment of Infrastructure Demand (Physical & Social).*  
Existing roads and infrastructure will be used. No permanent infrastructure/housing will be developed there.
- e. *Amenities/Facilities.*  
NA. As this is a temporary activity.

## 6. Proposed infrastructure

- a. *Industrial Area (Processing area)*  
Temporary drilling facility for sampling.
- b. *Residential area (Non Processing Area).*  
No, there is a temporary activity.
- c. *Social Infrastructure.*  
No, there is a temporary activity.
- d. *Connectivity (Traffic and Transportation: Road/Rail/Metro/Water ways etc).*  
Existing Road and existing off-shore navigation connectivity to be used for the work. Only minor traffic is envisaged due to planned activity.
- e. *Drinking Water Management (Source and Supply of water).*  
For boring/frilling sea water may be used with the help of water pump on board and submersible pump. However, for drinking purpose storage facility will be done on jack-up platform during off-shore activity.
- f. *Industrial Waste Management.*  
NA.
- g. *Solid Waste Management.*  
Drilling.  
Domestic solid waste of approx – 1-2 kg/day per well will be generated which is segregated at source (Organic / inorganic) & disposed accordingly.
- h. *Power requirement & Supply/ Source*  
Drilling.  
Power requirement: 7.5 KV for drilling rig deck and for illumination purposes.

## 7. Rehabilitation and Resettlement (R & R) Plan

- a. *Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given).*  
NA, this is a temporary activity.



*[Signature]*  
Executive Engineer  
Gulf of Khambhat Development Project (W.R.)  
Project Implementation Unit No. 1  
Bhavnagar (G.S.)  
Page 4 of 5

## 8. Project Schedule & Cost Estimates

- a. *Likely date of start of construction and likely date of completion (Time schedule for the project to be given.*  
Drilling planned between Oct-2018 to May-2019.
- b. *Estimated project cost along with analysis in terms of economic viability of the project.*  
Approximately INR 13 crores for the said geotechnical survey works.

## 9. Analysis of proposal (Final recommendations)

- a. *Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.*  
Manage the business processes to produce an overall positive impact on society.  
This is a temporary work for geotechnical investigation survey work along the dam alignment of Kalpasar project.



  
Executive Engineer  
Gulf of Khambhat Development Project (W.R.)  
Project Implementation Unit No. 1  
Bhavnagar (333)