

**PRE - FEASIBILITY REPORT
OF
GRAVEL**

OVER AN EXTENT 2.58.0 HECTARES

AT

**S.F.Nos. 227/4 AND 227/5C OF
VITTALPATTI VILLAGE VILLAGE, PERAIYUR TALUK,
MADURAI DISTRICT,
TAMIL NADU STATE.**

LESSEE: P.K.APPU

**PRE FEASIBILITY REPORT OF VITTALPATTI VILLAGE GRAVEL
QUARRY FOR OVER AN EXTENT OF 2.58.0HA IN VITTALPATTI**

**VILLAGE VILLAGE, PERAIYUR TALUK,
MADURAI DISTRICT AND TAMILNADU OF**

THIRU. P.K.APPU

(Under the Guidelines of Ministry of Environment and Forests in terms of the provisions of EIA notification 2006 and specifically in circular No J-11013/41/2006-IA.II (I) dated 30th December, 2010)

1.0 EXECUTIVE SUMMARY OF THE PROJECT

Total extent of the Area is 2.58.0Ha in Patta land at Vittalpatti Village Village, Peraiyur Taluk, Madurai District.

It is a new Gravel Quarry Project. The lease applied area is Exhibits slightly undulated topography.

The Eco friendly quarry operation is proposed to carry out with open cast semi mechanized quarrying by deploying Excavator without drilling and blasting.

The quarry operation is proposed up to a depth of 3m(1m above ground level and 2m below ground level).

The Total Geological reserve is about 77,400m³ of Gravel.

The Total Mineable reserve is about 68,774m³ of Gravel for the period of Two Years.

The proposed quantity of reserve is about 68,774m³ of Gravel for the period of Two Years only.

Mining license applied for period of Two Years.

Life of the quarry is Two Years.

The project area does not fall in 'HACA' region.

There is no Interstate boundary within the radius of 15kms.

There is no Western Ghats within the radius of 15km.

The project area does not fall in CRZ.

There are no Bird Sanctuaries, wild life sanctuaries as per Wild Life Production Act 1772, within the radius of 15km.

There is no habitation situated within the radius of 300km.

There is no quarry within the radius of 500m.

0.3KLD of water for labor drinking and domestic purpose will be available from nearby village through package drinking water vendors. 0.3KLD and 0.4KLD for dust

suppression in haul roads and Green belt during the quarrying operation, the water is available in existing borehole on near the quarry area and also available from authorized water vendors.

The cost of the project:

Fixed asset cost	=	5,56,000/-
Operational cost	=	13,26,000/-
EMP Cost	=	1,95,000/-
Total Cost(A+B+C)	=	20,67,000/-

(The Project cost including EMP Cost is about Rupees twenty lakhs and sixty seven thousand only)

2.0 INTRODUCTION OF THE PROJECT OR BACKGROUND INFORMATION

The applicant proposes to quarry Gravel by opencast semi mechanized quarrying over an Extent 2.58.0Ha, this project is located in Vittalpatti Village Village, Peraiyur Taluk, Madurai District, Tamil nadu.

The Category of project-'B2'.

(i) Identification of project and project proponent: In case of mining project, a copy of mining lease/letter of intent should be given

- I. The quarry lease was applied at the date of 01.06.2016.
- II. Precise area communication was issued by the District Collector, Madurai vide Rc.No. 275/2016/Mines/ dated 05.10.2018.
- III. The mining plan was approved by the Deputy Director, Department of Geology and Mining, Madurai vide Rc.No.275/2016/Mines/dated 26.10.2018.

Owner name and address (address for correspondence)

Name of owner : Thiru.P.K.Appu,
Address : S/o.Palraj,
No.3/362, Mallapuram East,
Peraiyur Taluk,
Madurai District.
Madurai-625 535.

Email Address : infoglobalmining@gmail.com

Location of Project site:

Name of the quarry : Vittalpatti Village Gravel Quarry

S.F.Nos : 227/4 and 227/5C

Extent : 2.58.0Ha

Village : Vittalpatti Village

Taluk : Peraiyur

District : Madurai

State : Tamil Nadu

Ownership : It's a Patta land registered in the name of Tmt.Saraswathy and Tmt.Chandra, Vide Patta Nos- 1338 and 458. The Applicant has obtained consent from pattadhars, Please refer the Annexure No- IV & VII.

(ii) Brief description of nature of the project

The Gravel quarrying is proposed to carry out by opencast Semi mechanized method. The Gravel is composed of unconsolidated rock fragments. The Gravel is an important commercial product, with a number of applications. The applicant intends to use for manufacture of Brick and domestic housing and infrastructure projects in and around the district.

To execute the above said project permission is requested to remove the Gravel from Vittalpatti Village Village in Peraiyur Taluk, Madurai District.

Machineries like excavator are proposed for quarrying for a Two Years period of this up to 3m (1m above ground level and 2m below ground level). No drilling and blasting is proposed. No benches are proposed the quarrying is a restricted to a depth of 3m in the entire quarry lease applied area.

There is no top soil. There is no wastage is not anticipated during the quarry operation, the entire Gravel is excavated and utilized. It is proposed to exploit Gravel of about 68,774m³ for a period of Two Years only.

(iii) Need for the project and its importance to the country and or region

The Gravel quarrying project falls in the area of Madurai District, Tamil nadu where scanty agricultural activities are been carried out and the new industries are springing up in the district. Gravel is an important commercial product, with a number of applications. The applicant intends to The excavated Gravel is used for manufacture of Brick and domestic housing and infrastructure projects in and around the district.

This project will give employment opportunities to 7 members directly. Mineral Industries of the state of Tamilnadu provides employment opportunities for the people of the state as well as in the specific project area. Mining and Quarrying is two among the major core sector industries which plays a vital process of country's economic development.

(iv) Demand and supply gap

There is a huge demand of Gravel in Madurai District, The excavated Gravel is used for manufacture of Brick and domestic housing and infrastructure projects in and around the district.

(v) Imports vs. indigenous production

There is no import of Gravel at present in India. India especially the peninsular India (southern India) has good resource of Gravel.

(vi)Export Possibility

There is no possibility for export of this Gravel.

(vii) Domestic/Export Markets

The excavated Gravel is used for manufacture of Brick and domestic housing and infrastructure projects in and around the district.

(viii) Employment Generation (Direct and Indirect) due to the project

About 7 employees including labors directly and engaged in this proposed quarry project and the tentative man power required for the proposed Gravel quarry shall be as follows.

Skilled:

Mines foreman	:	1
Supervisors	:	1

Semi-skilled:

Excavators Operators	:	1
Co-operator	:	1

Un -Skilled:

Watchman	:	1
Unskilled – helpers	:	2

Total : **7 Nos.**

The above man power is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and also to comply with the statutory provisions of mine safety regulations.

It is been ensured that the labors will not be deployed less than 18 years, No Child labor will engaged or entertained for any kind of quarrying operations. All the labors engaged for quarrying operations will be insured till the end of life of quarry.

3.0 PROJECT DESCRIPTION

(i) Type of project including interlinked and interdependent projects, if any

This is a quarrying project for exploitation of Gravel for the proposed production of 68,774m³. No other allied actions like processing and beneficiation is proposed in this project.

(ii) Location (map showing general location, specific location, and project boundary & project site layout) with coordinates

- The project Gravel is about 2.58.0Ha
- The project area falls in Vittalpatti Village Village
- The area is falls in GSI Topo sheet no. 58 G/07
- The Latitudes between of 09°47'20"N to 09°47'26"N
- Longitudes between of 77°42'22"E to 77°42'32"E on WGS 1984 datum.

(iii) Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations two into should be highlighted

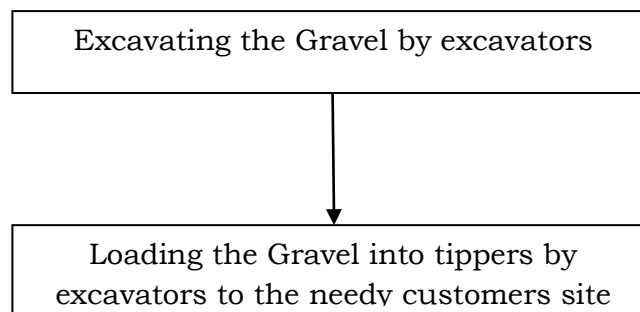
The opencast quarrying is proposed in the area for excavation of Gravel upto 3m(1m above ground level and 2m below ground level). The quarrying operation is proposed in Patta land and there is no any alternative site for this project is not considered, the project is site specific.

(iv) Size or magnitude of operation

The total area of the project is about 2.58.0Ha. It is proposed to exploit Gravel about 68,774m³, by open cast semi mechanized quarry by deploying excavates directly for a period of *Two Years* only.

(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given)

No process is involved in this project. The Gravel is excavated from the ground directly by excavators and loaded into tippers to the customer's site.



Mineable reserves

Total Recoverable Resource up to 3m(1m above ground level and 2m below ground level) =68,774m³

The applicant proposed to excavate= 68,774m³ for a period of Two Years only.

General Geology

The lease applied area is exhibits slightly undulated topography covered with Gravel which does not sustain any type of vegetation due to the topography of the land. The altitude of the area is 218m (Maximum) from MSL, the slope of the area is gentle towards Eastern side. Please refer the Topography, Geological plan and sections (Plate No -III), the slope of the area is

gentle towards Southeastern side. Please refer the Topography, Geological plan and sections (Plate No –III).

Details of Exploration

No exploration is carried out. The Gravel is found right from the surface and proposed to excavate up to a depth of 3m (1m above ground level and 2m below ground level) only.

Proposed Study to be carried out

As the quarrying operation is proposed to be carried out for a period of *Two Years* to a depth of 3m further exploration or proposed study is redundant.

Method of Estimation of Reserves

The Geological plans demarcating the commercially viable Gravel body have been prepared in 1:1000 scales (Plate No. III).

Totally four sections have been drawn, three sections drawn Length wise as (X-Y),(X1-Y1),(X2-Y2) another one section drawn width wise as (A-B), to choose the maximum area cover under the lease in the Horizontal 1:1000 and Vertical 1:100(please refer Plate No- III).

The cross sectional area for the proved depth persistence of 3m has been worked out for the section. The cross sectional area multiplied by its length of influence on the longer axis gives the volume (insitu) in the cross sectional area. The sum total of the insitu reserves available within the individual cross sectional area gives the geological reserves of the lease applied area.

The recoverable of Gravel is in the terms of cubic meter. The Geological Resource, Mineable Reserves are given only in terms of cubic meter. The Details of estimation of geological resource and Mineable Reserves with reference of Topography, Geological plan and section shown in (Plate No: III).

OPEN CAST WORKING

Opencast method of shallow mining is proposed, heavy Gravel moving machineries like excavator are proposed for quarrying this Gravel upto **3m (1m above ground level and 2m below ground level)** depth. No drilling and blasting is proposed for this type of Gravel quarrying, ***it is a eco-friendly quarry operation.***

The Gravel will be loaded directly to the trucks/Lorries for transportation to the needy customers. The depth of quarry is proposed to be restricted up to 3m.

Overburden:

There is no overburden the Gravel is exploit right from the surface to a depth of **3m (1m above ground level and 2m below ground level)** for a period of *Two Years only*.

(vi) Raw material required along with estimated quantity, likely source, marketing area of final products, Mode of transport of raw Material and Finished Products

This is a quarrying project for excavating Gravel hence there is no requirement for raw material. The excavated Gravel is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district.

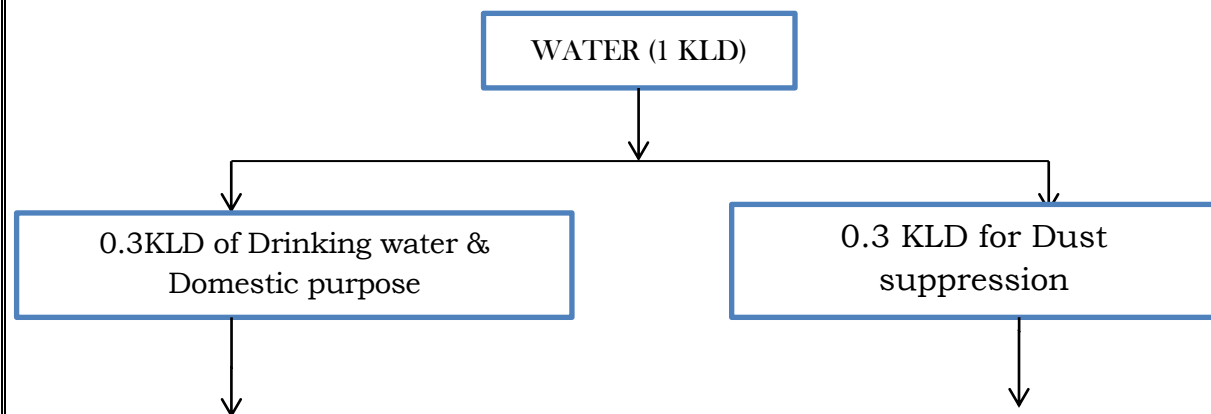
(vii) Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined

No optimization/ Recycling and Reuse envisaged in the proposed Gravel quarry projects.

(viii) Availability of water its source, Energy/power requirement and source should be given

This Gravel quarry project does not require huge water for the project. The total water requirement in the quarry will be around 1KLD for drinking, domestic usage and dust suppression sprinkling. The water will be brought from local suppliers.

WATER BALANCE CHART



Used only for drinking purpose
 for operational workers

Dust Suppression in the Haul
 Roads to prevent Dust emission,
 domestic purposes.

Table -1

Purpose	Quantity	Sources
Drinking and Domestic Purpose	0.3KLD	Water purchase from approved water vendors available in Vittalpatti which is about 750m on the northwestern side of the area.
Dust suppression	0.3 KLD	From existing borehole on nearby quarry area or approved water vendors
Green Belt	0.4 KLD	From existing borehole on nearby quarry area or approved water vendors

Energy

No Electricity is required for quarry operation; the quarry working is restricted on day time only between 7Am to 6Pm).

Diesel (HSD) will be used for quarrying machineries around **11,460 liters** of HSD will be used for the entire project life. Diesel will be brought from nearby diesel pumps.

No power is required for the project; lightings on the Night will be taken from nearby electric poles after obtaining permission from concerned authorities.

Per hour Excavator will consume = 10liters / hour

Per hour Excavator will excavate = 60m³

Per 68,774cbm = 68,774m³/60

= 1,146 hours

Diesel consume 1,146 working hours = 1,146X10

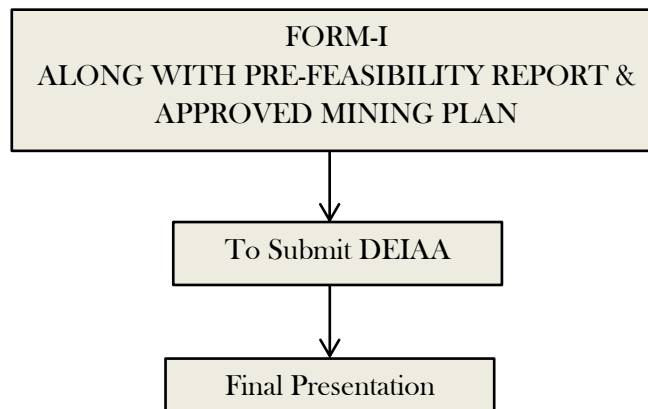
= **11,460liters of HSD for entire project life.**

(ix) Quantity of wastes to be generated (liquid and solid) and scheme for their management/disposal

There is no wastage is encountered during the quarrying operation the entire Gravel is utilized.

There is no toxic effluent expected to generate in the form of solid or liquid and gases and the no requirement of treatment of waste. There is no top soil available in the lease applied area.

(x) Schematic representations of the feasibility drawing which give information of EIA purpose



4.0 SITE ANALYSIS

(i) Connectivity

- There is an existing road from the area leads to Vandari village road on Southeastern side of the area.
- The Nearest Railway line is Madurai – Virudhunagar line which is about 31km on the eastern side of the area.
- The Nearest National Highway (NH-208) Tirumangalam – Tenkasi which is about 21Km on the eastern side of the area.
- The State Highway (SH-154) Vathalagundu - Kariyapatty is about 10Km on eastern side of the area.

(ii) Land Form, Land use and Land ownership

It's a Patta land registered in the name of Tmt.Saraswathy and Tmt.Chandra, Vide Patta Nos- 1338 and 458. The Applicant has obtained consent from pattadhars, Please refer the Annexure No- IV & VII.

(iii) Topography (along with map)

The lease applied area is exhibits slightly undulated topography covered with Gravel which does not sustain any type of vegetation due to the topography of the land. The altitude of the area is 218m (Maximum) from MSL, the slope of the area is gentle towards Eastern side. Please refer the Topography, Geological plan and sections (Plate No -III).the slope of the area is

gentle towards Southeastern side. Please refer the Topography, Geological plan and sections (Plate No -III).

(iv) Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area 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.

The lease area is slightly undulated topography; it is a dry barren land covered with Gravel formation, does not sustain any type of vegetation due to this Gravel formation and does not sustain any type of vegetation due to this Gravel formation. Ground water is about 33m depth from ground level. The quarrying is restricted up to 3m (1m above ground level and 2m below ground level), hence the quarry operation will not be affected by the ground water.

Govt. waste land	Agriculture land	Grazing land	Forest land	Government land	Total (Ha)
-	-	-	-	-	2.58.0Ha

- ❖ No CRZ within the radius 10km
- ❖ There are no Reserved forest / social forest / wild life sanctuary nearby the lease applied area.
- ❖ No National park, wild life sanctuary, eco sensitive area within the radius 10km
- ❖ No Western Ghats within the radius 10km
- ❖ No quarries within the radius of 500m.

(v) Existing Infrastructure

There is no existing infrastructure in the proposed quarry lease applied area.

(vi) Soil Classification

Coarse to medium grained Gravel formation, this land does not sustain any type of vegetation or Agriculture.

(vii) Climatic data form secondary sources

Both the North East and South West monsoon occurs here and the summer are hot and winters are cool. During April and May the temperature may shoot up to 40°C and during winter the temperature does not fall below 25°C. The annual rainfall is around 900mm.

(viii) Social infrastructure available

There is no social infrastructures like Government Buildings, worship in the 1Km vicinity of the quarry lease applied area.

6.0 PLANNING BRIEF

(i) Planning Concept (type of industries, facilities, transportation etc.) Town and Country Planning/Development authority Classification.

This quarrying project is to excavate Gravel by open cast semi mechanized method. Hydraulic excavator will be deploying for production. Transportation of Gravel shall be done by tippers on roads.

The project land is devoid of vegetation and lies in the backward town of Madurai District. There are no specific industries or factories in and around the project area.

Transportation

Hired Tippers of 10/20Ts capacity will be utilized for Transportation of Gravel from the quarry to needy customers' sites for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district. By Tarpaulin cover to prevent spillage. During the transportation of material through the village and populated area the vehicles are strictly prohibited not exceed the 40km speed limit.

Population projection

There are few village located in 5km radius from the lease applied area the details of the areas are given below.

Table-3

S.No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Vandapuli	2.5km – NE	200
2.	Vittalpatti	750m – SE	300
3.	T.Krishnapuram	4.5km – SW	500

(iii) Land use planning (breakup along with green belt etc.,)

The Gravel quarrying operation is proposed for a period of Two Years up to depth of 3m(1m above ground level and 2m below ground level). The project area extent is 2.58.0Ha. The entire area is proposed to be quarried.

(iv) Assessment of Infrastructure Demand (Physical & Social)

The existing road facilities are already available which shall be used and maintained. Medical facilities is available for the project sites, Government and private and other basic infrastructure facilities like communication center, school, supermarket, bus stand are also available in Peraiyur which is about 10.5km on the Southeastern side of the area. This quarry project will provide employment for about 7persons directly.

(v) Amenities/Facilities

The simple methods adopted and the limited scale of activities involved in quarrying does not require High Tension Electric Power supply or huge workshop facilities. The quarrying work is restricted to two general shift during day time only. Major Machinery repair works are attended at Peraiyur which is about 10.5km on the Southeastern side of the area.

All the facilities are available in Peraiyur which is about 10.5km on the Southeastern side of the area.

6.PROPOSED INFRASTRUCTURE

(i) Industrial Area (Processing area)

There is no processing area proposed within the lease applied area.

(ii) Residential area (Non processing area)

There is no residential area within 500mts of the lease applied area.

(iii) Green Belt

After the completion of the quarrying operation, the land will be leveled and only used for Agriculture purpose. Afforestation is not proposed inside the area. The applicant ensures to carry out Afforestation by planting native species on the nearby villages and village road after the consultation with Panchayat authorities. The budget for Afforestation will be around Rs. 30,000/-.

(iv) Social infrastructure

This proposed Gravel quarry will fetch employment for about 7 people directly and 6 persons indirectly.

(v) Connectivity (traffic and transportation road/ Rail/ Metro/ Water ways etc.,)

- There is an existing road from the area leads to Vandari village road on Southeastern side of the area.
- The Nearest Railway line is Madurai – Virudhunagar line which is about 31km on the eastern side of the area.
- The Nearest National Highway (NH-208) Tirumangalam – Tenkasi which is about 21Km on the eastern side of the area.
- The State Highway (SH-154) Vathalagundu - Kariyapatty is about 10Km on eastern side of the area.

(vi) Drinking Water management (Source & Supply of water)

This proposed Gravel quarry project does not require huge water either for beneficiation or processing. Water required for Drinking and domestic purpose for labor is around 0.3KLD the packaged Drinking water for this will be brought from approved water vendors Vittalpatti village which is about 750m on the northwestern side of the area.

1. Drinking Water &
Domestic purpose– 0.3KLD (Source: through approved packaged water vendors)
2. Dust Suppression –0.3 KLD(Source: From existing borehole on near the quarry area or From approved water vendors)
3. Green belt – 0.4 KLD(Source: From existing borehole on near the quarry area
_____ From approved water vendors)

Total – 1 KLD

(vii) Sewerage System

Toilets will be constructed on semi-permanent structure and sewage will be discharged in one months. The sewage waste will be collected in soak pit and discharged as manure.

(viii) Industrial Waste Management

No industrial waste will be generated from the project.

(ix) Solid Waste Management

The Gravel quarrying does not produce any waste. The entire Gravel is excavated and utilized. This Gravel may not produce any toxic effluent in the form of solid liquid or gas.

(x) Power Requirement & Supply / source

The proposed Gravel quarrying does not required any power supply the quarrying operation which is proposed to operate in day time only for 7 Am to 6Pm with 1 Hour lunch interval between 1Pm to 2Pm.

7.0 REHABILITATION AND RESETTLEMENT (R & R PLAN)

(i) Policy to be adopted (Central/State) in respect of the project affected persons including home ousters, langoustes and landless laborers (a brief outline to be given)

It's a Patta land registered in the name of Tmt.Saraswathy and Tmt.Chandra, Vide Patta Nos- 1338 and 458. The Applicant has obtained consent from pattadhars, Please refer the Annexure No- IV & VII. The applicant has purchased land from pattadhars copy of Document is enclosed as annexure no. IV&VII.

8.0 PROJECT SCHEDULE & COST ESTIMATES

(i) Likely date of start of construction and likely date of completion (Time schedule for the project to be given)

Gravel Quarrying project which is likely to get commenced after the execution of quarrying lease. The proposed quantity reserves 68,774m³. The life of the quarry project is Two Years only.

(ii) Estimated project cost along with analysis in terms of economic viability of the project

Fixed asset cost :-

Land cost	=	Rs.	5,16,000/-
Rest shelter	=	Rs.	20,000/-
Sanitary facility	=	Rs.	20,000/-
Total fixed asset cost	=	Rs.	5,56,000/-

Operational cost

For excavation	=	Rs.	11,46,000/-
Leveling	=	Rs.	30,000/-
Fencing cost	=	Rs.	1,50,000/-
Total operational cost	=	Rs.	13,26,000/-

EMP cost

Drinking water	=	Rs.	36,000/-
Sanitary Arrangements	=	Rs.	36,000/-
Safety kits	=	Rs.	20,000/-
Water Sprinkling	=	Rs.	48,000/-
Afforestation cost	=	Rs.	30,000/-
Cost towards charity	=	Rs.	25,000/-

(schools, worship places etc.,)

Total = Rs. 1,95,000/-

Fixed asset cost = 5,56,000/-

Operational cost = 13,26,000/-

EMP Cost = 1,95,000/-

Total Cost(A+B+C) = 20,67,000/-

(The Project cost including EMP Cost is about Rupees twenty lakhs and sixty seven thousand only)

Population Benefit

The applicant ensures to take social responsibilities like providing School Note books, Uniforms to the Students below poverty level beside if the villages require any borehole for public use the applicant ensure to do so. The applicant will also take part and contribute the native cultural activities in the nearby villages. During summer seasons packaged drinking water will be kept in the village for public and for trespassers. The applicant will involve and contribute all the socio cultural allocation in and around the area.

Government Revenue

The state Government will get revenue as Royalty, sale tax, surface rent, dead rent/ VAT/ income tax etc.

9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area

The end use of the excavated Gravel is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district. Due to this project many of the infrastructure development will be carried out in and around the district on time, nearly 7 employees directly get employment opportunity through this project. By considering the merit of the project the permission may be granted.

Signature of the applicant

P.K.Appu

Signature of Recognized Qualified Person

C.Natarajan, M.Sc.M.Phil

RQP/MAS/004/87/A

Place: Salam.

Date: .2018.