FORM - I

For

Validation of Environmental Clearance under the provision of EIA Notification 2006 and MoEF&CC Notification dated 06th April 2018 for

Naredi, Mota Nandra Bauxite Mining project

(Mine Lease, Area – 169.59 Ha. & Production Capacity 35,000 TPA)

At

Village – Naredi & Mota Nandra
Tehsil - Abdasa, District - Kutch, Gujarat – 370030

Project Proponent:

M/s. Gujarat Mineral Development Corporation Limited (GMDC)

Naredi - Mota - Nandra Bauxite Mining Project

Environmental Consultant:

M/s Anacon Laboratories Pvt. Ltd., Nagpur

QCI-NABET Accredited EIA Consultant
MoEF&CC (GOI) and NABL Recognized Laboratory
ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007
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October 2018

APPENDIX-I

FORM – I

I. Basic Information		
Sl. No.	**Item**	**Details**
1	Name of the project	**Naredi-Mota-Nandra Bauxite Mining Project (Mine Lease, Area – 169.59 Ha. & Production Capacity 35,000 TPA) at Vill: Naredi & Mota Nandra, Tehsil Abdasa, District Kutch, Gujarat** **Regarding Validation of Environmental Clearance under the provision of EIA Notification 2006 and in compliance of MoEF&CC Notification dated 06th April 2018**
2	S. No in the schedule	1(a)
3	Proposed capacity/ area /length/tonnage to be handled/command area/lease area/number of well to be drilled	Capacity: Lease Area: 169.59 Ha Bauxite: 35,000 TPA
4	New/Expansion/Modernization	New-As per EIA Notification 2006
5	Existing Capacity /Area etc.	Bauxite: 35,000 TPA/ 169.59 Ha
6	Category of the project i.e. 'A' or 'B'	"A"
7	Does it attract the general condition? If yes, please specify.	No
8	Does it attract the specific condition? If yes, please specify.	No
9	Location	The lease area falls under Survey of India Toposheet No. 41 E/3 old (new F 42 D/3), 41 E/4 old (F42 D/4 new) 41 E/7 old (new F 42 D/7) and 41 E/8 old (new F 42 D/8) on 1: 50,000 scale. The extension of ML area is: Latitude 23° 10' 57.0708"N, 23° 12' 20.6018"N & Longitude 69° 11' 40.4154"E, 69° 12' 39.8370"E. Detailed Boundary pillars latitude & longitude are given in Pre-feasibility report.
	Plot/Survey/Khasara No.	Vill. Naredi & Mota Nandra Khasra No.; Naredi; 437, 96, 140, 141/1, 141/2, Mota Nandra- 36, 38, 41, 44, 91, 94, 95, 96A, 96B- 31, 32, 34, 35
	Village	Naredi & Mota Nandra
	Tehsil	Abdasa
	District	Kutch
	State	Gujarat-370030
10	Nearest railway station / airport	Nearest Railway Station: Deshalpar-24.32 KM, ENE

	along with distance in kms	Nearest Airport : Air force Station-49.70 KM, NE and Bhuj town-48.2 KM,NE
11	Nearest Town, city, District Headquarters along with distance in kms.	Nearest Town : Deshalpar (24.24 km,E) and Naliya (28 Km, W) Nearest City : Bhuj (52 km, ENE) District HQ : Kutch (Bhuj) (59 km, ENE)
12	Village Panchayats, ZillaParishad, Municipal corporation, Local body (complete postal addresses with telephone nos. to be given)	Village Panchayat- Village- Naredi & Mota Nandra, Tehsil-Abdasa; Dist-Kutch (Bhuj); Gujarat- PIN- 370650 Zila Parishad- Bhuj, Gujarat. Municipality- Bhuj, Tehsil- Abdasa, Dist–Kutch (Bhuj), Gujarat, PIN-370650
13	Name of the applicant	M/s Gujarat Mineral Development Corporation Limited
14	Registered address	Gujarat Mineral Development Corporation Limited Khanij Bhavan, 132 ft Ring Road, Near University Ground, Vastrapur, Ahmedabad-380052
15	Address of correspondence:	
	Name	Mr. Chirag A. Shah
	Designation (owner/partner/CEO)	General Manager (Environment)
	Address	Gujarat Mineral Development Corporation Limited Khanij Bhavan, 132 ft Ring Road, Near University Ground, Vastrapur, Ahmedabad
	Pin code	380052
	e-mail	env@gmdcltd.com
	Telephone No.	079-27912747; 09909031790
	Fax No.	(0291) 2706098
16	Details of alternative sites examined, if any. Location of these sites should be shown on toposheet.	This is existing operative Bauxite mine having mining lease area 169.59 Ha with production capacity 35,000 TPA and hence not applicable.
17	Interlinked projects	NA
18	Whether separate application of interlinked project has been submitted?	Not Applicable
19	If yes, date of submission	Not Applicable
20	If no, reason	Not Applicable
21	Weather the proposal involves approval/clearance under: If yes, details of the same and their status to be given. (a) The Forest (conservation)	Not Applicable

	Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z Notification, 1991?	
22	Whether there is any government order/policy relevant/ relating to the site?	• Initial lease was granted for 30 years on 12-01-2006 vide letter no. MCR/1591/G-59/704/CHH. • The lease deed was executed on 28-03-2006 for a period of 30 years (lease period 28-03-2006 to 27-03-2036). • Mining lease is valid upto 2036 however as per the section 8(A) MMDR (Amendment) Act, 2015 the mining lease period will be further extended upto 2056. • The mining plan for the lease area (169.5968 ha) was approve by Indian Bureau of Mines, on 14-10-1999 vide letter no. 682(23)(942)/99-MCCM(N)UDP. • Environmental Clearance for the above area was accorded on 08-12-2005 vide letter no. J-11015/130/2005-IA-II(M) for a production capacity of 35,000 TPA, under purview of EIA notification 1994 • Progressive Mine closure plan was approved by Indian Bureau of Mines, on dated 09.12.1998 • Currently the mine scheme has been approved from IBM Gandhinagar vide letter no. 682(23)(942)/1999-KHANIKHAS(U) UDAI dtd. 15/11/2016 and for validity upto 31/03/2021. • Consent to Operate under air and water act was issued by Gujarat Pollution Control Board vide consent order no. AWH-88423 dated 29-09-2017 which is valid up to 06-09-2022 for a production 35,000 TPA.
23	Forest land involved (hectares)	Nil
24	Whether there is any litigation pending against the project and /or landing which the project is proposed to be set up? (a) Name of the court (b) Case No. (c) Order/directions of the court, if any and its relevance with the proposed project	No litigation is pending in any court of law.

(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.)

<table>
<tr><th>Sr. No.</th><th>Information/Checklist confirmation</th><th>Yes/ No</th><th>Details thereof (with approximate quantities /rates, wherever possible) with source of information data</th></tr>
<tr><td>1.1</td><td>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)</td><td>Yes</td><td>It is existing operative mine. The mining activity will result into permanent land use change which will be localized in form of physical change of Topography and Land Use.
Out of total 169.59 hects. ML area. Presently, the land use scenario is about area under –
<table>
<tr><th>S. No.</th><th>Land Use Category</th><th>Pre-Operational (Present)</th></tr>
<tr><td>1.</td><td>Overburden Soil Dump</td><td>Nil</td></tr>
<tr><td>2.</td><td>Waste Dump</td><td>0.60</td></tr>
<tr><td rowspan="2">3.</td><td>Excavation (Voids only)
Reclamation (Backfilled)</td><td>5.12
-</td></tr>
<tr><td>Total Excavated Area</td><td>5.12</td></tr>
<tr><td>4.</td><td>Roads/ mine road</td><td>0.30</td></tr>
<tr><td>5.</td><td>Infrastructure (mine office, rest shelter etc.)</td><td>0.10</td></tr>
<tr><td>6.</td><td>Town Ship Area</td><td>Nil</td></tr>
<tr><td>7.</td><td>Natural Water Bodies</td><td>8.50</td></tr>
<tr><td>8.</td><td>Plantation & Greenbelt</td><td>18.86</td></tr>
<tr><td>9.</td><td>Mineral Storage (Sub-grade/mineral)</td><td>Nil</td></tr>
<tr><td>10.</td><td>Undisturbed area</td><td>136.1168</td></tr>
<tr><td></td><td>Total</td><td>169.59</td></tr>
</table></td></tr>
<tr><td>1.2</td><td>Clearance of existing land, vegetation and buildings?</td><td>Yes</td><td>It is an existing operative mine having area under mining is 5.12 ha. Additional requirement during modified mining plan period will be 4.68 Ha. Thus, total land use at the end of modified mining plan period will be 9.80 ha during plan period (2016-17 to 2020-21). The area mainly covered by dry deciduous scrub along with thorny sparse rerophytic vegetation which will require to be cleared during plan period. The land is devoid of any major vegetation cover and appears barren hence, marginal vegetation clearance involved in the project.
No clearance of any building/structures involved in the project.</td></tr>
<tr><td>1.3</td><td>Creation of new land uses?</td><td>Yes</td><td>The mining lease of Naredi-Mota-Nandra (169.59 hects.) comprises of high grade Bauxite minerals. During approved plan period following land use is -
• Excavated area will be 9.80 Ha</td></tr>
</table>

			• Tar Roads/ mine road will be 0.30 Ha • Infrastructure (mine office, rest shelter etc.) is 0.10 Ha. • Natural Water Bodies is 8.50 Ha • Plantation & Greenbelt will be developed within 23.86 Ha. • Mineral Storage (Sub-grade/mineral area will be 0.00 Ha • Whereas, 126.0368 Ha are will remain undisturbed.
1.4	Pre-construction investigations e.g. bore holes, soil testing?	Yes	Departmental exploration, GMDC has been carried out 15 boreholes in compliance of proposal. The exploration has been done in last 5 years by aggregating 173 meters drilling. The boreholes were drilled for 5 to 20 m depth. The drilling was done according to surface exposed mineralized zone. This exploration confirmed the mineralization and its continuity.
1.5	Construction works?	No	This is existing operative mine all necessary facilities are already available hence, no construction activities involved.
1.6	Demolition works?	No	Since it is an existing operative mine and also the land is free from any structure and, therefore, no demolition work is envisaged.
1.7	Temporary sites used for construction works or housing of construction workers?	No	This is existing operative mine all necessary facilities are already available hence, no construction activities involved.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	No	No proposed ground work, however excavation activities will be involved during plan period.
1.9	Underground works including mining or tunneling?	NA	• It is existing operative Bauxite mineral mine. • No underground activities involved in the project. • The mining will be done by open cast semi mechanized method.
1.10	Reclamation works?	Yes	• The mining area covering 169.59 ha shall be gradually developed and exploited for bauxite. • It is estimated that by the end of 30 years, entire mineable bauxite reserves will be exhausted. • The voids shall be used for rainwater storage except a low lying part, if any. This accumulated water shall be kept suitably fenced off all around. • It is proposed to create water storages bodies during the lease period.
1.11	Dredging?	No	Not Applicable
1.12	Offshore structures?	No	Not Applicable

1.13	Production and manufacturing processes?	Yes	• Production capacity 35,000 TPA of Bauxite. • The mining is being carried out by semi mechanized open cast method involving removal of top soil/Reject/overburden, shallow hole drilling, blasting, mechanized excavation combined with manual sorting. • Sorted material is directly fed to the user industries. Transportation are carried out by hydraulic excavator, loader and tippers.
1.14	Facilities for storage of goods or materials?	Yes	• Marginal quantity of generated soil thus stacked will be used in re-vegetation/plantation schemes. • Plantation is proposed to be covered under 1.0ha along boundary barrier i.e. boundary line • Waste generated is proposed to be dumped at earmarked site.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	No	• No toxic effluent or solid waste is generated from the mines; quality of soil in the surrounding areas does not have any adverse impact. • The marginal quantity of generated topsoil has been scrapped and stacked separately and is being utilized for plantation purpose. The stacking would be for a temporary duration.
1.16	Facilities for long term housing of operational workers?	Yes	It is existing operative Bauxite mineral mine. At present following site facilities are available in the ML area. – A mine office is already present in the lease area for keeping the records and supervision by mines manager. – A rest shelter for resting of laborers during lunch interval. – Drinking water facilities – Canteen facilities – A first aid to the injured. – urinals
1.17	New road, rail or sea traffic during construction or operation?	No	Not Applicable. Existing facilities will be used.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Not Applicable

1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Not Applicable. Existing facilities will be used.
1.20	New or diverted transmission lines or pipelines?	No	Not Applicable
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of water courses or aquifers?	No	Not Applicable
1.22	Stream crossings?	No	Not Applicable, All nallahs or streams are seasonal & flow responses to monsoon showers only.
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	The total of about 12 KLD water required for various Domestic, Dust suppression, Green belt and mining operation, Source: Existing public water supply (through tankers). The source of water through existing water supply (tankers). However, in case of ground water utilization prior permission/NOC from CGWA will be obtained.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	There is no changes/disturbance of water course due to mining in past and also in future. As the matter of fact the mining lease area of Bauxite Mine is part of seasonal drains. Wherever required, water diversion channel shall be constructed. Direct precipitation as well as catchment area water accumulates in drains passing through the ML area. There is no chance of disturbance of water course due to mining in the past and also in the future
1.25	Transport of personnel or materials for construction, operation or decommissioning?	No	It is existing operative opencast semi-mechanized Bauxite mine in which local manpower already deployed from nearby villages. Thus, no transportation of personnel envisaged. Whereas, tippers of 10 Tonne capacity is used for transportation of minerals as well as waste within the lease area.
1.26	Long-term dismantling or decommissioning or	No	No dismantling works are envisaged during operation of mine. Post mining, mine land shall be duly reclaimed /rehabilitated as per Final Mine Closure Plan.

	restoration works?		
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not applicable.
1.28	Influx of people to an area in either temporarily or permanently?	No	Naredi-Mota-Nandra Bauxite Mine is being supervised and controlled by a team of technically and statutorily qualified personnel apart from the operating staff of skilled, semi-skilled and unskilled categories. Total 61 Manpower already involved mining operation. Thus, no additional influx of people either temporarily or permanently involved.
1.29	Introduction of alien species?	NA	Not Applicable
1.30	Loss of native species or genetic diversity?	No	Not Applicable
1.31	Any other actions?	No	Not Applicable

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

S. No.	Information/checklist confirmation	Yes /No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	Total 169.59 Ha Lease area comprises of - 1. Govt. land is 144.9979 Ha 2. Agriculture land 24.5989 Ha No forest land involved in the ML area.
2.2	Water (expected source & competing users) unit: KLD	Yes	The total of about 12 KLD Source: Existing water supply through tanker
2.3	Minerals (MT) Raw Coal	No	Nil
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	No	It is existing operative mine, no construction activities involved.
2.5	Forests and timber (source – MT)	No	Not Applicable

2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Electricity- The provision of Solar power has been established at mine site office to meet all essential requirements. Daily power requirement will be 15-20 KW/day Diesel requirement is being fulfilled from nearby diesel filling stations which have been required for machineries, instruments and transportation vehicles like excavators, dumpers, dozers, etc. through contractors.
2.7	Any other natural resources (use appropriate standard units)	No	Not Applicable

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna and water supplies)	Yes	One explosive Van of capacity 860 kg is being used. There will be no major storage of diesel which is being source from nearby diesel filling station.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	No such substances or material is being used which cause changes in occurrence of disease or disease vectors. Proper housekeeping & sanitation is being maintained to keep the work places free from disease causing vectors. Water sprinkling carried out for dust suppression.
3.3	Affect the welfare of people e.g. by	Yes	Following Facilities have been

	changing living conditions?		created for the welfare of the employees are: • Bauxite mining activity is the major source of employment, GMDC has provided sufficient infrastructural resources to the surrounding villages owing to various developmental and welfare activities. • All villages are well connected by approach roads. • Water supply, transportation, educations and medical facilities are provided by GMDC to nearby villages. • A well-equipped ambulance is provided to the local community round the clock. • Provision of school bus for the children of employers is provided. There is significant improvement in the standard of living due to facilities provided by GMDC.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Not envisaged
3.5	Any other causes	No	Not applicable

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

S. No.	Information/Checklist confirmation	Yes /No	Details there of (with approximate quantities/ rates, wherever possible) with source of information data
4.1	Soil, overburden or mine wastes	Yes	1. Topsoil: No topsoil available 2. Overburden (OB): OB removed will be stacked separately and backfilling into the pit voids, where bauxite has been completely exhausted. 3. Mineral Rejects: No mineral

			reject is considered during the entire life of mine as low grade mineral will be blended with high grade minerals or with the technological changes lower grade Bauxite can be used for beneficiation and possibilities can be searched out for other uses also.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	Domestic waste generated from mines office is being disposed to soak pit via septic tank. Commercial waste sold/disposed to authorized vendors.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	Used oil is being collected and disposed through authorized vendors.
4.4	Other industrial process wastes	No	There will be no other industrial process which will generate waste.
4.5	Surplus product	No	Not Applicable
4.6	Sewage sludge or other sludge from effluent treatment	No	No provision of STP, however negligible amount of domestic sludge generated from septic tank after long period which is easily decomposed.
4.7	Construction or demolition wastes	No	Not applicable
4.8	Redundant machinery or equipment	No	Not Applicable
4.9	Contaminated soils or other materials	No	Not Applicable
4.10	Agricultural wastes	No	Not Applicable
4.11	Other solid wastes	No	Not Applicable

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

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Emissions are generated from operation of HEMMs & transportation vehicles. Care is being taken to keep the emissions below standards by proper maintenance & regular

			monitoring.
5.2	Emissions from production processes	Yes	Particulate Matter emitted during drilling, blasting, Sizing with the help of rock breaker, Manual sorting and grading is being kept below the prescribed limits by adopting mitigating measures such as wet drilling, controlled blasting, water sprinkling on haul roads, development of greenbelt and plantation etc.
5.3	Emissions from materials handling including storage or transport	Yes	The loading of material and transportation may lead to generate dust pollutants. However, Systematic & scientific mining activities is being adopted, mine haul roads are sprayed with water to control dust emission. Periodical maintenance of HEMMs is being done regularly to control emissions. Water sprinkling during loading and unloading of excavated materials is regularly undertaken.
5.4	Emissions from construction activities including plant and equipment	No	Not applicable
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Dust generated during drilling, blasting, loading, unloading, handling and transportation of mined out materials. Wet drilling is being adopted and water spraying is being done to control dust emission while transportation of Ore and overburden. Since it is existing operative mine hence, no construction activities envisaged. There is no possibility of any odour generation.
5.6	Emissions from incineration of waste	No	Not Applicable
5.7	Emissions from burning of waste	NA	Not Applicable

	in open air (e.g. slash materials, construction debris)		
5.8	Emissions from any other sources	No	Not Applicable

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise generated due to mining machineries during mining operation. Personal Protective Equipment (PPE) like ear muffs/ear plugs is being provided to the workers including operators of mining machinery. Periodic Noise monitoring is being carried out and report submitted at statutory authorities. Monthly ambient noise monitoring is being carried out and proper maintenance of noise generating equipment's is being submitted statutory authorities regularly.
6.2	From industrial or similar processes	No	Not Applicable
6.3	From construction or demolition	No	Not applicable
6.4	From blasting or piling	Yes	Controlled blasting by use of latest blasting techniques is being adopted to keep noise level within permissible limits. Plantation at designated area will serve as a noise barrier and minimize the propagation of noise. Workers working in close vicinity of machines are provided with personal protective equipment (PPEs).
6.5	From construction or operational traffic	Yes	Operation of dumpers/Tippers and other machinery generate noise. Noise level is being maintained within prescribed limits by adopting site

			specific mitigation measures.
6.6	From lighting or cooling systems	No	Not Applicable
6.7	From any other sources	No	Not Applicable

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	Not Applicable since no hazardous material involved during mining process except the explosive which stored and handled as per the permission letter of controller of explosive and will not contaminate neither the land nor water bodies.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	Sewage is being treated in Septic tank followed by Soak Pit. Neither any chemical nor toxic effluents are discharged from the area nor any toxic substance used in the mining or allied activities.
7.3	By deposition of pollutants emitted to air into the land or into water	No	All the emissions from the Mine operations are controlled and in compliance with CPCB/SPCB norms.
7.4	From any other sources	No	Not envisaged.
7.5	Is there a risk of long term buildup of pollutants in the environment from these sources?	No	Not Envisaged.

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

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous substances	No	The extent of accident is expected to be nil because of adequate precautions and safety measures such as properly designed blasting

			by effective stemming and use of optimum charge/delay detonators. Fire extinguishers shall be provided in all HEMMS explosive magazine, workshop and mine office. Explosive are handled under the supervision of licensed person. DGMS & Controller of Explosive operational guidelines is followed.
8.2	From any other causes	No	Not Applicable
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	Yes	Seismically, this area is categorized under Zone-V as per IS-1893 (Part-1)-2002.

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting. Facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) eg. : • Housing development • Extractive industries • Supply industries • Other	Yes	GMDC was established in 1963, the company has done lot of activities for the development of society in the area. The activities of the company given in brief: • Water Resource Management • Health care program • Women empowerment • Education & • Infrastructure development • Skill development
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	Post mining, once minerals is excavated, the mined out area shall use for rainwater storage. This accumulated water shall be

			kept suitably fenced off all around. Thus, water storage bodies will be created. At the end of lease period 23.86 Ha. land will be under plantation and green belt.
9.3	Set a precedent for later developments	Yes	This is an existing operative mine project has set precedence in the area for environmental preservation and socio-economic improvement.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	There are no other existing or planned projects adjoining to existing Bauxite mine hence, no direct cumulative impact are envisaged. GMDC already adopted site specific mitigation measures in line with existing EC conditions.

(III) Environmental Sensitivity

S. No.	Areas	Name/ Identity	Aerial 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	No	No
2	Areas which are important or sensitive for ecological reasons - Wetlands, water courses or other water bodies, coastal zone, biospheres, mountains, forests	**Wetlands -** None within 15 km radius. **Coastal Zone -** None within 15 km radius. **Mountains –**None within 15 km radius.	
3	Areas used by	None within 15 km radius	

	protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration		
4	Inland, coastal, marine or underground waters	None within 15 km radius	Not Applicable
5	State, National boundaries	None within 15 km radius	Not Applicable
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	None within 15 km radius	Not Applicable
7	Defense installations	None within 15 km radius	Not Applicable
8	Densely populated or built-up area	Naredi	2.30 Km, SW
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Rural Hospital, Abdasa- 25.30 Km,W GMDC First Aid Centre- 2.45 Km NE Temple-Kotada Roha - 5.40 km SE	25.30 Km,W 2.45 Km NE 5.40 km SE
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	**Water Bodies - Seasonal** Seasonal Kankavati Nadi - Crossing ML area • Water body Balachod Sumrasar Talav - 2.05 km-NW Nalra River - 2.49 km- WNW **Forests –** • Mothala RF • Khirsara RF • Jarjok RF • Bhittara RF	Crossing ML area 2.05 km-NW 2.49 km- WNW 6.72 Km-W 9.82 km-E 6.02 km- S 7.02 km S

		• Makda RF • Moti Maun RF • Roha RF • Naranpar RF	7.46 km-SE 9.2 km SE 4.2 km -E 1.84 km-NE
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	None within 15 km radius	Not Applicable
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	Seismically, this area is categorized under Zone-V as per IS-1893 (Part-1)-2002.	

(IV) Proposed Terms of Reference for EIA studies

Site specific Terms of Reference is enclosed as **Appendix - I**

UNDERTAKING

I hereby give 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:

Place: Ahmedabad, Gujarat

Applicant:
Chirag A. Shah, (IAS)
General Manager (Environment)
Gujarat Mineral Development Corporation Ltd.
Khanij Bhavan, 132 ft Ring Road,
Near University ground, Vastrapur,
Ahmedabad-380052

PRE - FEASIBILITY REPORT

For

Validation of Environmental Clearance under the provision of EIA Notification 2006 and MoEF&CC Notification dated 06th April 2018 for Naredi - Mota - Nandra Bauxite Mining project

(Mine Lease, Area – 169.59 Ha. & Production Capacity 35,000 TPA)

At

Village – Naredi & Mota Nandra
Tehsil – Abdasa, District Kutch, Gujarat – 370650

Project Proponent:

M/s. Gujarat Mineral Development Corporation Limited (GMDC)

Naredi - Mota - Nandra Bauxite Mining Project

Environmental Consultant:

M/s Anacon Laboratories Pvt. Ltd., Nagpur

QCI-NABET Accredited EIA Consultant
MoEF&CC (GOI) and NABL Recognized Laboratory
ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007
60, Bajiprabhu Nagar, Nagpur - 440 033, MS
Lab. & Consultancy: FP-34, 35, Food Park,
MIDC, Butibori, Nagpur – 441122
Ph.: (0712) 2242077, 9373287475
Email: *info@anacon.in*, *ngp@anacon.in*
Website: *www.anaconlaboratories.com*

October 2018

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FIGURES

TABLE

EXECUTIVE SUMMARY OF THE PROJECT

Company Profile

Gujarat Mineral Development corporation ltd. is a government of Gujarat enterprise and public limited company engaged in mining and mineral processing in state of Gujarat. GMDC was incorporated on 15th May 1963 to develop major mineral resources in the state of Gujarat. GMDC have a number of leases in Gujarat for various minerals and are having their corporate office in Ahmedabad.

Project Brief:

- Envirionmental Clearance was granted for the Naredi-Mota-Nandra Bauxite mine having production capacity of 35,000 TPA in 169.59 ha dated 8th Dec 2005 under perview of EIA notification 1994 vide letter no. J-11015/130/2005-IA II (M) dated08.12.2005 under EIA Notification, 1994.
- The lease deed was executed for a period of 30 years on 12-01-2006 vide letter no. MCR/1591/G-59/704/CHH.
- The lease was granted for 30 years on 28-03-2006 for a period of 30 years (lease period 28-03-2006 to 27-03-2036).
- The mining plan for the lease area (169.59 ha) was approve by Indian Bureau of Mines, on 14-10-1999 vide letter no. 682(23)(942)/99-MCCM(N)UDP.
- Progressive Mine closure plan was approved by Indian Bureau of Mines, on dated 09.12.1998.
- Currently the mine scheme has been approved from IBM Gandhinagar vide letter no. 82(23)(942)/1999-KHANIKHAS(U) UDAI dtd. 15/11/2016 and for validity upto 31/03/2021
- Consent to Operate under air and water act was issued by Gujarat Pollution Control Board vide consent order no. AWH-88423 dated 29-09-2017 which is valid up to 06-09-2022 for a production 35,000 TPA.
- The raw material requirement to the various bauxite plant as well as other associated plants is being met from the GMDC Naredi-Mota-Nandra Bauxite Mining area.
- Naredi-Mota-Nandra Bauxite Mining project is Category “A” Semi mechanized opencast mine project.

Now the applicant seeking for validity of the environmental clearance as per EIA Notification, 2006 and recent notification of MoEFCC, New Delhi (S.O. 1530 (E) notification dtd. 6thApril, 2018.

Address of applicant:

Correspondenceand site Address:
Mr. Chirag A. Shah
General Manager (Environment)
Gujarat Mineral Development Corporation Limited.
Khanij Bhavan,132 ft Ring Road,
Near University Ground, Vastrapur,
Ahmedabad-380052
env@gmdcltd.com
Landline No. : 079 – 27912747
Mob. : +91-9909031790
Fax No.: 079-27912164

1. Project Location:

The mine is located at Tehsil Abdasa,Vill. Naredi- Mota -Nandra, No. Naredi; 437 - 96, 140, 141/1, 141/2, Mota Nandra- 36- 38, 41, 44, 91, 94, 95, 96A, 96B- 31, 32, 34, 35 , District-Kutch, Gujarat. The area falls between latitudes 23°10'57.0708"N, 23°12'20.6018"N & Longitude 69°11'40.4154"E, 69°12'39.8370"E and is covered by Survey of India Toposheet No. 41 E/3 old (new F 42 D/3), 41 E/4 old (F42 D/4 new)41 E/7 old (new F 42 D/7) and 41 E/8old (new F 42 D/8) on 1: 50,000 scale.

Table 1: CO-ORDINATES OF PROJECT LOCATION

Pillar No.	LATITUDE	LONGITUDE	Pillar No.	LATITUDE	LONGITUDE
1	23° 12' 11.1765" N	69° 11' 56.5146" E	21	23° 11' 1.8898" N	69° 12' 12.3136" E
2	23° 12' 9.7715" N	69° 11' 58.9696" E	22	23° 11' 1.8217" N	69° 12' 11.4148" E
3	23° 12' 5.4237" N	69° 12' 6.5664" E	23	23° 11' 2.3428" N	69° 12' 10.0300" E
4	23° 12' 2.8452" N	69° 12' 10.8632" E	24	23° 11' 3.4873" N	69° 12' 8.4215" E
5	23° 11' 58.9849" N	69° 12' 17.2958" E	25	23° 11' 3.8688" N	69° 12' 7.9352" E
6	23° 11' 52.1634" N	69° 12' 28.6623" E	26	23° 11' 3.7319" N	69° 12' 6.6618" E
7	23° 11' 49.5629" N	69° 12' 32.8882" E	27	23° 11' 3.6645" N	69° 12' 5.2387" E
8	23° 11' 38.6167" N	69° 12' 26.0802" E	28	23° 11' 4.0460" N	69° 12' 4.7524" E
9	23° 11' 36.8255" N	69° 12' 28.3311" E	29	23° 11' 4.6350" N	69° 12' 4.3414" E
10	23° 11' 34.6024" N	69° 12' 31.1248" E	30	23° 11' 5.0505" N	69° 12' 4.3420" E
11	23° 11' 32.2669" N	69° 12' 34.0597" E	31	23° 11' 5.9513" N	69° 12' 3.7442" E
12	23° 11' 31.2372" N	69° 12' 34.3201" E	32	23° 11' 6.4739" N	69° 12' 1.1985" E
13	23° 11' 30.0816" N	69° 12' 34.6124" E	33	23° 11' 5.4738" N	69° 11' 58.1637" E
14	23° 11' 28.0804" N	69° 12' 35.1184" E	34	23° 11' 3.8227" N	69° 11' 49.6981" E
15	23° 11' 22.7196" N	69° 12' 39.8370" E	35	23° 11' 7.1991" N	69° 11' 54.6417" E
16	23° 11' 9.4919" N	69° 12' 36.3544" E	36	23° 11' 14.4699" N	69° 12' 15.3471" E
17	23° 10' 57.1842" N	69° 12' 35.2034" E	37	23° 11' 15.6788" N	69° 12' 15.0339" E
18	23° 10' 57.0708" N	69° 12' 17.6238" E	38	23° 11' 17.3660" N	69° 12' 14.5400" E
19	23° 11' 0.2909" N	69° 12' 17.2917" E	39	23° 11' 29.2986" N	69° 12' 11.2393" E
20	23° 11' 2.0610" N	69° 12' 13.8118" E	40	23° 11' 31.1999" N	69° 12' 10.7115" E

Details of the area/lease:

- Naredi-Mota-Nandra Bauxite Mining project is Category “A” Semi mechanized opencast mine project.

The details of lease area is as follows;

Table 2: Land breakup details

Particulars	Forest Land	Private/ Ag. Land	Grazing Land	Waste Land	Others	Total
a) Pits & Quarries	-	-	-	12.82	-	12.82
b) Dumps of ore Waste & O.B./ Soil stack	-	-	-	1.0	-	1.0

Particulars	Forest Land	Private/ Ag. Land	Grazing Land	Waste Land	Others	Total
c)Infrastructure including of office, haul roads	-	-	-	0.30	-	0.30
d) Pond/ river/ habitation	-	-	-	8.50	-	8.50
e) Others (i) Govt. land (ii)Private/Ag. land	- -	- -	- -	146.9768 -	- -	146.9768 -
Total occupied Area	-	-	-	169.5968	-	169.5968

Area reclaimed/ rehabilitated by mine owner = Nil
Area afforested by mine owner = 23.86 ha (green belt)

Project Status:

It is an existing operative bauxite mine.

Production:

This is existing bauxite mine having mining lease area 169.59 Ha valid up to 2036 with production capacity 35,000 TPA for environmental clearance for Mining is already granted by MoEFCC, New Delhi dtd. Vide File No.J-11015/130/2005-IA-II(M) dtd. 08th December 2005 and Mining plan has been by approved by IBM till 31.03.2021.

Existing Resources Availability:

Power:

Electricity- Daily power requirement will be 15-20 KW/day by Solar power.

Water

Water requirement 12 KLD

Source: Existing water supply (through tankers).

Man Power:

Naredi-Mota Nandra Bauxite Mine of GMDC is being supervised and controlled by a team of technically and statutorily qualified personnel apart from the operating staff of skilled, semi skilled and unskilled categories.Total 61 persons.

Necessity for applying modification/amendment in EC

MoEF&CC accorded the Environmental Clearance vide letter no J-11015/130/2005-IA-II(M) dtd. 08th December 2005. Now, in compliance of MoEF&CC Notification dated 06th April 2018, we request to validate the aforesaid EC under the provision of EIA Notification 2006.

2.0 INTRODUCTION

(i) Identification of project and project proponent

Gujarat Mineral Development corporation ltd. is a Government of Gujarat Enterprise and Public Limited Company engaged in mining and mineral processing in state of Gujarat. GMDC was incorporated on 15th May 1963 to develop major mineral resources in the state of Gujarat. GMDC have a number of leases in Gujarat for various minerals and are having their corporate office in Ahmedabad.

- The Government of India accorded prior approval of Mining lease for mineral bauxite in favour of Gujarat Mineral Development Corporation (GMDC) for an area of 169.59 hects. in villages- Naredi-Mota-Nandra, Taluka- Abdasa, District – Kutch vide letter no. on 02.03.2000 vide letter no. 682(23)(942)/99-MCCM(N)UDP, directing GMDC for obtaining approval of Mining Plan from IBM (Udaipur) & Environmental Clearance from MoEF, Govt. of India. In continuation of above, the order for Mining lease for an area of 169.59 hects. in village- Naredi-Mota-Nandra, Taluka: Abdasa, District – Kutch for the period of 30 years was issued on date 12.01.2006 by Under Secretary to Government, Industries & Mines Department, Government of Gujarat.
- Envirionmental Clearance was granted for the Naredi-Mota-Nandra Bauxite mine having production capacity of 35,000 TPA in 169.59 ha dated 8th Dec 2005 under perview of EIA notification 1994 vide letter no. J-11015/130/2005-IA II (M) dated 08.12.2005 under EIA Notification, 1994.
- The lease was granted for 30 years on 12-01-2006 vide letter no. MCR/1591/G-59/704/CHH.
- The lease deed was executed on 28-03-2006 for a period of 30 years (lease period 28-03-2006 to 27-03-2036), Mining Lease is valid upto 2036 however as per section 8(A) MMDR(Amendment) Act, 2015 the mining lease period will be further extemted upto 2056.
- The mining plan for the lease area (169.59 ha) was approve by Indian Bureau of Mines, on 02.03.2000 vide letter no. 682(23)(942)/99-MCCM(N)UDP.
- Progressive Mine closure plan was approved by Indian Bureau of Mines, on dated 09.12.1998.
- Mining Plan with Progressive Mine Closure Plan is prepared and submitted under Rule 17 of Minerals (other than Atomic & Hydrocarbon Energy Minerals) Concession Rules, 2016 & 23(B)(3) of MCDR, 1988 for five financial years 2016-17 to 2020-21.
- Currently the mine scheme has been approved from IBM Gandhinagar vide letter no. 82(23)(942)/1999-KHANIKHAS(U) UDAI dtd. 15/11/2016 and for validity upto 31/03/2021.
- Consent to Operate under air and water act was issued by Gujarat Pollution Control Board vide consent order no. AWH-88423 dated 29-09-2017 which is valid up to 06-09-2022 for a production 35,000 TPA
- The raw material requirement to the various bauxite plant as well as other associated plants is being met from the GMDC Naredi-Mota-Nandra Bauxite Mining area.
- Naredi-Mota-Nandra Bauxite Mining project is Category “A” Semi mechanized opencast mine.
- Now the applicant seeking for validity of the environmental clearance as per EIA Notification, 2006 and recent notification of MoEFCC, New Delhi (S.O. 1530 (E) notification dtd. 6thApril, 2018.

Address of applicant:

Correspondence and site Address:
Mr. Chirag A. Shah,
General Manager (Environment)
Gujarat Mineral Development Corporation Limited.

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079 – 27912747
Mob. : +91-9909031790
Fax No.: 079-27912164

The applicant **M/s. Gujarat Mineral Development Corporation Limited (GMDC)** had operated Bauxite Ore Mineral quarry located Tehsil Abdasa, Vill. Naredi-Mota-Nandra, Khasra No. Naredi; 437- 96, 140, 141/1, 141/2, Mota Nandra- 36- 38, 41, 44, 91, 94, 95, 96A, 96B- 31, 32, 34, 35, District Kutch, Gujarat. over an area of 169.59 Ha for annual production 35,000 TPA.The area falls between latitudes N 23°10'57.0708"N, 23°12'20.6018"N & Longitude 69°11'40.4154"E, 69°12'39.8370"E and is covered by Survey of India Toposheet No. 41 E/3old (new F 42 D/3), 41 E/4 old (F42 D/4 new)41 E/7 old (new F 42 D/7) and 41 E/8old (new F 42 D/8) on 1: 50,000 scale.

The mined out bauxite ore are loaded and transported by dumpers to the various alumina and other associated plants.

Address of applicant:

Correspondence and site Address:
Mr. Chirag A. Shah,
General Manager (Environment)
Gujarat Mineral Development Corporation Limited.
Khanij Bhavan,132 ft Ring Road,
Near University Ground, Vastrapur,
Ahmedabad-380052
env@gmdcltd.com,
079 – 27912747
Mob. : +91-9909031790
Fax No.: 079-27912164

(ii) Brief description & nature of the project

This is an existing operative Bauxite semi - mechanized Open Cast mine having lease area of 169.59 Hahaving 35,000 TPA production capacity with Environmental Clearance from MoEFCC, New Delhi, Vide File No.J-11015/130/2005-IA-II (M) dtd. 08th December 2005.

The applicant **M/s. Gujarat Mineral Development Corporation Limited (GMDC)** now seeking Amendment in validity of the environmental clearance as per EIA Notification, 2006 and recent circular of MoEFCC, New Delhi (S.O. 1530 (E) notilitification dtd. 6th April, 2018.

The project is classified under Category 'A' as per EIA Notification 2006& as amended.The area falls between latitudes latitudes N 23° 10' 57.0708" - N 23° 12' 20.6018 and longitudes E 69° 11' 40.4154" -E 69° 12' 39.8370" and is covered by Survey of India Toposheet No. 41 E/3 old (new F 42 D/3) and 41 E/4 old (F42 D/4 new) on 1: 50,000 scale.

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

Gujarat Mineral Development Corporation Limited (GMDC) have currently operating 9 Nos. of Bauxite mines including Naredi-Mota-Nandra (169.59 hects.) mine having 35,000 TPA production capacity.

This is an existing operative mine for which environmental clearance already granted by MoEF, New Delhi dated 8th Dec 2005 under perview of EIA notification 1994 vide letter no. J-11015/130/2005-IA II (M) dated 08.12.2005 under EIA Notification, 1994.

Now applicant seeking the EC as per recent notification MoEFCC, New Delhi (S.O. 1530) (E) notification dtd. 6th April, 2018 stated that "mining projects, which were granted environmental clearance under the EIA Notification, 1994, and but not obtained environmental clearance for expansion/modernization /amendment under the EIA Notification, 2006. Thus, the project proponent in all such cases involving validity of the environmental clearance and expansion of mining projects vis-à-vis the base production, shall make application within six months from the date of issue of this notification Dt. 6 April, 2018, to regularize the case. Application to file in Form-1 as per EIA Notification, 2006, for grant of environmental clearance under the provisions of the EIA Notification, 2006.

Since, Naredi-Mota-Nandra Bauxite Mining Project of M/s. GMDC granted environmental clearance under EIA notification, 1994 and hence now application for EC amedendment (Form – I and Prefeasibility report) before EAC, MoEFCC, New Delhi to get environmental clearance/ EC amendment as per EIA Notification, 2006 and MoEF&CC notification dtd 6th April 2018.

Presently the bauxite produced from Naredi-Mota-Nandra mine is of grade having AL_2O_3 containing 42-58%. As such it is mainly used in industries like cement, emery,refractory abrasives, chemical industries, etc.

(iv) Demand-Supply Gap

This is an existing operative bauxite mine, supply of high grade material to various smelter as well as alumina plants through out the country as the rapid urbanisation, infrastructure development and the government's recent push for affordable housing to drive growth in the construction and other sector increase the mine is under expansion, the Supply and Demand gap is 40%, and the project clearance will further reduce the Demand & Supply gap. Hence demand supply issues whilst important, are considered in the current situation.

(v) Imports vs Indigenous production

Bauxite of all grades i.e., High grade and Low grade will be produced from this mine and will be supplied for refractory plants.

(vi) Export Possibility

High grade bauxite from the mine is being utilized in Refractory plants, while low grade will be sold to local consumers only after getting permission from Government of Gujarat.

(vii) Domestic / Export Markets

High grade bauxite from the mine is being utilized in Refractory Plants, while low grade will be sold to local consumers.

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

Naredi-Mota-Nandra Bauxite Mine of GMDC is being supervised and controlled by a team of technically and statutorily qualified personnel apart from the operating staff of skilled, semi skilled and unskilled categories. Following manpower has been deployed for mining operations:

S.No.	Particulars	Numbers
1	Officer and Staff (Highly Skilled)	4
2	Skilled	5

3	Semi-Skilled	1
4	Un-Skilled	51
	Total	**61**

3.0 PROJECT DESCRIPTION

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

This is an existing operative semi-mechanised open cast bauxite mines, having lease area of 169.59 Ha with Environmental Clearance is already granted by MoEF, New Delhi dtd. Vide File No.J-11015/130/2005-IA-II (M) dtd. 08th December 2005 and Mining Lease has been granted by Govt. of Gujarat and IBM ending 31.03.2021.

In order to meet the present requirement of production shallow hole drilling, blasting, mechanized excavation combined with manual sorting and loading and transportation by small to medium size excavator (Bucket capacity around 1 Cum.) and dumper, transported to various alumina and other associated plants. Besides, sizing & sorting no other means operation for up gradation of mineral is to be carried out at mine Hence, no beneficiation will be done at mine site.

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

The mine is located at Tehsil Abdasa,Vill. Naredi & Mota Nandra, Khasra No. 437- 96, 140, 141/1, 141/2, Mota Nandra- 36- 38, 41, 44, 91, 94, 95, 96A, 96B- 31, 32, 34, 35,District-Kutch, Gujarat. The area falls between latitudes N 23°10'57.0708"N, 23°12'20.6018"N & Longitude 69°11'40.4154"E, 69°12'39.8370"E and is covered by Survey of India Toposheet No. 41 E/3old (new F 42 D/3), 41 E/4 old (F42 D/4 new)41 E/7 old (new F 42 D/7) and 41 E/7old (new F 42 D/8) on 1: 50,000 scale and the coordinates given in the Table 1.

Details of the area/lease:

The details of lease area shown in Table 2. Figure 1A represents the google map of 10 km radius of Naredi & Mota-Nandra bauxite mining area, Figure 1B represents the Google view map, Figure 2 represents the index map, and figure 3 represents the study area map of 10 km radius in toposheet.

Figure 1A: Google map of 10km radius from Naredi-Mota-Nandra BauxiteMine (169.59 Ha.)

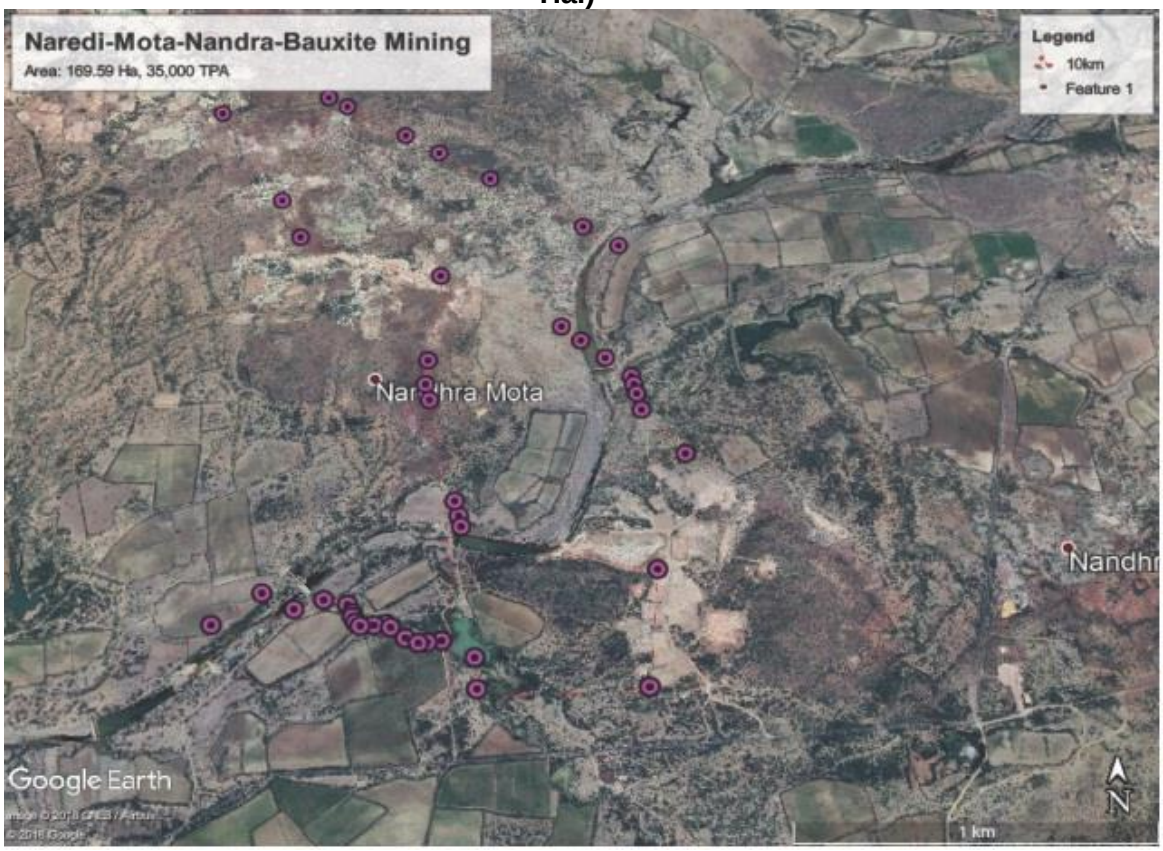


Figure 1B: Google map of Naredi-Mota-Nandra Bauxite Mine Lease area (169.59 Ha.)

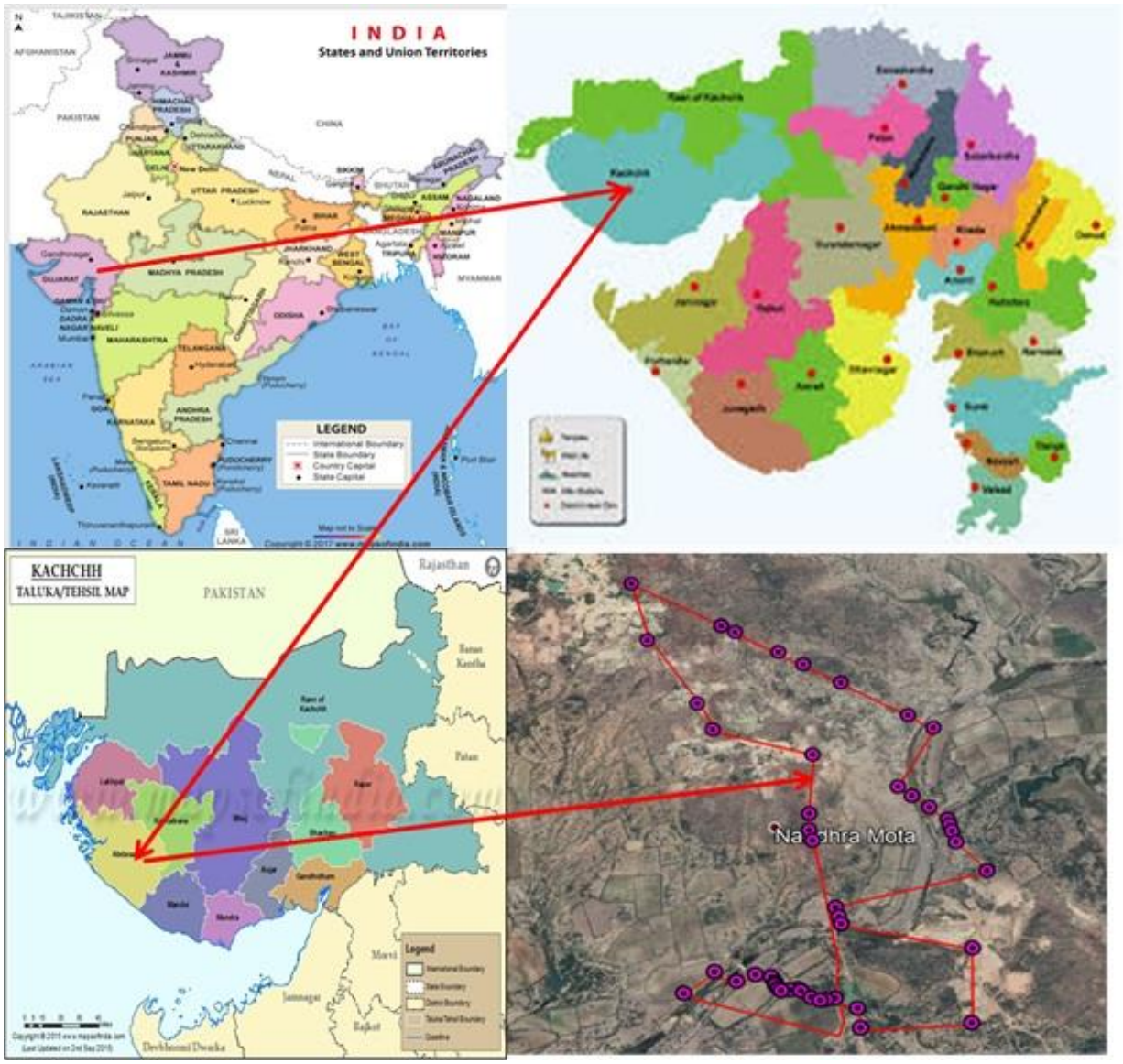


Figure 2: Index Map

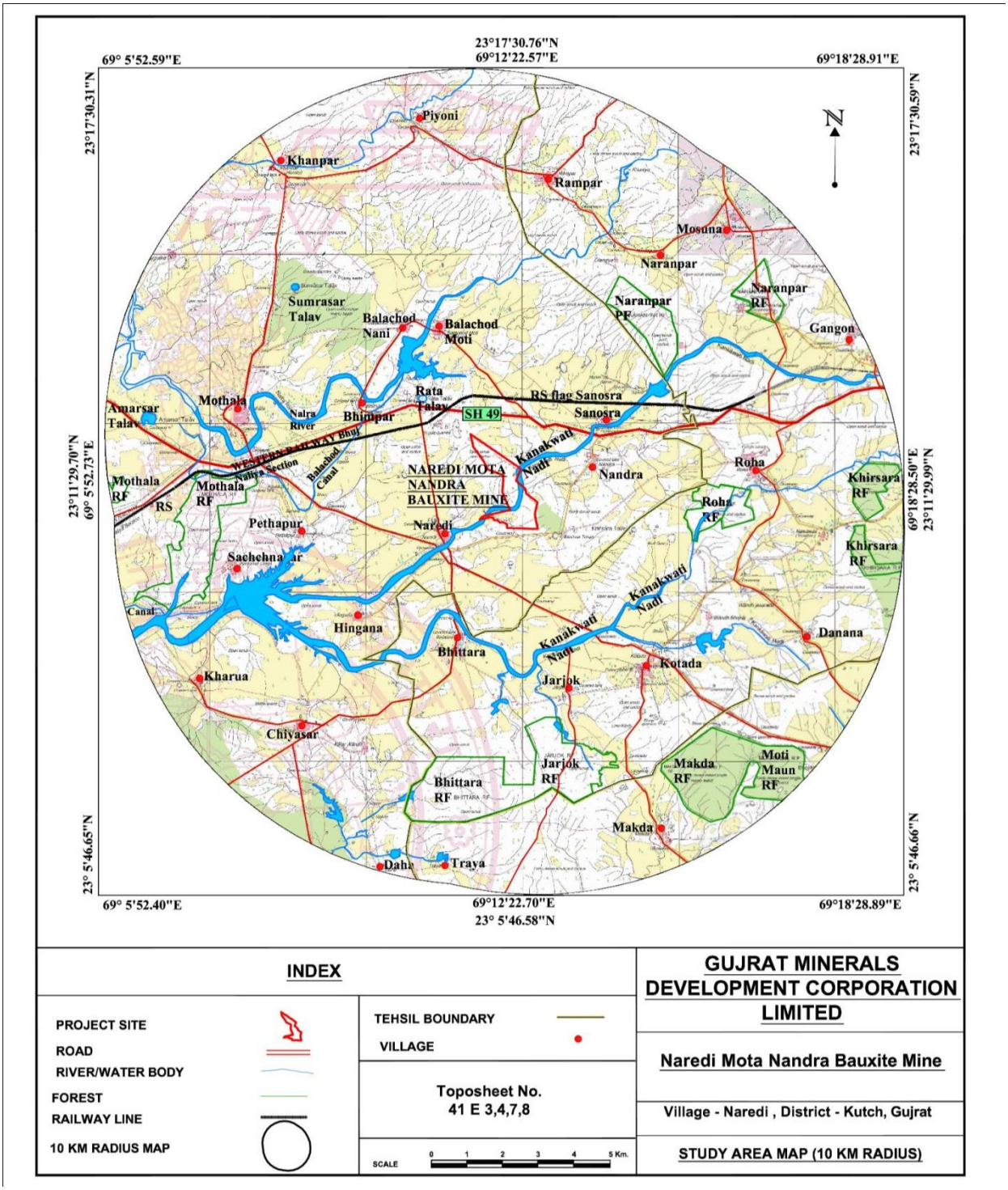


Figure 3: Study area Map Showing Mine Location

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

This is existing operative bauxite mine having mining lease area 169.59 Ha with production capacity 35,000 TPA for which Mining Lease has been granted by Govt. of Gujarat and IBM ending 27.03.2036. Mining lease is valid upto 2036 however as per section 8(A) MMDR (Amendment) Act, 2015 the mining lease period will be further extended upto 2056.

The present proposal for validity of the environmental clearance as per EIA Notification , 2006 and Gazette Notification, MoEFCC, New Delhi S.O. 1530 (E) dtd. 6th April, 2018. Hence, alternative sites not examined.

(iv) Size or magnitude of operation

This is an existing operative Bauxite semi - mechanized Open Cast mine having lease area of 169.59 Ha having 35,000 TPA production capacity with Environmental Clearance granted by MoEFCC, New Delhi dtd. Vide File No. J-11015/130/2005-IA-II (M) dtd. 08th January 2005.

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

Method of mining: As being practiced, the mining would be undertaken by the semi-mechanised open cast mining method.

The main considerations in conceiving a safe and workable mining review for Naredi & Mota-Nandra Bauxite Mines are following:

- Mining operations are carried out by opencast semi-mechanized method of mining by making benches of height max. 6.0 m and width 6m and maintaining overall bench slope of 70^0. Primarily conventional method is used for winning of mineral. Blasting is being practised when strata is hard otherwise manual mining is done.
- The blasting zone would be fixed away from local vicinity in the lease area or may be selected in the running development block with suitable measures.
- The bauxite being free from overburden therefore there was no need for any mine development work during mining operation. The excavation, loading and transportation are carried out by hydraulic excavator, loader and tippers.
- Drilling is being done by jack hammer. ANFO is being used with slurry explosive. Blasting frequency is maintained twice a week. Safe and controlled basting is practised by competent persons. Excavator of capacity 0.9 cum is being used for loading of fragmented rock mass of mineral and transported to destination outside the ML by tippers.

The Broad parameters of mining operation will be as below:

Number of working days	: 300 days/year
Working shift/day	: 1 day shift
Working benches	: 1 max.
Height	: 6.0 m (max.)
Width	: For running bench > 6 m
Bench slope	: $>60^0$
Ultimate Pit slope	: 45^0

There are 4 pits present in the mine with maximum depth upto 14.0m bgl.
The dimensions of pits existing within mining lease area is shown in Table 3: -

Table 3: Dimensions of pits exist within mining lease area

Pit No.	Size of the pit (m*M)	No. of Benches	Avg. slope	Depth (meters)
1	100*110	1	60-70°	3.0
2	270*80	2	60-70°	8.0
3	160*30	1	60-70°	2.0
Old pit	255*60	1	60-70°	3.0

- Presently one to two benches created so far in any one pit. The topmost bench is at 115 m RL whereas lower most at 99.905 m RL. Face length is kept 235 m max. The bench width clearance between all benches is kept more than 3 m. The slope of working benches are maintained around 60° while the overall pit slope proposed not below or more 45°. The layout of faces is towards all direction. No public road is passing through the mining lease area.
- List of Mining machinery/ equipmement in use are shown in Table 4.

Table 4: List of Mining Machinery/ Equipment in use

Sr. No.	Name/ Type of Machinery	Capacity/Specification	In Use (No.)
1.	Excavator & Rock breaker	0.90 Cubic Meter	01
2.	Tipper	10 Tonnes	02
3.	Front end loader with rock breaker	1.0 cubic meter	01
4.	Jack hammer	32mm	01
5.	Compressor	80 cfm	01
6.	Water Tanker	10KL	01
7.	Explosive Van	860 kg	01

- The present mining method shall be continued in future. No overburden as well as no top soil is required to be generated/ removed. Waste and mineral reject handling is envisaged.
- Total proved mineable reserves quantity stands 284375 tonnes. To meet the market quality requirement the ROM supply is optimized accordingly. Lower grade mineral from mine will be mined which will eventually lead to mineral conservation.
- Yearly 35,000 tonnes bauxite is required to fulfil the market demand. Out of total production high grade mineral and low grade mineral shall be produced variably as per field mineralization. The production target is proposed in line with Consent to Operate. Accordingly development blocks are being proposed.
- The stripping ratio of mineral to overburden for the next five years of mining operations will be 1:0.31. Details of year wise and bench wise development and production for the next five years has been given in table 5A and 5B .

Table 5A: Expected excavation during next plan period in terms of cum

Year	*Over burden*	Waste Rock	Mineral			Ore:OB
	(in cum)		ROM	Bauxite	Sub-Gr.	(tonnes:cum)
2016-17	Nil	Nil	33480	20088	13392	1:0.19
2017-18	Nil	Nil	40057.5	24034	16023	1:0.57
2018-19	Nil	Nil	33420	20052	13368	1:0.28
2019-20	Nil	Nil	33420	20052	13368	1:0.28
2020-21	Nil	Nil	33480	20088	13392	1:0.19
Total	**Nil**	**Nil**	173858	104315	69543	1:0.31

Table 5B: Expected excavation during next plan in terms of tonnes

Year	ROM (tonne)	Saleable (tonne)	Sub grade (tonne)	Reject (tonne)
2016–17	58590	35154	23436	Nil
2017–18	70101	35050	35050.31	Nil

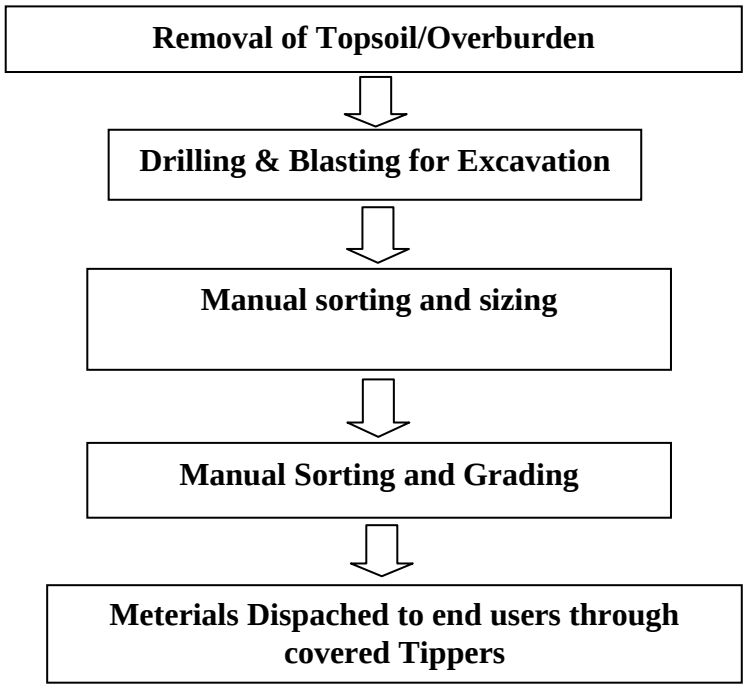
Year	ROM (tonne)	Saleable (tonne)	Sub grade (tonne)	Reject (tonne)
2018–19	58485	35091	23394	Nil
2019–20	58485	35091	23394	Nil
2020-21	58590	35154	23436	Nil
Total	**304251**	**175540**	**128710**	**Nil**

Conversion factor has been taken 1.75 for conversion of volume to tonnage for the purpose of mining of mineral.

Method of mining:-

- Mining is carried out by Semi Mechanized means comprising Jack Hammer drilling, Excavator, & Dumper/Trucks for transportation of minerals.Systematic & scientific mining has been proposed considering the technical parameters like surface topography, quality variation, geotechnical aspects & restriction over site such as habitation.
- The mining is carried out in virgin area & pit by forming one or two benches in bauxite. The height of the bench is 6.0 -meters & width 6.0m for production as well as for development keeping in mind the Mining Rules & Regulations. This bench height of 6.0 meters is quite easily achievable to suit most of the small to medium capacity excavators currently manufactured in India).
- The mining will start from North-western direction progressing towards south eastern part of the lease area. The width of working benches will be kept around 2.0 meters during development it may vary as per the occurrence of mineral. Haul road is proposed to approach the mineral at a gradient of 1:20.The ultimate pit slope proposed is 37°.In order to meet the present requirement of production shallow hole drilling by jack hammer, occasional blasting in hard formations to loosen the rock, mechanized excavation combined with loading into dumpers and further manual sorting to prepare for different marketable grade and loading and transportation by JCB and dumper, are in use. During loading ample precautions are being taken to separately load the waste material and thus minimize the subsequently sorting of the ROM. The mining operation will be carried under the supervision of qualified 1stclass mines manager/ mining engineer.
- The ground water table is 30-40m below the general surface level (Original ground level), whereas mining will be confined to maximum 17m from surface RL.
- There is top soil cover of 0.1 to 0.3 m in the allotted area. The earlier mineral stack will be dispatched before mining. Waste generated will be dumped within the lease area at non-mineral bearing areas only.
- The statutory barrier along the mining lease boundary will be kept 7.5 m. as shown in Surface Plan.
- The Mining of Bauxite includes drilling, charging with explosive and blasting of the hole to loosen the mineral. No blasting will be carried anywhere if the shortest distance from the place of firing to any part of such buildings or structures is situated within 300 m irrespective of any amount of explosive without prior permission from Director General of Mines & Safety office. The production of bauxite will be achieved by Mechanized means. The excavated 42 material will be loaded to the dumpers after proper sizing by the help of rock breaker.
- A thick plantation is proposed along the mine boundary and area proposed in year wise development plans. This will not allow the noise to propagate beyond the vicinity & help in getting absorbed.

MINING METHODOLOGY PROCESS FLOW DIAGRAM



(vi) Raw material required along with estimated quantity, likely source, marketing area of final product/s, Mode of transport of raw Material and Finished Product

- **Mode of Transporation of Raw Materials and finished product:**

Graded ore is being transported through covered Dumpers/Trucks to industries like cement, emery, refractory abrasives, chemical industries, etc. Mineral is sized with the help of rock breaker & manually sorted for impurities before final dispatch to consumers. Naredi-Mota-Nandra mine is having AL_2O_3 containing 42-58% grade. Graded ore is being transported through covered Dumpers/Trucks to industries like cement, emery, refractory abrasives, chemical industries, etc.

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

GMDC is the industry leader in responsible use of resources, both natural and man-made. The company generates energy from renewable resources like solar power (5 MW) and Wind power (200.9 MW).

Mechanised Opencast mining will recover the maximum bauxite mineral from the deposit and will be done as per the DGMS guidelines with due concern for safety & conservation.
The resources namely diesel, explosive, water and electricity will also be utilized in the optimal manner with due regards to safety.

The area has been worked by lessee intermittently inpits. Post Mininng, reclamation and rehabilitation of the mined out land is proposed at the end of life of mine. Backfilling will be done towards the end of life of mine and remaining area will be used as water reservoir & proper fencing will be done to avoid anymis-happening.

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

Total daily water requirement is 12 KL which is being souce from Source: Accumulated rain water in mine pit, tankers (water supply) and other sources.

Break up of Water Requirement

Particular	**Consumption CMD**			**Source**
Water requirement	**Existing**	**Proposed**	**Total**	Existing water supply
Domsetic	2.0	0	2.0	through tanker
Dust Suppression & Green Belt	10.0	0	10.0	
Total	**12.0**		**12.0**	

Electricity- The provision of Solar power has been established at mine site office to meet all essential requirements. Daily power requirement will be 15-20 KW/day

Diesel requirement is being fulfilled from nearby diesel filling stations which has been required for machineries, instruments and transportation vehicles like excavators, dumpers, dozers, etc. through contractors.

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

Solid Waste: Generation/ use of overburden soil during next five years

Particulars	**Proposal During Plan Period (01-04-2016- to 31-03-2021) (Unit – m^3)**	**Management**
Waste	95798	• Alluvium cover is available in the ML area. It is available in the form of overburden and inter-burden.The alluvium shall be removed separately and shall be used for plantation/ green belt purposes. • Waste generated during course of mining has been dumped separately.
Mineral Sub grade	128710	• During next five years of working, waste & sub-grade mineral shall be generated. This shall be disposed of by means of dumping/ stacking covering an area 1.0ha near boundary pillar no. 9-10.

Liquid Effluent:

- Domestic waste generated from mines office is being disposed to soak pit via septic tank.
- The mineral Bauxite will not be processed to enhance grade only. No any kind of processing unit at mine site or near the mine site except, sizing & sorting no other means operation for up gradation of mineral is tobe carried out at mine. Thus, there willbe no discharge of any tailings/middling.
- Neither any chemical nor toxic effluents will be discharged from the area nor any toxic substance be used in the mining or allied activities.
- The accumulated rainwater will be non-polluted or non-toxic in nature other than suspended solid which is being pumped out to the surface and after treatment utilized for dust suppression and plantation purposes.

4.0 SITE ANALYSIS

(i) Connectivity

Nearest Railway Station	:	Deshalpar: 24.32 KM, ENE
Nearest Airport	:	Bhuj Airport-49.70 KM, NE
Nearest Highway	:	SH 49 – 0.55 KM N

(ii) Land Form, Land use and Land ownership

This is existing operative bauxite mine having mining lease area 169.59 Ha with production capacity 35,000 TPA for which Mining Lease has been granted by Govt. of Gujarat & IBM Ghandinagar & Udaipur as per the section 8(A) subsection (6) of MMDR Act 2015 the lease period Mining Lease has been granted by Govt. of Gujarat and IBM ending 27.03.2036.

GMDC is the owner of the mining lease. GMDC is being represented by nominated owner Mr. Arun Kumar M Solanki,(IAS) who is the Managing Director of the company. Mr. Arun Kumar M Solanki,(IAS) has also been appointed as owner of the mines in terms of The Mines Act, 1952.

Land Details:

Details of the area:

Table 6: Land Details

Particulars	Forest Land	Private/ Ag. Land	Grazing Land	Waste Land	Others	Total
a) Pits & Quarries	-	-	-	12.82	-	12.82
b) Dumps of ore Waste & O.B./ Soil stack	-	-	-	1.0	-	1.0
c)Infrastructure including of office, haul roads	-	-	-	0.30	-	0.30
d) Pond/ river/ habitation	-	-	-	8.50	-	8.50
e) Others (i) Govt. land (ii)Private/Ag. land	- -	- -	- -	146.9768 -	- -	146.9768 -
Total occupied Area	**-**	**-**	**-**	**169.5968**	**-**	**169.5968**

(iii) Topography (along with map)

Topography: the lease area is undulated land moderately having maximum R.L. of 130m on western side of the area, while minimum R.L. of 95m at lower western side. Existence of two small hillocks at north western side of the area is remarkable. River Kankavati is flowing from NE to SE in monsoon season crossing centre part of the ML area. No nallahs and streams are flowing through. Centre portion is having minor undulations. Few water check dam can be seen in the ML area. North-western side of the area is covered by altered trap. Agriculture land is falling on bank of river. Gentle slope of the area is from north-west to south-east direction. The overall slope of the area is towards southern side. River Kankavati is a major flowing river passing on south-

eastern side of the area. River flows from NE-SW direction and is subsequent merges in south coastal plains of western Kutch. River remains dry in summer and winter season. Figure 4 represents the surface plan of the ML area.

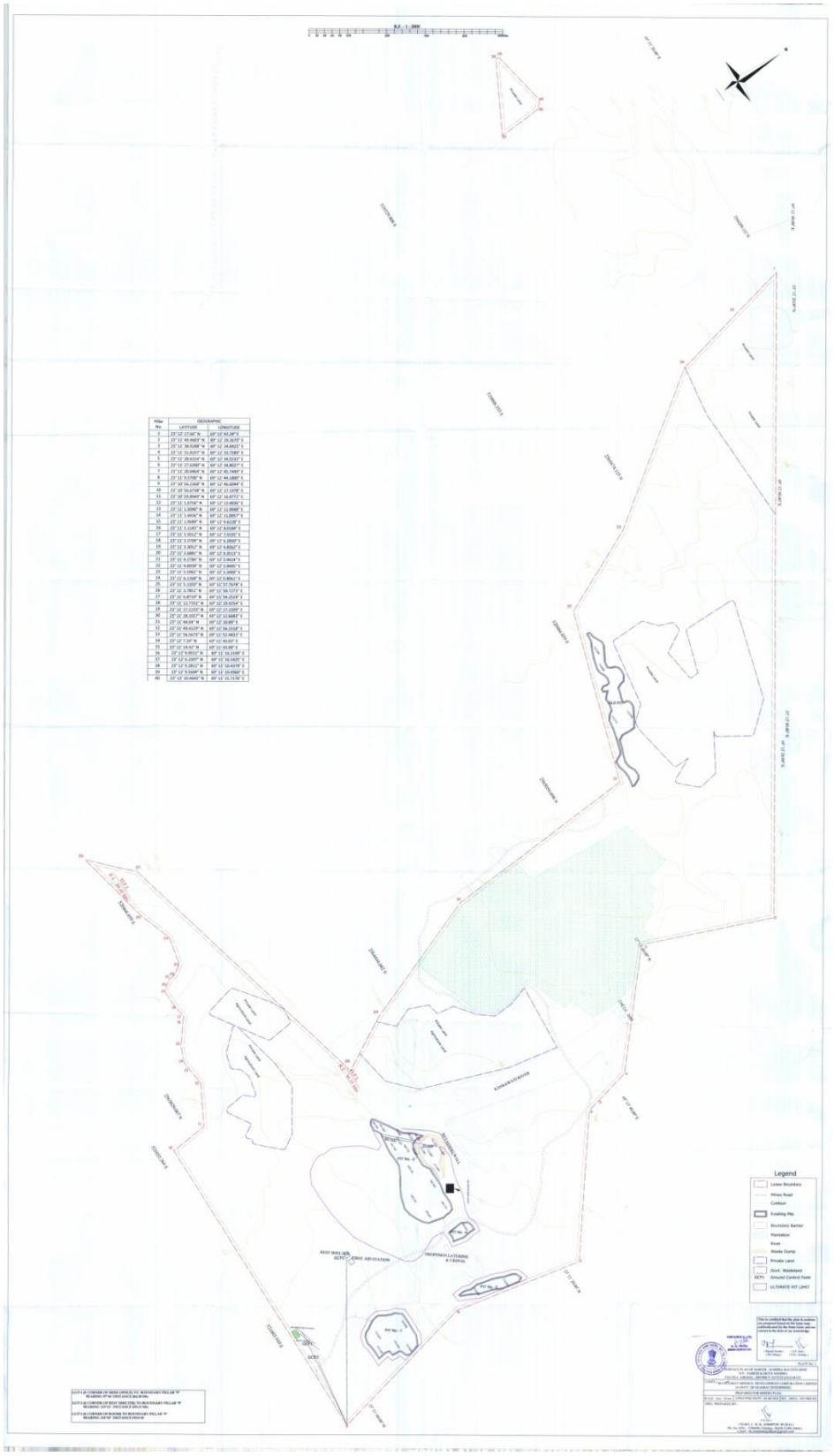


Figure 4: Surface Plan

(iv) Proposed 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

Land Use Pattern (Area in Ha)

The present, operational (at the end of 2020-21) and Post operational (at the end of lease period) are shown in **Table 7**.

Table 7: Land use pattern (Ha)

S. No	Land Use Category	Pre-Operational (Present)	Operational (At the end of 2020-21)	Post-Operational (At the end of lease period)
1.	Overburden Soil Dump	Nil	Nil	Nil
2.	Waste Dump	0.60	1.0	1.0
3.	Excavation (Voids only) Reclamation (Backfilled)	5.12 -	9.80 -	12.82 -
	Total Excavated Area	5.12	9.80	12.82
4.	Tar Roads/ mine road	0.30	0.30	0.20
5.	Infrastructure (mine office, res shelter etc.)	0.10	0.10	0.10
6.	Town Ship Area	Nil	Nil	Nil
7.	Natural Water Bodies	8.50	8.50	8.50
8.	Plantation & Greenbelt	18.86	23.86	23.86
9.	Mineral Storage (Sub-grade/mineral)	Nil	2.50	Nil
10.	Undisturbed area	136.1168	126.0368	123.1168
	Total	**169.5968**	**169.5968**	**169.5968**

Opencast mining activities may alter the landscape of the lease area and shall not have any effect on the surface features of the surrounding area. The existing land use pattern as well as land use pattern at the end of the proposed modified mining plan period (2020-2021) is given in the above table. The present land use pattern indicating the area already degraded due to mining, roads, processing plant, workshop, etc.

Distance from the nearest forest:	Khirsara Reserve Forest: 9.82 Km, E Jarjok Reserve Forest: 6.02 Km, S Bhittara Reserve Forest: 7.02 Km, S Makda Reserve Forest: 7.46 Km, SE Moti Maun Reserve Forest: 9.2 Km, SE Roha Reserve Forest: 4.2 Km, E Naranpar Reserve Forest: 1.84 Km, NE
Distance from National Park:	Nil within 15 km from ML boundary.
Distance from the nearest water body:	Kankavati Nadi (Near-Kolada Village): Crossing ML area Balachod (Sumrasar Talav): 2.05 km, NW Nalra River: 2.49 km, WNW

(v) Proposed Infrastructure

It is existing operative mine in which about 5.12 ha area has been opened up for excavation and during the next five years, 9.80 ha will be additionally broken up for excavation and post operational at the end of lease period is about 12.82 Ha. A total of 27.74 ha would have been opened up for excavation by the end of modified mining plan period.
The following Site services have been developed at mining site:

1. Mines Offices for Managerial Staff,
2. Time Office
3. First-aid Room
4. Rest Shelter

The First-Aid Station has the necessary facilities for imparting first-aid to the injured. It shall be located in the mine. Temporary rest shelters shall be constructed in the mine site. Canteen facilities are being maintained for the benefit of field staff and workers. Trees and shrubs have been grown and developed all around site services

(vi) Soil Classification

The soils found in Kutch district can broadly be grouped into four types, i.e., Shallow Black soils, Residual Sandy soils, Coastal Alluvial soils and Desert soils.The soil in abdasa taluka is mainly Sandy and saline soils.

(vii) Climate

The climate in the region is semi-arid. Temperatures vary considerably from season to season. The summer is generally hot and winter is cool. Mean maximum temperature ranges between 26.7°C during January to about 40.2°C during May. In Winter temperature ranges from 10.0 °C to 37.0°C .The relative humidity varies between 49 % during March and 95 % during July. Maximum rainfall reported in the month of July 130.9 mm (Source: Mandvi IMD (Naliya) station during year 2017). The recorded average rainfall in area is 415 mm per annum. During the year in which the rainfall is less and consequently precipitation is less it results in drought condition. However, as a precaution towards flash floods due to heavy rains, if any, caused due to cyclonic conditions, two sumps has been developed for storage of rain (sweet) water. Water is being conserved for dry months. The water is being used for consumption in the mine for dust suppression and plantation and also supplied to the villagers, if the village wells dry-up. Catchment area is quite big as it does not form a part of any major river system due to its proximity to the sea coast.

(viii) Social Infrastructure available

It is an existing operative bauxite mine,There is no social infrastructure available at site. However, Three villages Naredi, Mota Nandra & Nana Nandra lies just outside the lease area in W & E directions which constitutes small size human settlements. The villagers are mostly employed in agricultural work. Some people are engaged in other businesses. In the study area, i.e. the area falling within 5 km from the mine, there are 8 inhabited revenue villages. The entire study area falls within Kutch District of State Gujarat.

5.0 PLANNING BRIEF

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

This is existing operative bauxite mine having mining lease area 169.59 Ha with production capacity 35,000 TPA for which Mining Lease has been granted by Govt. of Gujarat and IBM.
Currently the mine plan has been approved from IBM Udaipurvide letter no. 684(23)(992)/1999-Min(U)Udaipur dated 14-10-1999. The present proposal is for validity of the environmental

clearance as per EIA Notification , 2006 and Gazette Notification, MoEFCC, New Delhi S.O. 1530 (E) dtd. 6th April, 2018. The required infrastructure facilities already available within ML area.

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

Company has a plan to plant saplings of trees and shrubs all along the periphery of the lease boundary. In the same manner greenbelt shall be carried out along the boundary barrier. Plantation is proposed to be done at the rate of 1000 saplings per hectare and area 1.0ha per year. Overburden soil if any removed during mining is proposed to be used for plantation purposed. Total area covered under plantation/greenbelt proposed is 6.5ha along boundary. By the end of this mining plan period, an area of 5.0 ha area under greenbelt shall be added to existing greenbelt/ plantation. As on date total of 984 no. saplings were planted within ML area covering 1.55 ha area. The survival rate is about 60%. When the mine is exhausted completely, entire area of ML will have few small water storages and big gardens with trees and shrub, which will be beneficial of human population of the region.

The following trees are already planted and also recommended: -

Table 8: Species of saplings planted and proposed

S. No.	Botanical Name	Local Name
1	Acacia auriculiformis	Bangalibaval
2	Acacia catechu	Khair
3	Acacia nilotica	Deshi babul
4	Albezialebbeck	Siras
5	Azadirectaindica	Neem
6	Bamboo spps.	Vans
7	Cassia fistula	Amaltas
8	Cassia seamea	Kashod
9	Casuarinaequisetifolia	Saroo
10	Cordiasebestina	Cordia
11	Dalbergiasissoo	Shisam
12	Delonixregia	Gulmohar
13	Erythrinaindica	Pangaro
14	Ficusreligiosa	Pipal
15	Gmelinaarbora	Shavan
16	Jetrophaspps.	RatanJyot
17	Kigeliapinnata	Kigelia
18	Padocarpuschinenses	Teak
19	Parkinsonia spp.	Rambaval
20	Peltoforumferrungium	Sonmohar
21	Pithecelobiumdulse	Gorasimli
22	Phyllanthusembelica	Amla
23	Pongamiapinnata	Karanj

The afforested area has to be protected from cattle menace, soil erosion, plant diseases etc. Plants will be protected from diseases by application of proper pesticides. Soil working, manuring etc will be done whenever necessary. Plants will be protected from cattle menace by proper watch and ward or fencing. Damaged plants will be replaced with new one.

6.0 PROPOSED INFRASTRUCTURE

(i) Industrial Area (Processing Area)

The area under mining will be 27.74 Ha. at the end of plan period.Mining of Bauxite through semi-mechanized open cast mining followed by stacking, Sizing with the help of rock breaker,manual sortingand transported to end users.

(ii) Residential Area (Non Processing Area)

There is no residential area within the mine lease and no residential structure is also proposed as the following facilities already have been for the welfare of the employees are:

- Site office,
- Rest shelter for resting of laborers during lunch interval,
- Water hut for drinking water facility for employees,
- First aid kit provided in the office for giving first aid to the injured persons, if any.,
- Separate urinals for men and women, etc

(iii) Green Belt

The mining lease area is 169.59 Ha having ML area of GMDC Bauxite Mine. The mining lease area is mineral bearing and the entire area is under active mining zone. As on date M/s. GMDC planted 1000 saplings in per 1.00 Ha. Overburden soil if any removed during mining is proposed to be used for plantation purposed. Total area covered under plantation/greenbelt proposed is 6.5ha along boundary. By the end of this mining plan period, an area of 5.0 ha area under greenbelt shall be added to existing greenbelt/ plantation. As on date total of 984 no. saplings were planted within ML area covering 1.55 ha area. The survival rate is about 60%.

(iv) Social Infrastructure

Following Facilities have been created for the welfare of the employees are:

- Bauxite mining activity is the major source of employment, GMDC has provided sufficient infrastructural resources to the surrounding villages owing to various developmental and welfare activities.
- All villages are well connected by approach roads.
- Water supply, transportation, educations and medical facilities are provided by GMDC to nearbyvillages.
- A well-equipped ambulance is provided to the local community round the clock.
- Provision of school bus for the children of employers is provided. There is significant improvement in the standard of living due to facilities provided by GMDC.

(v) Connectivity (Traffic and Transportation Road/ Rail/Metro/Water ways etc.)

Nearest Railway Station	:	Deshalpar: 24.32 KM, E
Nearest Airport	:	Bhuj Airport-49.70 KM, NE,
Nearest Highway	:	SH 49 – 0.55 KM N

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

Drinking water requirement is being fulfilled through existing water supply (tankers), However, in case of ground water utilization prior permission/NOC from CGWA will be obtained. The quality of water is good drinkable & potable and also water is being supplied from a well near the mine. A small water tank is also proposed in the proposed mine office premises. This can be used for supply of water to mining work, spraying, watering the plants and drinking purposes.

(vii) Sewerage System

Sewage is being treated in Soak Pit. Neither any chemical nor toxic effluents will be discharged from the area nor any toxic substance be used in the mining or allied activities.

(viii) Industrial Waste Management &

No toxic effluent nor solid waste is generated from the mines, quality of soil in the surrounding areas does not have any adverse impact.

(ix) Solid Waste Management

Alluvium cover is available in the ML area. It is available in the form of overburden and inter-burden.The alluvium shall be removed separately and shall be used for plantation/ green belt purposes. Waste generated during course of mining has been dumped separately.
During next five years of working, waste & sub-grade mineral shall be generated. This shall be disposed of by means of dumping/ stacking covering an area 1.0ha near boundary pillar no. 9-10.

(x) Power Requirement & Supply / source

Power requirement of the plant is mainly met from Solar Power which is being installed at mine site office of GMDC Naredi-Mota Nandra bauxite mine for uninterrupted power supply. In accordance with the statutory requirements, the mine haulage roads, excavation faces and other working areas apart from maintenance workshop and office premises are well illuminated. Proper maintenance is being carried out to keep the infrastructures in order and available for utilization. Electricity- Daily power requirement will be 15-20 KW/day. Whereas, solar system is being as power backup.

7.0 REHABILITATION AND RESETTLEMENT (R & R PLAN)

(i) Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless labour (A brief outline to be given)

It is an existing operational mine, no rehabilitation and resettlement is involved.

8.0 PROJECT SCHEDULE AND COST ESTIMATES

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

This is existing operative bauxite mine having mining lease area 169.59 Ha with production capacity 35,000 TPA. The lease was granted for 30 years on 28-03-2006 vide letter no. MCR/1591/G-56/349/CHH. The lease deed was executed on 28-03-2006 for a period of 30 years (lease period 28-03-2006 to 27-03-2036).
The present proposal for validity of the environmental clearance as per EIA Notification , 2006 and Gazette Notification, MoEFCC, New Delhi S.O. 1530 (E) dtd. 6th April, 2018. The required infrastructure facilities already available within ML area.

Mineral Reserves/ Resources

Total estimated reserves as on 284375 million tones.

MINE LIFE

At the production rate of 35,000 million TPA, total life of mine is 8.1 say 8 years.

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

Project Cost Calculation

Total capital cost towards mining equipments (excavator and dumers) is Rs 61 Lakhs to produce bauxite and waste / sub grade material. The above cost excludes drilling and other miscellaneous mining equipments which shall be taken care by equipmentslease of GMDC.

Economic viability of the project:

This is already exisiting operating mines, hence economic viability review is not envisaged. However, this mine is economically viable as per operational experience in the past.

Expenditure Proposed for Environmental protection activities :

This is existing mining lease hence as such no capital cost is proposed. However, recurring expenditures of Rs. 11.50 Lakhs per annum is envisaged for various environmental measures. The details of activities along with budgetiary provision under environmental protection is given in Table. No.9a and Table 9b.

. Table No. 9a: Environmental Protection Cost

Sr. No.	Description	Approximate Recurring cost per Annum (Rs. In Lacs)
1	Air pollution Control	3.00
2	Water Pollution Control	0.00
3	Environment Monitoring and Management	1.00
4	Wired Fencing	0.50
5	Noise Pollution Control	0.50
6	Occupational Health	1.00
7	Green Belt	4.00
8	Drinking Water	1.50
	Total	11.50
9	Cost For CSR Activity: Project Proponent will spent amount of 2% of their gross income for CSR (Corporate Social Responsibilities).	

Table 9b: Amount Of CSR Activity Contributed In Last 05 years – By GMDC Ltd. For all 8 Bauxite Mines in Dist: Kutch

	Year				
	2013-2014	**2014-2015**	**2015-2016**	**2016-2017**	**2017-2018**
Amount in Rs.	630000	885000	8070000	14439000	23143000

9. ANALYSIS OF PROPOSALS (FINAL RECOMMENDATIONS)

Financial & social benefits with special emphasis on the benefits to the local people including tribal population if any in the area

Socio-economics

Socio-economic profile of the study area revealed that the Bauxite mining activity is the major source of employment. GMDC has provided sufficient infrastructural resources to the surrounding villages owing to various developmental and welfare activities. All villages are well connected by approach roads. Water supply transportation, educations and medical facilities are provided by GMDC to nearby villages. A well-equipped ambulance is provided to the local community round the clock. Provision of school bus for the children of employers is provided. There is significant improvement in the standard of living due to facilities provided by GMDC. There is no direct or indirect impact in the villages on the population in the villages due to ongoing and proposed mining activity. However the response for the people towards the mining project is positive with expectations of mine job opportunities and economic development.

10.0 DETAILS OF ENVIRONMENTAL SETTING

Table no. 10: Project Details

Sr. No.	Particulars	Details
1.	Project Location	Vill. Naredi & Mota Nandra, Khasra No. ; 437- 96, 140, 141/1, 141/2, Mota Nandra- 36- 38, 41, 44, 91, 94, 95, 96A, 96B- 31, 32, 34, 35
2.	Latitude/Longitude	The area falls between latitudes Latitude 23° 10' 57.0708"N, 23° 12' 20.6018"N & Longitude 69° 11' 40.4154"E, 69° 12' 39.8370"E.
3.	Location covered in Toposheet No	Survey of India Toposheet No. 41 E/3 old (new F 42 D/3), 41 E/4 old (F42 D/4 new) 41 E/7 old (new F 42 D/7) and 41 E/8 old (new F 42 D/8) on 1: 50,000 scale.
4.	Climatic Conditions	Mean annual rainfall is 330 mm Temp. : Pre monsoon 24.8^0 C (Min.) 44.5^{0}C (Max.) : Winter 12.9^{0}C (Min.) 26.6^{0}C (Max) : Post monsoon 15.8^0 C (Min.) 32.9^{0}C (Max.) Source: IMD, Naliya (1981-2018)
5.	Site elevation above Mean Sea Level	95 to 130 mRL under 10 km radius from the project site/ ML area
6.	Land use at the proposed project site	Existing operational mine

Sr. No.	Particulars	Details
7.	Site topography	The lease area is undulated land moderately having maximum R.L. of 130m on western side of the area, while minimum R.L. of 95m at lower western side. Existence of two small hillocks at north western side of the area is remarkable. River Kankavati is flowing from NE to SE in monsoon season crossing centre part of the ML area. No nallahs and streams are flowing through. Centre portion is having minor undulations. Few water check dam can be seen in the ML area. North-western side of the area is covered by altered trap. Agriculture land is falling on bank of river. Gentle slope of the area is from north-west to south-east direction. The overall slope of the area is towards southern side. **Drainage Pattern:** river Kankavati is a major flowing river passing on south-eastern side of the area. River flows from NE-SW direction and is subsequent merges in south coastal plains of western Kutch. River remains dry in summer and winter season.
8.	Nearest roadway	SH 49 – 0.55 KM N
9.	Nearest Railway Station.	Deshalpar: 24.32 KM, ENE
10.	Nearest Railway line	Bhuj-Rajkot-Ahmedabad
11.	Nearest Air Port	Bhuj Airport -49.70 KM, NE
12.	Nearest village/major town	Naredi-1.78 SE
13.	Hills/valleys	None within 15 km radius.
14.	Ecologically sensitive zone	None within 15 km radius.
15.	Nearest Reserved/Protected forests	• Mothala RF-6.72 Km-W • Khirsara RF-9.82 Km-E • Jarjok RF-6.02 Km-S • Bhittara RF-7.02 Km-S • Makda RF-7.46 Km-SE • Moti Maun RF-9.2 Km-SE • Roha RF-4.2-E • Naranpar RF-1.84 Km-NE
16.	Historical/tourist places	None within 10 km radius area
17.	Nearest Industries	None within 10 km radius area
18.	Nearest water bodies	• Kankavati Nadi: Crossing through ML area • Water Body Balachod: 2.05 km, NW • Nalra River: 2.49 km, WNW
19.	Seismic zone	The area is not known for these natural hazards. Seismically, this area is categorized under Zone-V as per IS-1893 (Part-1)-2002. Hence, the site is Highest Risk Zone.