

FORM – 1, PRE-FEASIBILITY REPORT & EMP

FOR
Proposed Extraction/Collection of
Minor Minerals viz. Sand, Bajri & Boulders

IN KOSI RIVER

TOTAL ML AREA – 0.470 ha
PROPOSED CAPACITY – 14734.50 TONNES / ANNUM

AT
VILLAGE – RATANPURI
TEHSIL- BAZPUR
DISTRICT – UDHAM SINGH NAGAR
UTTARAKHAND

APPLICANT

SMT TRIPT KAUR,
W/O LATE SHRI AMARJEET SINGH,
R/O – RATANPURI, TEHSIL- BAZPUR,
DISTT:- UDHAM SINGH NAGAR,
UTTARKHAND

PREPARED BY:

M/s COGNIZANCE RESEARCH INDIA PRIVATE LIMITED,
E- 220, Sec. - 63, Noida-201301, UP.

FORM-I

APPENDIX I (See paragraph - 6)

FORM 1

(I) Basic Information

SN	Content		
1	Name of Project	:	Smt. Tript Kaur (ML Area – 0.470 ha.) at village – Ratanpuri, Tehsil – Bazpur, Distt:- Udhamasinghnagar, (Uttarakhand)
2	S No. in Schedule	:	1(a)
3	Proposed capacity/ area/ length/ tonnage to be handled/ command area/ lease area/ number of wells to be drilled	:	Total Recoverable Quantity of RBM – 14734.5 Tonnes/Annum (max) ML (As per approved Mining Plan) Area Approved of Mining: 0.470ha. Lease Period : 5 Years Consent of Mining Lease: The LOI vide letter no. 1497/VII-1/2019/02-ख/18 dated 1 February 2019 was issued for period of 6 month.
4	New/ Expansion/ Modernization	:	Fresh Mine
5	Existing Capacity/ Area etc.	:	0.470 ha.
6	Category of Project i.e. “A” or “B”	:	“B2”
7	Expected cost of the project	:	4.7 Lac
8	Does it attract the general condition? If yes, please specify	:	No
9	Does it attract the specific condition? If yes, please specify	:	No
10	Location Khasra No. Village Tehsil District State	:	Latitude:29°12'40.61"N to 29°12'44.14"N Longitude:79°5'8.18"E to 79°5'13.00"E 42/3 Ratanpuri Bazpur, Udhamasinghnagar, Uttarakhand.
11	Nearest Railway station/ airport along with distance in Km	:	Railway station: Bazpur approx., 8 Km in SE direction (Aerial) Nearest Airport : Pantnagar approx 43 Km in SE direction (Aerial)
12	Nearest Town, city, District Headquarters along with distance in Kms.	:	Town: Bazpur approx. 8Km in SE direction (Aerial) City : Bazpur approx. 8Km in SE direction (Aerial) Dist. Headquarter: Rudrapur, approx.40Km in SE direction
13	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with	:	Gram Panchayat: Ratanpur, Zila Parishad: Bazpur, Municipal Corporation: Bazpur,

	telephone nos. to be given)		
14	Name of the Applicant	:	Smt. Tript Kaur
15	Registered Address	:	R/o village – Ratanpuri, Tehsil – Bazpur, Distt:- Udhamasinghnagar, (Uttarakhand)
16	Address for correspondence Name Designation (Owner/Partner/CEO) Address Pin Code	:	Smt. Tript Kaur W/o Late Shri Amarjeet Singh (Owner) R/o village – Ratanpuri, Tehsil – Bazpur, Distt:- Udhamasinghnagar, (Uttarakhand) 263153
17	Details of Alternative sites examined, if any. Location of these sites should be shown on a toposheet	:	Mining is a site specific activity. Proposed site has been examined by a Joint Committee set-up by the District Magistrate, Udhamasinghnagar.
18	Interlinked Projects	:	None
19	Whether separate application of interlinked project has been submitted?	:	Not applicable
20	If yes, date of submission	:	Not applicable
21	If no, reason	:	Not applicable
22	Whether the proposal involves approval/clearance under: If yes, details of their status to be given a) The Forest (Conservation) Act, 1980? b) The Wildlife (Protection) Act, 1972? c) The CRZ Notification, 1991?	:	No No No
23	Whether there is any Govt. order / Policy relevant/ relating to the site?	:	No The LOI vide letter no. 1497/VII-1/2019/02-ख/18 dated 1 February 2019 was issued for period of 6 month.
24	Forest land involved (hectares)	:	No forest land is involved.
25	Whether there is any litigation pending against project and / or land in which the project is proposed to be set up? a) Name of Court b) Case No. c) Orders/ directions of the Court, if any and its relevance with the proposed	:	No

(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.):**

SN	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	<p>Land use & Land cover: The status of the mine lease area is a private land lying in the river bed of Kosi River. No change in the land use of mine lease area is envisaged as the existing land use category is river bed being a shoal deposit stretch of Kosi River and its tributaries. This shall continue to be so even after mining operations cease. The existing land cover pertains to waste land with deposits of Minor Minerals viz. Sand / Boulder/Bajri.</p> <p>Topography: The mine lease area lies in the river bed and is a part of hilly terrain plain topography in the Kosi river of Uttarakhand. Steep to moderate hills and fluvial valleys are dominantly occupied with very shallow to moderately shallow excessively drained.</p> <p>Highest & Lowest Elevation in the area is 236.50 m & 235.50m. During the entire lease period, the mining of minor minerals will be carried out from the top surface to 1.5m BGL; therefore No change in topography shall take place.</p>
1.2	Clearance of existing land, vegetation and buildings?	No	The entire mining lease area being part of river bed, there is no vegetation in the leased out area. Hence, there would be no clearance of existing land, vegetation and buildings.
1.3	Creation of new land uses?	No	The mining activity will be confined to the lease area i.e. within the flood plain of the River, so no new land use will be created.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	No	Proposed Project is for mining of Sand/ Bajri & Boulder already lying in the river bed and conspicuously visible and being replenished on yearly basis.
1.5	Construction works?	No	The work relates to only extraction of

			sand, bajri and boulders from stream bed during non-monsoon season. No construction work is required for the proposed activity.
1.6	Demolition works	No	Since no construction work is involved, there will not be any demolition either.
1.7	Temporary sites used for construction works or Housing of construction workers?	No	Local labour will be deployed for mining work; hence no temporary sites for housing will be required.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	No	The work involves excavation of sand, bajri and boulders from river bed.
1.9	Underground works including mining or tunneling.	No	There will not be any underground mining or tunneling.
1.10	Reclamation works.	No	No reclamation works of mine is involved in the proposed mining activity as the shoals created in the river bed get replenished during Monsoon Season.
1.11	Dredging?	No	The work involves extraction of sand, bajri and boulders from dry river bed and as such no dredging will be done.
1.12	Offshore structures?	No	-
1.13	Production and manufacturing processes?	Yes	The Opencast Mining Process for extraction of minor mineral (river bed material) primarily involves scooping the mineral through use of hand implements like Spade, Pick Axe and Tool Bars etc.
1.14	Facilities for storage of goods or materials?	No	Minerals extracted will be loaded directly into trucks for transportation. Hence no storage facility will be required.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	No	No solid waste other than negligible quantity of silt/silty clay, which gets deposited as crust material on the bed profile, shall be generated. This will be deposited into the mine area.
1.16	Facilities for long term housing of operational workers?	No	Not applicable, Only local workers will be deployed.
1.17	New road, rail or sea traffic during construction or operation?	Yes	Nearest Road is Bazpur Road connect to mine site about 600m which has an existing traffic load of approx. 12-15 tippers/LMV per hour. Due to transportation of excavated material, an additional load of 1 tipper per hour on the existing traffic is expected which is not very significant.
1.18	New road, rail, air, waterborne or other transport infrastructure including	No	The existing road facility is adequate for meeting additional traffic intensity

	new or altered routes and stations, ports, airports. etc.?		during operational phase of the mine.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	There would be no closure or diversion of existing routes, which would change the traffic movements.
1.20	New or diverted transmission lines or pipelines?	No	-
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology or watercourses or aquifers?	No	In view of changes to the hydrology of the area, no activity like impoundment, damming, culverting or realignment etc. is envisaged. However, as the mining is carried out by open-cast manual method so there will be development of shallow pits, which will be replenished during monsoon due to aggradations of sediment. There will be neither any abstraction nor addition to the river discharge, therefore, no change in the hydrology or impact on aquifer is anticipated.
1.22	Stream crossings?	No	No stream crossings are involved
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	During Operational phase of the mine, water for drinking purpose shall be taken from ground water sources of nearby Village. For dust suppression river water/tanker supply as per availability shall be used. Total demand of water shall be approximately 9.11 KLD.
1.24	Changes in water bodies or the land surface affecting drainage or run-off.	No	There will be no change in the land surface affecting drainage or run-off as mining will be limited within the river bed.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	No	Transportation of material and personnel is not warranted as no construction activity is involved. During the operational phase, the labour/ personnel shall arrange for their own means of transport either on foot to reach the mine site. However excavated mineral during operational phase of mine shall be transported by mule or trucks/ tipper/ tractor trolleys hired on contractual basis.
1.26	Long-term dismantling or decommissioning works?	No	-
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	No decommissioning activities are envisaged as the river bed mining is a continuous process. The works shall be

			carried out as per eco-friendly management plan.
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Only local people (27 nos.) will be deployed to carry out minerals extraction. So no influx of people will be seen.
1.29	Introduction of alien species?	No	No such introduction of alien species is fore seen.
1.30	Loss of native species or genetic diversity?	No	No loss of native species or genetic diversity is expected.
1.31	Any other actions?	No	-

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):

SN	Information/checklist confirmation	Yes /No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially underdeveloped or agricultural land (ha)	No	The activity will be done in the proposed mine lease area which is a river bed. No agricultural land is involved.
2.2	Water (expected) source & competing users) unit: KLD	Yes	Only 9.11 KLD water will be required for drinking purpose and dust suppression. Source of water will be river as well as ground water from nearby village.
2.3	Minerals (MT)	Yes	Proposed project is for excavation of 14734.50 Tonnes Sand/Bajri/Boulder (Minor Minerals) / Annum, which may replenish at almost the same rate annually, However it will depend on the intensity of rainfall.
2.4	Construction material – stone, aggregates, and/soil (expected source – MT)	No	No construction material is required for this project. On the other hand, construction material will be produced.
2.5	Forests and timber (source – MT)	No	Not required for this project.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT) energy (MW)	No	Mining operations will be manual requiring no electrical energy. However, for transportation of minerals excavated, fuel will be consumed.
2.7	Any other natural resources (use appropriate standard units)	No	No other natural resources will be used.

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:

SN	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)	No	This project operation will not involve use of any materials, hazardous to human health or environment.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	No change in occurrence of diseases, due to manual mining of sand, bajri and boulder. However, insect and other poisonous bites are quite possible. For this first aid facility along with anti-venom facility will be made available.
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	Project will have a positive effect on the welfare of local people by providing direct and in direct employment opportunity.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	No hospital, school exists nearby the mine lease area.
3.5	Any other causes	No	-

4. Production of solid wastes during construction or operation or decommissioning (MT/month):

SN	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
4.1	Soil, overburden or mine wastes	No	No solid waste other than minor quantity of silt/silty clay, which gets deposited as crust material in the bed profile, shall be scrapped and deposited into the mine pits.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	No municipal waste other than domestic sewage shall be generated, which shall be disposed eco-friendly mobile toilets.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	No hazardous wastes are envisaged.
4.4	Other industrial process wastes	No	No other industrial process wastes will be generated
4.5	Surplus product	No	No surplus products are expected.
4.6	Sewage sludge or other sludge from effluent treatment	No	Only domestic sewage will be generated which will be disposed through eco-friendly mobile toilet.
4.7	Construction or demolition wastes	No	No construction or demolition wastes are

			expected.
4.8	Redundant machinery or equipment	Yes	The machinery or hand equipment shall be disposed in a proper way based on the condition of equipment's or tools.
4.9	Contaminated soils or other materials	No	No contaminated soils will be generated.
4.10	Agricultural wastes	No	No agricultural wastes will be produced.
4.11	Other solid wastes	No	No other solid wastes will be generated.

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

SN	Information/check list confirmation	Yes /No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
5.1	Emission from combustion of fossil fuels from stationary or mobile sources	Yes	Emissions from vehicles are anticipated during transportation.
5.2	Emissions from production processes	Yes	Some dust is expected during loading and excavation of mineral.
5.3	Emissions from materials handling including storage or transport	Yes	Dust and fugitive emissions will be generated during activities such as loading and transportation of minor minerals which shall be suppressed by water spraying.
5.4	Emissions from construction activities including plant and equipment	No	No construction will be done at the mining site. Hence, no emissions are anticipated.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Dust emission is expected during handling of minerals i.e. during loading of minerals.
5.6	Emissions from incineration of waste	No	Since no burning of waste will be done, hence no emission is expected.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	No burning of waste is done, hence no emission is expected.
5.8	Emissions from any other sources	No	-

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

SN	Information/Checklist confirmation	Yes / No	Details there of (with approximate quantities / rates, wherever Possible) with source of information data of with source of information data
6.1	From operation of equipment e.g. engines ventilation plant, crushers	Yes	Minimum noise will be generated during manual extraction and screening operation of minor mineral.
6.2	From industrial or similar process From industrial or similar process	No	-
6.3	From construction or demolition	No	No construction or demolition work is

			proposed.
6.4	From blasting or piling	No	Blasting and piling is not proposed for the mining process.
6.5	From construction or operational traffic	Yes	Only transportation of excavated mineral will generate some noise. Adequate precaution shall be takes place to curtail the noise.
6.6	From lighting or cooling systems	No	Mining will be carried during day time and in open area. Thus there is no need for lighting and cooling systems.
6.7	From any other sources	No	-

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:

SN	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities / rates, wherever possible)
7.1	From handling, storage, use or spillage of hazardous materials	No	Since no hazardous material will be used or produced at the site, no risk of contamination of land or water envisaged.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	Domestic sewage will be disposed through eco-friendly mobile toilet.
7.3	By deposition of pollutants emitted to air into the land or into water	No	Adequate measures to suppress dust so as not to allow dust to become airborne are provided.
7.4	From any other sources	No	Not envisaged
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	Scraping of accumulated dust build-up on road will be done frequently to keep the road in good order, thus avoiding any risk to environment.

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

SN	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	No	No hazardous substance will be used or produced during the proposed mining operations.
8.2	From any other causes	No	Risk of accidents are expected: <ol style="list-style-type: none"> 1. During loading of minerals into trucks. 2. During transportation. Accidents can be avoided by taking due care and precautions.
8.3	Could the project be affected by	Yes	The topography of the lease area, lying in

	natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc.?)		river bed, is such that it can be affected due to disaster in the form of flash flood during monsoon period; hence mining activity will not be carried out during rainy season. Possibility of earthquakes cannot be neglected as the lease area lies within Seismic Zone-IV as per seismic zoning map of India (IS: 1893: 2002). However the mine lease area does not have any structure.
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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

SN	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. <ul style="list-style-type: none"> ▪ Supporting infrastructure (roads, power supply, waste or waste treatment etc.) ▪ Housing development ▪ Extractive industries ▪ Supply ▪ Other 	Yes	No major changes are expected within the existing environment. Minor minerals are in much demand for the purpose of construction as construction material. Hence it would cater the demand of Construction Sector.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	The site is in the river section and shall continue to be so even after the expiry of the lease and / or discontinuation of mining activity in the area. Thus, no impact on environment is expected.
9.3	Set a precedent for later developments	Yes	Proposed mining activity can set a precedent for increase in infrastructure developmental activity.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	-

(III) Environmental Sensitivity

SN	Areas	Name / Identity	Distance (Within 15 km.) Proposed project location boundary
1.	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil	None
2.	Areas which are important or sensitive for ecological reasons –Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Wetlands	-
		Water Bodies	Mining shall be carried out in the river bed of Kosi River.
		Coastal Zone	None
		Biosphere	None
		Mountains	-
		Forest	Ramnagar Forest Range
3.	Areas used by protected, important or sensitive species of flora and fauna for breeding, nesting, foraging, resting, over wintering, migration	No	-
4.	Inland, coastal, marine or underground waters	None	-
5.	State, National boundaries	No	-
6.	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Bazpur Road	About 600m
7.	Defence installations	No	None
8.	Densely populated or built-up area	Bazpur	About 8km
9.	Areas occupied by sensitive man- made land uses (<i>hospitals, schools, places of worship, community facilities</i>)	Hospital	Bazpur – 8 Km
		School	Dasmesh - 4km
		Place of Worship	Ratanpuri- 2km
		Community facility	Bazpur – 8 Km
10.	Areas containing important, high quality or scarce resources (<i>Ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i>)	None	None
11.	Areas already subjected to pollution or environmental damage. (<i>Those where existing legal environmental standards are exceeded</i>)	None	None
12.	Areas susceptible to natural hazard which could cause the project to present environmental problems (<i>Earthquakes, subsidence landslides, erosion, flooding or extreme or adverse climatic conditions</i>)	Earthquake	The study area lies in Seismic Zone IV. However natural hazards due to earthquakes are not anticipated to be a major environmental issue owing to the shallow mining depths. Also no major structures are

			part of the proposed development. Hence environmental impacts due to the proposed development are ruled out.
		Erosion	Erosion is not anticipated and is not considered to be a significant feature in case of river bed mining, as the topsoil content is almost nil and the excavated material is replenished every year.
		Flooding	Flooding may occur depending upon the rainfall, however mining will not be carried out during monsoon season. Mining will help to mitigate the impacts of Flooding.
		Extreme /adverse climate	No extreme/ adverse climatic conditions are observed in the study area.

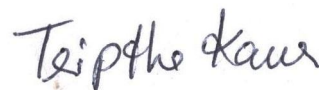
(IV) PROPOSED TERMS OF REFERENCE FOR EIA STUDIES

Considering nature, size & scale of the project, the project is likely to have minimal impacts, we request to consider project as category B2. We propose to submit EMP for the same.

“I hereby given an 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 given, if any to the project will be revoked at our risk and cost”

Date: 15/06/2019

Place: Udham Singh Nagar



(Tript Kaur)

W/o Late Shri Amarjeet Singh

R/o village – Ratanpuri,

Tehsil – Bazpur,

Distt:- Udham Singh Nagar,

Uttarakhand

PRE-FEASIBILITY REPORT

1.0 EXECUTIVE SUMMARY

Minor Minerals viz. Sand/Bajri/Boulder mining lease, measuring 0.470 ha was sanctioned the LoI by Director, GMU, Dehradun, Uttarakhand to Smt. Tript Kaur S/o W/o Late Shri Amarjeet Singh, R/o village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, Uttarkhand on lease in village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, (Uttarakhand). The lease was sanctioned; vide competent authority Letter of Intent No. 1497/VII-1/2019/02-ख/18 dated 1 February 2019 was issued for period of 6 months. **(Copy of LOI is attached as per Annexure-I).**

In accordance with the Schedule of EIA Notification, 2006 and its amendment from time to time, the proposed Project of Minor Mineral Mine is categorized under Category – “B2” 1 (a) (mining lease area >5 ha) - {Mining of Minerals} as the lease area is 0.470 ha. Therefore, it is being presented to State Environment Impact Assessment Authority (SEIAA), Dehradun, Uttarakhand; for the purpose of granting prior Environmental Clearance to start extraction of minor minerals. Form – 1, Pre-feasibility Report and Environment Management Plan are prepared by M/s Cognizance Research India Private Limited, E- 220, Sec. - 63, Noida-201301, UP.

1.1 SALIENT FEATURES OF THE PROJECT

Project Name	Proposed Extraction / Collection of Minor Minerals i.e. Sand, Bajri & Boulders from Kosi River Bed (ML Area 0.470 Hectare) at village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, (Uttarakhand)
Location of Mine	Khasra No. 42/3
Latitude & Longitude	29°12'40.61"N to 29°12'44.14"N & E 79°5'8.18"E to 79°5'13.00"E
Land Use	Private lease land in the river bed (Kosi River)
Minerals of Mine	Minor Minerals i.e. Sand, Bajri & Boulders
Life of Mine	Continuous, being replenished yearly
Proposed Production of Mine	Total mineable reserves – 14734.50 Tonnes (6697.50 Cubic meter)
Method of Mining	Open-cast manual mining
No of Working Days in a Year	130
Water Demand	Domestic Water: 0.81 KLD
	Dust Suppression: 3.60 KLD
	Plantation: 4.70KLD
	Total : 9.11 KLD
Sources of Water	Natural spring water from nearby village
Man Power	27
Nearest Railway Station	Bazpur approx., 8 Km in SE direction (Aerial)
Nearest Highway	NH 74 in Bazpur approx., 8 Km in SE direction (Aerial)
Nearest Air Port	Pantnagar approx 43 Km in SE direction (Aerial)
Seismic Zone	Zone-IV (As per 1893:2002)

1.2 PROPOSED PLANINIG

Mining Method: Open Cast Manual Mining Method

Tentative Project Cost: 4.7Lac

Production: Sand, Bajri & Boulders – 14734.50 Tonnes (6697.50 Cubic meter)

2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

2.1 IDENTIFICATION OF PROJECT PROPONENT

For economic development of people of Uttarakhand and provide the employment to the local personnel, mining lease was permitted by Director, DGMU, Dehradun, Uttarakhand. The above defined lease was sanctioned to Smt. Tript Kaur S/o W/o Late Shri Amarjeet Singh, R/o village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, Uttarkhand prior to grant Environmental Clearance as per EIA Notification, 2006.

2.2 BRIEF INFORMATION ABOUT THE PROJECT

The Project has been proposed to remove 14734.50 Tonnes (6697.50 Cubic meter) of Minor Minerals viz. Sand, Bajri & Boulders by open cast manual extraction method from river bed / Year. The lease area is a private lease land lies in the river bed.

During monsoon season, when the river reaches high stage, Kosi River has significant catchment area and its transports load material and sediments. The mined out area gets replenished annually during monsoon, thus it does not require any backfilling. Water requirement for the proposed project for domestic use, shall be met from natural spring water resource and the requirement for dust suppression shall be met from the surface water (river). Domestic water requirement would be fulfilled from nearby village. Total water requirement shall be 9.11 KLD approx.

2.3 NEED FOR THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY OR REGION

For meeting the huge demand of construction material like coarse and fine aggregate required in building construction and infrastructure works in Udham Singh Nagar region, the natural available materials in shoal deposits of Kosi River at river bed quarry site of village – Ratanpuri, Tehsil – Bazpur, Distt:- Udham Singh Nagar, (Uttarakhand), has been found suitable from techno-economic consideration. The mining project shall provide direct employment to about 27 labourers. Additional jobs are created by way of transportation. In addition to this the production of minerals will benefit the State in the form of Royalty; the project will generate direct and indirect employment opportunities for the people in nearby villages. Also the mine management will initiate various socio-economic developments in nearby village from time to time to improve the socio- economic status in the area.

2.4 DEMAND-SUPPLY GAP

The partial demand of Sand/Bajri/Boulders in construction activities like building, infrastructure facilities, construction and expansion of existing SH/NH of the area can be accomplished from this mine.

2.5 IMPORTS VS. INDIGENOUS PRODUCTION

Import does not apply in the present case as Sand, Bajri & Boulders is indigenously available at number of mines under operation in Uttarakhand State.

2.6 EXPORT POSSIBILITY

Export possibility is neither conceivable nor there is any such demand.

2.7 DOMESTIC/ EXPORT MARKETS

The proposed mining activity is for obtaining Sand/Bajri and Boulders for indigenous consumption and also for sale to nearby Cities and Towns located in the State.

2.8 EMPLOYMENT POTENTIAL

About 27 local labours shall be engaged through Project Proponent for extraction of Sand, Bajri & Boulders and loading and handling of mineral in mining area, besides, watch and ward activity with proper maintenance.

S.No.	Qualification	No. of persons
1.	Manager/Foreman	01
2	Supervisor	01
3	Time Keeper	01
4	Office Assistant/Dispatch Supervisor	01
5	Un Skilled	23
Total		27

3.0 PROJECT DESCRIPTION

3.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS, IF ANY

The project has been proposed for an annual production of 14734.5 Tonnes (6697.50 Cubic meter) of Sand, Bajri & Boulders by open cast manual extraction method from river bed. The lease area (0.470 Ha.) is a private waste land. The Project has no other interlinked Project.

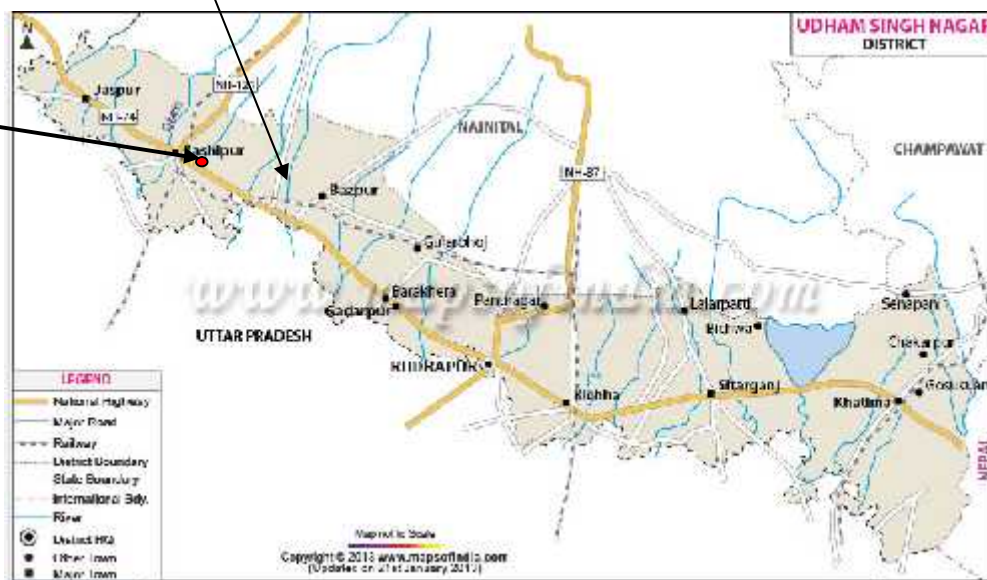
3.2 LOCATION

The mine lease area falls in Kh. No. 42/3 in village – Ratanpuri, Tehsil – Bazpur, Distt:- Udhamasinghnagar, (Uttarakhand). The lease area falls within survey of India Toposheet No. 53O/4 the Geographical location of mine is Latitude - 29°12'40.61"N to 29°12'44.14"N and Longitude- 79°5'8.18"E to 79°5'13.00"E. The site is easily approachable from NH 74.

The vicinity map of the mine location is given below:



Location of the Site



3.3 DETAILS OF ALTERNATE SITES

No Alternate site is required as the proposed mine lease area covered under Khasra No. 42/3 in village – Ratanpuri, Tehsil – Bazpur, Distt:- Udhamsinghnagar, (Uttarakhand) in mineable area of 0.470 ha. Proposed mine lease has been allotted to project proponent by the Uttarakhand Government. In order to demarcate the mineable area, within the approved area,

the inspection of the lease area was carried-out by the members of Joint Inspection Committee and an area of 0.470 ha was recommended suitable for mining.

3.4 SIZE OR MAGNITUDE OF OPERATION

The mine lease area is 0.470 ha private waste land in the river Bed and the project is contemplated to win the minor mineral (Sand, Bajri & Boulder) by Manual Open Cast Method of mining without blasting.

3.5 GEOLOGY

3.5.1 PHYSIOGRAPHY

This area lies on a valley and is flowing from NE to SW in a mountainous terrain of rough and rugged topography. The adjacent area is drained by Kosi River. The applied area forms a transverse ridge of Ratanpuri village. The area has sloppy undulating surface and at places gentle sloping also. The highest RL is about 236.5m on the NE side of the applied area, while the lowest RL recorded on the SW side of the applied area is about 235.5m.

3.5.2 GEOLOGY

Geology plays an important role in shaping the groundwater scenario of an area. Piedmont alluvial deposits represent the geology of study area. Broadly, it can be divided into two formations viz. Bhabar and Tarai. These are characterized by distinct lithology, grain size distribution, variation of degree of sorting etc. Siwalik Range and the Lesser Himalayan Range have folded mountains having medium to high relief and rugged terrain. The Siwaliks are also designated as a Sub-Himalayan zone. A generalized geological succession, of the area, is as follows;

Age	Morphotectonic	Divisions	Lithology
Recent to Quaternary	Piedmont	Bhabar	Boulder, sand and clay
	Alluvial plain	Tarai	Sand, clay and silt.

Bhabar formation is essentially constituted of alluvial deposits lying on the sloping plains in the Himalayan foothills. It is primarily constituted of unconsolidated sediments like sand, gravel, boulder and clays. The Tarai formation is exposed immediately south of the Bhabar formation and consists of clays, sandy, fine to medium sand and occasional gravels. In this formation there is a dominance of clayey successions over sandy horizons. The granular zones mostly occur as lenses and have inter-tonguing relationships with clastic and non-clastic units. The northern limits of the zone is demarcated by the spring line, i.e. the contact between Bhabar and Tarai, whereas the southern limit of this zone is taken to be the region where auto flow conditions cease to exist in the tube wells. Tarai Formation is better sorted as compared to the Bhabar.

3.5.3 MINEABLE RESERVES

As per mining plan, total estimated river bed material to be removed during the period of five year is 14734.50 Tonnes (6697.50 Cubic meter). Since the deposition of bed material and its transportation by the tractive force created during high floods is a natural and continual

phenomenon the mined out area annual gets deposited. However, deposit may vary as per rainfall and transportation of the material from upper reach.

3.5.4 PROPOSED RATE OF PRODUCTION WHEN MINE SHALL BE FULLY DEVELOPED AND EXPECTED LIFE OF THE MINE

Extraction of sand, bajri & boulder from the mine lease area shall be carried out as per the Uttarakhand Mineral Policy, 2011 & 2016. The rate of mineral excavation is calculated as 14734.50 Tonnes (6697.50 Cubic meter) per Annum. The mine will be worked on the day shift only. The average number of working days in the year would be 130 after grant of Environment Clearance. The proposed target production has been worked out on the basis of mineable area with maximum mining depth of 1.5 m. On the basis of the nature of RBM (River Bed Material) in the boulder reach near the river, the matrix comprises of the flood area load, mainly comprising of boulder, pebble, cobble, bajri and sand. The river originates from Garhwal Himalaya embodies a host of geomorphic features of glacial and fluvial origin and spring fed river with discharges throughout the year. During monsoon season, the high intensity and duration of rain fall result into high floods and sometime the flesh flood also. The banks of the river in the upper reaches are made-up of friable material, which is easily eroded. The river bed material and the suspended solids material mainly constitutes of sand, bajri and boulder, which gets settled into the beds with depressed elevation and into such pockets formed during the mining in pre-monsoon season. Viewing the competence of the river and the traction force generated during period of high discharges the bed load material, viz. boulder, shingle and sand gets aggraded annually and it is essential that the silviculture purposes and to save the nearby habitation, the removal of sand is essential, so that, the river course is not diverted. The annual target production is likely to be achieved during the year of normal rainfall in the catchment of Kosi river.

3.6 PROJECT DESCRIPTION WITH PROCESS DETAILS

3.6.1 PROPOSED METHOD OF MINING

The project does not involve any processes such as drilling, blasting and beneficiation. The mining process involves collection of material by simple hand tool such as shovel, pans and sieves. This is followed by sorting and manual picking, stacking and loading into trucks/tractor-trolley for transporting. The pits from where the material is picked are not deeper than 1.5m as allowed in mining area and shall follow the normal channel direction of the river. These get replenished during monsoon. The only waste is silt/clay which is recycled back to the pits.

Mining will be carried out only during the day time. The factors such as topography, bed gradient, soils, rainfall etc. will be taken into consideration for the same. The material is transported through the high velocity flow and is deposited in downstream portion where the bed slope is mild.

Applied area is a part of a river bed and mining will be done manually in open cast method in quite a systematic manner by forming benches of 1.5m high. However, there may be variation in the width which the lessee will keep on mending. About 14734.50 Tonnes

(66697.50 Cubic meter) mineral will be produced in per year. The proposed area is within river bed and mined out area will be replenished gradually during succeeding rainy season. The sandy soil to be scrapped manually with the help of pickaxe, spade & crowbar and will be stacked separately in dump yard located near the working pit.

Once the overburden, which appears thick, has been removed; the sand, *bajri* and boulder are excavated depending upon the lithological variation, no blasting may be used to make the sand containing material more amenable to excavation. Excavation is typically performed by manual means. Hand operated tools like spade; tasla etc will be used to collect the sand. The excavated material may be directly loaded into trucks, dumpers, tippers and tractors trolleys and send to the destination wherever it is required for construction and other purposes.

Transportation of sand, *bajri* and boulder from the mine is a process to deliver mined out material to the location where it is going to be collected. Mined out sand, *bajri* and boulder will manually be loaded into truck and transported to its destination where it will ultimately be used. Sufficient space will be left for loading of trucks. Excavation of river bed minerals will commence from the top surface of the area and commence towards down removing the minerals manually in 1.5m slices. Ultimate depth of a bench will be 1.5m. Mining will be restricted upto a maximum depth of 1.5m only. Per year about 14734.50 Tonnes (6697.50 Cubic meter) production of river sand, *bajri* and boulder have been proposed to meet the market requirement.

The mineral extraction will be done for a period of about 130 day in a year. During this period the areas of mining quarry will be free from submergence. During mining operation the river flow will be away to enable dry pit mining. In the lease area the river flow being reduced and sediment load get deposited. During flood season, the area gets replenished with sediments and source of erosion at this location is comparatively less.

The guidelines of the Ministry of Environment & Forests and Directorate of Geology and Mining will be followed; the most important is as under:

- Dry pit mining will be followed which means mining an all times will be above the flowing river water level. Mining activity will be immediately stopped when water comes in the mining pits.
- Sand, *bajri* and boulder will be collected in slices upto a depth of 1.5 m or river water levels whichever less than prescribed.
- Stream will not be diverted to form inactive channel.
- Mining at the concave side of the river channel will be avoided to prevent bank erosion.
- Plantation will be done on such area to isolate mining operation form the rest of the area.
- Area of mining lease will be demarcated prior to mining for sustainable development and Pillars will be erected on ground.
- No mining operations shall be carried out in proximity of any bridge and or embankment.

- Any other terms & condition mentioned in EC, GO and Letter of Intent will also be applicable during excavation of the mineral.

3.6.2 BLASTING

No blasting is proposed to be done.

3.7 RAW MATERIAL REQUIRED ALONG WITH ESTIMATED QUANTITY, LIKELY SOURCE, MATERIAL AREA OF FINAL PRODUCTS, MODE OF TRANSPORT OF RAW MATERIAL AND FINISHED PRODUCT

No raw material is required for extraction of minerals.

3.7.1 RESOURCE OPTIMIZATION/ RECYCLING AND REUSE

Not applicable in the present case as all size of minerals will be extracted and transported to the crusher site outside the mine lease area.

3.8 AVAILABILITY OF WATER ITS SOURCE, ENERGY / POWER REQUIREMENT & SOURCE

3.8.1 WATER REQUIREMENT

Water requirement for human consumption and dust suppression is 9.11 KLD, which shall be met from ground water source of the nearby village.

Activity	Water requirement (KLD)
Domestic	0.81
Dust suppression	3.60
Plantation	4.70
Total	9.11

3.8.2 POWER

No electrical power shall be required for operations.

3.9 QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/ DISPOSAL

3.9.1 SOLID WASTE GENERATION & ITS DISPOSAL

No solid waste other than negligible quantity of silt/silty clay, which gets deposited as crust material on the land profile, shall be scrapped and deposited into the mine pits.

3.9.2 LIQUID EFFLUENT

There will be no waste water generation from mining activities. Domestic sewage shall be disposed through eco-friendly mobile toilet.

4.0 SITE ANALYSIS

4.1 CONNECTIVITY

The mining site is approachable by metalled road followed by *kaccha* road, which connected with Bazpur road which is about 600m. Bazpur railway station is located at a distance of 8 Km.

4.2 LANDFORM, LAND USE AND LAND OWNERSHIP

4.2.1 LANDFORM

The mine lease area is in the river bed and forms section of the river Kosi.

4.2.2 LAND USE

The land use of the mine lease area is river bed classified as private waste land.

4.2.3 LAND OWNERSHIP

The designated mine area is private land and belongs to project proponent.

4.3 TOPOGRAPHY

The mine lease area lies in Garhwal Himalaya. The elevation range of the mining site is approximately between 235.5 AMSL to 236.5 AMSL creating a level difference of 1 m. Geographically, the study region constitutes of two physioclimatic divisions: the hilly tract and the plain regions. The natural environment of the hilly region is greatly different from that of the remaining areas of the plains. The diversified topography, soil, climate and vegetation on the one hand and socio-cultural and economic on the other have formed these regions into two separate entities. The plains have two separate sub-regions which are, physiographically distinctive, i.e., Bhabar and Tarai.

The hilly physiographic unit comprises the northern hills of outer Himalaya, which is separated by Main Boundary Thrust (MBT) from east to west of the area. The region geologically comes under the Lesser Himalaya and Siwalik. Bhabar is immediately to the south of the hills and is a narrow belt which is covered with forest at places, but devoid of water. The southern boundary of the tract is demarcated by the junction points of the different rivulets, which debouch in the area from adjacent Siwalik Hills.

The foothill plain is composed of the recent deposits which mainly includes coarse deposits. On account of porous substratum this tract is superficially devoid of water. There is not even a single channel traceable on the surface except a few major streams/rivers and the depth of water table is generally found deep. A major proportion of the region falls within the drainage basis of these main rivers i.e. Gaula, Nandhaur, Bhakara, while the southern face of the Siwalik gives rise to numerous streams that flow southwards across the foothill zone of Bhabar.

Kosi, in a real sense, can be regarded as the principal river of the area. This river also carries a large volume of water during the rain as also the off-season periods. It is due to such factors that it is proposed to be deemed at Jamrani for Irrigation and other is purposed a few kilometres upstream of Ranibagh where this river enters the foothills. It has a wide valley near

Kathgodam, Shismahal, Haldwani, Bedipadav, Debrampur, Halduchaur, Lalkua, Imlighat & Shantipur where the river carries huge deposits of boulders and other river borne material, here onwards the river has a winding course.

4.4 EXISTING LAND USE PATTERN

The existing land use of mine lease area belongs to land use category “River bed” and shall continue to be so even after the current mining project is over.

4.4.1 POST MINING (CONCEPTUAL) LAND PATTERN OF ML AREA (HA.)

S.No.	Sensitive Ecological Features	Name	Aerial Distance (in km.) from Mine Lease
1	National Park/Wildlife Sanctuary	Corbatt National Park	21km Northern direction
2	Tiger Reserve/Elephant Reserve /Turtle Nesting Ground	Corbatt National Park	21km Northern direction
3	Core Zone of Biosphere Reserve	-	-
4	Habitat for migratory birds	None	--
5	Lakes/Reservoir/Dams	No	--
6	Stream/Rivers	Mine is located in the River bed of Aglar River	Kosi River bed
7	Estuary/Sea	None	--
8	Mangroves	None	--
9	Mountains/Hills	Garhwal Himalaya	Lesser Himalya
10	Notified Archaeological sites	None	-
11	Industries/Thermal Power Plants	None	-
12	Defense Installation	Ranikhet	58Km in NNE direction
13	Airports	Pantnagar	43 Km in SE direction
14	Railway Lines	Bazpur	8 Km in SE direction
15	National / State Highways	NH-74	8 Km in SE direction
16	Important worship place	Ratanpuri	2.0 Km

4.5 EXISTING INFRASTRUCTURE

The mine lease area is a fallow land which lies near the Kosi river basin and gets deposition of sand, bajri during the monsoon season carried along the river course with the flow of river during monsoon. There is no existing infrastructure, however during mining temporary rest shelters for workers will be provided.

4.6 SOIL CLASSIFICATION

The soils are natural, dynamic, heterogeneous, non-renewable resource, which support plant and animal life. The tract of Udham Singh Nagar district consists of outward succession of ridges viz; Lesser Himalaya and central crystalline of decreasing height. The soils have developed from rocks like granite, schist, gneiss, limestone, phyllites, shales, slate, sand stone etc. under cool and moist climate.

4.7 CLIMATIC DATA FROM SECONDARY SOURCES

4.7.1 TEMPERATURE, RELATIVE HUMIDITY & WIND

The climate varies from Sub-tropical and sub-humid with three distinct seasons i.e. summer, monsoon (rainy season) and winter. The rainy season starts from the month of middle June to September end, and followed by the winter season, which starts from the end of October and goes up to February. The winter rains are generally experienced in late December or early January, which brings down the temperature and that's how December and January are the coldest months in the district. The summer season starts from March and it goes up to June. The hottest months of the year are May and June. The maximum temperature in the district goes up to 42°C during the summers and the minimum temperature is between 1 and 4° C, further north of the district, the temperature comes down to 0.4°C in winter season. Rainfall, spatially, is highly variable depending upon the altitude. The intensity of the rainfall increases from south to north and the amount of rainfall decreases in generally from west to east. About 90% of the rainfall received during the monsoon period, and the remaining 10% of the rainfall in non-monsoon period. The average annual rainfall is 1296.85 mm (Year; 2004).

4.7.2 RAINFALL

Rainfall, spatially, is highly variable depending upon the altitude. The intensity of the rainfall increases from south to north and the amount of rainfall decreases in generally from west to east. About 90% of the rainfall received during the monsoon period, and the remaining 10% of the rainfall in non-monsoon period. The average annual rainfall is 1296.85 mm (Year; 2004).

4.7.3 HUMIDITY

The humidity is high during the monsoon season and to a lesser extent in the cold months. In the summer months humidity is generally low and is between 27 and 65% and high during monsoon & winter season and varies from 45% to 84%.

4.7.4 CLOUDINESS

In the winter season the sky is generally clear or lightly clouded except for brief spells of a day or two each time when in association with the passage of western disturbances particularly in the northern parts of the district sky become cloudy. Sky is clear or lightly clouded in the summer and post-monsoon seasons. Heavily clouded to overcast sky prevail in the monsoon season.

4.8 SOCIAL INFRASTRUCTURE

The social infrastructure like educational facilities (primary and higher secondary schools, degree college), drinking water supply, post and telegraph, public transportation and hospitals are by and large are available within 10km the study area.

5.0 PLANNING BRIEF

5.1 PLANNING CONCEPT

Open cast manual mining method will be adopted for Sand, Bajri & Boulders mining. Project will produce 14734.50 Tonnes (6697.50 Cubic meter)/Annum of Minor Mineral, which will be used for meeting the demand of construction material like coarse and fine aggregate required in building construction and infrastructure works of Uttarakhand.

5.2 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL & SOCIAL)

Adequate infrastructure facilities are available in the vicinity of mine lease area and due to the mining activities; no extra infrastructure over and above the existing infrastructure is required.

5.3 AMENITIES/FACILITIES

5.3.1 MINES OFFICE

Proper site services such as First Aid, Rest Shelter and Drinking Water will be provided to the mine workers.

5.3.2 REST SHELTER

Rest shelter along with first-aid station complying with all the provisions of Mines Rules shall be provided by project proponent outside lease area.

5.3.3 WATER SUPPLY

Water will be supplied for Human Consumption & Dust Suppression.

5.3.4 POWER SUPPLY

The mine will work in day time only, so no lighting arrangement will be required.

5.3.5 TRANSPORT OF MEN AND MATERIAL

Employee will report to the duty on own means. The material from the mine will be transported by Tippers.

5.3.6 COMMUNICATION

Mobile phones shall be used for communication.

5.3.7 SECURITY ARRANGEMENTS

Appropriate security arrangement shall be made.

6.0 PROPOSED INFRASTRUCTURE

6.1 INDUSTRIAL AREA (PROCESSING AREA)

Temporary arrangements like Site Office, rest Shelters & approach roads etc. shall be provided. No permanent infrastructure is proposed.

6.2 RESIDENTIAL AREA (NON PROCESSING AREA)

As the local person shall be employed, no residential building / housing are proposed.

6.3 GREEN BELT

It is proposed to plant local trees and bushes along the river banks, nearby area, road side plantation in consultation with the local authority/ Govt. body, as the plantation is not feasible on the riverbed.

A total area of 0.470 ha will be covered under plantation

Area calculation for plantation

Area of mine lease has been considered along both the sides of river banks = 4700 sqm or 0.470Ha.

No. of Plants to be planted @2500 sapling/hectare = 1175 Plants

Expenditure for Plantation in Year (Amount in Rs. lakhs)

S. No.	Proposed Plantation Activity	Annual Cost (Amount in Rs. lakhs)			Grand Total (Rs. Lakhs)
		6 Month in a Year			
		Physical	Amount	Maintenance	
1	Plantation Activity in the area (Total 1175 trees for 6 months), (Cost of Sapling Rs.300/Sapling)	1175 No's	Rs.3.53 Lakhs	Rs.0.47 Lakhs	4.00

6.4 SOCIAL INFRASTRUCTURE

In-line with the Social Responsibility activities at any other operational sites, relevant developmental assistance shall be rendered depending on the local needs identified through studies.

-) Road facility (existing roads will be maintained regularly)
-) Employment opportunity
-) Medical camps
-) Social awareness camps,
-) Donations to schools
-) Secondary employment opportunities
-) Formation of self-help groups for the women in nearby villages

The following budget is allocated for various CSR activities. 10% of project cost will be earmarked for CSR activities.

S. No.	Description	Amount (INR)
1	Free distribution of School Bags & Scholarships for students	10,000
2	Education & Training Programs	8,000
3	Repairing of School Buildings	10,000
4	Health Safety & Medical Facilities	10,000
5	Water supply	9,000
Total		47,000

6.5 CONNECTIVITY

Site is well connected to existing road and rail network. There is no proposal to develop new road and rail links.

6.6 DRINKING WATER MANAGMENT

Water requirement for drinking and operations will be 9.11 KLD, which will be met from near Village and river water as per availability & suitability for the purpose.

6.7 SEWERAGE SYSTEM

No sewerage system is required as there is no domestic waste water will be disposed through eco-friendly Mobile Toilet.

6.8 INDUSTRIAL WAST MANAGMENT

Not applicable, as the mining activity will not be generating any overburden or waste water.

6.9 SOLID WAST MANAGMENT

No solid waste other than negligible quantity of silt/silty clay, which gets deposited as crust material on the bed profile, shall be scrapped and carefully stored for depositing into the mine pits in the river bed.

7.0 POWER REQUIREMENT & SUPPLY/SOURCE

No electrical power requirement for mining activities.

8.0 REHABILITATION AND RESETTLEMENT (R&R) PLAN

The existing mine lease area is designated as private land and has no human settlements and hence, no R & R is envisaged.

9.0 PROJECT SCHEDULE & COST ESTIMATES

9.1 LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION

No construction activity is involved under the project activity. The mining shall be started after getting Environmental Clearance and shall be continued for a period of five year only as stated in the Letter of Intent.

9.2 ESTIMATED PROJECT COST ALONG WITH ANALYSIS IN TERMS OF ECONOMIC VIABILITY OF THE PROJECT

The capital cost of proposed project is estimated as Rs. 4.7 Lac.

10.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

10.1 FINANCIAL AND SOCIAL BENEFITS WITH SPECIAL EMPHASIS ON THE BENEFIT TO THE LOCAL PEOPLE INCLUDING TRIBAL POPULATION, IF ANY, IN THE AREA

Achieving such a huge infrastructure requires basic building materials and sand, bajri and boulders is one of primary building material required for the purpose. The mining activities are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining. The mining operation supports demand for sand, bajri and boulder in the area. The proposed project is expected to provide employment to local people in different activities such as Mining, Sizing / Sorting, transportation activities. The project activity will not have any major impact on the environment.

ENVIRONMENT MANAGEMENT PLAN

ENVIRONMENT MANAGEMENT PLAN

INTRODUCTION

The Environment Management Plan converses all aspects of planning and operation of the project, which are relevant to environment aimed at mitigating the possible adverse impact of a project and for ensuring to maintain the existing environmental quality. It is essential to implement the EMP right from the planning stage and then continuing it throughout the construction and operation stage. Therefore the main objective of the EMP is to identify the project specific activities that would have to be considered for investigation of the significant adverse impacts and the mitigation measures required. The specific measures that shall be put to practice to minimize the impact on the environment are discussed.

EMP is planned taking into consideration following:

-) Subsidence: In this case being a surface mining in river bed. There is no underground working. Nor any structures are to be raised in mining area.
-) No Blasting/Drilling involve
-) No use of machinery.
-) Mining only during non-monsoon period.

LAND

Degradation of land is not a very significant adverse impact of riverbed mining. Creation of access roads, mining operations, transportation of mined out material may have some impact on surrounding environment. In order to prevent the environmental degradation of leased mine area and its surroundings, the following measures shall be taken;

- No Sand and Boulder will be collected from outside the ML Boundary. Safe clearance should be mainly determined by width of the river bed.
- Mining will be during daylight only.
- Minimal damage to the flora standing on the river bank.
- No mining activity will be carried out in monsoon season.
- No foreign material should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- Stockpiling of harvested sand and boulder on the river bed or river bank shall be avoided.

Movement of the vehicles on the road will be increased; however, none metalled road leading to sand and boulder mining area will be sprinkled with water at regular intervals. In addition to prevent spillage by trucks, over loading should be controlled along with speed limit.

There will be minimum numbers of access roads to river bed, as cutting river banks should be avoided and ramps are to be maintained. Access points to the river bed are to be decided based on the following-

- Least steepness of river bank.
- Where steepness cannot be avoided access ramps should be constructed.
- Less damage to riverside vegetation and least human activity.

- Haulage roads parallel to the river bank and roads connecting access (ramps) to the river bed shall be away from bank, preferably a minimum of 100 m away.
- Access roads from the public roads and up to the river bank should be aligned in such a way that it would cause least environmental damage.
- For particular operations approaching river bed from both the banks shall not be done.

Post Mining Land Use

As the mining lease area is part of active river course and suffer floods every monsoon season, the land degradation impact due to the excavation of river bed material undertaken during dry period of the year will get replenished by fresh material and there shall be not be any change in land use pattern in core zone i.e. mining lease area.

In view of the above, the mining lease area would remain active river course during and post mining operation.

SOLID WASTE MANAGEMENT

No municipal waste other than domestic sewage shall be generated, which shall be disposed through eco-friendly Mobile Toilet. Trucks will be utilized for shifting of RBM; therefore the generated dung will be ruled out.

WATER POLLUTION CONTROL MEASURES

Surface & Ground Water Management

-) Mining will neither intersect the ground water table of the area. So not at all disturbing water environment.
-) The mining does not have any impact on topography and natural drainage of surrounding area.
-) Drains and their Catchments will be constructed just beside the access roads so that the storm water gets settled before flowing to the river.
-) The washing of trucks and Tippers in the river will be avoided.
-) Mining will be done after leaving a safety distance of 10m from the stream, hence surface water will not be get effected.

AIR POLLUTION CONTROL MEASURES

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. However, the following measures would be adopted to mitigate the SPM levels in ambient air. Dust particles generated during various mining activities when become airborne lead to increase in SPM level in the ambient air. The major source of dust generation is the transport of material by trucks and tractor trolleys. Adequate control measures shall be taken during mining operations as well as transportation of minerals.

The following steps shall be adopted to prevent air pollution due to airborne dust.

-) Regular monitoring of Ambient Air Quality around mining area to monitor any changes in the ambient air quality once every six month one station

upstream/downstream.

-) Water spraying will be done on kachha roads.
-) Overloading of transport machinery shall be avoided.
-) Fortnightly scraping of road in order to keep the roads almost levelled will be done to ensure smooth flow of vehicles and to prevent spillage of mined material.
-) Dust mask will be provided to the workers engaged at dust generation points like excavations, loading and unloading points.
-) Proper tuning of vehicles will be ensured to keep the gas emissions from the vehicles within the prescribed norms.
-) While transporting fines (waste material), tarpaulin should be provided over the material.
-) Care will be taken to prevent spillage by covering the carrying vehicles with tarpaulin and sprinkling of water, if in dry form.
-) Vehicle speed will be restricted to 20km/hr to reduce dust emission.

NOISE POLLUTION CONTROL MEASURES

As the only impact is due to transportation of river bed material to the crusher unit/market through village roads, the following control measures shall be taken to keep the ambient noise levels well within limits:

-) Minimum use of horns at the village area.
-) Regular maintenance of machinery will keep the generated noise level below the minimum prescribed limits.
-) Care will be taken to produce minimum sound during loading/excavation.
-) Timely maintenance of vehicles and their silencers to minimize vibration and sound.
-) Phasing out of old and worn out trucks.
-) Awareness will be imparted prior to mining operations to all the operators & other persons concerned, so that they must be aware of detrimental effects of noise pollution.

BIOLOGICAL ENVIRONMENT

The mining activity will have insignificant affect on the existing flora and fauna. The purpose of the project itself is to save the flora around the project area from river widening, excessive erosion and floods. It was found that the sand, bajri and boulder mining activity will not have any significant impact on the biological environment of the region.

Mitigation of Impacts on Biological Environment

There is a requirement to establish a stable ecosystem with both ecological and economic returns. Minimization of soil erosion and dust pollution enhances the beauty of the core and the buffer zone.

-) Labours will not be allowed to dispose of food, plastic etc. indiscremately, which can attract animals/birds near the core site;
-) Only low polluting vehicles having pollution under control certificate will be

allowed for carrying mining materials.

-) Noise level will be maintained within permissible limit.

SOCIO-ECONOMIC ENVIRONMENT

This project operation will provide livelihood to the poorest section of the society. The overall impact of riverbed mining on the social economics of the area shall be a very positive one, as not only it will generate employment opportunities for local population at mine site.

About 27 persons shall be employed at mine site and local villagers are to be benefited directly or indirectly by the project.

OCCUPATIONAL HEALTH AND SAFETY MEASURES

Occupational health and safety (OHS) is a cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. The goal of all occupational health and safety programs is to foster safe work environment. To control and minimize the risks at work place, proponent implements Health, Safety and Environment Policy with the following objectives:

- To prevent hazards
- To provide safe and healthy environment to all the employees.

The Proponent therefore, adopts the policy set below for the purpose of creating and maintaining safe and healthy environment.

- To depute dedicated safety team
- Periodic health checkup
- To provide standard PPEs and ensure its uses
- Periodic inspection by internal and external safety experts
- Celebrations of various safety events for awareness
- Medical facilities & first aid boxes will be established in the mine premises

OTHER ENVIRONMENT SAFEGUARDS

-) No labour camps will be allowed on river bed.
-) Prior to mining, short awareness program will be conducted for labours to make them aware for way of working.
-) If some causality or injury to animal occurs, it will be informed to forest department and proper treatment will be given.
-) No lighting will be allowed in the area.
-) No tree cutting, chopping, lumbering, uprooting of shrubs and herbs will be allowed.
-) Care will be taken that noise produced during vehicles movement for carrying sand are within the permissible noise level.
-) No stock piling of sand will be done in adjoining area.

ENVIRONMENTAL MONITORING PROGRAM

The proponent shall follow the standard methods for monitoring various environmental parameters i.e. Air, Water, Noise and Soil through accredited laboratory and submit the compliance report as per EC conditions applicability.

Particulars	Monitoring frequencies	Imp. Monitoring parameters
Surface Water	Twice in a year	pH,SS,TDS,Iron, Cl,Hardness,alkalinity,NO ₃ ,PO ₄
Ambient Air Quality	Twice in a year	PM10,PM2.5,SO ₂ &NO _x
Soil Analysis	Twice in a year	pH conductivity SO ₄ ,NO ₃ ,PO ₄ texture,Alkalinity
Noise	Twice in a year	Noise level in dBA

BUDGET FOR ENVIRONMENTAL MONITORING PROGRAM

S.No.	Measures	Capital Cost (In Rs.) (6 Month in a Year)	Recurring Cost (In Rs.) (for Subsequent Years)
1	Pollution Control ➤ Dust Suppression	50,000	-
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Pollution iv) Noise Pollution	50,000 40,000 40,000 20,000	- - - -
3	Plantation/ Green belt	3,53,000	47,000
4	Reclamation of mined out area	--	10,000
5	Occupational Health	50,000	-
Total		6,03,000/-	57,000

CONCLUSION

All possible environment aspects have been adequately assessed and necessary control measures have been formulated to meet statutory requirements. Thus implementing this project will not have any appreciable negative impacts.