

**DETAILED PROJECT REPORT FOR PRELIMINARY EXPLORATION
(G3) OF BAUXITE IN LASUNDRA BLOCK A [2.21SQ. KM.] &
LASUNDRA BLOCK B [1.10SQ. KM.] KHEDA DISTRICT, GUJARAT.**

COMMODITY: BAUXITE

To

**NATIONAL MINERAL EXPLORATION & DEVELOPMENT TRUST
(NMEDT)**

**(THROUGH THE COMMISSIONER OF GEOLOGY & MINING,
GUJARAT)**

BY



M/s Gems Projects Pvt. Ltd. Ranchi

E-mail: md@gemsgroup.in

www.gemsgroup.in

PLACE: RANCHI

DATE: 10th JUL 2026



Ref No – NMEDT/E/24/26
Date- 25th MAR 2026

To
The Director & HoD
National Mineral Exploration & Development Trust (NMEDT)
Ministry of Mines
Room No. 325&326, Wing- F,
Udyog Bhawan,
Rafi Ahmed Kidwai Marg,
Rajpath Area, Central Secretariat
New Delhi- 110011

Sir,

We are herewith submitting the following details for granting 'in-principle' approval by NMET on the proposal of reconnaissance or prospecting surveys to NMET under the "Scheme for Engagement of Notified Private Exploration Agencies in Mineral Exploration directly through National Mineral Exploration Trust issued by Ministry of Mines vide OM No. 6/3/2015-NMET/28 dt-10.05.2022.

1. Name and Address of the Applicant:

(a)	Name of NPEA:	Gems Projects Private Limited
(b)	Name of Authorized Signatory	Deepak Kumar Swain
(c)	Postal address:	Street: 1236/2, Lajpat Nagar, Near Lala Lajpat Rai School Pundag, City: Ranchi, State: Jharkhand -
(d)	Telephone Number (Office):	
(e)	Fax number (Office):	
(f)	Mobile No:	+91-9431115961, +91- 9934307900
(g)	Telephone Number (Residence):	
(h)	E-mail address:	md@gemsgroup.in

2.Details of Accreditation as Private Exploration Agency and Notification under the provision to Section 4(1) of the MMRD Act:

(a)	Date of accreditation granted by QCI-NABET:	18 January 2024
(b)	Date of expiry of accreditation:	17 January 2027
(c)	Date of Notification under the proviso to Section 4(1) of the MMRD Act:	19 January 2024
(d)	Date of expiry of Notification:	17 January 2027



(e)	Category of the exploration Agency (Category A or B) under Notification:	A Category Exploration Agency
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3. Location Details of Proposed Block Area:

(a)	State	Gujarat																																																												
(b)	District (s)/ Taluka(s)/ Block(s)	Kheda/Kathalal																																																												
(c)	Nearby Village (s)	Lasundra, Ladvel, Lakshmanpura, Rampura,																																																												
(d)	Survey of India (SOI) Toposheet (s) No.	46F/01																																																												
(e)	Area in sq. km.	3.31 Sq.Km.																																																												
(f)	Boundary coordinates of the proposed block (In Degree Minute Second)	<table><tr><th colspan="3">LASUNDRA-A</th></tr><tr><th>Sl. No.</th><th>Northing</th><th>Easting</th></tr><tr><td>A</td><td>22° 53' 41.743" N</td><td>73° 6' 40.353" E</td></tr><tr><td>B</td><td>22° 53' 59.657" N</td><td>73° 7' 03.132" E</td></tr><tr><td>C</td><td>22° 54' 10.763" N</td><td>73° 7' 36.954" E</td></tr><tr><td>D</td><td>22° 53' 55.247" N</td><td>73° 7' 41.346" E</td></tr><tr><td>E</td><td>22° 53' 30.401" N</td><td>73° 7' 51.260" E</td></tr><tr><td>F</td><td>22° 53' 25.279" N</td><td>73° 7' 52.231" E</td></tr><tr><td>G</td><td>22° 53' 19.917" N</td><td>73° 6' 59.670" E</td></tr><tr><td>H</td><td>22° 53' 18.066" N</td><td>73° 6' 42.549" E</td></tr><tr><th colspan="3">LASUNDRA-B</th></tr><tr><th>Sl. No.</th><th>Northing</th><th>Easting</th></tr><tr><td>A</td><td>22° 53' 52.183" N</td><td>73° 8' 12.706" E</td></tr><tr><td>B</td><td>22° 53' 54.116" N</td><td>73° 8' 24.754" E</td></tr><tr><td>C</td><td>22° 54' 2.073" N</td><td>73° 8' 38.391" E</td></tr><tr><td>D</td><td>22° 53' 41.195" N</td><td>73° 9' 6.886" E</td></tr><tr><td>E</td><td>22° 53' 33.654" N</td><td>73° 9' 17.165" E</td></tr><tr><td>F</td><td>22° 53' 28.481" N</td><td>73° 8' 21.628" E</td></tr><tr><td>G</td><td>22° 53' 33.593" N</td><td>73° 8' 20.089" E</td></tr><tr><td>H</td><td>22° 53' 42.983" N</td><td>73° 8' 10.333" E</td></tr></table>	LASUNDRA-A			Sl. No.	Northing	Easting	A	22° 53' 41.743" N	73° 6' 40.353" E	B	22° 53' 59.657" N	73° 7' 03.132" E	C	22° 54' 10.763" N	73° 7' 36.954" E	D	22° 53' 55.247" N	73° 7' 41.346" E	E	22° 53' 30.401" N	73° 7' 51.260" E	F	22° 53' 25.279" N	73° 7' 52.231" E	G	22° 53' 19.917" N	73° 6' 59.670" E	H	22° 53' 18.066" N	73° 6' 42.549" E	LASUNDRA-B			Sl. No.	Northing	Easting	A	22° 53' 52.183" N	73° 8' 12.706" E	B	22° 53' 54.116" N	73° 8' 24.754" E	C	22° 54' 2.073" N	73° 8' 38.391" E	D	22° 53' 41.195" N	73° 9' 6.886" E	E	22° 53' 33.654" N	73° 9' 17.165" E	F	22° 53' 28.481" N	73° 8' 21.628" E	G	22° 53' 33.593" N	73° 8' 20.089" E	H	22° 53' 42.983" N	73° 8' 10.333" E
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**4. Mineral Potential of the Area:**

(a)	Name of Mineral(s) identified/ expected in the area/ block	BAUXITE
(b)	Title of the Project with name of the block	DETAILED PROJECT REPORT FOR PRELIMINARY EXPLORATION (G3) OF BAUXITE IN LASUNDRA BLOCK A [2.21SQ. KM.] & LASUNDRA BLOCK B [1.10SQ. KM.] KHEDA DISTRICT, GUJARAT.
(c)	Stage of Exploration	G3
(d)	List of documents relied upon in support of item	Location map of the block area, Geological map

5. Documents to be enclosed with the application:

- (i) Location of the proposed block demarcated on Survey of India (SOI) Toposheet No **46F/01 enclosed as Plate No-Plate II**
- (ii) Documents mentioned in item 4(d) above – Project Proposal in Prescribed Format along with its related drawings.

Yours Faithfully

**D. K Swain,
Managing Director**

Place: Ranchi**Date: 25th MAR 2026****Gems Projects Private Limited**



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PLACE: RANCHI

DATE: 10th JUL 2026

**SUMMARY OF THE BLOCK FOR PRELIMINAR EXPLORATION (G3)**

	Features	Details
	Block ID	DAKOR BLOCK(G3) FOR BAUXITE
	Exploration Agency	Gems Project Private Limited
	Commodity	BAUXITE
	Mineral Belt	Bauxite of Pleistocene-Holocene age
	Completion Period with entire Time schedule to complete the project	10 Months
	Objectives	1. To determine the extent of the bauxitic area in the block. 2. To assess the grade of bauxite deposit in the block area. 3. To drill 18 bore holes on 500X500m grid as per MEMC rules 2015 to decipher its depth and subsurface continuity to establish the different zones having different grades of bauxite deposits. 4. To estimate the resources and reserves of bauxite as per MEMC Rule-2015. 5. To estimate the in-situ resources of bauxite for G3 stage of exploration (333), and preparation of Geological Report (GR).
	Whether the work will be carried out by the proposed agency or through outsourcing and details thereof. Components to be outsourced and name of the outsource agency	Work will be carried out by the proposed agency; Gems Projects Private Limited.
	Name/ Number of Geoscientists	02 Geologists
	Expected Field days (Geology)Geological Party Days	100



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	Tehsil/ Taluk	Kathalal																																																												
	District	Kheda																																																												
	State	Gujarat																																																												
2	Area (hectares/ square kilometers)																																																													
	Block Area	3.31 Sq.Km.																																																												
	Forest Area	NA																																																												
	Government Land Area	NA																																																												
	Private Land Area	Major part in agricultural area private land																																																												
3	Accessibility																																																													
	Nearest Rail Head	Thasra & Dakor, both are 15 Km away from block																																																												



	Road	NH-59, Indore-Ahmedabad NH & Dakor-Kapadvanj road cross through block.
	Airport	Ahmedabad is the nearest airport about 60Km from block area.
4	Hydrography	
	Local Surface Drainage Pattern (Channels)	Direction is southern to south-western
	Rivers/ Streams	Drainage of the area is southerly to south-westerly. Mohar River flow far western and Mahi River flow far eastern part of the block. Narmada canal flow at N-E part of the block.
5	Climate	
	Mean Annual Rainfall	The mean annual Rain Fall recorded in the area is 790 mm
	Temperature (December) (Min) Temperature (June)(Max)	Minimum temperature 5°C Maximum temperature 46°C
6	Topography	
	Toposheet Number	46F/1
	Morphology of the Area	The area is more or less a plain.
7	Availability of baseline geosciences data	
	Geological Map (1:50K/ 25K)	Geological map on 1:50,000 scale (Source: NGDR)
	Geochemical Map	NA
	Geophysical Map (Aeromagnetic, ground geophysical, Regional as well as local scale GP maps)	NA



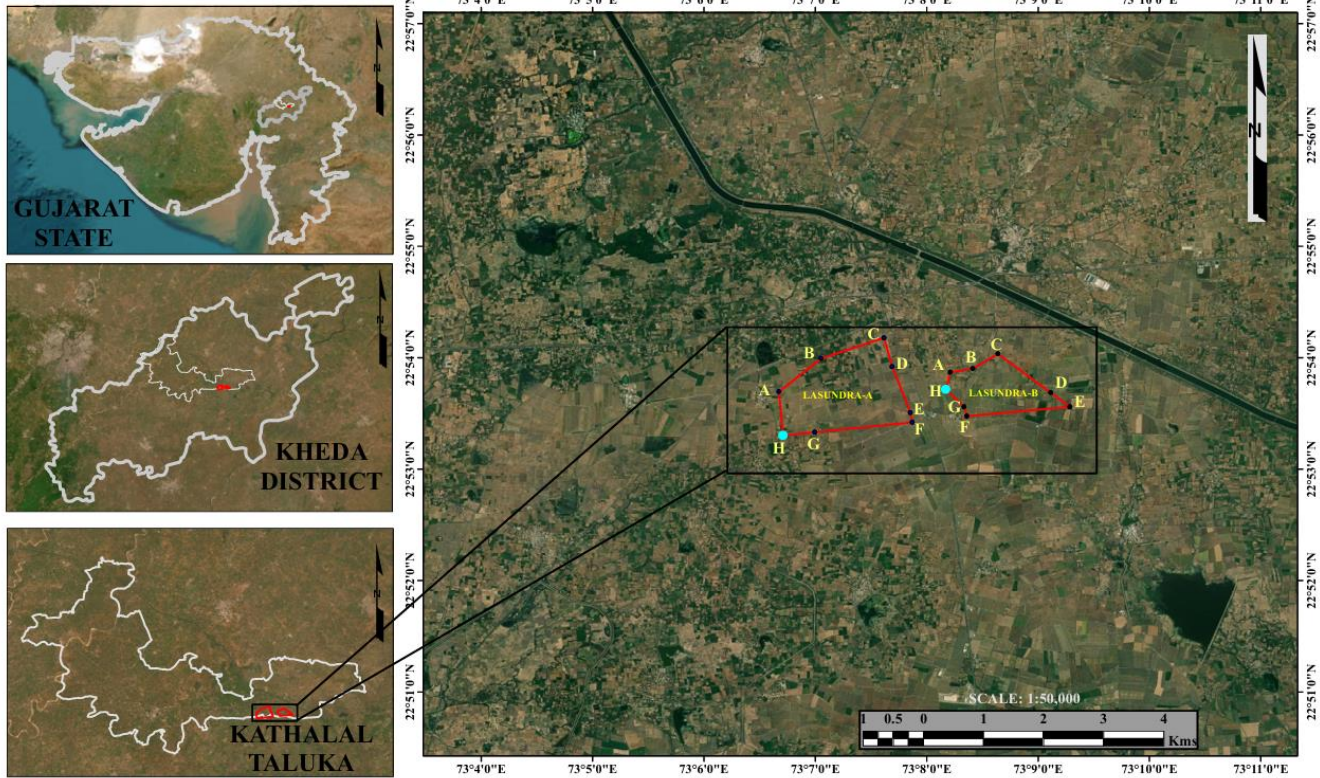
8	Justification for taking up Reconnaissance Survey / Regional Exploration	A. The proposed area is located over Deccan Traps. Several occurrences of Bauxite mineralization have been reported in and around the proposed block area. Here the Bauxite occurs as a pocket deposit associated with ferruginous/aluminous laterite.												
		B. CGM Gujarat carried out pitting, 8-10 km away from the southern part of the proposed block area. Chemical analysis of those pits samples reveals the following values which is promising to carry out further exploration within the proposed area. <table><tr><td>Al₂O₃</td><td>51.41-43.42%</td></tr><tr><td>SiO₂</td><td>4.04-5.04%</td></tr><tr><td>Fe₂O₃</td><td>8.90-20.16%</td></tr><tr><td>TiO₂</td><td>6.15-7.68%</td></tr><tr><td>CaO</td><td>0.06-2.75%</td></tr><tr><td>MgO</td><td>Nil-0.01%</td></tr></table> C. As per report of CGM Gujarat; Associated Cement Company's query reveals that; the top zone is composed mostly of nodules of bauxite, the middle zone is of big massive boulders of bauxite and the bottom zone is of lithomarge. D. Bauxite leases and a working bauxite mine is located in the close vicinity of the block, so it can be considered as an extension of the already existing bauxite deposit. (CGM Gujarat) E. CGM Gujarat issued NOC on 29th January 2026 to the Gems Projects for carrying exploration in this block.	Al ₂ O ₃	51.41-43.42%	SiO ₂	4.04-5.04%	Fe ₂ O ₃	8.90-20.16%	TiO ₂	6.15-7.68%	CaO	0.06-2.75%	MgO	Nil-0.01%
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9	Documents to be enclosed with the application	1. Location map of study area plotted on satellite image. 2. Location of the proposed block demarcated on Survey of India Toposheet No.46F/01 3. Geological map of block area. 4. Proposed boreholes, trench & pit.												

1. LOCATION MAP OF STUDY AREA PLOTTED ON SATELLITE IMAGE:



**LOCATION MAP OF LASUNDRA-A (2.21 Sq. Km.)
& LASUNDRA-B (1.10 Sq. Km.) BLOCK**

PLATE-I

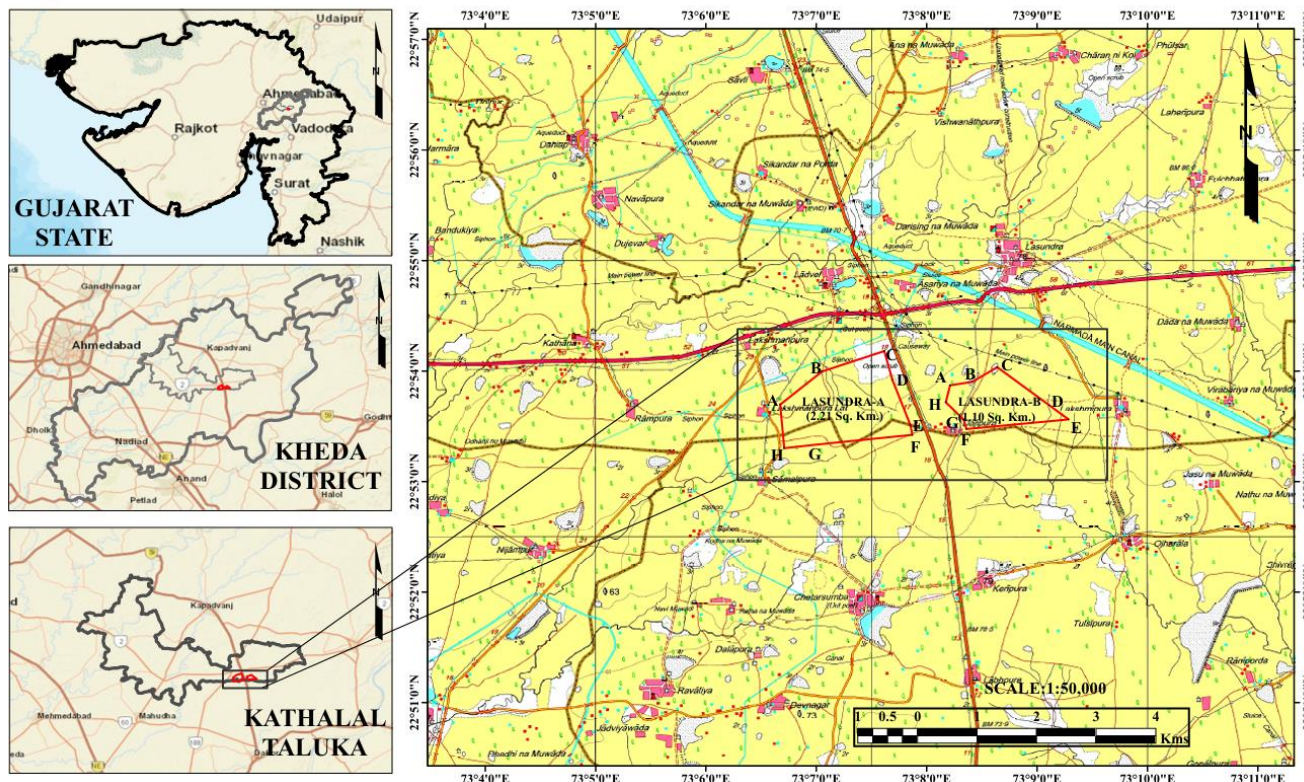




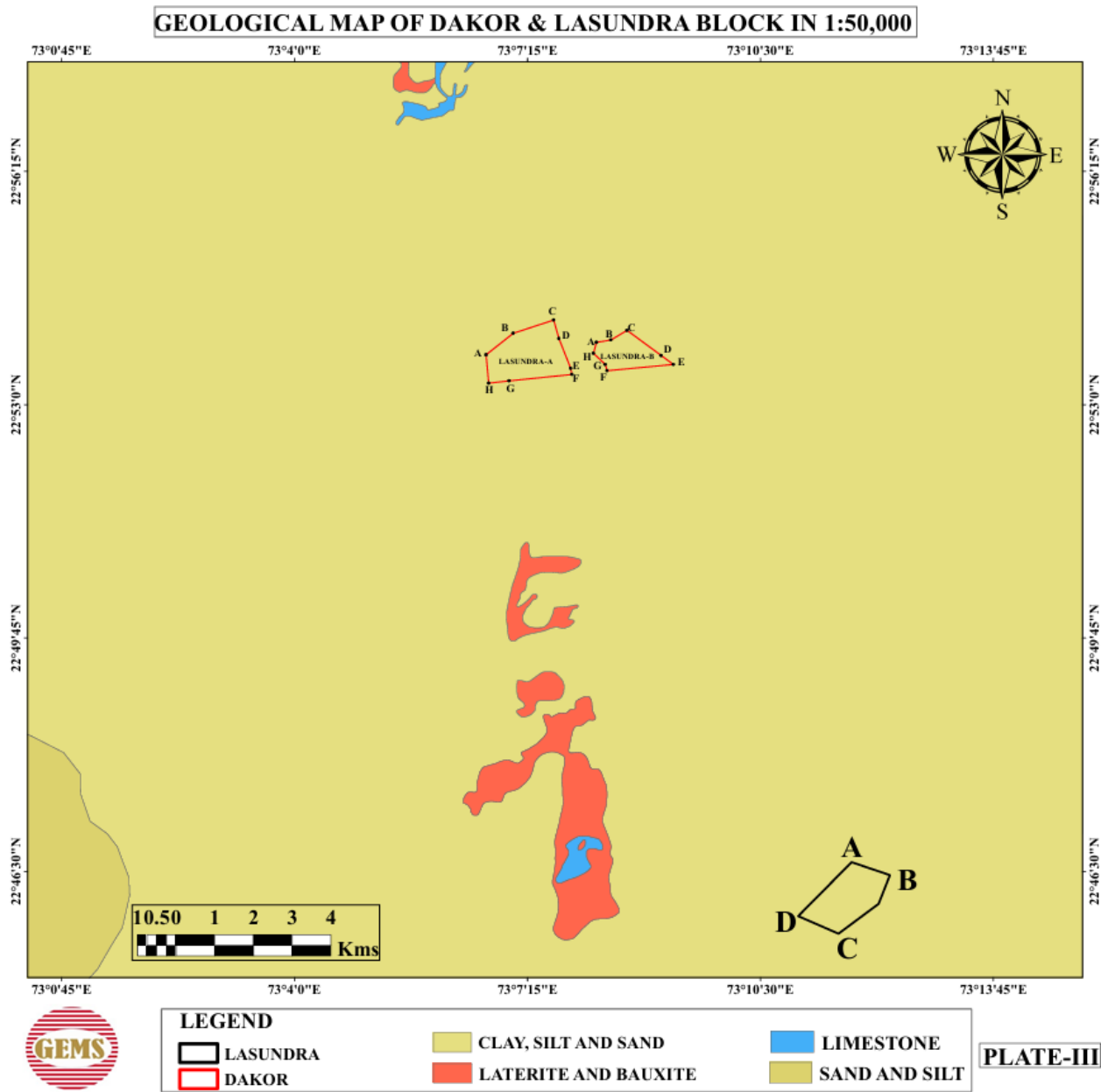
2. LOCATION OF THE PROPOSED BLOCK DEMARCATED ON SURVEY OF INDIA TOPOSHEET NO. 46F/01:



LASUNDRA BLOCK ON TOPOSHEET NO.46F/01 OF SOI PLATE-II



3. GEOLOGICAL MAP OF THE BLOCK AREA:





1. BLOCK SUMMARY

A. Location and details of the study area:

The entire study area comes under Kathalal taluka of Kheda district covers parts of Lakshmanpura, Rampura & Dijipura village. Kheda district covers an area of 3,667 Km² and population of the district is 2,299,885 as per 2011 population. Lasundra is located around 35 km towards north east from district headquarters Nadiad and around 60 km from state capital Gandhinagar. Lasundra block falls under the survey of India Toposheet No. 46F/1. The block area is nearly 3.31 Sq.Km. Co-ordinates of the cardinal points are tabulated below;

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B. Infrastructure & Accessibility:

The Lasundra block accessible from Kathalal town through NH-59. The nearest airport Ahmedabad is around 60 Km. Dakor and Thasra are nearest railway station from the block. The block area is accessible throughout the area.

C. Physiography & Drainage:

The area is more or less a plain except for a low ridge. The minimum and maximum elevations of ground level from the mean sea level are 60.96 meters and 76.2 meters respectively.

The direction of drainage of the area is southerly to south-westerly. River Mahor flowing roughly in western direction drains the area along with its tributaries Kharvo River and Luni River. River Mahi flow far eastern side of the block. The flow direction of these two rivers is towards south west. Narmada canal which originates from Sardar Sarovar Dam flow North-Eastern part of the block.

D. Climate:

The climate of area can be classified as tropical, hot and dry. Winter is dry and cool. December and January are the coolest months. Summer is quite hot and dry and temperature rises even up to 46°C during the months of April and May, Hot

winds and dust storms are common during this period. Heat subsides in middle of June when the south-west monsoon sets in maximum precipitation of rain takes place in July and August. The mean annual rainfall of the area 790 mm.

E. Vegeation:

The area is mainly covered under agriculture and practically devoid of forest. However, main trees of the area are Neem, Mango, Bor, Asopalav etc. No major wild life is seen in the area. The main agriculture crops of the area are tobacco, wheat, sugarcane, maize and millet.

F. Previous Work:

1. B. A. Amin (1970). Report on The Preliminary Mineral Investigation in Part of Kaira District, Gujarat State (CGM Gujarat), **p.g.:6-17**
2. J. M. Parikh (1970-71). Report on The Investigation for Bauxite in Some Villages of Thasra; Kaira District; Gujarat State (CGM Gujarat), **p.g.:7-15**
3. K. M. Patel (1998-99). Report on The Detailed Geological Survey for Bauxite Around Ladvel, Dujavar etc. Viliages of Kapadwanj Taluka of Kheda District in Parts of (Toposheet No.46E/4 & 46F/1) (CGM Gujarat), **p.g.:7-12**
4. Commissioner of Geology and Mining, Gujarat (2024). Gujarat's Mineral Wealth: A Responsible Exploration and Development Paradigm.**p.g.:42-43**

G. Planned Methodology:

- **Detailed Geological Mapping:** The detailed geological mapping (DM) on a 1:4,000 scale is to be carried out in and around **3.31 sq km** area. The detailed geological map will be finalized by adding physical features beyond geological features, attitudes of beds, structural features etc. to be picked up and plotted during mapping.
- **Pitting:** To know near-surface geology **15 nos.** of pits will be excavated. **[2mx2mx3mx15= 180 Cum]**
- **Drilling:** The entire area will be drilled in a grid pattern of **500mx500m**, (**15 nos.** down to **25m = 375m**)
- **Geochemical sampling:** Pit samples, Trench samples & Core samples etc. will be collected for analysis.
- **Chemical Analysis:** XRF analysis of major oxides & trace element study of selected samples.
- **Petrographic and mineralogical studies:** Petrographic & mineralogical studies of possible host rock.
- **Exploration Report:** Generate a detailed report (Final G3 stage Report), identifying and establishing area worthy of being raised to a G-2 scheme as per MEMC-2015. Data generated from G-3 level works, shall be presented in the Report as per the laid guidelines.

1. GENERAL GEOLOGY OF THE AREA:

Age	Lithology
Recent to sub-recent	Soil, Blown Sand, Alluvium and Kankar
.....Erosional Unconformity.....	
Miocene	Gray shale interbedded with beds of yellow coloured argillaceous limestone
.....Unconformity.....	
Eocene	Laterite and Bauxite, Lithomerae
	Concretionary limestone
.....Unconformity.....	
Cretaceo-Eocene	Deccan Traps

- i. Deccan trap is the oldest rock formation in the area investigated. Thin section study of this rock showed two distinct phases, the matrix is comparatively coarse basalt, and the embedded grains are fine grained in texture and richer in glass. The major constituents of the embedded grains are saussuritized plagioclase and a few large crystals of Actinolite Tremolite pseudo morphs after pyroxene in a glassy ground mass.
- ii. Concretionary limestone formation directly rests over the trap. The thickness of this limestone varies from a few centimeters to a few meters. At many places below the laterite and bauxite capping, the low ridge occurring between Kapadwanj and Dakor, pinkish white concretionary limestone was also noted.
- iii. The laterite and bauxite formations rest over the concretionary limestone. Two types of laterite formations can be recognized in the field. (i) Ferruginous laterite which is the more extensive formation of the two is a porous, pitted and earthy rock at times rich enough in iron to form low grade iron ore. (ii) The second variety is nodular of boundary in nature, generally ash grey or pinkish grey in colour. The first variety is low in alumina while the second one is generally high in alumina.
- iv. Greenish grey and yellowish shales, probably of Miocene age, rest over the laterite and concretionary limestone. These shales occur at various depths varying from few metres to few tens of metres below the alluvial cover in the area to the west of the low ridge between Kapadwanj and Dakor.
- v. Recent Alluvium directly rests on the Traps and the Tertiary formations in the area. Lithology is composed of different lenticular beds of clays, Silts, sands and gravels. The soils in the area vary from medium black (loamy) clay to sandy. Medium black soil generally prevails in the area to the east of the ridge where Trap formation occurs at shallow depths. The tropical Kankar below the soil cover is noted almost everywhere.

2. FIELD PHOTOGRAPHS:



(Field visit has done by our fellow Geologist on 10th of February 2026, but sample was not taken due to no surface exposure.)

**3. QUANTUM OF WORK:**

Sl. No.	Item of Work *	Unit *	Proposed Qua. (b)	
A	Geological Mapping Other Geological Work & Surveying			
	Geological mapping, (1:4,000 scale) & Trenching, drilling work	Sq.Km.	3.31	
B	Survey work			
	DGPS Survey for BH fixation & RL determination	Per Point of observation	31	
C	Trenching/Pitting			
	Excavation of Pits (2x2x3)	per cu.m	180	15 nos.
D	DRILLING (after review)			
	Drilling up to 300m (Soft Rock)	m	375	15 BHs, 25m each
E	LABORATORY STUDIES			
	Chemical Analysis			
i)	BRS Samples			
	Major oxides	Nos	30	
ii)	BRS Samples (10% External)			
	Major oxides	Nos	3	
iii)	Pit Samples			
	Major oxides	Nos	75	
iv)	Pit Samples (10% External)			
	Major oxides	Nos	8	
v)	BH Core samples			
	Major oxides	Nos	150	
vi)	BH Core Check samples (10%External)			
	Major oxides	Nos	15	
vii)	ICPMS analysis	Nos	15	
2	Physical & Petrological Studies			
i	Preparation of thin section	Nos	10	
ii	study of thin section	Nos	10	
iii	Bulk Density	Nos	4	
iv	Reactive Silica	Nos	7	

**4. TENTATIVE COST ESTIMATION OF THE PROJECT:**

Sl. No	Item	Total
1	Geological Work	23,09,511
2	Survey	11,25,720
3	Pitting/Trenching	8,50,500
4	Drilling	35,34,275
5	Laboratory Studies	13,69,200
	Sub total	91,89,206
6	Report	2,50,000
7	Peer Review	30,000
8	Proposal Preparation	1,83,784
	Total	96,52,990
9	GST 18%	17,37,538.22
Total cost including 18% GST		1,13,90,528
SAY, in Lakhs		113.91

5. TIME SCHEDULES:

ESTIMATED TIME SCHEDULE FOR PRELIMINARY EXPLORATION OF BAUXITE IN LASUNDRA BLOCK -A [2.21 SQ. KM.] & LASUNDRA BLOCK-B [1.10], STAGE G3 KHEDA DISTRICT, GUJARAT															
Sl. No.	Item of work	Months													
		1	2	3	REVIEW	4	5	6	REVIEW	7	8	8	REVIEW	9	10
1	Camp Setting/Mobilization														
2	Geologist Days (Field)														
3	Pitting/Trenching														
4	Survey Days (01 party)														
5	Drilling														
6	Sampling Days														
7	Laboratory Studies														
8	Camp winding														
9	Geologist Days, HQ														
10	Preparation of Geological report														
11	Peer review & Report Final Submission														