

PRE-FEASIBILITY REPORT
(AS PER THE GUIDELINE OF MoEF&CC)

FOR
PROPOSED NEW PROJECT AT

Name of the Industrial Unit	M/s. BHARAT RASAYAN LIMITED (UNIT-III), Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India.
Registered Office	1501, Vikram Tower, Rajendra place, New Delhi – 110 008, India.

For Bharat Rasayan Ltd.
[Signature]
Authorised Signatory

Bharat group is the brainchild of visionary and industry veteran Mr. S N Gupta. under his leadership Bharat Group started in 1977 with domestic brand and formulation business. Bharat Group's R&D facilities have been recognized by the Government of India's Ministry of Science & Technology

Bharat group has 3 companies.

1. Bharat Rasayan Limited
2. Bharat Insecticides Limited
3. BR Agotech Limited.

All the three companies have ISO 9001:2008 for Quality Management and ISO 14001:2004 for Environment Management system while Bharat Rasayan limited has an additional feather in the cap with OHS 18001:2007 certification for Occupational Health & Safety norms. Bharat Group is one of the top 10 agrochemical companies in India.

M/s. Bharat Rasayan Limited is Flagship Company of Bharat Group which was started in 1989 as a part of backward integration and first plant was established at Mokhra, Rohtak (Haryana) for manufacturing and intermediate / Insecticides, Herbicides & Fungicides (Technical). Company stock was listed at national stock exchange in 1993. M/s. Bharat Rasayan Limited started additional state of art manufacturing at Dahej, Bharuch (Gujarat) in 2012.

1. EXECUTIVE SUMMARY

M/s. BHARAT RASAYAN LIMITED (UNIT-III) is a proposed new unit. It shall be large scale industrial unit located at Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India. It shall be Manufacturing of Agrochemical, Pesticide, Insecticide, Intermediate and Formulation.

The company is known for its international quality and a broad portfolio. Bharat Rasayan Limited (BRL) is a government recognized Star Export House. The company, with a dedicated team of scientists has more than 195 international registrations and has been exporting its products to more than 60 countries across the globe. BRL is a preferred supplier for several MNCs for their global demand of several molecules.

1.1. Justification of the Project

The plant is located in Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India. The project site is located near to 21°47'57.46"N latitude and 72°49'39.21"E longitude. Saykha is a Notified GIDC Industrial Estate therefore it is well developed w.r.t. industrial resources & infrastructure. The proposed project for manufacturing of various products is based on market survey.

1.2. Synopsis of Report

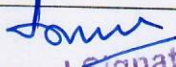
The pre-feasibility report includes a brief introduction of the company, need and justification of the project, manufacturing process description, required and available resources, proposed Environment Management Systems, land-use and proposed infrastructure, project schedule and cost estimate, and proposed Terms of reference for conducting the EIA studies. **M/s. BHARAT RASAYAN LIMITED (UNIT-III)** has engaged M/s. "Siddhi Green Excellence Pvt. Ltd., Ankleshwar" (NABET Accredited consultant by QCI) as their Environmental Consultant to conduct the EIA studies for obtaining Environmental Clearance (EC) for the proposed new project at Saykha.

Proposed new project at a glance is mentioned in following table:

Sr. No.	Description	Proposed New Project Details
1.	Name of Project & Address	M/s. BHARAT RASAYAN LIMITED (UNIT-III), Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India. PROPOSED NEW PROJECT
2.	Project Category	It falls under Project type 5(b) and Screening Category A of the EIA notification dated 14-09-2006
3.	Project capital cost	Rs. 310 Crores
4.	Products	As per Annexure – 3

For Bharat Rasayan Ltd.
Authorised Signatory

Sr. No.	Description	Proposed New Project Details
5.	Raw Materials	As per Annexure – 4
6.	Resource Requirement	
	Land	The unit has total area of 86019 m ² . Please refer Annexure – 12
	Water	Fresh water requirement: Domestic (150 KLD) + Industrial (2690 KLD) + Gardening (100 KLD) The entire water requirement shall be met through GIDC. Please refer Annexure – 6 for Water Balance.
	Electricity	Power Supplied by: Dakshin Gujarat Vij Co. Ltd. (DGVCL) Power requirement: Approx. 6000 KVA
	Backup power	4 Nos. D.G. set (2 Nos. 750 KVA of each & 2 Nos. 1500 KVA of each) shall be installed at site and used as emergency stand-by source of electricity in case of power supply failure.
	Fuel Consumption	Coal: 180 MT/Day, Natural gas OR HSD: 70000 SM ³ / day OR 80 KL/Day, HSD – For DG Set: 20 KL/Day
	Man power	Proposed Man Power : 700 Nos. Company Employees + 500 Nos. on Contract basis
7.	Source of Pollution	
	Waste Water Generation	Industrial wastewater generation: 1610 KLD Domestic wastewater generation: 90 KLD Please refer Annexure – 6 for Water balance
	Air Emission	Flue gas emission: PM, SO ₂ , NO _x Process gas emission: HCl, Cl ₂ , SO ₂ , NO _x , HBr, NH ₃ , PM, NaCN and VOC Please refer Annexure – 7
	Solid / Hazardous Waste Generation	Details of all waste category with quantity and their storage and disposal are given in Annexure – 8
8.	Mode of Treatment	
	Waste water	Effluent treatment facility: Sewage shall be treated in STP (100 KLD) & treated water shall be utilized either in Gardening / utilities purpose OR mixed with industrial effluent for further disposal. Industrial effluent shall be treated in proposed ETP consisting of Primary, Secondary & Tertiary treatment. Treated effluent from ETP shall be sent to u/g Drainage pipeline of Saykha GIDC connected to FPS into deep sea. Please refer Annexure - 6 & 9
	Air	Air Pollution Control Devices shall be provided to achieve GPCB norms. Please refer Annexure – 7
	Hazardous/ Solid municipal solid waste	Hazardous / Solid Waste / Municipal solid waste for Collection, storage and disposal to be carried out as per Hazardous and Other wastes (Management and Trans-boundary Movement) Rules, 2016. Please refer Annexure - 8
9.	Resource Recovery	
	Solvent	Approximately 95-98 % of solvent recovery shall be carried out and reused within plant.

For Bharat Rasayan Ltd

 Authorized Signatory

1.3. **Applicability of EIA Notification 2006**

M/s. BHARAT RASAYAN LIMITED (UNIT-III) is proposed new project located at Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India. It shall be Manufacturing of Agrochemical, Pesticide, Insecticide, Intermediate and Formulation. It falls under Project type 5(b) and Screening Category A (Industrial sector) of the EIA notification dated 14-09-2006 and therefore requires prior Environmental Clearance from the Ministry of Environment and Forest Climate Change, New Delhi.

2. INTRODUCTION OF THE PROJECT/ BACK GROUND INFORMATION

2.1. **Identification of project and project proponent**

Proposed New Project of M/s. BHARAT RASAYAN LIMITED (UNIT-III) is located at Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India.

Promoter Information:

M/s. BHARAT RASAYAN LIMITED (UNIT-III) is the venture of well known board of directors.

Mr. S. N. Gupta (Chairman and Managing Director):

Mr. Sat Narain Gupta, Founder Chairman and Managing Director of Bharat Rasayan Limited, has almost four decades of experience in the manufacture and distribution of pesticides. One of the pioneers of this industry in India, he launched his independent venture of formulating and manufacturing pesticides in the year 1977 as a proprietary concern and later converted it into a limited company named Bharat Insecticides in 1989.

Born in 1948, he holds a Bachelor of Commerce degree in Commerce and also has done post-graduation in Economics. Mr. Gupta is an expert in the arenas of International Business, Overall Marketing Strategy and Corporate Planning.

Key Personnel:

1. Mr. Ajay Gupta (Whole time Director):

“Ajay Kumar Gupta is the Director (Operations) of our Company for its units located at Saykha (Gujarat). He holds a bachelor's degree of Chemical Engineering from HBTI, Kanpur and Diploma in management. He is responsible for providing business direction to all verticals and leading all functions of Saykha Unit.

He has more than 35 years of experience in the Fertilizers, Pharma intermediate, Specialty Chemicals & Crop Protection industry. Prior to joining our Company, he has worked with Coromandel International Limited, DCM Shriram Industries Limited.

The detail of Directors name and address provided here in (Annexure-2).

2. Mr. Hasmukh R. Patel (Sr. DGM – Operation)

Vision:

- Our company creates results for our customers by being a sustainable and innovative world-class supplier of a broad range of quality crop protection products.
- Caring for employees, to work as a motivated team in an open and learning environment.
- Setting, challenging new standards of performance.
- We are determined to be one of the largest, the most preferred and ethical source of technical grade pesticides and their formulation across the globe.

Mission:

- Our company help improves quality of life for the world's population by supplying products that helps farmers increase yields and quality of crops to satisfy the global demand for food, feed fiber and energy.
- We remain dedicated to satiate our customers on all occasions by supplying quality products at prevailing competitive prices with no compromise on time line

For Bharat Rasayan Ltd.

Authorised Signatory

2.2. Brief description of nature of the project.

The Company proposes to set up new production facility at Saykha GIDC. Along with the production facilities, necessary support infrastructure like Wastewater treatment plant, Sewage treatment plant, Ware houses and other required Utilities will be put up to manufacture of Agrochemical, Pesticide, Insecticide, Intermediate and Formulation with cost effectiveness by considering good environment and culture.

Proposed Product List is as follows:

Sr. No.	Name of Product	CAS No.	Proposed Production Capacity (MT/Annum)	End Use	LD50 – Oral (Rat) mg/kg
1.	1,2,4 -Triazole	288-88-0	600	Intermediate of Tebuconazole (Fungicide)	1648
2.	2,4-D-Ethyl Ester	533-23-3	700	Weedicide	650 – 800
3.	2-[2-(4-Chlorophenyl)Ethyl]-2-(1,1-Dimethylethyl)-Oxirane	80443-63-6	600	Intermediate of Tebuconazole (Fungicide)	2500
4.	(2,6-Diisopropyl-4-Phenoxy) Phenylthiourea (DIPPT)	135252-10-7	900	Intermediate of Diafenthiuron (Insecticide)	>500
5.	2-Chloro-5-Chloromethyl Thiazole (CCMT)	105827-91-6	1500	Intermediate of Thiamethoxam (Insecticide)	>2000
6.	3-Methyl-4-Nitroiminoperhydro-1,3,5-oxiadiazine	153719-38-1	1500	Intermediate of Thiamethoxam (Insecticide)	>500
7.	4-Amino-6-(Tert-Butyl)-3-Mercapto-1,2,4-Triazin-5(4H) One	33509-43-2	600	Intermediate of Metribuzin (Herbicide)	1100
8.	5-amino-1-(2,6-Dichloro-4-Trifluoromethyl)-Phenyl-1H-Pyrazole-3-Carbonitrile	120068-79-3	600	Intermediate of Fipronil (Insecticide)	530
9.	5-Chloro-2,3-Difluoropyridine	89402-43-7	250	Intermediate of Clodinafop Propargyl (Herbicide)	342
10.	Aluminium Chloride	7446-07-0	2200	For Acetylation Reaction	3470
11.	4-acetyl-2-methylbenzoic acid (AMBA)	55860-35-0	50	Intermediate	>300 (Mouse)
12.	4-acetyl-2-methylbenzamide (AMBAD)	1095275-06-1	100	Intermediate	>300 (Mouse)
13.	Amitraz Technical	33089-61-1	60	Insecticide	400
14.	Atrazine	1912-24-9	900	Herbicide	2220
15.	Azoxystrobin Technical	131860-33-8	200	Fungicide	>2000
16.	Benzaldehyde	100-52-7	1800	Intermediate of m-Phenoxybenzaldehyde	1300
17.	Bifenthrin Alcohol	76350-90-8	500	Intermediate of Bifenthrin (Insecticide)	2219
18.	Bispyribac sodium salt	125401-92-5	300	Herbicide	2635
19.	Bromobenzene	108-86-1	700	Intermediate	2383
20.	Butachlor Technical	23184-66-9	1500	Herbicide	1740
21.	Carfentrazone-ethyl	128639-02-1	200	Herbicide	5143
22.	Cartap Hydrochloride	15263-52-2	500	Insecticide	250
23.	Cypermethric acid chloride (CMAC)	52314-67-7	2000	Intermediate	>600
24.	Isopropyl 5-chloro-4-Methyl-2-nitrobenzoate (CMNBP)	1204518-43-3	150	Intermediate	>500
25.	Cymoxanil Technical (98%)	57966-95-7	300	Fungicide	1100
26.	Chlorpyrifos-methyl Technical	5598-13-0	500	Insecticide	3000
27.	3',5'-Dichloro-2,2,2-trifluoroacetophenone (DCAP)	130336-16-2	100	Intermediate	>300 (Mouse)

For Bharat Rasayan Ltd.

Sr. No.	Name of Product	CAS No.	Proposed Production Capacity (MT/Annum)	End Use	LD50 – Oral (Rat) mg/kg
28.	3,6-dichloropyridazin-4-ol (DCHD)	2779-81-9	100	Intermediate	>200 (Fish)
29.	Deltamethrin Technical	52918-63-5	300	Insecticide	>5000
30.	[(R)-(+)-2-(4-Hydroxyphenoxy)-Propionic Acid] (D-HPPA)	94050-90-5	300	Intermediate of Clodinafop Propargyl (Herbicide)	2000
31.	Diafenthiuron Technical	80060-09-9	800	Insecticide	2068
32.	Difenoconazole Technical	119446-68-3	200	Fungicide	1453
33.	Ethephon Technical (75%)	16672-87-0	200	Herbicide	4229
34.	Fenoxaprop-P-ethyl	71283-80-2	200	Herbicide	3150 – 4000
35.	Fenpropathrin Technical (90% min)	64257-84-7	150	Insecticide	1000 (Skin & Eye)
36.	Fenpyroximate Technical	134098-61-6	25	Insecticide	245
37.	Fipronil Technical	120068-37-3	600	Insecticide	>2000 (Skin & Eye)
38.	Halosulfuron-methyl	100784-20-1	50	Herbicide	8866
39.	Hexaconazole Technical	79983-71-4	400	Fungicide	>2000 (Dermal)
40.	2-Hydroxy Propyloxymine Hydrochloride (HPOA HCl)	950595-72-9	100	Intermediate	>300 (Mouse)
41.	Imazethapyr Technical (97%)	81335-77-5	100	Herbicide	>5000
42.	Imibenconazole	86598-92-7	100	Fungicide	2800
43.	Imidacloprid Technical	138261-41-3	600	Insecticide	410
44.	Imiprothrin Technical	72963-72-5	15	Insecticide	2400
45.	Indoxacarb Technical	144171-61-9	100	Insecticide	268
46.	Isofetamid	875915-78-9	100	Fungicide	1302 – 6690
47.	Isoprothiolane Technical (96%)	50512-35-1	150	Fungicide	1190
48.	Lambda Cyhalothric Acid	72748-35-7	1200	Intermediate	980
49.	Lambda Cyhalothrin Technical	91465-08-6	1000	Insecticide	632 – 696 (Skin & Eye)
50.	M,N,O-1,2 dimethyl-N-nitrosourea	255708-80-8	600	Intermediate	>500
51.	Metalaxyl Technical (90%)	57837-19-1	300	Fungicide	566
52.	m-Phenoxybenzaldehyde	39515-51-0	2000	Intermediate	1222
53.	Novaluron Technical	116714-46-6	100	Insecticide	>5000
54.	Paclobutrazol	76738-62-0	100	Plant growth regulator	1300
55.	4-Chlorophenylacetic acid	1878-66-6	500	Intermediate (For Food and Bulk Drug)	1350
56.	Penoxsulam	219714-96-2	100	Herbicide	>5000
57.	Picoxystrobin Technical	117428-22-5	100	Fungicide	>5000
58.	Prallethrin Technical	23031-36-9	100	Insecticide	640
59.	Pretilachlor Technical	51218-49-6	600	Herbicide	2200
60.	Probenazole	27605-76-1	1000	Fungicide	2030
61.	Profenofos Technical	41198-08-7	400	Intermediate	358
62.	Propanil Technical	709-98-8	400	Herbicide	367
63.	Propargite Technical	2312-35-8	100	Insecticide	2800
64.	Propiconazole Technical	60207-90-1	300	Fungicide	1517
65.	Propineb Technical (80%)	12071-83-9	400	Fungicide	8500
66.	Propoxy Ethyl Chloride	42149-74-6	300	Intermediate	204
67.	Pymetrozine	123312-89-0	100	Insecticide	>5000
68.	Pyrazosulfuron-ethyl Technical (97%)	93697-74-6	50	Herbicide	>5000
69.	Pyriithiobac Sodium	123343-16-8	50	Herbicide	3300
70.	Quizalofop-p-ethyl	100646-51-3	200	Herbicide	1870

Sr. No.	Name of Product	CAS No.	Proposed Production Capacity (MT/Annum)	End Use	LD50 – Oral (Rat) mg/kg
71.	Spiromesifen Technical	283594-90-1	50	Insecticide	>2500
72.	Temephos Technical	3383-96-8	100	Insecticide	1000
73.	Thifluzamide	130000-40-7	200	Fungicide	>6500
74.	Thiodicarb Technical (94%)	59669-26-0	150	Insecticide	120
75.	Thiophanate-methyl	23564-05-8	200	Fungicide	6640
76.	Tolfenpyrad	129558-76-5	50	Insecticide	260 – 386
77.	Topramezone	210631-68-8	50	Herbicide	>2000
78.	Transfluthrin Technical	118712-89-3	200	Insecticide	>5000
79.	Tricyclazole Technical	41814-78-2	300	Fungicide	250
80.	Trifluoromethanesulfinyl chloride	20621-29-8	300	Intermediate of Fipronil (Insecticide)	250
81.	Zeta Cypermehrin	52315-07-8	500	Insecticide	>5000
82.	Zineb	12122-67-7	200	Fungicide	1850 – 8900
83.	Pilot Products #	--	100	--	--
Total			36300	--	--
Formulation Products					
1.	Pesticide Formulation (Solid)	--	6000	--	--
2.	Pesticide Formulation (Liquid)	--	6000	--	--

Pilot products shall be carried out for the betterment of proposed products (Sr. No.1 to 82) only. Hence, Total pollution load from Pilot products shall be disposed to common incinerator.

2.3. Need for the project and its importance to the country and or region

The proposed new project is necessitated because of the following reasons:

- To make the facility more resource efficient.
- Reduce operational costs and increase productivity.
- Development of the infrastructure of the facility.

Its importance to the country can be accounted by

- Add to foreign exchange generated by Exports.
- Ensure continued employment to workforce without affecting work conditions and hence supporting their families.
- Lead to generation of direct and indirect employment opportunities.
- Reduce dependence on Imports hence reducing Forex risks.

2.4. Demand-Supply Gap

The gap between demand and availability of Agrochemical, Pesticide, Insecticide, Intermediate and Formulation is likely to increase over the years. The growing demand and supply gap would require increasing emphasis to be given to the exploration and production sector. This calls for such projects which can help in bridging the gap.

2.5. Imports vs. Indigenous production

The products are all of good export value. Hence unit will be able to cater to domestic market and also export whatever possible

2.6. Export Possibility

The products have demand in international market also.

2.7. Domestic / Export Markets

The products have good demand of about 70% in local/ national markets and 30% in international market

For Bharat Rasayan Ltd.

 Authorised Signatory

2.8. Employment Generation (Direct and Indirect) due to the project

The project will give direct employment to local people based on qualification and requirement. In addition to direct employment, indirect employment shall generate ancillary business to some extent for the local population. In operation phase, the proposed project would require significant work force of non-technical and technical persons.

3. PROJECT DESCRIPTION

3.1. Type of project including interlinked and interdependent projects, if any

It is an Independent project.

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

M/s. BHARAT RASAYAN LIMITED (UNIT-III) is proposed new unit, located at Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India.

Latitude: 21°47'57.46"N

Longitude: 72°49'39.21"E

Elevation: ~ 7 - 10 m

- The unit has total area of 86019 sq.m. land area. Unit will commit to develop green belt @ 33%.
- Unit shall develop Green belt (~27964 sq.m) amounting to ~33% of the total plot area.
- The proposed project site is located within Saykha GIDC Industrial Estate, hence there is no agricultural or forest land involved in the project site.
- The estate is located at sufficient distance from reserved forests and sanctuaries, archeological sites and historical sites to ensure that there is no impact of industrial activities.

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

No alternative site study will be carried out as proposed new project will be located in a well-developed Industrial Area (GIDC). Following infrastructure is already available to the unit:

- Site is very well connected by road.
- Availability of sufficient land free form cultivation.
- Availability of power evacuation facilities
- Availability of water facilities from GIDC.
- Easy availability of raw materials.
- Transportation cost will be cheap.
- Availability of liquid terminals and possibility of solid cargo in future.
- All infrastructure facilities will be available.

For Bharat Rasayan Ltd.
[Signature]
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Sr. No.	Description	Name & Distance
1	Nearest Highway	SH 161 – 5.22 km to 62.89°NEE
		SH 6 – 9.75 km to 184.54°S
2	Nearest Railway Station	Vagra Railway Station – 5.83 km to 17.53°NNE
3	Nearest Airport/ Airbase	Surat (Domestic) – 75.67 km to 186.62°S
		Vadodara (International) – 71.43 km to 34.02°NE
4	Nearest Town/City	Bharuch City – 18.53 km to 121.93°SEE
5	Nearest settlement	Saykha Village – 1.59 Km to 240.83°SWW

3.4. Size or magnitude of operation

M/s. BHARAT RASAYAN LIMITED (UNIT-III) is a large scale industry. Proposed project capital investment will be Rs. 310 Crores. Proposed production capacity shall be 36300 MT/Annum & 12000 MT/Annum (Formulation Products) for Manufacturing of Agrochemical, Pesticide, Insecticide, Intermediate and Formulation.

3.5. Project description with process details

Detailed manufacturing processes are attached as an Annexure - 5. The manufacturing processes for the proposed products are detailed step-wise with material balance.

3.6. Raw material required along with estimated quantity, Likely source, marketing area of final product/s, Mode of transport of raw material and Finished product

The raw materials required for the proposed products will be either imported or procured from domestic market and transported conveniently by road, sea, by rail & air.

Detailed raw material list with quantity in MT/ Month is provided as Annexure – 4.

3.7. Resource optimization/ recycling and reuse envisaged in the project, if any, should be briefly outline

M/s. BHARAT RASAYAN LIMITED (UNIT-III) shall be developed system for 95 - 98% solvent recovery for proposed new project. The unit will try for possible waste conversion in to valuable products/ by-Product. More effective scrubber shall be provided for maintaining the emission in limits. Proponents commit that they shall optimize resources and recycling/ reuse is envisaged in the project at the time of commissioning.

3.8. Availability of water & its sources, Energy power requirement

- **Water:** Water shall be supplied from GIDC.
Fresh water requirement: 2940 KLD
- **Power:** Power shall be supplied by DGVCL.
Power requirement: Approx. 6000 KVA
- **Backup Power:** 4 Nos. D.G. set (2 Nos. 750 KVA of each & 2 Nos. 1500 KVA of each) shall be installed at site and used as emergency stand-by source of electricity in case of power supply failure.
- **Fuel consumption for proposed unit:** Coal (180 MT/Day), Natural gas OR HSD (70000 SM³/ day OR 80 KL/Day) & HSD (For DG Set) (20 KL/Day)

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

3.9.1. Wastewater Generation, Treatment and Disposal

- Refer Annexure 6 for water break-up & Annexure - 9 for ETP & STP details.

• **Effluent treatment facility:**

Sewage shall be treated in STP (100 KLD) & treated water shall be utilized either in Gardening / utilities purpose OR mixed with industrial effluent for further disposal.

Industrial effluent shall be treated in proposed ETP consisting of Primary, Secondary & Tertiary treatment. Treated effluent from ETP shall be sent to u/g Drainage pipeline of Saykha GIDC connected to Final Pumping Station into deep sea.

3.9.2. Air pollution and Control Measures

- Details of proposed flue gas stack and process stacks, nature of emitted pollutants and system provide for air pollution control is mentioned in Annexure - 7

3.9.3. Flue gas Emission

- Natural gas OR HSD, Coal, HSD (for DG Set) shall be used as fuel for production
- The flue gas parameters shall remain within permissible limits. The stack will be provided with sampling point and access ladder.
- Please refer Annexure – 7 for details.

3.9.4. Process Emissions

- There shall be process gas emission of HCl, Cl₂, SO₂, NO_x, HBr, NH₃, PM, NaCN and VOC from proposed production activity.

3.9.5. Solid/ Hazardous wastes

- Details of all waste category with quantity and their storage and disposal are given in Annexure – 8

For Bharat Rasayan Ltd.



Authorized Signatory

3.9.6. Environmental Monitoring Plan:

The unit shall be established EHS cell and shall be prepared an Environmental Monitoring plan for carrying out the following activities:

- To follow the trend of parameters those have been identified as critical.
- To comply with the conditions of consent order of GPCB.
- To check / assess / maintain the efficiency of controlling measures.

Monitoring of certain parameters shall be done by appointing external recognized/ approved agencies. The monitoring of environmental parameters shall be carried out from time to time and the reports of all the monitoring / analysis / assessment studies shall be well-documented.

3.10. Schematic representations of the feasibility drawing which give information of EIA purpose
It will be submitted later up on the requirement.

4. SITE ANALYSIS

4.1. Connectivity

Proposed new project is located in Saykha GIDC Industrial Estate. It is connected with road, rail and air transport. Transportation of Raw materials, finished products & personnel during the construction and operation phase shall be done by means of existing transportation facility.

- Nearest towns / cities : Bharuch City – 18.53 km to 121.93°SEE
- Transport by road : SH 161 – 5.22 km to 62.89°NEE
SH 6 – 9.75 km to 184.54°S
- Transport by Rail : Vagra Railway Station – 5.83 km to 17.53°NNE
- Transport by Air : Surat (Domestic) – 75.67 km to 186.62°S
Vadodara (International) – 71.43 km to 34.02°NE

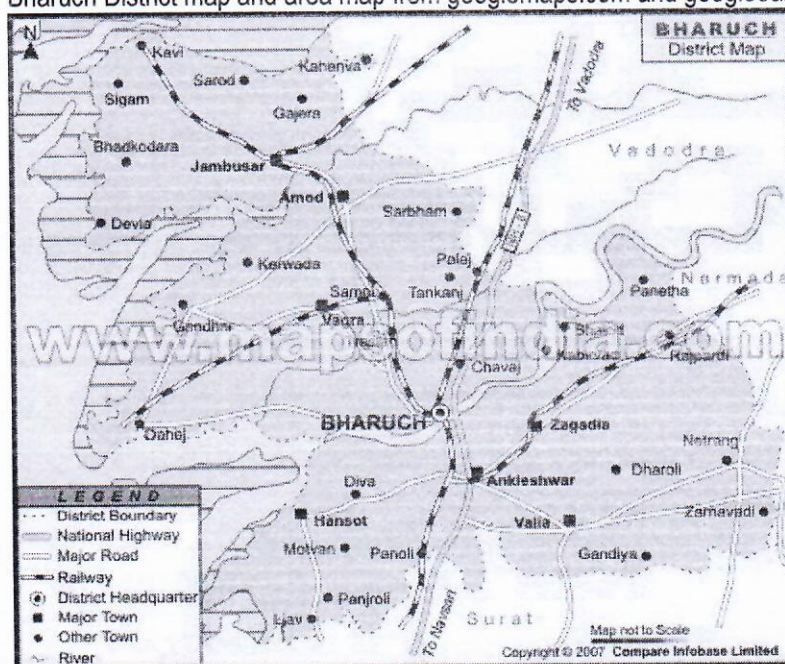
4.2. Land form, Land use and land ownership

Project land is acquired from Saykha GIDC; land possession document is attached herewith as Annexure - 12. Proposed project site is in Saykha GIDC Industrial Estate and adjacent to many industries, thus land use pattern is non-agricultural and declared for the industrial activities by town planner. Proposed break-up of land is as per Annexure-1.

4.3. Topography (along with map)

The following are the main features of this estate, which make it suitable for industrial activities of all types.

- The entire estate area (Saykha) is located at sufficient height from sea level and assessed for suitability with respect to topographical and geological requirement for industrial activities.
- Bharuch District map and area map from googlemaps.com and googleearth.com are as under:



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Google Earth Image



4.4. Existing land use pattern, nearby water bodies, forest, eco sensitive zones, CRZ.etc.

Sr. No.	Particulars	Details
1.	Town	Saykha
2.	Taluka	Vagra
3.	District	Bharuch
4.	Latitude	21°47'57.46"N
5.	Longitude	72°49'39.21"E
6.	Nearest water bodies	Bhukhi River – 4.20 km to 186.76°S
7.	Nearest Highway	SH 161 – 5.22 km to 62.89°NEE SH 6 – 9.75 km to 184.54°S
8.	Nearest Railway station	Vagra Railway Station – 5.83 km to 17.53°NNE
9.	Nearest Airport/ Airbase	Surat (Domestic) – 75.67 km to 186.62°S Vadodara (International) – 71.43 km to 34.02°NE
10.	Nearest town/city	Bharuch City – 18.53 km to 121.93°SEE
11.	Nearest Settlement	Saykha Village – 1.59 Km to 240.83°SWW

- Proposed land is allotted for industrial use by GIDC, Saykha
- No eco sensitive zone.
- The project is not covered under CRZ.
- The estate is located at sufficient distance from reserved forest, sanctuaries, archeological sites and historical sites to ensure that there is no impact of industrial activities.

4.5. Existing infrastructure

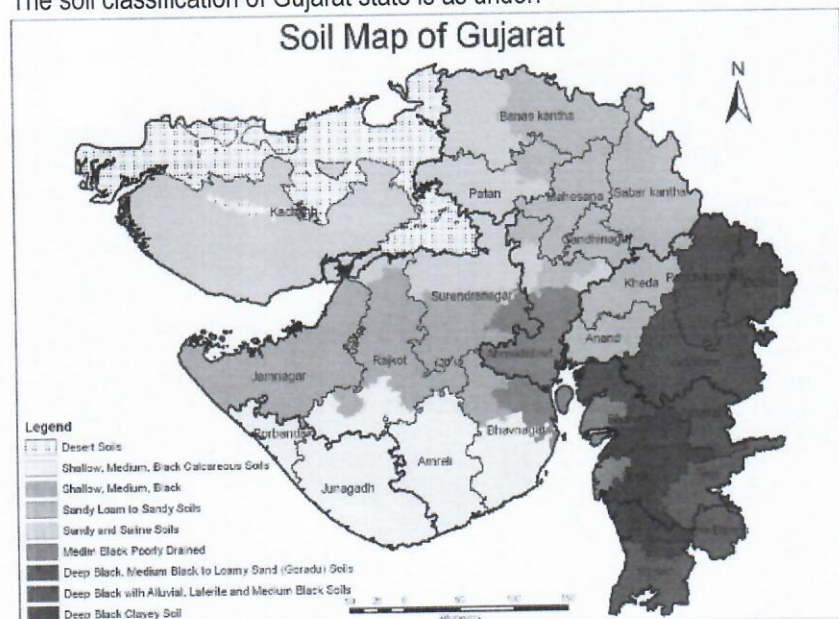
- This is proposed new project; hence there is no infrastructure available at the site.
- Open plot is acquired from Saykha GIDC.
- Proposed new project site is located in Saykha GIDC Industrial Estate, where land is already developed for Industrial purpose.
- Key infrastructure such as hospitals, schools, bank, fire station, disaster management center, places of worship and social/ community facilities such as park, playground etc. education, health care, community development, income distribution and social welfare are available in nearby area of the proposed site.

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4.6. Soil classification

The soil classification of Gujarat state is as under:



Source Based on data provided by Department of Agriculture, Gujarat

- The quality of Bharuch district area soil had been identified as deep black coastal alluvial type.
- Proposed new project site is located in Saykha GIDC industrial Area (GIDC), where land is already developed for industrial purpose. Quality of soil is not considerably fertile for agriculture activities and no evidence of any influence of soil contaminant has been noticed.

4.7. Climate data from secondary sources

Month 2017	Temp in °C		Relative humidity in %				Wind speed in kmph				Total Rainfall in mm	Rainy days
	Min.	Max.	07:39 hrs		14:39 hrs		07:39 hrs		14:39 hrs			
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
Jan	10.00	35.40	53.00	88.00	23.00	46.00	0.00	9.10	2.00	34.00	0.00	0
Feb	13.00	39.00	40.00	81.00	13.00	48.00	0.07	9.02	2.00	36.00	0.00	0
Mar	15.00	43.00	46.00	91.00	13.00	35.00	0.41	7.73	2.00	36.00	0.00	0
Apr	20.00	43.40	47.00	92.00	11.00	43.00	1.22	17.90	5.00	34.00	0.00	0
May	25.00	44.20	61.00	88.00	18.00	52.00	1.09	19.26	16.00	32.00	0.00	0
Jun	21.40	39.40	67.00	92.00	40.00	92.00	3.15	14.95	18.00	32.00	95.40	8
Jul	22.40	35.00	71.00	100.00	52.00	97.00	1.30	17.20	9.00	27.00	166.00	17
Aug	23.00	34.00	73.00	97.00	46.00	92.00	1.71	11.52	18.00	32.00	170.30	12
Sept	22.00	36.80	78.00	92.00	48.00	80.00	0.00	7.83	2.00	34.00	53.00	6
Oct	18.60	38.00	47.00	95.00	19.00	76.00	0.09	6.47	5.00	36.00	30.50	3
Nov	16.00	36.20	53.00	79.00	17.00	45.00	0.01	5.23	5.00	36.00	0.00	0
Dec	13.00	33.40	53.00	94.00	24.00	96.00	0.23	11.32	5.00	36.00	5.20	1

(Source: Indian Meteorological Department, Regional Cotton Research Center, Bharuch Station-2017)

4.8. Social infrastructure available

- Educational facilities in project area are quite good because all nearby villages have primary schools.
- The town has private dispensaries and hospitals in all major branches of medicines and surgery.
- All small villages have postal and telephone connection facilities.
- Electricity for all purpose (industrial and residential) is available.
- All small villages are connected with pucca roads.

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5. PLANNING BRIEF

5.1. *Planning concept (Type of industries, facilities, transportation etc)*

M/s. BHARAT RASAYAN LIMITED (UNIT-III) shall be large scale industry. It is located at Plot No. DP 53-55, Saykha GIDC Industrial Estate, Taluka: Vagra, Saykha – 392 140, Dist. - Bharuch, Gujarat, India. It proposes to install a new unit to meet the market demands.

5.2. *Population projection*

Proposed Man Power: 700 nos. Company Employees + 500 nos. on Contract basis
Locally employed manpower shall be utilized.

5.3. *Land use planning; break up along with green belt etc.*

Proposed break-up of land is as per Annexure -1.

5.4. *Assessment of infrastructure demand (physical & social)*

Well developed Infrastructure is already available since project site is located inside Saykha GIDC Industrial estate.

5.5. *Amenities/Facilities*

The amenities/ facilities of project area are explained as earlier.

6. PROPOSED INFRASTRUCTURE

6.1. *Industrial area (processing area)*

Site plan is attached as Annexure - 1.

6.2. *Non processing area*

Ware house & storage area will be constructed as per the requirement of proposed product storage.

6.3. *Greenbelt*

Unit propose to develop Green belt (~27964 sq.m) amounting to ~33% of the total plot area.

6.4. *Social infrastructure*

The project shall be large scale and the total investment for the project will be approximately Rs. 310 Crores. The project proponent is planning towards the social and economic development of small villages around Saykha GIDC Industrial estate.

6.5. *Connectivity (Transportation)*

The proposed project site is located inside Saykha GIDC industrial estate. The existing connectivity is convenient for future also.

6.6. *Drinking water management (Source and supply)*

The source of drinking water shall be GIDC water supply.

6.7. *Sewage system*


There will be 90 KLD domestic effluent generation. Sewage shall be treated in STP (100 KLD) & treated water shall be utilized either in Gardening / utilities purpose OR mixed with industrial effluent for further disposal.

6.8. *Industrial waste management*

Industrial wastewater generation from the proposed new project will be 1610 KLD. Industrial effluent shall be treated in proposed ETP consisting of Primary, Secondary & Tertiary treatment. Treated effluent from ETP shall be sent to u/g Drainage pipeline of Saykha GIDC connected to Final Pumping Station into deep sea. Water balance detail & ETP detail is annexed as Annexure 6 & 9 respectively.

6.9. *Solid waste management*

The unit will propose for the membership of TSDF Site & Incineration site.

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Detail of Solid / Hazardous waste management is annexed as Annexure - 8.

6.10. Power requirement and supply source

Electricity power is supplied from DGVCL.

Power requirement: Approx. 6000 KVA

Backup Power: 4 Nos. D.G. set (2 Nos. 750 KVA of each & 2 Nos. 1500 KVA of each) shall be installed at site and used as emergency stand-by source of electricity in case of power supply failure.

7. REHABILITATION AND RESETTLEMENT (R & R) Plan

7.1. Policy to be adopted (central/ state) in respect of the project affected persons including home outeers, land outeers and landless laborers (a brief outline to be given)

Proposed project activities will be carried out at Saykha GIDC Industrial estate, which is developed for industrial purpose and there is no population or local inhabitant at the proposed project site. Thus Rehabilitation & Resettlement (R&R) Plan is not applicable to propose project.

8. PROJECT SCHEDULE & COST ESTIMATION

8.1. Likely date of start of construction and likely date of completion (Time schedule)

The proposed project will be started after getting Environmental clearance from MoEF&CC. Project proponent is expected to start construction activity after obtaining EC from MoEF&CC. Likely completion time is considered approximately two years of project construction / commission.

8.2. Estimated project cost along with analysis in terms of economic viability of the project

The estimated approx. capital cost of the project shall be Rs. 310 Crores & details as follows:

Group	Particulars	Nos./Capacity	Cost Rs (In Lac)
Land	86019 m ²	1 No.	2000
Civil	4 Plants building civil and structural work	Lump sum	3600
	Pre-operative expenses	Lump sum	400
Process Plant	Reactors	160 Nos.	4800
	Condenser	400 Nos.	1600
	Hydrogenated reactor	2 Nos.	110
	Centrifuge (CF)	8 Nos.	320
	Agitator nutch cum dryer	10 Nos.	450
	Spin flash dryer	2 Nos.	140
	Spray Dryer	1 No	200
	Tanks (2 KL to 50 KL)	320 Nos.	1920
	Process pumps	400 Nos.	200
	Ejectors	80 Nos.	800
	Columns	40 Nos.	800
	Valve and Instruments	Lump Sum	1200
Utilities	Brine (up to - 30°C)	100 TR x 4 Nos.	160
	Boiler (For Water and Oil)	18 MTH x 3 Nos.	900
	D.G set	1500 KVA x 2 Nos.	140
		750 KVA x 2 Nos.	80
	Thermic Fluid Heater	4 Lakh Kcal/hr x 4 Nos.	60
	Chilling plant	220 TR x 6 Nos.	360
	Cooling tower	800 TR x 12 Nos.	120
	Nitrogen plant	150 NM ³ X 5 Nos.	150
Air compressor	110 CFM X 5 Nos.	100	
Storage Tanks	Water Storage Tank	3000 KL x 2 Nos.	400
	Raw material storage tank	30 KL x 30 Nos.	300
Environment	Effluent treatment plant (ETP)	400 KL* 2 Nos.	360
	MEE Plant	200 KL*3 Nos.	900

Group	Particulars	Nos./Capacity	Cost Rs (In Lac)
	Agitator thin film Evaporator (ATFD)	30 m ² *3 Nos.	300
	Sewage Treatment Plant (STP)	100 KLD	150
	Green Belt Development	Lump sum	100
	Air Pollution Control Measure (APCM)	20 Nos.	400
	Hazardous storage facilities	Lump sum	60
Other	Piping	Lump sum	2000
	Installation	Lump sum	1000
	Electrical installation	Lump sum	1200
	Misc expenses:- Ware house, Office furniture & fixtures requirement	Lump sum	402
	Total		28182
	Contingencies (10%)		2818
	Grand Total		31000

9. ANALYSIS OF PROPOSAL

9.1. *Financial and social benefits with special emphasis on the benefit to the local people including tribal population any in the area:*

- From the proposed project, there shall be increase to foreign exchange generated by Exports.
- Reduce dependence on Imports hence reducing forex risks.
- There shall be direct or indirectly increase in employment generation for the local people hence supporting their families.
- Company shall contribute for community welfare of the local connected area.
- The proposed project shall not have any adverse environmental impacts because adequate protection measures will be provided to achieve permissible norms of GPCB.

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