



# Shubhlaxmi Pigments

Mfg. & Export of Phthlocynine Pigments

Plot NO. 502, G.I.D.C. PANOLI - 394 116. Ta. Ankleshwar, Dist. Bharuch (INDIA)

Phone : +91-2646-272506, 272856, Mob. : +91-98240 88655

E-mail : dhirajbhayani@rediffmail.com Web. :

Ref. No. :

Date : Date: 26-11-2019

To,  
The Member Secretary,  
Expert Appraisal Committee (Industrial Projects -2)  
Indira Paryavaran Bhavan,  
Ministry of Environment, Forests and Climate Change,  
3<sup>rd</sup> Floor, Vayu Wing  
Jorbagh road, New Delhi - 110 003.

Kind Attention: Dr. R. B. Lal

**Subject:** Submission of EIA report and other relevant documents to obtain Environment Clearance for expansion of existing Synthetic Organic Chemicals manufacturing unit named M/s. Shubhlaxmi Pigments, located at Plot No. 502, GIDC Estate, Panoli, Ta.: Ankleshwar, Dist.: Bharuch, Gujarat.

**Category:** A-5(f) unit located in critically polluted area (Panoli - GIDC)

**Ref.:**

1. EIA Notification of MoEF dated 14<sup>th</sup> September, 2006.
2. Project is located critically polluted area (GIDC-Panoli) as per HON'BLE NGT Order O.A. No. 1038/2018 dated 10/07/2019 & O.A No. 1038/2018 dated 23/08/2019.
3. Letter No. CPCB/IPC-VII/CEPI/NGT/2019 dated 25/10/2019 of CPCB
4. Office Memorandum- Compliance of Hon'ble NGT order dated 19.08.2019 (published on 23.08.2019) in O.A. No. 1038 2018 - reg. Date:31/10/2019

Respected Sir,

This has reference to the above subject matter, we are submitting herewith EIA to obtain Environment Clearance for proposed Synthetic Organic Chemical unit at Plot No. Plot No. 502, GIDC Estate, Panoli, Ta.: Ankleshwar, Dist.: Bharuch, Gujarat by M/s. Shubhlaxmi Pigments. (Industrial Sector project-Category-A-5(f))

We will follow below given conditions mentioned in Office Memorandum- Compliance of Hon'ble NGT order dated 19.08.2019 (published on 23.08.2019) in O.A. No. 1038 2018 - reg. Date:31/10/2019

❖ For Air-

- We will use Natural Gas & Agro waste/Briquette as a fuel (cleaner fuel) to control stack emission level.
- We will done our material transportation by rail/ conveyor belt, wherever feasible.
- We will develop 40 % Greenbelt area (In plant premises & At outside of plant premises).
- We will develop roads with sufficient load carrying capacity in plant premises. Details are given in plant layout.



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Date :

- ❖ For Water-
  - We will try to maximum rain water harvesting. Detail plan for rain water harvesting will be provide in EIA report.
  
- ❖ For Land-
  - 40% Greenbelt area will be develop inside and outside of plant premises.
  
- ❖ Other Conditions-
  - Monitoring of compliance of EC conditions will be submit with third party audit every year.
  - Unit will contribute CER 2 times the slabs given in the OM dated 01.05.2018 in of Environmental Clearance.

We hope you would find the same in order and request you to do needful for further process and oblige.

Thanking you,

For M/s. Shubhlaxmi Pigments

Authorized Signatory

**Acceptance Letter for EC**

**F.No.- J-11011/790/2008-IA II (I)**

Ministry of Environment, Forests and Climate Change

Government of India

**Indira Paryavaran Bhawan**

Jor Bagh Road, Jor Bagh

New Delhi-110003

Dated: 04 Feb 2020

To,  
SHUBHLAXMI PIGMENTS,

Gujarat , 394114

Subject : M/s. Shubhlaxmi Pigments

Sir,

This has reference to your proposal No. IA/GJ/IND2/131023/2008 dated 24 Sep 2008 regarding grant of Environmental/CRZ Clearance for the above mentioned proposal.

2.0 This is to acknowledge that the soft copies of EIA/EMP/other reports along with the proceedings of Public Hearing have been received in the Ministry. You are requested to submit a hard copy (signed) of the documents in the Ministry(at the address given below) within a week, along with email alert generated by the system(through speed post).

**Address:**

Section Officer, 3rd floor, Vayu wing, Indira Paryawaran Bhawan, Jor Bagh Road, Jor Bagh, New Delhi-110003


3.0 The proposal shall be included in the agenda for its consideration by the respective EAC for grant of EC/CRZ Clearance after receipt of the hard copy along with email alert. The hard copy of the same can also be submitted by hand in the Ministry in between 3PM to 4PM on each working day. You are requested to visit portal of the Ministry at <http://environmentclearance.nic.in> to check its inclusion in the agenda. Once the proposal is included in agenda for a meeting, you may circulate hard copies of documents to the Chairman and Members of EAC within a week of uploading of agenda on Ministry's portal.

4.0 This should be clearly mentioned that EIA/EMP reports have been prepared by the accredited consultants along with his accreditation Number.

Yours Sincerely

Member Secretary

**Form-2****APPLICATION FOR PRIOR ENVIRONMENTAL CLEARANCE**

S. No.	Item	Details		
1.	Whether it is a violation case and application is being submitted under Notification No. S.O.804(E) dated 14.03.2017 ? <b>Details of Project:</b> (a)Name of the project(s) (b)Name of the Company / Organisation (c)Registered Address (d)Legal Status of the Company (e)Joint Venture	No M/s. Shubhlaxmi Pigments SHUBHLAXMI PIGMENTS Plot No-502 , GIDC ESTATE PANOLI-394114 Private No		
2.	<b>Address for the correspondence:</b> (a)Name of the Applicant (b)Designation (Owner/ Partner/ CEO) (c)Address (d)Pin code (e)E-mail (f)STD Code. (g)Fax No. (h)Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency .	Dhiraj Bhayani Partner Plot No.502,GIDC, Industrial Estate Panoli- 394114,,Anklesvar,Bharuch,Gujarat-394114 394114 dhirajbhayani7@gmail.com 265(f)Telephone No.  <a href="#">Annexure-Uploaded Copy of documents in support of the competence/authority</a> 2386937		
3.	<b>Category of the Project/Activity as per Schedule of EIA Notification,2006:</b> (a)Project/Activity (b)Category (c)Proposal Number (d)Master Proposal Number(Single Window) (e)EAC concerned (for category A Projects only) (f)Project Type	<b>5(f) Synthetic organic chemicals industry (dyes &amp; dye intermediates; bulk A</b> <b>IA/GJ/IND2/131023/2008</b> <b>SW/131015/2019</b> <b>Industrial Projects - 2</b> <b>Expansion</b>		
4.	<b>Location of the Project:</b> (a)Plot/Survey/Khasra No. (b)Pincode (c)Bounded Latitudes (North) (d)Bounded Longitudes (East) (e)Survey of India Topo Sheet No. (f)Uploaded Topo Sheet File (g)Maximum Elevation Above Means Sea Level(AMSL) (h)Uploaded (kml) File (i)Distance of Nearest HFL from the project boundary within the study area (j)Seismic Zone	502 393002 FROM 21 To 21 FROM 72 To 72 F43M14 <a href="#">Copy of Topo Sheet File</a> 22 <a href="#">Copy of Kml File</a>  3 3		
5.	(a)Number of States in which Project will be Executed (b)Main State of the project	1 Gujarat		
<b>Details of State(s) of the project</b>				
S. No.	State Name	District Name	Tehsil Name	Village Name
(1.)	Gujarat	Bharuch	Anklesvar	Panoli
6.	<b>Details of Terms of Reference (ToR)/EC:</b> (a)MoEF&CC / SEIAA File Number (b)Date of Apply of TOR (c)Date of Issue of TOR / Standard ToR (d)Date of Apply of EC (e)Date of Issue of EC (f)Previous TOR Letter (g)Previous EC Letter	J-11011/790/2008-IA II (I) 24 Sep 2008 09 Feb 2009 24 Sep 2008 09 Feb 2009 <a href="#">Copy of Previous TOR letter</a> <a href="#">Copy of Previous EC letter</a>		
7.	<b>Details of Public Consultation:</b> (a)Whether the Project Exempted from Public Hearing? (b)Reason (c)Supporting Document	Yes Unit is located GIDC Industrial Estate. <a href="#">Copy of Supporting Document</a>		
8.	<b>Details of Project Configuration/Product:</b>	<b>Details Not Applicable</b>		
9.	<b>In case of Expansion / Modernisation / One Time Capacity Expansion (only for Coal Mining) / Expansion under Clause 7(ii) /</b>			

<b>Modernisation under Clause 7(ii) / Change of Product Mix under Clause 7(ii):</b> <b>(a)Details of certified report on compliance of earlier environmental clearance condition</b> (i)Certified Compliance By   Regional (ii)Details of Regional Office of MoEFCC / Zonal Office of CPCB / SPCB / UTPCC from which certified report on   Bhopal (iii)Letter No.   SIA/GJ/IND2/35472/2019 (iv)Status of Compliance   Compiled (v)Certified report on compliance of earlier environmental clearance conditions (Including Monitoring Report)   <a href="#">Copy of Certified Compliance Report</a> (vi)Date of site visit   Jul 1 2014 12:00AM <b>(b)Details of Capacity Expansion</b>											
S. No.	Product/Activity (Capacity/Area)	Quantity From	Quantity To	Total	Unit	Other Unit	Mode of Transport / Transmission of Product	Other Mode of Transport / Transmission of Product			
(1.)	Phthalocyanine Alpha Blue	5.0	25	30	Others	MT/Month	Road				
(2.)	Phthalocyanine Beta Blue	10	50	60	Others	MT/Month	Road				
<b>(c)Details of Configuration</b>											
S. No.	Plant / Equipment / Facility	Existing Configuration	Proposed Configuration	Final configuration after expansion	Remarks						
(1.)	SFD	0	200 KG/Hour	200 KG/Hour	1 Nos						
(2.)	Air Compressor	7 HP (1 Nos)	15 HP (1 Nos)	15 HP & 7 HP	2 Nos						
(3.)	Filter Press	36*36/48*48 (3 Nos)	48*48 (1 Nos)	48*48 & 36*36	4 Nos						
(4.)	Open Vessel	10 KL (2 Nos)	18 KL (Nos)	18 KL & 10 KL	3 Nos						
(5.)	Tray Dryer	0	450 Tray	450 Tray	1 Nos						
(6.)	Ball Mill	3 KL (1 Nos)	5 KL (2 Nos)	5 KL & 3 KL	3 Nos						
(7.)	Receiver	4 KL (2 Nos)	0	4 KL	2 Nos						
(8.)	Blender	0	3 KL	3 KL	1 Nos.						
(9.)	Reactor	5 KL (2 Nos)	10 KL (1 Nos)	5 KL & 10 KL	3 Nos						
<b>Details of Consent to Operate</b>											
9.1.	(i)Whether Consent to operate obtained ?	NA									
	(ii)Copies of all Consent to operate obtained since inception	NA									
	(iii)Date of Issue	14 Oct 2019									
	(iv)Valid Upto	15 Sep 2024									
	(v)File No.	GPCB/ANK/CCA-BRCH-286/ID-15712/									
	(vi)Application No.	AWH - 104589									
	(vii)Copy of Consent to operate valid as on date	<a href="#">Copy of Consent to Operate</a>									
<b>Project Cost:</b>											
10.	(a)Total Cost of the Project at current price level (in Crores)	1.107									
	(b) Funds Allocated for Environment Management (Capital) (in Crores)	0.25									
	(c) Funds Allocated Towards CER (Corporate Environment Responsibility) (in Crores)	0.0221									
	(d) Funds Allocated for Environment Management Plan (EMP) (Recurring per Annum) (in Crores)	0.479									
<b>Whether project attracts the General Condition specified in the Schedule of EIA Notification ?</b>											
11.	a)Critically polluted areas as notified by the Central Pollution Control Board(CPCB) from time to time	Yes									
<b>Whether project attract the Specific Condition specified in the Schedule of EIA Notification ?</b>											
12.		No									
<b>Raw Material / Fuel Requirement:</b>											
13.	(a)Proposed quantity of raw material/fuel	3565.68									
	(b)Existing quantity of raw material/fuel	713.16									
	(c)Total quantity of raw material/fuel	4278.84									
<b>13.1. Raw Material / Fuel Profile</b>											
S. No.	Raw Material / Fuel	Quantity	Unit	Other Unit	Source (incase of Import. please specify country and Name of the port from which	Mode of Transport	Other Mode of Transport	Distance of Source from Project Site (in Kilometres) (In case of import, distance from the port from which the	Type of Linkage	Other Type of Linkage	Uploaded Copy of Linkage

					Raw Material / Fuel is received )			raw material / fuel is received )			
(1.)	Sulfuric Acid (98%)	2970	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>
(2.)	IBA/Xylene	36.36	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>
(3.)	Hydrochloric Acid	29.04	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>
(4.)	Globular Salt	72.72	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>
(5.)	Copper Phthalocyanine	1098	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>
(6.)	Rosin Solution	29.04	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>
(7.)	Octoic Acid	12.24	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>
(8.)	Caustic flake	21.84	Tons per Annum		Local	Road		12	Open Market		<a href="#">Copy of Linkage</a>

<b>Baseline Data :</b>	
14. (a) Period of Base Line Data Collection	FROM 01 Mar 2018 To 31 May 2018
(b) Season	Winter

14.1. **No. of ambient Air Quality (AAQ) monitoring locations : 8**

S. No.	Criteria Pollutants	Other Criteria Pollutants	Unit	Maximum Value	Minimum Value	98 Percentile Value	Prescribed Standard
(1.)	SO2		Micro Gram per Meter Cube	40	22	33.4	64
(2.)	NOx		Micro Gram per Meter Cube	48	32	46.8	64
(3.)	PM10		Micro Gram per Meter Cube	90	61	89	80
(4.)	PM2.5		Micro Gram per Meter Cube	46	30	43	48

14.2. **No. of Ground Water monitoring locations : 8**

S. No.	Criteria Pollutants	Other Criteria Pollutants	Heavy Metal	Unit	Other Unit	Maximum Value	Minimum Value	Desirable Limit	Maximum Permissible Limit
(1.)	Heavy Metals		Iron	mg/l		0.34	0.01	0.3	1
(2.)	TSS			mg/l		0	0	0	0
(3.)	Total Hardness			mg/l		672	146	200	600
(4.)	TDS			mg/l		2142	405	500	2000
(5.)	Fluoride			mg/l		0.70	0.01	1	1.5
(6.)	Chlorides			mg/l		310	70	250	1000
(7.)	pH			NA		8.5	7.02	8.5	8.5

14.3. **No. of Surface Water monitoring locations : 8**

S. No.	Criteria Pollutants	Other Criteria Pollutants	Unit	Other Unit	Maximum Value	Minimum Value	Classification of inland water body
(1.)	pH		NA		8.1	7.05	C
(2.)	BOD		mg/l		14	0	C
(3.)	DO		mg/l		6.7	3.4	C
(4.)	COD		mg/l		24	3	C
(5.)	Others	TDS	mg/l		915	423	C

14.4. **No. of Ambient Noise monitoring locations : 8**

S. No.	Parameter	Unit	Maximum Value	Minimum Value	Prescribed Standard
(1.)	Leq(Night)	A-weighted decibels(dB(A))	45	35	75
(2.)	Leq(Day)	A-weighted decibels(dB(A))	62	55	70

14.5. **No. of Soil Sample Monitored locations : 8**

S. No.	Parameter	Unit	Other Unit	Maximum Value	Minimum Value
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(1.)	pH			7.93	7.1
(2.)	N(Nitrogen)	Milliequivalents per 100 Gram		12.5	12.0
(3.)	Electric Conductivity	Millisiemens per Centimetre		1.50	1.22
(4.)	K(Potassium)	Milliequivalents per 100 Gram		1.5	1.2
(5.)	P(Phosphorus)	Milliequivalents per 100 Gram		15	14.5

<b>Details of Ground Water Table:</b>					
14.6.	(a)Range of Water Table Pre-Monsoon Season (Meters Below Ground Level (m bgl))		From 0 To 0		
	(b)Range of Water Table Post-Monsoon Season (Meters Below Ground Level (m bgl))		From 0 To 0		
	(c)Whether Ground Water Intersection will be there ?		NA		

15. **Details of Water Requirement (During Operation)**

S. No.	Source	Source Other	Required Quantity	Distance from Source	Copy of Permission from Competent Authority	Mode of Transport	Other Mode of Transport	Method of Water Withdrawal	Other Method of Water Withdrawal	Letter No.	Date of Issue	Permitted Quantity
(1.)	Others	Notified Area Office, GIDC Panoli	53.2	0.5	<a href="#">Copy of Permission Letter</a>	Pipeline		Others	GIDC Water Supply	NAO/PNL/107	06 Jul 2019	55

15.1.	(a)Whether Desalination is proposed	No
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16. **Waste Water Management(During Operation)**

S. No.	Type/Source	Quantity of Waste Water Generated (Kilolitre per Day)	Treatment Capacity (Kilolitre per Day)	Treatment Method	Mode of Disposal	Other Mode of Disposal	Quantity of Treated Water Used in Recycling/Reuse (Kilolitre per Day)	Quantity of Discharged Water (Kilolitre per Day)
(1.)	Industrial	63.3	60	Primary	Others	Discharge into PETL	34.8	28.5

16.1.	(a)Total Waste Water Generation		63.3
	(b)Total Discharged Water		28.5
	(c)Total Reused Water		34.8

17. **Solid Waste Generation/Management**

S. No.	Name of Waste	Item	Other Item	Quantity per Annum	Unit	Distance from Site(KM)	Mode of Transport	Other Mode of Transport	Mode of Disposal	Other Mode of Disposal
(1.)	ETP Waste	Hazardous Waste (as per Hazardous and Other Waste Management rules 2016)		60	Tons	10	Road		Treatment, Storage and Disposal Facility(TSDF)	
(2.)	Used Oil	Hazardous Waste (as per Hazardous and Other Waste Management rules 2016)		0.5	Kilolitre	0	Road		Others	Collection,Storage & Reuse within the premises.
(3.)	Discarded Drums/Containers	Hazardous Waste (as per Hazardous and Other Waste Management rules 2016)		3.3	Tons	0	Road		Others	Collection,Storage,Decontamination & Reuse
(4.)	Discarded Bag/Liners	Hazardous Waste (as per Hazardous and Other Waste Management rules 2016)		5	Tons	0	Others	Reuse in premises	Others	Collection,Storage,Decontamination & Reuse
(5.)	Recoverable Solvent	Hazardous Waste (as per Hazardous and Other Waste Management rules 2016)		1055	Tons	0	Others	Reuse Internally	Others	Collection, Storage, Recover & Reuse Internally

		Management rules 2016)						
18.								
18.1.	<b>Air Quality Impact Prediction</b>							
S. No.	Criteria Pollutants	Other Criteria Pollutants	Unit	Baseline Concentration	Distance GLC	Incremental Concentration	Total GLC	Prescribed Standard
(1.)	PM10		Microgram per Meter Cube	89	1	3.11	92.12	100
(2.)	PM2.5		Microgram per Meter Cube	43	1	3.11	46.12	60
(3.)	SO2		Microgram per Meter Cube	33.4	1	3.67	40.6	80
(4.)	NOx		Microgram per Meter Cube	46.8	1	1.85	48.70	80
18.2.	<b>Stack Details</b>							
S. No.	Source	Fuel	Stack Height(m)	Stack Diameter(m)	Pollutants	Other Pollutants	Emission (GLS)	
(1.)	Hot Air Generator for Tray Dryer (50000 Kcal/Hr.)	Agro Waste /Briquette	22	0.38	Others	PM,SO2,NOX	150,100,50	
(2.)	D.G.SET	Diesel	11	0.38	Others	PM,SO2,NOX	150,100,50	
(3.)	Boiler (600 kg/Hr.)	Agro waste /Briquette	22	0.35	Others	PM , SO2, NOX	150,100,50	
(4.)	Hot Air Generator For SFD (200000 Kcal/Hr.)	Natural Gas	11	0.38	Others	PM, SO2,NOX	150,100,50	
19.	<b>Power Requirement:</b> (a)Quantity (Kilo Volt Amps (kVA))   303.06 (b)Source   DGVCL (c)Uploaded Copy of Agreement   Not Applicable (d)Standby Arrangement (Details of DG Sets)   50 kva (e)Stack Height (in m)   11							
20.	<b>Land Ownership Pattern:</b> (a)Forest Land   0 (b)Private Land   0 (c)Government Land   0.1575 (d)Revenue Land   0 (e)Other Land   0 <b>Total Land   0.1575</b>							
21.	<b>Present Land Use Breakup of the Study Area in Ha:</b> (a)Agriculture Area   4743.53 (b)Waste/Barren Land   5097.08 (c)Grazing/ Community Land   0 (d)Surface Water Bodies   1418.57 (e)Settlements   0 (f)Industrial   4562.30 (g)Forest   0 (h)Mangroves   0 (i)Marine Area   0 (j)Others : 15661.18   0 <b>Total   15821.48</b>							
22.	<b>Land requirement for various activities</b>							
S. No.	Description of Activity / Facility / Plant / Others	Others	Land Requirement		Remarks			
(1.)	Green belt		0.05					
(2.)	Main Plant		0.05		Existing & Proposed plant			
(3.)	Others	Etp,Utility, SFD, BLENDER,OPEN PLOT Etc	0.05					
	<b>Total</b>		0.15					
23.	<b>Ecological and Environmental Sensitivity (Within 10 Km):- WLS-Wild Life Species; NPA-Notified Protected Area; ESAs-Eco Sensitive Areas; ESZs-Eco Sensitive Zones :</b>							
23.1.	<b>Details of Ecological Sensitivity :</b>							
S. No.	Details of Ecological Sensitivity	Name	Distance from the Project (Km)		Remarks			
(1.)	WLS	--	0		Not Applicable			

(2.)	NPA	--	0	Not Applicable
(3.)	ESAs	--	0	Not Applicable
(4.)	Corridors	--	0	Not Applicable
(5.)	Wildlife Corridors	--	0	Not Applicable
(6.)	Critically Polluted Area	--	0	Not Applicable
(7.)	ESZs	--	0	Not Applicable

23.2. **Details of Environmental Sensitivity :**

S. No.	Details of Environmental Sensitivity	Other Details of Environmental Sensitivity	Name	Distance from the Project (Km)	Remarks
(1.)	Forest		--	0	Not Applicable
(2.)	Archaeological Sites		--	0	Not Applicable
(3.)	Defence Installations		--	0	Not Applicable
(4.)	Others	No	--	0	Not Applicable

23.3.	(a)Whether Noc / Permission from the competent authority is required? (i)Uploaded Noc / Permission from the competent authority (b)Whether NBWL recommendation is required?	Yes <a href="#">Copy of Noc / Permission from the competent authority.</a> No			
24.	<b>Forest Land:</b> Whether any Forest Land involved?	No			
25.	<b>Tree Cutting:</b> (a)No. of Trees Cut for the Project (if Forest Land not Involved) (b)Details of Tree Cutting and Planting of Trees	Not Applicable Not Applicable			
26.	<b>Land Acquisition Status:</b> (a)Acquired Land(Ha) (b)Land yet to be acquired(Ha) (c)Status of Land acquisition if not acquired	0.15 0.15 Already acquired by GIDC Panoli			
27.	<b>Rehabilitation and Resettlement (R&amp;R):</b> (a)No. of Villages (b)No. of Households (c)No. of PDFs (Project Displaced Families) (d)No. of PAFs (Project Affected Families) (e)Funds Allocated for R&R(in INR) (in Lacs) (f)Status of R&R	0 0 0 0 0 Completed			
28.	<b>Details of Presence of Schedule-I Species:</b> (a)Whether there is Presence of Schedule-I Species ? (b)Whether conservation plan for Schedule-I Species has been prepared ? (c)Whether conservation plan for Schedule-I Species has been approved by competent authority ?	No No No			
29.	<b>Details of Presence of Water Bodies in Core Area:</b> (a)Whether there is Presence of Water Bodies in Core Area ? (b)Whether there is Diversion Required ? (c)Whether permission has been obtained from competent authority ?	No No No			
30.	<b>Details of Presence of Water Bodies in Buffer Area:</b> (a)Whether there is Presence of Water Bodies in Buffer Area ?	No			
31.	<b>Manpower Requirement:</b> (a)Permanent Employment-During Construction (b)Permanent Employment-During Operation (c)Temporary Employment- During Construction (d)Temporary Employment- During Operation (e)No. of working days (f)Total Manpower	0 25 0 5 0 30			
32.	<b>Green Belt in Ha:</b> (a)Uploaded Green Belt plan	<a href="#">Copy of Green Belt Plan</a>			

S. No.	Description	Existing	Proposed	Total
(1.)	Total Area of Green Belt	523	0	523
(2.)	Percentage of Total Project Area	33	0	33
(3.)	No. of Plants	50	450	500
(4.)	Funds Allocated	100000	400000	500000

33.	<b>Project Benefits</b>	
<b>S. No.</b>	<b>Type of Project Benefits</b>	<b>Details of Project Benefits</b>
(1.)	Environmental	Unit will generate employment.

**34. CRZ Specific Details : Not Applicable****35. Sector Specific Details : NOT APPLICABLE****35. Sector Specific Details For Industrial Projects - 2**

S. No.	Item	Details
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**Additional Detail Sought:** NIL ,w ,**3**.NIL

S. No.	Item	Details
36.	<b>Details of Court Cases:</b> (a)Whether there is any Court Cases pending against the project and/or land in which the project is proposed to be set up ?	No
37.	<b>Details of Direction Issued under Environment (Protection) Act / Air (Prevention &amp; Control of Pollution) Act / Water (Prevention &amp; Control of Pollution) Act:</b> (a)Whether any Direction issued under EPA Act/Air Act/Water Act ?	No
38.	<b>Details of EIA Consultant:</b> (a)Have you hired Consultant for preparing document? (i)Accreditation No. (ii)Name of the EIA Consultant (iii)Address (iv)Mobile No. (v)Landline No. (vi)Email Id (vii)Category of Accreditation (viii)Sector of Accreditation (ix)Validity of Accreditation (x)Uploaded Certificate of Accreditation certified by QCI/NABET	Yes 000 Jyoti Om Chemical Research Centre Pvt Ltd K1 7705/2,3,4, GIDC , Ankleshwer 9804150383 0264622029 info@jyotiom.com A Industrial Projects - 2 18 Mar 2020 <a href="#">Copy of Certificate of Accreditation</a>
39.	<b>Documents to be Attached:</b> (a)Uploaded Copy of EIA/EMP Report (b)Uploaded Copy of Risk Assessment Report (c)Uploaded Copy of Feasibility Report/ Detailed Project Report(DPR) /Detailed Engineering Report /Detailed Conceptual Plan /Approved Mining Plan (d)Uploaded Copy of Final Layout Plan (e)Uploaded Cover Letter (f)Uploaded Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency (g)Uploaded Additional File	<a href="#">Copy of EIA/EMP</a> <a href="#">Copy of EIA/EMP(Annexures)</a> <a href="#">Copy of EIA/EMP(Plans/Figures)</a> <a href="#">Copy of Risk Assessment</a> <a href="#">Copy of Feasibility Report/ Detailed Project Report(DPR) /Detailed Engineering Report /Detailed Conceptual Plan /Approved Mining Plan</a> <a href="#">Copy of Final Layout Plan</a> <a href="#">Copy of Cover Letter</a> <a href="#">Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency</a> <a href="#">Copy of Additional File</a>

**Undertaking**

**I hereby give undertaking that the data and information given in the application and enclosures are true to be best of my knowledge and belief. And I am aware that if any part of the data and information 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. In addition to above, I hereby give undertaking that no activity/ construction/ expansion has since been taken up.**

<b>Name of Applicant</b>	Dhiraj Bhayani
<b>Designation</b>	Partner
<b>Name of Company (Applicant Name should not be given here)</b>	SHUBHLAXMI PIGMENTS
<b>Address</b>	Plot No-502 , GIDC ESTATE PANOLI

**ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**OF**

**SHUBHLAXMI PIGMENTS**

**FOR**

**MANUFACTURING OF**

**Synthetic Organic Chemicals**

**EXPANSION PROJECT**

**Plot No.:502,  
GIDC Industrial Estate, Panoli  
Taluka: Ankleshwar-394114  
DIST: BHARUCH**

**PREPARED BY**



**M/s. JYOTI OM CHEMICAL RESEARCH  
CENTRE PRIVATE LIMITED**

**Shed No. K-1, 7705/2,3,4 GIDC ESTATE,  
Ankleshwar-393002**

**Phone: (02646)220293; Fax:(02646)239454**

**Website:www.jyotiom.com**

**Email:[info@jyotiom.com](mailto:info@jyotiom.com)**

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## **ABBREVIATIONS**

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<b>AAQM</b>	Ambient Air Quality Monitoring
<b>APCM</b>	Air Pollution Control Measures
<b>API</b>	Active Pharmaceutical Ingredient
<b>AMSL</b>	Above Mean Sea Level
<b>BEIL</b>	Bharuch Environ Technology Limited
<b>BGL</b>	Below Ground Level
<b>BOD</b>	Biological Oxygen Demand
<b>CETP</b>	Common Effluent Treatment Plant
<b>CGWA</b>	Central Ground Water Authority
<b>CGWB</b>	Central Ground Water Board
<b>CH BASE</b>	Chlorohexadine Base
<b>CH &amp; S</b>	Community Health & Safety
<b>CO</b>	Carbon Monooxide
<b>COD</b>	Chemical Oxygen Demand
<b>CPCB</b>	Central Pollution Control Board
<b>CSR</b>	Corporate Social Responsibility
<b>CTE</b>	Consent to Establish

<b>CTO</b>	Consent to Operate
<b>Db</b>	Decibels
<b>DCM/MDC</b>	Dichloro Methane/Methylene Dichloride
<b>DCP</b>	Dry Carbon Powder
<b>DEM</b>	Dimethyl ether
<b>DFO</b>	Deputy Forest Officer
<b>DG</b>	Diesel Generator
<b>DGVCL</b>	Dakshin Gujarat Vij Company Limited
<b>DMP</b>	Disaster Management Plan
<b>DMS</b>	Dimethyl Sulfide
<b>DO</b>	Dissolve Oxygen
<b>EHS</b>	Environmental Health and Safety
<b>EIA</b>	Environmental Impact Assessment
<b>EMP</b>	Environmental Management Plan
<b>EOT</b>	Electric Overhead Travel
<b>EPA</b>	Environmental protection Act
<b>ESP</b>	Exchangeable Sodium Percentage
<b>ETP</b>	Effluent Treatment Plant
<b>ETL</b>	Enviro Technology limited
<b>FAE</b>	Functional Area Expert
<b>FETP</b>	Final Effluent Treatment Plant
<b>GIDC</b>	Gujarat Industrial Development Corporation
<b>GLC</b>	Ground Level Concentration
<b>GPS</b>	Global Positioning System
<b>Ha</b>	Hectare
<b>HAZOP</b>	Hazard and Operability Study
<b>HBr</b>	Hydrobromic Acid
<b>HC</b>	Hydrocarbon
<b>HCl</b>	Hydrochloric acid
<b>HDPE</b>	High Density Polyethylene
<b>HP</b>	Horse Power
<b>HSD</b>	High Speed Diesel
<b>H<sub>2</sub>S</b>	Hydrogen sulfide
<b>H<sub>2</sub>SO<sub>4</sub></b>	Sulphuric Acid
<b>IMD</b>	Indian Meteorological Department
<b>IPA</b>	Isopropyl alcohol
<b>IPE</b>	Isopropyl Ether
<b>INR</b>	Indian Rupees
<b>ISCST-3</b>	Industrial Source Complex Short Term-3
<b>KG</b>	Kilo Gram
<b>KLD</b>	Kilo Liter per Day
<b>KVA</b>	Kilo Volt Ampere

<b>kW</b>	Kilowatt
<b>MCLS</b>	Maximum Credible Loss Scenarios
<b>MEE</b>	Multiple Effect Evaporator
<b>MIBK</b>	Methyl Isobutyl Ketone
<b>MoEF</b>	Ministry of Environment and Forest& Climate Change
<b>MoU</b>	Memorandum of Undertaking
<b>MS</b>	Mild Steel
<b>MSI HC</b>	Manufacture, Storage and Import of Hazardous Chemical
<b>MSDS</b>	Material Safety Data Sheet
<b>MSW</b>	Municipal Solid Waste
<b>MT</b>	Metric Tone
<b>NA</b>	Not Applicable
<b>NABET</b>	National Accreditation Board of Education and Training
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NH</b>	National Highway
<b>NOC</b>	No Objection Certificate
<b>NO<sub>x</sub></b>	Nitrogen Oxides
<b>ODPA</b>	4,4"-Oxydiphthalic acid
<b>OHS</b>	Occupational Health& Safety
<b>OSHAS</b>	Occupation Health and Safety Assessment Series
<b>PCU</b>	Passenger Car Unit
<b>PEL</b>	Permissible Exposure Level
<b>PESO</b>	Petroleum and Explosives Safety Organization
<b>PHC</b>	Public Health Center
<b>PM</b>	Particulate Matter
<b>PP</b>	Project Proponent
<b>PPE</b>	Personal Protective Equipments
<b>PPMV</b>	Parts per Million by Volume
<b>PUCC</b>	Pollution Under Control Certificate
<b>QCI</b>	Quality Council of India
<b>R&amp;R</b>	Resettlement & Rehabilitation
<b>RCC</b>	Reinforced Cement Concrete
<b>RO</b>	Reverse Osmosis
<b>SEAC</b>	State Expert Appraisal Committee
<b>SEIAA</b>	State Environment Impact Assessment Authority
<b>SS</b>	Stainless Steel
<b>STP</b>	Sewage Treatment Plant
<b>SH</b>	State Highway
<b>SO<sub>2</sub></b>	Sulfur Dioxide
<b>TBA</b>	Tertiary Butanol
<b>TDS</b>	Total Dissolved Solids
<b>TEBA</b>	Benzyltriethylammonium chloride

<b>TOC</b>	Total Organic Compound
<b>ToR</b>	Terms of Reference
<b>TPD</b>	Tone Per Day
<b>TSDF</b>	Transportation Storage and Disposal Facility
<b>TSS</b>	Total Suspended Solid
<b>USEPA</b>	United States Environment Protection Agency
<b>VECs</b>	Valued Environmental Components
<b>VOC</b>	Volatile Organic Compound
<b>ZLD</b>	Zero Liquid Discharge

# TOR Compliance

## ADDITIONAL TOR

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/1061/2019 dated: - 17<sup>th</sup> July 2019</b>		
1	Details with respect to justification for proposed expansion (1) To address proportionate availability of space for production plant.(2) To address proportionate availability of storage area for raw materials finished goods, utilities considering fire safety norms & PESO standards and goods carrier movement within premises.(3)To address proportionate captive/common infrastructure available to accommodate additional load due to proposed expansion.(4) Environment impact and its mitigation measures for common/Captive infrastructure due to proposed expansion.(4) Environment impact and its mitigation measure for common/captive infrastructure due to proposed production.	<ol style="list-style-type: none"> <li>1. Details are given in Chapter 2, Topic No. 2.2.1 from page No. 13.</li> <li>2. Details are given in Chapter 2, Topic No. 2.2.1 from page No. 13.</li> <li>3. Not Applicable</li> <li>4. Not Applicable</li> </ol> <p style="text-align: center;">Plant Layout attached as Annexure-II.</p>
2	Compliance of MoEFCC's OM dated 01/05/2018 regarding "Corporate Environment Responsibility" (CER). Fund allocation for Corporate Environment Responsibilities (CER) shall be made as per MoEFCC's O.M No.22-65/2017-IA.III date 01/05/2018 for various activities therein. The detail of fund allocation and activities for CER shall be incorporated in EIA/EMP report.	Detail is cover under Chapter No. 9, Table 9.1, Page No. 176
3	Explore the use of renewable energy to the maximum extent possible. Details of provisions to make the project energy efficient through energy efficient devices and adoption of modes of alternative eco-friendly sources of energy like solar water heater, solar lightning etc. Measures Proposed for energy conservation.	Unit will try to use renewable energy sources. Though unit will install steps toward Energy conservation, details are given in Chapter 4, Topic No.:4.4.3, Page No.:118
4	Quantitative and qualitative analysis of hazardous waste streams generation from the manufacturing process (Product wise). Explore the possibility to reuse such waste within premises as raw materials for other products or to convert it into valuable Products instead of selling outside. Sound management of such waste streams as per the HW waste rules 2016 as amended time to time. Feasibility report for utilization shall be incorporated in EIA report.	Details are given in Chapter No.2, Topic No.:2.6.3.3, Page No.: 40
5	PP shall furnish status of all the applicable rules, acts, regulation, clearance in a tabular form.	Details are given in Chapter No.1, Topic No. 1.4, Page No.5

6	Leak detection and repairing program (LDAR) for all the volatile organic solvent proposed for use in-house with detailed chemical properties including vapor pressure. LDAR shall endeavor prevention of losses of solvents to the best Minimum extent.	Details given in Chapter No.7, Topic No.:7.5.7 Page No.157
7	Safety precautions including flame proof fittings to be taken to avoid fire hazard during unloading, storage transportation, handling and processing of solvents.	Details are given in Chapter No.7, Topic No.7.5.1, Page No.:152

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/10612/2019 dated: - 17<sup>th</sup> July 2019</b>		
<b>STANDARD TOR</b>		
Sr. No.	Terms of Reference	Compliance
1.	A tabular chart with index for point-wise compliance of above mentioned TORs.	Compliance is given at starting of EIA report as Terms of reference and its compliance.
2.	Executive Summary of the project-s giving a prima facie idea of the proposal, use of the resources, justification, etc. In addition, it should provide a compilation of EIA report, including EMP and the Post-project monitoring plan in brief.	It is cover under whole Chapter No.11, from page No.192
3.	Justification for selecting the proposed product and unit size.	Justification for selecting the proposed product and unit size covered under chapter 2, Topic 2.2 page no. 13
4.	Land requirement for the project including its break up for various purposes, its availability and Optimization.	Cover chapter 2, Point No.:2.5, from page No.22
5.	Land possession documents. Copy of NA order showing permission to use the project land for industrial purpose. If located in GIDC, copy of plot holding certificate obtained from GIDC Authority.	GIDC plot allotment letter is attached as an Annexure-IV, Page No. 219
6.	Location of the project site and nearest habitats with distances from the project site to be Demarcated on a top sheet (1: 50000 scale).	Toposheet is attached as an Annexure-III, Page No.218
7.	Topography details of the project area.	Not applicable as project located in GIDC Panoli.
8.	Geological features and geo-hydrological status of the study area.	Not applicable as project located in GIDC Panoli.
9.	In case of project located outside notified area: Legal Undertaking stating that unit is complying the three conditions [i.e. water consumption less than 25 M <sup>3</sup> /day; Fuel consumption less than 25 TPD; and not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989] as per the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014.	Unit will be established in GIDC Panoli. So it is not applicable
10.	Present land use pattern of the study area shall be Given based on satellite imagery.	Details are covered under chapter-3, Topic No. 3.7, from page No.74
11.	Layout plan of the factory premises clearly demarcating various units within the plant. Provision of separate entry & exit and adequate margin all-round the periphery for unobstructed easy movement of the emergency vehicle / fire tenders without reversing back. Mark the same in the plant layout.	Plant layout marking the same is attached as an Annexure-II, page No.217.

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
12.	Technical details of the plant/s along with details on best available technologies (BAT), proposed Technology and reasons for selecting the same.	Details are cover chapter-2, Topic No.: 2.4, from page no. 17
13.	Product spectrum (Proposed products along with production Capacity) and processes.	Details of spectrum is given in chapter-1, table no.1.1 and pageno.2. Manufacturing process of the same in coverunder chapter - 2, point no. 2.4.1 and page no.18
14.	Chemical name of each proposed product to be manufactured. Details on end use of each product.(Provide CAS number of all the products & raw materials. In case of Dyes, CI number).	Details of spectrum is given in chapter-1, table no.1.1 and page no.2. CAS no. of raw mater is given in chapter-2, table no.2.1, page no. 14
15.	Details on raw materials, source and storage within the premises.	Details are covered in chapter-2, point no.2.3 and page no.14
16.	Details of complete manufacturing process / operations of each product along with chemical reactions, process flow diagram describing each unit processes and unit operations along with material balance, consumption of rawmaterials etc.	Manufacturing process of the same in coverunder chapter -2, point no. 2.4.2 and page no.14
17.	Details on strategy for the implementation of cleaner production activities.	Details are covered in Chapter-4 Under topic 4.4 and its sub topic 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, Page No. 118 & 119 and in Chapter-10 under topic no. 10.5.1 on page no. 186
18.	Assessment of source of the water supply with adequacy of the same to meet with therequirementsfortheproject.Permissionobtained From the concern authority for supply of raw water.	GIDC will be supplying freshwater and letter from GIDC confirming the supply of fresh water in its plot allotment letter. Given as an Annexure-IV, Page No. 219
19.	Undertaking stating that no bore well shall be dug within the premises (If project is located within the Industrial estate).	Undertaking stating no borewell to be dug is attached as an Annexure-XIII, page no.247.
20.	Details on water balance including quantity of effluent generated, recycled & reused. Details of methods to be adopted for the water conservation.	Water balance diagram is given in Chapter-2 under figure no. 2.1 on page no. 24. Details are covered in Chapter-10 under topic no. 10.5.2 on page no. 187.
21.	Efforts to minimize effluent discharge and to maintain quality of receiving water body.	Unit will reuse water in its one of product, Pthlocyanine Alpha Blue. Also install primary ETP. After achieving prescribed norms of PCTL then it will be discharge, Detail effluent treatment scheme with characteristics of treated quality of Effluent is given in Chapter No.2, Topic No. 2.6.1.1, Page No. 29.
22.	Explore the possibilities for Zero Liquid Discharge (ZLD)	Zero Liquid Discharge (ZLD) not Economically viable for industry. Details are given on Chapter No. 2, Topic No. 2.6.1.3, Page No. 32.

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
23.	Segregation of waste streams, characterization and quality with specific treatment and disposal of each stream including action plan for maximum recycle of treated waste water and minimum discharge for Effluent.	Details of segregation are covered in Chapter No.2, Topic No. 2.6.1.1, Page No.28
24.	Capacity of ETP in KL/day. Details of ETP including dimensions of each unit along with schematic flow diagram. Inlet, transitional and treated effluent qualities with specific efficiency of each treatment unit in reduction in respect of all concerned/regulated environmental parameters. Inlet effluent quality should be based on worst case scenario considering production of most polluting products that can be manufactured in the plant concurrently.	Details are under cover Chapter No.2, Topic No. 2.6.1.1, Page No.29.
25.	<p>In case of discharge into GIDC drainage / pipeline.</p> <p>I. Copy of permission letter with quantity (KLD) from the concern authority of drainage network / pipeline with confirmation for spare capacity available to take additional effluent.</p> <p>II. Characteristic of the combined effluent and treated water to be sent to Common pipeline with reference to the MoEFCC/CPCB/GPCB discharge norms.</p> <p>II. Provision from continuous monitoring system for waste water discharge.</p>	PETL membership copy is attached as an Annexure-VII, page no.226
26.	<p>In case of waste water sent to Common Facilities (CF) like CETP, MEE, Spray Dryer etc.</p> <p>a. Details of Common facilities including (1) Total capacity of the CF (2) Copy of CC&amp;A of the CF. (3) Actual load at present (Qualitative and Quantitative – KL per day) (4) Booked quantity &amp; Spare capacity of CF (5) Copies of XGN generated Inspection reports with analysis reports of the water/Air/Hazardous samples collected by GPCB (Last 2 year). Copies of instructions issued by GPCB in last 2 year and point wise compliance thereof. (6) Copies of Show- cause notices, closure notices etc. served by the GPCB and its compliance (6) Recommendations and suggestions of the last two Environment Audit reports of CETP and its compliance report. (7) Common Facility Up gradation scheme, if any.</p> <p>b. Status of compliance to the 18(1) (b) direction issued by the CPCB with respect to CETP Compliance &amp; CEPI area action plan along with relevant supportive document.</p> <p>c. Give status of compliance of Environmental norms of existing Common Infrastructure i.e.</p>	<p>Unit will install in-house ETP, after achieving PETL outlet norms and then after discharge to PETL pipeline only.</p> <p>Discharge norms of PETL is given in Table No.:2.16, Page No.:29</p> <p>PETL Detail is attached as Annexure- VII.</p>

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
	<p>CETP, MEE &amp; Spray Dryer (Whichever is applicable) in which you are amember.</p> <p>d. Submit adequacy of Common Infrastructure i.e. CETP, MEE &amp; Spray Dryer for additional load (Whichever is applicable) along with written confirmation/membership certificate mentioning the same (Total consentedquantity, e. totalquantitybookedsofar,quantitybookedfor the unit, spare quantityavailable).</p>	
27.	<p>In case of Zero Liquid Discharge (ZLD) :</p> <p>I. Action plan for 'Zero' discharge of effluent shall be included. Notarized undertaking for assuring that underground drainage connection will not be taken in the unit. And there shall be effluent discharge outside of the plantpremises.</p> <p>II. Economical and technical viability of the effluent treatment system to achieve Zero Liquid Discharge(ZLD).</p> <p>II. Certification of adequacy of proposed ZLD scheme through credible institutes of National repute.</p> <p>V. To estimate &amp; monitor ground water quality &amp; its contamination status, piezometer wells, one on up gradient of the groundwater flow and other three on the down gradient side of the ground water flow of the proposed project at different depth based on available ground water depthshallbeestablishedandalltheparameters mentioned in IS 10:500 for potable water standard shall bemonitored.</p>	Not Applicable.
28.	<p>In case of in-house MEE/Spray drier for waste water treatment: Capacity of MEE/Spray drier in KL/hr. Technical details of MEE including evaporation capacity, steam required for evaporation, adequacy of the proposed boiler to supply steam for evaporation in addition to the steam required for the process etc. Techno-economic viability of the evaporation system. Control measures proposed for the evaporation system in order to avoid/reduce gaseous emission/VOC from evaporation of industrial effluent containing solvents &amp; other chemicals.</p>	Not Applicable.
29.	<p>Technical details of ATFD/Crystallizer/Dryer, RO/NF system etc. (If any).</p>	Not Applicable.
30.	<p>Details for treatability and feasibility of waste water to be disposed of by means of spray dryer and its impact on environment and human health.</p>	Not Applicable

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
31.	Undertaking stating that a separate electric meter will be provided for the waste water treatment system viz.ETP, RO, MEE, Spray dryer etc. (Whichever is applicable)	Undertaking is attached as an Annexure-XIII, page no. 247
32.	Economical and technical viability of the effluent treatment system.	Economical and technical viability is covered in Chapter-2 under topic no. 2.6.1.2 on page no. 31
33.	Plans for management, collection and disposal of waste streams to be generated from spillage, leakages, vessel washing, used container washing etc. Measures proposed for preventing effluent Discharge during unforeseen circumstances.	Details are covered in Chapter-2 under topic no. 2.6.3.2 on page no.38.  Details are covered in Chapter-2 under topic no. 2.6 on page no.27.
34.	Action plan for reuse of liquid waste streams like Spent acids, Poly Aluminum Chloride etc. within premises to convert into valuable products instead of sending outside to actual end-users.	Unit is/will sell its spent acid to those units who are having permission of rule-9 or who have applied under rule-9.
35.	AdequacyoftheproposedEMSwithrespecttothe pollutionloadenvisagedintermsofAir,Waterand Hazardous waste.	Adequacy of EMS is covered in Chapter-2 under topic no. 2.13 on page no.47.
36.	One season Site-specific micro-meteorological data using temperature, relative humidity, hourly Wind speed and direction and rainfall should be incorporated.	Details covered in Chapter-3 under topic no. 3.2 From page no. 51.
37.	Anticipated environmental impacts due to the proposed project/production may be evaluated for Significance and based on corresponding likely impacts VECs may be identified.	Details are covered in Chapter-4 under topic no. 4.2 from page no. 102 to 115.
38.	One complete season base line ambient air quality data (except monsoon season) to be given along with the dates of monitoring. The parameters to be covered shall be in accordance with the revised National Ambient Air Quality Standards(NAAQS) as well as project specific parameters like NH <sub>3</sub> , HCl, CL <sub>2</sub> , HBr,VOC etc. Locations of the monitoring stations should be so decided so as to takeintoconsiderationthere-dominantdownwind direction, population zone and sensitive receptors. There should be at least one monitoring station in the upwind direction. There should be at least one monitoring station in the predominant downwind direction at a location where maximum ground level concentration is likely to occur.	Details of Air environment are covered in chapter-3 under topic no.3.3, on page No. 53.  Baseline monitoring dates are attached as Annexure – IX on page no. 235.

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
39.	Modeling indicating the likely impact on ambient air quality due to proposed activities. The details of model used and input parameters used for modeling should be provided. The air quality contours may be shown on location map clearly indicating the location of sensitive receptors, if any, and the habitation. The wind rose showing pre-dominant wind directions should also be indicated on the map. Impact due to vehicular movement shall also be included into the prediction using suitable model. Results of Air dispersion modeling should be superimposed on satellite Image / geographical area map.	Details are covered in Chapter-4 under topic no. 4.2.2 from page no. 102
40.	Base line status of the noise environment, impact of noise on present environment due to the project and proposed measures for noise reduction including engineering controls.	Details of noise environment are covered in chapter 3 under topic no. 3.5 form page no.69.
41.	<p>Specific details of</p> <p>a) Process gas emission from each unit process with its quantification.</p> <p>b) Air pollution Control Measures (APCM) proposed for process gas emission. Adequacy of the air pollution control measures (APCM) for process gas emission measures to achieve the GPCB norms.</p> <p>c) Details of the utilities required.</p> <p>d) Type and quantity (MT/hr. &amp; MT/Day) of fuel to be used for each utility.</p> <p>e) Flue gas emission rate emission from each utility.</p> <p>f) Air Pollution Control Measures (APCM) proposed to each of the utility along with its adequacy</p> <p>g) List the project specific sources of fugitive emission along with its quantification and proposed measures to control it.</p> <p>h) Details on tail gas treatment. (If any)</p>	<p>Details are covered in Chapter-2 as mentioned below:</p> <p>a) Process gas emission details are covered in Table no. 2.20 on page no.33.</p> <p>b) APCM for process gas emission is covered under topic no. 2.6.2.2 on page no.33.</p> <p>c) Details are covered in chapter-2, Topic No. 2.5.4, Table No. 2.11, Page No. 26.</p> <p>d) Details are covered in chapter-2, Topic No. 2.6.2.1, Table No. 2.19, Page No. 33.</p> <p>e) Details are covered in chapter-2, Topic No. 2.6.2.1, Table No. 2.19, Page No. 33.</p> <p>f) Details are covered in chapter-2, Topic No. 2.6.2.1, Table No. 2.19, Page No. 33.</p> <p>g) Details are covered in chapter-2, Topic No. 2.6.2.3, Table No. 2.21, Page No. 34.</p> <p>h) Not Applicable</p>
42.	Provision of CEMS (Continuous Emission Monitoring system).	CEMS will be provided as per guidelines, if applicable.
43.	Action plan for odour control to be submitted.	Action plan for odour control is covered in Chapter-2 under topic no. 2.10 from page no. 45.
44.	Management plan for hazardous/Solid waste including storage, handling, utilization and safe	Details are covered in Chapter-2 under topic no. 2.6.3.1 from page no. 36.

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
	Disposal as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules 2016. CPCB guidelines in respect of specific treatment, such as solar evaporation, incineration, etc., need to be followed.	
45.	How the manual handling of the hazardous wastes will be minimized? Methodology of de-contamination and disposal of discarded containers and its recordkeeping.	Details are covered in Chapter-2 under topic no. 2.6.3.1 & 2.6.3.2 from page no. 36 to 38. Methodology of de-contamination and disposal of discarded containers and its record keeping is covered in chapter 2, point No.2.6.3.2 page no.38.
46.	Management of by-products which fall under the purview of the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules 2016 as per the said rules and necessary Permissions from the concern authority.	Not applicable as there is no by-product
47.	Membership of Common Environmental Infrastructure like TSDF, Common Incineration Facility (CHWIF), MEE, Spray dryer etc.	BEIL Membership copy is attached as an Annexure- VI, page no.223
48.	Name and quantity of each type of solvents to be used for proposed production. Details of in-house solvent recovery system including mass balance, solvent loss, recovery efficiency (% recovery), feasibility of reusing the recovered solvents etc. for Each type of solvent.	Chapter-2 in table no. 2.3 on page no. 14. Solvent recovery, mass balance, % recovery, feasibility of reusing the recovered solvents is covered in Chapter-2 in topic no.2.9 from page no.43
49.	Appropriate monitoring network has to be Designed and proposed, to assess the possible residual impacts on VECs.	Details are covered in Chapter-6 under topic no. 6.4 from page no. 123.
50.	A detailed EMP including the protection and mitigation measures for impact on human health and environment as well as detailed monitoring plan and environmental management cell proposed for implementation and monitoring of EMP. The EMP should also include the concept of waste-minimization, recycle/reuse/recover techniques, energy conservation, and natural resource conservation. Total capital cost and recurring cost/annum earmarked for environment pollution control measures.	Details are covered in Chapter-10 under topic no. 10.4 from page no. 178.
51.	Details of in-house monitoring capabilities and the recognized agencies if proposed for Conducting monitoring.	Details are covered in Chapter-6 under topic no. 6.6 from page no. 126.
52.	Permission from PESO, Nagpur for storage of Solvents, other toxic chemicals, if any.	Not Applicable
53.	Occupational health impacts on the workers and mitigation measures proposed to avoid the human	Details are covered in Chapter-7 under topic No. 7.7 from page no. 170.

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
	health hazards along with the personal protective equipment to be provided. Provision of industrial hygienistandmonitoringoftheoccupationalinjury to workers as well as impact on the workers. Plan for periodic medical checkup of the workers exposed. Details of work place ambient airquality monitoring plan as per Gujarat Factories Rules.	
54.	Details of Volatile organic compounds (VOCs) from the plant operations and occupational safety health protection measures. Proposal for leak detection and Repair (LDAR) program as per the CPCB guidelines.	<ul style="list-style-type: none"> <li>• Details covered in Chapter-7 under table no.7.5.7 on pageno.157</li> <li>• Details covered in Chapter-10 under Topic no.10.7 on pageno.190</li> </ul>
55.	Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios should be carried out. The worst-case scenario should take into account the maximum inventoryofstorageatsiteatanypointoftime.The risk contours should be plotted on the plant layout map clearly showing which of the facilities would be affected in case of an accident taking place. Basedonthesame,proposedsafeguardmeasures Including On-Site / Off-Site Emergency Plan should be provided.	<ul style="list-style-type: none"> <li>• Details of Risk Assessment are covered in Chapter-7 undertopicno.7.3frompageno. 134</li> <li>• On-site and Off-site emergency plan is provided in Chapter-7 under topic no. 7.6 from page no.160</li> </ul>
56.	MSDS of all the products and raw materials.	MSDS will be given in soft copy.
57.	Details of hazardous characteristics and toxicityof raw materials and products to be handled and the control measures proposed to ensure safety and avoid the human health impacts. This shallinclude the details of Antidotesalso.	<ul style="list-style-type: none"> <li>• Details are covered in Chapter-7 under topic no.7.5.6 on page no.156</li> </ul>
58.	Details of quantity of each hazardous chemical (including solvents) to be stored, Material of Construction (MoC) of major hazardous chemical storage tanks, dyke details, threshold storage quantity as per schedules of the Manufacture, Storage & Import of Hazardous Chemicals Rules of major hazardous chemicals, size of the biggest storage tank to be provided for each raw material & product etc. How the manual handling of the Hazardous chemicals will be minimized?	<ul style="list-style-type: none"> <li>• Details are covered in Chapter-7 under table no. 7.1 and 7.2 from page no. 132 &amp; 133.</li> <li>• Details about handling are covered in Chapter-7 under Section 7.5.3 on page no. 154.</li> </ul>
59.	Details of the separate isolated storage area for flammable chemicals. Details of flame proof electrical fittings, DCP extinguishers and other safety measures proposed. Detailed fire control plan for flammable	<ul style="list-style-type: none"> <li>• Details are covered in Chapter-7 under topicno.7.2.2 from page no. 131.</li> <li>• Details are covered in Chapter-7 under topic no. 7.5.2 from page no.153.</li> </ul>

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
	substances and processes showing hydrant pipeline network, provision of DG Sets, fire pumps, jockey pump, toxic gas detectors etc.	
60.	Submit checklist in the form of Do's & Don'ts of preventive maintenance, strengthening of HSE, manufacturing utility staff for safety related Measures.	Details are covered in Chapter-7 under topic no. 7.5.5 from page no. 154.
61.	Specify safety precaution to be taken for Chemical Storage, process, and handling & transportation hazard.	Details are covered in Chapter-7 under Topic No. 7.5.1, Page No.152 & table no. 7.16 from page no. 152.
62.	Details on workers training before engaging work, periodical, in-house, outside etc.	Details are covered in Chapter-7 under topic no. 7.5.3, Point No.5, page no. 154, & topic no. 7.7.8 from page no. 172
63.	Details on various SOP to be prepared.	Details are covered in Chapter-7 under topic no. 7.5.4 from page no. 154
64.	Details on safety audit to be carried out and their compliance status.	Details are covered in Chapter-7 under topic no. 7.4 from page no.151
65.	Specific safety measures to be taken for general Public living in the vicinity.	Details are covered in Chapter-7 under topic no. 7.6.4, Point C, from page no. 169
66.	Details on hazard identification i.e. HAZOP, HAZAN, Fault tree analysis, Event tree analysis, Checklist, Audit etc. to be adopted for the safety operation of the plant.	Details are covered in Chapter-7 under topic no. 7.4 from page no. 151
67.	Details and monitoring of VOC gases.	Details are covered in Chapter-2 under table no. 2.6.2 from page no. 32.
68.	Detailed five year greenbelt development program including annual budget, planning schedule, species, width of plantations, number of trees to be planted, area under green belt development [with map], budgetary outlay etc. along with commitment of the management to carry out the tree plantation activities outside the premises at appropriate places in the nearby areas and elsewhere.	Details are covered in Chapter-10 under topic no. 10.4.7 from page no. 182.
69.	Action plan for the greenbelt development – species, width of plantations, planning schedule, etc., in accordance to CPCB published guidelines	Details are covered in Chapter-10 under topic no. 10.4.7 from page no. 182.
70.	Detailed socio-economic development measures including community welfare program most useful in the project area for the overall improvement of the environment. Submit a detailed plan for social corporate Responsibilities, with appropriate budgetary provisions for the next five years and activities proposed to be carried out; specific to the current demographic status of the area.	Details are covered in Chapter-8 under topic no. 8.2 from page no. 174.
71.	(a) Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA	Environment, Health and safety policy is attached as Annexure-XVI page No. 252  Details are covered in Chapter-6 under topic no. 6.7 from page no. 126.

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
	Report. (b). Does the Environment Policy prescribe for standard operating process/procedure to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.	
72.	What is the hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions. Details of this system may be given.	Details are covered in Chapter-6 under topic no. 6.7 from page no. 126.
73.	Does the company have a system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA Report	Details are covered in Chapter-6 under topic no. 6.7 from page no. 126.
74.	Phase wise project implementation schedule with bar chart and time frame, in terms of site development, infrastructure provision, EMS implementation etc.	Details are covered in Chapter-2 under topic no. 2.7 from page no. 41.
75.	Certificate of accreditation issued by the NABET, QCI to the environmental consultant should be incorporated in the EIA Report.	Hon. High court Stay Order is attached as an Annexure-XII, page no.242
76.	An undertaking by the Project Proponent on the ownership of the EIA report as per the MoEF&CC OM dated 05/10/2011 and an undertaking by the Consultant regarding the prescribed TORs have been complied with and the data submitted is factually correct as per the MoEF&CC OM dated 04/08/2009.	<ul style="list-style-type: none"> <li>• Undertaking by client is attached as an Annexure-XIII, page no.247</li> <li>• Undertaking by consultant is attached as an Annexure-XIV, page no.249</li> </ul>
77.	All documents to be properly referenced within text and continuous page numbering.	Complied
78.	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	Complied
79.	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing Reports should be available during appraisal of the Project.	All the analysis have been carried out in: M/s. Jyoti Om Chemical Research Centre Pvt. Ltd. (NABL accredited laboratory). All the original analysis/testing reports will be available during appraisal of project
80.	<p>In case of Expansion of the project</p> <p>a. Need for the proposed expansion should be justified in detail.</p> <p>b. Records of any legal breach of Environmental laws i.e. details of show- cause notices, closure notices etc. served by the GPCB to the existing</p>	<p>a. Detail are covered in chapter-2 ,Topic No. 2.7, Page No. 241</p> <p>b. Unit had received one show cause notice. SCN &amp; its Reply is attached as a Annexure –XVII, Page No. 253</p>

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
	<p>unit in last five years and action taken thereafter for prevention of pollution.</p> <p>c. Copies of Environmental Clearances obtained for the existing plant, its point wise compliance report.</p> <p>d. Environmental audit reports for last 3 years and compliance of its recommendations/Suggestions.</p> <p>e. (Include latest audit report and its compliance.)</p> <p>f. Copy of Consent to Operate (CC&amp;A) obtained along with point wise compliance status of all the conditions stipulated therein.</p> <p>g. Compliance of MoEF&amp;CC circulars vide No: J-11011/618/2010-IA-II(I) dated 30/05/2012 and J-11013/41/2006-IA-II(I) dated 20/10/2009.</p> <p>h. Copies of XGN generated Inspection reports with analysis reports of the water/Air/Hazardous samples collected by GPCB (Last 2 year). Copies of instructions issued by GPCB in last 2 year and point wise compliance thereof.</p>	<p>c. Not Applicable</p> <p>d. Not Applicable.</p> <p>e. Not Applicable</p> <p>f. Copy of Consent to operate with its compliance attached as Annexure –XVIII, Page No. 255</p> <p>g. Not Applicable.</p> <p>h. Analysis Report is attached as Annexure-XXI, Page No. 275</p>
81.	<p>In case of project is located in Ankleshwar-Ankleshwar, Vatva-Narol&amp;Vapi GIDC.</p> <p>A) Compliance of MOEFCC's OM no. J-11013/5/2010-IA.II (I) dated 25/11/2016 regarding lifting of moratorium on the consideration of projects for environmental clearance.</p> <p>B) Compliance of direction under section 18(1)(b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB dated 31/03/2016 regarding compliance of CETP.</p> <p>a) Action initiated by GPCB, if any, against proposed unit regarding non-compliance of prescribed standards under the various environmental laws.</p> <p>b) Performance of CETP with respect to current hydraulic load &amp; prescribed standards with No Objection Certificate of CETP regarding incorporation of the proposed unit for acceptance of wastewater.</p> <p>c) Performance of TSDF site with respect to current load &amp; prescribed standards with No Objection Certificate of TSDF site regarding incorporation of the proposed</p>	<p>A. Not applicable</p> <p>B. Unit have recently obtain membership of 28.3 KLD in new allotted PETL capacity as per new GPCB Circular. Unit will give full fledge treatment and after achieving the norm, unit will discharge effluent to PETL. So, direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP is not applicable.</p>

Sr. No.	Terms of Reference	Compliance
<b>As per TOR received vide as SEIAA/GUJ/TOR/5(f)/452/2019 dated: - 25<sup>th</sup>March 2019</b>		
	<p>unit for acceptance of hazardous waste to the common infrastructure.</p> <p>d) Copies of quarterly action report taken for the above points submitted to theCPCB.</p> <p>e) Report of GPCB which have conducted monitoring as per the said direction by CPCB dated31/03/2016.</p>	

# **CHAPTER - 1**

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## **INTRODUCTION**

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### **1.1 PURPOSE OF THE REPORT**

As per the EIA Notification dated 14th Sept.2006, as amended from time to time; it is mandatory to have Environmental Clearance for any new industry or the expansion/modernization of the existing industry from Ministry of Environment, Forests & Climate Change, Government of India, New Delhi. For this, Environment Impact Assessment (EIA) is to be conducted as per guidelines given by New Delhi.

The purpose of the EIA report is to provide a coherent statement of the potential impacts of the proposed project and the measures that should be taken to eliminate, reduce and remedy them. It contains essential information for:

- The proponent to implement the proposal in an environmentally and socially responsible way;
- The responsible authority to make an informed decision on the proposal, including the terms and conditions that must be attached to an approval or authorization; and
- The public to understand the proposal and its likely impacts on people and the environment.

#### **1.1.1 INTRODUCTION OF THE PROJECT & PROJECT PROPONENT**

##### **1.1.1.1 IDENTIFICATION OF PROJECT**

###### **(A) PROJECT PROPOSAL**

M/s. Shubhlaxmi Pigments is located at plot no:-502, GIDC Estate Panoli, Ta:-Ankleshwar, Dist:-Bharuch. Unit has proposed to manufacture Synthetic Organic Chemicals. Unit is applying EC for manufacturing of 90 MT/Month of Synthetic Organic Chemicals.

TOR copy is attached as **ANNEXURE-I**. The details of product are given in table no.1.1. The product proposed by the unit falls in the Schedule attached to the EIA Notification, i.e. Project No. 5(f).

The purpose of this report is to:

- Establish a pre-project baseline with respect to environmental indicators.
- Identify environment related impacts.
- Evaluate safety related risk factors associated with project.
- Propose appropriate mitigation measures for minimizing the adverse impacts to the extent possible.
- Suggest Environment Management Plan.
- Recommend Risk Management Plan.

This report is also made in the overall frame work of the Environmental Impact Assessment (EIA) Notification dated 14<sup>th</sup>September-2006 (and subsequent amendments to the same) issued by the Ministry of Environment and Forests and Climate Change (MoEF& CC), by providing required information with regards to the project as mentioned in the Terms of Reference issued by the State Level Environment Impact Assessment Committee.

**TABLE: 1.1**

**LIST OF PRODUCTS**

Sr. No.	Name of Products	CAS no. /CI no.	Quantity MT/Month			End Uses
			Existing as per CCA: AWH-66826	Proposed	Total After expansion	
1.	Phthalocyanine Alpha Blue	147-14-8/74160	5.0	25.0	30.0	Plastic, Ink, Rubber, Textile, Detergent
2.	Phthalocyanine Beta Blue	147-14-8/74160	10.0	50.0	60.0	
<b>TOTAL</b>			15.0	75.0	<b>90.0</b>	---

**Note :- Copy of CCA AWH-66826 & its compliance report is attached as Annexure - XVIII. Unit had valid CCA Order No. 1049 before 2006**

**(B) SCREENING CATEGORY**

As per EIA Notification dated 14<sup>th</sup>September, 2006, as amended from time to time; this project falls under Category “B”, Project or Activity-5 (f) and requires Environmental Clearance from SEAC, Gandhinagar. However Panoli is declared as critically polluted area, the project becomes category-A project. As per the official memorandum we are applying Category – A project to Delhi.

**1.2 IDENTIFICATION OF THE PROJECT AND PROJECT PROPONENT**

M/s. Shubhlaxmi Pigments is located at plot no:-502, GIDC Estate Panoli, Ta:-Ankleshwar, Dist:-Bharuch. Unit is applying EC for manufacturing of 90 MT/Month of Synthetic Organic Chemicals. Total plot area of the unit is 1575 Sq.mt.

Unit has proposed to develop 523 (33%) sq.mt green belt area within the premises. Unit will develop another 300 Sq. m area outside the compound wall. The letter for conformation is attached as Annexure-XV. Plant Layout of the unit is attached as **ANNEXURE-II**.

**1.2.1 PROJECT PROPONENT**

1. **Mr. Dhiraj Bhayani** is Partner of the Shubhlaxmi Pigments Having a vast experience of 25 years in Pigment Industry. He completed his M.Sc Organic (Batch – 1987).

2. **Mr. PremjiBhai Vaghani** is one of the partner. He has 25 years of great experience.

3. **Mrs. Chandrikaben Vaghani** is partner of the Shubhlaxmi Pigments. She has 20 years of great experience. She is B.A.

4. **Mrs. Ramaben Vaghani** is also partner of the Shubhlaxmi Pigments. She has 20 years of great experience. She is B.A.

The list of Partner is listed in below table no. 1.2.

**TABLE: 1.2****LIST OF PARTNERS**

Sr. No.	Name of Partners	Present Residential Address	Contact No.
1.	Mr. Dhiraj D.Bhayani	Plot No. 2608/1, GIDC Estate Ankleshwar, Dist- Bharuch	9824088655
2.	Mr. Premjibhai M.Vaghani	Plot No. 901/C,Gunatinand Co- Opp.Hous.societysumul dairy road,Surat	9825196045
3.	Ms. Chandrikaben P.Vaghani	Plot No. 901/C,Gunatinand Co- Op.Hous.societysumul dairy road,Surat	9825196045
4.	Ms. Ramaben C.Vaghani	Plot No. 901/C,Gunatinand Co- Op.Hous.society sumul dairy road,Surat	9825129257

**1.3 BRIEF DESCRIPTION OF NATURE,SIZE AND LOCATION OF THE PROJECT****1.3.1 Brief Description Of Nature, Size And Location Of The Project**

Brief description of project in terms of nature, size, location of the project and its importance to the country, region is given in the table no 1.3. And list of nearby Industries is given below in table no. 1.4.

**TABLE: 1.3****BRIEF DESCRIPTION OF NATURE, SIZE AND LOCATION OF PROJECT.**

Particulars	Details	Distance from Site
Villages	Sanjali	1.08 KM
Approx. Geographical positioning	Latitude: Longitude:	21°33'10.31"N 72°59'44.81"E
Nearest City	Panoli Ankleshwar	1 Km E 10 Km N

## **EIA REPORT OF M/s. SHUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE,PANOLI**

<b>Particulars</b>	<b>Details</b>	<b>Distance from Site</b>
Nearest Railway line/ Railway station	Panoli	6 Km E
Domestic Airport	Surat	55 Km S
International Airport	Ahmedabad	210 Km N

**TABLE: 1.4**

### **NEARBY INDUSTRY DETAILS**

<b>Sr. No.</b>	<b>Name of Industry</b>	<b>Address</b>
1.	Wank Sons Chem Ind (P) Ltd	Plot No- 518,GIDC Industrial Estate Panoli, District- Bharuch.
2.	Ohm Dye Chem	Plot No-517, G.I.D.C. Industrial Estate, Panoli, District- Bharuch.
3.	Vardan Petrochem Pvt. Ltd.	Plot No. 526-527 , GIDC Industrial Estate , Panoli, District- Bharuch.
4.	Shreeji Chemical Industries	Plot No- 506, G.I.D.C. Estate, Panoli District-Bharuch.

### **1.3.2 LOCATIONMAP**

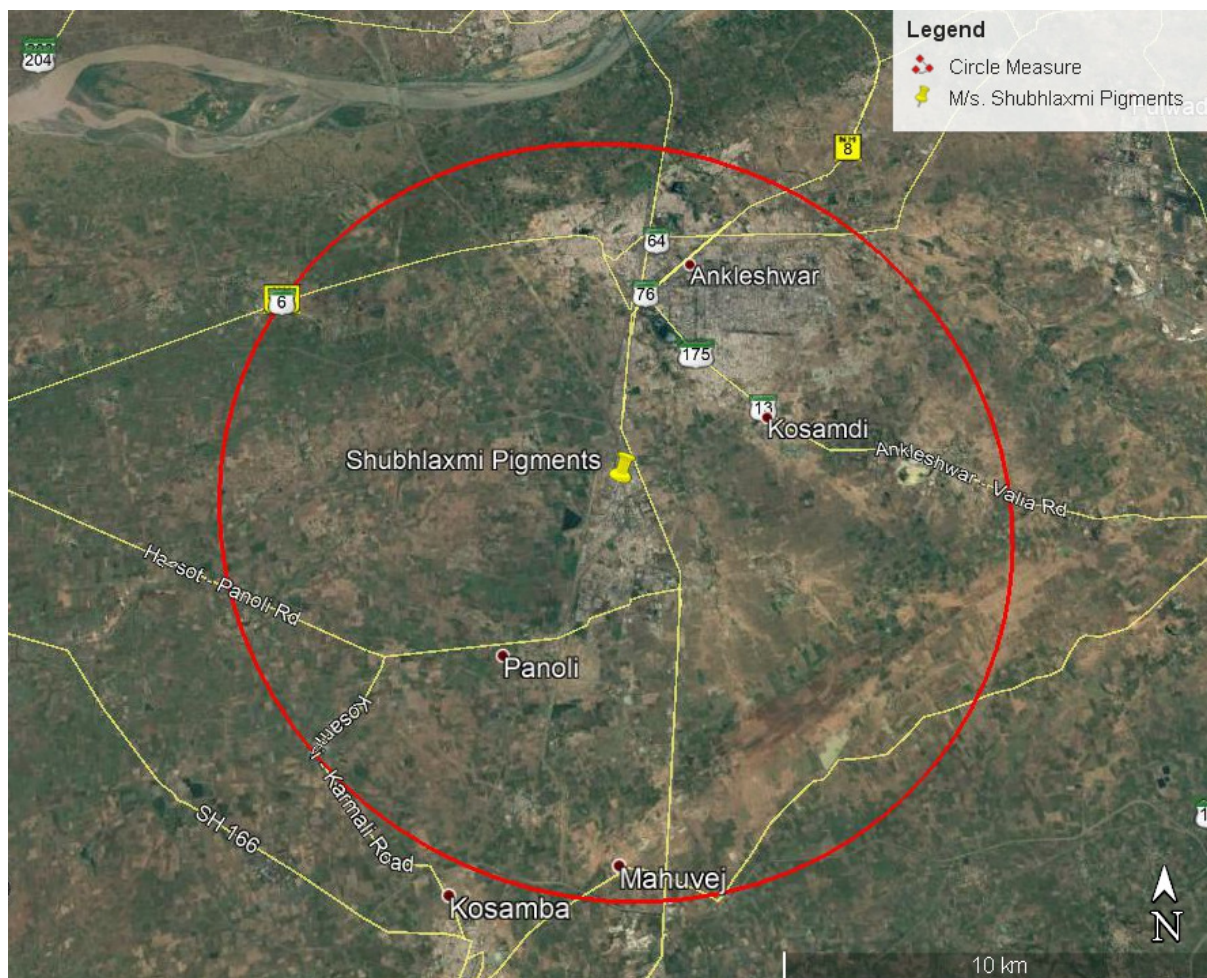
**FIGURE: 1.1**

#### **PROJECTLOCATION MAP**



**FIGURE: 1.2**

**AERIAL VIEW OF THE PROJECT SITE**



**1.3.3 LOCATION OF THE PROJECT**

M/s. Shubhlaxmi Pigments is located at plot no:-502, GIDC Estate Panoli, Ta:-Ankleshwar, Dist:-Bharuch, Gujarat which is one of the fastest growing industrial estate and having all the essential facilities & infrastructure for the management & disposal of effluent discharge. The approximate geographical positioning of the project site is at Latitude: 21°33'10.31"N Longitude: 72°59'44.81"E. The location of the project site can be identified from the location map shown in Figure-1.1.

**1.4 REGULATORY FRAMEWORK**

To keep the environment congenial for better standard of living, the provisions have been made in the constitution of India and many Enactments have taken place, so that, Industrialization may not have adverse impact on the environment. There are many Acts/ Rules/Notifications issued by MoEF & CC in this regard, few of them are mentioned below:

- Environment(Protection)Act,1986;
- Environment(Protection)Rules,1986;

## **EIA REPORT OF M/s. SHUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE,PANOLI**

- Water (Prevention&ControlofPollution) Act,1974;
- Air (Prevention&ControlofPollution) A ct ,1981;

Environmental Impact Assessment (EIA) Notification, dated 14<sup>th</sup>September-2006 as amended from time to time.

### **1.5 SCOPE OF THE EIA STUDY**

The Disciplines covered under the study are pre-requisite in formation of the proposed site, process technology, effluent generation, treatment and its proper disposal, hazardous waste management, impacts and management plans. This report contains data of ambient air quality monitoring as well as the ecological studies noise environment, socio-economic study carried out during March-2018 to May-2018.

#### **1.5.1 SIZE AND COST OF THE PROJECT**

The expected cost of proposed project is Rs.110.7 Lakhs. New Plant and machinery installations will also have to be acquired and installed .Environment Protection and safety systems have also been considered in planning the Cost Projection. The below given table no-1.5 shows the break-up of the project cost.

**TABLE: 1.5**

#### **CAPITAL COST PROJECTION**

<b>Sr. No.</b>	<b>Purpose</b>	<b>TOTAL (Rs. In Lacs)</b>
1.	Land	0
2.	Building	14.7
3.	Plant and Machinery	71.0
4.	Environment Protection & Safety	
a)	Air Pollution Control Measure	7.00
b)	Effluent Treatment Plant	8.00
c)	Safety Equipment (PPE, fire extinguishers, Ventilation, etc.)	5.00
d)	Green belt development	5.00
	<b>Total</b>	<b>110.7</b>

### **1.6 REGULATORY FRAME WORK**

As per the EIA Notification, September 2006, the proposed project falls under category 5(f) of the schedule. The unit has proposed to manufacture organic chemicals which requires prior Environmental Clearance(EC).They are categorized as "**CATEGORY-B**", requiring EC from **STATE LEVEL EXPERT APPRAISAL COMMITTEE**. As per the official memorandum we are applying Category – A project to Delhi. The EIA report is based on the TOR granted by SEIAA

vide as ref no. SEIAA/GUJ/TOR/5(f)/1061/2019 Dated: 17<sup>th</sup> July, 2019. Letter containing Terms of reference (TOR) given by the SEIAA, Gandhinagar, Gujarat is attached as **ANNEXURE-I**.

### **1.7 SCOPE & OBJECTIVES OF THE EIA STUDY**

This EIA Report is prepared to comply with the requirements of the SEAC as per the guideline for the Clearance. The objectives of this EIA are:

- To describe the Project and associated works together with the requirements for carrying out the Project.
- To identify and describe the elements of the community and environment likely to be affected by the Project, and / or likely to cause impacts upon the Project, including both the natural and man-made environment.
- To identify and quantify emission sources and determine the severity of impacts on sensitive receivers and potential affected uses.
- To recognize and quantify any environmental impacts associated with the Project and recommend appropriate mitigation measures.
- To study existing landscape and visual quality in the study area so as to evaluate the landscape and visual impacts of the project.
- To propose mitigation measures to minimise pollution, environmental disturbance and nuisance during construction and operation of the project;
- To identify, predict and evaluate the residual (that is, after practicable mitigation) environmental impacts and cumulative effects expected to arise during the construction and operation phases of the project in relation to the sensitive receivers and potential affected uses.
- To identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the project which are necessary to mitigate these impacts and reduce them to allowable levels within established standards / guidelines.
- To investigate the extent of side-effects of proposed mitigation measures that may lead to other forms of impacts.
- To identify constraints associated with the mitigation measures recommended in this EIA.
- To identify any additional studies necessary to fulfil the objectives to the requirements of this EIA Study.

**1.8 STRUCTURE OF EIA REPORT**

The generic structure of the EIA report, as per the guideline provided by MoEF&CC is illustrated in the following tabulated format table no:-1.6.

**TABLE: 1.6****STRUCTURE OF EIA REPORT**

<b>Sr. No.</b>	<b>EIA Structure</b>	<b>Contents</b>
1.	Introduction	<ul style="list-style-type: none"><li>• Purpose of the report and regulatory frame work</li><li>• Identification of the project and project proponent</li><li>• Key Information of project</li><li>• Regulatory Frame work</li><li>• Scope &amp; Objective of EIA study</li><li>• Structure of EIA report</li><li>• Terms of reference &amp; Its Compliance</li></ul>
2.	Project Description	<ul style="list-style-type: none"><li>• Condensed description of those aspects of the project (based on project feasibility study), likely to cause environmental effects. Description contains the details of the following:<ul style="list-style-type: none"><li>• Type of project</li><li>• Need for the project</li><li>• Location details showing general location, specific location, project boundary &amp; project site layout)</li><li>• Technology and process description</li><li>• Project description. Including drawings showing project layout, components of project etc. Schematic representations of the feasibility drawings which give information important for EIA purpose</li><li>• Description of mitigation measures incorporated into the project to meet environmental standards,</li></ul></li></ul>
3.	Description of the Environment	<ul style="list-style-type: none"><li>• Study area, period, components &amp; methodology</li><li>• Establishment of baseline for valued environmental components, as identified in the scope</li><li>• Base maps of all environmental components</li></ul>
4.	Anticipated	<ul style="list-style-type: none"><li>• Details of Investigated Environmental impacts due to</li></ul>

**EIA REPORT OF M/s. SHUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE,PANOLI**

<b>Sr. No.</b>	<b>EIA Structure</b>	<b>Contents</b>
	Environmental Impacts & Mitigation Measures	project location, possible accidents, project design, project construction, regular operations, final decommissioning or rehabilitation of a completed project <ul style="list-style-type: none"><li>• Measures for minimizing and / or offsetting adverse impacts identified</li><li>• Irreversible and Irretrievable commitments of environmental components</li><li>• Assessment of significance of impacts (Criteria for determining significance, Assigning significance)</li><li>• Mitigation measures</li></ul>
5.	Analysis of alternatives (technology & site)	<ul style="list-style-type: none"><li>• Need for alternatives with respect to technology and site selection, give details of each alternative, summary of adverse impact of each alternative and propose mitigation measures for each alternative.</li></ul>
6.	Environmental Monitoring Program	<ul style="list-style-type: none"><li>• Technical aspects of environmental monitoring for the effectiveness of mitigation measures (incl. Measurement methodologies, frequency, location, data analysis, reporting schedules, emergency procedures, budget &amp; procurement schedules)</li></ul>
7.	Additional Study: Risk Assessment & Disaster Management Plan	<ul style="list-style-type: none"><li>• Hazard Identification</li><li>• Risk Assessment &amp; control/prevention Measures</li><li>• Disaster Management</li></ul>
8.	Project Benefits	<ul style="list-style-type: none"><li>• Detail of the Socioeconomic &amp; other tangible benefits of the project</li></ul>
9.	Environmental Cost Benefit Analysis	<ul style="list-style-type: none"><li>• Environmental cost benefit analysis to be carried out if required.</li></ul>
10.	Environment Management Plan	<ul style="list-style-type: none"><li>• Description of the administrative aspects of ensuring that mitigation measures are implemented and their effectiveness monitored, after approval of the EIA. The Chapter consist of:<ul style="list-style-type: none"><li>• Mitigation measures for impacts</li><li>• Pollution Prevention Plan</li><li>• Greenbelt Development Plan</li></ul></li></ul>

**EIA REPORT OF M/s. SHUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE, PANOLI**

Sr. No.	EIA Structure	Contents
		<ul style="list-style-type: none"> <li>• Mangrove Management Plan</li> <li>• Dredging management Plan</li> </ul>
		<ul style="list-style-type: none"> <li>• Waste management plan</li> <li>• Environment Management Cell</li> <li>• Budgetary Provisions for EMS</li> </ul>
11.	Summary & Conclusion	<ul style="list-style-type: none"> <li>• Description of brief of EIA report</li> </ul>
12.	Disclosure of Consultant Engaged	<ul style="list-style-type: none"> <li>• Detail of the EIA Consultant</li> </ul>

**1.9 REGULATORY PROVISIONS AND REQUIREMENT**

The proposed project is for the manufacturing of Synthetic Organic Chemicals and is covered under EIA Notification of MoEF&CC. It is obligatory for the proponent to obtain prior EC from State Environment Impact Assessment Authority (SEIAA), Gujarat and Consent to Establish (CTE/NOC) and Consent to Operate (CTO/CCA) from GPCB for the proposed project, under the various Environmental laws.

**1.9.1 GENERAL LEGAL REQUIREMENTS**

The general legal statutory requirements applicable to the proposed project are tabulated in Table 1.7.

**TABLE: 1.7****APPLICABLE REGULATORY PROVISION FOR PROPOSED PROJECT**

Sr. No.	Legal Instrument	Concern Authority or Bodies
1.	Air (Prevention and Control of Pollution) Act, 1981 amended 1987	CPCB and SPCB/UTPCC
2.	Air (Prevention and Control of Pollution) (Union Territories) Rules, 1983	CPCB and SPCB/UTPCC
3.	Water (Prevention and Control of Pollution) Act, 1974 amended 1988	CPCB and SPCB/UTPCC
4.	Water (Prevention and Control of Pollution) Rules, 1975	CPCB and SPCB/UTPCC
5.	The Environment (Protection) Act, 1986, amended 1991	Ministry of Environment, Forests & Climate Change, CPCB and SPCB/UTPCC
6.	Environmental (Protection) Rules,	Ministry of Environment, Forests & Climate

**EIA REPORT OF M/s. SHUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE, PANOLI**

	1986 (Amendments in 1999, 2001, 2002, 2002, 2002, 2003, 2004)	Change, CPCB and SPCB/UTPCC
7.	Hazardous & Other Wastes (Management and Transboundary Movement) Rules 2016	MoEF&CC, CPCB, SPCB/UTPCC, DGFT, Port Authority and Customs Authority
8.	Manufacture Storage and Import of Hazardous Chemicals Rules, 1989 amended 2000	Ministry of Environment & Forests, Chief Controller of Imports and Exports, CPCB, SPCB/UTPCC, Chief Inspector of Factories, Chief Inspector of Dock Safety, Chief Inspector of Mines, AERB, Chief Controller of Explosives, District Collector or District Emergency Authority, CEES under DRDO
9.	Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996	CCG, SCG, DCG, LCG and MAH Units
10.	Ozone Depleting Substances (Regulation and Control) Rules, 2000	Ministry of Environment, Forests & Climate Change
11.	EIA Notification, 2006 as amended timely (2009, 2011)	MoEF&CC, SPCB/UTPCC
12.	Batteries (Management and Handling) Rules, 2001.	SPCB/UTPCC, CPCB and MoEF
13.	Public Liability Insurance Act, 1991 amended 1992	Ministry of Environment, Forests & Climate Change, District Collector
14.	Public Liability Insurance Rules, 1991 amended 1993	Ministry of Environment, Forests & Climate Change, District Collector
15.	Factories Act, 1948	Ministry of Labour, DGFASLI and Directorate of Industrial Safety and Health/Factories Inspectorate
16.	The Explosives Act, 1884	Ministry of Commerce and Industry (Department of Explosives)
17.	The Explosive Rules, 1983	Ministry of Commerce and Industry and Chief Controller of Explosives, port conservator, customs collector, railway administration
18.	The Gas Cylinder Rules, 2004 *	Ministry of Commerce and Industry and Chief Controller of Explosives, port conservator, customs collector, DGCA, DC, DM, Police (sub

**EIA REPORT OF M/s. SHUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE,PANOLI**

		inspector to commissioner)
19.	The Static and Mobile Pressure Vessels (Unfired) Rules, 1981	Ministry of Commerce and Industry and Chief Controller of Explosives, port conservator, customs collector, DGCA, DC, DM, Police (sub inspector to commissioner)
20.	The Motor Vehicle Act, 1988	Ministry of Shipping, Road Transport and Highways
21.	The Central Motor Vehicle Rules, 1989	Ministry of Shipping, Road Transport and Highways
22.	The Custom Act, 1962	CBEC, Ministry of Finance

*(Note: \* the rules are not directly applicable to the proposed project but during operation it may be applicable timely depending up on allied operations like welding, fabrication & shipping of raw materials & products.)*

## **CHAPTER-2**

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### **PROJECT DESCRIPTION**

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#### **2.1 TYPE OF PROJECT**

M/s. Shubhlaxmi Pigments is located at plot no:-502, GIDC Panoli, Dist:-Bharuch. As per the EIA Notification, 14<sup>th</sup> September 2006, the project falls under Category “B”, Project or Activity-5 (f) of the schedule. However Panoli is declared as critically polluted area, the project becomes category-A project. As per the official memorandum we are applying Category – A project to Delhi.

#### **2.2 JUSTIFICATION FOR SELECTING PRODUCT**

Proponent is already engaged in the manufacturing of the same product Synthetic Organic Chemicals.

- The promoters are already engaged in manufacturing and marketing of Pigments. Pigments are used in plastic, paint, Ink, Textile industries. There is regular use of these products and has demand in local market as well as in export. This will meet the local demand and generate employment.
- The global pigments market size was valued at \$20,023 million in 2015, and is expected to garner \$26,598 million by 2022, registering a CAGR of 4.1% during the forecast period 2022. Pigments are solid materials that improve the appearance or impart color to the substrate on which they are used.
- Unit is having good foreign demand of Pigments.
- Unit is having no any alternative facility for pigments.
- Proponent is having best available technology to make products

#### **2.2.1 JUSTIFICATION OF SIZE OF THE PROJECT**

- Unit will construct 2 floors for manufacturing activity.
- Unit will dedicate individual floor for different- different activity.
- Ground floor will be a used for the storage of raw materials and finished good product.
- Unit will install Drowning Vessel, Distillation machineries on Ground floor.
- Reactor and Filter Press is/will install on 1<sup>st</sup>Floor.
- Unit will install 3 reactors, 2 Filter Press, 1 Drowning Vessel, Distillation assembly to manufacture 90 MT/Month.
- Unit will/is construct Alpha plant in 263.25 Sq. m area & Beta plant in 235.50 Sq. m. area.
- There is adequate space for the storage of raw materials & Utility area.

## **EIA REPORT OF M/s. SUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE, PANOLI**

- Unit will/is construct Raw Material storage, SFD & Blender in 62.80 Sq. m. area and Utility in 29.40 Sq. m Area.
- Plant Layout attached as Annexure- II.

### **2.3 PRODUCTS AND RAW MATERIAL DETAILS**

#### **2.3.1 DETAILS OF PRODUCT**

Total production capacity of the unit will be 90 MT/Month. The unit has proposed to manufacture Synthetic Organic Chemicals on this premises. List of product is given in Chapter-1, Table No:-1.1.

#### **2.3.2 DETAILS OF RAW MATERIAL**

The list of name of raw materials for each product is provided in table no. 2.1, details of solvent used is given in table no. 2.2.

**TABLE: 2.1**

#### **LIST OF RAW MATERIALS CONSUMPTION**

<b>NAME OF THE PRODUCT</b>	<b>NAME OF RAW MATERIALS</b>	<b>CAS NO</b>	<b>QUANTITY MT/MT OF PRODUCT</b>	<b>QUANTITY MT/MONTH</b>
CPC Alpha Blue	Copper Phthalo Cyanine Blue	147-14-8	1.03	30.9
	Sulfuric acid (98%)	7664-93-9	8.25	247.5
	Octoic acid	124-07-2	0.034	1.02
	Dispersing Agent	8012-56-4	0.003	0.9
CPC Beta Blue	Copper Phthalo Cyanine Blue	147-14-8	1.01	60.61
	IBA/Xylene (Fresh)	133-32-4	0.05	3.03
	Caustic flakes	1310-73-2	0.03	1.82
	Dispersing Agent	36290-04-7	0.002	0.12
	Rosin	8050-09-7	0.05	3.03
	Hydrochloride acid	7647-01-0	0.04	2.42
	Globular Salt	231-665-7	0.10	6.06

**M/s. SHUBHLAXMI PIGMENTS** based on requirement. Plant Layout is attached as **ANNEXURE-II**.

**TABLE: 2.2**

**DETAILS OF SOLVENTS STORED FOR PROJECT**

Sr. No.	Name of solvents	Maximum Quantity stored (in MT)
1.	IBA/XYLENE	1

**2.3.2.1 RAW MATERIAL STORAGE AND HANDLING**

The details of storage and handling of product, raw material are given in table no.2.3.

**2.3.3 TRANSPORTATION OF RAW MATERIALS AND FINISHED PRODUCTS**

The raw materials and finished goods will be transported through tankers and trucks. There is well developed road structure in Panoli as well as within premises also. The raw material source will be standard manufacturer or supplier. Indicative list along with mode of transportation is included in table no. 2.4.

**TABLE: 2.3**

**DETAILS OF STORAGE & HANDLING OF RAW MATERIAL**

Sr. No.	Name of Raw Material	State Solid/Liquid/Gas	Storage Mode	Capacity (Container Capacity)	Max. storage capacity at site	MOC (Container MOC)
1.	Copper Phthalo Cyanine Blue	Solid	Bag	25 kg	35.0 ton	HDPE
2.	Sulphuric acid (98%)	Liquid	Tank	20 Ton	15 Ton	MS Tank
3.	Octoic acid	Liquid	Drum	185 kg	5 Drum	MS/HDPE
4.	Dispersing Agent	Liquid	Drum	100 KG	4 Drum	HDPE
5.	IBA/Xylene (Fresh)	Liquid	Drum	200 KG	5 Drum	MS
6.	Caustic flakes	Solid	Bag	50 KG	2 MT	HDPE
7.	Rosin	Solid	Drum	240 KG	2 Drum	GI
8.	Hydrochloride acid	Liquid	Tank	5 KL	3 KL	HDPE
9.	Globular Salt	Solid	bag	50 KG	3 MT	HDPE

**EIA REPORT OF M/s. SUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE,PANOLI**

**TABLE: 2.4**

**DETAILS OF RAW MATERIAL SOURCE AND METHOD OF TRANSPORTATION**

<b>Sr. No.</b>	<b>Name of Raw Material</b>	<b>State</b>	<b>Source (Name of Seller Company)</b>	<b>Mode of transportation</b>
1	Copper Phthalocyanine Blue Alpha/Beta	Solid	Deep Chem, Ankleshwar Siv Dyestuff & Intermediate, Nandesari Narayan Organics , Ankleshwar	HDPE
2	Sulfuric acid (98%)	Liquid	Hitesh Chemicals , Ankleshwar	MS Tank
3	Octoic acid	Liquid	Meena Chemicals, Mumbai	MS/HDPE
4	Dispersing Agent	Liquid	Sphtantik Industries, Ankleshwar	HDPE
5	IBA/Xylene (Fresh)	Liquid	Dayaram Chemicals , Ankleshwar	MS
6	Caustic flakes	Solid	Om Chemi Tech, Ankleshwar	HDPE
7	Rosin	Solid	Emco Dyestuff Pvt. Ltd., Ankleshwar	GI
8	Hydrochloride acid	Liquid	Standard Chemicals, Ankleshwar	HDPE
9	Globular Salt	Solid	Om Chemi Tech, Ankleshwar	HDPE

**TABLE: 2.5**

**LIST OF ETP CHEMICALS**

<b>Name of Raw Material</b>	<b>State</b>	<b>Storage Mode</b>	<b>Capacity Max. storage at site</b>	<b>CAS NO</b>	<b>MOC</b>
LIME	Powder	Bags	4 MT	1305-78-8	HDPE

## **2.4 PROCESS DESCRIPTION**

The process is basically pigment formation. There is no chemical reaction in this process. There is only change in the crystal formation. For Alpha CPC pigment acid digestion is done while for beta alkaline digestion is done. This is a versatile practice.

The manufacturing process is based on “Best Available Technology. It uses IBA/Xylene as solvent and recovers more than 96% solvent.

## **2.4.1 MANUFACTURING PROCESS**

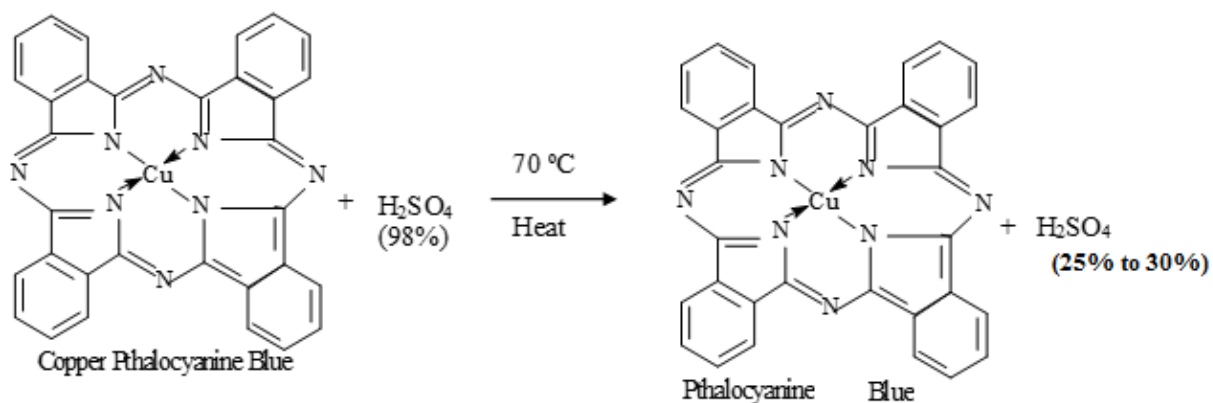
### **1. PHTHLOCYanine ALPHA BLUE**

Charge H<sub>2</sub>SO<sub>4</sub> in reaction vessel & add slowly copper phthalocyanine Blue and octoic acid as per desired ratio. Apply stirring for 5 hr. Then take recycle water in MSRL and drown the mass in MSRL. After drowning filter it the mass and wash it. After filtration process whatever mother liquor generated that contain approximately 25 to 30% of sulphuric acid. This spent sulfuric acid will be sent to those units who are having permission of rule-9 or who have applied under rule-9.

#### **Pigmentation:-**

The filter Cake charge in another Vessel which contain recycle water and then dispersing agent. The above slurry is filtered and the cake is washed with fresh water. The wet cake is dried into SFD.

### **CHEMICAL REACTION**



**MATERIAL BALANCE OF PHTHLOCYNINE ALPHA BLUE**

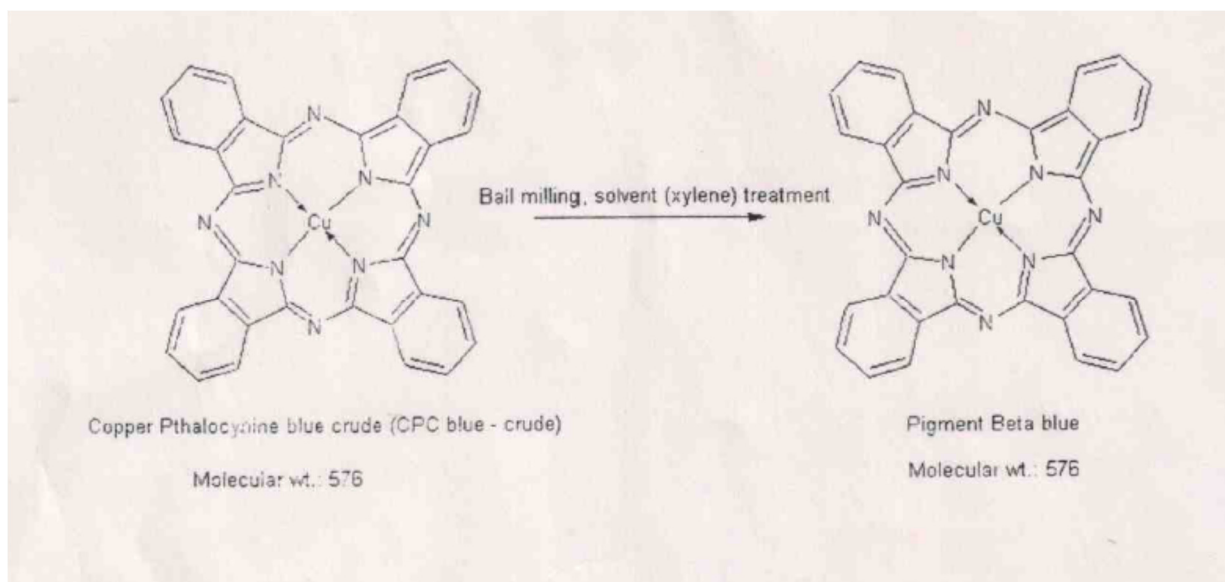
<b>Input</b>	<b>Kg</b>	<b>MS Reactor</b>	<b>Output</b>	<b>Kg</b>
CPC Crude	600		Reaction mass	5420
Sulfuric acid(98%)	4800		<b>Total</b>	<b>5420</b>
Octoic acid	20			
<b>Total</b>	<b>5420</b>			
		↓		
<b>Input</b>	<b>Kg</b>	<b>MSRL</b>	<b>Output</b>	<b>Kg</b>
Reaction Mass	5420		Reaction mass	15420
Recycled Water	10000		<b>Total</b>	<b>15420</b>
<b>Total</b>	<b>15420</b>			
		↓		
<b>Input</b>	<b>Kg</b>	<b>FILTER PRESS-I</b>	<b>Output</b>	<b>Kg</b>
Reaction mass	15420		Wet cake	5420
			Spent sulphuric acid(25 to 30%)	10000
<b>Total</b>	<b>15420</b>		<b>Total</b>	<b>15420</b>
		↓		
<b>Input</b>	<b>Kg</b>	<b>PIGMENTATION</b>	<b>Output</b>	<b>Kg</b>
Recycle water from Filter Press	10000		Reaction mass	15422
Dispersing agent	2			
Wet cake	5420		<b>Total</b>	<b>15422</b>
<b>TOTAL</b>	<b>15422</b>			
		↓		
<b>Input</b>	<b>Kg</b>	<b>FILTER PRESS-2</b>	<b>Output</b>	<b>Kg</b>
Reaction mass	15422		Wet cake	1940
Washing-Fresh Water	15518		Filterate Water Reuse in 1 st MSRL vessel (8% to 10%-acidity)	10000
			2nd MSRL vessel (4% to 6%-acidity)	10000
<b>Total</b>	<b>30940</b>		Wash Water to ETP	9000
		<b>Total</b>	<b>30940</b>	
		↓		
<b>Input</b>	<b>Kg</b>	<b>SFD</b>	<b>Output</b>	<b>Kg</b>
Wet cake	1940		Final Product	582
<b>TOTAL</b>	<b>1940</b>		Evaporation loss	1358
			<b>TOTAL</b>	<b>1940</b>

## **2. PHTHLOCYNINE BETA BLUE**

Crude CPC Blue is taken into Ball mill for grinding. Here the particle size of the material gets reduced. Then the grinded material is taken into the reactor with Caustic Soda. Caustic soda is used to get alkaline pH. The alkaline pH results in better dispersion of particles for pigmentation. The mass is refluxed for pigmentation. Here the colour of the material gets enhanced due to fine tuning with Xylene / IBA.

This is only a physical process and does not involve any chemical reaction. After completion of reflux, the mass is distilled for recovery of Xylene / IBA. After recovery of Xylene / IBA, the mass is neutralized with hydrochloric acid to increase the particle size of beta blue. The whole mass is washed and filtered in filter press. Filtrate and washing are sent into ETP for further treatment. Finally wet cake will be subjected to SFD.

### **CHEMICAL REACTION FOR PHTHLOCYNINE BETA BLUE**



**MATERIAL BALANCE SHEET OF PHTHLOCYanine BETA BLUE**

<b>Input</b>	<b>Kg</b>	<b>BALL MILL</b>	<b>Output</b>	<b>Kg</b>
copper phthalocyanine Blue	1000.000		Reaction mass	1100.000
Globular Salt	100			
<b>Total</b>	<b>1100.000</b>		<b>Total</b>	<b>1100.000</b>
		↓		
<b>Input</b>	<b>Kg</b>	<b>PIGMENTATION &amp; DISTILLATION</b>	<b>Output</b>	<b>Kg</b>
Mass	1100.000		REACTION MASS	5732.000
FRESH WATER	3500		Recovered Solvent	1450
Fresh IBA/Xylene	50			
Recovered IBA/Xylene	1450			
Caustic flakes	30			
Dispersing agent	2			
Rosin	50			
Steam	1000			
<b>Total</b>	<b>7182.000</b>		<b>Total</b>	<b>7182.000</b>
		↓		
<b>Input</b>	<b>Kg</b>	<b>NEUTRALIZATION</b>	<b>Output</b>	<b>Kg</b>
Reaction mass	5732.000		Reaction mass	5772.000
Hydrochloride acid	40.000			
<b>Total</b>	<b>5772.000</b>	<b>Total</b>	<b>5772</b>	
		↓		
<b>Input</b>	<b>Kg</b>	<b>FILTRATION &amp; WASHING</b>	<b>Output</b>	<b>Kg</b>
Product mass	5772		Wet cake	3300
FRESH WATER	2000		Effluent to ETP	4472
<b>Total</b>	<b>7772</b>	<b>Total</b>	<b>7772</b>	
		↓		
<b>Input</b>	<b>Kg</b>	<b>SFD</b>	<b>Output</b>	<b>Kg</b>
Mass	3300		Beta Blue	990
			Evaporation loss	2310
<b>Total</b>	<b>3300</b>	<b>Total</b>	<b>3300</b>	
		↓		
		<b>PACKING</b>		

## **2.5 RESOURCE REQUIREMENT**

### **2.5.1 LAND**

Total Plot area of the unit is 1575 sq.mt. Unit will provided 523 sq.mt green belt area within premises and outside the plot area unit will develop green belt in 300 Sq. m. area. Permission letter for the develop green belt on the outside area is attached as **ANNEXURE – XV**. Land use break up of total plot area is given in table no:-2.6. Land possession document is attached as **ANNEXURE-IV**.

**TABLE: 2.6**

#### **LAND USE BREAK UP OF TOTAL PLOT AREA**

<b>SR. NO.</b>	<b>DESCRIPTION</b>	<b>AREA IN Sq. M</b>	<b>% PERCENTAGE</b>
<b>1</b>	Utility Boiler	29.40	1.87
<b>2</b>	Alpha Plant	263.25	16.71
<b>3</b>	Beta Plant	235.50	14.95
<b>4</b>	OTTA	12	0.76
<b>5</b>	Green Belt Area	523	33.21
<b>6</b>	ETP Plant	27	1.71
<b>7</b>	Room	9	0.57
<b>8</b>	Open Plot & Road	399.55	25.37
<b>9</b>	U.G.Tank	13.50	0.86
<b>10</b>	SFD, Blender, Storage	62.80	3.99
	<b>TOTAL</b>	<b>1575</b>	<b>100</b>

### **2.5.2 WATER**

Unit has proposed to manufacture 90 MT/Month Synthetic Organic Chemicals. Total water requirement will be 88 KLD. Unit will use only 53.2 KLD fresh water& 34.8 KLD recycle water. Unit has obtained permission from GIDC. Permission letter is attached as **ANNEXURE-V**.

**EIA REPORT OF M/s. SUBHLAXMI PIGMENTS, GIDC INDUSTRIAL ESTATE, PANOLI**

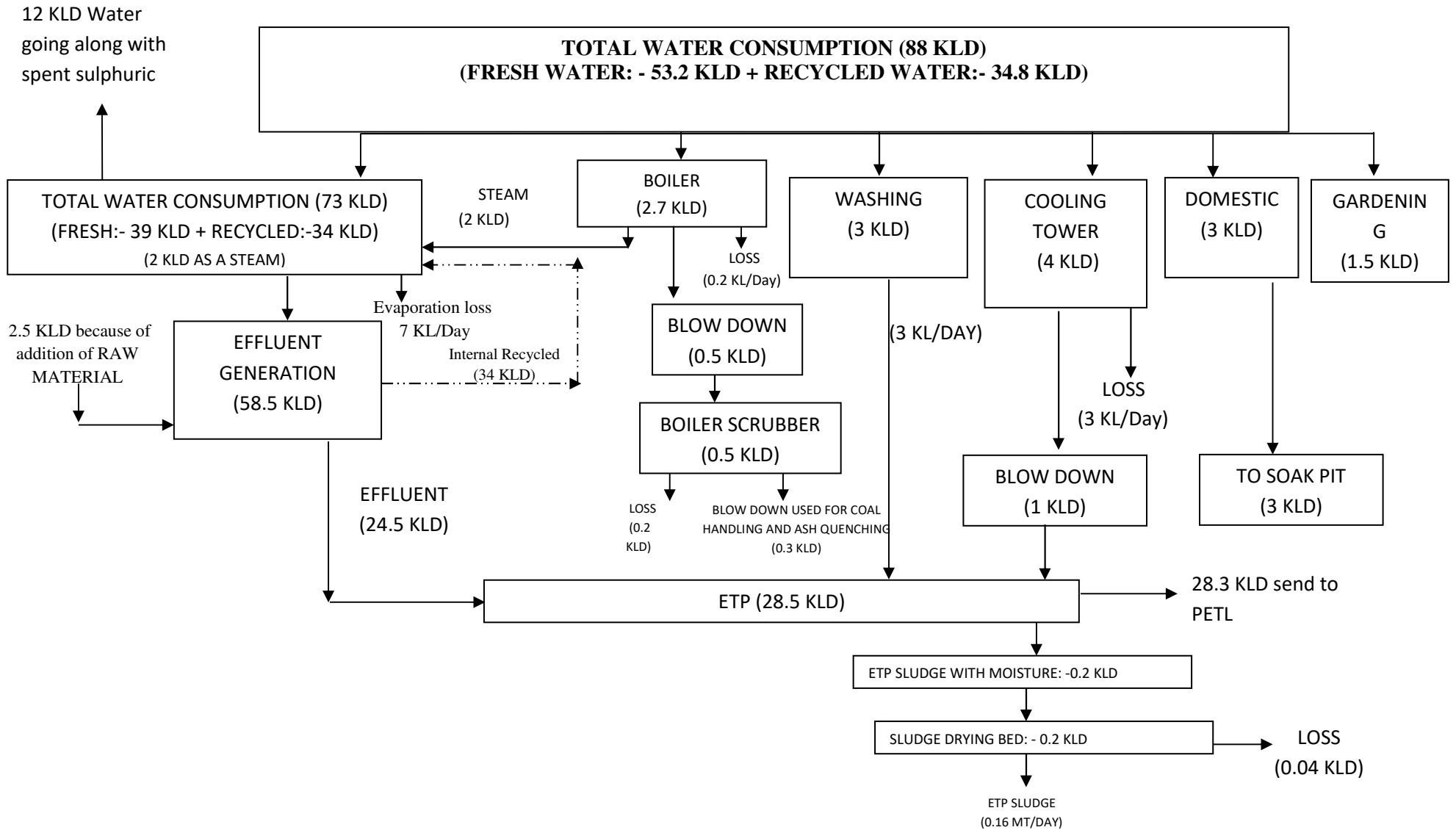
**TABLE: 2.7**

**CATEGORY-WISE WATER REQUIREMENT**

Sr. No.	Particulars	As per Consent AWH-66826	Actual Water Requirement	Proposed Water Requirement	Total after Expansion KLD	Remarks
1.	<b>Domestic</b>	<b>3.00</b>	1	2	3.00	In existing, only 1 KLD (Existing Manpower:-10 Nos) water is required for domestic purpose. Unit is already having 3 KLD water consumption permission for domestic purpose. And the after expansion unit will require only 3 KLD water for domestic purpose (Manpower:-15 nos). So no need to take extra water for domestic activity.
2.	<b>Gardening</b>	<b>0.0</b>	--	1.5	1.5	<b>Fresh Water:- 1.5 KLD</b>
3.	<b>INDUSTRIAL</b>					
	Process	12	12 (Fresh:- 6.3 + Recycled:- 5.7)	61 (Fresh 32.7 + Recycled :- 28.3)	73	As per consent, unit is having permission to use 12 KLD fresh water for the manufacturing process. Unit is using only 6.3 KLD Fresh and 5.7 KLD recycled water. After proposed expansion <b>total water requirement will be 73 KLD</b> . Unit will use <b>39 KLD fresh water</b> and <b>34 KLD internal recycled water</b> .
	washing	2.00	2.00	1	3	<b>Fresh water:- 3 KLD</b>
	Boiler	1.5	0.5	2.2	2.7	<b>Fresh water:- 2.7 KLD (Unit will use 2 KLD live steam)</b>
	Cooling	1.1	0.6	3.4	4	<b>Fresh water:- 4 KLD</b>
	Other	--	--	0.8	0.8	Unit will use <b>0.5 KLD Boiler Blow Down water</b> for Water scrubber of Boiler. From scrubber 0.2 KLD water will be getting evaporated. Remaining <b>0.3 KLD saturated scrubber solution</b> will be used for Ash quenching.
	<b>Industrial Total</b>	<b>16.6</b>	<b>15.1</b>	<b>68.4</b>	<b>83.5</b>	<b>48.7 KLD Fresh + 34.8 Recycle</b>
	<b>Grand Total (1+2+3)</b>	<b>19.6</b>	<b>16.1</b>	<b>71.9</b>	<b>88</b>	<b>53.2 KLD Fresh + 34.8 Recycle</b>

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**FIGURE: 2.1**



**EFFLUENT TREATMENT SCHEME**

**2.5.3 ENERGY REQUIREMENT**

The energy requirement in terms of fuel and power for proposed unit is shown in following table no. 2.8 & 2.9.

**TABLE: 2.8**

**FUEL CONSUMPTION REQUIREMENT**

Sr. No.	Particulars	Existing requirement as per CCA AWH-66826	Proposed requirement	Total requirement after expansion
1.	Wood *	4 MT/MONTH	-4 MT/MONTH	0 MT/MONTH
2.	Agro Waste/Briquette	0 MT/MONTH	30 MT/MONTH	30 MT/MONTH
3.	Natural Gas	---	25-30 Nm <sup>3</sup> /Hr	25-30 Nm <sup>3</sup> /Hr
4.	Diesel	---	15 lit/Hr	15 lit/Hr

**TABLE: 2.9**

**ELECTRICITY CONSUMPTION REQUIREMENT**

Sr. No.	Particulars	Existing requirement as per CCA AWH-66826	Proposed requirement	Total requirement after expansion	Remark
1.	Electricity	125 HP	200 HP	325 HP	Will be met through Electricity company

**2.5.3.1 DETAILS OF ENERGY DISTRIBUTION**

Details of energy distribution are covered in below table no. 2.10.

**TABLE: 2.10**

**ENERGY DISTRIBUTION**

Sr. No.	Name of Equipment	Total Connected Energy in HP
1.	Pumps	20
2.	Reactors	40
3.	Air Compressor	15
4.	SFD	25
5.	ETP	15
6.	Blender	15
7.	Ball Mill	180
8.	Utility	15
<b>Total</b>		<b>325</b>

**2.5.4 UTILITIES**

Details of utilities are given in table no. 2.11.

**TABLE: 2.11**

**DETAILS OF UTILITIES**

Sr. No.	Name of Utilities	Capacity	Quantity in Nos.	MOC
1	Hot Air Generator for Tray Dryer & SFD	50000 Kcal/hr & 200000 Kcal/hr	2 Nos	MS
2.	Cooling Tower	80 TR	1 Nos	MS FRP
3.	Air Compressor	15 HP	2 Nos	MS
4.	Boiler	600 Kg/Hr	1 Nos	MS

**2.5.5 EQUIPMENTS/ MACHINERIES**

List of machineries is given in table no:-2.12

**TABLE: 2.12**

**DETAILS OF EQUIPMENTS/MACHINERIES**

Sr. No.	Name of the equipment	Existing		Proposed		TOTAL		MOC
		Capacity KL	Nos.	Capacity KL	Nos.	Capacity KL	Nos.	
1.	Ball Mill	3 KL	1	5 KL	2	5 KL & 3 KL	3	MS/SS
2.	Reactor	5 KL/10 KL	2	10 KL	1	5 KL & 10 KL	3	MS/SS
3.	Open Vessel	10 KL	2	18 KL	1	18 KL & 10 KL	3	MS
4.	SFD	-	-	200 KG/Hour		200 KG/Hour	1	MS

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5.	Blender	-	-	3 KL	1	3 KL	1	--
6.	Air Compressor	7 HP	1	15 HP	1	15 HP & 7 HP	2	--
7.	Receiver	4 KL	2	--	--	4 KL	2	MS
8.	Filter Press	36*36/48*48	3	48*48	1	48*48 & 36*36	4	PP
9.	Tray Dryer	--	--	450 Tray	1	450 Tray	1	--

### **2.5.6 MANPOWER**

The manpower required for the project as well as during the construction/ commissioning activities will be employed from the local. The preference will be given to local people. The man-power requirement is given in below table no. 2.13.

**TABLE: 2.13**

#### **MAN POWER REQUIREMENT**

<b>Phase of Project</b>	<b>Type of Labor</b>	<b>No. of Worker</b>
During construction	Contractual	5
During operations	Managerial	1
	Skilled	19
	Unskilled	10

### **2.6 POLLUTION POTENTIAL SCENARIO**

The details of pollution generation in terms of effluent generation, sewage generation, flue gas emission, process emission and hazardous waste generation are covered in this section.

#### **2.6.1 EFFLUENT AND SEWAGE GENERATION**

Unit has proposed to manufacture 90 MT/Month Synthetic Organic Chemicals. Total wastewater generation will be 66.3 KLD (Domestic: 3 KLD + Industrial: 63.3 KLD). Out of 66.3 KLD, 34.8 KLD effluent will be internally recycle & remaining 28.5 KLD will be subjected to primary ETP. After Achieving CETP norms, 28.3 KLD will subject to CETP (Panoli Enviro Technology Ltd. [PETL]) and generated sludge (with moisture) 0.2 KLD will be sent at TSDF site.

Membership certificate of M/s. BEIL & M/s. PETL is attached as **ANNEXURE-VI & ANNEXURE - VII.**

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**TABLE: 2.14**

**CATEGORY-WISE WASTEWATER GENERATION**

Sr. No.	Particulars	As per Consent AWH-66826	Actual Waste Water Generation	Proposed Waste water Generation KL/Day	Total Waste Water Generation after expansion KL/Day	Remarks
1.	<b>DOMESTIC</b>	3.0	1.00	2.00	3	Disposed through soak pit
2.	<b>INDUSTRIAL</b>					
	Process	7.5	10 (Internal Recycled:- 5.7 + Effluent:- 4.3)	48.5 (Internal Recycled:- 28.3 + Effluent:- 20.2)	58.5	Internal Recycled:- 34 Effluent: - 24.5 KLD subjected to ETP.
	Washing	2.00	2.00	1.0	3	3 KLD washing effluent Subjected to ETP.
	Boiler	0.3	0.1	0.4	0.5	0.5 KLD Boiler Blow Down will be used for Boiler Scrubber.
	Cooling	0.2	0.1	0.9	1	1 KLD Cooling tower blow down will be subjected to ETP.
	Scrubber	--	0.00	0.3	0.3	0.3 KLD Saturated Scrubber solution will be used for ash quenching.
	<b>TOTAL INDUSTRIAL</b>	<b>10</b>	<b>12.2</b>	<b>51.1</b>	<b>63.3</b>	Internal Recycled:- 34.8 KLD Effluent:- 28.5 KLD
	<b>TOTAL (DOMESTIC + INDUSTRIAL)</b>	<b>13</b>	<b>13.2</b>	<b>53.1</b>	<b>66.3</b>	Dispose Through Soak Pit :- 3 KLD  Effluent internally recycled:- 34.8 KLD  Effluent subjected to ETP :- 28.5 KLD  Total 0.2 KLD effluent will be going along with sludge.  <b>So total 28.3 KLD</b>

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						effluent will be subjected to M/s. PETL.
--	--	--	--	--	--	--

**TABLE: 2.15**

### **CHARACTERISTICS OF RECYCLED STEAMS**

Sr. No.	Parameters	Units	STEAMS			
			Filter Press- I	Filter Press - II	Boiler Blow Down	Boiler Scrubber
1.	pH	--	3.0 to 5.0	5.0 to 6.0	8.0 to 10.0	8.0 to 10.0
2.	TSS	mg/l	30-50	20-40	<10	<10
3.	TDS	mg/l	2000-3000	1500-	3000-4000	6000-7000
4.	Ammonical Nitrogen	mg/l	<10	<10	<10	<10
5.	C.O.D.	mg/l	1500-2000	800-900	150-200	<50

#### **2.6.1.1 DETAILS OF EFFLUENT TREATMENT PLANT**

The effluent generated from the various areas will be:

- Process Waste water
- Washing from plant area.
- Utility Blow downs- Boiler, Cooling Tower

Effluent from manufacturing process, Utility, Equipment Washing, will be collected in collection cum neutralization tank. Effluent will be neutralized by using of lime as per requirement till required pH range obtained in neutralization tank. Then, effluent will be passed through a filter press. Filtrate will be collected in collection tank and subjected to M/s PETL-common effluent treatment plant. And generated sludge from filter press will be dried by using of sludge drying bed and subjected to TSDF site Sludge from filtrate and clarifier will be sent to M/s. BEIL, Ankleshwar. TSDF site membership certificate is attached as **ANNEXURE-VI**.

Waste streams generated from spillage, leakages, vessel washing, used container washing etc. will be collected in tank and send to effluent treatment plant.

Unit has recently obtained membership of 28.3 KLD in new allotted PETL capacity as per new GPCB Circular. Unit will give primary treatment and after achieving PETL inlet norm, unit will discharge effluent to PETL. PETL is meeting its discharge norm. So, direction under section 18 (1) (b) of the

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Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP is not applicable.

**TABLE: 2.16**

### **EQUIPMENT LIST OF PROPOSED EFFLUENT TREATMENT PLANT WITH DIMENSION**

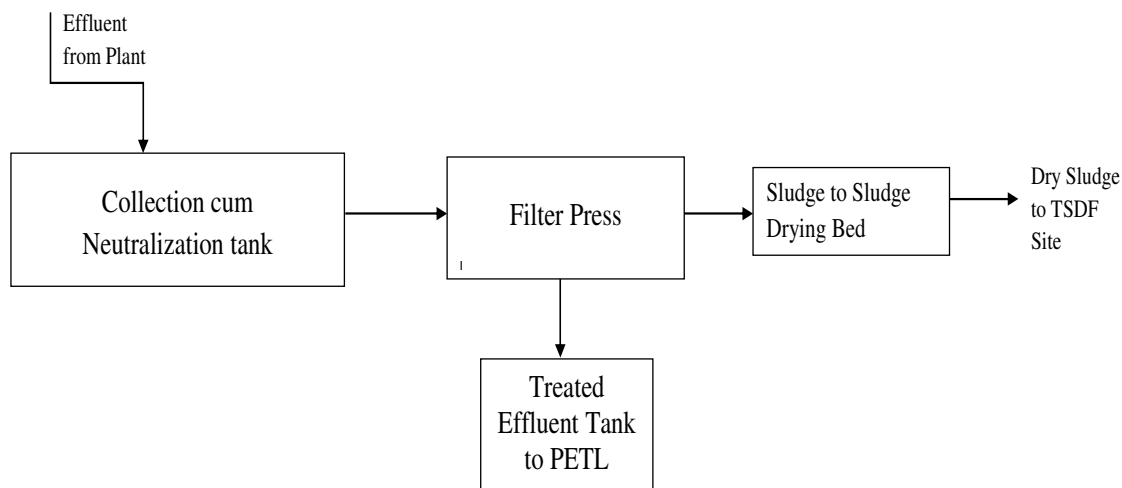
<b>Sr. No.</b>	<b>Name of unit</b>	<b>Qty.</b>	<b>Capacity</b>	<b>MOC</b>	<b>STORAGE LOCATION</b>
1.	Collection cum Neutralization Tank	1	30 KL	RCC BRICK LINING	Over Ground
2.	Filter Press	1	48" X 48"	--	Over Ground
3.	Treated Effluent Tank collection tank	1	30 KL	RCC BRICK LINING	Over Ground
4.	Sludge Drying Bed	1	--	--	Over Ground

**TABLE: 2.17**

### **WASTE WATER CHARACTERISTICS OF DIFFERENT STREAMS**

<b>Sr. No.</b>	<b>Parameter</b>	<b>Unit</b>	<b>Collection cum Neutralization Tank Inlet</b>	<b>After Filter Press (Store in Collection Tank)*</b>	<b>M/s. PETL Norms</b>
1	pH	-	5-6	6.5-7.5	6.5-7.5
2	TDS	mg/lit	4000-6000	4000-6000	--
3	TSS	mg/Lit	70-80	40-60	<100
4	COD	mg/lit	3500-4500	3000-4000	10000
5	BOD	mg/lit	1500-2000	1000-1500	3000
6	Ammonical Nitrogen	mg/lit	<20	<20	<20
7	Phenol	mg/lit	Nil	Nil	<1
8	Copper	mg/lit	Nil	Nil	3
9	O & G	mg/lit	Nil	Nil	Nil

**FIGURE: 2.2**  
**FLOW DIAGRAM OF ETP**



**2.6.1.2 ECONOMICAL AND TECHNICAL VIABILITY OF THE EFFLUENT TREATMENT SYSTEM**

**TABLE: 2.18**

**DETAILS OF COST OF ETP PER YEAR**

<b>Sr. No.</b>	<b>Detail</b>	<b>Expenses in Rs. Monthly</b>	<b>Expenses in Rs. Annually</b>
1	ETP O & M	61,000/-	7,32,000/-
2	Raw Material Consumption	30,000/-	3,60,000/-
3	28.3 KLD effluent discharge in PETL	1,82,500/-	21,90,000/-
<b>TOTAL(A) Rs.</b>		<b>2,73,500/-</b>	<b>32,82,000/-</b>

Unit will allocate a certain amount of money towards environment health and safety department. This will enable the management to smoothly run ETP plant. Thus proper management of ETP can be carried out without having to worry about unit profit.

The annual turnover of the company will be around Rs. 37.80 Crores. The ETP operational cost is 1.69% of turnover per year. This indicates financial viability of effluent treatment plant.

As characteristic shown in table 2.17, unit will achieve the CETP norm after neutralization.

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Considering this, we can say that proposed effluent treatment system is economically & technically viable.

### 2.6.1.3 EXPLORING POSSIBILITY FOR ZLD

Sr. No.	Unit	Installed Capacity (KLD)	Capital Cost (Rs in Lacs)	Operating cost (Thousand/Day/KL)			Maintenance Cost (Thousand/Day/L)	Utility Cost (Thousand/Day/KL)	Total recurring cost (Thousand/Day/KL)
				Electricity	Man power	Chemical & consumables			
1	MEE	28.3	56	0.2	0.8	0.2	1.4	0.4	3.0
<b>TOTAL</b>			<b>56</b>	<b>0.2</b>	<b>0.8</b>	<b>0.2</b>	<b>1.4</b>	<b>0.4</b>	<b>3.0</b>

- For Zero liquid discharge, unit will require to install 28 KLD MEE.
- The cost of 1 KLD effluent treatment by MEE will be 3000 Rs.
- For 28.3 KLD effluent treatments, MEE cost will be 84900 Rs.
- A charge of companies BEIL (CMEE) is Rs.5.00 per liter and ACPTCL (CMEE) is Rs. 7.0 per liter.
- GIDC charge Rs. 30 for fresh 1 KL water.
- By installing MEE, Unit will recover 27.5.
- KL/Day water. For 27.5 KL, GIDC charge Rs. 825/.
- ZLD COST FOR 28.3 KLD will be 84900-825= 84075 Rs./Day
- PETL charges for effluent treatment is 30 Rs./KL. So. 28.3 KLD discharges will be 849 Rs. /day.
- There will be increase CO<sub>2</sub> emission.

Unit is small scale Unit. So, The ZLD is not economically viable to unit.

### 2.6.2 GASEOUS EMISSIONS & CONTROL

#### 2.6.2.1 FLUE GAS EMISSIONS

In existing condition unit has installed Boiler (600 kg/Hr.) & Hot Air Generator (50000 Kcal/Hr.) based on Wood. After proposed expansion unit will install Boiler (600 kg/Hr.) & Hot Air Generator (50000 Kcal/Hr.) for Tray Dryer based on Agro waste/ Briquette, Hot Air generator (200000 Kcal/Hr.) based on Natural gas for SFD and D.G.Set (50 KVA). Unit will install Bag Filter & water scrubber as an APCM to curb the flue gas emission. Flue gas emission detail is given in table no:-2.19.

**TABLE: 2.19**

**FLUE GAS EMISSIONS**

Sr. No.	Stack Attached To	Stack Height (m)	Quantity of Fuel	APCM	Type of Emission	Permissible Limit
<b>AS PER Existing CCA No:-AWH-66826</b>						
1.	Boiler 600 KG/Hr	11	WOOD - 4 MT/Month	---	PM SO <sub>2</sub> NO <sub>x</sub>	120 mg/Nm <sup>3</sup> 80 ppm 40 ppm
2.	Hot Air Generator (50,000 Kcal/Hr)	11				
<b>AFTER PROPOSED EXPANSION</b>						
3.	Boiler 600 Kg/Hr	22	Agro Waste/Briquette (20 MT/Month)	Bag Filter + Water Scrubber	PM SO <sub>2</sub> NO <sub>x</sub>	120 mg/Nm <sup>3</sup> 80 ppm 40 ppm
4.	Hot Air Generator (Tray Dryer)	22	Agro Waste/Briquette (10 MT/Month)	Bag Filter + Water Scrubber		
5.	Hot Air Generator for SFD (2,00,000 Kcal/Hr)	11	Natural Gas (25 Nm <sup>3</sup> /Hr.)	Adequate stack height		
6.	D.G.Set (50 KVA)	11	Diesel (15 Lit/Hr.)	Acoustic Enclosure		

**2.6.2.2 PROCESS EMISSIONS**

PM will be a possible source of process gas emission. Process gas emission detail is given in table no:- 2.20.

**TABLE: 2.20**

**PROCESS EMISSIONS AND CONTROL MEASURES**

<b>As per Existing CCA No.: AWH-66826</b>					
Sr. No.	APCM attached to	Stack Height	APCM	Pollutant	Permissible Limit
No existing process gas emission.					
<b>After Proposed Expansion</b>					
1	Spin Flash Dryer	11	Bag Filter	PM	120 mg/Nm <sup>3</sup>

**2.6.2.3 FUGITIVE EMISSION**

The possible sources of fugitive emission are given in table No. 2.21.

**TABLE: 2.21****DETAILS OF FUGITIVE EMISSION CONTROL MEASURES**

<b>Sr. No.</b>	<b>Source</b>	<b>Probable Pollutant Emission</b>	<b>Control Measures/ APCM</b>
<b>FUGITIVE EMISSION</b>			
1	Handling of raw material bags in storage area	Air pollutant (PM)	i) Provision of exhaust ventilation ii) Provision of PPE. iii) Provision of Job rotation to reduce exposure.
2	Solid raw material transferring to reactor	Air pollutant (PM)	Hopper will be provided with powder transfer system.
3	Solvent Recovery System	Air Pollutant (VOC)	i) Solvent recovery system with steam condensation system. ii) Pump & motors are mechanical seal type.
4	Solvent storage tank	Air Pollutant (VOC)	i) Carry out workplace area monitoring to find out concentration level in ambient air close handling system. ii) Provision of breather valve cum flame arrester.
5	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	i) Routine & periodic inspection to check leakage. ii) Preventive maintenance, Follow SOP for maintenance. iii) Pumps & motors will be mechanical seal type. iv) LDAR program will be followed. Provision of Flange guard.
6	Liquid raw material transferring to reactor	Air pollutant (VOC)	Feeding of liquid raw material will be carried out by closed pipeline and mechanical seal pump.
7	Loading /unloading at storage area	Air pollutant (VOC)	Unloading through pipeline to tank in a close system.

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Regular ambient air quality monitoring will be carried out within premises and nearby area for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub>, and VOC in the downwind directions as well as where maximum ground level concentration is anticipated and record of the same shall be maintained.

To control other fugitive emissions following measures are recommended:

- A. Controlled emissions and provision of PPE for the workers.
- B. Provision of mechanical seal in pumps.
- C. Regular inspection of tank roof seals.
- D. Adequate measures for the minimization/prevention of the fugitive emission.
- E. Regular maintenance of valves, pumps and other equipment to prevent leakage.
- F. Entire process to be carried out in the closed reactors with proper maintenance of temperature.
- G. Regular periodic monitoring of work area to check the fugitive emission.
- H. Adequate stack heights as per the CPCB estimation will be provides at all locations to reduce GLCs of pollutants.
- I. Air Pollution Control System will be installed in the plant.

### **2.6.3 SOLID & HAZARDOUS WASTE GENERATION**

The following type of hazardous waste will be generated from the operational activities. All the waste will be stored separately in a designated storage area. The details of hazardous waste are given in table no.2.22.

**TABLE: 2.22**

**DETAILS OF HAZARDOUS WASTE**

Sr. no.	Name of Hazardous waste	Source of generation	Category	Quantity/ Annum				Management of HW
				As per Consent –AWH 66826	Actual Generation	Proposed	Total	
1.	ETP Waste	From ETP plant	26.2	60 MT	22 MT	38 MT	60 MT	Collection, Storage Transportation and disposal at TSDF M/s.BEIL.
2.	Used Oil	From Lubrication	5.1	0.06 KL.	0.06 KL	0.44 KL	0.5 KL	Collection, Storage & Reused within the premises.
3.	Discarded Drums/ Containers	From Packing Material	33.3	0.075 MT	0.075 MT	3.225 MT	3.3 MT	Collection, Strong, Decontamination & Reused
4.	Discarded Bag/Liners	From Packing Material	33.1	0.24 MT	0.24 MT	4.76 MT	5 MT	Collection, Strong, Decontamination & Reused
5.	Recoverable Solvent	Generated from CPC BETA BLUE	28.6	0	15 MT	1040 MT	1055 MT	Collection, Storage, Transportation & recover and reuse internally.
6.	Spent Sulphuric Acid	Generated from CPC Alpha Blue	B15	1260 MT	1032 MT	5160 MT	6192 MT	Collection, Storage, Transportation & sell to end user having Rule-9 Permission.

**2.6.3.1 HAZARDOUS WASTE AND SOLID WASTE MANAGEMENT**

Waste is an unavoidable byproduct of human activity. Economic development, rapid urbanization & improved living standards have led to the increase in quantity & complexity of the waste generated. Proper disposal of waste is essential for preservation and improvement of public health.

Solid waste management is one of the most essential services for maintaining the quality of life in the plant and for ensuring better standards of health and sanitation. Solid waste generated in the plant area

can be handled under two main categories, namely domestic wastes and industrial wastes. Effective measures shall be taken to effectively implement the solid waste management systems in the plant. Solid waste will be handed over to authorized vendor for disposal.

The Hazardous wastes shall be handled and disposed as per Hazardous Waste (Management and Handling) Rules, 2016.

The Waste Management plan includes:

- Waste Inventory
- Classification of waste
- Packaging, Storing and Transporting Wastes to Disposal site
- Data Management and Reporting -Personnel Training
- Waste Minimization

**General Guidelines for Waste Management:**

**1. Solid waste**

- The solid waste shall be segregated as bio-degradable and non-biodegradable.
- The organic waste shall be segregated and handed over to outside authorized agency for disposal.
- The non-biodegradable (inorganic) waste shall be handed over to authorized recycler for further handling and disposal.
- Reuse of paper and plastic waste.
- Planned system for waste collection, segregation and disposal.
- E-waste will be disposed as per E-Waste (Management) Rule, 2016.

**2. Hazardous waste**

- Hazardous waste will be stored as per the guidelines in proper storage room and handed over to authorized vendor for final disposal.
- The collection, treatment and disposal of hazardous waste will be as per Hazardous waste (Management and Handling) Rules 2016, and hence no adverse impact on land environment is envisaged.
- It is proper management it will be stored separately in dry & covered place with RCC plat form. There will be provision of separately storage area.
- Forklift truck will be used in shifting, loading and unloading operation for hazardous waste to minimize manual handling of hazardous waste.
- Necessary PPE's shall be provided to workers while handling of hazardous waste.

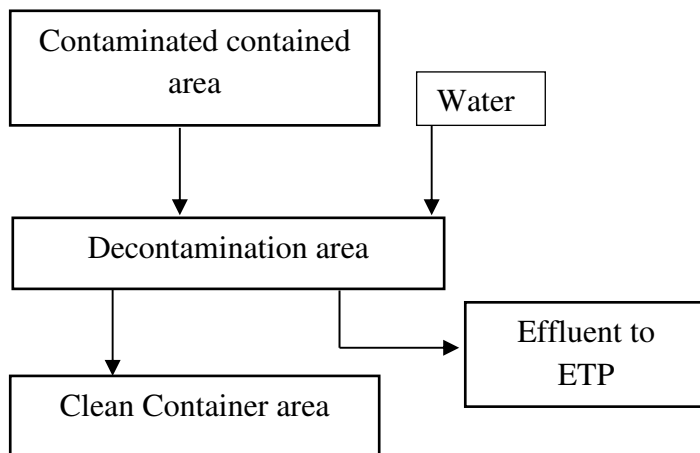
- The details of quantity of hazardous waste generated and disposal facility is given in Chapter 2 in section 2.6.3.

### **2.6.3.2 METHODOLOGY FOR DECONTAMINATION**

For disposal of discarded bags and containers, the guideline provided by the Gujarat Pollution Control Board will be followed. It will be ensured that containers are empty before taken for disposal. As per the guidelines all the containers will be washed properly, the washings will be checked for pH and COD. The pH should be neutral and COD should be NIL. This will ensure that the containers are cleaned before taken for disposal. Removal or defacing of all labeling and content of all product and waste material will be regular practice. The sticker will be put on individual container as "cleaned". The container will be deposited in the area marked for disposal. Then the containers will be inspected by the certifying agency approved by the GPCB. In confirmation of the quality of the cleaning they will issue the stickers for identification. After receiving stickers, that should be pasted on to the containers. Then the containers are disposed of to actual raw material supplier.

**FIGURE: 2.3**

### **METHODOLOGY OF DECONTAMINATION**



**FIGURE 2.4**

**PHOTOGRAPHS OF EXISTING SITE**

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**2.6.3.3 QUALITATIVE AND QUANTITATIVE ANALYSIS OF HAZARDOUS WASTE STEAM**

During the manufacturing of Synthetic organic chemicals, One types of hazardous waste will be generated.

1) Spent Sulphuric Acid

**A) QUALITATIVE AND QUANTITATIVE ANALYSIS OF SPENT SULPHURIC ACID SOLUTION**

**TABLE: 2.23**

**QUANTITATIVE ANALYSIS**

<b>NAME OF HAZARDOUS WASTE</b>	<b>SOURCE</b>	<b>GENERATION OF MT HAZARDOUS WASTE / MONTH</b>	<b>MT OF PRODUCT</b>
Spent Sulphuric Acid (25 to 30%)	From Phthalocyanine Alpha Blue	515.46	30

**TABLE: 2.24**

**QUALITATIVE ANALYSIS**

<b>NAME OF HAZARDOUS WASTE</b>	<b>CHARECTERISTICS</b>	<b>REMARKS</b>												
Spent Sulphuric Acid	<table border="1"><thead><tr><th><b>Test</b></th><th><b>Characteristics</b></th></tr></thead><tbody><tr><td>Color</td><td>Colorless</td></tr><tr><td>Sp. Gr.</td><td>1.2 – 1.3</td></tr><tr><td>Acidity (%)</td><td>25 to 30</td></tr><tr><td>pH</td><td>&lt;1</td></tr><tr><td>COD (mg/l)</td><td>Not more then 2500</td></tr></tbody></table>	<b>Test</b>	<b>Characteristics</b>	Color	Colorless	Sp. Gr.	1.2 – 1.3	Acidity (%)	25 to 30	pH	<1	COD (mg/l)	Not more then 2500	Sell to End users who are having permission of rule-9.
	<b>Test</b>	<b>Characteristics</b>												
	Color	Colorless												
	Sp. Gr.	1.2 – 1.3												
	Acidity (%)	25 to 30												
	pH	<1												
COD (mg/l)	Not more then 2500													

## **2.7 IMPORTANCE AND JUSTIFICATION OF PROJECT**

M/s. Shubhlaxmi Pigments is a pigment group of India ventured into manufacture of synthetic organic chemical. This Chemical is commonly used as a coloring agent in different substances. The offered chemicals is processed by using optimum quality chemical and advanced technology as per set market norms. This product is used into plastic, Rubber, Textile, Inks and paints industries.

### **2.7.1 PROJECT IMPLEMENTATION SCHEDULE**

Implementation of Project within a pre-determined time frame is an important factor for the success of a project. Timely implementation saves on various costs like interest, administrative overheads and helps to realize the goals as per pre-determined objectives. Implementation of Project involves co-ordination of different activities at various levels of the firm and amongst different outside agencies. The project implementation schedule is given in table no.2.25.

This will start immediately after getting Environment Clearance. From the date of start, the implementation schedule envisages completion of project in 8 months. It is considered that preliminary activities such as obtaining necessary statutory clearance for proposed project and financial arrangements for the implementation of the project will be made at proper dates.

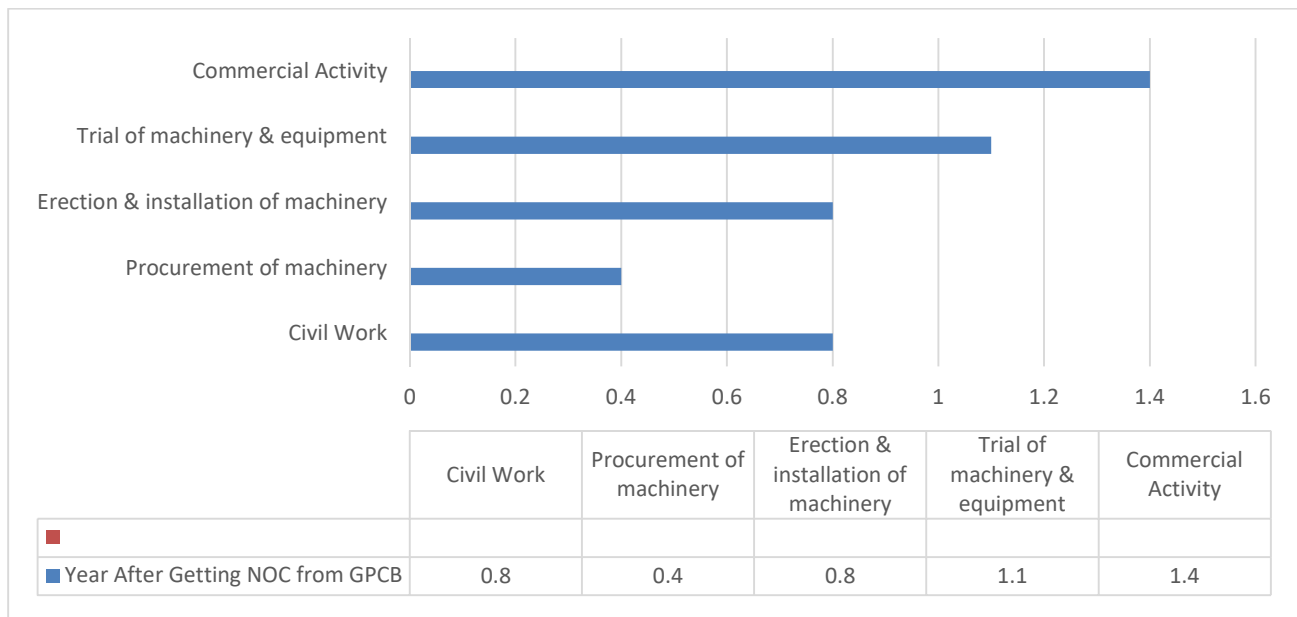
The major activities to be carried out at site during project work are as follows:

**TABLE: 2.25**

#### **PROJECT IMPLEMENTATION SCHEDULE**

Project implementation schedule after getting NOC from GPCB		
<b>Sr. No.</b>	<b>Activity</b>	<b>Required Period</b>
1.	Civil work	Immediately after getting NOC-8 Months
2.	Procurement of machinery	4 month after getting NOC
3.	Erection& installation of machinery	Immediately after competition of activity no.2 - 4 month
4.	Trial of machinery & equipment	Within 3 months after competition of activity no.3
5.	Commercial activity	3 months after competition of activity no.4

**FIGURE 2.5  
BAR CHART**



**2.8 PROJECT COST ESTIMATES**

A Budget allocation for project and effective Environmental Monitoring Plan (EMP) is proposed in Table 2.26.

**TABLE 2.26**

**BUDGET ALLOCATION FOR ENVIRONMENTAL MANAGEMENT**

<b>CONSTRUCTION PHASE</b>			
<b>Sr. No.</b>	<b>Pollution Control Measures</b>	<b>Operating cost (Rs. In Lakhs)</b>	
1.	Miscellaneous	2 Lakhs	
<b>TOTAL</b>		<b>2 Lakhs</b>	
<b>OPERATION PHASE</b>			
<b>Sr. No.</b>	<b>Pollution Control Measures</b>	<b>Approximate Capital Cost (Rs. In Lakhs)</b>	<b>Approximate Recurring Cost Per Annum (Rs. In Lakhs)</b>
1.	Air Pollution Control	7.0	2.4
2.	Water Pollution Control	8	32.82
3.	Environment Monitoring and Management	--	3.0
4.	Solid Waste Management	1	0.90
5.	Fire Safety & Equipment	4	3.3
6.	Green Belt	5	5.48
<b>TOTAL</b>		<b>25</b>	<b>47.90</b>

## **2.9 SOLVENT RECOVERY SYSTEM WITH SCRUBBER TO CONTROL VOC**

IBA/Xylene is the solvent to be used in the Phthalocyanine Beta Blue process. Solvent will be recovered under closed system.

Isobutyl alcohol/xylene is the solvent to be used in beta blue manufacturing process.

Solvent recovery plant is designed to recover the IBA/Xylene from the mother liquor. Plant will work efficiently with approx. 96 to 97 % recovery.

Recovered IBA/Xylene will be reused in next batch. There will no loss in the atmosphere.

The 2 to 3 % solvent remains with waste water and finds its way in the effluent.

Diagram for IBA/Xylene recovery system is shown in Figure 2.2.

**TABLE 2.27**

### **SOLVENT RECOVERY MATERIAL BALANCE**

<b>Input</b>	<b>kg</b>		<b>kg</b>	<b>output</b>
Fresh IBA/Xylene	50	<b>DISTILLATION</b>	1450	Recovered IBA/Xylene
Recover IBA/Xylene	1450		50	Loss
<b>Total</b>	<b>1500</b>		<b>1500</b>	<b>Total</b>

**TABLE 2.28**

### **DETAILS OF SOLVENT RECOVERY**

<b>SOLVENT</b>	<b>TOTAL MT/MONTH</b>	<b>RECOVERED MT/MONTH</b>	<b>FRESH MT/MONTH</b>	<b>RECOVERY (%)</b>
<b>IBA / Xylene</b>	90.91	87.88	3.03	<b>96.7%</b>

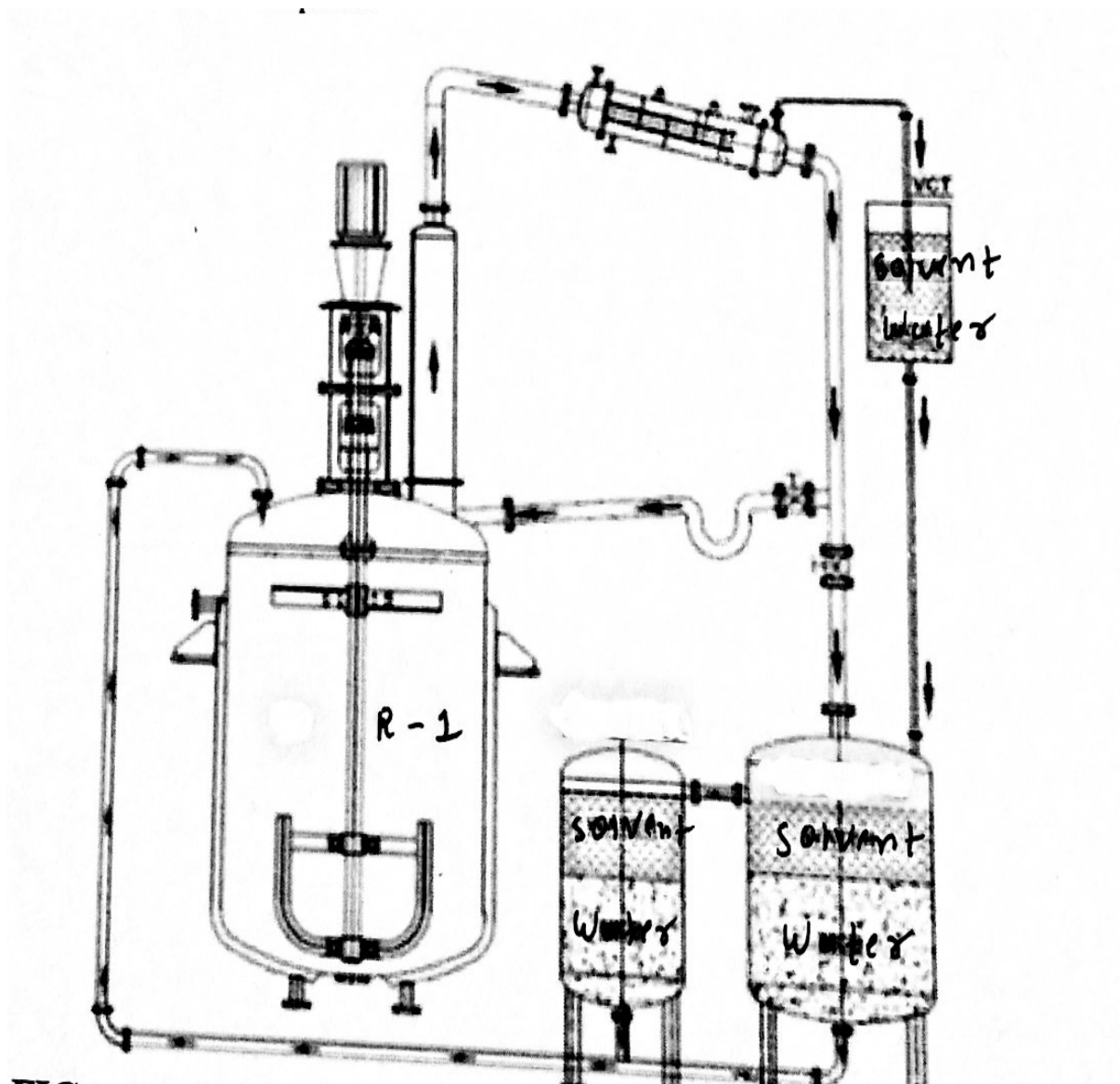
**TABLE 2.29**

### **MACHINERY FOR SOLVENT RECOVERY SYSTEM**

<b>Sr. No.</b>	<b>Name of Units</b>
1.	Reactor
2.	Receiver
3.	Condenser
4.	Water Tank

FIGURE 2.6

DIAGRAM OF SOLVENT RECOVERY SYSTEM OF IBA/XYLENE



## **2.10 ODOUR MANAGEMENT PLAN**

### **Odour Problem and Sources of Emissions**

- Causes of odour can be bad sanitation, bacterial growth in the interconnecting pipes & unattended drains etc.

### **Remedial Measures**

- Better management to avoid staling.
- Use of sanitation biocides to minimize the growth of aerobic/anaerobic microorganisms.
- Steaming of major pipe lines.
- Proper cleaning of drains.

Following Additional methods can also be used to reduce odour nuisance:

- Green belt development in the buffer zone may help at least partially to mitigate / obfuscate the Odour.
- Ensuring that the operation is carried out under the best management practices.
- If still the Odour persists, nozzles, sprayers and atomizers that spray ultra-fine particles of water or chemicals can be used along the boundary lines of area sources to suppress odour.

## **2.11 FUGITIVE EMISSIONS MANAGEMENT PLAN**

Fugitive emission sources and their control measures are shown in below table no. 2.30.

**TABLE: 2.30**

### **PROPOSED FUGITIVE EMISSION CONTROL MEASURES**

<b>Sr. No.</b>	<b>Probable Source</b>	<b>Proposed Control Measures</b>
1.	Pump handling odorous chemicals and pressured gases	<ul style="list-style-type: none"><li>• Use of mechanical seals of pumps and compressor.</li><li>• All pipeline and pipe fitting shall be well maintain, wear and tear shall be attended promptly.</li></ul>
2.	At reactor during charging of liquid and solids chemicals	<ul style="list-style-type: none"><li>• Liquid raw material will be charged by pumping and closed loop.</li></ul>
3.	Pressure release valve emission from pipeline	<ul style="list-style-type: none"><li>• For highly pressurized lines, vent lines of PRVs to air pollution control device in case of toxic gases.</li></ul>
4.	Release from sampling lines	<ul style="list-style-type: none"><li>• Using a close loop sampling system.</li></ul>
5.	Emission from bulk storage tank during unloading	<ul style="list-style-type: none"><li>• Breather valve, PSVs, Rupture disc will be provided.</li><li>• Vapor recovery system will be installed for process</li></ul>

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Sr. No.	Probable Source	Proposed Control Measures
		and storage vent tank.
6.	Leak from valves, flanges, plugs and instrument connection.	<ul style="list-style-type: none"><li>• Welded pipes will be used wherever feasible.</li><li>• Suitable gasket material to be used.</li><li>• Suitable gland packing will be used in valves.</li><li>• Periodic inspection and maintenance of pipes and pipe fittings.</li></ul>
7.	Chemical vapors from wet cake in filtration and drying area	<ul style="list-style-type: none"><li>• Filtration will be done out in Agitated Neutsch filter. Transfer and drying of wet-cake done in system shall be adopted, worker shall be provided PPEs, fume extraction system shall be provided, whenever require.</li></ul>
8.	Warehouse storing drums and bags	<ul style="list-style-type: none"><li>• Spillages shall be strictly prevented by providing dip pans, proper handling equipment, minimum manual operation, local exhaust and roof top ventilators.</li><li>• Spill control procedures and equipment shall be provided.</li></ul>

### 2.12 DETAILS OF NON HAZARDOUS WASTE

Details of Non Hazardous waste is shown in below table no. 2.31.

**TABLE: 2.31**

#### **DETAILS OF NON HAZARDOUS WASTE**

Sr. No.	Waste	Quantity	Mode of Disposal
1.	Glass Waste ( Z 13)	0.2 MT/Year	Landfill site
2.	Paper waste (Z44)	0.5 MT/Year	Landfill site
5.	Wooden Waste	3 MT/Year	Authorized Scrap Vendors
6.	E-waste	1 MT/Year	Authorized E-Waste handlers

## **2.13 ADEQUACY OF THE PROPOSED EMS**

### **AIR:**

Unit will install HAG for Tray Dryer (50000 Kcal/Hr.) & Boiler (600 Kg/Hr.) based on Agro waste/Briquette, HAG for SFD (200000 Kcal/Hr.) Based on natural gas & D.G.Set (50KVA). Unit will install Bag Filter as an APCB to curb the flue gas emission from HAG. Agro waste/Briquette will be used in Boiler with adequate APCM like bag filter. To curb the process gas emission (PM), unit will install Spin Flash Dryer.

### **WATER:**

Total water requirement will be 88 KLD. Unit will use only 53.2 KLD fresh water. Unit has obtained permission from GIDC. Permission letter is attached as **ANNEXURE-V**.

Total 28.3 KLD Effluent will be send to the M/s. PETL attached as **ANNEXURE – VII**.

### **HAZARDOUS WASTE:**

There will be generation of ETP sludge (60 MT/Annum), Discarded Drums/containers 3.3 MT/Annum), Discarded bags and Liners (5 MT/ Annum), Used oil (0.5 KL/Annum), Recoverable Solvent (1055 MT/Annum) and Spent Sulphuric acid (6192 MT/Annum). Hazardous waste will be stored in dedicated closed areas. ETP sludge will be sent to TSDF site for disposal. Discarded containers and bags will be sold to authorized dealers after proper decontamination. Used oil will be disposed to registered re-processors. Spent Sulphuric acid will be sent to end user having Rule-9 permission.

### **CONCLUSION:**

The environment management plan given by **M/s. SHUBHLAXMI PIGMENTS** for air, water and hazardous waste is adequate as per the worst-case scenario.

## **CHAPTER – 3**

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### **BASELINE ENVIRONMENT STATUS**

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#### **3.1 INTRODUCTION**

It is essential to monitor the environment quality prevailing in the surrounding area before implementation of the any project for assessing the environmental impacts. The Environment status within the study area could be used for identification of significant environmental issues to be addressed in the impact assessment study.

The impact from an existing industrial project on its surrounding environment are mainly regulated by,

- The nature of the pollutants,
- Their quantities discharged to the environment,
- Existing environment quality
- Assimilative capacity of the surrounding environment and
- Topography and terrain of the project site.

In order to identify and establish the extent of likely impacts, it is necessary to gather information on existing environmental quality relating to various components of the environment.

Primary data were collected for baseline collection. Secondary data were also gathered for remaining information like meteorological data, Socio-economic data, Ecological data and Land use data. For the purpose of collection of primary data, study area was selected within 5 km radius taking project site as a center which also included towns and villages.

The main factor of local, sub-regional and regional meteorology that influence the air quality in area of the proposed project are diurnal and seasonal wind pattern and wind direction, humidity , temperature etc.

Panoli is a very important industrial center having the advantage of due to NH-8 and Panoli railway station, GIDC is well connected by road and rail to rest parts of the country. Communication facility available in the area is good. Water is available from GIDC.

Panoli is large industrial estate with a number of chemical plants, paper mills, textile processing plants and other allied industries totaling to about more than 500 units.

At present there are several industries located in this area. Lists of major industries in the Panoli are given in Table 3.1.

**TABLE: 3.1****LIST OF MAJOR INDUSTRIES IN THE PANOLI-GIDC**

<b>Sr. No.</b>	<b>Name Of The Company</b>	<b>Address</b>
1.	Krishna Polymers	Plot No: 227/3, Phase-i, Opp. Cheminova India Ltd., G.I.D.C., Panoli- 393416, Gujarat, India.
2.	Saffron Chemical Industries	Plot No-3003, G.I.D.C., Near Gujrat Agro Chemicals, Panoli - 393416, Gujarat, India
3.	Yash Engineering	Shed No. J-1415, G.I.D.C., Estate,, Panoli - 394116, Gujarat, India
4.	P K Intermediates Pvt. Ltd.	C1b 1906 & 1907 G.I.D.C. Panoli, Dist - Bharuch, Panoli - 394116, Gujarat, India
5.	Shreeji Chemical Industries	Plot No- 506, G.I.D.C. Estate, Panoli District-Bharuch, Panoli - 394116, Gujarat, India
6.	Vrundavan Chemicals	C1-b 407/6, G.I.D.C. Estate, Tal-ankleshwar,, Panoli - 394116, Gujarat, India
7.	Arihant Inorganics Process (Pvt.) Ltd.	Plot No. 906/19, Nr. Ganeshanand Chowkdi, G.I.D.C., Panoli - 394116, Gujarat, India
8.	Navkar Chemicals	Plot No. 3010, Third Phase, G.I.D.C. Industrial Estate, Panoli - 394116, Gujarat, India
9.	Jackson & Sons	Plot No. 514, 515, 516, B/h, V-trans (i) Ltd., G.I.D.C. Estate, Panoli - 394116, Gujarat, India
10.	Sun Chloride Pvt. Ltd.	Plot No. 603, G.I.D.C. Estate, Panoli, Panoli - 394116, Gujarat, India
11.	Pragna Life Science Pvt. Ltd.	Plot No. 409/b/2, Panoli - 394116, Gujarat, India
12.	Visual Pharma Chem	Plot No.: 2216/2217, G.I.D.C., Phase-3, Panoli - 394115, Gujarat, India
13.	Impro Interchem Pvt. Ltd.	Plot No. 414, G.I.D.C. Industrial Estate, Panoli - 394116, Gujarat, India.
14.	Shivnath Industries	Plot No.1815, I-phase, G.I.D.C. Panoli - 394116, Gujarat, India.
15.	Enzal Chemicals (i) Ltd.	Plot No-2803/4, G.I.D.C. Estate, Bharuch District, Panoli - 394116, Gujarat, India.
16.	Dalmiya Chemicals Ltd	Plot No.425, G.I.D.C., Panoli - 394116, Gujarat, India.
17.	Sai Vision Chem India Pvt. Ltd.	Plot No. 2912, G.I.D.C. Phase-3, Panoli - 394116, Gujarat, India.
18.	Machhar Industries Limited	Office No.614, G.I.D.C. Panoli - 394115, Gujarat, India.
19.	Plus Chemicals	Plot No. 220/a, Near J.b. Chemical, Water Tank, G.I.D.C. Panoli - 394 116, Gujarat, India.
20.	Solvay Specialities India Pvt. Ltd.	Plot No. 3526/27, G.I.D.C. Estate, Panoli, Bharuch, Panoli - 394116, Gujarat, India.

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<b>Sr. No.</b>	<b>Name Of The Company</b>	<b>Address</b>
21.	Rhodia Polymers & Specilist India Pvt. Ltd.	Plot No-237, G.I.D.C. Estate, District Bharuch, Panoli - 393002, Gujarat, India.
22.	Trikaldarshi Chemical Industries	Plot No.: 104, Road No.: 1, G.I.D.C. Panoli - 394116, Gujarat, India.
23.	Gujarat Reclaim & Rubber Products Ltd.	Plot No.664, G.I.D.C. Panoli - 394116, Gujarat, India
24.	Karunesh Remedies	Plot No. 417/2, G.I.D.C. Panoli, Tal; Ankleshwar, Dist: Bharuch, Panoli - 394116, Gujarat, India
25.	Rahul Intermediates	Plot No: 422, G.I.D.C., Panoli, near Dalmia Chemical, Road No-4, Opp. Blueblend Syntex, Panoli - 394116, Gujarat, India.
26.	Abs Industries	Plot No: 408/10, Opp. Achechem Limited G.I.D.C., Panoli - 394116, Gujarat, India.
27.	Gujarat Amines	Plot No.:2107, G.I.D.C., Opp. Sanjali Railway Station, Panoli - 394116, Gujarat, India.
28.	Acmechem Limited	Plot. 412-413, G.I.D.C. Estate, Dist. Bharuch, Panoli - 394116, Gujarat, India.
29.	S. R. Chemicals	Plot No. 1917 & C-1/1918, G.I.D.C., Dist. Bharuch, Panoli - 394116, Gujarat, India.
30.	Sunwell Organics Pvt. Ltd.	Plot No. 602, G.I.D.C. Estate, Panoli - 394116, Gujarat, India.
31.	Meghmani Organics Ltd.	Plot No.21/21/1, G.I.D.C. Estate, Panoli - 394116, Gujarat, India.
32.	R. P. Industries	Plot No.314/315, G.I.D.C. Panoli - 394116, Gujarat, India.
33.	Ohm Dye Chem	Plot No-517, G.I.D.C. Industrial Estate,, Panoli - 394116, Gujarat, India.
34.	Rajchem Industries	Plot No. 2915/2916, Phase-iii, Opp. Gujarat Agro Chem, G.I.D.C. Panoli - 394116, Gujarat, India.

M/s. Shubhlaxmi Pigments will be located in GIDC Estate, Panoli. The location aspects of the site are provided in Table 1.4 in Chapter 1.

For Baseline Study, the monthly meteorological data for study period from March-2018 to May-2018 is shown at below Table 3.2.

### 3.2 WINDROSE

Based on the meteorological data, wind rose have been prepared for the summer season period between the March-2018 to May-2018. The wind rose diagram prepared from same data is shown at Figure 3.1(A), Figure 3.1(B) Figure 3.2.

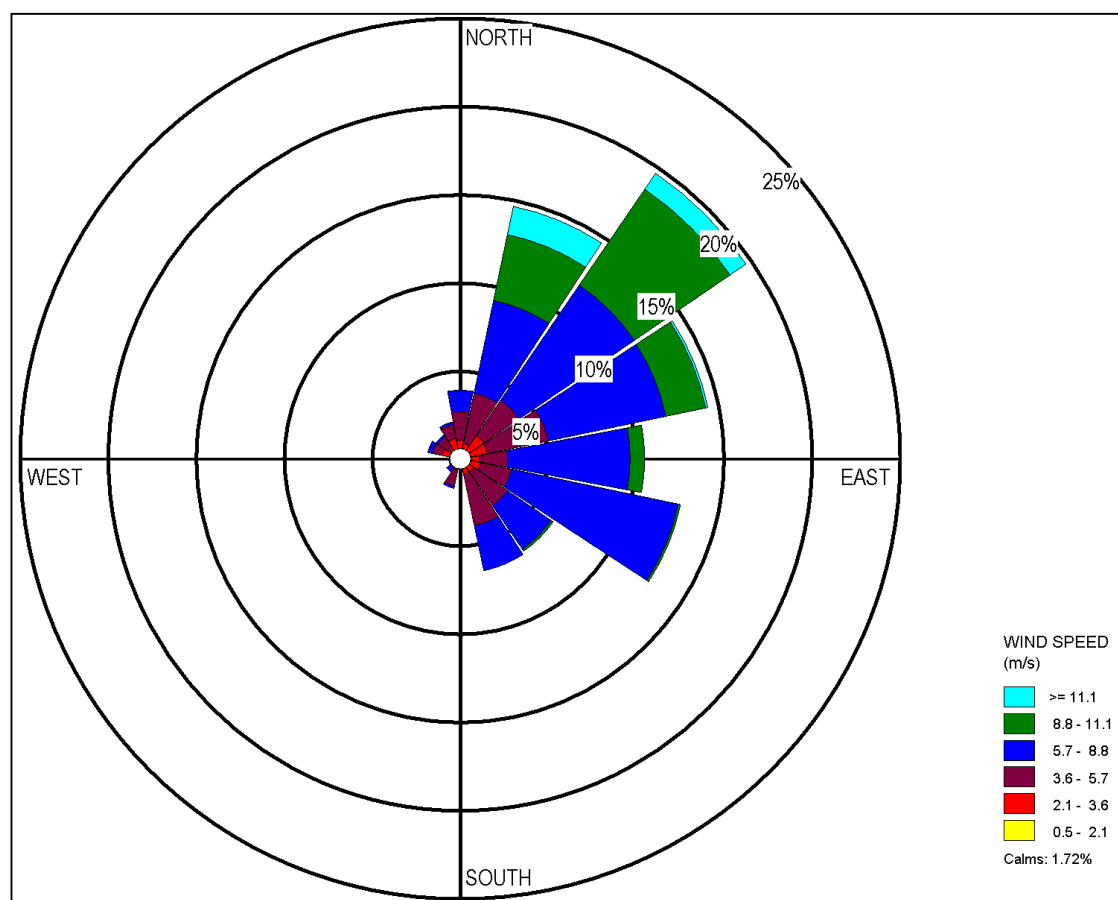
**TABLE: 3.2**

**METEOROLOGICAL DATA**

Month	Temperature(°C)		Humidity (%)		Rain fall (mm)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
March-2018	39	25	79	4	00	00
April-2018	40	26	76	3	00	00
May-2018	42	28	72	3	00	00

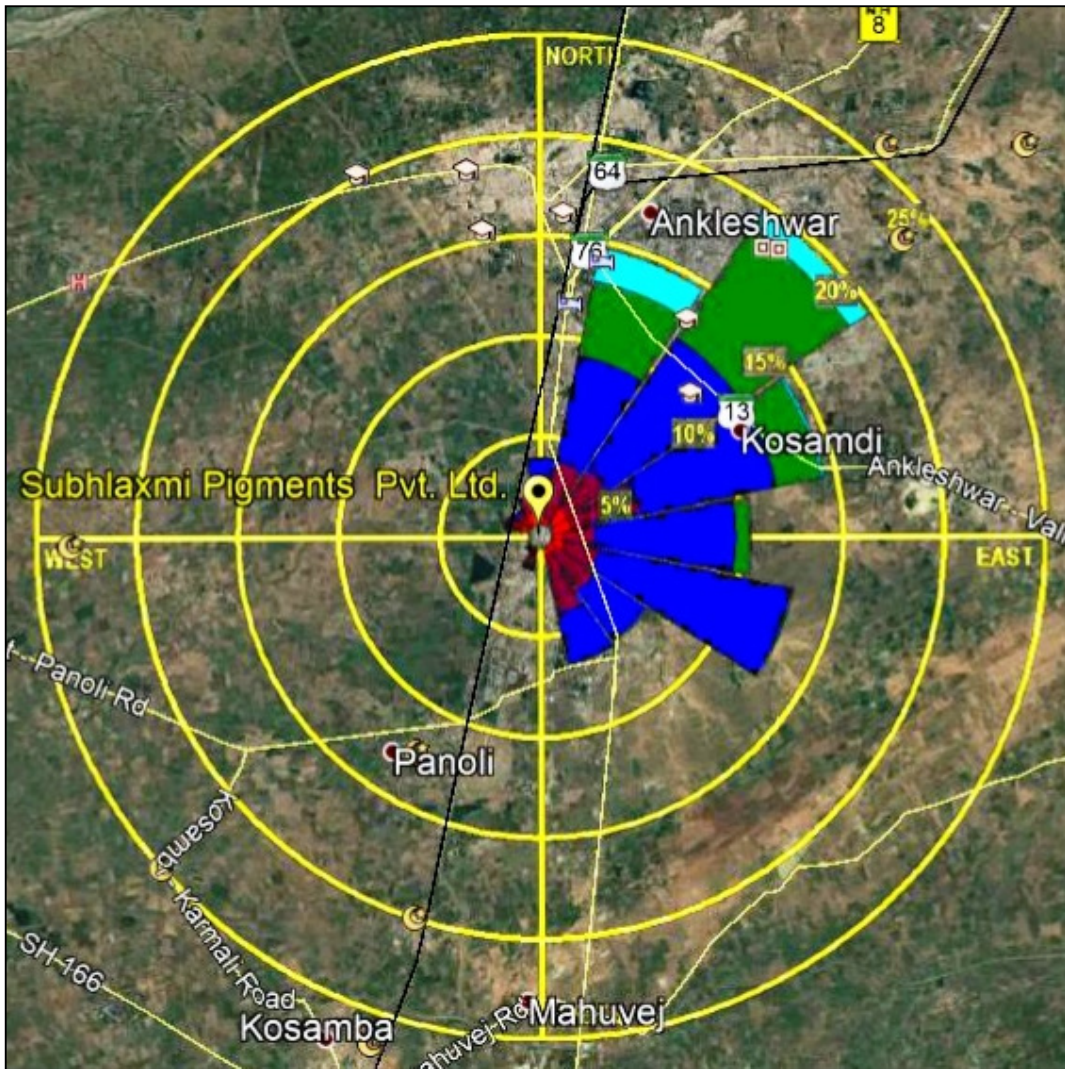
**FIGURE: 3.1(A)**

**WIND ROSE DIAGARM FOR PERIOD OF MARCH-2018 TO MAY-2018**



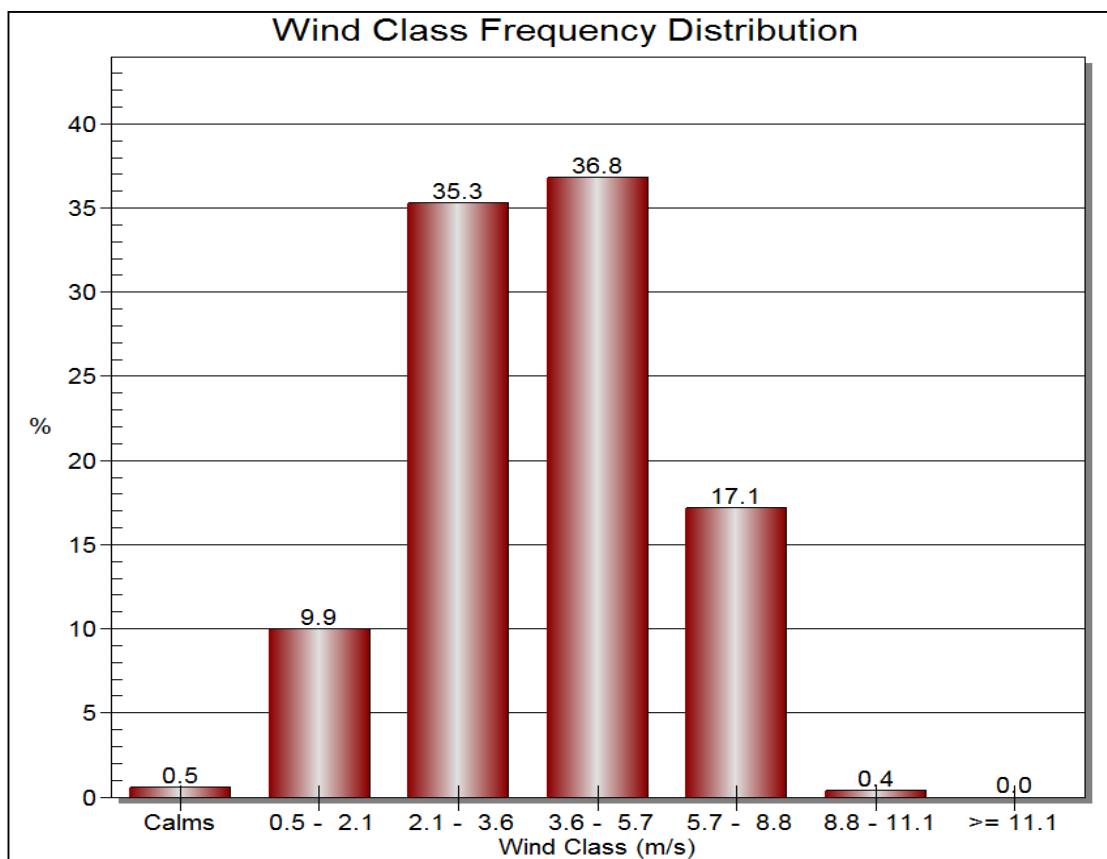
**FIGURE: 3.1(B)**

**WIND ROSE DIAGARM ON SATELITE IMAGE**



**FIGURE: 3.2**

**WIND CLASS FREQUENCY DISTRIBUTION**



It was observed that wind is blowing mainly towards the North East direction. Average wind speed was 4.01 m/s with calm winds recorded to be 0.54%.

**3.3. AIR ENVIRONMENT**

**3.3.1 AMBIENT AIR QUALITY (AAQ)**

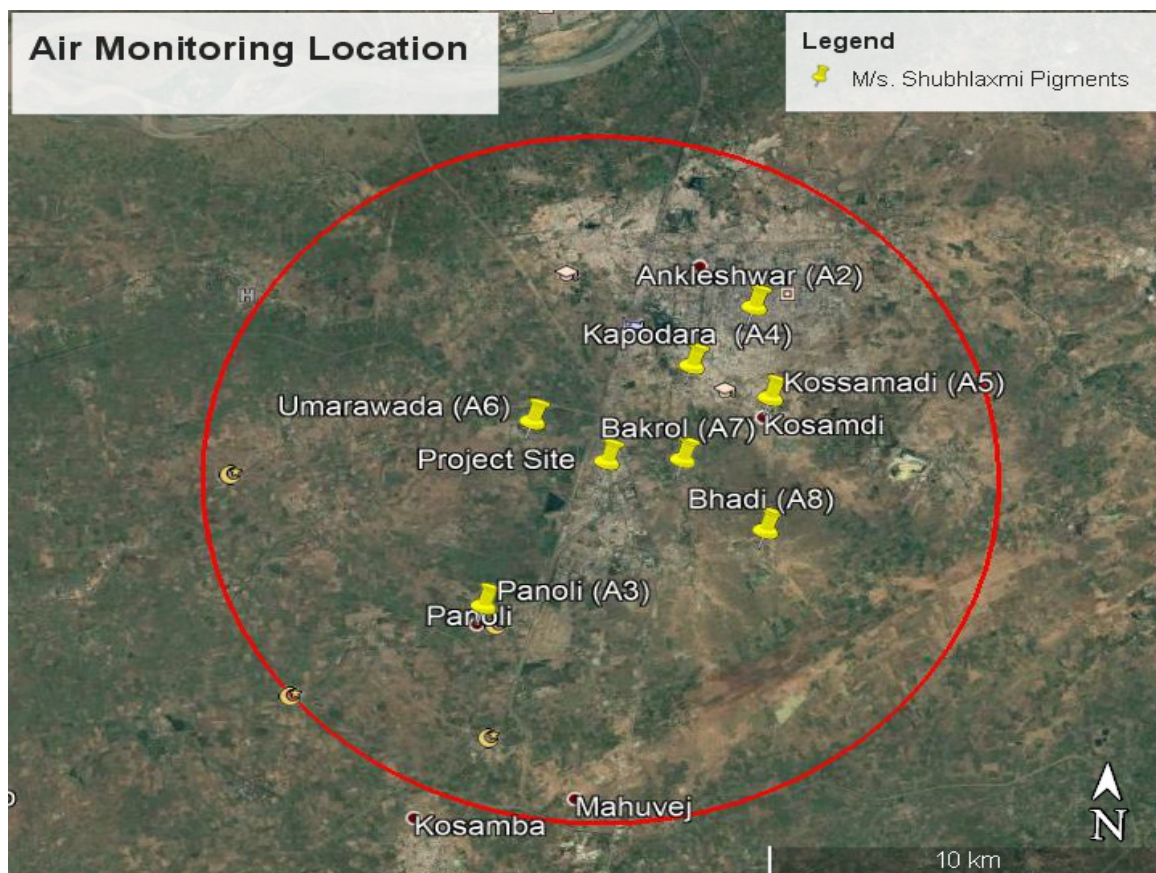
The basic objective of collection of base line data for air environment is to identify project specific air pollutants being released into atmosphere, which will have significant impact on air environment of immediate locality of the proposed project site. For assessment of the baseline data it is important to specify the study area in respect of the location of the proposed project. It was decided to the study ambient air quality at 8 locations in the different direction in probable impact zone including the project site.

**3.3.1.1 LOCATION OF AAQ MONITORING STATIONS**

Ambient air quality stations were chosen considering the various factors like the most prevailing wind direction, pockets of habitation, available infrastructure facilities like power supply, accessibility etc. The location of AAQ monitoring stations are shown in Figure 3.3 and Table 3.3.

**FIGURE: 3.3**

**LOCATION OF AMBIENT AIR QUALITY MONITORING STATIONS**



**TABLE: 3.3**

**DETAILS OF SAMPLING LOCATION OF AMBIENT AIR QUALITY MONITORING**

Sr. No.	Location	Distance & Direction w.r.t project site	Latitude & Longitude	District
1.	Project Site (A1)	--	Latitude - 21°34'11.11"N Longitude - 72°59'33.20"E	Bharuch
2.	Anklashwar (A2)	5.84,NNE	Latitude : 21°36'41.00"N Longitude : 73° 1'38.14"E	Bharuch
3.	Panoli (A3)	5.18,SSW	Latitude - 21°31'51.91"N Longitude - 72°57'49.51"E	Bharuch
4.	Kapodara (A4)	3.53,NNE	Latitude : 21°35'43.66"N Longitude : 73° 0'45.04"E	Bharuch

5.	Kosamadi (A5)	4.53,ENE	Latitude : 21°35'15.30"N Longitude : 73°1'54.76"E	Bharuch
6.	Umarwada (A6)	2.18,NW	Latitude : 21°34'47.23"N Longitude : 72°58'27.03"E	Bharuch
7.	Bakrol (A7)	1.91,E	Latitude : 21°34'14.72"N Longitude : 73° 0'39.51"E	Bharuch
8.	Bhadi (A8)	4.42, ESE	Latitude - 21°33'9.79"N Longitude - 73° 1'54.06"E	Bharuch

**3.3.1.2 BASE LINE DATA**

The ambient air quality monitoring was carried out during period of March-2018 to May-2018. Monitoring details like location, monitoring date are attached as **Annexure-IX**. The frequency of monitoring was twice in a week for a period of 12 weeks to assess the existing the sub regional air quality status. All the sampling locations were monitored for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC & CO on 24 hr basis to enable the comparison with ambient air quality standards prescribed by the CPCB.

Based on the data obtained through ambient air quality survey statement showing maximum, minimum average concentration values of different monitoring location in the study area have been computed and presented at Table 3.4.

**TABLE: 3.4**

**AMBIENT AIR QUALITY STATUS OF STUDY AREA**

Locations	Min. Value	Max. Value	Avg. Value
<b>PM<sub>10</sub> (Permissible Limit (CPCB standard) : 100 µg/m<sup>3</sup>)</b>			
A1-Project Site	65	89	80
A2-Ankleshwar	68	88	75
A3-Panoli	76	90	81
A4-Kapodara	72	83	78
A-5-Kosamadi	77	90	82
A6-Umarwada	67	86	78.5
A7-Bakrol	66	89	80
A8-Bhadi	61	78	73.5
<b>PM<sub>2.5</sub> (Permissible Limit (CPCB standard) : 60 µg/m<sup>3</sup>)</b>			
A1-Project Site	31	40	37
A2-Ankleshwar	30	46	39
A3-Panoli	34	43	39
A4-Kapodara	33	40	36
A-5-Kosamadi	32	42	38.5
A6-Umarwada	33	40	36
A7-Bakrol	31	42	36
A8-Bhadi	33	42	37

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Locations	Min. Value	Max. Value	Avg. Value
<b>SO<sub>2</sub> µg/m<sup>3</sup>(Permissible Limit (CPCB standard):80 µg/m<sup>3</sup>) (24 hr)</b>			
A1-Project Site	22	33	27
A2-Ankleshwar	24	35	28.5
A3-Panoli	25	36	29
A4-Kapodara	23	32	29
A-5-Kosamadi	23	36	29
A6-Umarwada	25	32	28.5
A7-Bakrol	28	40	30
A8-Bhadi	24	33	28
<b>NO<sub>x</sub> µg/m<sup>3</sup>(Permissible Limit (CPCB standard):80 µg/m<sup>3</sup>) (24 hr)</b>			
A1-Project Site	33	45	39
A2-Ankleshwar	36	47	43
A3-Panoli	39	44	41
A4-Kapodara	37	46	41
A-5-Kosamadi	39	46	42
A6-Umarwada	36	48	42
A7-Bakrol	38	43	40
A8-Bhadi	32	42	39
<b>VOC (Permissible Limit (CPCB Standard):5 µg/m<sup>3</sup>)</b>			
A1-Project Site	2.2	3.9	3.2
A2-Ankleshwar	1.8	3.2	2.70
A3-Panoli	1.6	3.2	2.5
A4-Kapodara	2.7	3.9	3.2
A-5-Kosamadi	2.8	3.7	3.18
A6-Umarwada	2.3	3.9	3.0
A7-Bakrol	1.3	2.4	1.8
A8-Bhadi	1.8	3.4	2.7
<b>CO (Permissible Limit (CPCB Standard): 02 mg/m<sup>3</sup>)</b>			
A1-Project Site	0.3	0.6	0.5
A2-Ankleshwar	0.3	0.7	0.5
A3-Panoli	0.3	0.7	0.5
A4-Kapodara	0.2	0.5	0.3
A-5-Kosamadi	0.4	0.7	0.5
A6-Umarwada	0.3	0.7	0.5
A7-Bakrol	0.4	0.6	0.5
A8-Bhadi	0.2	0.5	0.3

**OBSERVATION:**

Based on data obtained, it could be stated that, during the study period the values of PM<sub>10</sub> at monitored locations is ranged between 61-90 µg/m<sup>3</sup> while the values PM<sub>2.5</sub> fluctuates in the range of 30-46 µg/m<sup>3</sup>. The values of SO<sub>2</sub> and NO<sub>x</sub> were observed to be in the range of 22-40

$\mu\text{g}/\text{m}^3$  and  $32\text{-}48 \mu\text{g}/\text{m}^3$  respectively. The values of VOC were observed to be in the range of 1.3-3.9 ppm  $\text{mg}/\text{m}^3$  respectively & the values of CO were observed to be in the range 0.2 - 0.7

The average concentration of  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ ,  $\text{SO}_2$ ,  $\text{NO}_x$ , VOC and CO are within prescribed limit at all locations.

### 3.4 WATER ENVIRONMENT

There are two categories of water environment:

- 1) Ground water: - accumulation in deeper strata of ground and
- 2) Surface water: - river, drains, canals, ponds etc.

#### Sampling Method

The samples were collected as per Indian standard IS: 3025 (part-1) for ground water and surface water quality assessment.

#### Analysis Method

The analysis method followed for the measuring different parameters to evaluate water quality is given in Table 3.5.

**TABLE: 3.5**

#### METHOD OF ANALYSIS

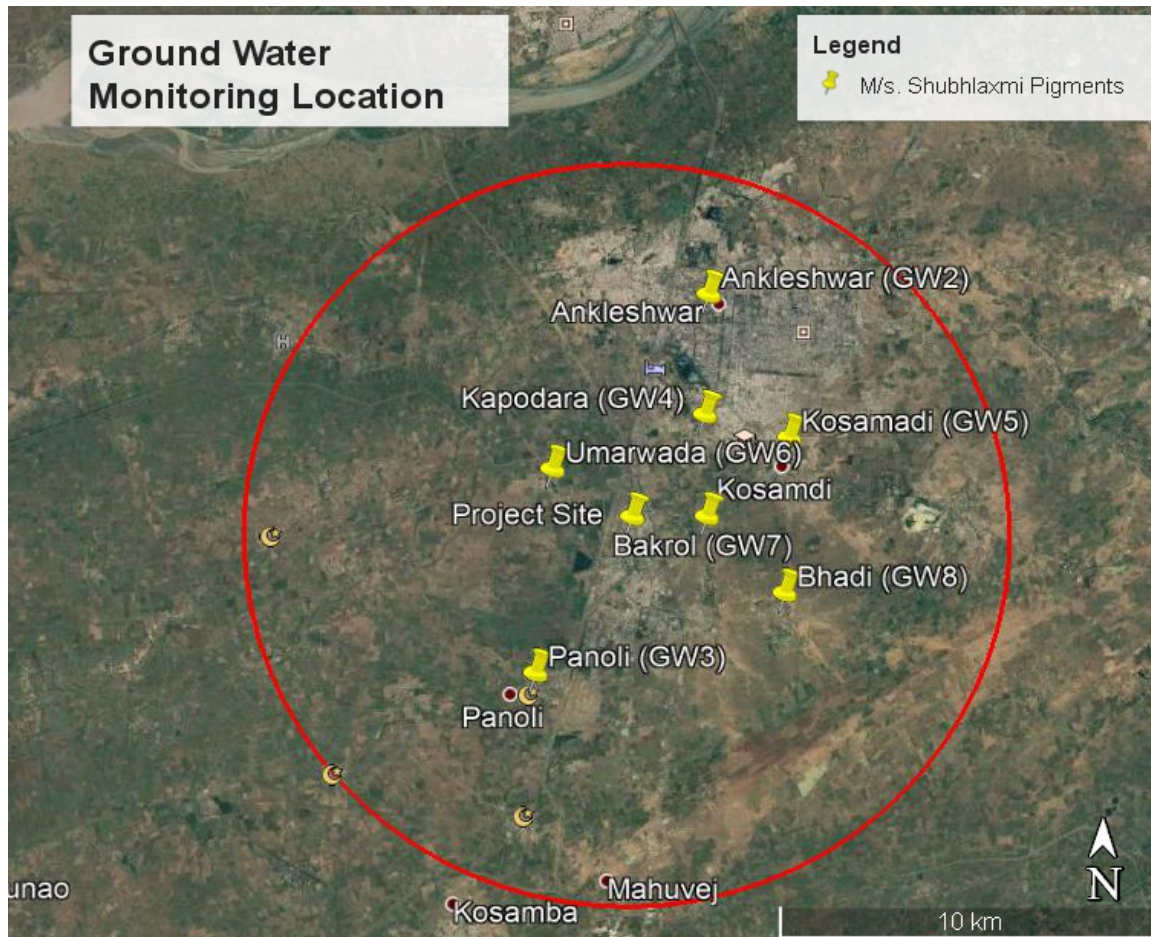
Sr. No.	Parameters	Applicable Standard Method of Analysis	Detection Limit
1.	Color in Pt. Co. Sc.	APH (22 <sup>nd</sup> Edition) Spectrophotometer (analogous to APHA 2120 C) (Platinum Cobalt Method)	1
2.	pH	APHA(22 <sup>nd</sup> Edition) 4500 H <sup>+</sup> B Electrometric Method	0.01
3.	Total hardness (as $\text{CaCO}_3$ ) in mg/l	APHA(22 <sup>nd</sup> Edition) 2340 C: Page 2 – 37 EDTA Titrimetric Method	2
4.	Chloride (as Cl) in mg/l	APHA(22 <sup>nd</sup> Edition) 4500-Cl-B-Argentometric method	1
5.	TDS in mg/l	APHA (22 <sup>nd</sup> Edition) 2540 C Total Dissolved Solid Dried at 180°C	4
6.	TSS in mg/l	APHA (22 <sup>nd</sup> Edition) 2540-D-Total Suspended Solids Dried at 103-105°C	4
7.	Calcium (as Ca) in mg/l	APHA (22 <sup>nd</sup> Edition) 3500- Ca : B Page 3 – 65 EDTA Titrimetric Method	2
8.	Magnesium (as Mg) in mg/l	APHA(22 <sup>nd</sup> Edition) – 3500 - Mg : B Page 3 – 84 Calculation Method	2
9.	Sulphate (as $\text{SO}_4$ ) in mg/l	APHA (22 <sup>nd</sup> Edition) 4500– $\text{SO}_4^{2-}$ E: Page 4-188 Turbid metric Method/ IS 3025 (Part 24) 1986 (Reaffirmed 1986) Gravimetric Method	1

10.	Alkalinity (as CaCO <sub>3</sub> ) in mg/l	APHA (22 <sup>nd</sup> Edition) – 2320 B: Page 2 – 27 Titration Method	2
11.	COD in mg/l	APHA(22 <sup>nd</sup> Edition)– 5220 B Open Reflux Method	4
12.	BOD in mg/l	IS: 3025 (Part – 44) 1993 (Reaffirmed 1999)	1
13.	MPN Coliform Count	APHA -9221 C	--
14.	E.coli	APHA- 9221 D (Presence Absence Test)	--
15.	Nitrate in mg/l	Spectrophotometer	1
16.	Iron (as Fe) in mg/l	By NOVA 60 spectrophotometer (Triazine)	0.01
17.	Fluoride (as F) in mg/l	By NOVA 60 spectrophotometer	0.1
18.	Residual Free Chlorine in mg/l	Iodometric method	1
19.	Sodium in mg/l	Flame photo meter	--
20.	Potassium in mg/l	Flame photo meter	--
21.	Ammonical Nitrogen in mg/l	APHA-4500 N ORGBnC macro and semi-micro KJELDHAL	2.8

Eight locations were selected for ground water sampling and surface water sampling. Collected samples were analyzed for drinking water quality parameters like physic-chemical parameters and heavy metals. During study period, the sampling was done for one time. The map viewing location for sampling points is shown at Figure 3.4 and Figure 3.5. The analysis results are presented at Table 3.6 & 3.8.

**FIGURE: 3.4**

**LOCATION OF GROUND WATER QUALITY MONITORING STATIONS**



**TABLE: 3.6**

**DETAILS OF GROUND WATER MONITORING LOCATIONS**

Sr. No.	Location	Distance & Direction w.r.t project site	Latitude & Longitude	District
1.	Project Site (GW1)	--	Latitude - 21°34'11.11"N Longitude - 72°59'33.20"E	Bharuch
2.	Ankleshwar (GW2)	6.32,NNE	Latitude - 21°37'26.28"N Longitude -73°0'40.10"E	Bharuch
3.	Panoli (GW3)	4.84,SSW	Latitude - 21°31'53.47"N Longitude - 72°58'7.03"E	Bharuch
4.	Kapodara(GW4)	3.41,NNE	Latitude - 21°35'41.13"N Longitude - 73° 0'38.20"E	Bharuch
5.	Kosamadi	4.66,ENE	Latitude - 21°35'21.87"N	Bharuch

<b>Sr. No.</b>	<b>Location</b>	<b>Distance &amp; Direction w.r.t project site</b>	<b>Latitude &amp; Longitude</b>	<b>District</b>
	(GW5)		Longitude - 73° 1'55.21"E	
6.	Umarwada (GW6)	2.50,NW	Latitude - 21°34'51.87"N Longitude - 72°58'20.03"E	Bharuch
7.	Bakrol (GW7)	1.91,E	Latitude - 21°34'12.12"N Longitude - 73° 0'41.11"E	Bharuch
8.	Bhadi (GW8)	4.34,ENE	Latitude - 21°33'6.13"N Longitude - 73° 1'52.91"E	Bharuch

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**TABLE: 3.7**

**WATER QUALITY PARAMETERS (GROUND WATER SOURCES)**

Parameter	Unit	IS 10500 : 2012		Sampling Location							
		Desirable Limit	Permissible Limit	Project site (GIDC Water) (GW1)	Ankleshwar (GW2)	Panoli (GW3)	Kapodara (GW4)	Kosamadi (GW5)	Umarwada (GW6)	Bakrol (GW7)	Bhadi (GW8)
pH	---	6.5 – 8.5	6.5 –8.5	7.21	7.4	8.5	7.09	7.02	7.5	7.3	7.2
Color	Hazen	5	15	<5	<5	<5	<5	<5	<5	<5	<5
TSS	mg/L	--	--	ND	ND	ND	ND	ND	ND	ND	ND
TDS	mg/L	500	2000	185	640	1050	810	835	3260	1045	3850
Total Hardness (as CaCO <sub>3</sub> )	mg/L	200	600	146	424	336	285	195	835	410	1420
Chloride (as Cl)	mg/L	250	1000	70	625	230	136	114	198	112	310
Calcium (as Ca)	mg/L	75	200	105	160	92	103	162	451	215	520
Magnesium (as Mg)	mg/L	30	100	17	70	45	62	68	135	95	148
Iron (as Fe)	mg/L	0.3	1	0.25	0.34	0.01	0.28	0.32	0.02	0.01	0.02
Fluoride (as F)	mg/L	1	1.5	0.70	0.45	0.01	0.35	0.68	0.1	0.02	0.02
Sodium (as Na)	mg/L	--	--	120	490	224	356	148	634	302	231
Potassium (as K)	mg/L	--	--	35	45	80	45	52	98	85	105
Sulphate (as SO <sub>4</sub> )	mg/L	200	400	24	65	165	178	42	326	119	395

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Parameter	Unit	IS 10500 : 2012		Sampling Location							
		Desirable Limit	Permissible Limit	Project site (GIDC Water) (GW1)	Ankleshwar (GW2)	Panoli (GW3)	Kapodara (GW4)	Kosamadi (GW5)	Umarwada (GW6)	Bakrol (GW7)	Bhadi (GW8)
Nitrate	mg/L	45	45	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity (as CaCO <sub>3</sub> )	mg/L	200	600	90	390	457	310	379	310	424	210
COD	mg/L	4	--	ND	ND	ND	18	ND	10	22	06
BOD	mg/L	1	--	ND	ND	ND	5	ND	ND	7	ND
Free Residual Chlorine	mg/L	--	--	ND	ND	ND	ND	ND	ND	ND	ND
E.coil	MPN/100 ml	Absent	No relaxation	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Total coliform Bacteria	MPN/100 ml	1	10	ND	ND	<1.8	ND	ND	ND	ND	<1.8

**\*ND-Not Detected**

Detectable limit for Free Residual Chlorine- 1 mg/l

**Observation: Quality of Ground Water**

It was observed from the analysis report that:

- pH of the groundwater samples were recorded in the range of 7.02-8.5 as against the IS: 10500 drinking water standard of 6.5 to 8.5. pH of the water sample collected from the borewell within the project site (7.21) was found to be within the specified standards.
- Total hardness in the ground water samples recorded from 146 mg/l to 1420 mg/l.

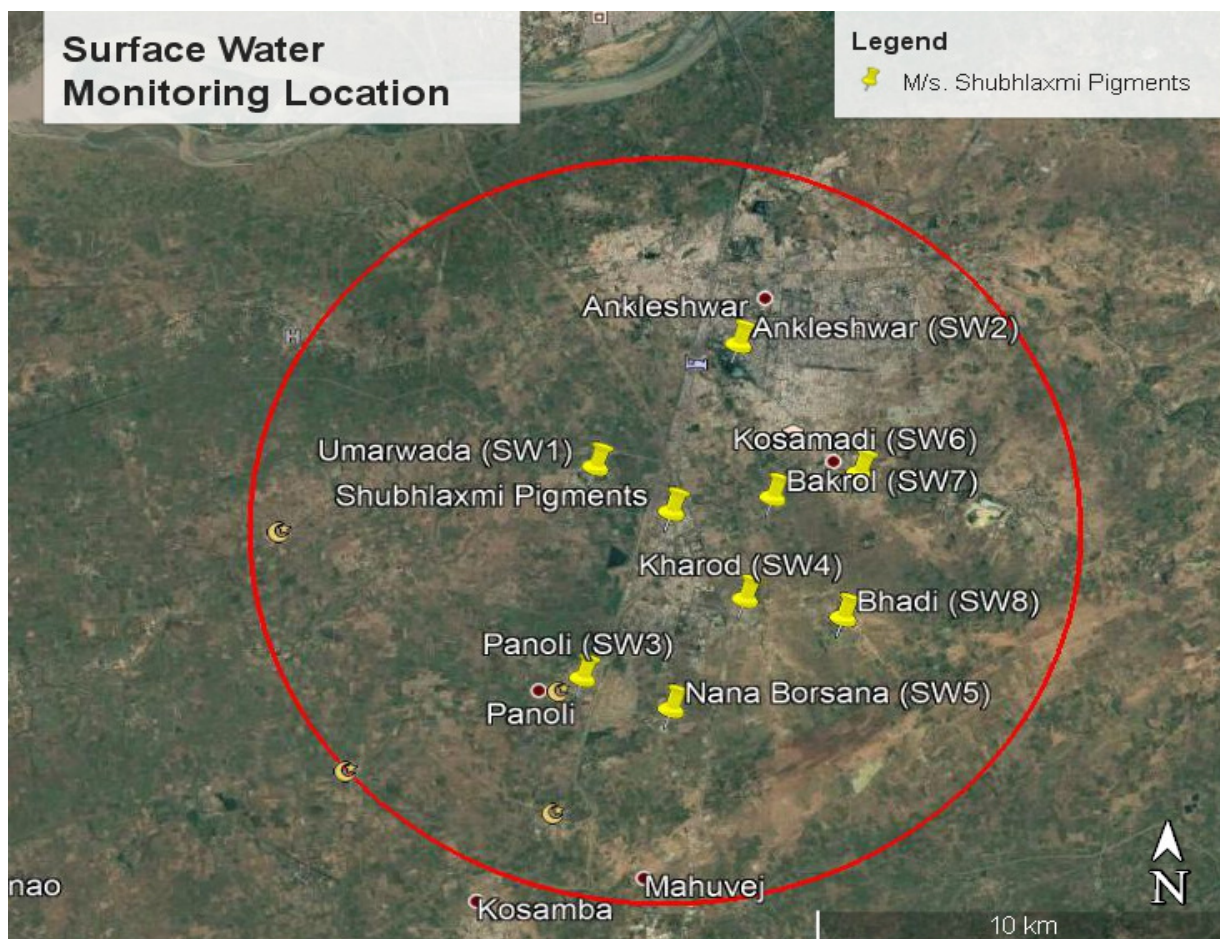
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- Chloride concentrations varied from 70 mg/l to 625 mg/l in the groundwater samples.
- Magnesium concentrations varied between 17 –148 mg/l. all the samples were found to be not exceeding the permissible limits (100 mg/l).
- The level of total dissolved solids (TDS) recorded in the groundwater samples varied from 185 mg/l to 3850 mg/l.
- Fluoride levels in the groundwater samples were found to be in the range 0.01-0.70 mg/l. However, fluoride concentrations at all location were found to be within the permissible limit (1.5 mg/l).
- Nitrate concentrations in all the samples were found to be within the acceptable limits (45 mg/l).
- E. coli concentrations were found to be absent for all the samples.
- Total coliform in the groundwater samples were found to be in the range of ND- <1.8 MPN/100 ml. All the samples were found to be within the acceptable limits.

Analysis of collected samples reveals that rest of the parameters satisfy the permissible limits as per IS 10500:2012 specified for drinking water and hence are suitable for drinking, however it is suggested that the water may disinfected by boiling or by use of chlorine tablets before use.

**FIGURE: 3.5**

**LOCATION OF SURFACE WATER QUALITY MONITORING STATIONS**



**TABLE: 3.8**

**DETAILS OF SURFACE WATER MONITORING LOCATIONS**

Sr. No.	Location	Distance & Direction w.r.t project site	Latitude & Longitude	District
1.	Umarwada (SW1)	2.21, NW	Latitude - 21°34'49.49"N Longitude - 72°58'28.82"E	Bharuch
2.	Ankleshwar (SW2)	6.39, NNE	Latitude - 21°36'37.68"N Longitude - 73° 0'27.44"E	Bharuch
3.	Panoli (SW3)	6.66, SSW	Latitude - 21°31'45.76"N Longitude - 72°58'20.58"E	Bharuch
4.	Kharod (SW4)	3.00, SSE	Latitude - 21°32'56.13"N Longitude - 73° 0'36.03"E	Bharuch

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<b>Sr. No</b>	<b>Location</b>	<b>Distance &amp; Direction w.r.t project site</b>	<b>Latitude &amp; Longitude</b>	<b>District</b>
5.	Nana Borsana (SW5)	5.24, S	Latitude - 21°31'19.68"N Longitude - 72°59'35.28"E	Bharuch
6.	Kosamadi (SW6)	4.89, ENE	Latitude - 21°34'46.83"N Longitude - 73° 2'10.68"E	Bharuch
7.	Bakrol (SW7)	2.47, E	Latitude - 21°34'24.89"N Longitude - 73° 0'57.95"E	Bharuch
8.	Bhadi (SW8)	4.99, ENE	Latitude - 21°32'40.95"N Longitude - 73° 1'58.48"E	Bharuch

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**TABLE: 3.9**

**WATER QUALITY PARAMETERS (SURFACE WATER SOURCES)**

Parameter	Unit	IS 10500: 2012		Sampling Location							
		Desirable Limit	Permissible Limit	Umarwada (SW1)	Ankleshwar (SW2)	Panoli (SW3)	Kharod (SW4)	Nana Borsana (SW5)	Kosamadi (SW6)	Bakrol (SW7)	Bhadi (SW8)
pH	---	6.5 -8.5	6.5-8.5	8.1	7.05	7.7	7.8	8	7.9	7.1	8.0
Colour	Pt.co.s c	5	15	<1	<5	<1	<1	<1	<5	<1	<1
Odour	---	Unobjectionable	--	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
Turbidity	NTU	3	5	<2	<2	<2	<2	<2	<2	<2	<2
DO	mg/L	--	--	5.4	6.7	3.4	5.7	6.2	5.0	4.5	4.9
Total hardness (as CaCO <sub>3</sub> )	mg/L	200	600	290	122	235	454	168	220	162	165
Chloride (as Cl)	mg/L	250	1000	232	48	193	435	65	130	42	182
TDS	mg/L	500	2000	625	1150	595	610	360	640	420	810
Calcium (as Ca)	mg/L	75	200	163	53	160	212	94	140	82	105
Magnesium (as Mg)	mg/L	30	100	102	69	94	236	64	80	89	76
Iron	mg/L	0.3	1	0.23	0.002	0.1	0.15	0.02	0.005	0.02	0.2
Fluoride	mg/L	1	1.5	0.02	0.24	0.2	0.03	0.03	0.38	0.02	0.1
Sodium (as Na)	mg/L	--	--	88	39	142	202	44	110	36	220
Potassium (as K)	mg/L	--	--	64	94	39	85	42	65	46	89

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Sulphate (as SO <sub>4</sub> )	mg/L	200	400	48	16	52	46	102	25	232	72
Nitrate	mg/L	45	45	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity (as CaCO <sub>3</sub> )	mg/L	200	600	484	335	232	152	168	125	131	310
COD	mg/L	--	--	08	13	24	3	4	10	12	5
BOD	mg/L	--	--	ND	4	14	ND	ND	ND	ND	ND
E.Coil	MPN/ 100 ml	--	--	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Total coliform Bacteria	MPN/ 100 ml	--	--	<1.8	Absent	<1.8	<1.8	<1.8	Absent	<1.8	<1.8

**ND-Not Detected**

**Observation: Quality of Surface Water**

It was observed from the analysis report that:

- pH of the surface water samples varied between 7.05-8.1.
- Highest TDS value was obtained for the sample collected from Ankleshwar. (1150 mg/l).
- Total hardness in the surface water samples recorded from 122 mg/l to 454 mg/l, whereas all location is within the permissible limit of 600 mg/l.
- Chloride concentrations varied from 42 mg/l to 435 mg/l in all location had chloride concentrations within the acceptable limit (250 mg/l) except kharod location. Samples collected from kharod were found to be exceeding the permissible limit (1000 mg/l).
- Magnesium concentrations varied between 64 – 236 mg/l, Samples collected from kharod & Umarwada were found to be exceeding the permissible limit (100 mg/l).

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- The level of total dissolved solids (TDS) recorded in the surface water samples varied from 360 mg/l to 1150 mg/l. In samples collected from all location in the TDS levels were found to be exceeding the acceptable limit of 500 mg/l.
- Biochemical Oxygen demand (BOD) of the samples varied between ND to 14 mg/l. highest BOD value was obtained for the sample collected from panoli.
- Chemical Oxygen Demand (COD) of the samples varied between 3 to 24 mg/l. highest COD value was obtained for the sample collected from panoli.
- E. coli concentrations were found to be absent for all the samples.
- Total coliform in the groundwater samples were found to be in the range of ND- <1.8 MPN/100 ml. All the samples were found to be within the acceptable limits.

In summary, surface water from the village ponds is used for bathing, irrigation and catching fish. The surface water quality reveals that the water conforms to CPCB Class “B” (Outdoor bathing organized) and Class “D” (Propagation of wildlife and fisheries) water quality criteria.

### **3.5 NOISE ENVIRONMENT**

Noise can be defined as an unwanted sound. It interferes with speech and hearing. If intense enough, it can damage hearing, or is otherwise irritating. Noise can also disturb natural wildlife and ecological system.

#### **3.5.1 RECONNAISSANCE**

In order to measure the existing noise sources and to identify the background noise levels, the noise pollution survey around the proposed site was carried out.

#### **3.5.2 METHODOLOGY FOR NOISE MONITORING**

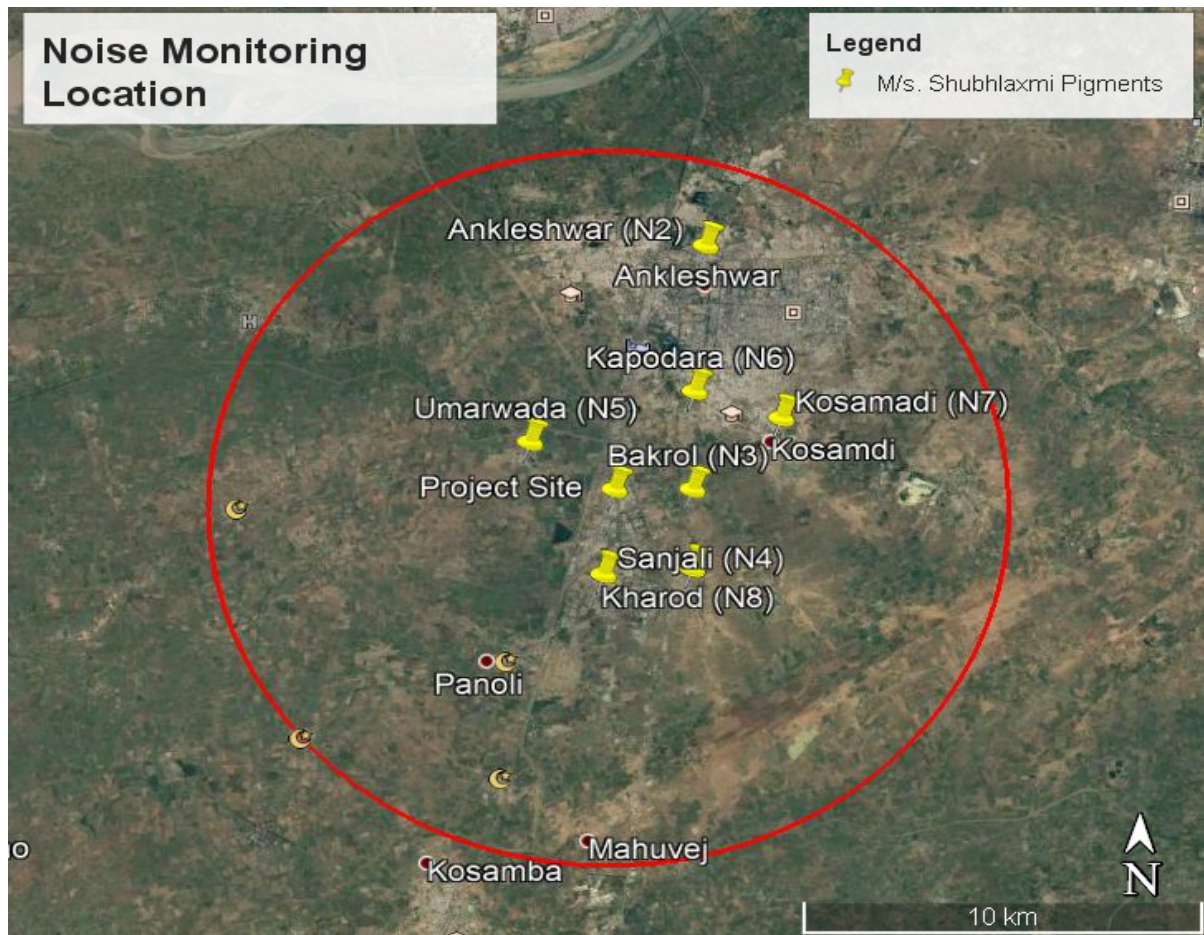
Noise standards have been designated as per the Noise Pollution (Regulation & Control) Rules, 2000 Notified by Ministry of Environment and Forests, New Delhi, February 14, 2000. The ambient noise standards are presented in Equivalent noise levels (Leq). The measurements were carried out at each monitoring location during day time and night time. Noise survey was conducted using Sound Level Meter.

#### **3.5.3 NOISE MONITORING LOCATIONS**

A total of eight locations were identified for ambient noise monitoring in the study area. The noise monitoring locations are shown in Figure 3.6 and listed in Table 3.10.

**FIGURE: 3.6**

**LOCATION OF NOISE MONITORING STATIONS**



**TABLE: 3.10**

**NOISE LEVEL DATA**

Sr. No.	Location	Distance in Km & Direction	Latitude & Longitude	Area Category	LEQ (DB (A))	
					Day time	Night time
1	Project Site (N1)	--	Latitude : 21°34'11.11"N Longitude : 72°59'33.20"E	Industrial	45-55	40-45
2	Ankleshwar (N2)	7.06, SW	Latitude : 21°37'53.33"N Longitude : 73° 0'49.50"E	Residential	53-60	48-52
3	Bakrol (N3)	1.89, E	Latitude : 21°34'12.08"N Longitude : 73° 0'41.10"E	Residential	50-55	42-50
4	Sanjali (N4)	2.63,S	Latitude : 21°32'53.81"N Longitude :72°59'24.65"E	Residential	55-62	45-55

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5	Umarwada (N5)	2.53	Latitude : 21°34'53.14"N Longitude :72°58'19.02"E	Residential	54-60	45-51
6	Kapodara (N6)	3.22	Latitude : 21°35'40.96"N Longitude : 73° 0'41.76"E	Residential	47-53	35-47
7	Kosamadi (N7)	4.46	Latitude : 21°35'17.68"N Longitude : 73° 1'57.57"E	Residential	50-55	43-50
8	Kharod (N8)	2.90	Latitude : 21°33'0.17"N Longitude : 73° 0'41.81"E	Residential	52-60	44-52

**TABLE: 3.11**

### **CPCB RECOMMENDATIONS FOR COMMUNITY NOISE EXPOSURE**

Area Code	Category of area	Leq. (dBA) (Daytime) (06:00 to 21:00hrs.)	Leq. (dBA) (Night time) (21:00 to 06:00hrs.)
A	Industrial area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

**Note : 1** Silence zone is defined as areas up to 10 meters around such premises as hospitals, education, institutions and courts. The silence zones are to be declared by the Component Authority.

**Note : 2** Mixed categories of areas should be declared as one of the four above-mentioned categories by the Component Authority and the corresponding standard has apply.

(Source: The Noise Pollution (Regulation & Control) Rules, 2000)

### **OBSERVATION & DISCUSSION**

The noise levels during daytime varied from 45-55 dB (A) Leq to 55-62 dB (A) Leq in the study area. The noise level in the study area is within the permissible Limits as per Noise rules 2000.

The night time noise level in the study area is in the range of 35-47 dB (A) Leq to 45-55 dB (A) Leq. The night time noise was also within stipulated standards of CPCB.

## **3.6 SOIL ENVIRONMENT**

### **3.6.1 BASELINE DATA**

Description of soil environment has become vital particularly when the treated effluent is to be discharge on land for disposal or treatment. The soil environment is usually described by determining the physical and chemical characteristics of soil samples collected from site with

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the help of auger/spade. The composite soil sample was collected from project site and the villages Within 10 km radius. The samples were collected to determine physical and chemical characteristic of soil. The selected soil sampling locations are given in Table 3.12 and shown in Figure 3.7.

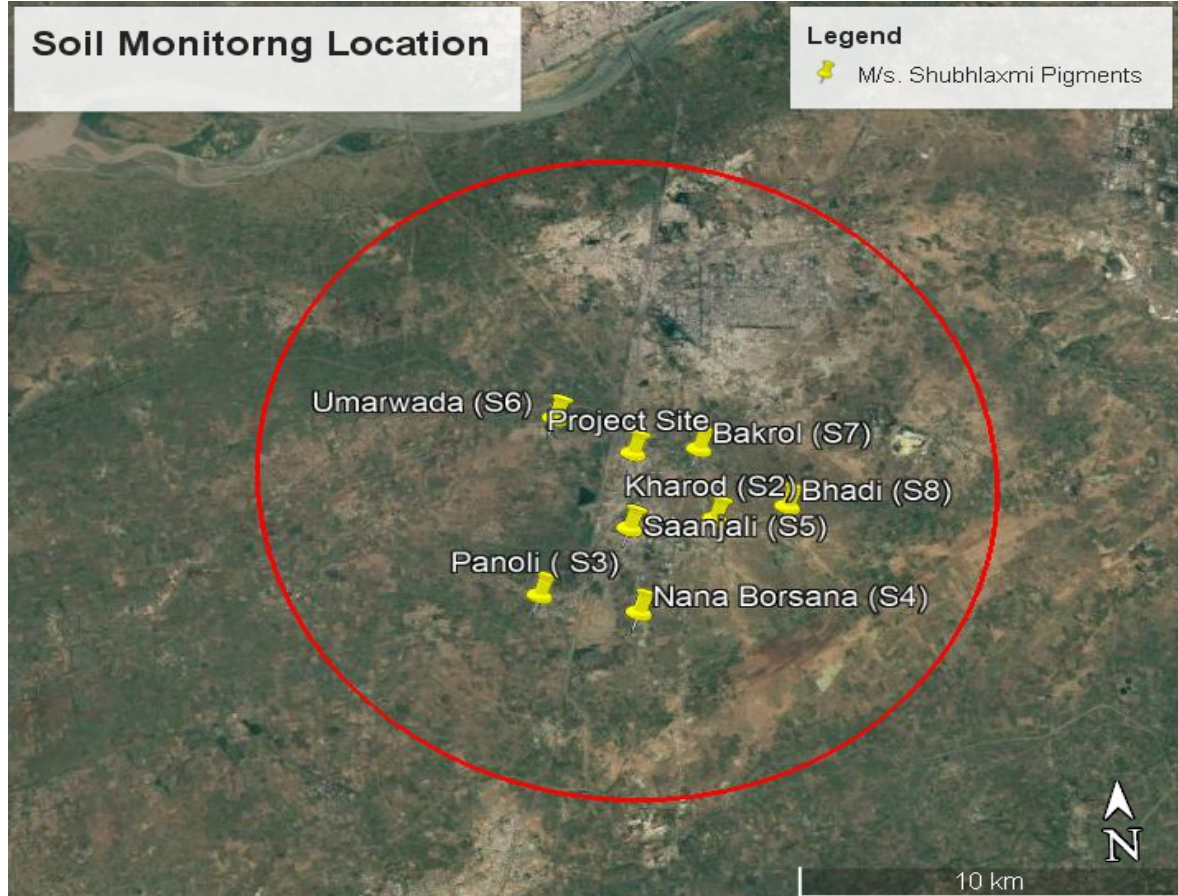
**TABLE: 3.12**

### **SOIL QUALITY MONITORING WITH RESPECT TO THE PROJECT SITE**

<b>Sr. No</b>	<b>Locations</b>	<b>Distance in Km</b>		<b>Type of Area</b>	<b>District</b>
1.	Project Site (S1)	--	Latitude : 21°34'11.11"N Longitude : 72°59'33.20"E	Industrial	Bharuch
2.	Kharod (S2)	2.96,SE	Latitude - 21°33'1.81"N Longitude - 73°0'44.96"E	Residential	Bharuch
3.	Panoli (S3)	2.35,SW	Latitude -21°31'52.06"N Longitude -72°57'55.27"E	Residential	Bharuch
4.	Nana Borsana (S4)	3.76,S	Latitude - 21°31'31.58"N Longitude -72°59'26.31"E	Residential	Bharuch
5.	Sanjali (S5)	1.22,SSE	Latitude - 21°32'55.42"N Longitude -72°59'23.99"E	Residential	Bharuch
6.	Umarwada (S6)	2.37,NNW	Latitude - 21°34'49.88"N Longitude -72°58'22.12"E	Residential	Bharuch
7.	Bakrol (S7)	1.79,ENE	Latitude - 21°34'13.06"N Longitude - 73° 0'35.57"E	Residential	Bharuch
8.	Bhadi (S8)	4.44 (ESE)	Latitude - 21°33'11.74"N Longitude - 73° 1'53.85"E	Residential	Bharuch

**FIGURE: 3.7**

**LOCATION OF SOIL MONITORING STATIONS**



**TABLE: 3.13**

**SOIL QUALITY PARAMETERS**

Parameter	Sampling Location							
	S1	S2	S3	S4	S5	S6	S7	S8
pH (5% slurry)	7.92	7.4	7.9	7.93	7.7	7.5	7.1	7.78
Specific Gravity	1.46	2.3	1.22	1.25	1.36	2.60	2.51	1.28
Porosity (%)	18	46	18	20	22	38.5	44.1 2	24
Conductivity (µmS/cm)	1.29	1.37	1.22	1.42	1.50	1.34	1.33	1.41
Water Holding Capacity (90% by wt. of Soil (%))	42	34	45	32	38	33	36	40
<b>Grain Size Distribution (%)</b>								
Clay (< 0.002 mm)	9.9	40	48	8.3	12	44	46	23
Slit (0.075-0.002 mm)	30	23	15.2	11	30	22	25	15.1
Sand (4.75- 0.075mm )	58.9	16	33.2	80.7	59.6	22	15	62.8
Phosphate (gm/kg )	0.0006	0.008	0.0055	0.0179	0.0085	0.00 3	0.00 6	0.01 75

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Parameter	Sampling Location							
	S1	S2	S3	S4	S5	S6	S7	S8
Calcium (gm/kg)	0.192	0.68	0.890	0.13	0.699	0.22	0.69	0.142
Magnesium (gm/kg)	0.215	0.25	0.149	0.299	0.245	0.2	0.12	0.251
Zinc (gm/kg)	0.033	ND	0.252	0.0063	0.024	0.020	ND	ND
Nickel (gm/kg)	0.04	0.002	0.030	0.023	0.025	0.04	0.016	ND
Sodium (gm/kg)	0.255	0.30	0.360	0.263	0.344	0.376	0.35	0.222
Potassium (meq/100gm)	1.2	1.3	1.2	1.4	1.3	1.5	1.2	1.4
Nitrgen (meq/100gm)	12.0	12.3	12.1	12.5	12.0	12.2	12.2	12.3
Phosphorus (meq/100gm)	14.5	14.9	14.6	15.0	14.8	14.7	14.5	14.6
% Moisture Content	5.3	12.32	6.21	4.7	12.32	4.8	6.21	6.25

**3.7 LAND USE PATTERNS**

The land use pattern of the study area has been studied by satellite imaginary picture of National Remote Sensing Centre, Govt. of India. Details are covered in Table 3.14.

**TABLE: 3.14**

**AREAS UNDER DIFFERENT LAND USE**

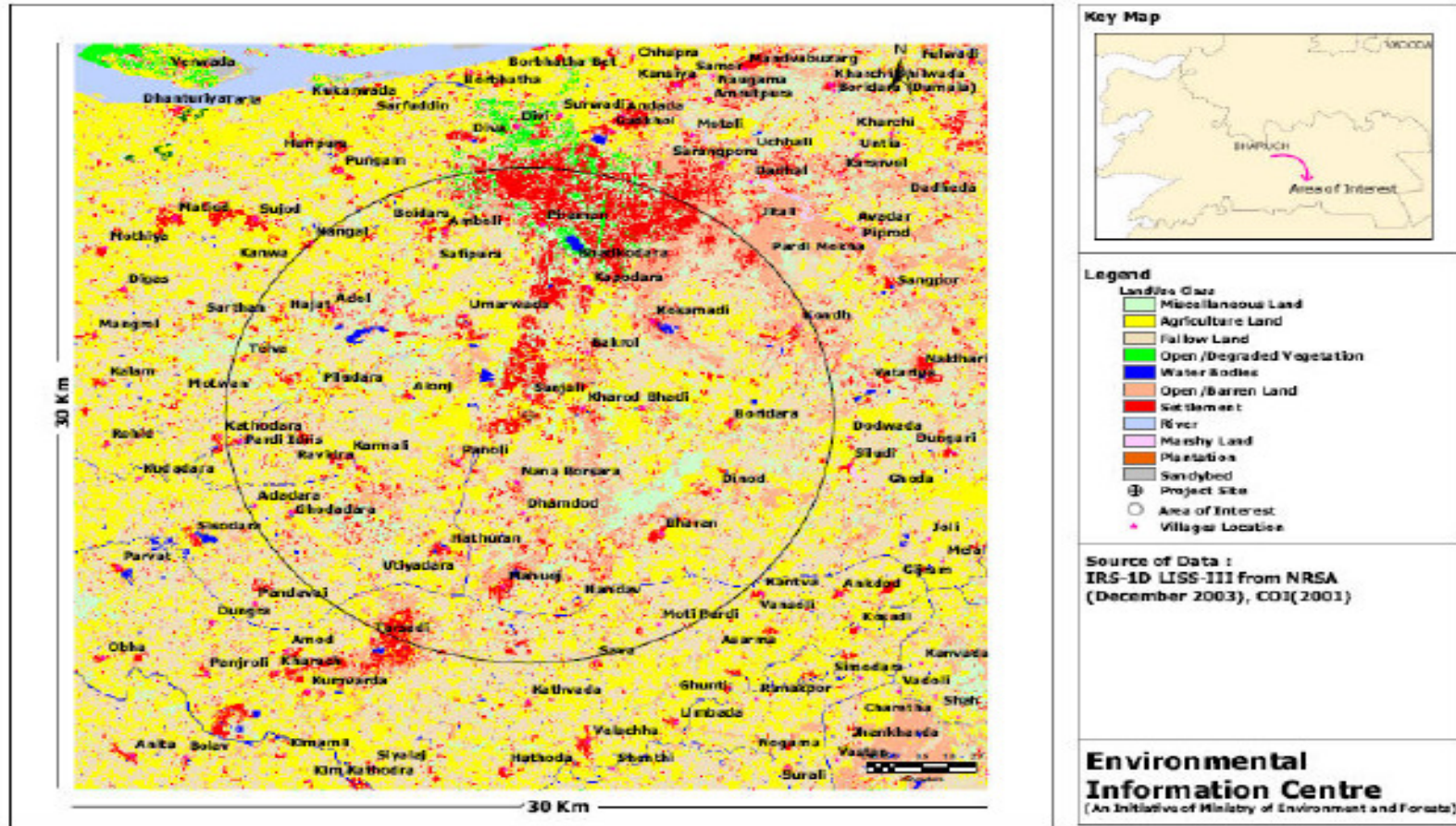
Sr. No.	Land Use Classification	Area within 10 km of Project Location	Percentage of Total Area
1.	Agriculture Land	80.32	25.56
2.	Fallow Land	135.48	43.11
3.	Habitation, Settlement	31.34	9.97
4.	Marshy Land	0.20	0.06
5.	Miscellaneous Land	28.44	9.05
6.	Degraded Vegetation	1.98	0.63
7.	Water	2.36	0.75
8.	Open & Barren Land	33.37	10.62
9.	River	0.74	0.24
	<b>Total</b>	<b>314.23 m sq.</b>	<b>100.00</b>

(Courtesy: Environmental Information Center, New Delhi)

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

**FIGURE: 3.8**

**LAND COVER MAP WITH VILLAGE LOCATION**



(Courtesy: Environmental Information Center, New Delhi)

### **3.8 BIOLOGICAL ENVIRONMENT & SOCIO –ECONOMIC ENVIRONMENT**

#### **3.8.1 ECOLOGICAL INFORMATION**

The study of the environmental components like flora and fauna is required to assess the biological diversity of the region. Flora and fauna can be used for biological surveillance in assessing the environmental status. The ecological interpretation of study area is based on secondary sources of information.

Water is the basic and essential resource for the survival of flora and fauna. The flora being the primary producer influences the fauna of the region. The characteristic flora existing in a region depends upon the existing conditions such as intensity of sunlight, type of soil, quality of air, including the quality and quantity of water available, etc.

The topography of Bharuch district is plain with numerous small watersheds and water logged areas resulting from agriculture wasteland, fallow land and pastures collecting rainwater or backwater and becoming marshy /saline. The waterlogged areas are dominated by hydrophytes. The coast is silty to clayed silt substratum with some sandy part. The areas near the seashore are mostly affected by tides and remain submerged for considerable time.

#### **3.8.2 FOREST**

Bharuch area is characterized by tropical dry deciduous forests. The total forest area of district is 1449. 68 sq. km. That accounts for 0.73 % of the total geographical area of the district. The study area does not have any identified endangered species and also does not have any designated forest, national park, sanctuaries.

(Source: Forest Department, Government of Gujarat).

#### **3.8.3 FLORA**

The list of flora is taken from forest department.

Flora is covered in entire Bharuch district.

List of flora is given in Table 3.15.

**TABLE: 3.15**

#### **LIST OF FLORA**

<b>Sr.No.</b>	<b>Scientific name</b>	<b>Common name</b>	<b>Family</b>
<b>I</b>	<b>Trees</b>		
1	Acacia auriculiformis	Bangali Babool	Fabaceae
2	A.leucopholia	Aniar	Fabaceae

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

<b>Sr.No.</b>	<b>Scientific name</b>	<b>Common name</b>	<b>Family</b>
3	A.catechu	Khair	Fabaceae
4	A.ferrungula	Pandhara Khair	Fabaceae
5	A.nilotica	Babul	Fabaceae
6	A.lebbeck	Siris	Fabaceae
7	A. procera	Siris	Fabaceae
8	A.polycantha	Garad	Fabaceae
9	Adina cordifolia	Hed	Rubiaceae
10	Aegle marmelos	Bela	Rutaceae
11	Ailanthus excelsa	Maharukh	Simaroubaceae
12	Alangium salvifolium	Ankol	Alangiaceas
13	Albizia odoratissimus	Siris	Fabaceae
14	Annogeissus latifolia	Dhavda	Combritaceae
15	Annona squamosa	Sitafal	Annonaceae
16	Azardirachta indica	Nim	Moraceae
17	Bahuania purpurea	Kachamar	Fabaceae
18	Bombax ceiba	Semal	Verbenaceae
19	Bridelia retusa	Asta (Kathmohli)	Fabaceae
20	B.squamosa	Asan	Fabaceae
21	Buchanania lanzan	Charoli	Anacardiaceas
22	Butea monospesma	Palas	Fabaceae
23	Callistemon lancealatus	Bottlebrush	Mytraceae
24	Casuarina equisetifoier	Sura	Casuarineae
25	Careya arborea	Kumbh	Mytraceae
26	Casearia elliptica	Manjo	Symydaceae
27	Caseria graveoiens	Dedak manio	Samidacea
28	Cassia fistula	Sunari	Fabaceae
29	Cestrum noctusnum	Ralkirani	Solana ceae
30	Cochiospermum religiosun	Ganeri	Cochlospermaceds
31	Cocas nicifera	Nariyal	Palmeae
32	Cordia dichotoma	Gundi	Boranginacea
33	Dalbergia paniculata	Dhobin	Fabaceae
34	D. latifolia	Sisso	Fabaceae
35	Murraya koenigii	Karlilimb	Rata ceae
36	Ixora parviflora	Kara	Rubiaceae
37	I.nigricans	Kukeri	Rubiaceae
38	Delonix elala	Gulmohar	Fabaceae
39	Diosphyros melanoxylon	Tendu	Ebenaceae
40	Dolichandrone falcate	Mallar sing	Bignoniaceae
41	Elaeodendron roxburghii	Alinar	Ceiastracea
42	Eucalyptus globules	Safeda	Eucalyptaceae
43	Emblica officinalis	Aonla	Euphobiaceae
44	Erithina uliginosa	Pungara	Fabaceae
45	Eramphis uliginosa	Almi	Rubiaceas

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

<b>Sr.No.</b>	<b>Scientific name</b>	<b>Common name</b>	<b>Family</b>
46	Ficus. Religiosa	Pipal	Moraceae
47	F.rumphii	Pilari	Moraceae
48	F.benghalensis	Bara	Moraceae
49	Flacourtia indica	Rankdi	Bixaceae
50	Garua pinnata	Kakad	Bursraceae
51	Griwia teliaefolia	Dhaman	Tiliaceae
52	Haidwickia bipinnata	Aniar	Caesalpiniacea
53	Holoptelia intigrifolia	Valva	Uticaceae
54	Kydia calycia	Bhindi	Malvaceae
55	Lagerstroemia lanceolata	Nano	Fabaceae
56	L.parviflora	Sidha	Fabaceae
57	Michellia champaca	Champa	Bignoneaceae
58	Lannea caromadalyca	Modad	Anacardiaceae
59	Madhuca indica	Mahua	Sapotaceae
60	Mangifera indica	Amm	Anacardiaceae
61	Miliusa tomentosa	Gulambh	Annonacea
62	Millgntonia hortensis	Indian Coral tree	Bignoniaceae
63	Mitragyna parvifolia	Kalam	Rubiaceae
64	Michelia Champa	Champa	Mangnoliaceae
65	Moringa oliefera	shevga	Moringaceae
66	Musa paradisiacea	Kela	Musaceae
67	Oroxyium indicum	Tetu	Bignoniaceae
68	Phoenix sylvestris	Shindi	Palminae
69	Prosopis juliflora	Babul	Mimoceae
70	P.cineraria	Babul	Mimoceae
71	Pithecelobium ducele	Chisbalai	Fabaceae
72	Pongamia pinnata	Karanja	Fabaceae
73	Pisidium guajava	Guava	Mutraceae
74	Pterocarpus marsupium	Bija	Fabaceae
75	Punica grantalum	Anar	Pomergrannatae
76	Sapindus emergginatus	Aritha	Sapindaceae
77	Soymida febrifuga	Rohan	Meliaceae
78	Poleathia langifolia	Ashok	Apoctnaceae
79	Saraca indica	Ashok	Apoctnaceae
80	Thevetia neirifolia	Pilakanton	Apoctnaceae
81	Sterculia urens	Kodaya	Sterculiaceae
82	Syzygium cuminii	Jamun	Myrtaceae
83	Terminalia crenulata	Salad	Fabaceae
84	T.bellirica	Behada	Combretaceae
85	T. arjuna	Arjun	Combretaceae
86	T.caltapa	Jangli badam	Combretaceae
87	Tamarindus indica	Tentuli	Fabaceae
88	Tecoma stans	Nellow bell	Bisgnonia ceae
89	Tectona grandis	Sag	Verbanaceae
90	Trema orientalis	Gol	Ulmaceae

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

<b>Sr.No.</b>	<b>Scientific name</b>	<b>Common name</b>	<b>Family</b>
91	Wrightia tinctoria	kudo	Apocynaceae
92	Zizyphus xylocarpus	Ghatbor	Rhamnaceae
93	Z.mauritiana	Bordi	Rhamnaceae
	<b>Shrubs</b>		
1	Argemone mexicana	Darudi	Papaveraceae
2	Caranthus resus	Sudufuli	Apocyanaceae
3	C.calatropis	Mundar	Asclepiadaceae
4	Calatopis gigantean	Rui	Asclepiadaceae
5	Carrissa carandas	Karvand	Apocyaninnae
6	Clerodendrum multyfolium	Multaiforum	Verbenaeae
7	Gymnosporia spinosa	Spinosa Rekee	Fabaceae
8	Lantana camera	Ghaneri	Verbanaceae
9	Opuntia dillenii	Nivdang	Cactacealea
10	Euphorbia nerifolia	Wavding	Celastraceae
11	Ocium gratissium	Rantulro	Labiataeae
12	Helicteries isora	Atali	Sterculiaceae
13	Ficus hispida	Tet umaro	Moraceae
14	Datura fastuasa	Dhotara	Solanaceae
15	Vitex negundo	Nirgudi	Verbaceae
16	Cassia tora	Tarota	Fabaceae
17	Zizyphus nummularia	Beri	Rhannaceae
18	Euphorbia tirucolli	Thor	Euphorbiaceae
	<b>Bamboos</b>		
1	Dendrocalamus strictus	Manvel	Grammineae
2	Abrus precatorius	Gunj	Fabaceae
3	Capparis sepiraria	Lamtjar	Cappariaceae
4	Cocculus hirrutus	Asanwel	Menispermaceae
5	Combretum ovalifolium	Jal	Combratae
6	Cayratia carnosae	Khatumbo	Vitaceae
	<b>Grasses</b>		
1	Andropogon pumilus	Kusal	Gramineae
2	Cenchrus setgerus	Dhramnu	Gramineae
3	Cynodon dactylon	Durva	Gramineae
4	Cymbopogen marinil	Rosha	Gramineae
5	Heteropogon contortus	Gawat	Gramineae
6	Sorghum halepense	Baru	Gramineae
7	Themeda triandra	Bhathdu	Gramineae
	<b>Crops</b>		
1	Ricinus communis	Arand	Euphorbiaceae
2	Saccharum officinarum	Ganna	Gramineae
3	Sorghum vulgae	Juwar	Gramineae
4	Zea mays	Makai	Gramineae
5	Arachis hypogaea	Ground nut	Logumin
6	Oryza sativa	Chokha	Gramineae
	<b>Macrophytes</b>		

**EIA FOR EXPANSION OF M/S. SHUBHLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

Sr.No.	Scientific name	Common name	Family
1	Eichhornia crassipes	Jalkumbhi	Pontederiace
2	Ipomea aquatica	Kalmisay	Volvulaceae
3	Trapa latifolia	Lotus	Nymphaceae
4	Nelumbo nucifera	Lotus	Nymphaceae
5	Azolla pinnata	Common duckweed	Lemnaceae
6	Muntiacus muntjak	Barking deer	Bovidae
7	Felis chaus	Jungle cat	Falidae
8	Myaena hyaena	The striped hyena	Canidae
9	Presbytis entellus	Hanuman langur	Colobinae

(Courtesy: State forest Dept., Bharuch, Gujarat)

**3.8.4 FAUNA**

Fauna is covered in entire Bharuch district.

List of fauna is given in Table 3.16.

**TABLE: 3.16****LIST OF FAUNA**

Sr.No.	Scientific name	Common name	Family
1	Acridothera tristis	Common myna	Sturnidae
2	A. ginginianus	Bank myna	Sturnidae
3	Athene brama	Spotted owlet	Striginae
4	Aegithina tiphia	Common lora	Lrenidae
5	Ardeola grayee	Pond Heron	Ardeidae
6	Amaurornis phoenicurus	Whitebreasted waterhen	Phasinidae
7	Babulcus ibis	Cattle Egret	Ardeidae
8	Centropus cinensis	Crow-pheasant	Cuculidae
9	Columba Livia	Blue Rock Pigeon	Columidae
10	Corvus splendens	House Crow	Carvidae
11	Coracias benghalensis	Indian Roller	Coracidae
12	Dicrurus adsimilis	Black Drongo	Dieruridae
13	Dinophum benghalense	Goldenbacked Woodpecker	Picidae
14	Eudynamis scolopacea	Koel	Cuculidae
15	Fracolinus francollinus	Black partiridge	Pharianidae
16	Halcyon rustica	Whitebreasted Kingfisher	Aicenidae
17	Hirundo rustica	Common swallow	Hirundinidae
18	Lanius exubitor	Grey Shrike	Daniidae
19	Lauchura malabarica	Whitethroated munia	Estrildinae
20	Megalaima rubricapilla	Smallgreen barbet	Capilonidae
21	Merops orientalis	Littlegreen Bea-eater	Miropidae

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Sr.No.	Scientific name	Common name	Family
22	M.malabarica	Crimsonbreasted Barbet	Capilionidae
23	Milvus migrans	Pathi Kite	Accipitridae
24	Motacilla maderatensis	Large pied wagtail	Motacillidae
25	Nectarinia asiatica	Purplerumped sunbird	Nectarinidae
26	Nectarinia minima	Small sunbird	Nectarinidae
27	Oriolus oriolus	Golden oriole	Oriolidae
28	Orthotomus sutorius	Tailor Bird	Pachycephaline
29	Passer domesticus	House Sparrow	Passerinae
30	Psittacula cyanocephala	Blossamheaded parakeet	Psittacidae
31	Pycnonotus caffer	Redvented bulbul	Pycnonotidae
32	Ploceus philipinensis	Weaver bird	Plocidae
33	Sexicoloides fulicate	Indian Robin	Corvidae
34	Sopsychus saularis	Magpie Robin	Corvidae
35	Streptopelia chinensis	Spotted dove	Columbidae
36	S.senegalensis	Little brown dove	Columbidae
37	Sternus pagodramus	Brahiminy myna	Sternidae
38	Turdoides caudatus	Common Babbler	Muscicapidae
39	Upupa epos	Hoopoe	Upupidae
40	Vanellus indicus	Redwattled Lapwing	Jacaniae
41	Metopidius indicus	Brongewinged jacana	Jacaniae
42	Ardea alba	Large egrd	Ardeidae
43	A.cinerea	Grey Heron	Ardeidae
44	Falica atra	Coot	Rallidae
45	Phalacrocorax niger	Little cormorant	Phalacrocoracidae

(Courtesy: State forest Dept., Bharuch, Gujarat)

### **3.9 SOCIO-ECONOMIC ENVIRONMENT**

As assessment of socio-economic environment forms an integral part of an EIA study, baseline information for the same was collected during the study period. The baseline socio-economic data collected for the study region, before the proposed expansion is operational, has been identified for the four major indicators viz. demography ,civic amenities, economy and social culture. The baseline status of the above indicators is compiled in forthcoming sections.

#### **3.9.1 DEMOGRAPHIC DATA WITHIN THE REGION OF INTEREST**

Demography covers the information related to population density sex ratio and literacy level of the public in the study area. Table 3.19 provides the data on inhabitations of the Ankleshwar Taluka.

**EIA FOR EXPANSION OF M/S. SHUBHLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

On an average, Taluka Ankleshwar has population density of about 228 persons per sq.km. (2011 Census data), compared to the Bharuch District, which has a population density of about 295 persons per sq.km. (2011 Census data).

**TABLE: 3.17****DEMOGRAPHIC DATA**

Sr. No	Village name	Taluka	Total population	Total male	Total female	Total population <6 years
1	Panoli	Ankleshwar	5462	2817	2645	800
2	Kharod	Ankleshwar	4658	2623	2035	537
3	Bakrol	Ankleshwar	1591	851	740	199
4	Bhadi	Ankleshwar	2831	1381	1450	444
5	Umarwada	Ankleshwar	3711	1847	1837	476
6	Amrutpura	Ankleshwar	943	502	441	125
7	Avadar	Ankleshwar	1333	707	626	152
8	Dadhali	Ankleshwar	3695	1838	1857	540
9	Jitali	Ankleshwar	4225	2160	2065	523
10	Kararvel	Ankleshwar	1526	785	741	199
11	Mandvabuzarg	Ankleshwar	5938	2995	2943	646
12	Motali	Ankleshwar	895	459	436	153
13	Naugama	Ankleshwar	920	502	418	101
14	Pardi Mokha	Ankleshwar	586	292	294	63
15	Piprod	Ankleshwar	607	298	309	97
16	Samor	Ankleshwar	1294	670	624	152
17	Sangpor	Ankleshwar	2670	1369	1301	286
18	Sarangpore	Ankleshwar	16671	9373	7298	2666
19	Uchhali	Ankleshwar	895	451	444	117
20	Andharkachhala	Jhagadia	293	156	137	45
21	Boridara	Jhagadia	960	495	465	94
22	Borjai	Jhagadia	1519	787	732	199
23	Bhojpur	Jhagadia	698	369	329	89
24	Dadheda	Jhagadia	1094	559	535	135
25	Dholakuva	Jhagadia	310	158	152	45
26	Damalai	Jhagadia	563	298	267	77
27	Fulwadi	Jhagadia	1783	916	867	202
28	Govali	Jhagadia	4381	2297	2084	444
29	Haripara	Jhagadia	816	433	383	70
30	Jhagadia	Jhagadia	5446	2779	2667	550
31	Kapalsadi	Jhagadia	2024	1038	986	208
32	Kharchi	Jhagadia	1068	575	493	108
33	Kharchi Bhilwada	Jhagadia	998	501	497	158
34	Kharia	Jhagadia	531	277	254	74

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

Sr. No	Village name	Taluka	Total population	Total male	Total female	Total population <6 years
35	Kunvarpara	Jhagadia	200	99	101	31
36	Karad	Jhagadia	727	368	359	94
37	Limet	Jhagadia	1739	893	846	215
38	Malpor (Dumala)	Jhagadia	906	466	440	121
39	Moran	Jhagadia	866	437	429	106
40	Mota Sanja	Jhagadia	1053	526	527	84
41	Mulad	Jhagadia	1043	529	514	119
42	Nana Sanja	Jhagadia	1644	852	792	188
43	Navagam Mota	Jhagadia	520	261	259	71
44	Padal	Jhagadia	1743	880	863	209
45	Panvadi	Jhagadia	592	307	285	71
46	Rajpore	Jhagadia	339	165	174	44
47	Randedi	Jhagadia	447	230	217	63
48	Ranipara	Jhagadia	2225	1125	1100	266
49	Ratanpor	Jhagadia	2130	1093	1037	262
50	Sardarpura	Jhagadia	456	247	209	38
51	Selod	Jhagadia	1653	836	817	179
52	Sultanpura	Jhagadia	5864	3003	2861	570
53	Shiyali	Jhagadia	1069	559	510	135
54	Talodara	Jhagadia	2057	1026	1031	250
55	Uchedia	Jhagadia	2438	1249	1189	250
56	Untia	Jhagadia	752	378	374	92
57	Vanthevad	Jhagadia	661	349	312	82
58	Vasna	Jhagadia	1522	778	744	223
59	Vaghpara	Jhagadia	274	133	141	37
60	Bhilod	Valia	3476	1745	1731	389
61	Dholgam	Valia	2556	1311	1245	303
62	Hirapor	Valia	1963	1019	944	272
63	Kondh	Valia	4562	2372	2190	544
64	Valia	Valia	7678	3829	3849	769

(Source: Census-2011 for Bharuch District)

**TABLE -3.18**

**POPULATION DENSITY & SEX RATIO**

Sr. No	Name	Population (Persons)	Population Density (Person/Sq.km.)	Sex ratio (No. of females per 1000 males)
1	Within 10 km radius (2011)	117837	375	928
2	Taluka Jhagadia	185337	228	949

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	(2011)			
3	Taluka Ankleshwar (2011)	315596	725	882
4	Taluka Valia (2011)	145400	283	962
5	District Bharuch (2011)	1551019	295	925

**3.9.2 LITERACY RATE**

The literacy rate is a major factor, which influences the socio-cultural condition of a particular place. Details of literacy rate in percentage in district Bharuch and Taluka Jhagadia are given in Table 3.19.

**TABLE- 3.19**

**LITERACY RATE**

Sr. No.	Name	Literacy rate (%)
1	Within 10 km radius	78.13%
2	Taluka Ankleshwar (2011)	75.62 %
3	District Bharuch(2011)	72.09 %

(Source: Census-2011 for Bharuch District)

**TABLE: 3.20**

**LITERACY RATE WITHIN 10 KM RADIAL DISTANCE OF STUDY AREA**

Sr. No.	Village name	City/block name	Total population	Population < 06 years	Population Literate	Literacy (%)
1	Panoli	Ankleshwar	5462	800	3458	75.95
2	Kharod	Ankleshwar	4658	537	3749	90.01
3	Bakrol	Ankleshwar	1591	199	1183	84.8
4	Bhadi	Ankleshwar	2831	444	1805	77.4
5	Umarwada	Ankleshwar	3711	476	2516	78.6
6	Amrutpura	Ankleshwar	943	125	619	75.67
7	Avadar	Ankleshwar	1333	152	963	81.54
8	Dadhhal	Ankleshwar	3695	540	2708	85.83
9	Jitali	Ankleshwar	4225	523	2897	78.25
10	Kararvel	Ankleshwar	1526	199	1039	78.29
11	Mandvabuzarg	Ankleshwar	5938	646	4089	77.26
12	Motali	Ankleshwar	895	153	545	73.45
13	Naugama	Ankleshwar	920	101	656	80.09
14	Pardi Mokha	Ankleshwar	586	63	467	89.29
15	Piprod	Ankleshwar	607	97	360	70.58
16	Samor	Ankleshwar	1294	152	699	61.20
17	Sangpor	Ankleshwar	2670	286	1783	74.79
18	Sarangpore	Ankleshwar	16671	2666	11430	81.61
19	Uchhali	Ankleshwar	895	117	597	76.73

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

<b>Sr. No.</b>	<b>Village name</b>	<b>City/block name</b>	<b>Total population</b>	<b>Population &lt; 06 years</b>	<b>Population Literate</b>	<b>Literacy (%)</b>
20	Andharkachhala	Jhagadia	293	45	139	56.04
21	Boridara	Jhagadia	960	94	696	80.37
22	Borjai	Jhagadia	1519	199	1072	81.21
23	Bhojpur	Jhagadia	698	89	482	79.14
24	Dadheda	Jhagadia	1094	135	642	66.94
25	Dholakuva	Jhagadia	310	45	208	78.49
26	Damalai	Jhagadia	563	80	314	65.01
27	Fulwadi	Jhagadia	1783	202	1141	72.17
28	Govali	Jhagadia	4381	444	2917	74.09
29	Haripara	Jhagadia	816	70	530	71.04
30	Jhagadia	Jhagadia	5446	550	4081	83.35
31	Kapalsadi	Jhagadia	2024	208	1572	86.56
32	Kharchi	Jhagadia	1068	108	859	89.47
33	Kharchi Bhilwada	Jhagadia	998	158	640	76.19
34	Kharia	Jhagadia	531	74	278	60.83
35	Kunvarpara	Jhagadia	200	31	119	70.41
36	Karad	Jhagadia	727	94	471	74.40
37	Limet	Jhagadia	1739	215	1149	75.39
38	Malpor (Dumala)	Jhagadia	906	121	487	62.03
39	Moran	Jhagadia	866	106	603	79.34
40	Mota Sanja	Jhagadia	1053	84	731	75.43
41	Mulad	Jhagadia	1043	119	758	82.03
42	Nana Sanja	Jhagadia	1644	188	1152	79.12
43	Navagam Mota	Jhagadia	520	71	273	60.8
44	Padal	Jhagadia	1743	209	1066	69.49
45	Panvadi	Jhagadia	592	71	417	80.03
46	Rajpore	Jhagadia	339	44	164	55.59
47	Randedi	Jhagadia	447	63	256	66.66
48	Ranipara	Jhagadia	2225	266	1284	65.54
49	Ratanpor	Jhagadia	2130	262	1177	63
50	Sardarpura	Jhagadia	456	38	384	91.86
51	Selod	Jhagadia	1653	179	1150	78.09
52	Sultanpura	Jhagadia	5864	570	4506	85.11
53	Shiyali	Jhagadia	1069	135	634	67.88
54	Talodara	Jhagadia	2057	250	1415	78.3
55	Uchedia	Jhagadia	2438	250	1601	73.17
56	Untia	Jhagadia	752	92	512	77.57
57	Vanthevad	Jhagadia	661	82	429	74.09
58	Vasna	Jhagadia	1522	223	959	73.82
59	Vaghpara	Jhagadia	274	37	183	77.21
60	Bhilod	Valia	3476	389	2392	77.48
61	Dholgam	Valia	2556	303	1595	70.79

<b>Sr. No.</b>	<b>Village name</b>	<b>City/block name</b>	<b>Total population</b>	<b>Population &lt; 06 years</b>	<b>Population Literate</b>	<b>Literacy (%)</b>
62	Hirapor	Valia	1963	272	1321	78.11
63	Kondh	Valia	4562	544	3208	79.84
64	Valia	Valia	7678	769	6004	86.9

**(Source: Census-2011 for Bharuch District)**

### **3.9.3 OCCUPATIONAL STRUCTURE**

In economic development of the region its geographical location, natural resources, business and employment, industries and manpower play vital role. Table 3.19 provides the occupational patterns in all villages of Ankleshwar Taluka.

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

**TABLE-3.21**

**OCCUPATIONAL STRUCTURE**

Sr. No.	Village name	Cd block Name	Total population	Total Work Population	Total main Worker Population	Total marginal Worker Population	Total non Worker population	Employment ratio%
1	Panoli	Ankleshwar	5462	1897	1667	230	3565	34.73
2	Kharod	Ankleshwar	4658	1290	1236	54	3368	27.69
3	Bakrol	Ankleshwar	1591	782	554	228	809	49.15
4	Bhadi	Ankleshwar	2831	898	868	30	1933	31.72
5	Umarwada	Ankleshwar	3711	1429	1389	40	2282	38.50
6	Amrutpura	Ankleshwar	943	388	252	136	555	41.14
7	Avadar	Ankleshwar	1333	607	361	246	726	45.53
8	Dadhal	Ankleshwar	3695	1301	1152	149	2394	35.21
9	Jitali	Ankleshwar	4225	1610	1384	226	2615	38.1
10	Kararvel	Ankleshwar	1526	544	403	141	982	35.64
11	Mandvabuza rg	Ankleshwar	5938	2258	2086	172	3680	38.02
12	Motali	Ankleshwar	895	385	347	38	510	43.01
13	Naugama	Ankleshwar	920	412	361	51	508	44.78
14	Pardi Mokha	Ankleshwar	586	199	191	8	387	33.95
15	Piprod	Ankleshwar	607	264	251	13	343	43.49
16	Samor	Ankleshwar	1294	617	587	30	677	47.68
17	Sangpor	Ankleshwar	2670	1186	1147	39	1484	44.41
18	Sarangpore	Ankleshwar	16671	5905	5587	318	10766	35.42
19	Uchhali	Ankleshwar	895	324	297	27	571	36.2
20	Andharkach hala	Jhagadia	293	140	81	59	153	47.78
21	Boridara	Jhagadia	960	411	377	34	549	42.81
22	Borjai	Jhagadia	1519	478	466	12	1041	31.46
23	Bhojpur	Jhagadia	698	398	397	1	300	57.02
24	Dadheda	Jhagadia	1094	331	282	49	763	30.25

**EIA FOR EXPANSION OF M/S. SHUBLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

<b>Sr. No.</b>	<b>Village name</b>	<b>Cd block Name</b>	<b>Total population</b>	<b>Total Work Population</b>	<b>Total main Worker Population</b>	<b>Total marginal Worker Population</b>	<b>Total non Worker population</b>	<b>Employment ratio %</b>
25	Dholakuva	Jhagadia	310	185	124	61	125	59.67
26	Damalai	Jhagadia	563	340	95	245	223	60.39
27	Fulwadi	Jhagadia	1783	748	535	213	1035	41.95
28	Govali	Jhagadia	4381	1857	1774	83	2524	42.38
29	Haripara	Jhagadia	816	515	219	296	301	63.11
30	Jhagadia	Jhagadia	5446	2164	2003	161	3282	39.73
31	Kapalsadi	Jhagadia	2024	787	654	133	1237	38.88
32	Kharchi	Jhagadia	1068	538	397	141	530	50.37
33	Kharchi Bhilwada	Jhagadia	998	382	239	143	616	38.27
34	Kharia	Jhagadia	531	214	210	4	317	40.3
35	Kunvarpara	Jhagadia	200	72	66	6	128	36
36	Karad	Jhagadia	727	354	333	21	373	48.69
37	Limet	Jhagadia	1739	683	679	4	1056	39.27
38	Malpor (Dumala)	Jhagadia	906	579	566	13	327	63.90
39	Moran	Jhagadia	866	381	327	54	485	43.99
40	Mota Sanja	Jhagadia	1053	498	483	15	555	47.29
41	Mulad	Jhagadia	1043	437	393	44	606	41.89
42	Nana Sanja	Jhagadia	1644	755	506	249	889	45.92
43	Navagam Mota	Jhagadia	520	160	160	0	360	30.76
44	Padal	Jhagadia	1743	664	442	222	1079	38.09
45	Panvadi	Jhagadia	592	363	356	7	229	61.31
46	Rajpore	Jhagadia	339	134	133	1	205	39.52
47	Randedi	Jhagadia	447	145	110	35	302	32.43
48	Ranipara	Jhagadia	2225	1030	1005	25	1195	46.29
49	Ratanpor	Jhagadia	2130	743	545	198	1387	34.88
50	Sardarpura	Jhagadia	456	202	106	96	254	44.29

**EIA FOR EXPANSION OF M/S. SHUBHLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

Sr. No.	Village name	Cd block Name	Total population	Total Work Population	Total main Worker Population	Total marginal Worker Population	Total non Worker population	Employment ratio %
51	Selod	Jhagadia	1653	626	550	76	1027	37.87
52	Sultanpura	Jhagadia	5864	2025	1844	181	3839	34.53
53	Shiyali	Jhagadia	1069	403	344	59	666	37.69
54	Talodara	Jhagadia	2057	715	579	136	1342	34.75
55	Uchedia	Jhagadia	2438	1057	931	126	1381	43.35
56	Untia	Jhagadia	752	506	402	104	246	67.28
57	Vanthevad	Jhagadia	661	253	235	18	408	38.27
58	Vasna	Jhagadia	1522	605	581	24	917	39.75
59	Vaghpara	Jhagadia	274	79	78	1	195	28.83
60	Bhilod	Valia	3476	1312	1127	185	2164	37.74
61	Dholgam	Valia	2556	900	499	401	1656	35.21
62	Hirapor	Valia	1963	869	743	126	1094	44.26
63	Kondh	Valia	4562	1783	1563	220	2779	39.08
64	Valia	Valia	7678	2976	2558	418	4702	38.76

**(Source: Census-2011 for Bharuch District)**

Main worker is a worker who has worked last year for six month or more. Marginal worker is a worker who has worked last year for less than six months. Non-worker is worker who did not work at all during the reference period of one year.

Distribution of main worker and marginal worker into further following four categories are shown in Table 3.22.

I) Cultivators II) Agricultural labors III) Household industry IV) others workers

**EIA FOR EXPANSION OF M/S. SHUBHLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

**TABLE- 3.22**

**DISTRIBUTION OF WORKERS**

Sr. No.	Village name	Main worker population				Marginal worker population			
		Cultivator	Agriculture	House Hold	Other	Cultivator	Agriculture	Household	Other
1	Panoli	214	533	76	844	12	70	26	117
2	Kharod	222	423	3	588	20	6	0	28
3	Bakrol	81	81	16	376	12	149	5	62
4	Bhadi	181	321	2	364	4	11	0	15
5	Umarwada	162	795	0	432	5	22	0	13
6	Amrutpura	38	147	2	65	32	87	2	15
7	Avadar	82	33	5	241	6	235	0	5
8	Dadhal	137	385	39	591	8	63	9	69
9	Jitali	126	642	34	582	11	192	2	21
10	Kararvel	70	117	2	214	21	49	1	70
11	Mandvabuzarg	272	1264	29	521	13	130	4	25
12	Motali	67	187	1	92	8	25	0	5
13	Naugama	45	197	0	119	1	45	0	5
14	Pardi Mokha	35	68	0	88	1	4	0	3
15	Piprod	21	147	0	83	2	7	0	4
16	Samor	52	437	2	96	2	20	0	8
17	Sangpor	161	755	16	215	2	28	1	8
18	Sarangpore	67	443	108	4969	11	25	15	267
19	Uchhali	49	178	0	70	3	20	0	4
20	Andharkachhala	18	58	1	4	3	55	0	1
21	Boridara	141	143	10	83	5	11	0	18

**EIA FOR EXPANSION OF M/S. SHUBHLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

Sr. No.	Village name	Main worker population				Marginal worker population			
		Cultivator	Agriculture	House Hold	Other	Cultivator	Agriculture	Household	Other
22	Borjai	95	238	41	92	1	8	1	2
23	Bhojpur	13	378	0	6	1	0	0	0
24	Dadheda	88	153	4	37	4	42	0	3
25	Dholakuva	46	73	0	5	1	60	0	0
26	Damalai	45	14	8	28	1	243	0	1
27	Fulwadi	77	128	4	326	14	144	1	54
28	Govali	309	1038	14	413	17	42	0	24
29	Haripara	54	108	20	37	19	201	28	48
30	Jhagadia	209	506	25	1263	6	32	15	108
31	Kapalsadi	138	351	8	157	20	82	0	31
32	Kharchi	89	116	1	191	20	85	3	33
33	Kharchi Bhilwada	60	65	2	112	6	84	0	53
34	Kharia	14	145	0	51	0	3	1	0
35	Kunvarpara	2	64	0	0	1	5	0	0
36	Karad	40	190	10	93	1	4	4	12
37	Limet	93	518	3	65	1	0	1	2
38	Malpor (Dumala)	3	535	0	28	1	11	0	1
39	Moran	33	287	0	7	1	53	0	0
40	Mota Sanja	48	312	0	123	0	3	1	11
41	Mulad	76	213	7	97	12	24	2	6
42	Nana Sanja	77	256	2	171	43	54	4	148
43	Navagam Mota	4	154	0	2	0	0	0	0
44	Padal	63	292	0	87	22	170	2	28
45	Panvadi	28	231	1	96	0	6	0	1

**EIA FOR EXPANSION OF M/S. SHUBHLAXMI PIGMENTS,GIDC ESTATE,PANOLI**

Sr. No.	Village name	Main worker population				Marginal worker population			
		Cultivator	Agriculture	House Hold	Other	Cultivator	Agriculture	Household	Other
46	Rajpore	25	78	0	30	0	1	0	0
47	Randedi	14	67	0	29	1	22	0	12
48	Ranipara	140	777	1	87	9	3	2	11
49	Ratanpor	11	296	0	238	35	155	0	8
50	Sardarpura	28	12	1	65	5	78	3	10
51	Selod	129	347	14	60	14	49	2	11
52	Sultanpura	108	404	181	1151	16	26	2	137
53	Shiyali	65	265	0	14	0	48	0	11
54	Talodara	108	292	11	168	19	93	4	20
55	Uchedia	177	523	23	208	1	108	4	13
56	Untia	97	124	2	179	44	49	0	11
57	Vanthevad	9	173	3	50	0	13	2	3
58	Vasna	117	381	0	83	1	21	0	2
59	Vaghpara	3	70	0	5	1	0	0	0
60	Bhilod	221	562	19	325	10	143	9	23
61	Dholgam	96	280	2	121	16	277	1	107
62	Hirapor	56	469	0	218	6	82	0	38
63	Kondh	102	551	12	898	18	112	2	88
64	Valia	122	459	35	1942	30	60	16	312

(Source: Census-2011for Bharuch District)

### **3.10 TRAFFIC SURVEY**

#### **3.10.1 RECONNAISSANCE**

The traffic survey, to ascertain the traffic density in the study area was conducted on the road near the project site. The composition of Traffic includes Two Wheelers, Three Wheelers (Goods & Passenger Autos, Four Wheeler (Passenger Cars) and Four Wheeler Heavy Vehicles like Trucks, Lorries, Busses etc.

#### **3.10.2 TRAFFIC SURVEY OF THE STUDY AREA**

Data was collected by physically counting the number of vehicles playing in both directions of NH-8: Delhi to Mumbai Highway. The hourly counts were carried out for the different type/ category of vehicles. The variation in the traffic flow at the given road along with the numbers of vehicles during peak hour & lean hour is presented in the table below. While it's graphical representation is done in figure below.

**TABLE: 3.23**

#### **DELHI TO MUMBAI HIGHWAY (NH-8)**

<b>Sr. No.</b>	<b>Vehicle Type</b>	<b>During Lean Hrs. (No. of Vehicles/Hr)</b>	<b>No. of Vehicles In PCU During Lean Hrs</b>	<b>During Peak Hrs (No. of Vehicles/Hr)</b>	<b>No. of Vehicles In PCU During Peak Hrs</b>
1.	Two Wheelers	46	23	76	57
2.	Three Wheelers	26	32	37	74
3.	Cars	303	607	321	642
4.	Buses/ Mini Buses	211	778	242	528
5.	Trucks/ Lorries	202	741	248	910
6.	2 Axle Truck	235	865	261	966
7.	3 Axle Truck	225	830	258	955

#### **3.10.3 EXISTING TRAFFIC SCENARIO AND LEVEL OF SERVICES (UP)**

- The road from Delhi to Mumbai is six lanes with divider.
- Capacity of road as per IRC= 2500 PUC's/ hr
- Total volume during peak hours= 1443 Nos.
- Existing volume / capacity ratio=  $1443/2500=0.5772$
- The level of service is "C" that is good

**TABLE: 3.24**

**LEVEL OF SERVICE**

Sr. No.	Existing volume/ Capacity Ratio	Levels of Services
1.	0.0 to 0.2	“A” (Excellent)
2.	0.2 to 0.4	“B” (Very Good)
3.	0.4 to 0.6	“C” (Good)
4.	0.6 to 0.8	“D” (fair)
5.	0.8 to 1.0	“E” (Poor)

Location: From B to A (Down): From Mumbai to Delhi

**TABLE: 3.25**

**MUMBAI TO DELHI HIGHWAY (NH-8)**

Sr. No.	Vehicle Type	During Lean Hrs. (No. of Vehicles/Hr)	No. of Vehicles In PCU During Lean Hrs	During Peak Hrs (No. of Vehicles/Hr)	No. of Vehicles In PCU During Peak Hrs
1.	Two Wheelers	42	31	79	90
2.	Three Wheelers	30	32	35	68
3.	Cars	276	552	320	637
4.	Buses/ Mini Buses	201	742	246	908
5.	Trucks/ Lorries	190	699	209	770
6.	2 Axle Truck	215	792	253	932
7.	3 Axle Truck	214	788	242	892

**3.10.4 EXISTING TRAFFIC SCENARIO AND LEVEL OF SERVICES (DOWN)**

- Capacity of road as per IRC= 2500 PUC’ s/ hr
- Total volume during peak hours= 1384
- Existing volume / capacity ratio= 1384/2500=0.55
- The level of service is “C” that is good

**Results:**

The above traffic reveals the LOS (Levels of Service) as “C” Good for the NH-8 Road, Which are 4 lane roads divider for proposed project scenario. Since adequate parking is provided and increase in traffic due to proposed project has taken care by the six lane road.

## **CHAPTER-4**

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### **IDENTIFICATION & ASSESSMENT OF IMPACT**

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#### **4.1 IDENTIFICATION OF IMPACT**

This chapter deals with the assessment of project impacts on environment. Mitigative measures are suggested to minimize the likely negative impacts.

The network method (Cause - effect) was adopted to identify potential impact of the proposed activity. It includes step wise study of relationship between an activity and its environmental parameters. This method involves in the “Road Map” type of approach to the identification of second and third order effect. The basic idea is to account for the project activity and identify the type of impact that could initially occur followed by the identification of secondary and tertiary impact.

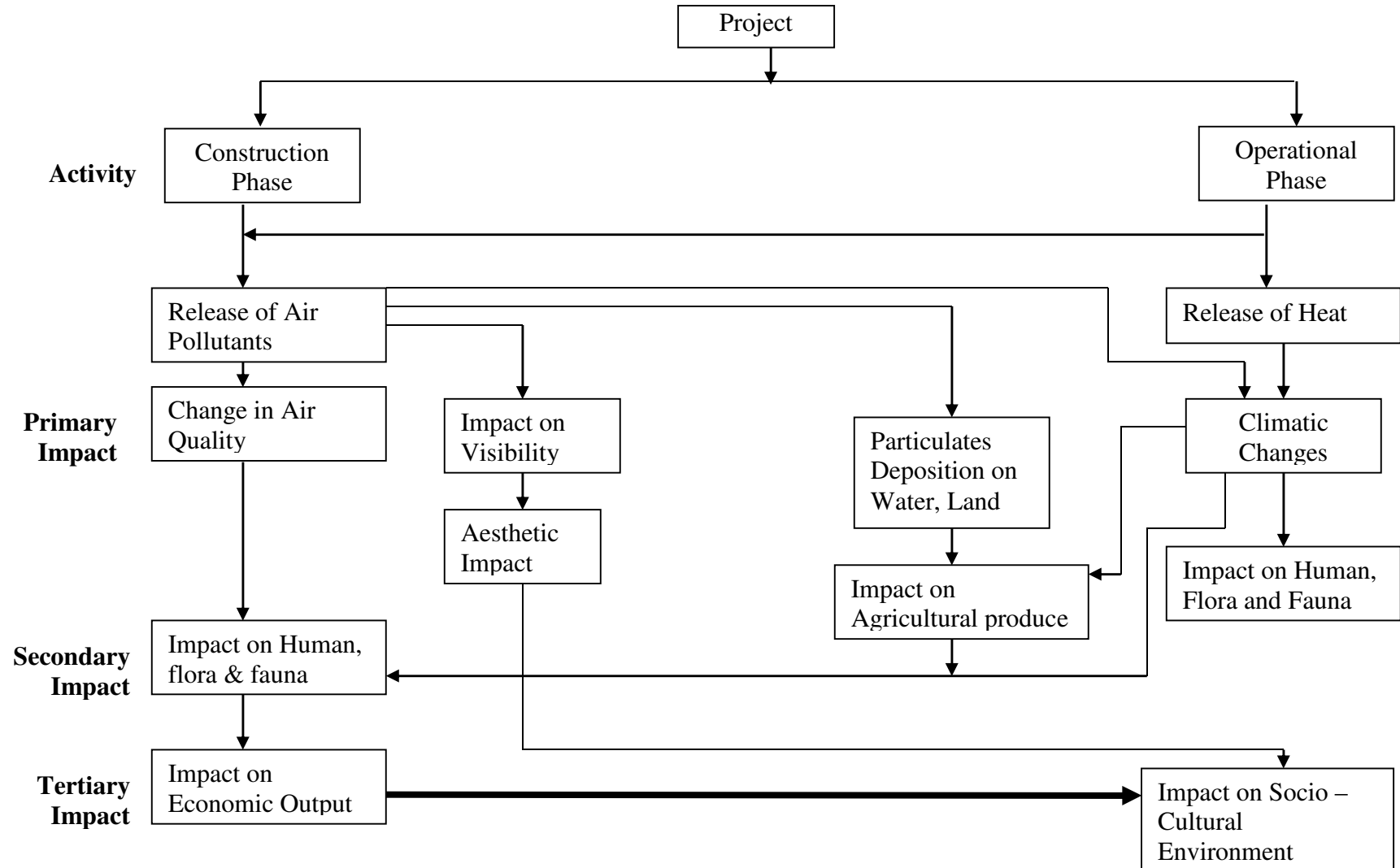
The project will have impacts of varying magnitude on different environmental components. These impacts could be categorized as-

- Primary impacts, i.e. impacts which occur as a direct result of the project activities.
- Secondary and tertiary impacts, i.e. impacts that occur as a result of primary impacts.

The type of identified potential impacts on various environmental components i.e. Air, Noise, Water and Land are presented in figure 4.1 to figure 4.6.

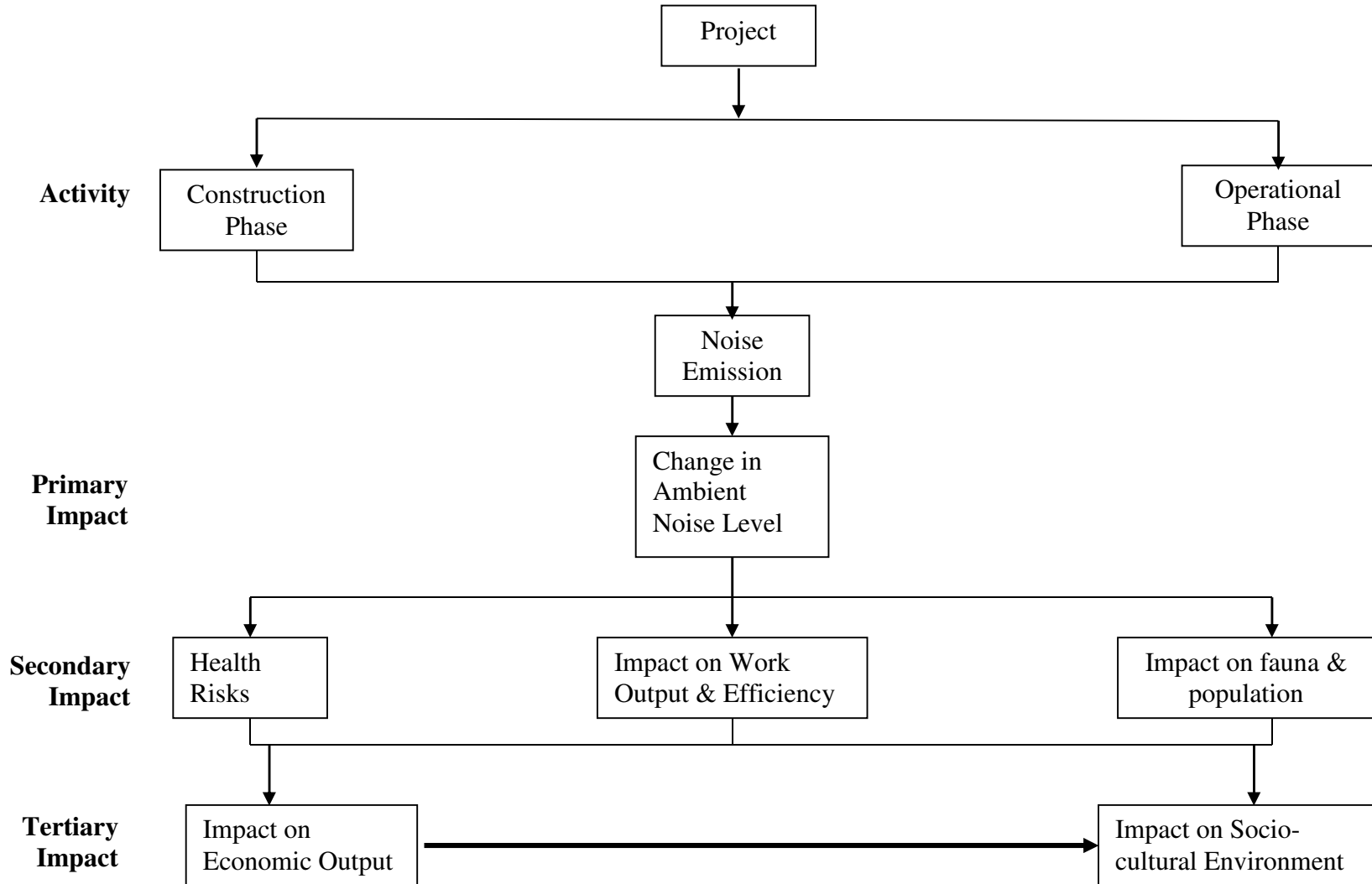
**FIGURE 4.1**

**IMPACT NETWORK ON AIR ENVIRONMENT**



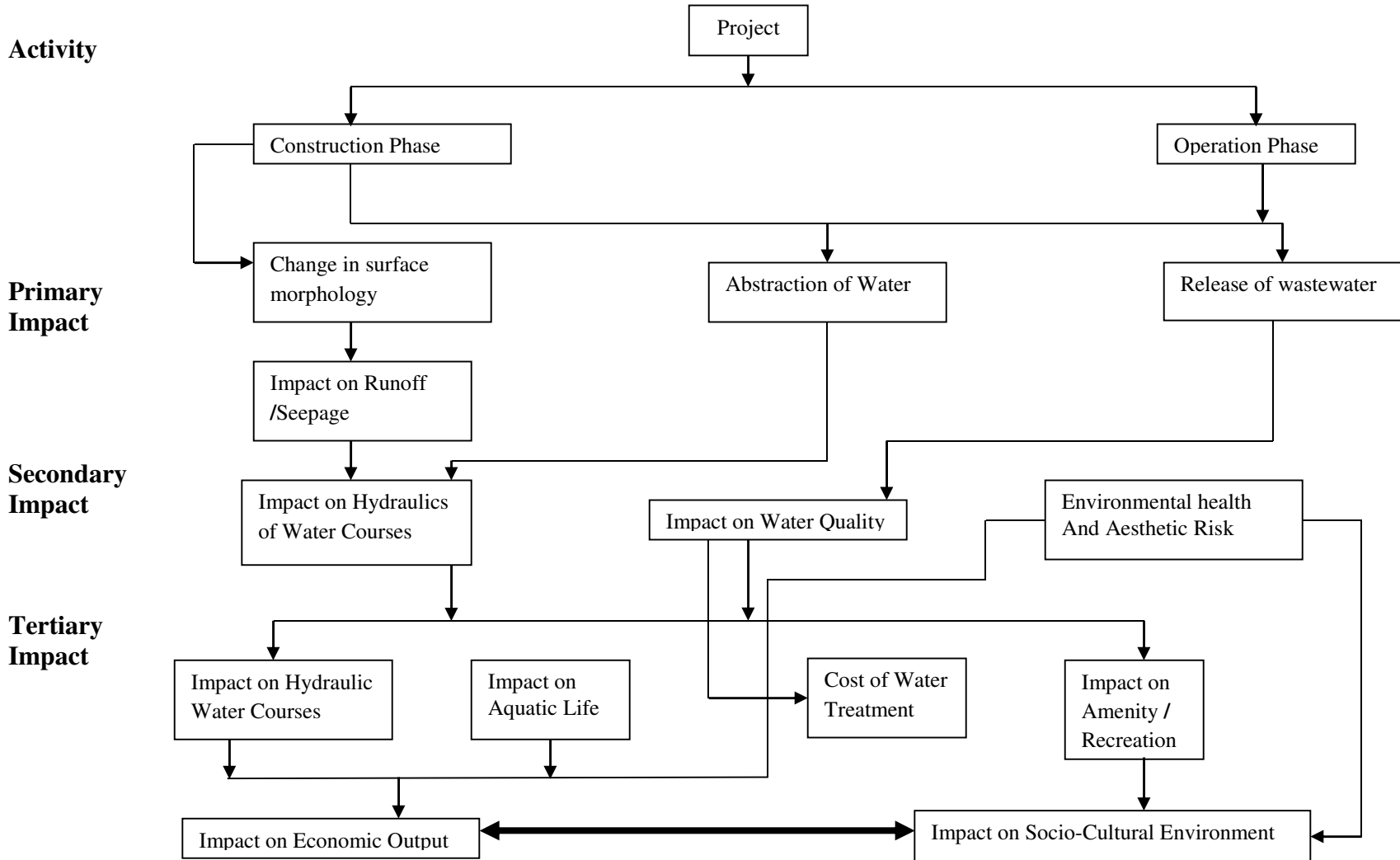
**FIGURE 4.2**

**IMPACT NETWORK ON NOISE ENVIRONMENT**



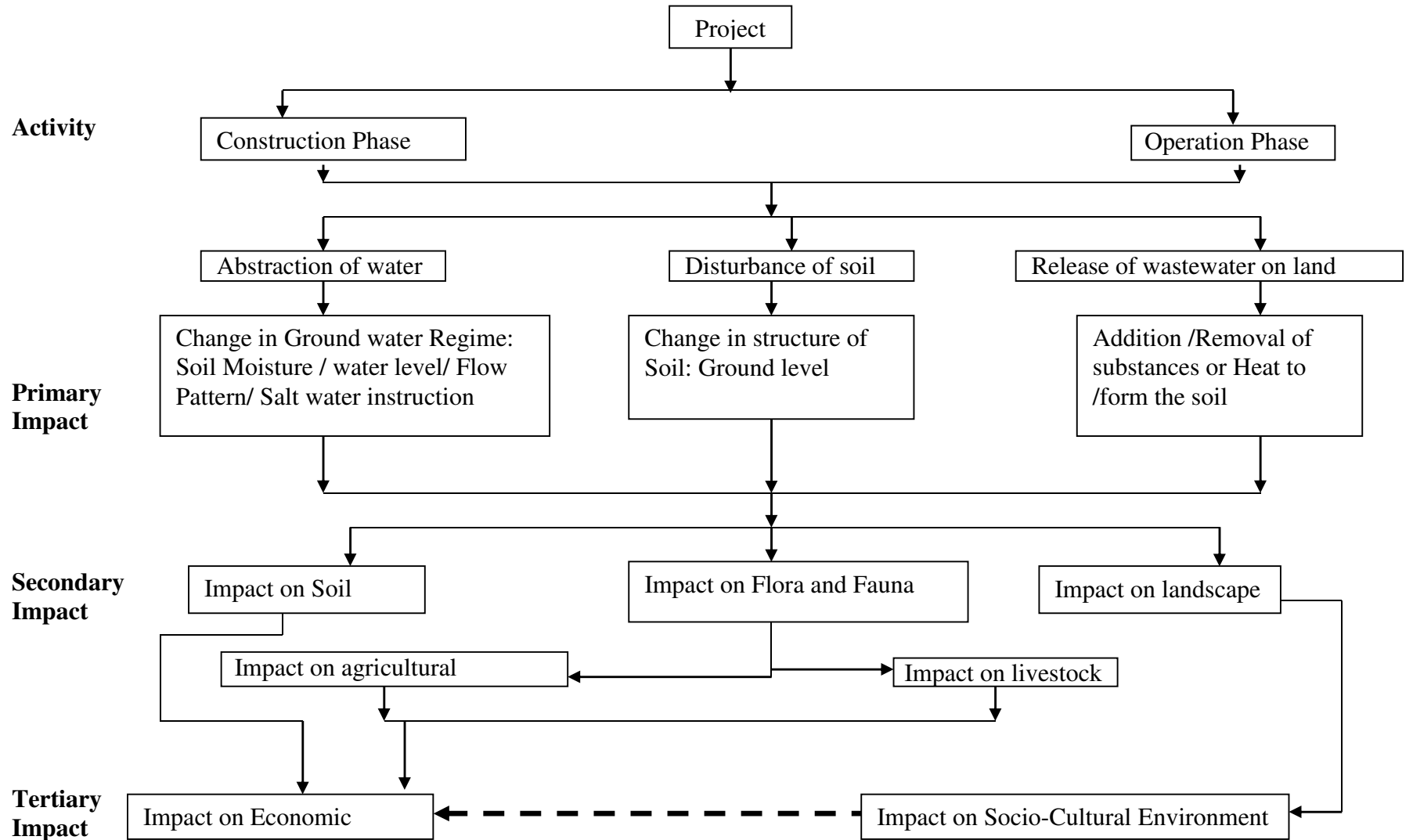
**FIGURE 4.3**

**IMPACT NETWORK ON WATER ENVIRONMENT**



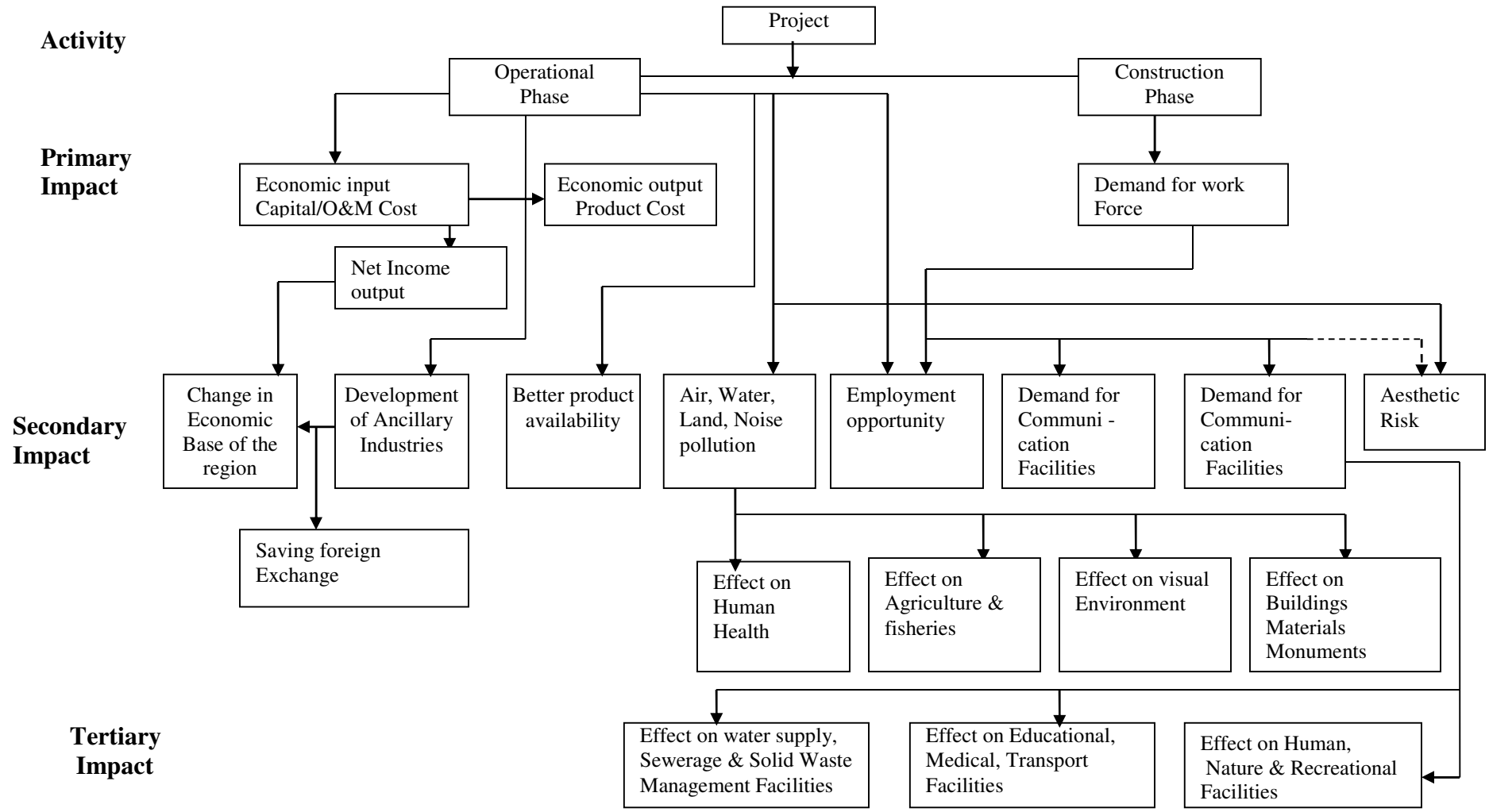
**FIGURE 4.4**

**IMPACT NETWORK ON GROUND WATER ENVIRONMENT**



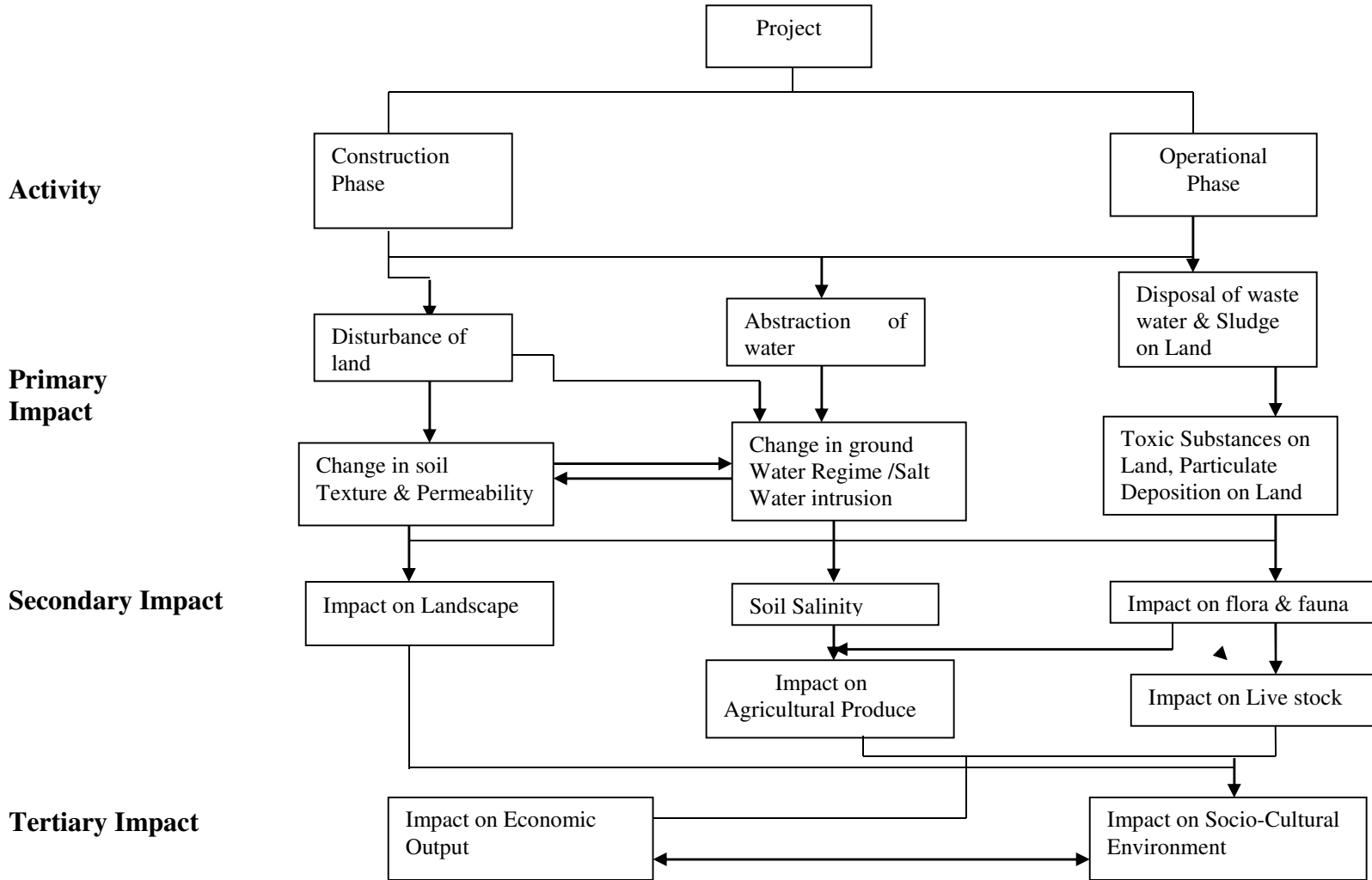
**FIGURE 4.5**

**IMPACT NETWORK ON SOCIO-AND CULTURAL ENVIRONMENT**



**FIGURE 4.6**

**IMPACT NETWORK ON LAND ENVIRONMENT**



## **4.2 PREDICTION AND ASSESSMENT OF IMPACT**

The predication and assessment of impact on the environmental parameters have been carried out. For assessing the impact, the baseline data of environmental status were considered. The change in the environmental parameters due to manufacturing activities of the industry has been superimposed on the status data.

### **4.2.1 WATER ENVIRONMENT**

#### **4.2.1.1 CONSTRUCTION PHASE IMPACTS**

During construction phase, water will be required for construction of structures, sprinkling for dust suppression. The raw water for the various purposes will be supplied by GIDC.

There will no impact on surrounding ground water quality and quantity during construction phase.

#### **4.2.1.2 OPERATIONAL PHASE IMPACTS**

Unit can use 19.6 KL/Day as per existing CCA-AWH-66826. In which 3.0 KLD water for domestic purpose and 16.6 KLD water for industrial purpose.

The source of water is GIDC water supply system. After proposed expansion unit will use total 88.0 KLD water (**53.2 KLD Fresh + 34.8 Recycle**). In which water consumption for the domestic purpose will be 3 KLD, for the gardening purpose will be 1.5 KLD and for the Industrial purpose will be 83.5 KLD.

Process effluent generation after proposed expansion will be 66.3 KL/Day (**Internal Recycled :- 34.8 + Effluent:- 28.5 KLD**). In the Utility waste water from boiler ( 0.5 KLD) , washing effluent ( 3 KLD), Cooling tower blow down ( 1 KLD), sewage will be dispose through soak pit (3 KLD ) and scrubber (0.3 KLD) will be neutralize into primary ETP and then effluent send to PETL. PETL Membership certificate is attached as **ANNEXURE-VII**.

### **4.2.2 AIR ENVIRONMENT**

#### **4.2.2.1 CONSTRUCTION PHASE IMPACTS**

Dust will be generated during excavation and hauling operation and vehicle transportation on unpaved tracks at the site. Other exhaust gases like NO<sub>x</sub>, SO<sub>2</sub> and VOC may be also slightly released into the local ambient air due to vehicular traffic movement. Thus, the local ambient air quality may be temporarily affected. It will be confined within the project boundary and expected to be negligible outside the plant boundaries.

### **Mitigative Measures**

Water sprinkling and provision of enclosures will allow the particles to settle down prior to discharge. There will be provision of enclosures to construction area to allow the particles to settle down prior to discharge. The load carrying vehicle will be covered by clean impervious layer to ensure the dusty material do not leak from vehicle. Proper maintenance of vehicles and construction equipment will help in controlling the gaseous emissions.

#### **4.2.2.2 OPERATION PHASE IMPACTS**

The project will result flue gas emission, process emission and fugitive emission. Flue gas emission will be from stacks HAG, Boiler and DG sets. Process emission will be from Spin Flash Dryer.

There will be fugitive emission of VOC and acid mist during material handling, transferring and at storage area.

### **Mitigative Measure**

HAG & Boiler will be based on agro waste and briquette & Natural gas. Unit has proposed to install Bag Filter as an APCM to curb the flue gas emission. The unit will also provide adequate stack height for DG sets. There will be a process gas emission of PM from Spin Flash Dryer.

### **Modelling Details**

The dispersion of pollutants in the atmosphere is a function of several meteorological parameters like temperature, wind speed and direction, mixing depths, inversion level etc. The air quality impacts of source or collection of sources is evaluated by use of models. The model stimulates the relationship between air pollutants emission, meteorology and air chemistry, all of which are determined by formulating impact scenario. Estimation of emissions from the plant has been made by Industrial Source Complex – Short Term (ISC-ST3) model developed by United States Environment Protection Agency (USEPA). ISC-ST is based on a modified steady state Gaussian Plume equation, and it has been recommended for use in EIA studies by Ministry of Environment & Forests and Climate change (MoEF& CC) in EIA manual.

**TABLE 4.1****FLUE GAS EMISSION & PROCESS GAS EMISSION DETAILS****FLUE GAS EMISSION DETAIL**

<b>Sources of gaseous emissions</b>	<b>Boiler (600 kg/hr)</b>	<b>Hot Air Generator for Tray Dryer (50000 Kcal/hr)</b>	<b>Hot Air Generator for SFD (200000 Kcal/hr)</b>
Fuel used	Agro Waste / Briquette	Agro Waste/ Briquette	Natural Gas
Quantity of fuel	20 MT/Month	10 MT/Month	25 Nm <sup>3</sup> /Hr
Stack height (m)	22	22	11
Stack diameter at the top (mm)	600mm	600mm	600mm
Stack gas exit temperature (°C)	150°C - 200°C	150°C - 200°C	150°C - 200°C
Stack gas exit velocity (m/s)	7 m/s	7 m/s	7 m/s
PM Concentration	120 mg/Nm <sup>3</sup>		
NO <sub>x</sub> Concentration	40 ppm		
SO <sub>2</sub> Concentration	80 ppm		

**PROCESS GAS EMISSION DETAILS**

<b>Sources of gaseous emissions</b>	<b>Spin Flash Dryer</b>
Stack height (m)	11 m
Stack diameter at the top (mm)	450 mm
Stack gas exit temperature (°C)	150°C
Stack gas exit velocity (m/s)	6 m/s
APCM	Bag filter
PM Concentration	120 mg/Nm <sup>3</sup>

**TABLE 4.2**

**CONCENTRATION OF PM**

Highest Values	Incremental increase in Concentration ( $\mu\text{g}/\text{m}^3$ )		X Co-ord (mts)	Y Co-ord (mts)
	PM			
1	3.114		1000	0
2	2.523		1000	0
3	2.508		1000	1000
4	2.408		1000	0
5	2.252		1000	0
6	2.153		0	1000
7	2.045		0	1000
8	1.879		1000	1000
9	1.878		1000	1000
10	1.829		1000	0

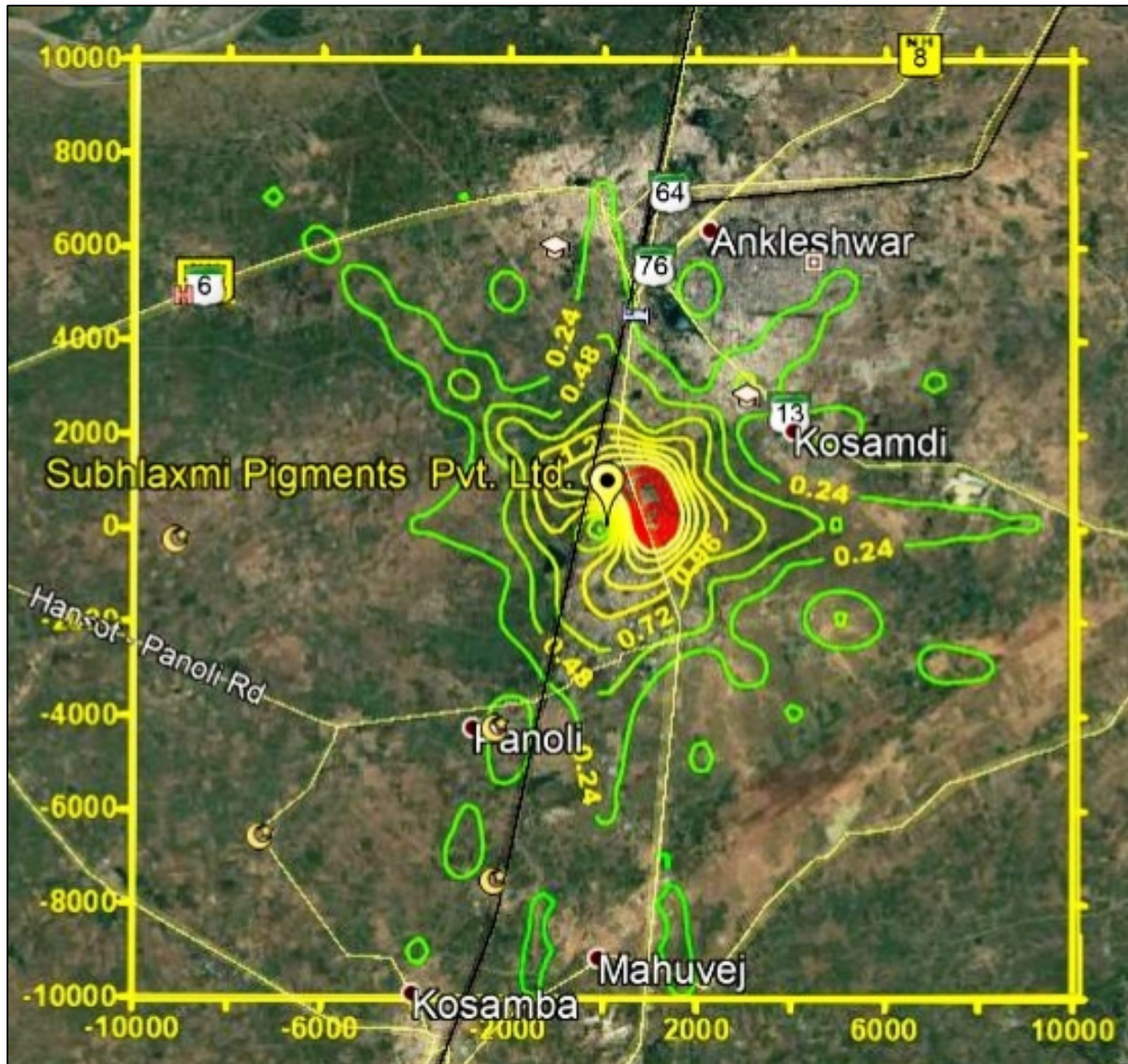
**TABLE 4.3**

**CONCENTRATION OF SO<sub>2</sub> and NO<sub>2</sub>**

Highest Values	Incremental increase in Concentration ( $\mu\text{g}/\text{m}^3$ )		X Co-ord (mts)	Y Co-ord (mts)
	SO <sub>2</sub>	NO <sub>2</sub>		
1	2.669	1.854	1000	0
2	2.162	1.503	1000	1000
3	2.052	1.424	1000	0
4	2.03	1.409	1000	0
5	1.923	1.336	1000	0
6	1.836	1.275	0	1000
7	1.735	1.204	0	1000
8	1.618	1.124	1000	1000
9	1.617	1.124	1000	1000
10	1.558	1.082	1000	0

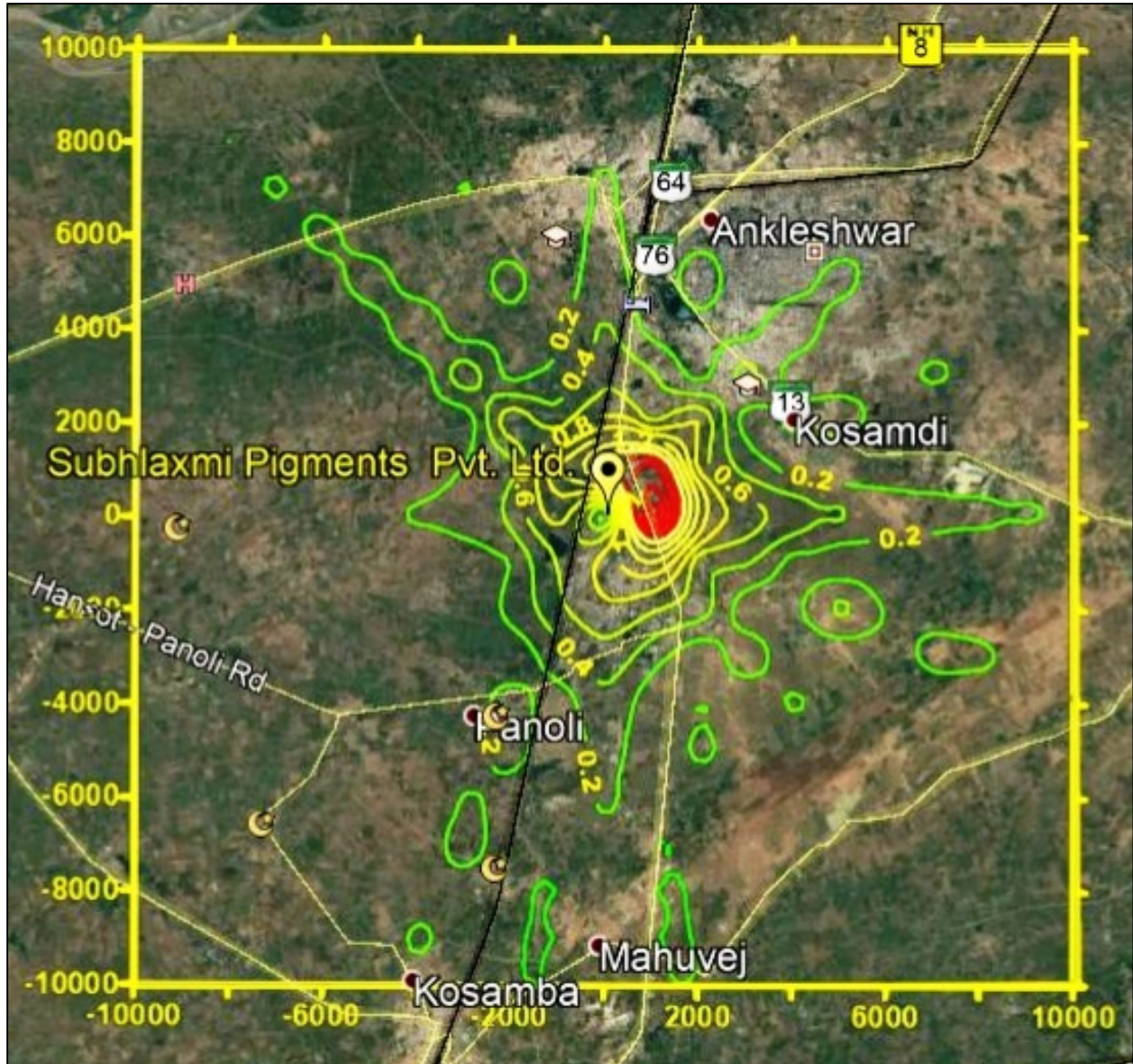
**FIGURE 4.7**

**ISOPLETHS OF PM (SITE COORDINATES 0, 0)**



**FIGURE 4.8**

**ISOPLETHS OF SO<sub>2</sub> (SITE COORDINATES 0, 0)**



**FIGURE 4.9**

**ISOPLETHS OF NO<sub>x</sub> (SITE COORDINATES 0,0)**



**OBSERVATIONS FROM DISPERSION MODELING STUDIES:**

From the dispersion modeling studies conducted, it was observed that the maximum ground level concentration occurs in the East direction. The maximum incremental increase in concentration for PM, SO<sub>2</sub> and NO<sub>x</sub> is 3.114 µg/m<sup>3</sup>, 2.669µg/m<sup>3</sup> and 1.854 µg/m<sup>3</sup> respectively at a distance of about 1 km in the East direction.

### **4.2.3 NOISE ENVIRONMENT**

#### **4.2.3.1 CONSTRUCTION PHASE IMPACTS**

Noise will be generated during the intermittent operation of machineries for site clearing and construction work. Vehicular movement will be also a source of noise generation. There will be short term, localized and reversible impact on ambient noise levels during the construction activities.

##### **Mitigative Measures**

- Operation of construction equipment's generating higher noise will be strictly restricted during 10 p.m. to 6 a.m.
- The construction machinery and equipment will be well maintained. Provision of enclose, damper and other engineering control will control noise pollution.
- Workers operating this equipment will be given ear plugs/muffs.

#### **4.2.3.2 OPERATIONAL PHASE IMPACTS**

The sources of noise pollution will be boiler and other noise generating units. Vehicular movements during operation phase for loading/unloading of raw materials and finished products and other transportation activity may also increase noise level.

##### **Mitigative Measures**

- Adequate noise control measures such as mufflers, silencers at the air inlet/outlet, anti-vibration pad for equipment with high vibration etc. shall be provided.
- Housing/casing shall be provided for all noise generating machines.
- Job rotation will reduce exposure to some extent. Moreover, PPE like earmuff and ear plugs will be provided to the operators/worker exposed to high noise.
- The proposed green belt will further be helpful in reducing the ambient noise level.

### **4.2.4 LAND ENVIRONMENT**

#### **4.2.4.1 CONSTRUCTION PHASE IMPACTS**

##### **4.2.4.1.1 LAND USE**

- The proposed facility is spread over an area of approximately 1575 sq. m. Panoli, Gujarat.

##### **4.2.4.1.2 TOPOGRAPHY, GEOLOGY AND SOILS**

- As the project site is fairly flat terrain without any rock, there will be no blasting. As the site is uneven, some levelling work will be required.

#### **4.2.4.1.3 POPULATION DISPLACEMENT AND REHABILITATION**

- There is no issue of resettlement and relocation as the project is in GIDC Estate, Panoli.

#### **4.2.4.1.4 LAND POLLUTION**

- Land pollution can be caused due to improper disposal of hazardous wastes on the land environment and spillage or leakage of chemicals.

#### **Mitigative Measures**

- The hazardous solid waste generated during construction activity will be stored and disposed properly. The storage will be properly constructed with impervious layer with R.C.C. with proper flooring.
- Sewage generated from sanitation facility will be disposed through high efficient and compact sewage treatment plant. The treated wastewater will be used for gardening.
- Hence, there will be no significant adverse impact on land environment due to handling of hazardous solids waste.

#### **4.2.4.2 OPERATIONAL PHASE IMPACTS**

If the hazardous wastes are not handled properly, it can pose danger of land contamination and can affect land system adversely. Transportation is one of the most important areas of concern associated with handling Hazardous Waste, Because the packaging and method of transporting of Hazardous waste will prevent the likelihood that an accident or spill would occur.

#### **Mitigative Measures**

- Transportation of hazardous waste to the TSDF Site will be governed as per the guidelines.
- Separate collection system will be provided for collection of spillage material. Impervious layer, RCC roads and flooring will be provided to area, where the chemical and hazardous waste storage and handling activities will be involved.
- Separate storm water collection system will be provided to prevent contamination of soil through contaminated water.
- The unit will follow the Standard Operating Procedure (SOP) for storing and handling of hazardous wastes.
- The proposed green belt area will improve the aesthetic environment of the area.
- No significant impact on land environment has been envisaged during the operation phase as the hazardous waste generated will be either recycled or disposed off as per norms.

- The unit will follow Standard Operating Procedure (SOP) for storing and handling of hazardous wastes.

### **Standard Operating Procedure**

1. All the departments will collect the various types of the waste and segregate it in various types like paper and packing material, plastic bags, process waste, metal waste glass waste etc.
2. After collecting the waste, respective departments will fill up the slip along with format number for disposal
3. The person will shift the various type of waste in the designated areas of the waste category. Before shifting it person will inform and hand over the filled slip to ETP Operator/ Chemist/ EHS – HOD.
4. On sufficient stock of the waste type, it will be disposed off.
5. Spent/used oil will be given to MoEF registered repressor.
6. For disposal of discarded bags and containers, the guideline provided by the Gujarat Pollution Control Board will be followed. It will be ensured that containers are empty before taken for disposal. As per the guidelines all the containers will be washed properly, the washings will be checked for pH and COD. The pH should be neutral and COD should be NIL. This will ensure that the containers are cleaned before taken for disposal. Removal or defacing of all labelling and content of all product and waste material will be regular practice. The sticker will be put on individual container as "cleaned". The container will be deposited in the area marked for disposal. Then the containers will be inspected by the certifying agency approved by the GPCB. In confirmation of the quality of the cleaning they will issue the stickers for identification. After receiving the stickers that should be pasted on to the containers. Then the containers are disposed off to actual raw material supplier.

### **Care To Be Taken During Handling of Waste**

1. Person handling the hazardous waste should wear gloves, shoes/ gum boots etc. mask like Personal Protective Equipment.
2. If spillage occurred swipe it and collect it in to the bag and mix it with the waste.
3. Forklift will be used in shifting, loading and unloading operation for hazardous waste to minimize manual handling of hazardous waste.

#### **4.2.5 ECOLOGICAL ENVIRONMENT**

The impact due to the proposed expansion on ecological parameters like natural vegetation, cropping pattern, fishers and aquatic life, forest land species diversity are briefly summarized below:

##### **4.2.5.1 CONSTRUCTION PHASE IMPACTS**

The project site is located within the GIDC Panoli. The project site is devoid of trees; it will not damage any important flora. There will be no impact on natural vegetation during construction. Since, the project is established on a non-agriculture land, it will not alter the crop production of the area. The project site is at a far distance from the forest land, wild life sanctuaries and national parks. Hence, no adverse impact on this account is anticipated.

##### **4.2.5.2 OPERATIONAL PHASE IMPACTS**

The study area does not have any type of forest and endangered fauna within 10 km area. However, all the environmental and related issues have been properly addressed with its impacts and Mitigative measures in the proposed project. There will not be any major impact on the terrestrial ecology of the project site due to proposed project.

##### **Mitigative Measures**

- The green belt will be developed by unit having different species of flora, which will lead to beneficial impact on ecological environment.
- There will be necessary environmental protection measures which have been planned under EMP i.e. air pollution control system designed to take care of release of the gaseous pollutants like PM, SO<sub>2</sub>, NO<sub>x</sub>, VOC.
- The waste water generation from process will be treated in Primary ETP and then effluent will be sent to M/s. PETL.
- Raw material and hazardous waste will be transported by road and will be stored in plant premises.
- The project proponent shall consider all the safety measures in planning, designing and operation of the plant as per standard practices.
- Hence, no adverse impact on this account is anticipated.

## **4.2.6 INFRASTRUCTURE AND SERVICES**

### **4.2.6.1 CONSTRUCTION PHASE IMPACTS & OPERATION PHASE IMPACTS**

The plant is located in a GIDC Estate, Panoli, Ta:-Ankleshwar, Dis :- Bharuch, and Gujarat having all essential facilities such as water, power, post and telecommunication. There is a well laid down broad roads already existing in GIDC Estate. The transportation facilities will also expect to improve due to increase in the movement of workers and raw material and finished products. This will have almost negligible impact on road network. Power requirement of proposed project will be 325 HP and will be met from DGVCL.

The infrastructure services e.g. roads, post and telegraph, communication, medical facilities, education; housing will be improved in surrounding area.

### **4.2.7 SOCIO-ECONOMIC IMPACT**

#### **4.2.7.1 CONSTRUCTION PHASE IMPACTS**

##### **4.2.7.1.1 POPULATION**

- During the peak construction phase, construction manpower including construction workers will be employed.
- However, to the maximum extent possible, construction workers will be employed from within the study area.
- Since the construction phase of this project will be for short time period, the socio-economic impact due to construction of this project is going to be temporary.
- Considering the above-mentioned factors, the construction phase of the project will have minor impact on population in the study area.

##### **4.2. 7.1.2 EMPLOYMENT**

- Around 20-25 workers will be employed in the construction work. This will increase construction employment in the study area although temporality. Hence, the proposed project will have minor impact on employment in construction phase.

##### **4.2.7.1.3 TRANSPORTATION**

- For transportation of construction material, the existing road infrastructure is adequate.
- Moreover, as the construction phase for the proposed project will be few months, the impact would be temporary.

#### **4.2.7.2 OPERATION PHASE IMPACTS**

##### **4.2.7.2.1 POPULATION**

In the operational phase, about 30 workers will be employed for the proposed project. This number of employee is very small compared to the total population of the study area. Also as a social impact mitigation measure, unit will endeavour to employ most of these people from within the study area at worker level, subject to availability of suitable manpower in the area. So the proposed project in its operational stage is not expected to directly affect the total number or composition of population in the study area significantly. However the population of the study area is expected to increase marginally due to migration of persons from outside of the study area.

##### **4.2.7.2.2 EMPLOYMENT**

All efforts will be made to employ local people as far as possible. Local people will be given first preference based on technical skill and knowledge. In addition, employment will be generated by the secondary supporting activities e.g. transportation, communication, boarding, daily utility services.

##### **4.2.7.2.3 TRANSPORTATION**

Because of the good network of transportation facilities in the study area, the additional truck traffic generated during the operational phase is not expected to bring any considerable load to the existing transportation system.

##### **4.2.7.2.4 IMPACT DUE TO FIRE ACCIDENT**

The project design and development has been planned with care and all provisions have been made for the safety and security of the property as well as the personnel.

##### **4.2.7.2.5 IMPACT ON PUBLIC HEALTH**

The discharge of waste materials (gaseous emission and solid wastes) from the project can have some adverse impact on public health in the surrounding area, if appropriate treatment procedures are not followed. The unit is committed to provide efficient and productive Treatment (Effluent, gaseous emission and solid wastes) to ensure there are very negligible impacts on Public Health.

#### **4.2.7.2.6 ACCIDENT HAZARD AND SAFETY**

During operational phase accident / hazards will be greatly minimized and ensure further safety of the local people. In addition, by adopting mitigation measures it will ensure high safety standards.

#### **Mitigative Measure**

- Provision of adequate APC and maintains of APC will prevent any accidental emission from stacks and reduce risk to the health of the people in the vicinity of the project.
- All safety measures will be carried out to prevent any accident. The unit will have onsite /offsite emergency plan

#### **4.3 IMPACT MATRIX**

The parameter discussed are presented in the form of a matrix in Table 4.4. There will be both construction and operation phases.

The quantification of impact is done using numerical scores 0 to 5 as per the following criteria.

<b>Score</b>	<b>Severity criteria</b>
0	No Impact
1	No damage
2	Slight/short term effect
3	Occasional reversible effect
4	Irreversible /Long –term effect
5	Permanent Damage

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**TABLE 4.4**

**ENVIRONMENT IMPACT MATRIX (WITH MITIGATION MEASURES)**

Phase	Activities during the Phase	Air quality	Water quality	Noise & Odour	Land quality	Infra-Structure /Services	Ecological environment	Health safety & Aesthetics	Socio-Economic Status
Construction phase	Excavation, civil work, transportation of construction vehicle	2	1	2	2	2	2	2	1
Operation phase	Water requirement	0	1	0	0	1	0	0	0
	Material Storage/handling/ Transport	2	1	2	2	2	2	2	0
	Effluent discharge (considering discharge to GIDC Drainage)	0	2	0	0	2	1	0	0
	Utilities	2	1	1	1	1	1	1	0
	Gaseous emissions	2	0	1	1	0	1	2	0
	Fugitive emissions	2	0	0	0	0	0	2	0
	Solid/hazardous Waste Disposal	1	1	1	1	2	1	2	0
	Spills & Leaks	2	1	0	1	1	1	2	0
	Plant Operations	2	2	1	0	1	1	2	1
	Equipment Failures/ Shutdown/ Startup	2	2	1	0	2	1	2	1
Transport of workers/Movement of vehicles	1	0	1	0	1	1	1	1	
	Cumulative score	<b>18</b>	<b>12</b>	<b>10</b>	<b>08</b>	<b>15</b>	<b>12</b>	<b>18</b>	<b>04</b>

**TABLE 4.5**

**CUMULATIVE IMPACT CHART**

<b>Environmental Parameter</b>	<b>Total Cumulative</b>
Air Quality	18
Water Quality	12
Noise and Odor	10
Land Quality	08
Infrastructure/ Service	15
Ecological environment	12
Socio Economic Status	18
<b>Health safety &amp; Aesthetics</b>	04

**Conclusion:**

The source of water will be GIDC water; there will be no extraction of ground water. Entire effluent will be treated in primary effluent treatment plant. Then Effluent will be send to the M/s. PETL for further treatment.

Effluent will be subjected to M/s. PETL. Even though after provision of APCM, there will be minor increase in ground level concentration of SO<sub>2</sub>, NO<sub>x</sub>, PM, in ambient air due to construction and operational activities of proposed project.

Construction activities will disturb soil profile but impact will be insignificant. The unit will take adequate measure for storage, handling and disposal hazardous waste. Hence, there will be no significant adverse impact on land environment.

Engineering control, use of PPE, restriction of construction activity during 10 p.m. to 6 a.m., and green belt will reduce impact of noise pollution due to construction work, vehicular movement and noise generating equipment. There will be minor increase in ambient noise level and impact will be insignificant.

The project site is at a far distance from the forest land, wild life sanctuaries and national parks. There will be not significant impact on crops & vegetation as the proposed APCM will take care of flue gas emission and process emission.

This will be a beneficial impact on the local socio-economic environment as increase in demand for essential utilities and employment during both construction and operational phase. This willbe a beneficial impact on the local infrastructure services e.g. roads, post and telegraph, communication, medical facilities, education, housing will be improved in surrounding area.

#### **4.4 CLEANER PRODUCTION**

- Cleaner Production in recent times has emerged as an attractive proposition to tackle the environmental problems posed by rapid industrialization and is being accepted worldwide. Besides reducing pollution, it also improves the process efficiency, thus reducing the cost of production.
- Applications of CP mainly focus on preventing or minimizing the generation of waste and gaseous emission. The basic idea of cleaner production is to avoid a problem altogether rather than trying to find remedial measure by adopting proactive approach of waste management. As far as the production processes are concern, CP is achieved by raw material and energy conservation, by reducing quantum of emission and waste generation. To obtain fruitful results of CP should be implemented by adopting the concept of product modification, source reduction and recycling. This is a existing unit and it will be implemented various techniques of CP in their factory premises and put continues efforts for developing new techniques. Proposed implementation of techniques of CP is described below:

- **4.4.1 Pollution Prevention-Cleaner Production**

- High density polythene bags or drums are used. Hence, the generation of plastic waste will be reduce. Moreover, Discarded Bags and Container are decontaminated and reuse/sold.
- The unit is maintaining the proper inventory of the hazardous chemicals and keeping the buffer stock as minimum as possible. This reduces the possibilities & magnitude of environmental hazards.
- There is a periodic arrangement of environmental training program to create understanding among plant personnel towards environment.
- Unit will manufacture products with maximum yield by using high-quality of raw material and advanced process technology.
- To minimize material wastage, standard SOP will be followed by the unit.

- **4.4.2 Water Conservation-Cleaner Production**

- Mopping will be done for floor cleaning.
- As a part of water conservation, excess service water taps will not be provided in the plant premises. Likewise, for the green belt development, water sprinkle system will be used instead of hose pipe.
- Flow meter will be installed at raw water intake and outlet of Effluent Treatment plant.
- High Pressure Jet Pump will be used for the cleaning of equipment, vessel & reactor etc.

- **4.4.3 Energy Conservation-Cleaner Production**

- First step to conserve energy is to identify source of energy utilization.
- Variable frequency drives (VFD) in pumps, whenever required will be provided to save energy.
- Use of low loss transformer instead of conventional transformer.
- Proper air to fuel ratio will be maintained for the maximum efficiency of boiler.
- Good insulation practice will be adopted to prevent heat losses.
- Regular cleaning to the lamps and fixtures will be done to get better illumination in the plant.

- To avoid loss of precious quantum of energy, regular maintenance/ servicing is provided total the equipment.
- Unit will planning to conduct energy audit regularly as a tool for monitoring purpose.
- Unit will apply White washing on wall to reduce requirement of light.

**4.4.4. Reuse / Recycle-Cleaner Production**

- The solvent used in the manufacturing process will be recovered through vaporization by heating and condensation and reused again in the manufacturing process.
- Used oil from the plant & machineries will be reused as a lubricant within plant or sell to MoEF approved Recyclers.

**4.4.5. Good Housekeeping-Cleaner Production**

- Good housekeeping means changing existing practices or introducing new ways of operating and maintaining equipment. Proper good housekeeping can prevent accidents, spillages and leakages, raw material & product loses. For Good housekeeping following practices are adopted.
- All the materials are stored in compatible group.
- All pits, sumps are properly covered or securely fenced.
- Appropriate tools are provided for handling of all the materials.
- Regular training is given to all workforces. All the passages, floors and stairways are maintained in good condition. The system is made available to deal with any spillage at the plant.
- Sufficient disposable bins are clearly marked and these are suitably located in the plant.
- In the plant, precaution and instructions are displayed at strategic locations. Proper working instructions are given to all the workers in factory.
- Roads/walkway within the plant is maintained neat and clean. Walkways are clearly marked and free from obstructions.

## CHAPTER -5

### **ANALYSIS OF ALERNATIVES (TECHNOLOGY & SITE)**

#### **5.1 ALTERNATIVE ANALYSIS & JUSTIFICATION OF THE PROJECT**

The alternatives analysis is an important tool for the best selection of the proposed project, technologies and the location of the project. The analysis of the alternatives dealt with the justification of selections of the proposed project and the minimization of negative impacts on environment as well as health and enhances the project benefits. It has been carried out taking into account both with and without project scenario.

#### **5.2 FOR PROJECT SELECTION**

- The land area of the proposed unit with break-up details is presented in Chapter-2.
- The proposed location is already in developing industrial area therefore infrastructure facility like power, water supply, road drainage, manpower etc. are easily available.
- Also Panoli (Industrial Hub) is within around 10 km. Therefore Raw material availability will be easy, also beneficial for Product demand and transportation.
- Existing roads and rails will be used for the proposed project. Thus, no new roads or rails are envisaged outside the boundary of the plant.
- There is no forest, national park, wild life sanctuary, eco sensitive areas, and historical sites in surrounding 10 km radius. The project doesn't fall under CRZ boundaries. No forest land and displacement of population is involved in the project. It may also be noted that other industrial units are located on all sides of this plot and no habitation exists nearby. There are no sensitive receptors in the vicinity.
- Thus, the project location is best suited for proposed activities. So no alternative for site is analysed.

#### **5.3 ALTERNATIVE FOR TECHNOLOGIES**

**TABLE: 5.1**

##### **ALTERNATIVE FOR TECHNOLOGIES**

<b>Particulars</b>	<b>Proposed Technology</b>	<b>Alternatives / Comments</b>
<b>Process Technology</b>	<ul style="list-style-type: none"><li>• The company will use the Best Available Process Technology (BAT) for the</li></ul>	<ul style="list-style-type: none"><li>• Product manufacturing process will implement the principles of Sustainable development which</li></ul>

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	<p>production. This section includes the manufacturing process of the product, chemical reactions and mass balance of each product.</p> <ul style="list-style-type: none"> <li>• The product will be manufactured by unit will be establish since last long and increase the reaction efficiency up to optimum level in R&amp;D lab. Above all the products are tailor made products based on literature review and set in R&amp;D. Hence no proposal of alternate process or technology and currently it is best technology available with the proponent</li> <li>• The manufacturing process is based on “Best Available Technology. Unit will recover solvent more than 96%</li> </ul>	<p>emphasizes to minimize water consumption, air emissions; and maximum amount of water will be recycle to reduce waste water generation.</p>
<b>Water Supply</b>	<ul style="list-style-type: none"> <li>• Total fresh water consumption will be 53.2 KLD.</li> <li>• Water requirement will be sourced from GIDC.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit will use GIDC Water therefore no Ground water table will be used by unit.</li> </ul>
<b>Wastewater Disposal</b>	<ul style="list-style-type: none"> <li>• Sewage will be disposed through Soak pit and industrial waste water will be treat in to in-house ETP. After achieving standard norms of it will be send to PETL.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit will try maximum amount of water will be recover.</li> </ul>
<b>Fuel Requirement / Air Emissions Control</b>	<ul style="list-style-type: none"> <li>• Unit will use Agro waste/Briquette as a Fuel for Boiler&amp; Hot Air Generator (Tray Dryer), Natural gas for Hot Air Generator (Spin Flash Dryer And For Diesel for D.G. Set it will be operate in standby mode.</li> <li>• Spin Flash Dryer will be provided at reaction vent to as air pollution control measures.</li> </ul>	<ul style="list-style-type: none"> <li>• 22 meter stack height provided for Boiler &amp; HAG (Tray Dryer) &amp; 11 meter stack height provided for HAG (Spin Flash Dryer) which is also adequate. 11 meter stack height provided to D.G. Set.</li> <li>• Bag filter will be provided as an air pollution control measure.</li> <li>• The proposed air pollution control system is efficient and adequate to take care of potential emissions.</li> </ul>
<b>Handling &amp; Disposal of Hazardous Waste</b>	<ul style="list-style-type: none"> <li>• The hazardous wastes generated in premises will be properly collected and stored in a separated/designated storage area and safely disposed to Landfill site authorized recycler or Landfill site whichever will be applicable mention in chapter No. 2</li> <li>• Unit will obtain prior membership of TSDF/CHWIF, end user under Rule 9 for disposal of Hazardous Waste</li> </ul>	<ul style="list-style-type: none"> <li>• All type of wastes to be properly segregated, collected &amp; storage in a separate/ designated storage area and safely transported to GPCB authorized agencies(s) for its final disposal.</li> </ul>

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**ENVIRONMENTAL MONITORING PROGRAM**

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**6.1 INTRODUCTION**

Environmental monitoring describes the processes and activities that need to take place to characterize and monitor the quality of the environment. Environmental monitoring is used in the preparation of environmental impact assessments, as well as in many circumstances in which human activities carry a risk of harmful effects on the natural environment. All monitoring strategies and programmes have reasons and justifications which are often designed to establish the current status of an environment and Prediction of the impact of future development and/or alteration in the operation and design of existing installations. Environmental Monitoring Network is operation phase of the project for monitoring of various environmental parameters like air, water, noise, soil etc.

A well-defined environmental monitoring programme would be employed with trained and qualified staff of Environmental Management Cell of the proposed expansion project to monitor the environmental attributes of the area with respect to EMP as well as the guidelines of the GPCB/CPCB. Environment monitoring schedule proposed to be adopted by the project.

**6.2 OBJECTIVES OF ENVIRONMENTAL MANAGEMENT PLAN**

- To comply with the statutory requirements of monitoring for compliance with conditions of NOC.
- To comply with the provision of Factory Act & MSIHC Rules.
- To verify the results of the impact assessment study in particular with regards to new development.
- Identification of any significant adverse transformation in environmental condition to plan additional mitigation measures; if & as required.
- To check or assess the efficiency of the controlling measures.
- To ensure that new parameters, other than those identified in the impact assessment study, do not become critical through the commissioning of new project.
- To establish a data base for future Impact Assessment Studies for new project.

**6.3 IMPLEMENTATION SCHEDULE OF MONITORING MEASURES**

Monitoring should be done as periodically to understand the environmental condition of the site.

The mitigation measures suggested in the Chapter-4 should be implemented so as to reduce the impact on environment due to the operations of the proposed project. In order to facilitate easy

Implementation, mitigation measures are phased as per the priority implementation. The priority of the implementation schedule is given in Table 6.1.

**TABLE 6.1****IMPLEMENTATION POLLUTION CONTROL MEASURES**

<b>Sr. No.</b>	<b>Required Measures</b>	<b>Stage</b>	<b>Remarks</b>
1.	Air pollution control measures	During operation stage	Adequate stack height for flue gas emission and Scrubber system will be provided as APCM for process gas emission
2.	Ground Water Criteria and Drinking Water parameter.	During construction and Operation stage.	As per IS 10500 Standard Quarterly monitor quality of water.
3.	Waste Water Treatment	Operation phase of the project	Effluent will be treated in Primary effluent treatment plant. After that Effluent will be sent to M/s. PETL.
4.	Greenbelt development	During construction stage & operation stage.	Plantation will be done along the periphery within premises.
5.	Solid waste disposal	Construction and operation phase of the project	Solid waste to be segregated and disposal as per guideline.
6.	Hazardous waste disposal	Operation phase of the project	Collection /storage /transportation /disposal at TSDF-& disposal as per Hazardous waste rule 2016.

**6.4 POLLUTION MONITORING AND SURVEILLANCE SYSTEM**

Regular monitoring of important parameters is of immense importance to assess the status of environment during plant operation. With the knowledge of baseline conditions, a properly planned monitoring program can serve as an indicator for assessment of any deterioration in environment conditions. This will facilitate undertaking suitable measures to mitigate adverse impact during the operation of the plant and further help to protect the environment in the area. The main attributes for which monitoring shall be carried out are:

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- Ambient Air Quality
- Stack Emission
- Effluent water Quality
- Noise Level

The above mentioned sources will be monitored so as to meet the requirements of the State Pollution Control Board.

### **6.4.1 AMBIENT AIR QUALITY MONITORING**

The ambient air quality with respect to PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and NO<sub>x</sub> shall be monitored at ETP, process area, storage area and one location in downwind direction. The frequency of monitoring will be every three month by external approved monitoring agency.

The log book shall be maintained at environment cell for evaluation of impact and to decide required migratory measures.

### **6.4.2 STACK MONITORING**

All the flue gas stacks in the proposed project shall be monitored with respect to temperature, oxides of nitrogen (NO<sub>x</sub>), Suspended Particulate Matter (SPM) and Sulphur dioxide (SO<sub>2</sub>) level. The process stacks shall be monitored for PM.

### **6.4.3 NOISE MONITORING**

Monitoring of noise levels is essential to assess the effectiveness of Environmental Management Plan implemented to reduce noise levels. A good quality sound level meter and noise exposure meter may be procured for the same. Audiometric tests shall be conducted periodically for the employees working close to the high noise sources. The noise levels due to machines/Equipment viz. compressor, motors, engines etc shall be monitored regularly.

### **6.4.4 WATER AND WASTE WATER QUALITY MONITORING**

Daily analysis of effluent stream is recommended. Sampling and analysis of the raw effluent, neutralization tank, Before sand filter , After Sand filter, Before RO and After RO (RO permeate) will be conducted regularly. Online meter will be fitted for monitoring of flow.

The detailed monitoring plan is tabulated in Table 6.2.

**TABLE: 6.2**

### **ENVIRONMENT MONITORING PLAN**

<b>Sr. No.</b>	<b>Description</b>	<b>Location</b>	<b>Parameter To be Monitored</b>	<b>Frequency of Monitoring</b>
1.	Flue Gas Emission Monitoring Plan	Boiler (1 Nos) Hot Air Generator (2 Nos) (D.G.Set)(1 Nos.)	PM ,SO <sub>2</sub> and NO <sub>x</sub>	Monitoring will be done by external monitoring agency every month.
2.	Process Emission	Spin Flash Dryer	PM	Every month by external monitoring

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	Monitoring Plan			agency. Online monitoring system with alarm and recording facility.
3.	Fugitive Emission Monitoring Plan	Process area & storage area	Relevant solvent (VOC) and acidic fumes.	Quarterly by external monitoring agency.
4.	Ambient Air Monitoring Plan	ETP, Process area, storage area and one location in downwind direction	PM <sub>10</sub> ,PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub>	Within premises ambient air monitoring station will be established in consultation with GPCB. Quarterly by external monitoring agency
5.	Noise Monitoring	Eight location within company premises	Noise	Quarterly by internal monitoring agency in day time and night time.
<b>6.</b>	<b>Water Quality Monitoring</b>			
6.1	Effluent Quality Before Primary Treatment	Collection Cum Neutralization Tank	For TDS, pH, COD,TSS	1) Quarterly by external approved monitoring agency. 2) Every day by self-analytical facility.
6.2	Effluent quality after Primary Treatment	Collection Cum Neutralization Tank	For TDS, pH, COD, TSS	1) Quarterly by external approved monitoring agency. 2) Every day by self-analytical facility.
<b>7.</b>	<b>Water Quantity Monitoring</b>			
7.1	Inlet & Outlet	ETP	Quantity in KL	Flow meter
7.2	Inlet & Outlet	Cooling Tower	Quantity in KL	Flow meter
7.3	Inlet	Process	Quantity in KL	Flow meter
7.4	Inlet	Domestic	Quantity in KL	Flow meter
<b>8.</b>	<b>Hazardous waste quantity Monitoring</b>			
8.1	ETP Waste	ETP Hazardous waste area	Quantity generated & Disposed in MT	Record Maintain
8.2	Discarded containers/bags	Raw Material Storage area	Quantity generated & Disposed in MT	Record Maintain
8.3	Used oil	Lubrication	Quantity generated & Disposed in Liter	Record Maintain

<b>9. Electricity Consumption Monitoring</b>				
9.1	ETP Plant	Effluent treatment plant	Electricity	Separate electricity meter and daily reading will be noted.
9.2	Air pollution control system	Scrubbers	Electricity	Separate electricity meter and daily reading will be noted.
<b>10. Environment Audit</b>				
10.1	Environment audit will be carried out once in year through GPCB recognized schedule-II Environment Auditors. This is as per directive of Hon. Gujarat High Court.			

**6.5 COST PROVISION FOR ENVIRONMENTAL MEASURES**

For environment protection, management and pollution control and treatment and monitoring systems, appropriate budgetary provision would be made and provision for recurring expenditure for environment management of the project would be made.

**6.6 MONITORING EQUIPMENT AND CONSUMABLES**

A well-equipped laboratory with consumable items will be established for monitoring of important environmental parameter. Alternatively, monitoring can be outsourced from NABL / MoEF recognized laboratory. Details of equipment and in-house monitoring facilities is shown in table 6.3.

**TABLE 6.3****LIST OF LAB EQUIPMENTS**

<b>SR. NO</b>	<b>TITLE</b>
1.	pH meter
2.	COD Digester
3.	BOD Incubator
4.	Oven
5.	Glass Thermometer
6.	Digital Balance
7.	Refrigerator
8.	Glass Wear

**6.7 ENVIRONMENTAL MANAGEMENT CELL**

Company will ensure to conduct all business operations in compliance with applicable laws, regulations and standards related to occupational Health, Safety and Environment. An Environmental Management Cell with adequate professional expertise and resources shall be established to discharge responsibilities related to environmental management including statutory compliance, pollution prevention, environmental monitoring, etc. The EMC will be made responsible for all issues related to environmental management of the proposed project facilities.

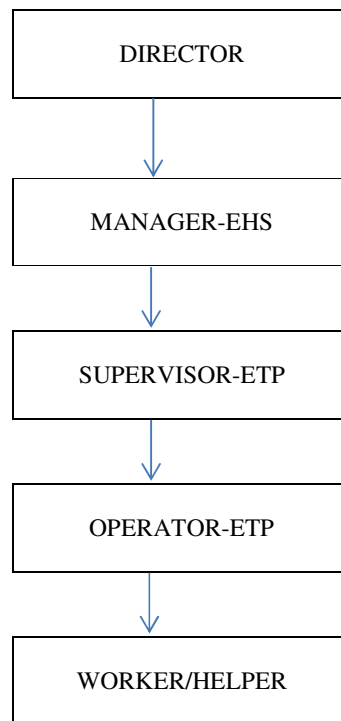
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There shall be EHS department for overseeing all environment and safety responses to ensure the implementation of EMP mentioned during construction and operation phase including findings / recommendations of third party audits and monitoring results as mentioned in the EMP.

At least one permanent employee with adequate educational and professional qualification and experience to discharge responsibilities related to environmental management including statutory compliance, pollution prevention, environmental monitoring will be employed by company and will directly report to the Director of the organization operations. Environment management cell is shown in below Figure 6.1.

**FIGURE: 6.1**  
**FLOW DIAGRAM OF ENVIRONMENT MANAGEMENT CELL**

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**RISK ASSESSMENT**

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**ADDITIONAL STUDIES**

In order to support the environment impact assessment and environment management plan, following additional studies have been included in this report.

- Risk Assessment.
- Onsite and Offsite Emergency Plan.
- Occupational Health Program.

**7.1 SCOPE OF THIS STUDY:**

The QRA study in this report has been conducted considering the Terms of References (TORs) given by Expert Appraisal Committee of MoEF for Environment Clearance (EC).

The study has been carried out with a view to comply the following TOR points:

- **TOR No. 6:** Leak Detection and Repairing Programme (LDAR) for all the volatile organic solvent proposed for use in-house with detailed chemical properties including vapour pressure. LDAR shall endeavor prevention of losses of solvents to the best minimum extent.
- **TOR No. 7:** Safety precautions including flame proof electric fittings to be taken to avoid fire hazard during unloading, storage, transportation, handling and processing of Solvents.
- **TOR No. 53:** Occupational health impacts on the workers and mitigation measures proposed to avoid the human health hazards along with the personal protective equipment to be provided. Provision of industrial hygienist and monitoring of the occupational injury to workers as well as impact on the workers. Plan for periodic medical checkup of the workers exposed. . Details of work place ambient air quality monitoring plan as per Gujarat Factories Rules.
- **TOR No. 55:** Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios should be carried out. The worst-case scenario should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the facilities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures including On-Site / Off-Site Emergency Plan should be provided.
- **TOR No. 57:** Details of hazardous characteristics and toxicity of raw materials and products to be handled and the control measures proposed to ensure safety and avoid the human health impacts. This shall include the details of Antidotes also.

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- **TOR No. 58:** Details of quantity of each hazardous chemical (including solvents) to be stored, Material of Construction of major hazardous chemical storage tanks, dyke details, threshold storage quantity as per schedules of the Manufacture, Storage & Import of Hazardous Chemicals Rules of major hazardous chemicals, size of the biggest storage tank to be provided for each raw material & product etc. How the manual handling of the hazardous chemicals will be minimized?
- **TOR No. 59:** Details of the separate isolated storage area for flammable chemicals. Details of flame proof electrical fittings, DCP extinguishers and other safety measures proposed. Detailed fire control plan for flammable substances and processes showing hydrant pipeline network, provision of DG Sets, fire pumps, jockey pump, toxic gas detectors etc.
- **TOR No. 60:** Submit checklist in the form of Do's & Don'ts of preventive maintenance, strengthening of HSE, manufacturing utility staff for safety related measures.
- **TOR No. 61:** Specify safety precautions to be taken for Chemical storage, process, and handling& transportation hazard.
- **TOR No. 62:** Details on workers training before engaging work, periodical, in-house, outside etc.
- **TOR No. 63:** Details on various SOP to be prepared.
- **TOR No. 64:** Details on safety audit to be carried out and their compliance status.
- **TOR No. 65:** Specific safety measures to be taken for general Public living in the vicinity.
- **TOR No.66:** Details on hazard identification i.e. HAZOP, HAZAN, Fault tree analysis, Event tree analysis, Checklist, Audit etc. to be adopted for the safety operation of the plant.

## **7.2 METHODOLOGY OF RISK ASSESSMENT**

**M/s. Shubhlaxmi Pigments Panoli**, handles various chemicals, some of which are hazardous in nature by virtue of their intrinsic chemical properties or their operating temperatures or pressures or a combination of them. Fire, explosion, toxic release or combinations of them are the hazards associated with industrial plants using hazardous chemicals. More comprehensive, systematic and sophisticated methods of Safety Engineering, such as, Hazard Identification and Qualitative/Quantitative Risk Assessment have been developed to improve upon the integrity, reliability and safety of industrial plants, the same has been discussed in detail under their respective headings.

### **7.2.1 OBJECTIVES OF RISK ASSESSMENT**

Risk analysis follows an extensive hazard analysis. It involves the identification and assessment of risks the neighbouring populations are exposed to as a result of hazards present. This requires a thorough knowledge of failure probability, credible accident scenario, vulnerability of population etc. Much of this information is difficult to get or generate. Consequently, the risk analysis is often confined to maximum credible accident studies.

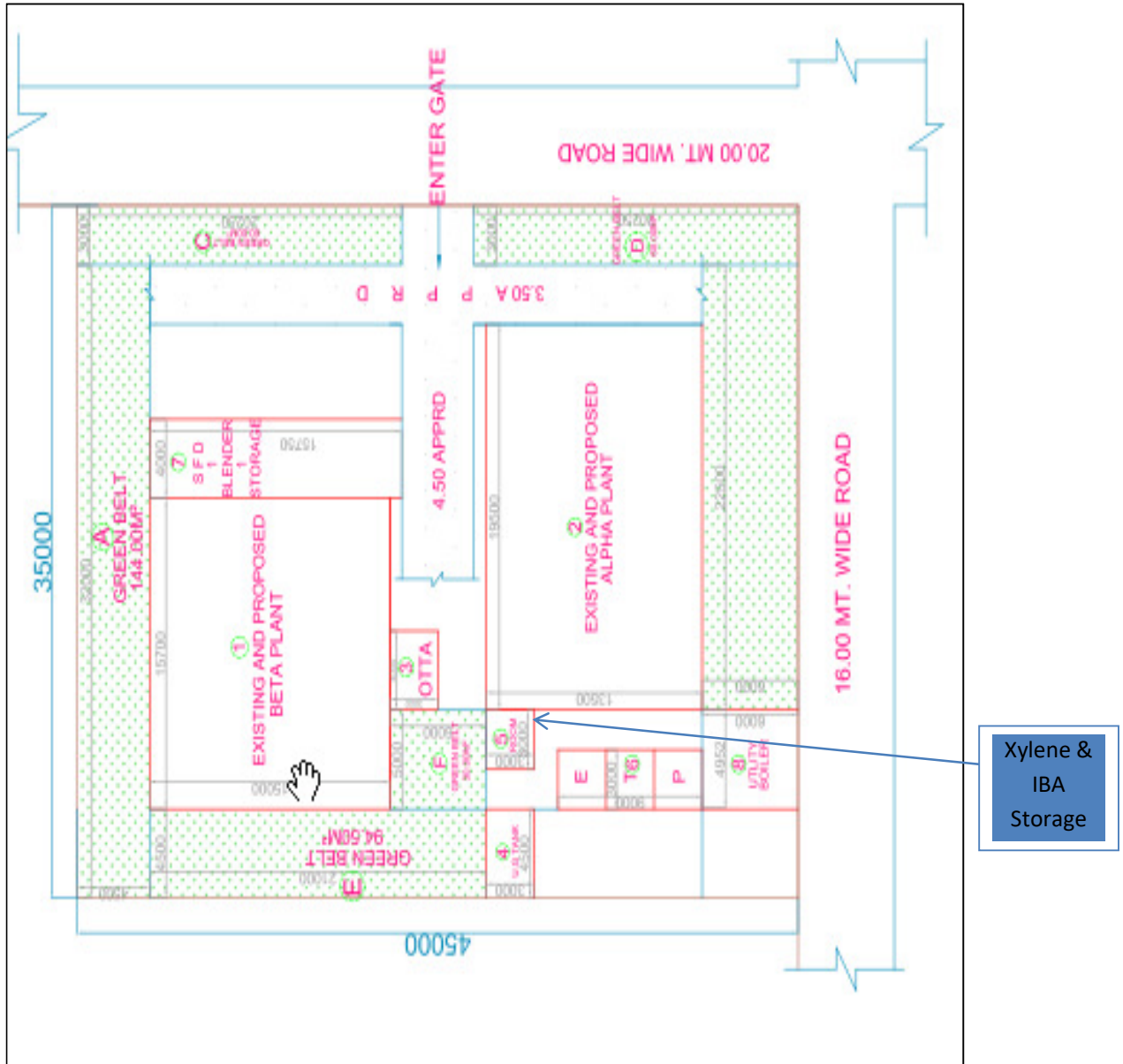
Risk assessment is carried out with the following objectives:

1. To identify hazard and risk resulting from the hazards
2. To study and foresee the effects of such risks on the workers, public, property and environment and to find out necessary control measures to prevent or minimize risk.
3. To comply the legal requirement by various safety and environment laws of the country like...
  - The Factories Act, 1948.
  - The Gujarat Factories Act, 1963.
  - The Environment Protection Act and Rules, 1986.
  - Hazardous waste (Management & Handling) Rules, 1989.
  - Public Liability Insurance Act & Rules, 1991.
  - Chemical Accident, (Emergency, planning, preparedness and response) Rules, 1996.
4. To get the necessary information for Emergency planning and evacuation.

**7.2.2 PLANT LAYOUT**

The below plant layout shows details of storage of Raw materials & ADEQUATE MARGIN ALL ROUND THE PERIPHERY.

**FIGURE – 1 HAZARDOUS CHEMICAL LOCATION IN COMPANY LAYOUT**



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**Table 7.1 : STORAGE DETAILS OF RAW MATERIALS**

SR. No.	NAME OF THE RAW MATERIALS	CAPACITY	MODE OF STORAGE	STATE	POSSIBLE TYPE OF HAZARDS	CONTROL MEASURES PROVIDED
1.	Iso-Butanol	165 Kg	Drum	Liq.	<ul style="list-style-type: none"><li>• Flammable</li></ul>	<ul style="list-style-type: none"><li>• Proper storage area is provided.</li><li>• Well ventilated storage area is provided.</li><li>• Eye wash Stations are provided.</li><li>• Spill containment kit is provided near solvent storage area.</li><li>• PPEs like Splash goggles, Vapour respirator, Boots, Gloves etc., are used while handling this chemical. Specialist will be consult, if required.</li></ul>
2.	Xylene	165 Kg	Drum	Liq.	<ul style="list-style-type: none"><li>• Flammable</li></ul>	

**NOTES:**

1. Since the storage of raw materials is in drums (capacity – 165 kg) thus, dyke is not applicable in storage area.
2. The unit is classified as Non Major Accident Hazard (NMAH) unit based on the quantity of Hazardous Chemicals stored at site, as the quantity of these chemicals being stored within the factory premises are well within the threshold storage quantity as per schedules of Manufacture, Storage & Import of Hazardous Chemicals (MSIHC) Rules of major hazardous chemicals.

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**Table 7.2 : PROPERTIES OF HAZARDOUS CHEMICALS (i.e. Hazardous Characteristics & Toxicity)**

Sr. No.	CHEMICAL	PHYSICAL STATE	FP (°C)	BP (°C)	SP. GR @ 20°C	VAP. DEN. VS AIR	VAP. PR. @ 20°C	LEL %	UEL %	LD <sub>50</sub> ORAL MG/KGS	LD <sub>50</sub> DERMAL MG/KGS	LC <sub>50</sub> MG/L	IDLH VALUE BY ACGIH/NIOSH	STEL BY OSHA (PPM)	TLV-TWA BY OSHA (PPM)
1.	Iso Butanol	Liq	Closed Cup: 28°C	108	0.806	2.56	1.2 KPA	1.2	10.9	2460 mg/kg [Rat.]	3400 mg/kg [Rabbit.]	-	-	-	-
2.	Xylene	Liq	21-27	135-155	0.87	3.7	0.9 kPa	1	7.1	4300 (Rat)	12400	4550	-	655 mg/m <sup>3</sup> 15 minutes	435 mg/m <sup>3</sup> 8 hours

### **7.3 RISK ASSESSMENT**

Identification of hazards in the proposed project activity is of primary significance. Hazard states the characteristics of system/plant/process that presents potential for an accident. All the components of a system/plant/process needs to be thoroughly examined to assess their potential for initiating or propagating an unplanned event/sequence of events, which can be termed as an accident.

#### **HAZARDS IDENTIFICATION AND DETAILS OF PROPOSED SAFETY SYSTEMS**

At **M/s. Shubhlaxmi Pigments, Panoli**, major risks have been identified for the following area:

- Storage Area

As a conservative approach, we have analysed the risk qualitatively and quantitatively both, as mentioned below.

In this study,

- The Storage & Handling of Iso-Butanol and Xylene has been considered for Quantitative Risk Assessment (Consequence Analysis). Their storage location has been shown in Figure-7.2. Hazardous properties of these chemical have been summarized in Table 7.2 .
- Storage & Handling of Solid Chemicals, Acids and Drum Handling have been considered for Qualitative Risk Assessment.

**7.3.1 QUALITATIVE RISK ASSESSMENT**

Many a times Risk involved in various processes / process equipment cannot be addressed completely by Consequence Analysis. As a conservative approach, these risks have been considered separately under this topic. The approach is to identify hazards associated in operation of equipment as well as in processes, assessing its impacts, ranking the risk posed by it and finally to propose remedial actions/mitigation measures such that the risk is minimized to tolerable level.

The **Risk Matrix** presented below should be referred in evaluating this assessment.

In **Qualitative Risk Assessment**, risk has been analysed using methodology called HIRA- Hazards Identification & Risk Assessment. In HIRA, major manual activities carried out by plant personnel as well as contract labours have been considered.

For the following areas, Qualitative Risk Assessment has been carried out to identify the risk, ranking them as per their severity & probability, identifying the existing mitigation measures and finally to propose recommendations, if existing measures are not enough.

1. Storage & Handling of Solid Chemicals.
2. Storage & Handling of Acids.
3. Storage & Handling of Drums.

**TABLE: 7.3 RISK MATRIX FOR QUALITATIVE RISK ASSESSMENT**

LIKEHOOD/ PROBABILITY		SEVERITY				
		Catastrophic (Death/ System Loss)	Major/ Critical (Serious injury/ Illness)	Moderate (Less Serious Injury/ Illness)	Minor/ Marginal (Minor Injury/ Illness)	Insignificant/ Negligible (No injury/ Illness)
		5	4	3	2	1
Almost Certain	5	H	H	H	M	M
Likely	4	H	H	M	M	L
Possible	3	H	M	M	M	L
Unlikely	2	M	M	M	L	L
Impossible	1	M	M	L	L	L

**TABLE – 7.4 RISK RANGE & ACCEPTABILITY CRITERIA**

<b>RISK RANGE</b>	<b>RISK ACCEPTABILITY CRITERIA</b>	<b>REMARKS</b>
<b>H</b>	Unacceptable/ High	Management’s Decision/Action Plan Required. Potential off-site Impact.
<b>M</b>	Medium	Generally Minor Impact. Acceptable with Management’s Review. Specific monitoring or SOP to be followed.
<b>L</b>	Low	Acceptable without Review. Manage through Routine Procedure.

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**7.3.1.1 STORAGE AND HANDLING OF SOLID CHEMICALS**

**7.5 RISKS AND RECOMMENDATIONS FOR SOLID CHEMICALS HANDLING**

Sr.	Process Or Activity	Associated Hazards	Health & Safety Impact (Risk)	Initial Risk			Existing Measures	Residual Risk			Additional Recommendations
				Severity	Likelihood	Risk		Severity	Likelihood	Risk	
1.	Handling Chemical bags	<ul style="list-style-type: none"> <li>• Chemical dust Exposure</li> </ul>	<ul style="list-style-type: none"> <li>• Skin/Eye irritation.</li> </ul>	2	3	<b>M</b>	<ul style="list-style-type: none"> <li>• Chemicals are stored in isolated storage rooms having provision for natural &amp; forced ventilation.</li> <li>• Suitable protective clothing, gloves, respirator and other PPEs are used.</li> </ul>	2	2	<b>L</b>	<ol style="list-style-type: none"> <li>1. Operators/ Workers to be trained for Safe Work Practices.</li> <li>2. Chemical handling bags to be labeled and segregated properly.</li> </ol>
2.	Cleaning of Chemical Spillage.	<ul style="list-style-type: none"> <li>• Fumes Inhalation.</li> <li>• Dust Exposure.</li> </ul>	<ul style="list-style-type: none"> <li>• Severe irritation to eyes, skin.</li> <li>• Inhalation.</li> </ul>	4	3	<b>M</b>	<ul style="list-style-type: none"> <li>• Spillage is cleaned or neutralized with suitable media.</li> <li>• Cleaning activities are carried out under strict vigilance.</li> <li>• Provision for natural &amp; forced ventilation is available.</li> </ul>	2	2	<b>L</b>	

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**7.3.1.2 STORAGE AND HANDLING OF ACIDS**

**7.6 RISKS AND RECOMMENDATIONS FOR ACID HANDLING**

Sr. No	Process Or Activity	Associated Hazards	Health & Safety Impact (Risk)	Initial Risk			Existing Measures	Residual Risk			Additional Recommendations
				Severity	Likelihood	Risk		Severity	Likelihood	Risk	
1.	Acids Loading & Unloading.	<ul style="list-style-type: none"> <li>Exposure to acidic fumes due to leakage.</li> <li>Spillage of acids.</li> </ul>	<ul style="list-style-type: none"> <li>Skin/Eye irritation.</li> <li>Toxic Vapour inhalation etc.</li> </ul>	4	C	M	<ul style="list-style-type: none"> <li>Loading &amp; Unloading activity is carried out in well-ventilated area.</li> <li>Neutralization media is made available in areas where acids are stored/ handled/ used.</li> <li>PPEs are used.</li> </ul>	5	B	L	<ul style="list-style-type: none"> <li>3. Operators/ Workers to be trained for Safe Work Practices.</li> <li>4. Health checkup of the concerned personnel to be carried as per the plan.</li> </ul>
2.	Working in Storage Area.	<ul style="list-style-type: none"> <li>Exposure to acid fumes.</li> </ul>	<ul style="list-style-type: none"> <li>Severe irritation to eyes, skin.</li> <li>Body burns.</li> </ul>	4	C	M	<ul style="list-style-type: none"> <li>Storage area is well ventilated.</li> <li>Acid proof flooring is available.</li> <li>Neutralization is done immediately with soda ash/lime or spill is</li> </ul>	5	B	L	

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							absorbed in sand or by suitable adsorbent.				
							<ul style="list-style-type: none"> <li>• PPEs like face mask, gloves etc. are worn by concerned person.</li> </ul>				

**7.3.1.3 STORAGE AND HANDLING OF DRUM HANDLING**

**7.7 RISKS AND RECOMMENDATIONS FOR DRUM HANDLING**

Sr. No.	Process Or Activity	Associated Hazards	Health & Safety Impact (Risk)	Initial Risk			Existing Measures	Residual Risk			Additional Recommendations
				Severity	Likelihood	Risk		Severity	Likelihood	Risk	
1.	Unloading of chemical drums from truck.	<ul style="list-style-type: none"> <li>✓ Drum rupture</li> <li>✓ Fall of drums</li> </ul>	<ul style="list-style-type: none"> <li>✓ Toxic Vapour inhalation etc.</li> <li>✓ Fire</li> </ul>	3	3	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Loading &amp; Unloading activity is carried out in well-ventilated area.</li> <li>✓ Pellets are used for handling of drums.</li> <li>✓ Trained workers</li> <li>✓ PPEs</li> </ul>	1	2	<b>L</b>	
2.	Handling of Drums (during storage and	<ul style="list-style-type: none"> <li>✓ Exposure to fumes due to leakage in drums.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Skin/Eye irritation.</li> <li>✓ Toxic Vapour inhalation etc.</li> </ul>	2	3	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Storage and handling of drums is carried out in well-ventilated area.</li> <li>✓ PPEs are used.</li> </ul>	2	2	<b>L</b>	<ul style="list-style-type: none"> <li>✓ Allied facilities to be inspected on periodic basis.</li> <li>✓ Neutralization media</li> </ul>

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	usage)	✓ Spillage of chemicals.									is made available in areas where acids are stored/ handled/ used.
3.	Unloading/Emptying of chemical from drums	✓ Exposure to chemical fumes.	<ul style="list-style-type: none"> <li>✓ Severe irritation to eyes, skin.</li> <li>✓ Body burns.</li> </ul>	3	3	M	<ul style="list-style-type: none"> <li>✓ Storage area is well ventilated.</li> <li>✓ Acid proof flooring is available.</li> <li>✓ Neutralization is done immediately with soda ash/lime or spill is absorbed in sand or by suitable adsorbent.</li> <li>✓ PPEs like face mask, gloves etc. are worn by concerned person.</li> </ul>	1	3	L	
4.	Transfer of chemicals from drums to plant/reactor	✓ Exposure to chemical fumes.	✓ Skin/Eye irritation.	3	3	M	✓ PPEs like face mask	1	3	L	
5.	Cleaning of empty drums	✓ Exposure to chemical fumes.	✓ Toxic Vapor inhalation etc.	2	3	M	✓ PPEs like face mask	1	3	L	

### **7.3.2 QUANTITATIVE RISK ASSESSMENT**

Quantitative Risk Assessment (QRA) is a structured approach to identifying and understanding the risks associated with Storage and Handling of flammable/toxic chemicals. The assessment starts by taking into account an inventory of hazardous chemicals stored, likelihood of leakage/spillage associated with it and selecting the worst case scenario for consequence estimation.

Finally, suggesting the measures to minimize or mitigate risks to meet appropriate acceptability criteria. The planning for emergency evacuation shall be borne in mind whilst interpreting the results.

#### **7.3.2.1 CONSEQUENCE ANALYSIS**

In a plant handling hazardous chemicals, the main hazard arises due to storage and handling of hazardous chemicals as mentioned above. If these chemicals are released into the atmosphere, it may cause damage due to resulting fires or vapour clouds. Blast Overpressures depend upon the reactivity class of material between two explosive limits.

#### **7.3.2.2 DAMAGE CRITERIA**

In Consequence Analysis studies, in principle three types of exposure to hazardous effects are distinguished:

1. Heat radiation, from a jet, pool fire, a flash fire or a BLEVE.

In the next three paragraphs, the chosen damage criteria are given and explained as per the Guidelines for QRA – Phase (Micro) Software (DNV) & Purple Book for QRA released by Centre for Chemical Process Safety (CCPS).

##### **Heat Radiation**

The consequence caused by exposure to heat radiation is a function of:

- The radiation energy onto the human body [ $\text{kW/m}^2$ ];
- The exposure duration [sec];
- The protection of the skin tissue (clothed or naked body).

In this report following damage criteria has been considered for the effects due to Fire/Explosion.

**TABLE 7.8 EFFECTS DUE TO INCIDENT RADIATION INTENSITY**

<b>INCIDENT RADIATION – kW/m<sup>2</sup></b>	<b>TYPE OF DAMAGE</b>
37.5	Immediate ignition of wood (without flame Contact). 100 % fatal.
25	Minimum Energy required for igniting wood. (Without flame contact). 100 % fatal in 1 min. Significant injury in 10 sec.
12.5	Minimum heat required to ignite wood (With flame contact). 1 % fatal in 1 min. First. degree burn in 10 sec.
4	Pain after 20 sec. Blistering unlikely.
2	No discomfort for long exposure.

**Explosion**

In case of vapour cloud explosion, two physical effects may occur:

- \* a flash fire over the whole length of the explosive gas cloud;
- \* a blast wave, with typical peak overpressures circular around ignition source.

As explained above, 100% lethality is assumed for all people who are present within the cloud proper.

The following damage criteria may be distinguished with respect to the peak overpressures resulting from a blast wave:

**TABLE 7.9 DAMAGE DUE TO OVERPRESSURES.**

<b>Peak Overpressure</b>	<b>Damage Type</b>
0.40 bar	Ear Drum Rupture to humans 50 % probability of fatality inside 15% probability of fatality in open
0.21 bar	Structural Damage to buildings 20% probability of fatality to personnel inside 0% probability of fatality in the open
0.1 3 bar	Minor Structural Damage to nearby structures 10% probability of fatality to personnel inside 0% probability of fatality in the open
0.02 bar	Glass Damage
0.01 bar	Minor Damage

**Intoxication**

In this report, LC<sub>50</sub> concentration and IDLH concentrations have not been considered for Consequence Analysis as there is no storage or use of toxic chemicals.

**7.3.2.3 ASSUMPTIONS FOR CONSEQUENCE ANALYSIS**

For Consequence Analysis, assumptions regarding Meteorological, Pasquil Stability Classes, Wind velocity, Ambient Temperature, Relative Humidity, Inventory, Ground Roughness, Model used etc. are very important. In this report, the following assumptions have been considered.

**i. Meteorological Paste other tables**

- Atmospheric Conditions: No Inversion
- Ambient Temperature: 30<sup>0</sup>C has been considered as MCA approach.
- Relative Humidity: As the site is not in rainy zone RH of 50% has been considered.

**ii. Pasquil Stability Classes**

- Pasquil Stability category D/F is considered as conservative approach.

**iii. Other assumptions:**

- Ground Roughness: Ground Roughness has been considered as 0.3 M.
- Dispersion model of both Heavy Model and also Gaussian distribution have been used as applicable/appropriate.

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- Inventory: Release of 100% of the inventory has been considered. For this, failure of the container has been considered from the bottom.
- Storage conditions: Storage conditions have been considered as they are practically stored at site.

Following Weather data has been used for the study:

**TABLE NO 7.10 WEATHER DATA USED FOR THE STUDY**

<b>WIND SPEED (M/S)</b>	<b>PASQUILL STABILITY</b>
1.5	F
1.5	D
5	D

### **7.3.2.4 SOFTWARE USED FOR CALCULATIONS**

1. PHAST MICRO.

### **7.3.2.5 SCENARIOS CONSIDERED FOR CONSEQUENCE ANALYSIS**

1. In this study, the scenarios for consequence analysis have been selected considering:
  - The physical and chemical properties of hazardous materials,
  - Storage conditions & Modes of Storage (Drums),
  - Hazards ranking by NFPA,
  - Guidelines by OSHA (29 CFR),
  - Operating and storage conditions of handling and storage of hazardous chemical.

**This report considers the worst case scenario which is possible during any set of operation variable and production methodologies. The objective of the study is the emergency planning, hence only holistic & conservative assumptions are used for obvious reasons. Hence though the outcomes may look pessimistic, the planning for emergency concept should be borne in mind whilst interpreting the results.**

**In this regard, the failure cases which may lead to release of hazardous chemicals are as under, put of which the worst case relevant scenario shall be considered:**

- Possible Release/Leakage due to 2" damage to drum or tilting of drum with open lid.
2. In this study, results of consequence analysis shall be used for;
    - a. Emergency Planning
    - b. Deciding Evacuation Routes
    - c. Deciding Location of Assembly Points and ECC
    - d. Resource Allocation for mitigation

**7.11 SCENARIOS IDENTIFIED FOR CONSEQUENCE ANALYSIS**

Scenarios	Description of Scenario	Storage Pressure & Temp.	Scenarios considered
<b>FIRE SCENARIOS</b>			
1.	Iso-Butanol	Ambient	Flash Fire, Late Pool Fire
2.	Xylene	Ambient	Flash Fire, Late Pool Fire

**Considerations Made:**

- In Case of Iso-Butanol, Xylene we have considered the failure case of Release of Inventory due to 2” damage to drum or tilting of drum with open lid.

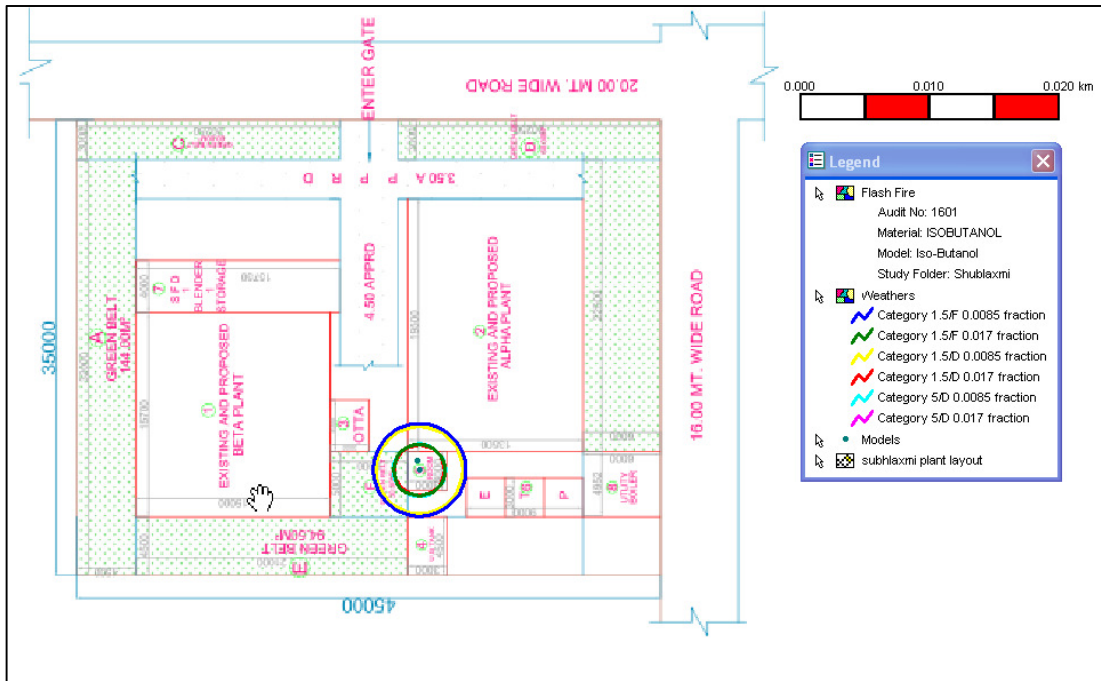
**Selection Criteria of Scenarios:**

- As per the relevant guidelines for consequence analysis, we have considered the **maximum credible scenarios** for all the above mentioned chemicals, which is the representative of all kinds of minor/major leakages.
- Based on the above considerations and the input parameters considered for worst case scenarios, the risk contours are plotted on the plant layout map clearly showing which of the facilities would be affected in case of an accident taking place. Based on the same the safety measures/recommendations are proposed and On-Site & off-Site emergency plan is prepared as mentioned under the section 7.6.

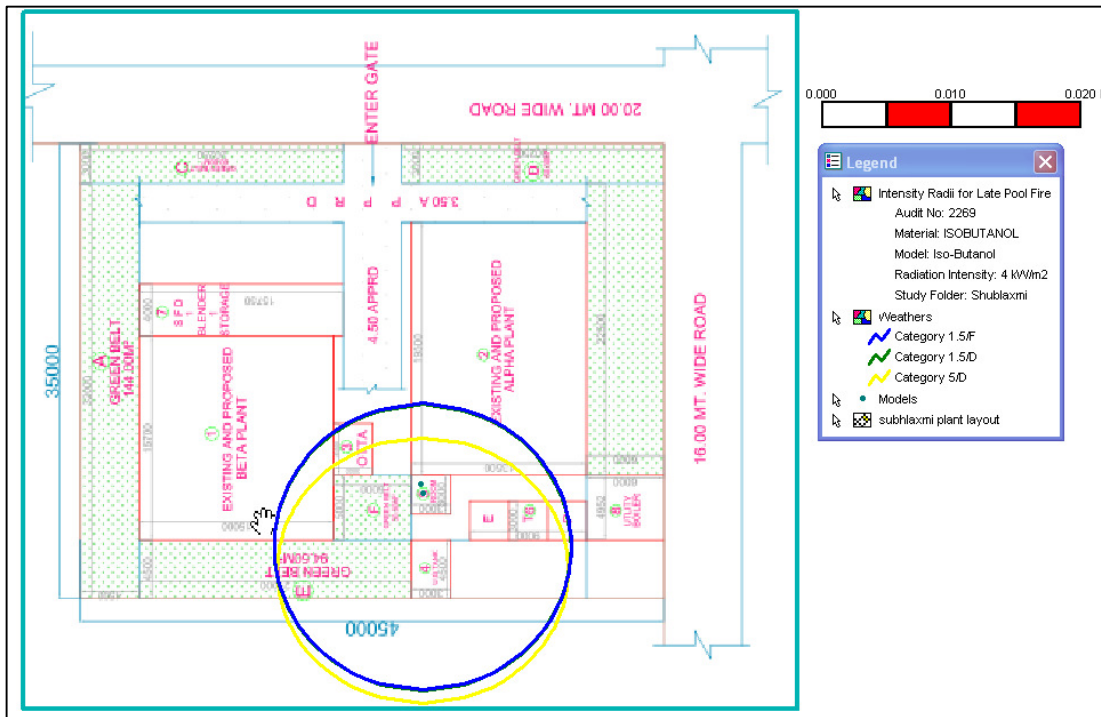
**TABLE - 7.12 SCENARIO # 1 – RELEASE OF ISO-BUTANOL**

<b>Basis: Possible Release/Leakage due to 2” damage to drum or tilting of drum with open lid.</b>					
<b>Input Data</b>					
Leak Size Considered	50mm				
Release rate	4.412 kg/s				
Drum gets empty in	35.97 s				
Pressure	Ambient				
Temperature	30 ° C				
Weather Condition	1.5/F, 1.5/D, 5/D				
LFL	17000				
UFL	109000				
<b>CASE:1 FLASH FIRE</b>					
Concentration(ppm)		Averaging Time	Distance (m)		
			Category 1.5/F	Category 1.5/D	Category 5/D
UFL	(109000)	18.75 s	1.97433	1.94349	2.00289
LFL	(17000)	18.75 s	1.98382	1.94867	2.01919
LFL Frac	(8500)	18.75 s	3.58105	3.36038	2.02069
<b>CASE:2 VAPOUR CLOUD EXPLOSION (OVERPRESSURE RESULTS)</b>					
Not Reached					
<b>CASE:3 LATE POOL FIRE (EFFECTS OF RADIATION LEVEL)</b>					
RadiationLevel			Distance (m)		
			Category 1.5/F	Category 1.5/D	Category 5/D
RadiationLevel	4	kW/m2	22.7165	22.6725	23.6482
RadiationLevel	12.5	kW/m2	14.5904	14.5505	16.4055
RadiationLevel	25	kW/m2	9.72226	9.68543	12.4391
RadiationLevel	37.5	kW/m2	6.93919	6.90303	7.86168

**FIGURE- 7.2 RISK CONTOUR FOR FLASH FIRE:**



**FIGURE- 7.3 RISK CONTOUR FOR LATE POOL FIRE:**

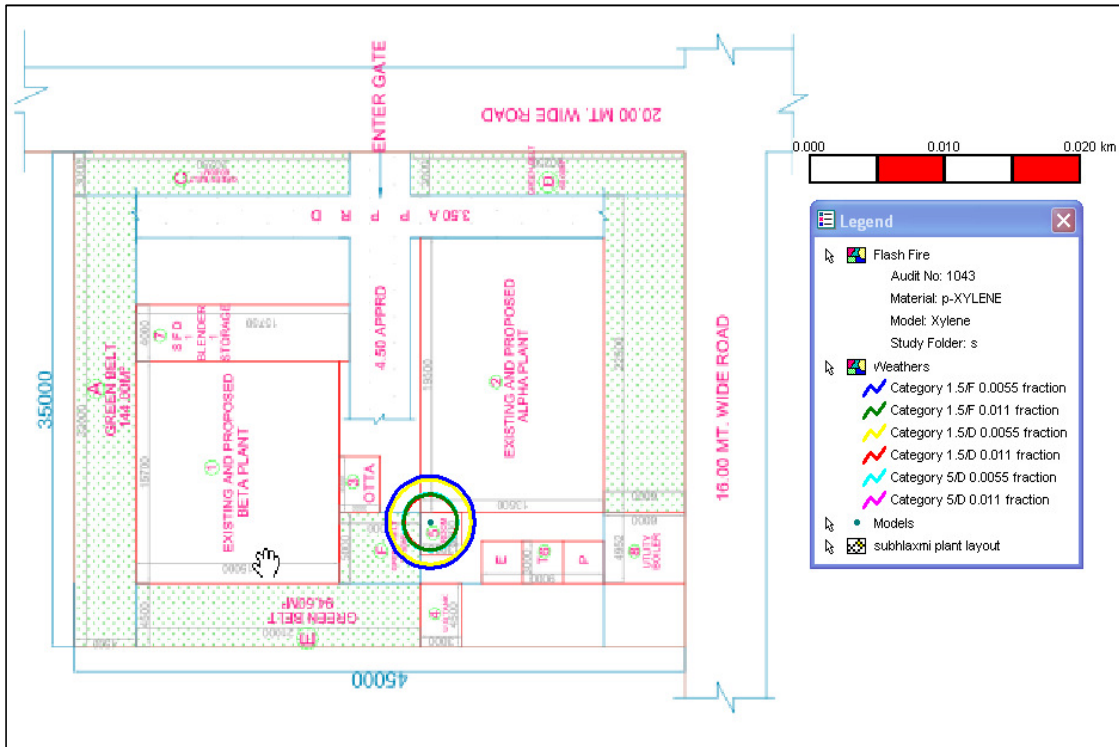


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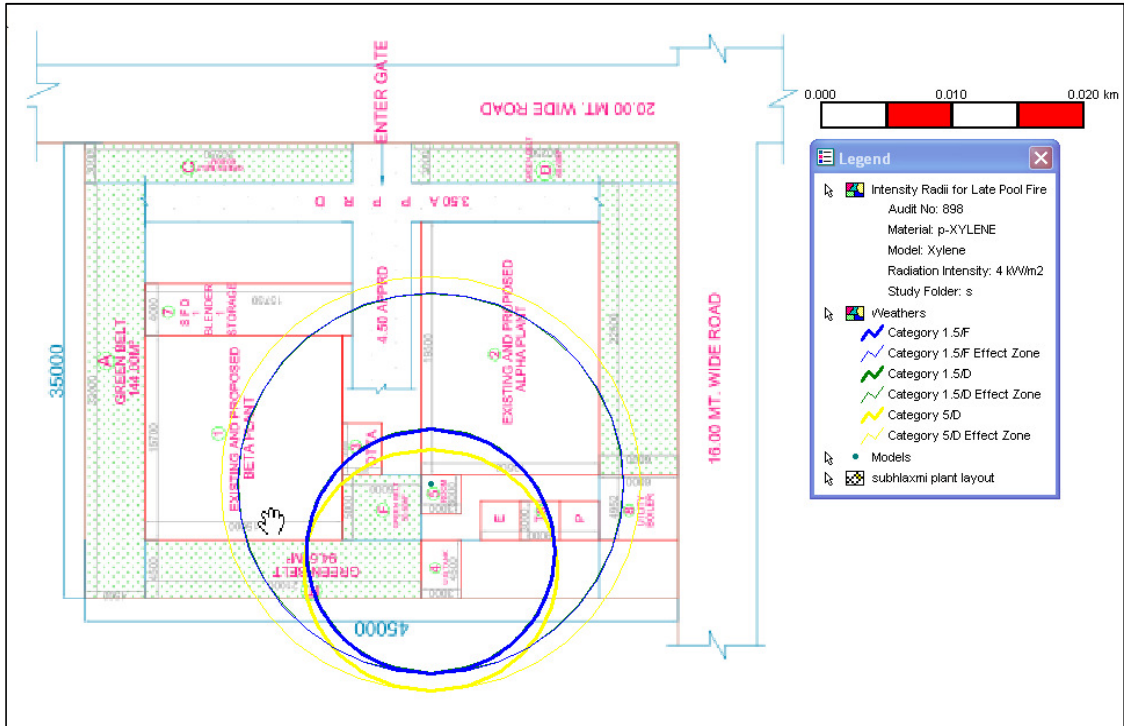
**TABLE - 7.13 SCENARIO # 2 – RELEASE OF XYLENE**

<b>Basis: Possible Release/Leakage due to 2” damage to drum or tilting of drum with open lid.</b>						
<b>Input Data</b>						
Leak Size Considered	50mm					
Release rate	4.8273 kg/s					
Drum Gets empty in	35.49 s					
Pressure	Ambient					
Temperature	30 ° C					
Weather Condition	1.5/F, 1.5/D, 5/D					
LFL	11000					
UFL	70000					
<b>CASE:1 FLASH FIRE</b>						
Concentration(ppm)			Averaging Time		Distance (m)	
					Category 1.5/F	Category 1.5/D
					Category 5/D	
UFL	(70000)	18.75	s		1.98075	1.94795
LFL	(11000)	18.75	s		1.98723	1.95153
LFL Frac	(5500)	18.75	s		3.26843	3.01332
					2.01642	2.02863
						2.02976
<b>CASE:2 VAPOUR CLOUD EXPLOSION (OVERPRESSURE RESULTS)</b>						
Not Reached						
<b>CASE:3 LATE POOL FIRE (EFFECTS OF RADIATION LEVEL)</b>						
					Distance (m)	
					Category 1.5/F	Category 1.5/D
					Category 5/D	
RadiationLevel	4		kW/m2		14.6857	14.6469
RadiationLevel	12.5		kW/m2		8.52384	8.48772
RadiationLevel	25		kW/m2		5.0324	4.99669
RadiationLevel	37.5		kW/m2		4.76259	4.72581
						15.9898
						11.0971
						5.74174
						4.7983

**FIGURE – 7.4 RISK CONTOUR FOR FLASH FIRE:**



**FIGURE- 7.5 RISK CONTOUR FOR LATE POOL FIRE:**



**7.3.2.6 CONSEQUENCE ANALYSIS SUMMARY**

**TABLE - 7.14 FLASH FIRE SCENARIOS:**

SR. No.	Scenario	Concentration (ppm)	Distance (meters)		
			Category 1.5/F	Category 1.5/D	Category 5/D
1.	Release of Iso-Butanol	LFL. 17000	1.98	1.94	2.01
		LFL Frac.8500	3.58	3.36	2.02
2.	Release of Xylene	LFL. 11000	1.98	1.95	2.02
		LFL Frac. 5500	3.26	3.01	2.02

**TABLE – 7.15 LATE POOL FIRE:**

SR. No.	Scenario	Radiation Level (KW/m <sup>2</sup> )	Downwind Distance (meters)		
			Category 1.5/F	Category 1.5/D	Category 5/D
1	Release of Iso-Butanol	4	22.71	22.67	23.64
		12.5	14.59	14.55	16.40
		25	9.72	9.68	12.43
		37.5	6.93	6.90	7.86
2	Release of Xylene	4	14.68	14.64	15.98
		12.5	8.52	8.48	11.09
		25	5.03	4.99	5.74
		37.5	4.76	4.72	4.79

#### **7.4 COMMENTS / RECOMMENDATIONS BASED ON CONSEQUENCE ANALYSIS**

##### **Flash Fire & Late Pool Fire:**

- From the scenarios considered above vapor travels to a maximum distance 3.58 m in case of release of Iso-Butanol in 1.5/F weather condition.
- In case of Late pool fire, Iso-Butanol will cover the distance of 23.64 m in 5/D weather condition for 4 KW/m<sup>2</sup> radiation level.

##### **Recommendations:**

- Evacuation routes shall be planned such that alternate route is available from any corner in more than one direction.
- Extra precautions to be taken in unloading of flammable/toxic chemicals. The details of precautions during storage handling and transportation of chemicals have been given in separate paragraph.
- Firefighting arrangements shall be provided as per the appropriate guidelines.
- Hazard Identification Studies like HAZOP, HAZAN, Fault tree analysis, Event tree analysis, Checklist Audit etc. will be carried out (if required) for safe operation of plant.
- Safety audit (i.e. Third Party Safety Audit as per IS: 14489) and its Compliance shall be carried out as per the frequency decided by the management. Audit is an important tool to identify organizational & operational safety policy, and practices, plant conditions or operating procedures that could lead to an accident and significant losses in life or property and their effectiveness against accident preventative program.

**7.5 ARRANGEMENTS FOR ENSURING HEALTH & SAFETY OF WORKERS ENGAGED IN HANDLING OF HAZARDOUS MATERIALS.**

**7.5.1 Following Safety Precautions Are Considered During Transportation, Unloading, Handling & Storage of Solvent, etc.) for its existing facilities, the same shall be updated to cover the new facilities, if required:**

**TABLE 7.16 SAFETY PRECAUTIONS**

<b>Sr.</b>	<b>ACTIVITY</b>	<b>SAFETY PRECAUTIONS</b>
1	Transportation of Solvents/chemicals by road trucks.	<ul style="list-style-type: none"><li>• Training is given to driver and cleaner regarding the safe driving, hazards of chemicals, emergency handling, and use of SCBA sets.</li><li>• TREM card is kept with TL.</li><li>• SCBA set is kept with TL.</li><li>• Fire extinguishers are kept with TL.</li><li>• Instructions are given not to stop road truck in populated area.</li><li>• Hazard Identification symbol and emergency telephone number are displayed as per HAZCHEM CODE.</li><li>• Appropriate PPEs are kept with TL.</li></ul> <hr/> <p>In case of leak or spill:</p> <ul style="list-style-type: none"><li>• Source of leakage are checked.</li><li>• Damaged containers or spilled materials are not attended without wearing appropriate protective clothing.</li><li>• Leak is stopped, if possible to do so without risk.</li><li>• Water spray is used to reduce vapors (but do not put water directly on leak, spill area or inside container).</li><li>• Combustibles (wood, paper, oil, etc.) are kept away from spilled material.</li></ul>
2	Unloading Activity	<ul style="list-style-type: none"><li>• Priority is given to Truck to immediately enter the storage premises at site and is not kept waiting near the gate.</li><li>• Security person checks License, TREM CARD, Fire extinguisher condition; and required PPEs as per SOP laid down.</li></ul> <p><b>Following precautions are taken during unloading:</b></p> <ul style="list-style-type: none"><li>• Wheel stopper is provided to TL.</li><li>• Flexible SS hose connection is done at TL outlet line.</li></ul>

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		<ul style="list-style-type: none"><li>• All TL valves are closed in TL.</li><li>• Only day time unloading is permitted.</li></ul>
3	Solvents Storage safety.	<ul style="list-style-type: none"><li>• All storage areas are isolated from all sources of open flame and well posted with ' NO SMOKING' signs and provided with adequate fire fighting/extinguishing systems.</li><li>• Water spray is used to reduce vapors (but do not put water directly on leak, spill area or inside container).</li><li>• Combustibles (wood, paper, oil, etc.) are kept away from spilled material.</li><li>• Fire fighting facilities (along with foam attachment) are available as mentioned below.</li><li>• Sand Buckets are available.</li></ul>

**7.5.2 FIRE CONTROL PLAN.**

M/s. Shubhlaxmi Pigments, Panoli, has considered fire prevention measures at the project planning stage to avoid any outbreak of fire. But the chances of outbreak of fire cannot be totally ignored. Hence to tackle such a situation, company has planned to develop a well- resourced and adequate fire protection system/fire fighting network. The same facilities shall be updated to cover the expansion facilities also, if required.

**Other details on Fire Control Plan and same shall be updated for expansion facility if required:**

- Fire fighting facilities comprising has been installed as per the GFR and TAC guidelines, the same shall be updated after the expansion of new facilities, if required.
- Fire Extinguishers like DCP, Carbon Dioxide & Foam types has been provided as per the GFR and TAC guidelines, at conspicuous locations.
- Other Fire fighting facilities like, fire monitor, foam trolley, fire hose boxes with hose pipe, sand buckets, fire blanket, Jumbo bags, Water Jet Fire Blanket, etc. shall be provided within the company at conspicuous locations.
- Working staff is given training to operate DCP and CO<sub>2</sub> extinguishers.
- Emergency Action Team members are working round the clock in all shifts.
- First aid is available round the clock in all shifts of all plants / sections.
- DG Set is available for power backup.

**7.5.3 WAYS TO MINIMIZE THE MANUAL HANDLING OF THE HAZARDOUS CHEMICALS.**

1. Forklifts are used for unloading chemical barrels/carboys, their movements within plant, handling carboys, bulk chemical bags, etc.
2. Cranes, hoists, pallet trucks, conveyors, etc. are used as per the requirement, to eliminate manual handling.
3. Lifting tools & tackles are used, wherever required.
4. SOPs, work instructions are prepared and followed.
5. Trainings are provided to relevant staff, operators, workers for the risk associated with manual handling of hazardous chemicals, ways to overcome those risk, etc.

**7.5.4 SAFE OPERATING PROCEDURE**

- SOP is a procedure which is specific to the operation that describes the activities necessary to complete tasks in accordance with industrial activities.
- SOP shall be well prepared, documented and displayed in local language.
- SOPs like Raw Material Charging, Operation of APCM and Operation in utilities already being followed.
- Some of the following SOPs will be prepared on need basis:
  - Raw material Charging
  - Loading & Unloading Activities
  - Pre Start Up Safety Review (PSSR)
  - Reactor Cleaning
  - Etc.

**7.5.5 DO'S & DON'TS**

Management has listed some of the Do's & Don'ts activities to strengthen the **SAFETY AT WORK**, which will be followed strictly:

**For Preventive Maintenance**

**Do's:**

- Inspection of Storage Area, Earthing & Bonding system.
- Inspection of all Fire Fighting Facilities.
- Ensuring that operators/workers etc. follows the SOPs, Safety procedures & standards, work permit system etc.
- Checking the availability of Spill Containment Kit.
- Make sure existing fire extinguishers are fully charged and ready for action.
- Inspections of plant, machinery, tools, equipment, premises, work practices, processes, procedures and general environment must be carried out for the health and safety of plant, people and surrounding.

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- On-site and Offsite Emergency Plans shall be reviewed and updated, as per the requirement.

### **Don'ts:**

- Don't allow anyone who hasn't received specific safety and operational training to get indulge in any site activity.
- Don't perform your own maintenance.
- Don't compromise on Design and Engineering part.
- Don't perform any activity without proper permit.
- Don't panic if you are in a risky situation.
- Don't allow spilled chemicals to drain to sewers/gutters etc.

### **Strengthening of HSE (Applicable for Manufacturing Utility Staff)**

#### **Do's:**

- Correct or report unsafe conditions.
- Include a timeline for completion of each recommendation.
- Make recommendations that are measurable and track able.
- Ensure that each recommendation is assigned to an individual to oversee implementation.
- Help keep things clean & orderly. Keep gangways clear.
- Report all injuries. Get first aid promptly.
- Use, adjust and repair equipment only, when authorized.
- Use right tools & equipment for the job, use them safely.
- Use prescribed protective equipment; keep them in good working conditions.
- Respect signs / warnings. Abide by rules laid down for your safety.

#### **Don'ts:**

- Do not take chances. If you don't know, ask. Follow instructions.
- Do not make vague statements, do not overrule supervisor,
- Do not adopt shortcuts.
- Do not smoke in restricted areas. Do not flick cigrate/ beedi in company.
- Do not Horseplay. Do not run. Avoid distracting others. Avoid throwing things

#### 1) No worker in a factory-

- Shall wilfully interfere with or misuse any appliance, convenience or other thing provided in the factory for the purpose of securing the Health, Safety or Welfare of the workers therein:
- Shall wilfully and without reasonable cause do anything likely to endanger himself or others; and

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- Shall wilfully neglect to make use of any appliance or other thing provided in the factory for the purposes of securing the Health or Safety of the workers therein.

**7.5.6 ANTIDOTES DETAILS:**

The appropriate antidotes for the hazardous chemicals for the existing facility are available at site and the same shall be updated & kept available for the expansion facility also.

**Following Antidotes for major hazardous chemicals are kept available at the site.**

Chemical	Antidote / Medical Treatment
Iso-Butanol	<ul style="list-style-type: none"><li>• Ensure that adequate decontamination has been carried out.</li><li>• Patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained.</li><li>• Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting.</li></ul>
Xylene	<ul style="list-style-type: none"><li>• Wash affected skin with plenty of water. Administer Fresh air or Oxygen, 0.1 mg/kg slowly through injection restin bed. Don't apply Epinephrine, Ifridin etc. Don't apply milk, vegetable oil or alcohol</li><li>• Diazem – 1 mg/kg. (Intravenous),Epenephia, Efidrine</li></ul>

**7.5.7 LEAK DETECTION & REPAIR PROGRAM**

Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. In addition to control fugitive emissions, LDAR Program also helps the industries to reduce unwanted losses of chemicals and thereby conserving energy & increasing their profitability.

**Need of Leak detection and Repair (LDAR) programs:**

Fugitive emissions constitute a source of air pollution and fire. EPA has determined that leaking equipment, such as valves, pumps, and connectors, are the largest source of emissions of volatile organic compounds and volatile hazardous air pollutants (VHAPs) from chemical manufacturing facilities.

A benefit of LDAR program is reduction of product losses. Facility that apply LDAR also increase safety for workers and operators, decrease exposure of the surrounding community, reduce emission fees and help facilities avoid enforcement action.

Following steps shall be followed for effective implementation of LDAR Program:

**1. Identification of volatile chemicals which may contribute in VOCs:**

In existing plant, following are the list of chemicals which may contribute in VOCs.

- Iso-Butanol
- Xylene

**2. Identification of all the probable sources of leakage; such as valves, pumps, and connectors.**

List of the sources of probable leakage is as follows:

- Valves/Flanges
- Pump glands handling above chemicals
- Open vents from the tank top
- Pump seals
- Compressor seals
- Pressure relief devices
- Process drains
- LPDs (Low Point Drains)
- HPVs (High Point Vents)

A list of all such items shall be made and same shall be incorporated in the checklist for LDAR.

**3. Selection of appropriate method for leak detection:**

Considering the nature of the chemical; appropriate method shall be selected for leak detection of individual chemicals from the list given below:

- Visual Checks
- LEL meter
- VOC meter
- Gas Detector
- Etc.

**4. Scheduling and checklist for Leak Detection:**

All points shall be checked as per the checklist given below.

**5. Methods for rectification of identified leaks:**

For all identified leaks, closure shall be ensured with the help of maintenance department and records for the same shall be maintained.

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**Checklist for implementation of LDAR Program to reduce emissions of VOCs.**

Sr. No.	List of Source of leakage	Name of Chemical	Method of leak check	Frequency Weekly/Monthly / Quarterly	Checked on	Checked by	Observations/ Remarks	Leak to be attended by (Repair to be done within 5 working days)	Leak attended on	Closure Note

Records of leak detection have been maintained by client and are available at site.

## **7.6 ONSITE AND OFFSITE EMERGENCY PLAN**

M/s. Shubhlaxmi Pigments, Panoli has prepared the Onsite emergency Plan which is linked with District Disaster Management Plan. This plan has been prepared based on the risk contours plotted on the plant layout map clearly showing the facilities that would be affected, in case an accident takes place.

The purpose of this plan is to provide M/s. Shubhlaxmi Pigments, Panoli. With the means to effectively utilize all the resources at its disposal for the protection of life, environment and property. The same ERP shall be updated after expansion to cover new plants or facilities, if required. The details of the same are discussed in the following sections.

### **7.6.1 DEFINING THE NATURE/LEVEL OF EMERGENCY**

THE LEVEL OF EMERGENCY CAN BE CLASSIFIED IN THREE CATEGORIES:

#### **LEVEL - 1:**

The leakage or emergency, which is confinable within the plant/area. It may be due to:

- a) Small pipe/valve rupture or similar leakages that do not affect outside premises.
- b) Release of toxic chemicals for short duration.
- c) Small fire in the plant.

#### **LEVEL - 2:**

The emergency, which is confinable within the factory premises. It may arise due to -

- a) Leakage of toxic chemicals for long duration.
- b) Medium scale explosion confined to the factory premises.
- c) Medium scale fire inside the factory premises.

#### **LEVEL - 3:**

The emergency, which is not confinable within the factory premises and general public in the vicinity are likely to be affected. It may arise due to -

- a) Heavy / Profuse leakage of toxic / flammable gases for a long duration.
- b) Explosion of high magnitude affecting the adjacent area.
- c) Major fire inside the factory premises

### **7.6.2 OBJECTIVES OF EMERGENCY MANAGEMENT SYSTEM**

The objectives of the emergency management system are summarized as under.

- To define and assess emergencies, including risk and environment impact assessment.
- To control and contain incidents.
- To safeguard employees and people in vicinity.
- To minimize damage to property or/and the environment.

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- To inform employees, the general public and the authority about the hazards/risks assessed, safeguards provided, residual risk if any and the role to be played by them in the event of emergency.
- To be ready for 'mutual aid' if need arises to help neighbouring unit. Normal jurisdiction of an OEP is limited to the own premises only, but looking to the time factor in arriving the external help or off-site plan agency, the jurisdiction must be extended outside to the extent possible in case of emergency occurring outside.
- To inform authorities and mutual aid centers to come for help.
- To effect rescue and treatment of casualties. To count injured.
- To identify and list any serious injuries and or fatalities.
- To inform and help relatives.
- To secure the safe rehabilitation of affected areas and to restore normally.
- To provide authoritative information to the news media.
- To preserve records, equipment etc, and to organize investigation into the cause of the emergency and suggest preventive measures to stop its recurrence.
- To ensure safety of the works before personnel re-enter and resume duty.
- To work out a plan with all provisions to handle emergencies and to provide necessary inputs for emergency preparedness and the periodical rehearsal.

### **7.6.3 STRUCTURE OF EMERGENCY MANAGEMENT SYSTEM**

**M/s. Shubhlaxmi Pigments, Panoli** has developed an emergency management team. The management structure includes the following personnel's;

- Site Main Controllers.
- Incident Controllers and Deputy Incident Controllers.
- Key Personnel's.
- Essential Workers.

The other elements of Disaster Management Plan are:

- Assembly points.
- Emergency control center.
- Fire control arrangements.
- Medical arrangements.
- Other arrangements.

### **7.6.3.1 SITE MAIN CONTROLLER**

He is the head authority of the organization. V.P. – Operations holds the responsibilities of the site main controller or emergency controller. He is having overall responsibilities for directing operation.

Immediately on hearing of emergency, he will proceed to Gate House, where he will meet the Communication Officer.

- From time to time, he will assess the magnitude of the situation and decide if staff needs to be evacuated.
- Exercise direct operational control of those parts of the works outside the affected area.
- Maintain a continuous review of possible developments and assess these to determine the most probable course of event.
- Initiate the shutting down and evacuation of plant in consultation with the Incident Officer.
- Liaise with Police Services and provide advice on possible effects on areas outside the factory.
- Issue authorized statements to the news media. Where appropriate, inform the Director.
- Ensure that proper consideration is given to the preservation of evidence.
- Control rehabilitation of affected areas on cessation of emergency.
- Determine what investigations and reporting should be carried out and by whom, to determine cause and prevention of reoccurrence.

### **7.6.3.2 ROLE OF INCIDENT CONTROLLER AND DEPUTY INCIDENT CONTROLLER**

His primary duties shall be to take charge at the scene of the incident. In the initial stage he may be required to take decisions involving the operation of the other plants or to stop or continue any process and to take technical decisions to control the incident. The deputy incident controller will take the charge of incident controller, if he is not available due to any reason. They will be always available in each shift and can take charge of the incident.

#### **Responsibilities/Duties of Incident Controller and Deputy Incident Controller:**

- Managers connected with Plants/the respective Plant-In-Charge from each shift have been designated as I.C.
- Two Production officers in each shift will be identified as Deputy Incident Controllers.
- He shall take charge at the scene of incident.
- He shall immediately assess the gravity of risk and alert panel and field operators to start controlling their respective section.
- He will work under the direction of the SMC, but till his arrival he may have to execute following responsibilities.
- He will ensure that all the Key Personnel are called.
- Direct for evacuation of plant and areas likely to be affected by the emergency.

- He shall communicate to the SMC the type of outside help needed.
- He shall direct all emergency operations within the affected area with the following priorities.
- Personnel safety, including of surrounding community.
- Minimum damage to Plant, Property and Environment.
- Appropriate actions to minimize loss of Production and Material.
- Give information to the head of fire fighting and rescue team and other emergency services.
- Instruct upstream/downstream units to take emergency shutdown /cutting off supply and other appropriate actions and emergency evacuation help etc.
- Direct for search of casualties.
- Evacuate non-essential workers/visitors/contractors to safe assembly points.
- Brief site main controller and keep him informed about the developments.
- Preserve evidences. This will be necessary for investigation for cause and concluding preventive measures.

#### **7.6.3.3 KEY PERSONNELS**

Senior officers of various departments like Fire, Security, Safety, Administration, Engineering, Project, Production, Transport, Pollution control, Technical Services and Stores shall be nominated as Key Personnel in their respective fields. As necessary, they shall decide the actions needed to shutdown plants, evacuate personnel, carryout emergency engineering work, arrange for supplies of equipments, utilities, carryout.

environment monitoring, provide catering facilities, liaise with police, fire brigade and other local authorities, relative of casualties, hospital, press & neighbouring industries, action at assembly points, outside shelters and mutual aid centre under the direction of the SMC. All the key personnel and other called in so to assist, shall report to the ECC. They are available at any time on duty or on call or on holidays.

#### **7.6.3.4 ESSENTIAL WORKERS:**

Essential Workers shall be those who shall be trained in Fire Fighting and First Aid. One Supervisor and two helpers from each shift will be identified as E.W.'s & shall supposed to report at EMERGENCY SITE to take instructions from I.C. or Dy. I.C. Such work instructions will include:

- Fire fighting and spill control till a Fire Brigade takes the charge.
- To help the Fire Brigade and mutual aid teams, if it is so required.
- Shutting down plant and making it safe.
- Emergency engineering work e.g. isolating equipment, material process, providing temporary by-pass lines, safe transfer of materials, urgent repairing or replacement, electrical work, etc.

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- Provision of emergency power, water, lighting, instruments, equipment, materials, etc.
- Movement of equipment, special vehicle and transport to or from the scene of the accident.
- Search, evacuation, rescue and welfare.
- The injured will be given First Aid.
- Carrying out atmospheric test and pollution control.
- Manning of assembly points to record the arrival of evacuated personnel. Manning for outside shelters and welfare of evacuated persons there.
- Assistance at casualties reception areas to record details of casualties.
- Assistance at communication centres to handle outgoing and incoming calls and to act as messengers if necessary.
- Manning of works entrances in liaison with the police to direct emergency vehicles entering the work, to control traffic leaving the works and to turn away or make alternative safe arrangements for visitors, contractors and other traffic arriving at the works.
- Informing surrounding factories and the public as well as directed by the Site Main Controller.
- Any special help required.

### **OTHER ELEMENTS OF DMP:**

#### **7.6.3.5 ASSEMBLY POINT**

In affected & vulnerable plants, all nonessential workers (who are not assigned any emergency duty) will be evacuated from the area & they shall report to specified Assembly Points. Assembly Point is marked at a safe place, well away from area of risk and least affected by the down wind direction.

To ensure that workers do not have to approach the affected area to reach the Assembly Point, proper location and number shall be marked at Assembly Points. Each Assembly Point shall be manned by a nominated person to record the names and dept. At each Assembly Point, duties of Assembly Point In-charge are displayed in brief. Before reaching an Assembly Point or subsequently, if it is required to pass through an affected area or due to presence of toxic substances, suitable PPE's including respirators, helmet etc., shall be issued & made available with workers.

#### **7.6.3.6 EMERGENCY CONTROL CENTER**

The Emergency Control Centre is the place or room from where the operations to handle the emergency are directed and coordinated. A room near Security Gate has been earmarked/identified as the Emergency Control Room.

Telephone and other facilities required with necessary documents are displayed in ECC for ready reference. ECC has been operated by Site Main Controller, key personnel and Senior Officers of the Fire, Police, Factory Inspectorate, District Authorities and Emergency Services.

The ECC centre is equipped with the following facilities:

- Internal and external telephone including STD facility.
- Telephone directory/ Telephone nos. of mutual aid centres.
- Factory Layout showing evacuation plan, fire fighting arrangements, emergency control centre, location of assembly points, etc.
- First Aid.
- Gate pass book.
- Muster roll of Workers.
- Work permit book.
- Identity card register.
- Copy of ON SITE/ OFF SITE PLAN.
- Stationeries like- note book, pen, pencils etc.
- SCBA Sets.
- Sand Buckets & Hydrant Network.
- Adequate numbers of PPE's (like dust mask, Air Mask, safety dress, PVC hand gloves, Full Face piece respirator with 3M cartridge, helmet, goggles, etc).

**7.6.3.7 FIRE CONTROL ARRANGEMENTS (FIRE FIGHTING, GAS LEAK CONTROL AND RESCUE OPERATION)**

**A. Role of Manager (Fire and Safety) / Shift In-Charge (Fire & Safety)**

1. Incident Controller directs the firefighting and Emergency operation. His duties include...
2. Keep the constant touch with the SMC / In charge - EHS.
3. Direct the crew members to the scene of emergency and arrange replenishment of Manpower / equipment / extinguishing media etc.

**B. Role of EHS Representative:**

1. On being notified about the location of fire/ gas leakage, he immediately proceeds to the help.
2. Decides his line of action in consultation with Incident controller and takes appropriate measures to handle the emergency.
3. Assessing the severity of the incident, immediately report to emergency controller about the gravity of the situation.
4. He assesses the extra requirement required if any, from the neighbouring industry.

#### **7.6.3.8 MEDICAL SERVICES**

The roles of Medical officers are as follows;

- (a) He will report immediately to the SMC/IC.
- (b) He will render necessary treatment, at Occupational Health Center.
- (c) He will arrange for Hospitalization and Treatment at outside hospitals, if required.
- (d) He will mobilize in getting the services of External medical agencies, other Para – medical services etc. and transportation services etc.
- (e) He will arrange for extra medical assistance/antidotes, from out, if required.
- (f) He will arrange for first-aid trained volunteers for necessary help.
- (g) He will liaise with the Government Health Authorities for treatment of the affected persons nearby.

#### **7.6.3.9 ROLE OF SECURITY IN-CHARGE (SECURITY OFFICER)**

- On hearing the emergency siren, he shall find out the location of the incident (fire / gas leak / spill / explosion) and inform the location of the same to the key personnel coming to the plant.
- He will depute the security guards for managing gates and traffic control at the incident site & send remaining guards to the site of incident.
- He will prevent unauthorized entry in to the site
- He will render assistance as demanded by the safety in-charge.
- He will mobilize additional security force for help, if required.
- He will direct ambulance(s) and emergency vehicle(s) to the scene of incident.
- He will help evacuate persons within the scene of incident.
- As directed by the site main controller, he may be required to address the public of surrounding villages for warning / evacuation.

#### **7.6.3.10 ROLE OF MUTUAL-AID MEMBERS**

- Company has Mutual Aid with various nearby factories and GIDC fire station etc.
- On receiving the call, they shall proceed immediately with fire squad & fire tenders.
- They will be guided to the place of the incident by the main gate security guard.
- The fire squad in-charge will report to the safety in-charge of the unit in which the incident has occurred.

#### **7.6.3.11 OTHER ARRANGEMENTS**

Other arrangements include external transport (transport centre), heavy vehicles, lift/cranes, Utilities, generator sets to supply emergency power, environment monitoring equipment,

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special instruments/equipments, rescue items etc. is made available from Ankleshwar Association or nearby locations, when available resources do not meet the requirements.

### **STANDARD OPERATING PROCEDURE (FOLLOWED DURING EMERGENCY)**

- As soon as emergency alarm is heard, all essential workers shall report to IC or SMC.
- They shall carefully listen to the instructions given by IC or SMC
- According to the type of emergency/accident, they shall get equipped with PPE/Fire fighting equipment and devices.
- The runner among the workers shall inform SMC/IC and key personnel if they are not at site.
- The messenger amongst the workers shall deliver messages to nearby units as per the instructions of SMC/IC.
- The in-charge of medical arrangements shall prepare first-aid and other required facilities for the injured.
- The other essential workers shall try to control the emergency as per the instructions given to IC.
- IC would keep SMC informed about the status of control measures being taken at the site and ask for other requirements e.g. Mutual aid, equipment etc. if he find necessary.
- SMC would co-ordinate with outside agencies regarding control measures being taken, need for external help, evacuation, medical treatment etc.

#### **7.6.4 COMMUNICATION SYSTEM**

After assessing the risk of the emergency / incident, the second step of the plan is communication.

This chapter deals with the procedure to be followed at the time of emergency to inform following personnel.

- Incident controller
- Site main controller
- Mutual aid centers
- Neighbouring industries and public in vicinity
- Government authorities.

The communication of emergency begins with sounding the siren from the emergency. The procedure us as under;

#### **7.6.4.1 RAISING THE ALARM**

As soon as incident takes place inside the factory and is noticed by someone, the first step shall be to raise the nearest manual emergency bell to alert the nearby people. Next, he/she shall inform the security persons to raise the emergency siren located at the factory gate. The security personnel sound the siren.

The alarm sound informs the I.C and the S.M.C that an emergency has been created and emergency organization is to be activated. The I.C. rushes to the site and shall takes charge of the scene.

#### **7.6.4.2 DECLARING THE MAJOR EMERGENCY**

The nominated persons are technically qualified and experienced. They will advice the incident controller or the Site main controller. The site main controller with the consultation to technical persons declare major emergency.

The joint decision to declare major emergency shall be taken as early as possible and without wasting time.

#### **7.6.4.3 TELEPHONE MESSAGES**

After hearing the emergency siren or even receiving the emergency message on phone, the telephone operator (security officer) transmit the message to site main controller and key personnel as per the instruction received from incident controller.

#### **7.6.4.4 COMMUNICATION OF EMERGENCY & STATUTORY INFORMATION**

##### **Communication of Emergency:**

An effective system to communicate emergency has been made to communicate about the emergency situation as mentioned below:

- Inside the factory i.e. workers including key personnel and essential workers, on duty & inside during normal working hours.
- To key personnel and essential workers not on duty and outside during normal working hours.
- To the outside emergency services and the Government authorities.
- To the neighbouring factory & the General Public in the vicinity.

##### **STATUTORY INFORMATION:**

###### **a) Information to Workers**

Set of Statutory information regarding types of hazards and their prevention and control as directed in the Factories Act is prepared by the unit. This information is printed in the local language and given in the form of booklet to all workers including contract workers.

**b) To the outside emergency services and District Emergency Authority**

Statutory information in the form of booklet is given to outside emergency services and authorities, if required.

**c) Specific Safety Measure to be taken for neighbouring firms, general public vicinity & Factory Inspectorate**

- Statutory information in the form of booklet, is given to neighbouring units and the general public of the villages in the vicinity of the unit, if required.
- General Public in the vicinity shall be trained for associated chemical hazards, safety measures, on-site & off-site emergencies, individual actions required during emergencies, first aid, etc.
- General Awareness Seminars will be conducted.
- Required safety drills, Off Site drill, etc. will be conducted.

## **7.7 OCCUPATIONAL HEALTH & SAFETY**

M/s. Shubhlaxmi Pigments, Panoli, has prepared the **Occupational Health Surveillance Programme** for its existing facility. The same programme shall be updated (if required) after the expansion, to cover new plants or facilities. The details of the existing programme are described in the following sections.

### **7.7.1 OCCUPATIONAL HEALTH**

Occupational health needs attention both during construction & erection and operation & maintenance phases. However, the problem varies both in magnitude and variety in the above phases.

### **7.7.2 HOSPITAL FACILITIES**

Company has made formal agreements with the nearby hospitals, having facilities to attend fire and toxic effect cases, emergency cases, attending the affected persons in the emergency arising out of accidents, if any, etc.

Emergency vehicle is available round the clock in the factory to transport the victim/injured person from the factory to the nearby hospital. Ambulance is equipped with Stretcher, First aid box, Oxygen Cylinder, Mask, etc.

### **7.7.3 FACTORY MEDICAL OFFICER/OHC**

A qualified doctor has been appointed as FMO on retainer ship basis. Apart from him, Paramedical Staff has also been employed. Adequate no. of employees is trained in First aid.

### **7.7.4 PLAN FOR PERIODIC MEDICAL CHECKUP**

Periodic Medical Examination is being conducted as per the following schedule;

Workers employed are examined by a Qualified Medical Practitioner/ Factory Medical Officer, in the following manner:

- (a) Before employment, to ascertain physical fitness of the person;
- (b) During employment, once in a period of 6 months, to ascertain physical fitness of the person to do the particular job;

Medical examinations are then documented in Form no.: 32 & 33 and maintained.

**7.7.5 DETAILS OF OCCUPATIONAL HEALTH IMPACTS AND SAFETY HAZARDS**

<b><u>Occupational Hazards</u></b>	<b><u>Occupational Health Impacts</u></b>
<ul style="list-style-type: none"><li>• Exposure to Toxic Chemicals.</li><li>• Exposure to Flammable Solvents.</li><li>• Fire due to Static charge generation</li><li>• Slip/trip, fall, electric shock, etc.</li><li>• Spillage/leakage,</li><li>• Overflow,</li><li>• Exposure to Corrosive Chemicals.</li></ul>	<ul style="list-style-type: none"><li>• Toxication, Irritation,</li><li>• Fall Injury, Electrocutation,</li><li>• Body Injury, Burns, Skin sensitization,</li><li>• Severe irritation to eyes &amp; skin,</li><li>• Respiratory disorder,</li><li>• Damage to nearby equipments,</li><li>• Fatality, etc.</li></ul>

Mitigation measures/Safety Measures proposed to avoid the human health hazards are mentioned under section 7.5. Personal protective equipment like Helmet, Safety shoes/ Gumboots Hand gloves, Gas Mask / Nose Mask, PVC apron, SCBA Set, PVC pressure suit, Bobble hood are also provided to the required personnel.

**7.7.6 WORKZONE MONITORING ARRANGEMENTS FOR HAZARDOUS CHEMICALS**

Work zone monitoring is carried out by independent competent third party every month. Records are kept in Form No. 37 as per Gujarat Factories Rules. Location for samplings shall be identified. Samples are analysed for Air borne concentration of hazardous chemicals in ppm. Following information is incorporated in the format for maintaining records of work zone monitoring:

- Location/Operation monitored
- Identified contaminant
- Sampling instrument used
- Number of Samples
- Range of contaminant concentration as measured in sample
- Average concentration
- TWA concentration of contaminant (As given in Second Schedule of Factories Act)
- Reference method used for analysis
- Number of workers exposed at the location being monitored
- Signature of the person taking samples
- Other relevant details

**7.7.7 PROVISION OF INDUSTRIAL HYGIENIST & HEALTH EVALUATION OF WORKERS**

1. Management has device a plan to check and evaluate the exposure specific health status evaluation of workers.
2. Workers are checked for physical fitness with special reference to the possible health hazards likely to be present, where he/she is being expected to work before being employed for that purpose. Complete medical examinations including PFT, Urine and Blood examination, Liver Function tests, chest X-ray, Audiometry, Spirometry Vision testing, ECG, etc. is carried out. However, the parameters and frequency of such examinations are decided in consultation with Factory Medical Officer and Industrial Hygienists and the details of the same are maintained in record.
3. While, in work also, all the workers are periodically examined for the health with specific reference to the hazards. Which they are likely to be exposed, during work. Again, the parameters and frequency of such examination are decided in consultation with Factory Medical Officer and Industrial Hygienists. Monthly and yearly report of the health status of workers with special reference to Occupational Health and Safety is maintained.

**7.7.8 SAFETY TRAININGS & MOCK DRILLS**

Safety trainings (on Safe Material Handling, First Aid, & all Safety Aspects) shall be provided every 15 days by the Safety Officers with the assistance of faculty members called from other Professional Safety Institutions and Universities. In addition to regular employees, limited contractor labours will also be given safety training. To create safety awareness, safety films shall be shown to workers and leaflets are distributed.

**MOCK DRILLS**

To evaluate the effectiveness of emergency preparedness and to spread the awareness among employees mock drill will be carried out at the interval of every six months.

After completion of the mock drill, summary report shall be made and corrections will be done if any weakness has been observed.

**FREQUENCY OF MOCK DRILLS:**

- On-site emergency : Once every 6 months
- Off-site emergency : Once every year

## **CHAPTER - 8**

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### **PROJECT BENEFITS**

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#### **8.1 INTRODUCTION**

Over the years, **M/s. SHUBHLAXMI PIGMENTS** has focused on impacting rural education, water conservation, tribal welfare, agriculture, animal husbandry, health and hygiene, disaster relief and rehabilitation. A number of these projects were replicated by other companies, increasing their impact.

The company is committed for contribution of funds and provides the services for the upliftment of local community in the nearby villages and growth in the industrial sector creates new opportunities for employment and can also help diversify the economy. This is especially important given the high level of urbanization, growing levels of unemployment and poverty in many cities. Synergistic growth in the chemical industries could have positive spin-offs for the socioeconomic development. The use of chemical further leads to development in field of research and development. This chapter describes about benefits of the project on improvements in the physical infrastructure, social infrastructure and employment potential in the region.

## **8.2 CORPORATE ENVIRONMENT RESPONSIBILITY**

M/s. SHUBHLAXMI PIGMENTS has decided to use 2.21 Lacks Rs in below mentioned sector under the CER scheme:-

**TABLE 8.1 - CORPORATE ENVIRONMENT RESPONSIBILITY**

<b>CER ACTIVITIES TO BE DONE (AMOUNT IN LAKH)</b>								
<b>Sr. No.</b>	<b>Activities</b>	<b>Name of the Village / Place</b>	<b>Year - 1</b>	<b>Year - 2</b>	<b>Year - 3</b>	<b>Year - 4</b>	<b>Year- 5</b>	<b>Total (Lakh)</b>
1	Installation and maintenance of RO plant	Village: Kosamadi Tal: Ankleshwar Dist. Bharuch	0.30	0.05	0.05	0.05	0.05	0.50
2	To provide dustbin in village		0.05	0.05	0.05	0.05	0.05	0.25
3	To electrify the village by providing LED light		0.05	0.05	0.05	0.05	0.05	0.25
4.	Plantation in Village area	Village: Kapodara Tal: Ankleshwar Dist. Bharuch	0.30	0.20	0.21	0.25	0.25	1.21
	<b>Total</b>		<b>0.55</b>	<b>0.27</b>	<b>0.28</b>	<b>0.28</b>	<b>0.28</b>	<b>2.21</b>

\*Commitment letter is attached as ANNEXURE-X.

## **8.3 ECONOMIC DEVELOPMENT**

This project will increase the economic activities around the area, creating avenues for direct/ indirect employment during operation phase of the project. There would be a wide economic impact in terms of generating opportunities for other business like workshops, marketing, repair and maintenance tasks etc.

- The continuous inflow of people will require local transport systems like autos, taxis etc which would help economic boost.

## **8.4 EMPLOYMENT POTENTIAL**

There will be increase in the employment facilities due to the upcoming project like

- There will be employment opportunity for local people during construction and operation phase.

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- The Unit will use latest STATE OF ART technology. Thus man power will be exposed to new technology.
- There will be employment opportunity for local people during construction and operation phase.

## **CHAPTER -9**

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### **ENVIRONMENTAL COST BENEFIT ANALYSIS**

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#### **9.1 INTRODUCTION**

Cost-benefit analysis (CBA) is an analytical way for society to make decisions about complicated issues such as education, health care, transportation, or the environment. Like most personal decisions, it involves a comparison of the costs of an action compared with considerations of the benefits of that action. However, for public policy it is formalized and quantitative. For instance, a public policy can be evaluated by calculating and weighing the benefits against the costs, once all factors have been given a common unit of measurement. When policymakers have to choose among various alternatives, they require a tool that will allow them to distinguish between the options. Decision makers can then choose the policy with the largest surplus, or overall net benefits.

Also, as per CER initiative we can see that the unit is going to contribute 2% (i.e. 2.21 Lacs) of the project cost towards betterment of society in nearby villages in 10 KM vicinity area.

However the unit will explore further possibility after commencement of project and will carry out detailed environmental cost benefit analysis.

## **CHAPTER - 10**

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### **ENVIRONMENTAL MANAGEMENT PLAN**

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#### **10.1 INTRODUCTION**

Environmental protection is an issue that no organization can neglect and hope to survive. The key to the success of the integrated approach to pollution prevention and control is the management and operation of the organization. Effective committed management delivers a successful industry. A total commitment to the environment, not just for compliance with legal or regulatory compliance will be the essence of environment management of an industry. Many companies have recognized the benefits of implementing an effective environmental management system.

#### **10.2 AIM AND OBJECTIVE**

The aim of environment management plan is to conserve natural resources and water, to prevent pollution of environment, to ensure effectiveness of control measures and monitoring program, to ensure safety, welfare and good health of worker, to minimize generation of waste.

The objectives of EMP are as under:

- Pollution will be prevented or reduced at the source,
- Pollution that cannot be prevented will be recycled in to the system,
- Pollution that cannot be prevented or recycled will be subjected for recovery of chemicals using best technologies,
- Pollution that cannot be prevented or recycled or recovered will be treated in environmentally safe manner, and
- Disposal and other releases into the environment will be used “only as a last resort” and will be conducted in an environmentally safe manner.

This report is also made in the overall frame work of the Environmental Impact Assessment (EIA) Notification dated 14<sup>th</sup> September 2006 (and subsequent amendments to the same) issued by the Ministry of Environment and Forests& Climate Change (MoEF& CC), by providing required information with regards to the project as mentioned in the Terms of Reference issued by the SEIAA, Gujarat.

### **10.3 ENVIRONMENT, HEALTH AND SAFETY (EHS)**

It is of utmost concern for a company to conduct its business in a manner that will promote the protection of the occupational Health & Safety; Welfare of its employees and others involved in or affected by its business operations and address the environmental concerns regarding sustainable development.

To be a responsive and responsible corporate citizen, we shall strive to achieve an organizational culture of safety, health and environmental excellence.

As an integral part of the company's business performance, the company shall declare full commitment to achieve high levels of performance in Health, Safety and Environment.

### **10.4 ENVIRONMENTAL MANAGEMENT PLAN**

An Environmental Management Plan (EMP) is prepared to mitigate and manage various environmental impacts identified. The EMP presents the project specific guidelines on: Environmental management strategies.

Specialized engineering construction procedures in relation to environmental guidelines of the country.

- Spill prevention and control
- Management of wastes and hazardous chemicals
- Air, water and soil quality protection
- Noise control
- Soil erosion control and slope stabilization
- Vegetation, wildlife and habitat protection
- Socio-economic and welfare considerations
- Risk and disaster management plan
- To prepare a checklist for statutory compliance

Due to its complexity and implications, the implementation of the EMP must be executed utilizing a specific EMS framework. Once an EMP has been approved, it should provide the basis for environmental considerations of all the activities carried out on the site by the appointed personnel.

With respect to the various environmental impacts identified during the EIA stage, mitigation measures to prevent or minimize the impacts are suggested for all the environmental components.

The environmental management plan for the proposed project aims to mitigate the potentially detrimental impacts on the environment, both during construction and operation phases of the project. It is also

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Necessary that continued compliance with existing environmental regulations is ensured. The construction and associated activities have been planned so as to minimize impacts on the physical, biological and socio-economic-cultural environments. Even though it would be naive to expect that all detrimental impacts can be avoided, it is apparent that most of the impacts will be localized and temporary in nature.

This is a new synthetic organic manufacturing unit in Panoli. Environmental impacts during the construction phase can be attributed to the site preparation, excavation of trenches, erection & mechanical fabrication, construction activities, transportation etc. and provision of civic amenities to the construction workforce. The potential for environmental impact during construction phase on most of the environmental components are temporary and the environment returns back to its previous status on completion of the construction. State of the art technology will be adopted for control of pollution during project execution phase, whenever and wherever applicable.

All construction activities generally cause disruptions to the pre project environmental quality. The following environmental protection measures should be incorporated as part of terms and conditions of contract for implementation by the contractor or the authority as appropriate. Recommendations made to minimize impacts during construction phase are delineated below:

### **10.4.1 CONSTRUCTION PHASE**

M/s.ShubhlaxmiPigments is located at plot no:-502, GIDC Estate Panoli, Ta- Ankleshwar,Dist:-Bharuch. However M/s.Shubhlaxmi Pigments Pvt. Ltd. will ensure to keep the pollution potential level in the construction phase to a minimum. The task will be assigned to security people and supervised by qualified supervisor. The control measures proposed by the unit to minimize the pollution during construction phase are as under Table no.10.1.

**TABLE: 10.1**

#### **CONTROL MEASURES FOR CONSTRUCTION PHASE**

<b>Sr. No.</b>	<b>Source</b>	<b>Waste type/ Pollution</b>	<b>Control measures</b>
<b>(A) Site Preparation</b>			
1.	Uplift of dust during the excavation, leveling operations etc.	Dust	Sprinkling of water over land, and provision of enclosure.
<b>(B) Sanitation</b>			
1.	Sanitation facilities.	Sewage	Sewage will be sent to Soak pit.
<b>(C) Noise</b>			
1.	Movement of vehicles like truck, Dozer, Cranes	Noise pollution	Restrict movement of vehicle between 10 p.m. to 6 a.m.

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Sr. No.	Source	Waste type/ Pollution	Control measures
			All vehicles will be maintained in well condition.
2.	Construction activity	Noise pollution	Engineering control, Provide noise protection devices like earmuffs, ear plug to worker, Rotation of work to minimize exposure.
<b>(D) Wastes from construction equipment</b>			
1.	Dozer, Cranes	Waste oil	Avoid spillage, proper storage, disposal by selling to repressor.
2.	Painting	Empty containers of paints and oils	Proper storage, disposal by selling to authorized buyers/incineration.
3.	Construction	Construction waste	Use for leveling purpose within premises

### **10.4.2 OPERATIONAL PHASE**

M/s. Shubhlaxmi Pigments has proposed Environment Management Plan to keep the pollution potential to a minimum level in the operation phase.

### **10.4.3 AIR ENVIRONMENT**

#### **Flue Gas Emission:**

Flue gas emission will be from 2 stack of HAG, 1 Stack Boiler & 1 stack of DG Set.Boiler and HAG(For Tray Dryer) will be based on agro waste and briquette & HAG (For Spin Flash Dryer) will be based on Natural Gas. Unit has proposed to install Bag Filter as an APCM to curb the flue gas emission.

#### **Process Gas Emission:**

There will be a process gas emission of PM from Spin Flash Dryer.

#### **Fugitive Emission:**

There will be fugitive emission of VOC during material handling, transferring and at storage area.

The control measures of flue gas emission and process emission are as under.

#### **10.4.4 WATER ENVIRONMENT**

Total water requirement of the unit will be 88 KL/Day. Unit will use only 53.2 KL/Day fresh water. GIDC water will be a source of fresh water. 34.8 KL/Day water will recycle.

Water conservation measures will be taken to explore possibility of reuse/recycle of water. Process optimization, reduction, reuse and recycle of water will be carried out to minimize the impact. Record of water consumption will be maintained.

Pumps and reactors will be having mechanical seal, so there will be no leakages. The unit will provide connection system for possibility of leakages. Leakages will be collected in a small pit which will carry the leakages to effluent plant. Possible spillages will be from vessel washing, transfer of liquids, to avoid the spillage fixed pipeline will be provided. Vessel washing will be collected to effluent treatment plant. The unit will provide dedicated area made with RCC and HDPE lining so that the washing can be directly sent to ETP plant.

28.5 KLD effluent treated into the primary Effluent Treatment Plant. 28.3 KLD send to PETL and generated sludge will be send to the TSDF site.

#### **10.4.5 NOISE ENVIRONMENT**

The sources of noise generation will be transportation activities, D.G. set, cooling tower, plant machinery etc. The unit will take following measures to control noise pollution.

**TABLE: 10.2**

#### **DETAILS OF CONTROL MEASURES FOR NOISE POLLUTION**

<b>Sr. No.</b>	<b>Source</b>	<b>Waste type/ pollution</b>	<b>Control measures</b>
1.	Transportation activities	Noise pollution	Green belt, Restriction on transportation between 08 p.m. to 9 a.m., Maintain vehicle in good condition.
2.	D.G.Set	Noise pollution	Acoustic enclose, Engineering control, Provision of PPE, Green belt,
3.	Plant/process area	Noise pollution	Maintain equipment & machines in good working condition. Isolated noisy area from other area by distance and if it is not possible than by physical separation or noise proof valve. Provide silencer to safety valve, relief valve

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			Provision of PPE, Green belt, Record noise level monitoring of different places within and outside premises, Periodically Audio metric test, Rotation of work to minimize exposure.
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### **10.4.6 LAND ENVIRONMENT**

The management plan for this component of environment lays emphasis on development of greenbelt comprising of appropriately selected species of shrubs and trees. It is recommended that plantation be made on sites, road sides, around waste treatment units. Such a development of greenbelt and plantation of shrubs and trees will not only significantly reduce or mitigate adverse impacts due to aerosols and gaseous pollutants, noise, odour and nuisance etc., but also serve as shelter belts for avifauna, stabilize and improve soil permeability and aesthetic environment.

#### **10.4.6.1 RAW MATERIAL & PRODUCT STORAGE AREA**

The unit will take following control measures to prevent land contamination from raw material storage and handling.

- Raw materials will be stored in M.S tanks, S.S tank and HDPE Carboys, HDPE bags, etc in separate storage room.
- Separate collection system is provided for collection of spillage material. Impervious layer, RCC roads and flooring is provided to area, where the chemical storage and handling activities is involved.
- Hazardous flammable substances are separately stored within premises. Solvent transfer will be done by pumps. Reactor & solvent handling pump have mechanical seal.
- The acid tanks will be provided with dyke wall to control spread of leakages.

### **10.4.7 GREEN BELT DEVELOPMENT**

The main objective of green belt is to provide a barrier between source of pollution and surrounding area by filtering the air particulate and interacting with gaseous pollutants before it reaches to the ground. The unit will plant trees like Babool (Vachellianilotica), Peepal (Ficus religiosa), Neem (Azadirachta indica), Asopalav (Polyalthia longifolia), Banyan, Kapok (Ceiba pentandra), Nilgiri (Eucalyptus), Gulmohar (Delonix regia), Pelta Farm, Kashid.

**TABLE 10.3**

**BUDGET FOR GREENBELT DEVELOPMENT**

<b>Work or Activity</b>	<b>1<sup>st</sup> Year</b>	<b>2<sup>nd</sup> Year</b>	<b>3<sup>rd</sup> Year</b>	<b>4<sup>th</sup> Year</b>	<b>5<sup>th</sup> Year</b>	<b>Total</b>
<b>Plantation Outside the Area</b>						
Plantation Required	150	130	100	70	50	500 Trees
Amount (INR)	1,50,000	1,30,000	1,00,000	70,000	50,000	5,00,000

**Preparation of Greenbelt Plan**

The proposed greenbelt development should be of a suitable width along the periphery of project site area including unit complex, space between the units located within the project, along the roads, storage areas, loading / unloading areas of products etc.

**Criteria for Selection of Species for Greenbelt**

The plant species suitable for green belt development should be selected based on characteristics.

- It should have thick canopy cover
- They should be perennial and evergreen
- They should have high sink potential for pollutants
- They should be efficient in absorbing pollutants if any without significantly affecting their growth.

**Guidelines for Plantation**

The plant species identified for greenbelt development should be planted using pitting technique. The pit size should be either 45 cm × 45 cm × 45 cm or 60 cm × 60 cm × 60 cm. bigger pit size is prepared on marginal and poor quality soil. Soil used for filling the pit should be mixed with well decomposed farm yard manure for 45cm × 45 cm × 45 cm and 60 cm × 60 cm × 60 cm size pits respectively. The filling of soil should be completed at least 5-10 days before actual plantation. Healthy sapling of identified species should be planted in each pit.

**Roadside Plantation**

Roadside plantation plays a very important role for greening the area, increasing the shady area, increasing aesthetic value and for eco-development of the area. The approach roads to project site will be planted with flowering trees. Trees should be planted to increase aesthetic value as well as shady area along the roads.

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Each plant shows different air pollution tolerance level depending upon number of factors. The trees should be tolerant to air pollutants present in the area & should be able to grow and thrive on soil of the area, be evergreen, inhabitant, having minimum of leaf fall. The trees should be tall in peripheral curtain plantation and with large and spreading canopy in primary and secondary attenuation zone. It is also recommended to plant few trees, which are sensitive to air pollution as air pollution indicator.

### **10.4.8VEHICULAR POLLUTION CONTROL**

- All vehicles will be maintained in well condition by regular preventive maintenance to reduce the exhaust level.
- Drivers of all vehicles used in the transportation will be trained in transportation of Hazardous chemicals to prevent any accident. Fitness and training test certificate approved by R.T.O to be maintained on the vehicle at all times to ensure transport worthiness.

### **10.4.9SAFETY MEASURES TO PREVENT THE OCCUPATIONAL HEALTH HAZARDS**

- All reasonably practical measures will be adopted by the unit to minimize the risk of accidents within a chemical manufacturing unit
- All building plans and installations will be as per relevant laws and approved by competent authority
- Training is imparted to all workers for all the hazardous process operations within the plant and will be supervised by experienced supervisors
- Suitable personnel protective equipment and fire extinguishers at strategic locations and suitable personal protective equipment will be provided
- Flame proof electrical fittings, flame arrestors etc will be installed
- All the raw materials & solvents will be stored in designated storage area equipped with necessary safety features.
- Physical and chemical properties of raw materials and products as MSDS are provided as soft copy in CD.
- The solvent storage area will be restricted for unauthorized persons. Proper earthing will be provided in all electrical equipment whenever solvent handling is done. Flame arrester cum breather valve and flame proof fitting will be provided at tank farm.
- Periodic inspection & testing of pressure vessels, equipment, and machineries will be done.
- Good housekeeping will be ensured within the factory premises

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- All designated staff & workers will be trained for the firefighting, work permit system, first aid and safe handballing of hazardous chemicals.
- Incident/accident reporting system will be developed and all the employees are made aware for the same.
- Suitable notices/boards will be displayed at designated locations indicating appropriate hazard warnings.
- Antidotes as well as MSDS for all the chemicals will be made available within the factory premises.
- Pre-employment medical checkup at the time of employment will be carried out. In order to safe guard the health of the employees, all the employees undergo periodic health checkup at every six month.

### **10.4.10 RAIN WATER HARVESTING SCHEME**

Rainwater harvesting is a mechanism involved in collecting, storing and using rainwater when it is most needed. A rainwater harvesting system comprises of various stages – transporting rain water through pipes or drains, filtration, and storage in tanks for reuse or recharge. There are five components in a rainwater harvesting system namely catchment, conveyance, filtration, storage and recharge.

Rain water harvesting will be carried out to improve groundwater condition in the surrounding area.

Unit will harvest of rain water system at the out the side of the premises.

#### **Advantages of Rain Water Harvesting**

There are various advantages of Rain Water recharging from which some of those are listed below:

- Prevent evaporation and runoff of rain water and convey it to recharge groundwater especially in such areas where runoff is very high.
- Solution to water scarcity problems.
- Effective rise in ground water levels.
- It's economical and energy saving as it prevents extraction of water from depleting ground water table.
- Easy operation and maintenance.

#### **Design of Rain Water Harvesting**

- Quantity of Rain water collected depends upon:
  - (a) Average rainfall intensity (b) Catchment area (c) Run-off coefficient.

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- The rain water from the Roof tops, Paved and Green Area will be collected through PVC pipes and then transferred to the proposed rainwater harvesting pits. Design calculations for these pits are discussed in subsequent section.
- Based on the long term IMD Data for Bharuch District
- Annual Rainfall intensity = 1165 mm (1.165 m)
- It will be collected in intermediate tank and stored in raw water tank for further usage.

### **10.4.11 STORM WATER MANAGEMENT**

- The drains for storm water will be kept clean and dry in summer and winter. The storm water drains will be connected to holding tank. The rain water of the premises will be collected in this holding tank through storm water drains. The collected water will be analyzed for any contamination of pollutants for 1st and 2nd rain during monsoon. If analysis indicates any contamination, the collected water will be diverted to ETP plant. In case of no contamination, the collected water will be used in cooling tower and other applications.

## **10.5 ADDITIONAL MITIGATION MEASURES**

In addition to the above suggested measures for management of air, water, soil, etc following additional measures shall be provided.

### **10.5.1 ENERGY CONSERVATION PROGRAMME**

Energy conservation measures are often the easiest, quickest and cheapest way to reduce costs and be environmentally pro-active. Energy conservation will be one of the focuses during planning and operation stages. The conservation efforts would consist of the following:

#### **a. Architectural design**

- Public areas will be cooled by natural ventilation as opposed to air-conditioning.
- Maximize the use of natural lighting through design.

#### **b. Energy Saving Practices**

- Purchase of energy efficient appliances.
- Reducing energy consumption by installing Solar Panel in administrative office in near future.
- Constant monitoring of energy consumption and defining targets for energy conservation.
- Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort levels.
- Economizers will be provided to utilize heat.

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- Condensate will be recovered and will send back to boiler.
- Proper temperature controls will be provided to reduce load on heating systems.
- Proper load factor will be maintained by the company.
- Company will adopt good maintenance practices and will maintain good housekeeping which will help in better illumination levels with least number of fixtures.
- On most of roofs transparent acrylic sheets will be provided to use day light and to stop use of lights during day time.
- LED lamps will be provided.
- To the extent possible and technically feasible, energy efficient equipment will be selected.
- Gravity flow will be preferred wherever possible to save pumping energy.
- Recycling of condensate water will be done.
- Variable frequency drive motors will be used. Energy efficient motors will be used.

### **c. Behavioral change on consumption**

- Awareness on energy conservation.
- Training to staffs on methods of energy conservation.

### **10.5.2 WATER CONSERVATION PROGRAMME**

Unit will reuse 34.8 KLD recycle water for industrial purpose. However, water conservation shall be practiced to the extent possible by use of reclaimed water for all non-potable application like gardening, lawns an, flushing toilets etc.

#### **(I) Minimizing Water Consumption**

A combination of water saving appliances and water management measures will be planned in the plant. The message of water conservation shall be spread to all occupiers on site by way of awareness campaigns and circulars. Specific measures that will be implemented include the following:

#### **(II) Management Measures**

- Reduce toilet cistern volume in single flush models.
- Promote awareness on water conservation and reducing water wastage.
- Quick fixing of leaking taps pipes and toilet cisterns; Sweep with a broom and pan where possible, rather than hose down external areas.

Minimize water use in gardens by the following measures:

- Drip irrigation system shall be used for the lawns and other green area which can save water between 15-40% of the water use, compared with other watering techniques.
- Plants with similar water requirements shall be grouped on common zones to match precipitation heads and emitters.
- Use of low-volume, low-angle sprinklers for lawn areas.
- Select controllers with adjustable watering schedules and moisture sensors to account for seasonal variations and calibrate them during commissioning.
- Selecting a drought resistant grass.

### **(III) Water Saving Investments**

- Reduce water delivery in taps and showers, through the installation of low flow devices or aerators on showerheads.
- Spring-loaded taps;
- Installation of sub-meters on key areas of water use – monitoring water use is a precursor for management and Water Efficient Plumbing Fixtures

### **10.5.3 MANAGEMENT OF TRAFFIC**

Parking space for vehicles will be provided for loading and unloading products. Adequate roads to cater to two way traffic and to meet the fire regulations are planned in the complex.

- One gate for entry and exit will be provided with 7m wide approach roads.
- Convex mirror placed along all critical points for visibility.
- Adequate Ramp Feeds will be provided.
- Zebra crossings shall be provided on the existing road for pedestrian access.
- Entry and exit shall be managed by security personnel who will also regulate traffic.
- Thus the traffic management will be easily and smoothly monitored without any hindrances to the regular flow of traffic on the main road.

### **10.5.4 SAFETY MEASURES TO PREVENT THE OCCUPATIONAL HEALTH HAZARDS**

- All reasonably practical measures will be adopted by the unit to minimize the risk of accidents within a chemical manufacturing unit.

## **EIA REPORT OF M/s. SHUBLAXMI PIGMENTS,GIDC INDUSTRIAL ESTATE,PANOLI**

- All building plans and installations will be as per relevant laws and will be approved by competent authority
- Training will be imparted to all workers for all the hazardous process operations within the plant and will be supervised by experienced supervisors
- Suitable personnel protective equipment and fire extinguishers at strategic locations and suitable personal protective equipment will be provided
- Flame proof electrical fittings, flame arrestors etc will be installed
- All the raw materials will be stored in designated storage area equipped with necessary safety features
- Periodic inspection & testing of pressure vessels, equipment, and machineries will be done.
- Good housekeeping will be ensured within the factory premises
- All designated staff & workers will be trained for the fire-fighting, work permit system, first aid and safe handballing of hazardous chemicals.
- Incident/accident reporting system will be developed and all the employees will be made aware for the same.
- Suitable notices/boards will be displayed at designated locations indicating appropriate hazard warnings.
- Antidotes as well as MSDS for all the chemicals will be made available within the factory premises.
- Pre-employment medical checkup at the time of employment will be carried out. In order to safe guard the health of the employees, all the employees undergo periodic health checkup at every six month.

### **10.5.5 SOCIAL WELFARE MEASURES FOR FUTURE PLANNING**

Providing materials and monetary aid to schools, primary health centers, hospitals, sports, clubs and places of worship.

- Planning to create residential, medical, educational and recreational facilities for our employees.
- Rural Development Programmers for up liftmen of people in the form of dead diction, self-help, vocational training and guidance etc.
- Contributed in any welfare society.
- Scholarship for girls in Schools.
- Training local unprivileged boys and girls for Housekeeping, Laundry etc and provide employment.
- Adoption of Local School / Slum for up liftmen of locals.

## **10.6 FINDINGS**

From the foregoing sections it is clear that environmental considerations are foremost during development of the project, at all the following levels:

(1) Project sitting (2) Planning and design (3)Project construction (4) Post project operations

The following findings are to be mentioned:

- The Project will have no significant environmental impacts during construction and operations.
- Project risks will be minimized through rigorous enforcement of national design and operational standards.
- The environmental and safety aspects of the Project are straightforward and well understood.
- A detailed environmental impact study is carried out and EMP. No further studies are required to elaborate these subjects.

The EMP also provides for establishing, and maintaining a system of environmental monitoring and auditing to ensure strict compliance of all the measures identified in the EMP, and minimize adverse environmental and social impacts.

## **10.7 LEAK DETECTION AND REPAIR (LDAR) PROGRAM**

M/s. Shubhlaxmi Pigments will follow LDAR program as mentioned below:

**TABLE: 10.4**

### **LDAR PROGRAM**

<b>Sr. No.</b>	<b>Component</b>	<b>Frequency of monitoring</b>	<b>Repair Schedule</b>
1	Valves/Flanges	Quarterly (semi-annual after two consecutive periods with <2% leaks and annual after 5 periods with <2% leaks)	Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak for general organic chemicals. In case of methanol or toluene, the leak shall be attended immediately for repair.
2	Pump seals	Quarterly	-do-
3	Compressor seals	Quarterly	-do-
4	Pressure relief devices	Quarterly	-do-

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5	Pressure relief devices (after venting)	Within 24 hours	-do-
6	Heat exchangers	Quarterly	-do-
7	Process drains	Annually	-do-
8	Components that are difficult to monitor	Annually	-do-
9	Pump seals with visible liquid dripping	Weekly	Immediately
10	Any component with visible leaks	Weekly	Immediately
11	Any component after repair/replacement	Within a week	--

### **10.8 CONCLUSION**

The project can cause minor impacts only during construction phase due to the various activities involved during that phase. However, strict adherence to the various mitigation measures as identified under the EMP, strengthened by adequate environmental monitoring using best available technology (BAT) and auditing and good construction practices, including the special construction methods as prescribed, will go a long way in effectively reducing the impacts as to negligible levels.

During operation phase of the project, none of the routine activities will cause any noticeable impact on any component of the environment, including the socio-economic component. Provision of green belt and energy conservation shall further facilitate in overall scenario management of Environment.

Thus, it can be concluded on a positive note that after the implementation of the mitigation measures and Environmental Management Plan, the proposed project shall have negligible impact on environment and will benefit the local people and economy.

## **CHAPTER-11**

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### **EXECUTIVE SUMMARY & CONCLUSION**

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#### **11.1 INTRODUCTION**

M/s.Shubhlaxmi Pigments is located at plot no:-502, GIDC Estate Panoli, Ta:-Ankleshwar, Dist:-Bharuch. As per the EIA Notification, September 2006, the project falls under category 5(f) of the schedule.

##### **11.1.1 LOCATION**

M/s. Shubhlaxmi Pigments is located at plot no:-502, GIDC Estate Panoli, Ta :-Ankleshwar, Dist:-Bharuch.

##### **11.1.2 INVESTMENT**

The total investment for proposed new project will be in plant and machinery, building and environment protection and safety. The cost of proposed new project will be Rs. 110.7lakhs.

##### **11.1.3 INFRASTRUCTURE FACILITIES**

The plant is located in Panoli, which is well-developed industrial zone. Panoli is having all essential facilities such as internal roads, arrangement for supply of water and power to industries etc.

#### **11.2 PROJECT DESCRIPTION**

##### **11.2.1 NEED FOR THE PROJECT**

Proponents have been engaging in the manufacturing of Synthetic Organic Chemicals. It will be a dedicated facility catering to exports from India. The product will be supplied to global multinational company for their growing demand for a supply term of 20 years. Global Customer had evaluated many suppliers across different countries and has finally decided to partner. This is first step in building a long term relationship with a Global customer which will set a base for future long term projects.

##### **11.2.2 PRODUCTION AND RAW MATERIAL**

Total production capacity of the unit will be 90 MT/Month. The unit has proposed manufacturing of synthetic organic chemical as a product.

##### **11.2.3 RESOURCE REQUIREMENT**

###### **LAND**

The total plot area of the unit is 1575 sq. m. The green belt area will be approx. 523 sq. m.

###### **WATER REQUIREMENT**

Unit has proposed to manufacture 90 MT/Month Synthetic Organic Chemical.Total water requirement will be 88 KLD. Unit will use only 53.2 KLD fresh water& 34.8 KLD recycle water. . Unit has obtained permission from GIDC. Water Permission letter is attached as ANNEXURE-V.

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Total 28.5 KLD water will be treated into ETP. In which 28.3 KLD effluent sent to the M/s. PETL. And generated sludge will be sent to the TSDF site.

Membership certificate of M/s. PETL is attached as **ANNEXURE-VII**.

### **ENERGY REQUIREMENT**

The power requirement for proposed project will be 325 HP.

### **UTILITIES**

The proposed utilities like HAG, cooling tower, air dryer, air compressor etc. are adequate for proposed project.

### **11.2.4 POLLUTION POTENTIAL SCENARIO**

#### **WASTE WATER MANAGEMENT**

The effluent generated from the various area will be:

- Process Waste water
- Washing from plant area.
- Utility Blow downs- Boiler, Cooling Tower

Effluent from manufacturing process, Utility, Equipment Washing, will be collected in collection cum neutralization tank. Effluent will be neutralized by using of lime as per requirement till required pH range obtained in neutralization tank. Then, effluent will be passing through to filter press. Filtrate will be collected in collection tank and subjected to M/s PETL-common effluent treatment plant. And Generated sludge from filter press will be dried by using of sludge drying bed and subjected to M/s. BEIL, TSDF site.

M/s. BEIL, TSDF site & M/s. PETL membership certificate is attached as **ANNEXURE-VI & ANNEXURE-VII**.

### **GASEOUS EMISSION**

#### **FLUE GAS EMISSION**

Unit will install HAG for Tray Dryer (50000 Kcal/Hr.) & HAG for SFD (200000 Kcal/Hr.) based on Agro waste/ Briquette & Natural Gas, Boiler will install for (600 Kg/H.) and D.G. Set (50 KVA). Unit will install Bag Filter as an APCB to curb the flue gas emission from HAG.

#### **PROCESS GAS EMISSION**

PM will be a possible source of process gas emission. Therefore, Unit will install Spin Flash Dryer.

### **11.3 BASELINE ENVIRONMENT STATUS**

#### **11.3.1 STUDY AREA INCLUDED IN ENVIRONMENTAL SETTING**

Studies were carried out in about 10 km radial distance from the project site with respect to sampling and analysis of air quality, water quality, noise level and soil quality. The base line data were monitored for study period of March-2018 to May-2018.

#### **11.3.2 CLIMATE OF THE STUDY AREA**

##### **Relative humidity**

The maximum relative humidity reported around 79% and minimum relative humidity is reported around 4% during period of March-2018 to May-2018.

##### **Temperature**

The maximum temperature reported is 42<sup>0</sup>C and the minimum temperature reported is 25<sup>0</sup>C during period of March-2018 to May-2018.

##### **Rainfall**

There was no rain fall in March-2018 to May-2018.

#### **11.3.3 AMBIENT AIR QUALITY**

Based on data obtained, it could be stated that, during the study period the values of PM<sub>10</sub> at monitored locations is ranged between 61-90 µg/m<sup>3</sup> while the values PM<sub>2.5</sub> fluctuates in the range of 30-46 µg/m<sup>3</sup>. The values of SO<sub>2</sub> and NO<sub>x</sub> were observed to be in the range of 22-40 µg/m<sup>3</sup> and 32-48 µg/m<sup>3</sup> respectively. The values of VOC were observed to be in the range of 1.3-3.9 ppm mg/m<sup>3</sup> respectively & the values of CO were observed to be in the range 0.2 - 0.7

The average concentration of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC and CO are within prescribed limit at all locations.

#### **11.3.4 WATER QUALITY**

It was observed from the analysis report that:

- Though the area is found to be of rocky terrain but the TDS content of the sample is observed to be maximum up to 3850 mg/l in Bhadi which is little bit aboveon acceptable limit. Other village water sample are having TDS below acceptable limit.

Analysis of collected samples reveals that rest of the parameters satisfy the permissible limits as per IS 10500:2012 specified for drinking water and hence are suitable for drinking, however it is suggested that the water may disinfected by boiling or by use of chlorine tablets before use.

#### **11.3.5 NOISE ENVIRONMENT**

The noise levels during daytime varied from 48-53 dB (A) Leqin the study area. The noise level in the study area is within the permissible Limits as per Noise rules 2000.

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The night time noise level in the study area is in the range of 40-45dB (A) Leq. The night time noise was also within stipulated standards of CPCB.

### **11.3.6 SOIL**

The composite soil sample was collected from project site and the villages within 10 km radius. The samples were collected to determine physical and chemical characteristics of soil.

### **11.3.7 LAND USE OF THE STUDY AREA**

As per land use study, major land use of study area of 10 km buffer area is covered by 69.76 % of Water body, 9.34% of open/barren land, 3.46% of agricultural land, 1.81% of fallow Land, 1.42% of industrial area, 0.35% of human settlement area.

### **11.3.8 BIOLOGICAL ENVIRONMENT**

The study of the environmental components like flora and fauna is required to assess the biological diversity of the region. Flora and fauna can be used for biological surveillance in assessing the environmental status. The ecological interpretation is based on secondary sources of information.

Water is the basic and essential resource for the survival of flora and fauna. The flora being the primary producer influences the fauna of the region. The characteristic flora existing in a region depends upon the existing conditions such as intensity of sunlight, type of soil, quality of air, including the quality and quantity of water available, etc.

## **11.4 IDENTIFICATION & ASSESSMENT OF IMPACT**

### **11.4.1 WATER ENVIRONMENT**

Unit has proposed to manufacture 90 MT/Month Synthetic Organic Chemicals. Total water requirement will be 88 KLD. Unit will use only 53.2 KLD fresh water. Unit has obtained permission from GIDC. Permission letter is attached as **ANNEXURE-VI**.

Total 28.5 KLD Effluent will be sent to the M/s. PETL.

The effluent generated from the various area will be:

- Process Waste water
- Washing from plant area.
- Utility Blow downs- Boiler, Cooling Tower

Effluent from manufacturing process, Utility, Equipment Washing, will be collected in collection cum neutralization tank. Effluent will be neutralized by using of lime as per requirement till required pH range obtained in neutralization tank. Then, effluent will be passing through to filter press. Filtrate will be collected in collection tank and subjected to M/s PETL-common effluent treatment plant. And Generated sludge from filter press will be dried by using of sludge drying bed and subjected to TSDF site.

M/s.BEIL. TSDF site&M/s PETL-common effluent treatment plant membership certificate is attached as **ANNEXURE-VI&ANNEXURE-VII**.

Waste streams generated from spillage, leakages, vessel washing, used container washing etc. will be collected in tank and send to effluent treatment plant.

#### **11.4.2 AIR ENVIRONMENT**

The unit will provide adequate stack height for Boiler, Hot Air Generator and acoustic enclosure for one stack connected to DG sets.

#### **11.4.3 NOISE ENVIRONMENT**

Adequate noise control measures such as mufflers, silencers at the air inlet/outlet, anti-vibration pad for equipment with high vibration etc. shall be provided. Housing/casing shall be provided for all noise generating machines. Job rotation will reduce exposure to some extent. Moreover, PPE like earmuff and ear plugs will be provided to the operators/worker exposed to high noise. The proposed green belt will further be helpful in reducing the ambient noise level.

#### **11.4.4 LAND ENVIRONMENT**

If the hazardous wastes are not handled properly, it can pose danger of land contamination and can affect land system adversely. Transportation is one of the most important areas of concern associated with handling Hazardous Waste, because the packaging and method of transporting of Hazardous waste will prevent the likelihood that an accident or spill would occur. Separate collection system will be provided for collection of spillage material. Impervious layer, RCC roads and flooring will be provided to area, where the chemical storage and handling activities will be involved. Hence, there will be no significant adverse impact on land environment.

#### **11.4.5 ECOLOGICAL ENVIRONMENT**

The project site is at a far distance from the forest land, wild life sanctuaries and national parks. There will be not significant impact on crops & vegetation as the proposed APCM will take care of flue gas emission and process emission.

#### **11.4.6 SOCIO-ECONOMIC IMPACT**

This will be a beneficial impact on the local socio-economic environment as increase in demand for essential utilities and employment during both construction and operational phase.

#### **11.4.7 INFRA STRUCTURE AND SERVICES**

This will be a beneficial impact on the local infrastructure services e.g. roads, post and telegraph, communication, medical facilities, education, housing will be improved in surrounding area.

### **11.5 ENVIRONMENT MONITORING PROGRAM**

The unit will carry out quarterly monitoring of ambient air, process emission, fugitive emission, Noise, waste water and yearly monitoring of hazardous waste by external approved monitoring agency. Waste water will be monitored daily by in house facility for pH and COD.

### **11.6 RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN**

The chapter 7 includes objectives and methodology of risk assessment, details of storage of finish products and raw materials, details of safety measures, identification of hazards, consequence analysis, recommendations on the basis of risk assessment done, safety aspects to reduce risk in storage area and disaster management plan. Consequences analysis covers major five types of exposures to hazardous effect. Flash fire and explosions, Toxic effect from toxic materials or toxic combustion product.

### **11.7 PROJECT BENEFITS**

The unit has planned to spend Rs. 2.21 lakhs for period of five year towards CER activity. There will be employment opportunity for local people during construction and operation phase. The CER activity will be carried within 10 km affected villages.

### **11.8 ENVIRONMENTAL MANAGEMENT PLAN**

#### **11.8.1 ENVIRONMENT MANAGEMENT CELL**

There shall be EHS department for overseeing all environment and safety responses to ensure the implementation of EMP mentioned during construction and operation phase including findings / recommendations of third party audits and monitoring results as mentioned in the EMP.

At least one permanent employee with adequate educational and professional qualification and experience to discharge responsibilities related to environmental management including statutory compliance, pollution prevention, environmental monitoring will be employed by company and will directly report to the Director of the organization operations.

#### **11.8.2 ENVIRONMENTAL MANAGEMENT PLAN FOR UNIT**

##### **11.8.2.1 ENVIRONMENT MANAGEMENT PLAN FOR CONSTRUCTION PHASE**

During construction it is necessary to control uplift of dust during the excavation, leveling and transportation by spraying water over the paths, land and along the temporary roads. The workers involved in the construction will be provided proper sanitation facilities. The construction workers on

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site will be provided with necessary noise protection devices like earmuffs whenever they have to work near the noise generating equipment/sources. The vehicles will be maintained properly so as to minimize the emissions from exhaust. The empty containers of paints shall be sold to authorized buyers/incineration. The construction wastes shall be used for leveling purpose.

### **11.8.2.2 ENVIRONMENT MANAGEMENT PLAN FOR OPERATIONAL PHASE**

#### **WATER**

Unit has proposed to manufacture 90 MT/Month Synthetic Organic Chemicals.Total water requirement will be 88 KLD. Unit will use only 53.2 KLD fresh water. Unit has obtained permission from GIDC. Water Permission letter is attached as **ANNEXURE-V**.

The effluent generated from the various area will be:

- Process Waste water
- Washing from plant area.
- Utility Blow downs- Boiler, Cooling Tower

Effluent from manufacturing process, Utility, Equipment Washing, will be collected in collection cum neutralization tank. Effluent will be neutralized by using of lime as per requirement till required pH range obtained in neutralization tank. Then, effluent will be passing through to filter press. Filtrate will be collected in collection tank and subjected to M/s PETL-common effluent treatment plant. And Generated sludge from filter press will be dried by using of sludge drying bed and subjected to TSDF site.

M/s.BEIL TSDF site&M/s PETL-common effluent treatment plant membership certificate is attached as **ANNEXURE-VII & ANNEXURE-VI**.

#### **AIR ENVIRONMENT**

The unit will provide adequate stack height for Boiler, Hot Air Generator and acoustic enclosure for one stack connected to DG sets.

#### **NOISE**

Audio metric test should be conducted periodically for employees working close to the high noise sources. Adequate noise control measures such as mufflers, silencers at the air inlet/outlet, anti-vibration pad for equipment with high vibration, earmuff and ear plugs to the operators, etc. shall be provided. Rotation of work will minimize exposure.

#### **LAND**

Raw materials will be stored in separate storage area. All the raw effluent storage tanks will be covered with RCC slab. Separate collection system will be provided for collection of spillage material. Impervious layer, RCC roads and flooring will be provided to area, where the chemical storage and

handling activities will be involved. The acid tanks are provided with dyke wall to control spread of leakages.

### **GREEN BELT**

The plant layout has earmarked space for development of green belt. Unit will develop 523 sq.mt green belt area within premises and outside the plot area unit will develop green belt in 300 sq.mt area. Permission letter for the develop green belt on the outside area is attached as **ANNEXURE - XV**.

### **CLEANER PRODUCTION**

- The plant is itself a product of cleaner production technology.
- Continuous loop reactor instead of batch conventional reaction.

Further cleaner production techniques will be carried out after successful trial of plant.

### **BUDGETARY PROVISION PROPOSED FOR ENVIRONMENT POLLUTION CONTROL MEASURES**

The unit has proposed Rs. 110.7 Lakhs as capital cost and Rs. 47.90 Lakhs as recurring cost for environment pollution control measures.

### **11.9 HEALTH & SAFETY**

There will be provision of PPE, antidotes, periodic inspection & testing of pressure vessels, equipment, machineries, pre-employment medical checkup, periodic health checkup, training of firefighting, work permits system, first aid, safe handling of hazardous chemicals and integrating safety. Hazardous processes will be operated by trained workers and will be looked after by qualified & experienced supervisors

### **11.10 CONCLUSION**

It can be concluded on positive note that after implementation of proper mitigation measures and environment management plan this project will have insignificant impact on environment and economic.

## CHAPTER -12

**DISCLOSURE OF CONSULTANT ENGAGED**

**M/S. JYOTI OM CHEMICAL RESEARCH CENTRE PVT. LTD.** established in 1990 by woman entrepreneur Mrs. Hina C. Upasani, is well-equipped analytical laboratory for chemical analysis. It offers following services to various types of industries in general, and Chemical / Pharmaceutical, CETPS, solid waste sites, steel industries in particular.

The environment impact assessment report was carried out by the EIA team mentioned in table no. 12.1 with respective experience and qualification.

**TABLE 12.1****EIA TEAM MEMBER**

Sr. No.	Name of Member	Qualification	Experience
1.	Dr. C. B. Upasani	M.Sc.-Chemistry, Ph. D.-(Applied Chemistry), C.Chem.	38 years
2.	Mrs. Hina C. Upasani	M.Sc.-Chemistry, Diploma- Environment Management	37 Years
3.	Mr. Kamlesh Patel	B.Sc.-Chemistry, Diploma-Environment Management	30 year
4.	Mr. Krunal Prajapati	B.E.- Chemical	8 Years
5.	Ms. Prerna Shah	B.E.-Chemical, Certified Course of Industrial Environment Management	7 years
6.	Mr. Vikisha Patel	B.E.-Environment	6 Years
7.	Mr. Vikas Patel	B.E.-Environment	5 years
8.	Ms. Kashmir Shah	B.E.-Environment, Post Diploma in Industrial Safety	5 Years
9.	Mr. Anandkumar Pandey	B.E.-Environmental Science & Technology	4 Years
10.	Mr. Piyush Jamariya	B.E.- Chemical	4 Years
11.	Mr. Ramesh Tarbundiya	B.Sc. & M.Sc.- Biotechnology	4 Year
12.	Mr. Pranav Barad	B.E.- Environment	3 Years
13.	Ms. Riddhi Rathod	B.Sc. Chemistry	2 year
14.	Ms. Nimisha Rana	B.E.-Environment	2 year
15.	Mr. Bhavesh Vagh	B.E.-Environment	2 year
16.	Ms. Archana Vasava	M.sc Environment Science	2 year
17.	Ms. Artising Kushwaha	B.E.- Environment	4 Years

Our associate for Air Pollution Monitoring & Control, Air Quality modelling & prediction is Dr. Khyati Chanana, Enviro Technologies, Vadodara

**M/s. JYOTI OM CHEMICAL RESEARCH CENTRE PVT.LTD ANKLESHWAR.**

Our associate for safety & risk assessment for, Health & Hygiene, Risk & Hazard is Mr. Nilesh Jugal, Jogi Safetech, Surat.

### **12.1 SALIENT FEATURES**

- Spread over 600 m<sup>2</sup> plot with about 350 m<sup>2</sup> built up area.
- 1000sq.feet office space purchased at Vadodara for carrying out Climate Change work.
- Well-equipped laboratory with instrument room, conference room, wet Analysis Lab room, microbiology laboratory, Air Analysis Laboratory, Library & Computer room etc.
- Experienced and qualified staff.
- Approved Testing House by Industries Commissioner, Gujarat Government.
- Recognized as Environment Auditor by Gujarat Pollution Control Board, Gandhinagar.
- ISO 9001-2015 Certified by TUV Austria.
- NABL ISO/IEC 17025:2005 accreditation for water and Air parameters.
- Trained for Cleaner Production Assessment by Department of Environment and Forest, Government of Gujarat under World Bank capacity building programme.
- Computerized testing facility.
- Consultant to Gujarat Cleaner Production Centre, Gandhinagar for Cleaner Product Assessment.
- Service provider to UNIDO, Vienna, Austria for Clean Technology Assessment.
- Consultancy for EIA reports.

### **12.2 SERVICES PROVIDED BY THE CENTRE**

- Analysis of chemicals, dyes and dye intermediates
- Analysis of bulk drugs and intermediates
- Analysis of water and waste water
- Testing of environment samples – water, air, solid waste and soil
- Trace analysis of chemicals in waste water
- Environment auditing
- Cleaner Production Assessment
- Microbiological analysis of water

- Clean Technology Assessment
- Environment Technological Assessment (EnTA)
- Environment Impact Assessment
- Climate Change Consultancy
- Environment consultancy
- Environment clearance consultancy

### **12.3 OUTSTANDING ACHIVEMENTS**

- 1) Received **Gujarat Cleaner Production Award** for CP work at M/s. The Ankleshwar Poly Dye stuff Pvt. Ltd. on 5<sup>th</sup> June, 2006 from Chief Minister Mr. Narendra Modi.
- 2) Received **contract from UNIDO**, Vienna, for writing PDD and developing new methodology for sulphuric acid project.
- 3) Established demonstration unit **FIRST TIME** in INDIA of **Plasma based hazardous waste destruction facility** in collaboration with M/s. PEAT International, USA. Got approval from Central Pollution Control Board, New Delhi.
- 4) Engaged in creating **cluster base recycling unit of spent sulphuric acid** to pure sulphuric acid.
- 5) UNIDO, VIENNA has also assigned work to find out **alternative Air oxidation technology** in place of nitric acid oxidation technology to reduce Green House gas emission.
- 6) Clean Technology tie up with following companies: (i) for recovery of sulphuric acid from spent sulphuric acid – M/S Aker Kvaerner Chemetics, Canada. (ii) Destruction of hazardous waste using Plasma Technology, PEAT International, USA.  
  
(iii) Catalytic Air Oxidation in place of Nitric acid oxidation, M/S Buss Chem Tech AG, Switzerland  
(iv) CDM consultancy , BSS, Switzerland
- 7) Received **contract from UNIDO**, Vienna, for writing PDD and developing new methodology for Air Oxidation Technology.
- 8) The organization wrote two methodologies and Project Development Document (PDD) and submitted to UNFCCC. The working committee of UNFCCC approved the methodologies. They are for recovery of sulphuric acid from spent sulphuric acid and substitution of incineration with Plasma Technology.

#### **12.4 STATUS OF NABET ACCREDITATION**

The organization has obtained stay order from the Honorable High Court of Gujarat. The copy of the stay order is attached as **ANNEXURE-XIV**.

#### **12.5 DECLARATION BY CONSULTANT:**

An undertaking regarding the prescribed TOR have been complied with and data submitted in this EIA is factually correct is attached as **ANNEXURE-XVII**. This is as per office memorandum of MoEF and CC dated 04/08/2009.



STATE LEVEL ENVIRONMENT  
IMPACT ASSESSMENT  
AUTHORITY  
GUJARAT

S. M. SAIYAD, IFS  
MEMBER SECRETARY  
SEIAA (GUJARAT)

Government of Gujarat

By R P A D

No. SEIAA/GUJ/TOR/5(f)/1061/2019

Date: 17 JUL 2019

Time Limit

Sub: Terms Of Reference to M/s. Shubhlaxmi Pigments for setting up of 'Synthetic Organic Chemicals' manufacturing plant at Plot No. 502, GIDC Panoli, Bharuch.

Ref: Your Proposal No: SIA/GJ/IND2/35472/2019.


Dear Sir,

This has reference to your online application dated 13/05/2019 along with Form-I submitted to SEIAA. The project activity is covered in 5(f) and is of 'B' Category.

The SEAC, Gujarat vide their letter dated 24/06/2019 had recommended to the SEIAA, Gujarat, to grant the Terms Of Reference for the above-mentioned project based on its meeting held on 06/06/2019.

The proposal was considered by SEIAA, Gujarat in its meeting held on 26/06/2019 at Gandhinagar. After careful consideration, the SEIAA hereby accords Terms Of Reference to above project under the provisions of EIA Notification dated 14<sup>th</sup> September, 2006. The copy of Terms Of Reference is attached herewith.

With regards,  
Yours sincerely,

  
(S. M. SAIYAD)  
Member Secretary

Encl: As Above

Issued to:  
M/s. Shubhlaxmi Pigments  
Plot No. 502,  
GIDC Panoli,  
Bharuch



**Terms of Reference [ToR] to M/s. Shubhlaxmi Pigments for setting up of expansion in manufacturing plant of 'Synthetic Organic Chemicals' at Plot No: 502, GIDC Panoli, Bharuch.**

Category of the unit: 5(f)

Project status: Expansion

- I. This office has received an application vide their online proposal no. SIA/GJ/IND2/35472/2019 dated 13/05/2019 made by project proponent (PP) regarding grant of Terms of Reference [ToR] for preparation of EIA/EMP report.
- II. Project proponent (PP) has submitted Form-1, PFR and relevant details/information.
- III. This is existing unit and now proposes for expansion tabulated as below:

Sr. No.	Name of the Products	CAS no. /CI no.	Quantity MT/Month			End Use of the product
			Existing	Proposed	Total	
1.	Phthalocyanine Alpha Blue	147-14-8	5.0	25.0	30.0	Plastic, Ink, Rubber, Textile, Detergent
2.	Phthalocyanine Beta Blue	147-14-8	10.0	50.0	60.0	
<b>TOTAL</b>					<b>90.0</b>	

- IV. The project falls under Category B of project activity 5(f) as per the schedule of EIA Notification 2006.
- V. PP was called for presentation in the SEAC meeting dated 06/06/2019.
- VI. Salient features of the project including Water, Air and Hazardous waste management :

Sr. no.	Particulars	Details						
<b>A</b>	<b>Total cost of Proposed Project (Rs. in Crores):</b>	Existing: 0.109 Proposed: 0.998 Total: 1.107						
<b>B</b>	<b>Total Plot area (sq. meter)</b>	Existing: 1575 Sq. m. Proposed: 0 Sq. m. Total: 1575 Sq. m.						
	<b>Green belt area (sq. meter)</b>	Existing: 235 Sq. m. Proposed: 288 Sq. m. Total: 523 Sq. m.						
<b>C</b>	<b>Employment generation</b>	Existing: 10 Proposed: 20 Total: 30						
<b>D</b>	<b>Water</b>							
i	Source of Water Supply (GIDC Bore well, Surface water, Tanker supply etc...)	GIDC Panoli						
	Status of permission from the concern authority.	Unit will obtain membership.						
ii	<b>Water consumption (KLD)</b>							
		Sr. No.	Particulars	As per Consent AWH-66826	Actual Water Requirement	Proposed Water Requirement	Total after Expansion KLD	Remarks
	1.	Domestic	3.00	1	2	3.00	In existing, only 1 KLD (Existing Manpower:-10 Nos) water is required for domestic purpose. Unit is already having 3 KLD water consumption permission for domestic purpose. And the after expansion unit will require only 3 KLD domestic effluent (Manpower:-30 nos). So no need to take extra water for domestic activity. Unit will use 3 KLD fresh water for it.	
	2.	Gardening	0.0	--	1.5	1.5	Fresh Water:- 1.5 KLD	
	3.	<b>INDUSTRIAL</b>						



Process	12	12 (Fresh:- 6.3 + Recycled:- 5.7)	61 (Fresh 32.7 + Recycled :- 28.3)	73	As per consent unit is having permission to use 12 KLD fresh water in the manufacturing process. Unit is using only 6.3 KLD Fresh and 5.7 KLD recycled water. After proposed expansion total water requirement will be 73 KLD. Unit will use 39 KLD fresh water and 34 KLD internal recycled water.
washing	2.00	2.00	1	3	Fresh water:- 3 KLD
Boiler	1.5	0.5	2.2	2.7	Fresh water:- 2.7 KLD (Unit will use 2 KLD live steam)
Cooling	1.1	0.6	3.4	4	Fresh water:- 4 KLD
Other	--	--	0.8	0.8	Unit will use 0.5 KLD Boiler Blow Down water for Water scrubber of Boiler. From scrubber 0.2 KLD water will be getting evaporated. Remaining 0.3 KLD saturated scrubber solution will be used for Ash quenching.
<b>Industrial Total</b>	<b>16.6</b>	<b>15.1</b>	<b>68.4</b>	<b>83.5</b>	<b>48.7 KLD Fresh + 34.8 Recycle</b>
<b>Grand Total (1+2+3)</b>	<b>19.6</b>	<b>16.1</b>	<b>71.9</b>	<b>88</b>	<b>53.2 KLD Fresh + 34.8 Recycle</b>

1) Total water requirement for the project: 88.0 KLD

2) Quantity to be recycled: 34.8 KLD

3) Total fresh water requirement: 53.2 KLD

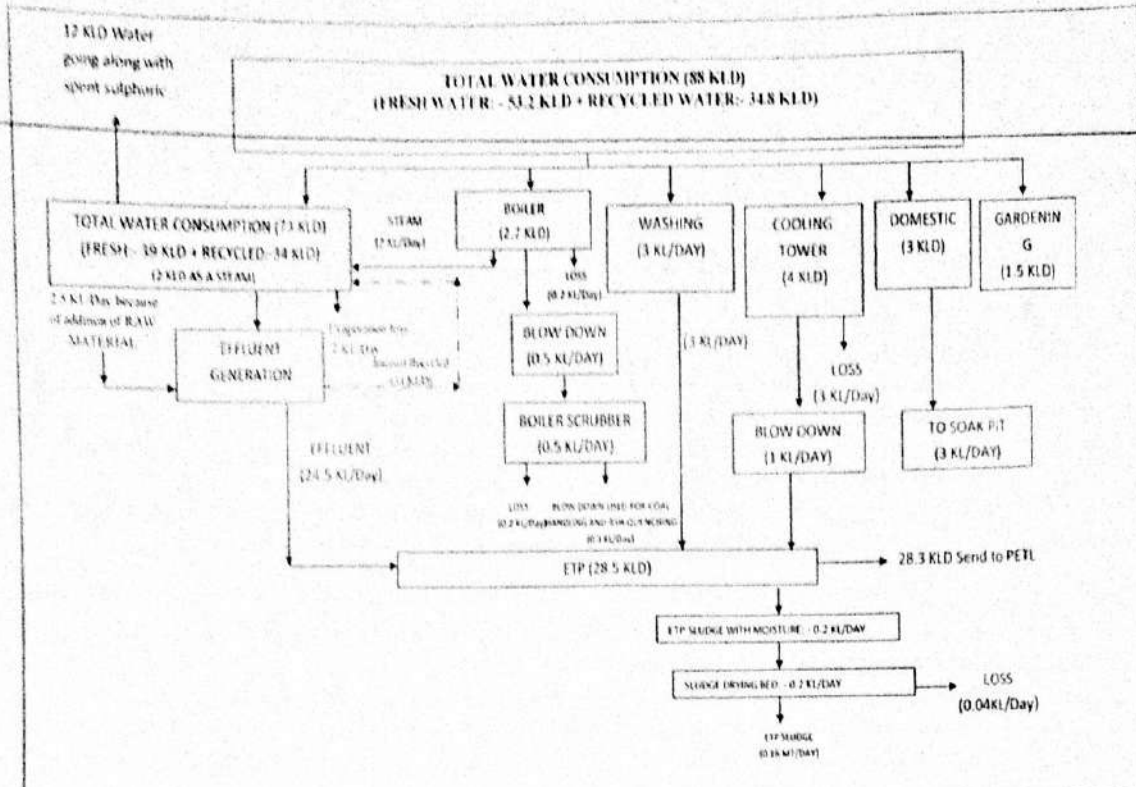
iii Waste water generation (KLD)

Sr. No	Particulars	As per Consent AWH-66826	Actual Waste Water Generation	Proposed Waste water Generation KL/Day	Total Waste Water Generation after expansion KL/Day	Remarks
1.	DOMESTIC	3.0	1.00	2.00	3	Disposed into Soak Pit
2.	INDUSTRIAL					
	Process	7.5	10 (Internal Recycled :- 5.7 + Effluent:- 4.3)	48.5 (Internal Recycled:- 28.3 + Effluent:- 20.2)	58.5	Internal Recycled:- 34 Effluent: - 24.5 KLD subjected to ETP.
	Washing	2.00	2.00	1.0	3	3 KLD washing effluent Subjected to ETP.
	Boiler	0.3	0.1	0.4	0.5	0.5 KLD Boiler Blow Down will be used for Boiler Scrubber.
	Cooling	0.2	0.1	0.9	1	1 KLD Cooling tower blow down will be subjected to ETP.
	Scrubber	--	0.00	0.3	0.3	0.3 KLD Saturated Scrubber solution will be used for ash quenching.
	<b>TOTAL INDUSTRIAL</b>	<b>10</b>	<b>12.2</b>	<b>51.1</b>	<b>63.3</b>	Internal Recycled:- 34.8 KLD Effluent:- 28.5 KLD
	<b>TOTAL (DOMESTIC + INDUSTRIAL)</b>	<b>13</b>	<b>13.2</b>	<b>53.1</b>	<b>66.3</b>	Sewage Subjected to Soak Pit:- 3 KLD Effluent internally recycled:- 34.8 KLD



	AL)					Effluent subjected to ETP :- 28.5 KLD Total 0.2 KLD effluent will be going along with sludge. So total 28.3 KLD effluent will be subjected to M/s. PETL.
iv	Treatment facility within premises with capacity [In-house ETP (Primary, Secondary, Tertiary), MEE, Stripper, Spray Dryer, STP etc.. ➤ ETP-60 KLD (primary)					
	Treatment scheme including segregation at source ➤ Effluent from manufacturing process, Utility, Equipment Washing, will be collected in collection cum neutralization tank ➤ Effluent will be neutralized by using of lime as per requirement till required pH range obtained in neutralization tank. Then, effluent will be passing through to filter press. ➤ Filtrate will be collected in collection tank and subjected to M/s PE IL-common effluent treatment plant. And Generated sludge from filter press will be dried by using of sludge drying bed and subjected to TSDF site.					
	Note: (In case of CETP discharge): <b>Management of waste water keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP.</b> ➤ Unit have recently obtain membership of 28.3 KLD in new allotted PETL capacity as per new GPCB Circular. Unit will give full fledge treatment and after achieving the norm, unit will discharge effluent to PETL. So, direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP is not applicable.					
	Brief note on adequacy of ZLD (In case of Zero Liquid Discharge): ➤ Not Applicable.					
v	Mode of Disposal & Final meeting poi					
	Domestic:	Dispose in Soak pit				
	Industrial:	Unit will neutralize 28.5 KLD Water, After achieving the norms 28.3 KLD water send to PETL, Generated sludge 0.2 KLD send to sludge drying bed, in which 0.04 KLD will be evaporation loss & 0.16 MT/D generated ETP sludge will be send to TSDF site.				
vi	In case of Common facility (CF) like CETP, Common Spray dryer, Common MEE, CHWIF etc. <b>Name of Common facility (CF)(For waste water treatment)</b> ➤ Panoli Effluent Treatment Plant					
	Membership of Common facility (CF) <b>(For waste water treatment)</b> Panoli Effluent Treatment Plant - 28.3 KLD					
vii	Simplified water balance diagram with reuse / recycle of waste water					





vii Reuse/Recycle details (KLD)  
[Source of reuse & application area]

**Total reuse 34.8 KLD**

Source of waste water for reuse with quantity in KLD (From where it is coming)	Application area with quantity in KLD (Where it is used)	Characteristics of waste water to be reused (COD, BOD, TDS etc.)	Remarks regarding feasibility to reuse i.e.
34.0 KLD Reuse in filtration - I & II	34 KLD Reuse in filtration - I & II	Recycle water filter press - I TDS - 2000-3000 COD - 1500-2000 Acidity - 0% to 10 % Recycle water filter press - II TDS - 1500-2500 COD - 800-900 Acidity - 4% to 6 %	Reusable
0.5 KLD From Boiler Blow down	0.5 KLD Boiler Blow Down to scrubber	Boiler Blow Down PH - 8 to 10 TDS - 3000	Reusable
0.3 KLD From boiler Scrubber	0.3 KLD Boiler Scrubber solution	Boiler Scrubber PH - 8 to 10 TDS - 6000-7000	Reusable

E Air

i Flue gas emission details  
No. of Boilers/TFH/Furnaces/DG sets etc. with capacities viz. TPH, Kcal/hr, MT/hr, KVA etc.  
Existing & Proposed

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
AS PER Existing CCA No:-AWH-66826						
1.	Boiler 600 KG/Hr	11	WOOD	4 MT/Month	PM SO2 NOx	Adequate stack height
2.	Hot Air Generator (50,000 Kcal/Hr)	11				
AFTER PROPOSED EXPANSION						



3	Boiler 600 Kg/Hr	22	Agro Waste/ Briquette	(28 MT/Month)	PM SO2 NOx	Bag Filter + Water Scrubber
4	Hot Air Generator (50,000 Kcal/ hr) (Tray Dryer)	22	Agro Waste/ Briquette	(2 MT/Month)		Bag Filter + Water Scrubber
5	Hot Air Generator for SFD (2,00,000 Kcal/Hr)	11	Natural Gas	(25 Nm <sup>3</sup> /Hr)		Adequate stack height
6	D.G. Set (50 KVA)	11	Diesel	(15Lt/Hr)		Acoustic Enclosure

ii Process gas i.e. Type of pollutant gases (SO<sub>2</sub>, HCl, NH<sub>3</sub>, Cl<sub>2</sub>, NO, etc.)  
Existing & Proposed

As per Existing CCA No.: AWH-66826				
Sr. No.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
No existing process gas emission.				
After Proposed Expansion				
1	Spin Flash Dryer	PM	11	150 mg/Nm <sup>3</sup>

iii Fugitive emission details with its mitigation measures.

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1	Solvent storage tank	Air pollutant (VOC)	i) Carry out work place area monitoring to find out concentration level in ambient air Close handling system. ii) Provision of breather valve cum flame arrester.
2	Solvent recovery system	Air pollutant (VOC)	i) Solvent recovery system with steam condensation system. ii) Pumps & motors are Mechanical seal type.
3	Handling of raw material bags in storage area	Air pollutant (PM)	i) Provision of exhaust ventilation Provision of PPE. ii) Provision of Job rotation to reduce exposure.
4	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	i) Routine & periodic inspection to check leakage. ii) Preventive maintenance, Follow SOP for maintenance. iii) Pumps & motors will be mechanical seal type. iv) LDAR program will be followed. Provision of Flange guard.
5	Solid raw material transferring to reactor	Air pollutant (PM)	Hopper will be provided with powder transfer system.
6	Liquid raw material transferring to reactor	Air pollutant (VOC)	Feeding of liquid raw material will be carried out by closed pipeline and mechanical seal pump.
7	Loading /unloading at storage area	Air pollutant (VOC)	Unloading through pipeline to tank in a close system.

F Hazardous waste  
(As per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.)  
Existing & Proposed

Sr. no.	Name of Hazardous waste	Source of generation	Category	Quantity/ Annum				Management of HW
				As per Consent	Actual Generation	Proposed	Total	
1.	ETP Waste	From ETP plant	26.1	60 MT	22 MT	38 MT	60 MT	Collection, Storage Transportation and disposal at TSDF M/s. BEIL.
2.	Used Oil	From Lubrication	5.1	0.06 KL.	0.06 KL	0.44 KL	0.5 KL	Collection, Storage & Reused within the premises.



	3.	Discarded Drums/ Containers	From Packing Material	33.1	0.075 MT	0.075 MT	3.225 MT	3.3 MT	Collection, Strong, Decontamination & Reused													
	4.	Discarded Bag/Liners	From Packing Material	33.1	0.24 MT	0.24 MT	4.76 MT	5 MT	Collection, Strong, Decontamination & Reused													
	5.	Recoverable Solvent	Generated from Phthalocyanine Beta Blue	26.4	0	15 MT	1040 MT	1055 MT	Collection, Storage, Transportation & recover and reuse internally.													
	6.	Spent Sulphuric Acid	Generated from Phthalocyanine Alpha Blue	26.3	1260 MT	1032 MT	5160 MT	6192 MT	Collection, Storage, Transportation & sell to end user having Rule-9 Permission.													
ii	Membership details of TSDF, CHWIF etc. (For HW management)						BEIL															
iii	Details of Non-Hazardous waste & its disposal (MSW and others)						All Non-Hazardous waste will give to scrap vendor															
G	Solvent management, VOC emissions etc.																					
i	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc. (Details in Table Format)																					
	Sr. No.	Name of Representative Product	Name of Solvent used	Product Quantity in MT/Month	Solvent Quantity used in ton per ton of product	Solvent recover Quantity in Ton per ton of product	Solvent Recovered Quantity in MT/Month	Percentage Recovery														
	1.	Phthalocyanine Beta Blue	Xylene IBA	60	1.52	1.46	87.88	96%														
ii	VOC emission sources and its mitigation measures																					
	<ul style="list-style-type: none"> <li>Provision of mechanical seal in pump.</li> <li>Regular inspection of tank roof seals.</li> <li>Adequate measures for the minimization/prevention of the fugitive emission.</li> <li>Regular maintenance of valves, pumps and other equipment to prevent leakage</li> <li>Entire process to be carried out in the closed reactor with proper maintenance of temperature.</li> <li>Regular periodic monitoring of work area to check the fugitive emission.</li> <li>Adequate stack heights as per the GPCB estimation will be provides at all locations to reduce GLCs of pollutants.</li> <li>Air Pollution Control System will be installed in the plant.</li> </ul>																					
H	<ul style="list-style-type: none"> <li>Details regarding storage of Hazardous chemicals</li> </ul> <table border="1" style="width: 100%;"> <tr> <td>Storage details</td> <td>Name of major Hazardous chemicals</td> </tr> <tr> <td>MS Drum</td> <td>IBA/XYLENE</td> </tr> <tr> <td>HDPE Storage Tank/Carboy</td> <td>Hydrochloric Acid</td> </tr> <tr> <td>MS Storage Tank</td> <td>Sulphuric Acid (98%)</td> </tr> <tr> <td>MS Drum</td> <td>Octoic Acid</td> </tr> <tr> <td>BAG</td> <td>Caustic Flakes</td> </tr> </table> <ul style="list-style-type: none"> <li>Applicability of PESO : Not Applicable</li> </ul>										Storage details	Name of major Hazardous chemicals	MS Drum	IBA/XYLENE	HDPE Storage Tank/Carboy	Hydrochloric Acid	MS Storage Tank	Sulphuric Acid (98%)	MS Drum	Octoic Acid	BAG	Caustic Flakes
Storage details	Name of major Hazardous chemicals																					
MS Drum	IBA/XYLENE																					
HDPE Storage Tank/Carboy	Hydrochloric Acid																					
MS Storage Tank	Sulphuric Acid (98%)																					
MS Drum	Octoic Acid																					
BAG	Caustic Flakes																					



VII. Considering the above project details, the terms of reference (ToR) are prescribed as below and as per the standard TOR for the Synthetic Organic Chemical projects recommended by SEAC vide letter no. EIA-10-GEN-21/1480 dated 14/09/2017 and approved by SEIAA in its 12<sup>th</sup> meeting dated 16/09/2017 for the EIA study to be done covering 10 Km radial distance from the project boundary.

1. Details with respect to justification for proposed expansion: (1) To address proportionate availability of space for production plant. (2) To address proportionate availability of storage area for raw materials finished goods, utilities

considering fire-safety norms & PFSO standards and goods carrier movement within premises. (3) To address proportionate captive/common infrastructure available to accommodate additional load due to proposed expansion. (4) Environment impact and its mitigation measures for common/ captive infrastructure due to proposed production.

2. Compliance of MoEFCC's OM dated 01/05/2018 regarding "Corporate Environment Responsibility" (CER). Fund allocation for Corporate Environment Responsibility (CER) shall be made as per MoEFCC's O.M. No. 22-65/2017-IA.III dated 01/05/2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.
3. Explore the use of renewable energy to the maximum extent possible. Details of provisions to make the project energy-efficient through of energy efficient devices and adoption of modes of alternative eco-friendly sources of energy like solar water heater, solar lighting etc. Measures proposed for energy conservation.
4. Qualitative and quantitative analysis of hazardous waste streams generation from the manufacturing process (Product wise). Explore the possibility to reuse such waste streams within premises as raw materials for other products or to convert it into valuable products instead of selling out side. Sound management of such waste streams as per the HW Rules 2016 as amended time to time. Feasibility report for utilization shall be incorporated in EIA report.
5. PP shall furnish status of all the applicable rules, acts, regulation, clearances in a tabular form.
6. Leak Detection and Repairing Programme (LDAR) for all the volatile organic solvent proposed for use in-house with detailed chemical properties including vapor pressure. LDAR shall endeavor prevention of losses of solvents to the best minimum extent.
7. Safety precautions including flame proof electric fittings to be taken to avoid fire hazard during unloading, storage, transportation, handling and processing of Solvents.

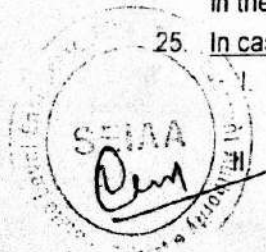


The TOR prescribed as above and as per the standard TOR approved by SEIAA and the model ToRs available in the MoEFCC's sector specific EIA Manual for 'Synthetic Organic Chemical Industry' shall be considered as generic TORs for preparation of the EIA report in addition to all the relevant information as per the generic structure of EIA given in Appendix III in the EIA Notification, 2006.

Further Project Proponent may be advised to submit final EIA Report with EC application within 100 days from the date of issuance of this ToR to expedite processing of Environment Clearance application.

- X. The project proponent shall have to apply for Environmental clearance through online portal <http://environmentclearance.nic.in/> along with final EIA report.

1. A tabular chart with index for point wise compliance of below mentioned TORs
2. Executive summary of the project - giving a prima facie idea of the objectives of the proposal, use of resources, justification, etc. In addition, it should provide a compilation of EIA report, including EMP and the post-project monitoring plan in brief
3. Justification for selecting the proposed product and unit size
4. Land requirement for the project including its break up for various purposes, its availability and optimization
5. Land possession documents. Copy of NA order showing permission to use the project land for industrial purpose. If located in GIDC, copy of plot holding certificate obtained from GIDC Authority.
6. Location of the project site and nearest habitats with distances from the project site to be demarcated on a toposheet (1: 50000 scale).
7. Topography details of the project area
8. Geological features and geo-hydrological status of the study area.
9. In case of project located outside notified area: Legal Undertaking stating that unit is complying the three conditions [i.e. water consumption less than 25 M<sup>3</sup>/day; Fuel consumption less than 25 TPD; and not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989] as per the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014.
10. Present land use pattern of the study area shall be given based on satellite imagery.
11. Layout plan of the factory premises clearly demarcating various units within the plant. Provision of separate entry & exit and adequate margin all round the periphery for unobstructed easy movement of the emergency vehicle / fire tenders without reversing back. Mark the same in the plant layout.
12. Technical details of the plant/s along with details on best available technologies (BAT), proposed technology and reasons for selecting the same.
13. Product spectrum (Proposed products along with production Capacity) and processes.
14. Chemical name of each proposed product to be manufactured. Details on end use of each product (Provide CAS number of all the products & raw materials. In case of Dyes, CI number).
15. Details on raw materials, source and storage within the premises
16. Details of complete manufacturing process / operations of each product along with chemical reactions, process flow diagram describing each unit processes and unit operations along with material balance, consumption of raw materials etc.
17. Details on strategy for the implementation of cleaner production activities.
18. Assessment of source of the water supply with adequacy of the same to meet with the requirements for the project. Permission obtained from the concern authority for supply of raw water.
19. Undertaking stating that no bore well shall be dug within the premises (If project is located within the Industrial estate).
20. Details on water balance including quantity of effluent generated, recycled & reused. Details of methods to be adopted for the water conservation.
21. Efforts to minimize effluent discharge and to maintain quality of receiving water body.
22. Explore the possibilities for Zero Liquid Discharge (ZLD) option for the proposed project.
23. Segregation of waste streams, characterization and quality with specific treatment and disposal of each stream including action plan for maximum recycle of treated waste water and minimum discharge for effluent.
24. Capacity of ETP in KL/day. Details of ETP including dimensions of each unit along with schematic flow diagram. Inlet, transitional and treated effluent qualities with specific efficiency of each treatment unit in reduction in respect of all concerned/regulated environmental parameters. Inlet effluent quality should be based on worst case scenario considering production of most polluting products that can be manufactured in the plant concurrently.
25. In case of discharge into GIDC drainage / Pipeline:
  1. Copy of permission letter with quantity (KL/day) from the concern authority of drainage network / pipeline with confirmation for spare capacity available to take additional effluent.
  2. Characteristics of the combined effluent and treated water to be sent to Common pipeline with reference to the MoEFCC/CPCB/GPCB discharge norms.



## III. Provision for Continuous Monitoring System for waste water discharge

26. In case of waste water sent to Common Facilities (CF) like CETP, MEE, Spray Dryer etc.

- a. Details of Common facilities including (1) Total capacity of the CF (2) Copy of CC&A of the CF (3) Actual load at present (Qualitative and Quantitative - KL per day) (4) Booked quantity & Spare capacity of CF (5) Copies of XGN generated Inspection reports with analysis reports of the water/Air/Hazardous samples collected by GPCB (Last 2 year). Copies of instructions issued by GPCB in last 2 year and point wise compliance thereof. (6) Copies of Show- cause notices, closure notices etc. served by the GPCB and its compliance (6) Recommendations and suggestions of the last two Environment Audit reports of CETP and its compliance report. (7) Common Facility Up gradation scheme, if any.
- b. Status of compliance to the 18(1) (b) direction issued by the CPCB with respect to CETP compliance & CEPI area action plan along with relevant supportive document.
- c. Give status of compliance of Environmental norms of existing Common Infrastructure i.e. CETP, MEE & Spray Dryer (Whichever is applicable) in which you are a member.
- d. Submit adequacy of Common Infrastructure i.e. CETP, MEE & Spray Dryer for additional load (Whichever is applicable) along with written confirmation/membership certificate mentioning the same (Total consented quantity, total quantity booked so far, quantity booked for the unit, spare quantity available).

27. In case of Zero Liquid Discharge (ZLD) :

- I. Action plan for 'Zero' discharge of effluent shall be included. Notarized undertaking for assuring that underground drainage connection will not be taken in the unit and there shall be no effluent discharge outside the plant premises.
- II. Economical and technical viability of the effluent treatment system to achieve Zero Liquid Discharge (ZLD).
- III. Certification of adequacy of proposed ZLD scheme through credible institutes of National repute.
- IV. To estimate & monitor ground water quality & its contamination status, piezometer wells, one on up gradient of the groundwater flow and other three on the down gradient side of the ground water flow of the proposed project at different depth based on available ground water depth shall be established and all the parameters mentioned in IS 10:500 for potable water standard shall be monitored.

28. In case of in-house MEE/Spray dryer for waste water treatment: Capacity of MEE/Spray dryer in KL/hr. Technical details of MEE including evaporation capacity, steam required for evaporation, adequacy of the proposed boiler to supply steam for evaporation in addition to the steam required for the process etc. Techno-economical viability of the evaporation system. Control measures proposed for the evaporation system in order to avoid/reduce gaseous emission/VOC from evaporation of industrial effluent containing solvents & other chemicals.

## 29. Technical details of ATFD/Crystallizer/ spray Dryer, RO/NF system etc. (If any).

## 30. Details of the treatability and feasibility of wastewater to be disposed off by means of spray dryer and its impact on environment and Human Health

## 31. Undertaking stating that a separate electric meter will be provided for the waste water treatment system viz. ETP, RO, MEE, Spray dryer etc. (Whichever is applicable)

## 32. Economical and technical viability of the effluent treatment system.

## 33. Plans for management, collection and disposal of waste streams to be generated from spillage, leakages, vessel washing, used container washing etc. Measures proposed for preventing effluent discharge during unforeseen circumstances.

## 34. Action plan for reuse of liquid waste streams like Spent acids, Poly Aluminium Chloride etc. within premises to convert into valuable products instead of sending outside to actual end-users.

## 35. Adequacy of the proposed EMS with respect to the pollution load envisaged in terms of Air, Water and hazardous waste.

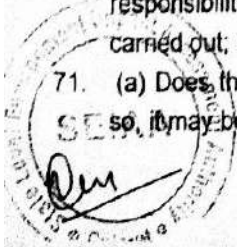
## 36. One season Site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall should be incorporated.

## 37. Anticipated environmental impacts due to the proposed project/production may be evaluated for significance and based on corresponding likely impacts VECs (Valued Environmental Components) may

be identified. Baseline studies may be conducted within the study area for all the concerned/identified VECs and likely impacts will have to be assessed for their magnitude in order to identify mitigation measures.

38. One complete season base line ambient air quality data (except monsoon season) to be given along with the dates of monitoring. The parameters to be covered shall be in accordance with the revised National Ambient Air Quality Standards (NAAQS) as well as project specific parameters like NH<sub>3</sub>, HCl, CL<sub>2</sub>, HBr, VOC etc. Locations of the monitoring stations should be so decided so as to take into consideration the pre-dominant downwind direction, population zone and sensitive receptors. There should be at least one monitoring station in the upwind direction. There should be at least one monitoring station in the pre dominant downwind direction at a location where maximum ground level concentration is likely to occur.
39. Modeling indicating the likely impact on ambient air quality due to proposed activities. The details of model used and input parameters used for modeling should be provided. The air quality contours may be shown on location map clearly indicating the location of sensitive receptors, if any, and the habitation. The wind rose showing pre-dominant wind direction should also be indicated on the map. Impact due to vehicular movement shall also be included into the prediction using suitable model. Results of Air dispersion modeling should be superimposed on satellite Image / geographical area map.
40. Base line status of the noise environment, impact of noise on present environment due to the project and proposed measures for noise reduction including engineering controls.
41. Specific details of
  - a) Process gas emission from each unit process with its quantification.
  - b) Air pollution Control Measures (APCM) proposed for process gas emission. Adequacy of the air pollution control measures (APCM) for process gas emission measures to achieve the GPCB norms.
  - c) Details of the utilities required.
  - d) Type and quantity (MT/hr & MT/Day) of fuel to be used for each utility.
  - e) Flue gas emission rate emission from each utility.
  - f) Air Pollution Control Measures (APCM) proposed to each of the utility along with its adequacy
  - g) List the project specific sources of fugitive emission along with its quantification and proposed measures to control it.
  - h) Details on tail gas treatment (If any)
42. Provision of CEMS (Continuous Emission Monitoring system).
43. Action plan for odour control to be submitted.
44. Management plan for hazardous/Solid waste including storage, handling, utilization and safe disposal as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016. CPCB guidelines in respect of specific treatment, such as solar evaporation, incineration, etc., need to be followed.
45. How the manual handling of the hazardous wastes will be minimized? Methodology of de-contamination and disposal of discarded containers and its record keeping.
46. Management of by-products which fall under the purview of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016 as per the said rules and necessary permissions from the concern authority.
47. Membership of Common Environmental Infrastructure like TSDF, Common Incineration Facility (CHWIF), MEE, Spray dryer etc.
48. Name and quantity of each type of solvents to be used for proposed production. Details of in-house solvent recovery system including mass balance, solvent loss, recovery efficiency (% recovery), feasibility of reusing the recovered solvents etc. for each type of solvent.
49. Appropriate monitoring network has to be designed and proposed, to assess the possible residual impacts on VECs.
50. A detailed EMP including the protection and mitigation measures for impact on human health and environment as well as detailed monitoring plan and environmental management cell proposed for implementation and monitoring of EMP. The EMP should also include the concept of waste-minimization, recycle/reuse/recover techniques, energy conservation, and natural resource conservation. Total capital cost and recurring cost/annum earmarked for environment pollution control measures.

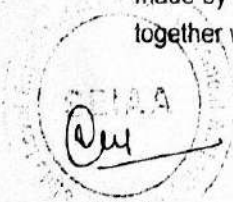
51. Details of in-house monitoring capabilities and the recognized agencies if proposed for conducting monitoring
52. Permission from PESO, Nagpur for storage of solvents, other toxic chemicals, if any.
53. Occupational health impacts on the workers and mitigation measures proposed to avoid the human health hazards along with the personal protective equipment to be provided. Provision of industrial hygienist and monitoring of the occupational injury to workers as well as impact on the workers. Plan for periodic medical checkup of the workers exposed. Details of work place ambient air quality monitoring plan as per Gujarat Factories Rules.
54. Details on volatile organic compounds (VOCs) from the plant operations and occupational safety and health protection measures. Proposal for Leak Detection and Repair (LDAR) program as per the CPCB guidelines.
55. Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios should be carried out. The worst-case scenario should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the facilities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures including On-Site / Off-Site Emergency Plan should be provided.
56. MSDS of all the products and raw materials.
57. Details of hazardous characteristics and toxicity of raw materials and products to be handled and the control measures proposed to ensure safety and avoid the human health impacts. This shall include the details of Antidotes also.
58. Details of quantity of each hazardous chemical (including solvents) to be stored, Material of Construction (MoC) of major hazardous chemical storage tanks, dyke details, threshold storage quantity as per schedules of the Manufacture, Storage & Import of Hazardous Chemicals Rules of major hazardous chemicals, size of the biggest storage tank to be provided for each raw material & product etc. How the manual handling of the hazardous chemicals will be minimized?
59. Details of the separate isolated storage area for flammable chemicals. Details of flame proof electrical fittings, DCP extinguishers and other safety measures proposed. Detailed fire control plan for flammable substances and processes showing hydrant pipeline network, provision of DG Sets, fire pumps, jockey pump, toxic gas detectors etc.
60. Submit checklist in the form of Do's & Don'ts of preventive maintenance, strengthening of HSE, manufacturing utility staff for safety related measures.
61. Specify safety precautions to be taken for Chemical storage, process, handling & transportation hazard.
62. Details on workers training before engaging work, periodical, in-house, outside etc.
63. Details on various SOP to be prepared.
64. Details on safety audit to be carried out and their compliance status.
65. Specific safety measures to be taken for general Public living in the vicinity.
66. Details on hazard identification i.e. HAZOP, HAZAN, Fault tree analysis, Event tree analysis, Checklist, Audit etc. to be adopted for the safety operation of the plant.
67. Detection and monitoring of VOC's / gases.
68. Detailed five year greenbelt development program including annual budget, planning schedule, species, width of plantations, number of trees to be planted, area under green belt development [with map], budgetary outlay etc. along with commitment of the management to carry out the tree plantation activities outside the premises at appropriate places in the nearby areas and elsewhere.
69. Action plan for the greenbelt development – species, width of plantations, planning schedule, etc., in accordance to CPCB published guidelines.
70. Detailed socio-economic development measures including community welfare program most useful in the project area for the overall improvement of the environment. Submit a detailed plan for social corporate responsibilities, with appropriate budgetary provisions for the next five years and activities proposed to be carried out, specific to the current demographic status of the area.
71. (a) Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report. (b). Does the Environment Policy prescribe for standard operating

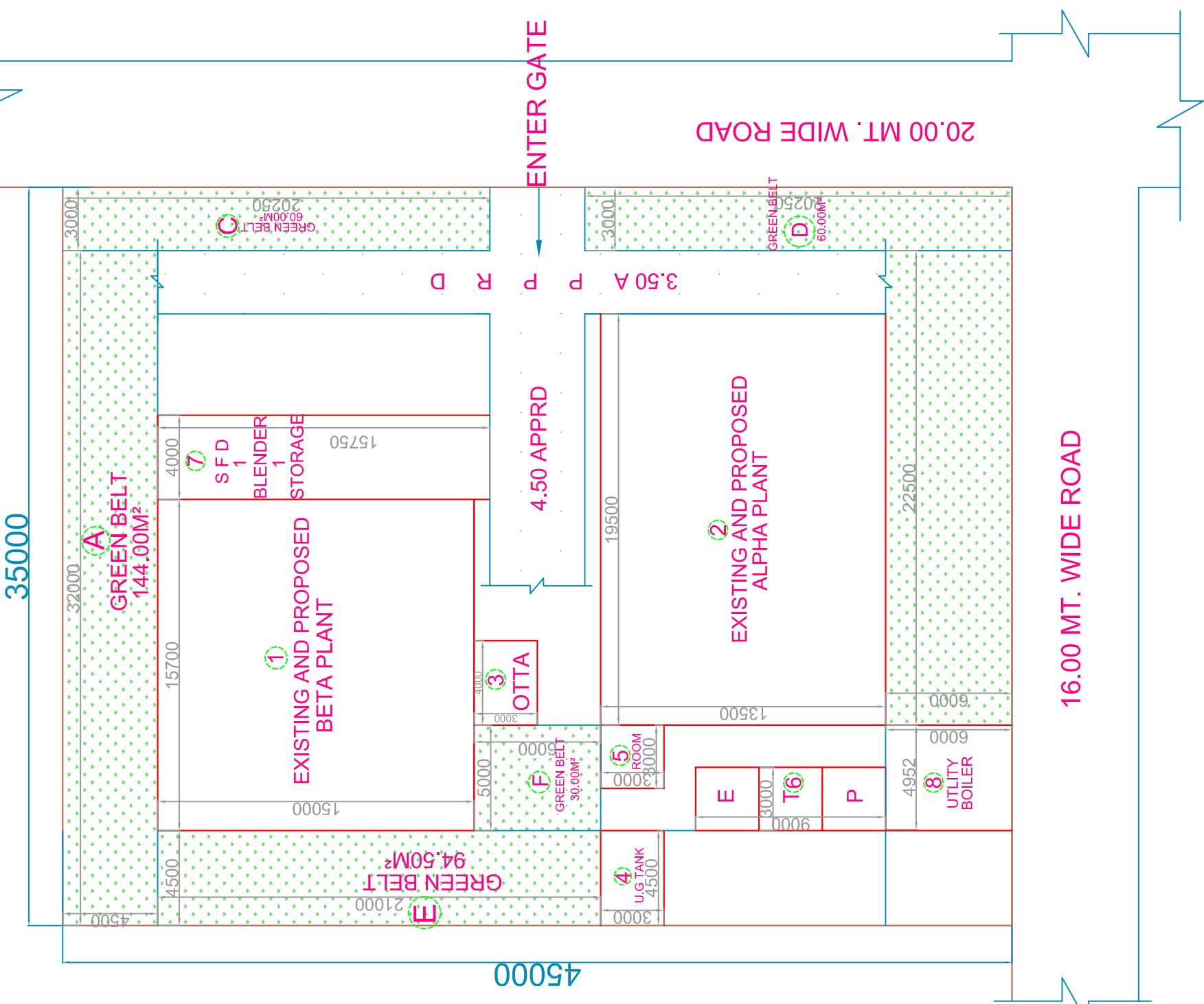


- process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA
72. What is the hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions. Details of this system may be given.
  73. Does the company have a system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA Report
  74. Phase wise project implementation schedule with bar chart and time frame, in terms of site development, infrastructure provision, EMS implementation etc.
  75. Certificate of accreditation issued by the NABET, QCI to the environmental consultant should be incorporated in the EIA Report
  76. An undertaking by the Project Proponent on the ownership of the EIA report as per the MoEF&CC OM dated 05/10/2011 and an undertaking by the Consultant regarding the prescribed TORs have been complied with and the data submitted is factually correct as per the MoEF&CC OM dated 04/08/2009.
  77. All documents to be properly referenced with index and continuous page numbering.
  78. Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  79. Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  80. In case of Expansion of the project
    - a. Need for the proposed expansion should be justified in detail.
    - b. Adequacy of existing EMS (Environmental Management System).
    - c. Explore the possibility to achieve Zero Liquid Discharge (ZLD) for existing as well as proposed activity.
    - d. Records of any legal breach of Environmental laws i.e. details of show- cause notices, closure notices etc. served by the GPCB to the existing unit in last five years and actions taken then after for prevention of pollution.
    - e. Copies of Environmental Clearances obtained for the existing plant, its point wise compliance report.
    - f. Environmental audit reports for last 3 years and compliance of its recommendations/Suggestions. (Include latest audit report and its compliance)
    - g. Copy of Consent to Operate (CC&A) obtained along with point wise compliance status of all the conditions stipulated therein.
    - h. Compliance of MoEFCC circulars vide No: J-11011/618/2010-IA.II (I) dated 30/05/2012 and J-11013/41/2006-IA-II(I) dated 20/10/2009.
    - i. Copies of XGN generated Inspection reports with analysis reports of the water/Air/Hazardous samples collected by GPCB (Last 2 year). Copies of instructions issued by GPCB in last 2 year and point wise compliance thereof.
  81. In case of project is located in Ankleshwar-Panoli, Vatva-Narol & Vapi GIDC.
    - (A) Compliance of MOEFCC's OM no. J-11013/5/2010-IA.II (I) dated 25/11/2016 regarding lifting of moratorium on the consideration of projects for environmental clearance.
    - (B) Compliance of direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB dated 31/03/2016 regarding compliance of CETP.
      - a) Action initiated by GPCB, if any, against proposed unit regarding non-compliance of prescribed standards under the various environmental laws.
      - b) Performance of CETP with respect to current hydraulic load & prescribed standards with No Objection Certificate of CETP regarding incorporation of the proposed unit for acceptance of waste water.
      - c) Performance of TSDF site with respect to current load & prescribed standards with No Objection Certificate of TSDF site regarding incorporation of the proposed unit for acceptance of hazardous waste to the common infrastructure.
      - d) Copies of quarterly action report taken for the above points submitted to the CPCB.
      - e) Report of GPCB which have conducted monitoring as per the said direction by CPCB dated 31/03/2016.

#### Validity of ToR:

- The ToRs prescribed for the project will be valid for three years for submission of EIA & EMP report.
- The period of validity could be extended for a maximum period of one year provided an application is made by the applicant to the Regulatory Authority, at least three months before the expiry of validity period together with an updated Form-I, based on proper justification and also recommendation of the SEAC.





GREEN BELT AREA	
SR NO.	AREA
A	144.00M <sup>2</sup>
B	135.00M <sup>2</sup>
C	60.00M <sup>2</sup>
D	60.00M <sup>2</sup>
E	94.50M <sup>2</sup>
F	30.00M <sup>2</sup>
TOTAL	523.5M <sup>2</sup>

BUILDING SCHEDULE		
SR NO.	NAME OF BUILDING	AREA
1	PROP SHED	235.50M <sup>2</sup>
2	EXI SHED	263.25M <sup>2</sup>
3	OTTA	12.00M <sup>2</sup>
4	U.G TANK	13.50M <sup>2</sup>
5	ROOM	9.00M <sup>2</sup>
6	E.T.P	27.00M <sup>2</sup>
7	SFD, BLENDER, STORAGE	62.80M <sup>2</sup>
8	UTLITY BOILER	29.40M <sup>2</sup>
TOTAL		651.17M <sup>2</sup>

(1)	TOTAL PLOT AREA	1575.00M <sup>2</sup>
(2)	GREEN BELT REQD. (33%)	519.75M <sup>2</sup>
(3)	GREEN BELT PROVIDED	523.00M <sup>2</sup>
	GREEN BELT PROVIDED / TOTAL PLOT AREA 526.00M <sup>2</sup> / 1575.00M <sup>2</sup> PROVIDED AS PERCENTAGE OF PLOT	33.00%

**SHUBHLAXMI PIGMENTS**  
 PLOT NO:- 502 GIDC, PANOLI

PROJECT MANAGEMENT CONSULTANTS  
 F.F:- 4 CENTER POINT,  
 Nr. G.I.D.C. POLICE STATION - ANKLESHWAR  
 Tel. Fax:- 02646-226579,

**PMCO**

Project NO:- MASTER PLAN

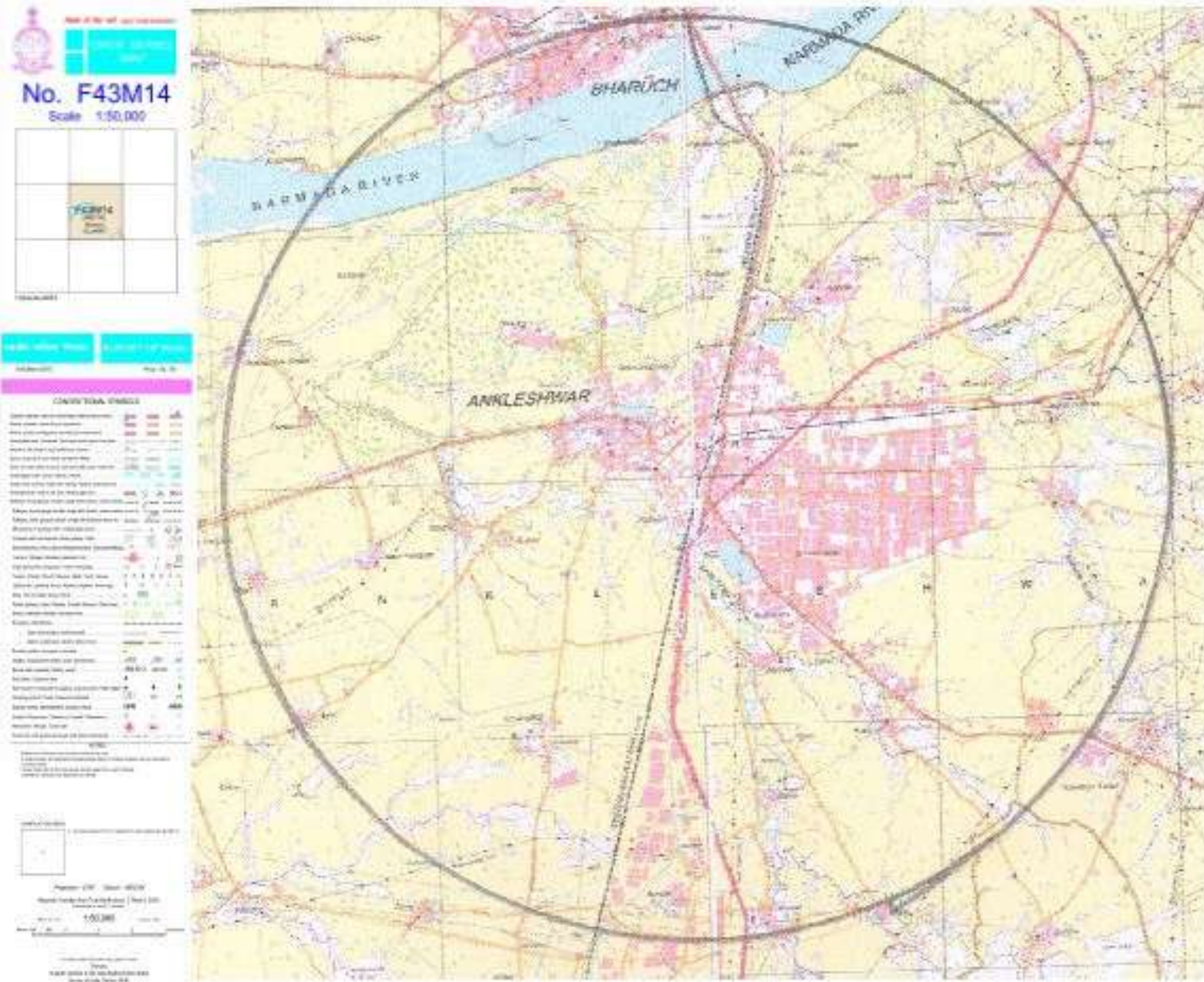
TITLE :- FACTORY LAYOUT PLAN

DRAWN BY :- SNEH | CHECKED BY :- N.K.P | APPD.BY:-

DATE :- 27/04/2019 | DATE :- 27/04/2019 | SCALE :- REV. N.T.S

DRG.NO. :- DO/PMC/GPCB/ST01 | REV. R0

ANNEXURE – III



ANNEXURE - IV

**Gujarat Industrial Development Corporation**  
(A Govt. of Gujarat Undertaking)  
Office of the Regional Manager  
BCL/BN GIDC Housing Sector-1, Vallia Road, Ankleshwar-383 002, Dist. Bharuch  
BY REGD. A. D.

Date: 31/3/94.

No. GIDC/RM-A/ALT/PU/SHD/122001  
To: M/s Shubh Laxmi Pigments,  
16- Ram Nagar Society,  
Ashwinikumar Road,  
Suret.

Our Ref.: refer letter dt. 28/3/94  
Sub.: Allotment of Plot/No. 502--- at Panoli. Indl. Estate

Dear Sir

We are indeed happy to welcome you in our Panoli estate and accordingly we are sending you allotment letter to you, we are enclosing herewith the form of Agreement/ Agreement for sale in triplicate which you may duly execute and return to us. It is not necessary for you to execute this agreement to this office.

The agreement forms are required to be signed by all the partners/firms on each page in case of a private/public limited company it is necessary to send a copy of the Resolution authorising the Director/Officer who is to sign the agreement.

It may be noted that if you fail to execute the agreement within a period of 30 days from date of allotment letter you will be liable to pay the interest on outstanding capital from the date of allotment till you get the allotment letter rescinded at your request.

The sketch map of your plot/shed along with the relevant section of the detailed development plan/drawing of shed design is enclosed for your information. You have already been advised and about the procedure of obtaining water/power-supply connections as well as other infrastructure conditions along with our earlier letter in the form of a printed booklet.

On your sending the agreement duly executed to us, we will send you a possession advice. You will be required to obtain possession from our Asstt. Engineer/Add. Asstt. Engineer.

Terms of payment of this balance amount: You have already paid an amount of Rs. 45675/- (Rupees forty five thousand six hundred seventy five only.) being 20% of the total price of plot/shed. This is the offer amount. You are required to make the payment of remaining amount of Rs. 1,82,700/- (Rupees One lac eighty two thousand seven hundred only.) in the following manner.

(a) During the first 2 years, the interest at 19% in 8 quarterly instalments, first instalment being of Rs. 8750/- and 2nd to 8th instalments of Rs. 8678/- The first quarterly instalment falls due on 30/6/94 and thereafter every quarter you will be required to send the above mentioned amount by cheque/draft drawn in favour of GIDC. After the moratorium period of 2 years is over the balance amount of Rs. 1,82,700/- being the remaining outstanding amount shall be payable with interest on reducing balance in 32 quarterly instalment with 19% rate of interest mentioned in the enclosed Annexure-'A'.

The rate of interest mentioned above is subject to revision from time to time at the discretion of the Corporation and the interest would be payable at such revised rates on dates as may be specified by the Corporation from time to time.

( P. T. O. )

- (c) You must please note that the Corporation levies penal interest at the rate of 3% over & above the normal rate of interest for the amount in default.
- (d) You will be happy to note that the Corporation gives 3% rebate in the balance price of plot shed if the remaining amount is full paid. This facility is also available in case when the GSEFC make payment of the entire amount to us when you obtained loan from them (excepting NES cases).
6. You shall have to comply with the provisions of water (prevention and Control - Pollution Act, 1974) and accordingly to obtain consent from the State water, prevention and control Board, Gujarat State before discharging sewage or treated effluents from your plant and you shall not discharge any sewage or treated effluent without getting such consent and you shall observe this condition would entitle the Corporation to disconnect your water supply and to resume possession of land/shed.

7. Detailed about your plot/shed are as under:-

a. Type of shed and shed Number: \_\_\_\_\_

b. Price of shed: \_\_\_\_\_ Rs. \_\_\_\_\_

Plot number: 502 Area of plot: 1575 sq. mtrs

(I) Premium price at the rate of Rs. 139/-  
for 1575 sq. mtrs. Rs. 2,04,750-00

(II) Mortgage at the rate of Rs. 15/-  
for 1575 sq. mtrs. Rs. 23,625-00

Total Rs. 2,28,375-00

8. According to the policy of the Corporation you shall put the shed to Industrial use manufacturing the products mentioned in your application within a period of 6 months from the date of allotment falling which corporation is entitled to claim the possession back. In case of plots, you are required to get the building plans approved within a period of 3 months and you shall start the construction at the end of 2 years from the date of allotment to the plot falling which the Corporation is entitled to take back the possession of the plot unless extension is given by the Corporation.

9. Other Points: (Please see Annexure-B) 1 to 7  
Once again we welcome to our estate & we now request you to send us the forms of agreement got executed at your earliest but not later than 30 days, in order to enable us to hand over the possession of the plot/shed.

10. In case of power supply for L. T. purpose wherever there is Jurisdiction of GEB the allottee has to bear the full cost of service line from L. T. line laid by the the GIDC.

11. The receipt No. 295646 dt. 31/3/94 amounting Rs. 30675/-  
of offer amount is also enclosed h/w.  
In the mean while assuring you of best of our services,

Yours faithfully, We remain **You shall have to fill up plot/**

Regional Manager (II)  
GIDC, Ankleshwar,

Copy to s to :

- (11)
- Ex. Engineer, GIDC, Dh. III Ankleshwar.
  - Dy. Ex. Engineer, GIDC Sub. Dh. Panoli. ~~XXXXXXXXXX~~ Panoli.
  - Audit officer, GIDC, Ankleshwar.
  - Notified Area, Bharuch, GIDC, Ankleshwar.

Enc. 1. Payment forms (in triplicate) 2 Annexure-B.  
Your water requirement 45KL. per day & Electricity 60 KVA kw.

Annexure "B"

1. You shall have to take ~~the~~ NOC/Consent from Gujarat Pollution Control Board before starting the production.
2. You shall have to treat the effluent /gas emission as per the standards laid down by the G.P.C.B. before discharging the same.
3. You shall have to keep provision for sufficient land/fund for effluent treatment plant since beginning.
4. You shall not change the product later on without permission of the Corporation.
5. The water supply of party shall be disconnected if party fails to comply with any of above conditions.
6. ~~Considering the request made, this offer is in compliance to the letter dated 19/8/94, hence offer for plot no. 312 is cancelled.~~
7. You shall have to fill up atleast 80% of posts in your industrial unit by local persons and for Manager and Supervisory cadres atleast 50% of posts shall have to be filled up by the Local persons. The expression "Local Person" shall mean a person domiciled in Gujarat State for minimum 15 years shall be considered as Local Person."

Mishra

Regional Manager (II),  
GIDC/Ankleshwar.

**OFFICE OF THE CHIEF OFFICER**  
(GUJARAT INDUSTRIAL DEVELOPMENT CORPORATION)

**PANOLI NOTIFIED AREA**

Fire Station Building, G.I.D.C., PANOLI, Ta, Ankleshwar, Dist. Bharuch (Gujarat) Phone : 02646-272747  
E-mail : naofficerpanoli@yahoo.co.in

No. NAO/PNL/107

Date: 6/7/19

To,  
M/s. Shubhlaxmi Pigments,  
Plot No.:- 502,  
GIDC, PANOLI

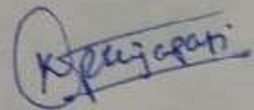
Sub: - Change in water requirement M/s. Shubhlaxmi Pigments, Plot No. 502 GIDC Panoli.

Ref. No. Allotter's request on dated. 05/07/19

With reference to the above, it is to inform that GIDC may supply water 55KL/Day to the Industry as per GIDC water supply norms and GPCB consent if this Qty. is approved by GPCB/MoEF.

Thanking You.

Yours Faithfully



Chief Officer  
NA, GIDC Panoli



**BEIL INFRASTRUCTURE LIMITED**  
(formerly known as Bharuch Enviro Infrastructure Limited)

Ref. BEIL/ANK/2019

08 July, 2019

To,  
**Shubhlaxmi Pigments**  
Plot No. 502  
GIDC Estate,  
Panoli.

**Sub: NOC for receiving Landfill waste.**

Dear Sir,

We are in receipt of your letter dtd.05-Jul-19. You are planning to expand capacity. Due to this, **additional Qty.60 MT /Year at BEIL Infrastructure Ltd. Ankleshwar Site, Plot No.9701-16, GIDC, Ankleshwar, waste will be generating.**

We would like to inform you that we have no objection in accepting your additional waste quantity. We shall be accepting your **Landfill waste** subject to verification of quality and it should be as per GPCB authorisation. **You will also be required to increase your booking quantity and necessary fees paid.**

Thanking you,

Yours faithfully,  
For, **BEIL INFRASTRUCTURE LIMITED**

**AUTHORISED SIGNATORY**



## PANOLI ENVIRO TECHNOLOGY LIMITED

Plot No. 619-619/1, GIDC Estate, Panoli - 394116, Dist. Bharuch (Gujarat)  
Ph. : (02646) 272822, Fax : (02646) 272022, e-mail : petipanoli@gmail.com



International Standards  
Certifications Pvt. Ltd.



### MEMBERSHIP CERTIFICATE

Ref : PETL/235/2019.

#### To Whom So Ever It May Concern:


This is to certify that M/s. SHUBHLAXMI PIGMENTS having their unit located at Plot No.502, GIDC Estate, Panoli-394116, Dist. Bharuch is member of our Common Effluent Treatment Plant (C.E.T.P.).

**Their total booked quantity of waste water with PETL is as under :**

01. Industrial Effluent	:	10.0 -M <sup>3</sup> /Day.
02. Sewage/Domestic	:	3.0 -M <sup>3</sup> /Day.
03. For Expansion-Effluent Qty.	:	18.3 -M <sup>3</sup> /Day.

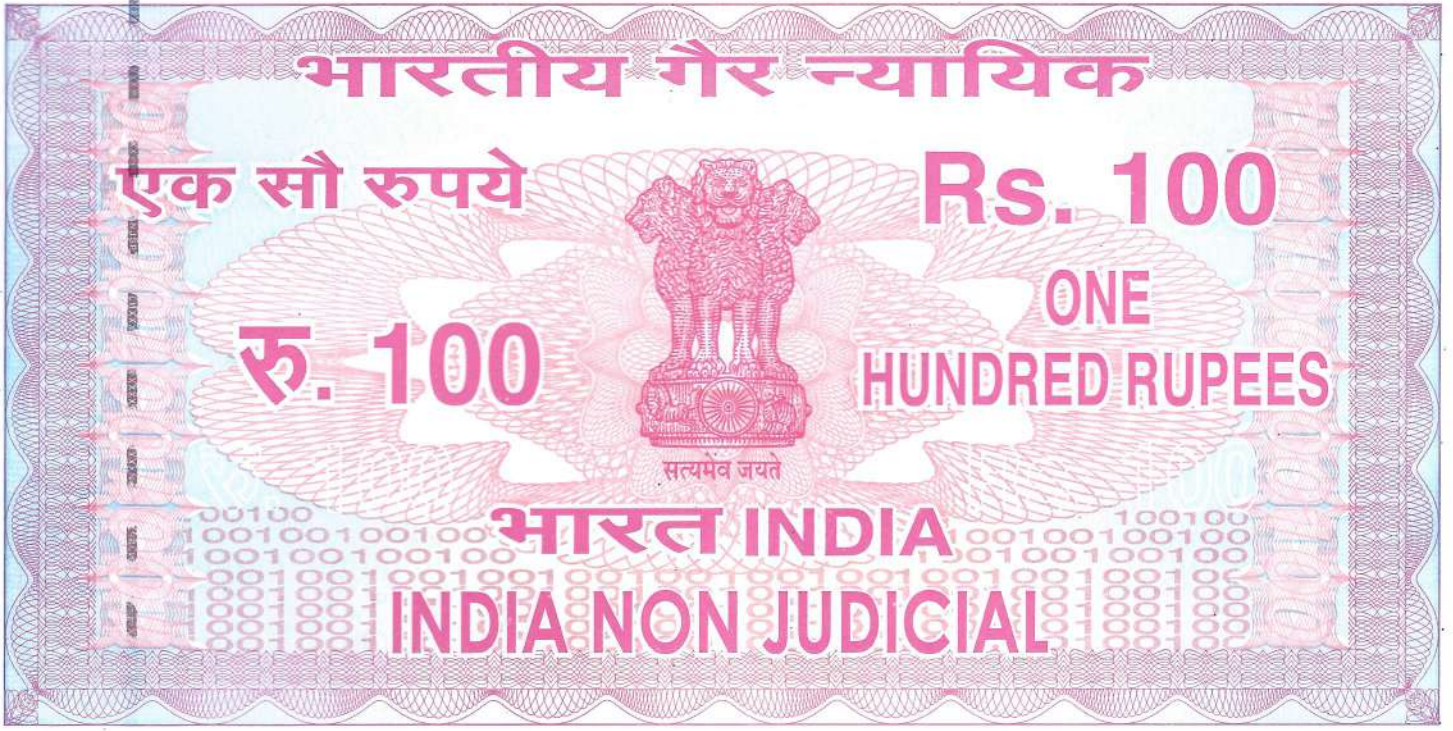
**Total Booked Qty. : 31.3 -M<sup>3</sup>/Day**

For, PANOLI ENVIRO TECHNOLOGY LTD.

  
B. S. PATEL  
DIRECTOR



Date : 20-06-2019  
Place : Panoli



गुजरात गुजरात GUJARAT

BN 978434

स्टे.श्री.नं. ९४२ तारीख २०/०४/२०१८

रु. १००/- कुल किंमत ५००/- कुल नंग ०५

स्टेम्प लेनारनुं नाम शुभलक्ष्मी पीगमेन्ट्स

स्टेम्प लेनारनुं सरनामुं प्लोट नं. ५०२, जीआईडीसी., पानोली-३८४११६, ता. अंकलेश्वर, जी.भरुच.

स्टेम्प लेवा आवनारनुं नाम धीरज डी. भायाणी

स्टेम्प लेवा आवनारनुं सरनामुं उपर मुजब

वनारनी सही .....

AAHFS2051E

Patel H.M

हेमलता अेम. पटेल

स्टेम्प वेन्डर ला.नं. ६/१८

स्पंदन टाईपींग सेन्टर

बी/उप, प्रिन्स प्लाजा कॉम्प्लेक्स

जीआईडीसी, अंकलेश्वर



MEMORANDUM OF UNDERSTANDING

BETWEEN

SUPPLIER	BUYER
M/s. Shubhlaxmi Pigments Plot No.502, GIDC., Panoli-394116, Tal.Ankleshwar, Dist.Bharuch, Gujarat	M/s. Siv Dyestuff & Intermediate Industries Plot No.C1B-41/B-8 & 9 & 42/8, GIDC., Nandesari, Tal.Baroda, Dist.Baroda, Gujarat

(Contd...2...)

// 2 //

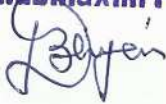
THAT

As a part of this MOU, the Buyer has agreed to accept the Spent Sulphuric Acid generated from the manufacturing of Phthalocynide Alpha Blue. Spent Sulphuric Acid as a Raw Material for our Products. The particulars of this MOU including terms and conditions between the Buyer and the Supplier are mentioned herewith :

1. Material : Spent Sulphuric Acid
2. Physical State : Liquid
3. Purity : 25 – 30%
4. Quantity : 100 MT. / Month
5. Mode of Transport : Through Road
6. Contract Validity : Five Year

For M/s. Shubhlaxmi Pigments

**For Shubhlaxmi Pigments**



**Partner**

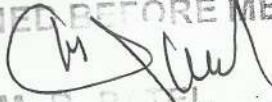
For M/s. Siv Dyestuff & Intermediate Industries

FOR SIV DYESTUFF & INTERMEDIATE INDUSTRIES



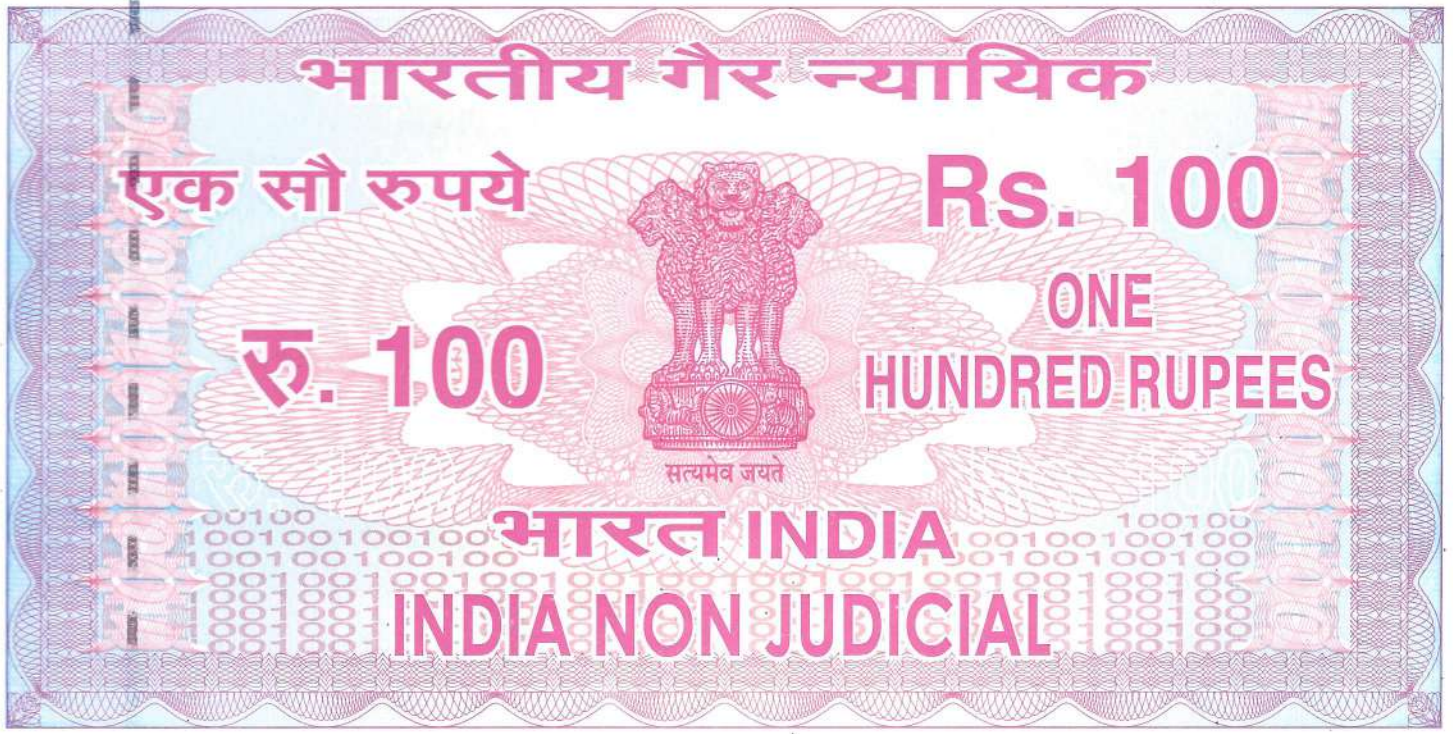
**Partner**

SIGNED BEFORE ME

  
M. B. PATEL  
B. Com. LL.B.  
ADVOCATE & NOTARY  
(Govt. of Guj.)



Reg No 4564/19  
Date 20 APR 2019



गुजरात गुजरात GUJARAT

BN 978433

स्टेम्प नं. ९४९ तारीख २०/०४/२०१९

रा. १००/- कुल किंमत ५००/- कुल नंग ०५

स्टेम्प लेनारतुं नाम शुभलक्ष्मी पीगमेन्ट्स

स्टेम्प लेनारतुं सरनामुं प्लोट नं. ५०२, जीआईडीसी., पानोली-३९४११६, ता. अंकलेश्वर, जी. भरुच.

स्टेम्प लेवा आवनारतुं नाम धीरज डी. भायाणी

स्टेम्प लेवा आवनारतुं सरनामुं उपर मुजब

नी सही .....

AHFS2051E

Patel H.M

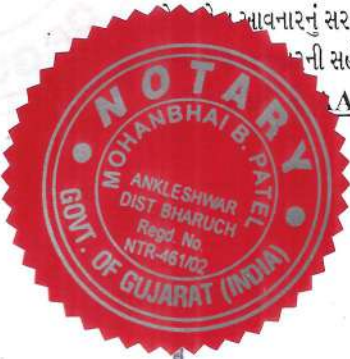
हेमलता अ. पटेल

स्टेम्प वेन्डर ला. नं. ६/१८

स्पंदन टाईपींग सेन्टर

बी/उप, प्रिन्स प्लाजा कोम्प्लेक्स

जीआईडीसी, अंकलेश्वर



## MEMORANDUM OF UNDERSTANDING

### BETWEEN

SUPPLIER	BUYER
M/s. Shubhlaxmi Pigments Plot No.502, GIDC., Panoli-394116, Tal.Ankleshwar, Dist.Bharuch, Gujarat	M/s. Raj Enterprise Plot No.908/6, GIDC., Panoli-394116, Tal.Ankleshwar, Dist.Bharuch, Gujarat

(Contd...2...)

// 2 //

THAT

As a part of this MOU, the Buyer has agreed to accept the Spent Sulphuric Acid generated from the manufacturing of Phthalocynide Alpha Blue. Spent Sulphuric Acid as a Raw Material for our Products. The particulars of this MOU including terms and conditions between the Buyer and the Supplier are mentioned herewith :

1. Material : Spent Sulphuric Acid
2. Physical State : Liquid
3. Purity : 25 – 30%
4. Quantity : 122 MT. / Month
5. Mode of Transport : Through Road
6. Contract Validity : Five Year

For M/s. Shubhlaxmi Pigments

For Shubhlaxmi Pigments

*Bhagwati*  
Partner

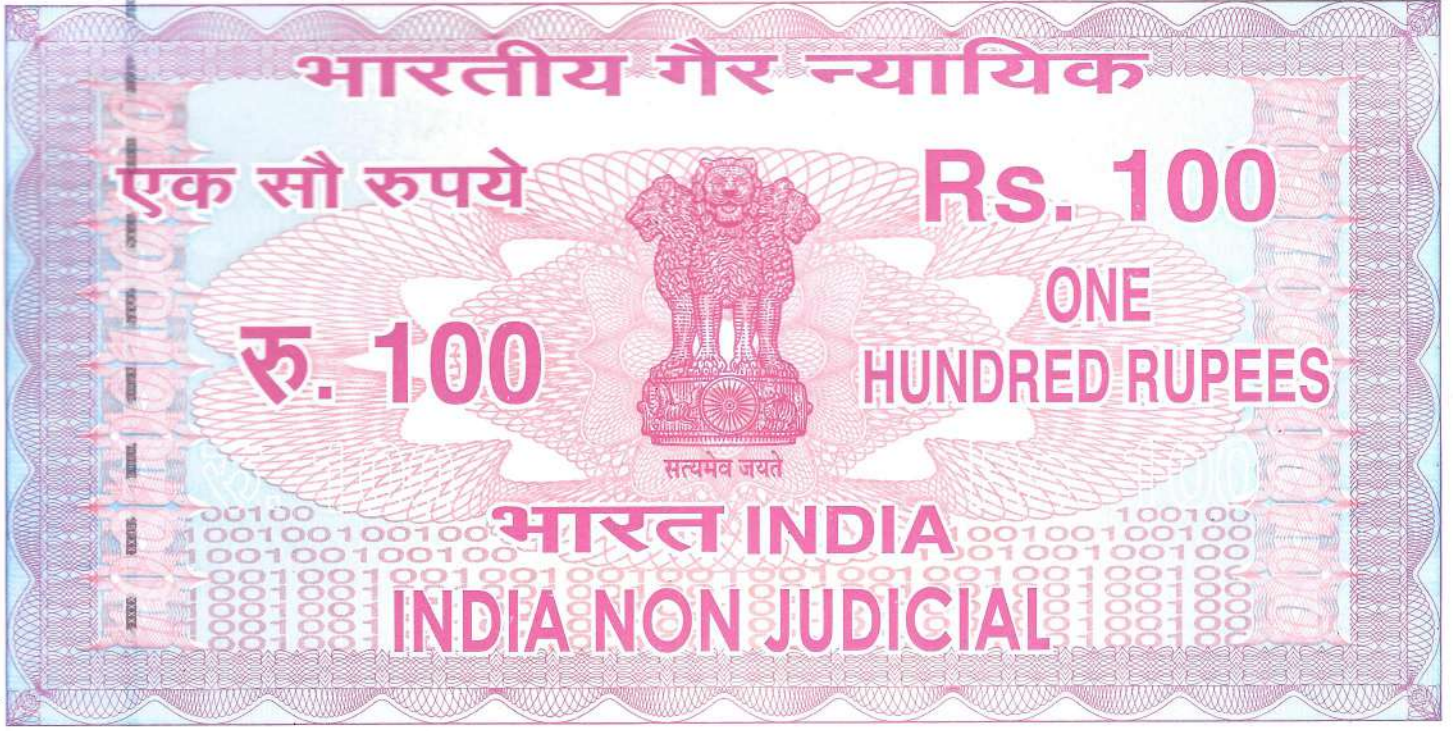
For M/s. Raj Enterprise  
For, RAJ ENTERPRISE

*G. Maheta*  
Proprietor

SIGNED BEFORE ME  
*M. B. Patel*  
M. B. PATEL  
B.Com., LL.B.  
ADVOCATE & NOTARY  
(Govt. of Guj.)



Reg No 4563/19  
Date 20 APR 2019



गुजरात गुजरात GUJARAT

BN 978432

स्टे.श्री.नं. २४० तारीख २०/०४/२०१९

रु. १००/- कुल किंमत ५००/- कुल नंग ०५

स्टेम्प लेनारनुं नाम शुभवक्ष्मी पीगमेन्ट्स

स्टेम्प लेनारनुं सरनामुं प्लोट नं. ५०२, श्रीआईडीसी., पानोली-३९४११६, ता.अंकलेश्वर, श्री.ભરૂચ.

स्टेम्प लेवा आवनारनुं नाम धीरज डी. भायाणी

स्टेम्प लेवा आवनारनुं सरनामुं ઉપર મુજબ

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AAHFS2051E



*Bhujari*

*Patel H.M*

હેમલતા એમ. પટેલ

स्टेम्प वेन्डर ला.नं. ६/१८

स्पंदन टाईपींग सेन्टर

બી/૩૫, પ્રિન્સ પ્લાઝા કોમ્પ્લેક્સ

શ્રીઆઈડીસી., અંકલેશ્વર



**MEMORANDUM OF UNDERSTANDING**

**BETWEEN**

SUPPLIER	BUYER
M/s. Shubhlaxmi Pigments Plot No.502, GIDC., Panoli-394116, Tal.Anklashwar, Dist.Bharuch, Gujarat	M/s. Ashapura Chemicals Industries Plot No.2919, GIDC., Panoli-394116, Tal.Anklashwar, Dist.Bharuch, Gujarat

(Contd...2...)

THAT

As a part of this MOU, the Buyer has agreed to accept the Spent Sulphuric Acid generated from the manufacturing of Phthalocynide Alpha Blue. Spent Sulphuric Acid as a Raw Material for our Products. The particulars of this MOU including terms and conditions between the Buyer and the Supplier are mentioned herewith :

1. Material : Spent Sulphuric Acid
2. Physical State : Liquid
3. Purity : 25 – 30%
4. Quantity : 400 MT. / Month
5. Mode of Transport : Through Road
6. Contract Validity : Five Year

For M/s. Shubhlaxmi Pigments

**For Shubhlaxmi Pigments**

*Bhujem*  
**Partner**

For M/s. Ashapura Chemicals Industries

**For Shree Ashapura Chemicals**

*Shree Ashapura*  
**Partner**



SIGNED BEFORE ME

*M. B. Patel*  
**M. B. PATEL**  
B. Com. L. B.  
ADVOCATE & NOTARY  
(Govt. of Guj.)



Reg no 4566/19  
Date 20 APR 2019





गुजरात गुजरात GUJARAT

BN 978435

स्टे.श्री.नं. २४३ तारीख २०/०४/२०१८

श्री. १००/- कुल किंमत ५००/- कुल नंग ०५

स्टेम्प लेनारनुं नाम शुभलक्ष्मी पीगमेन्ट्स

स्टेम्प लेनारनुं सरनामुं प्लोट नं. ५०२, जीआईडीसी., पानोली-३८४११६, ता.अंकलेश्वर, जी.भरुच.

स्टेम्प लेवा आवनारनुं नाम धीरज डी. भायाड़ी

स्टेम्प लेवा आवनारनुं सरनामुं उपर मुजुध

स्टेम्प लेवा आवनारनी सही .....

नं. AAHFS2051E

*Patel H.M*

डेमलता अेम. पटेल

स्टेम्प वेन्डर ला.नं. ६/१८

स्पॅन्डन टाईपींग सेन्टर

भी/उप, प्रिन्स प्लाजा कोम्पलेक्स

जीआईडीसी, अंकलेश्वर



**MEMORANDUM OF UNDERSTANDING**

**BETWEEN**

SUPPLIER	BUYER
M/s. Shubhlaxmi Pigments Plot No.502, GIDC., Panoli-394116, Tal.Ankleshwar, Dist.Bharuch, Gujarat	M/s. Trexil Chemical Ind. Plot No. C1B/424, GIDC. Ind. Estate, Ankleshwar-2, Dist.Bharuch, Gujarat

(Contd...2...)

THAT

As a part of this MOU, the Buyer has agreed to accept the Spent Sulphuric Acid generated from the manufacturing of Phthalocynide Alpha Blue. Spent Sulphuric Acid as a Raw Material for our Products. The particulars of this MOU including terms and conditions between the Buyer and the Supplier are mentioned herewith :

1. Material : Spent Sulphuric Acid
2. Physical State : Liquid
3. Purity : 25 – 30%
4. Quantity : 10 MT. / Month
5. Mode of Transport : Through Road
6. Contract Validity : Five Year



For M/s. Shubhlaxmi Pigments

For Shubhlaxmi Pigments

*Bhayer*  
Partner

M/s. Trexil Chemical Ind.

For TREXIL CHEMICAL IND.

*Coor*

Partner

SIGNED BEFORE ME  
*M.B. Patel*  
M. B. PATEL  
B.Com., LL.B.  
ADVOCATE & NOTARY  
(Govt. of Guj.)



Reg No 4565/17  
Date 20 APR 2019

## Monitoring Sampling Date

ANNEXURE - IX - MONITORING SAMPLING DATES (MARCH-APRIL-MAY-2018)											
	Month of Monitorong	Project Site	Ankleshwar	Panoli	Kapodra (S5)	Kosmadi	Umarwada	Bakrol	Bhadi		
		(A1)	(A2)	(A3)	(A4)	(A5)	(A6)	(A7)	(A8)		
	Mar-18	01-03-2018	02-03-2018	03-03-2018	01-03-2018	02-03-2018	02-03-2018	02-03-2018	01-03-2018		
		04-03-2018	06-03-2018	07-03-2018	04-03-2018	06-03-2018	06-03-2018	06-03-2018	04-03-2018		
		08-03-2018	09-03-2018	10-03-2018	08-03-2018	09-03-2018	09-03-2018	09-03-2018	08-03-2018		
		11-03-2018	13-03-2018	14-03-2018	11-03-2018	13-03-2018	13-03-2018	13-03-2018	11-03-2018		
		15-03-2018	16-03-2018	17-03-2018	15-03-2018	16-03-2018	16-03-2018	16-03-2018	15-03-2018		
		18-03-2018	20-03-2018	21-03-2018	18-03-2018	20-03-2018	20-03-2018	20-03-2018	18-03-2018		
		22-03-2018	23-03-2018	24-03-2018	22-03-2018	23-03-2018	23-03-2018	23-03-2018	22-03-2018		
	27-03-2018	28-03-2018	29-03-2018	27-03-2018	28-03-2018	28-03-2018	28-03-2018	27-03-2018			
	Apr-18	03-04-2018	04-04-2018	05-04-2018	03-04-2018	04-04-2018	04-04-2018	04-04-2018	03-04-2018		
		06-04-2018	07-04-2018	08-04-2018	06-04-2018	07-04-2018	07-04-2018	07-04-2018	06-04-2018		
		10-04-2018	11-04-2018	12-04-2018	10-04-2018	11-07-2018	11-07-2018	11-07-2018	10-04-2018		
		13-04-2018	14-04-2018	15-04-2018	13-04-2018	14-04-2018	14-04-2018	14-04-2018	13-04-2018		
		17-04-2018	18-04-2018	19-04-2018	17-04-2018	18-04-2018	18-04-2018	18-04-2018	17-04-2018		
		20-04-2018	21-04-2018	22-04-2018	20-04-2018	21-04-2018	21-04-2018	21-04-2018	20-04-2018		
		24-04-2018	25-04-2018	26-04-2018	24-04-2018	25-04-2018	25-04-2018	25-04-2018	24-04-2018		
	27-04-2018	28-04-2018	29-04-2018	27-04-2018	28-04-2018	28-04-2018	28-04-2018	27-04-2018			
	May-18	01-05-2018	02-05-2018	03-05-2018	01-05-2018	02-05-2018	02-05-2018	02-05-2018	01-05-2018		
		04-05-2018	05-05-2018	06-05-2018	04-05-2018	05-05-2018	05-05-2018	05-05-2018	04-05-2018		
		08-05-2018	09-05-2018	10-05-2018	08-05-2018	09-05-2018	09-05-2018	09-05-2018	08-05-2018		
		11-05-2018	12-05-2018	13-05-2018	11-05-2018	12-05-2018	12-05-2018	12-05-2018	11-05-2018		
		15-05-2018	16-05-2018	17-05-2018	15-05-2018	16-05-2018	16-05-2018	16-05-2018	15-05-2018		
		18-05-2018	19-05-2018	20-05-2018	18-05-2018	19-05-2018	19-05-2018	19-05-2018	18-05-2018		
		22-05-2018	23-05-2018	24-05-2018	22-05-2018	23-05-2018	23-05-2018	23-05-2018	22-05-2018		
	25-05-2018	26-05-2018	27-05-2018	25-05-2018	26-05-2018	26-05-2018	26-05-2018	25-05-2018			
	Noise	Location	Project Site	Kharod	Panoli	Nana Borasara	Sanjali	Umarwada	Bakrol	Bhadi	
			(N1)	(N2)	(N3)	(N4)	(N5)	(N6)	(N7)	(N8)	
		Date of Sampling	01-03-2018	02-03-2018	03-03-2018	01-03-2018	02-03-2018	02-03-2018	02-03-2018	01-03-2018	
	Ground Water	Location	Project Site	Ankleshwar	Panoli	Kapodra (S5)	Kosmadi	Umarwada	Bakrol	Bhadi	
		(GW1)	(GW2)	(GW3)	(GW4)	(GW5)	(GW6)	(GW7)	(GW8)		
	Date of Sampling	01-03-2018	02-03-2018	03-03-2018	01-03-2018	02-03-2018	02-03-2018	02-03-2018	01-03-2018		
Surface Water	Location	Umarwada (Lake)	Ankleshwar (Lake)	Panoli (Lake)	Kharod (Lake)	Nana Borsana (Lake)	Kosamadi (Lake)	Bakrol (Lake)	Bhadi (Lake)		
		(SW1)	(SW2)	(SW3)	(SW4)	(SW5)	(SW6)	(SW7)	(SW8)		
	Date of Sampling	02-03-2018	02-03-2018	03-03-2018	01-03-2018	06-03-2018	01-03-2018	09-03-2018	02-03-2018		
Soil Sample	Location	Project Site (S1)	Kharod (S2)	Panoli (S3)	Nana Borsana (S4)	Sanjali (S5)	Umarwada (S6)	Bakrol (S7)	Kosamadi (S8)		
	Date of Sampling	01-03-2018	03-03-2018	10-03-2018	04-03-2018	09-03-2018	06-03-2018	07-03-2018	02-03-2018		



જા. નં.

તા. ૧૧/૭/૧૯૯

શુભલક્ષ્મી પાગમેજરમ  
 પ્લોટ નં. ૫૦૨  
 જી. આઈ. ડી. આઈ. પાગમેજર  
 તા. - અંકલેશ્વર  
 જી. - ભરૂચ.  
 Ph - ૧૪૨૪૦૮૪૬૫૫

વિષય :- CER પ્રવૃત્તિ કરવા અરિ.  
 ઉપરોક્ત વિષય અન્વયે આમ શરૂઆત પૂરી ની  
 જરૂર પડ્યાનું કે નીચે મુજબ ની જરૂરીયાત બાબતમાં

૧. પ્રા.શાળા ની RD તમારું જે કામ
૨. બાબતમાં કરવા અરિ કરવાનું
૩. બાબતમાં તાઈટ જે કામ.

હવે વિચારી જરૂરીયાત હવે કામ કરી આપવા  
 તલાઈટી કમ મમી  
 ગ્રામ પંચાયત બાકરોલ  
 તા. અંકલેશ્વર, જિ. ભરૂચ

ગ્રામ પંચાયત 'આર' પોલ  
 સરપચત્રી  
 ગ્રામ પંચાયત બાકરોલ  
 તા. અંકલેશ્વર, જિ. ભરૂચ



# GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 021.

Website : www.gpcb.gov.in

## ANNEXURE - XI

BY R.P.A.D

NO.GPCB/ANK-CC&A-286(2)/ID-15712/

DT-

In exercise of the power conferred under section-25of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)Act-1981 and Authorization under rule 3(c)& 5(S)of the Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules 2008 framed under the E(P)Act-1986.

And whereas Board has received consolidated application dated 09/9/2014 vide inward no. 85252 for the consolidated consent and authorization (CC & A) of this Board under the provisions / rules of the aforesaid Acts, Consent & Authorization is hereby granted as under.

### CONSENT AND AUTHORISATION:

(Under the provisions / rules of the aforesaid environmental acts)

To,  
M/s. SHUBH LAXMI PIGMENTS,  
PLOT NO. 502,  
GIDC PANOLI,  
DIST. BHARUCH.

1. Consent Order No. : AWH-66826, date of Issue 09/12/2014.
2. The consent under Water Act -1974 for conveying the industrial effluent to the CETP of M/s. PETL for the treatment and disposal of treated effluent. The consent under Air Act - 1981 & Authorization under Environment (Protection) Act, 1986 shall be valid up to 15/9/2014 to operate industrial plant for manufacture of the following products :

Sr. No.	Product	Max. Quantity MT/MONTH
1.	Phthlocynine Alpha Blue	5.0
2.	Phthlocynine Beta Blue	10.0
BY PRODUCT		
3.	Spent Sulphuric Acid	105.0

### 3. CONDITIONS UNDER WATER ACT 1974:

- 3.1 The quantity of industrial effluent shall not exceed 10.0 KL/Day
- 3.2 The quantity of the domestic waste water (sewage) shall not exceed 3.0 KL/Day
- 3.3 The total water consumption for industrial process and other ancillary operations shall be not exceed 16.6 KL/Day & water consumption for domestic purpose shall not exceed 3.0 KL/Day as mentioned in form D of consent application, submitted under water Act-1974
- 3.4 The unit shall affix of water meters as per Section 4 (1) of the water (Prevention and Control of Pollution) Cess Act-1977 for the purpose of measuring and recording the quantity of water consumed at such places as may be required, within 15 days and it

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shall be presumed that the quantity indicated by the meter has been consumed by the industry until the contrary is proved.

- 3.5 The GIDC drainage connection given by the GIDC for discharge of industrial effluent shall be disconnected & the outlet shall be sealed.
4. TRADE EFFLUENT:
- 4.1 The applicant shall be required to make storage facilities to store the effluent for at least 48 hours by providing acid proof brick lined impervious tanks/HDPE tanks.
- 4.2 The applicant shall make fixed arrangement for loading the effluent from their collection tanks to the tanker of PETL. The unit shall not keep any by-pass line or system or loose or flexible pipe line for loading the effluent into the tanker of PETL.
- 4.3 Leachate from the hazardous solid waste, if any shall also be connected into a collection tank through leachate collection facilities and shall be conveyed along with industrial effluent to the CETP of PETL.
- 4.4 Magnetic flow meters shall be installed at the inlet & outlet of effluent collection tanks to measure the quantity of effluent lifted into the tanker of PETL.
- 4.5 The ENTIRE quantity of industrial effluent shall have to be conveyed by PETL. In no circumstances the effluent either treated or untreated shall be discharged into GIDC drain or anywhere else.
- 4.6 Disposal system for storm water shall be provided separately. In no circumstances storm water shall be mixed with the Industrial effluent.
- 4.7 The applicant shall be responsible for loading its effluent into the tankers of the PETL for transporting the effluent. Due care shall be taken to avoid any leakage or spillage of effluent during loading the tanker.
- 4.8 If the effluent contains heavy metals, phenols & cyanide, the PETL member unit shall have to treat the effluent within its premises to conform to the following standards (Whichever applicable)

PARAMETERS	PERMISSIBLE LIMIT
Zinc (Zn)	5.0 mg/l
Total Chromium	2.0 mg/l
Nickel (Ni)	3.0 mg/l
Mercury (Hg)	0.01 mg/l
Cyanide (as CN)	0.2 mg/l
Pesticides	Absent
Phenolic Compounds	1.0 mg/l
Lead (Pb)	0.1 mg/l
Copper (Cu)	3.0 mg/l
Hexavalent Chromium	0.1 mg/l
Cadmium (Cd)	1.0 mg/l
Arsenic (As)	0.2 mg/l
Selenium	0.05 mg/l
BOD	3000 mg/l
COD	10000 mg/l
Free Acidity	55000 ppm

- 4.9 The applicant shall keep accurate records of quantity of production of each product, quantity of water consumption, quantity of effluent generated and consumption of electricity on day to day basis and required to submit the compiled record of one month to GPCB & PETL on or before fifth day of the succeeding month.



# GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar-382 021.

Website : www.gpcb.gov.in

- 4.10 In case of shut-down of plant for more than three days for any reason, the PETL unit member shall intimate to PETL authority & GPCB well in advance for the better operation & management of CETP.
- 4.11 The applicant shall either stop or curtail its production activities if the effluent is not adequately treated by the CETP of PETL to conform to the standards specified by G.P.C.B.
- 4.12 The authorized representative of PETL shall have right of entry at any time for the purpose of inspection and monitoring the effluent collection facilities PETP (if required) of the applicant.
- 4.13 In case of incinerators, the flow measuring devices for mother liquor/toxic effluent/Non-biodegradable effluent, light diesel oil, Furnace oil, etc. i.e. fuel used for combustion, air used for combustion shall be separately provided. Incinerator temperature recording devices as well as gaseous flow measuring devices for scrubber shall also be provided. These data of temperature & flow should be recorded every day & submitted to GPCB & PETL on monthly basis.
- 4.14 The GIDC drainage connection given by the GIDC for discharge of industrial effluent shall be disconnected & the outlet shall be sealed.
- 4.15 If the PETL authority terminates the membership of CETP, the PETL member unit shall have to close down the manufacturing activities/industrial operation of the process plant immediately until the PETL membership is resumed.
- 4.16 The applicant shall also comply with the General Condition (Whichever applicable from No. 1 to 25) attached herewith.
- 4.17 The applicant shall put up at the entrance a board displaying PETL membership number & date of joining of PETL, the name of unit, particulars of the products/ process and the name of proprietor/partners /directors of the unit and the electricity consumer number as on the record of GEB.
- 4.18 The Environmental Management Unit/Cell shall be setup to ensure implementation on and monitoring of environment safeguards and other conditions stipulated by statutory authorities. The Environmental Management Cell / Unit shall directly report to the Chief Executive of the organization and shall work as a focal point for internalizing environmental issues. These Cells also coordinate the exercise of environmental audit and preparation of environmental statements.
- 4.19 The Environmental audit shall be out yearly and the environmental statements pertaining to the previous year shall be submitting to this State Board latest by 30<sup>th</sup> September every year.
- 4.20 The Board reserves the right to revoke and/or revoke the consent and / or make modifications in the conditions which it deems fit in accordance with provisions of Water Act-1974.
- 4.21 In case of change of ownership/management the name and address of the new ownership/partners/directors/proprietor should immediately be intimate to the Board.
- 4.22 The applicant shall have to submit EVERY MONTH the certified copies of challans (endorsed by PETL) regarding the quantity of industrial effluent (No. of Tankers) delivered per month to CETP of PETL.

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4.23 Unit shall strictly observe & comply to the standards for the discharge of trade effluent / sewage in to Amlakhadi as per notification No. P/111(3) Board's standards / 33129, dated 30<sup>th</sup> October, 2001.

4.24 Unit have to modify / Improve performance of existing Effluent treatment facilities for efficiency & adequacy in order to comply with prescribed standards in respects of effective operation of effluent treatment plant with regards to notification No. P/111(3) Board's standards/33129 dated 30<sup>th</sup> October 2001 in light of High Court in SCA No. 4473 of 97 dated 21/20/99.

5. CONDITIONS UNDER AIR ACT 1981:

5.1 The following shall be used as fuel in boiler & D.G.Set respectively.

Sr. No.	Fuel	Quantity
1.	Wood	4 MT/Month

5.2 The flue gas emission through stack attached to boiler / furnace shall conform to the following standards:

Stack No.	Stack Attached To	Stack Height in Meter	Parameter	Permissible Limit
1.	Boiler	11	Particulate matter	150 mg/NM <sup>3</sup>
2	Hot Air Generator	11	SO <sub>2</sub> NO <sub>x</sub>	100 ppm 50 ppm

5.3 There shall be no process emission from the manufacturing process as well as any other ancillary process.

5.4 The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder.

PARAMETER	PERMISSIBLE LIMIT
PM 10	100 microgram per cubic meter
PM 2.5	60 microgram per cubic meter
Oxides Of Sulphur	80 microgram per cubic meter
Oxides Of Nitrogen	80 microgram per cubic meter

5.5 The applicant shall operate industrial plant/ air pollution control equipment very efficiently and continuously so that the gaseous emission always conforms to the standards specified in condition no. 5.2.2 & 5.2.3 above.

5.6 The consent to operate the industrial plant shall lapse if at any time the parameters of the gaseous emission are not within the tolerance limits specified in the condition no. 5.2.2 & 5.2.3 above.

5.7 The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1,S-2,etc and these shall be painted/displayed to facilitate identification.



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5.8 The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75dB(a) during day time and 70 dB(A) during night time. Daytime is reckoned in between 6a.m. and 10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.

## 6. GENERAL CONDITIONS:-

- 6.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.
- 6.2 Applicant shall also comply with the general conditions given in annexure I.
- 6.3 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court's order in W.P. No.657 of 1995 dated 14<sup>th</sup> October 2003.
- 6.4 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including waste water and air emissions and solid hazardous waste generated within the factory premises

## 7. AUTHORISATION FOR THE MANAGEMENT & HANDLING OF HAZARDOUS WASTES Form-2 (See rule 3 (c) & 5 (5))

7.1 Number of authorization: AWH-66826. Date of Issue: 09/12/2014.

7.2 M/s. SHUBH LAXMI PIGMENTS, is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated PLOT NO. 502, GIDC PANOLI, DIST. BHARUCH.

Sr. No.	Waste	Quantity/ Year	Schedule / Month	Facility
1	ETP Waste	60 MT/Yr.	26.2	Collection, Storage, Transportation and disposal at TSDF BEIL.
2	Used Oil	0.06 KL/Yr.	5.1	Collection, Storage, Transportation sale to register re-processors.
3	Discarded Drums / barrel bags liner	5 Nos./Yr. 2400 Nos./Yr.	33.3	Collection, Storage, Transportation Decontamination.

7.3 The authorization is granted to operate a facility for collection, storage, within the factory premises and transportation and ultimate disposal of Hazardous wastes selling to refiners and authorized recyclers consequently.

7.4 The authorization shall be in force for a period up to 15/9/2019

7.5 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

**8. TERMS AND CONDITIONS OF AUTHORISATION**

- a) The applicant shall comply with the provisions of the Environment (Protection) Act - 1986 and the rules made there under.
- b) The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.
- c) The persons authorized shall not rent, lend, sell, and transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
- d) Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.
- e) It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility
- f) An application for the renewal of an authorization shall be made as laid down in rule 5 (6) (ii).
- g) Industry shall submit annual report within 15 days and subsequently by 31<sup>st</sup> January every year.
- h) Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court's order in W.P. No. 657 of 1995 dated 14<sup>th</sup> October 2003.
- i) Industry shall have to display on-line data outside the main factory gate with regard to and nature of hazardous chemicals being handled in the plant, including waste water and air emission and solid hazardous waste generated within the factory premises.
- j) Industry shall have to manage waste oil, discarded containers etc., process waste as per Amended Rules- 2003 and shall apply Authorization for all applicable waste as per Amended Rules-2003.

For and on behalf of  
Gujarat Pollution Control Board

(K. C. MISTRY)  
SENIOR ENVIRONMENTAL SCIENTIST

## ANNEXURE - XII

1/9/2020

SPECIAL

016

Status : PENDING

( Filing(Stamp) Number : SCA/5331/2016 )

CNR No : GJHC240461492016

Next Listing Date: 11/02/2020

Coram

- HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH and HONOURABLE MR.JUSTICE A.J. SHASTRI

## S.NO.Petitioner Name

1 JAYESHKUMAR SOMABHAI PATEL  
2 CHANDRASHEKHAR BHANUPRASAD UPASANI  
3 MALAV PRAFULBHAI DALWADI  
4 SNEHAL BHARATBHAI SATYAPATHI  
5 PRADEEP PRABHAKAR JOSHI  
6 GAURANG VINODBHAI PARMAR  
7 DARSHAN JITENDRABHAI PAREKH  
8 SURESH TULSHIBHAI MORADIA  
9 SUDHIR NARASINGH VERMA  
10 SEEMA CHANDRAKANT ABHALE  
11 DILIP CHANDUBHAI THAKKAR  
12 BALU TRIBHOVAN PATEL

## Advocate On Record

ANSHUL N SHAH(8540) for: Petitioner(s) → 1 - 12  
MR NILESH P SHAH(3215) for: Petitioner(s) → 1 - 12

## S.NO.Respondent Name

1 UNION OF INDIA

## Advocate On Record

NOTICE SERVED(4) for :Respondent(s) → 1

Presented On : 30/03/2016

Bench Category : DIVISION

Case Originated From : -

Purpose of Listing : 192-NOTICE &amp; ADJOURNED MATTERS

Classification

- 2012-DB - VIRES CHALLENGED - VIRES CHALLENGED - CONSTITUTION OF INDIA - CENTRAL ACT / STATE ACT / RULE / STATUTORY NOTIFICATION / REGULATIONS

Registered On

District

: 04/04/2016

: SURAT

Act

- CONSTITUTION OF INDIA

## Court Proceedings

S. No.	Notified Date	CourtCode	Board Sr. No.	Stage	Action	Coram
1	05/04/2016	1	6	111-URGENT ADMISSION (FRESH MATTERS)	4-FIXED NOTICE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
2	13/06/2016	1	31	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
3	04/07/2016	1	35	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
4	21/07/2016	1	55	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
5	22/08/2016	1	36	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
6	14/09/2016	1	119	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
7	05/10/2016	1	119	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
8	07/11/2016	1	29	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
9	18/11/2016	1	73	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>

S. No.	Notified Date	CourtCode	Board Sr. No.	Stage	Action	Coram
10	19/12/2016	1	88	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
11	20/01/2017	1	69	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
12	21/02/2017	1	50	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
13	14/03/2017	1	86	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
14	20/04/2017	1	109	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
15	03/07/2017	1	97	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
16	04/09/2017	1	86	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
17	14/11/2017	1	74	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
18	12/01/2018	1	49	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
19	20/02/2018	1	65	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
20	27/03/2018	1	120	192-NOTICE & ADJOURNED MATTERS		<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
21	27/03/2018	1	120	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
22	03/04/2018	1	140	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
23	13/04/2018	1	89	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
24	10/07/2018	1	219	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>

S. No.	Notified Date	CourtCode	Board Sr. No.	Stage	Action	Coram
25	07/09/2018	1	104	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>
26	27/11/2018	1	197	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE MR. JUSTICE ANANT S. DAVE</li> <li>HONOURABLE MR.JUSTICE BIREN VAISHNAV</li> </ul>
27	11/01/2019	1	64	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE MR. JUSTICE ANANT S. DAVE</li> <li>HONOURABLE MR.JUSTICE BIREN VAISHNAV</li> </ul>
28	18/02/2019	1	166	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE MR. JUSTICE ANANT S. DAVE</li> <li>HONOURABLE MR.JUSTICE BIREN VAISHNAV</li> </ul>
29	25/03/2019	1	125	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE MR. JUSTICE ANANT S. DAVE</li> <li>HONOURABLE MR.JUSTICE BIREN VAISHNAV</li> </ul>
30	02/05/2019	1	64	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE MR. JUSTICE ANANT S. DAVE</li> <li>HONOURABLE MR.JUSTICE BIREN VAISHNAV</li> </ul>
31	07/08/2019	1	59	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE MR. JUSTICE ANANT S. DAVE</li> <li>HONOURABLE MR.JUSTICE BIREN VAISHNAV</li> </ul>
32	09/09/2019	2	36	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE MR.JUSTICE S.R.BRAHMBHATT</li> <li>HONOURABLE DR.JUSTICE A. P. THAKER</li> </ul>
33	14/10/2019	1	127	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>
34	28/11/2019	1	116	192-NOTICE & ADJOURNED MATTERS		<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>
35	08/01/2020	1	107	192-NOTICE & ADJOURNED MATTERS	1-NEXT DATE	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>


## Available Orders

S. No.	Case Details	Judge Name	Order Date	CAV	Judgement	Questions	Transferred	Download
1	SCA/5312/2016	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>	05/04/2016	N	ORDER	-	Y	Download
2	SCA/5312/2016	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>	21/07/2016	N	ORDER	-	Y	Download
3	SCA/5312/2016	<ul style="list-style-type: none"> <li>HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>	18/11/2016	N	ORDER	-	Y	Download

S. No.	Case Details	Judge Name	Order Date	CAV	Judgement	Questions	Transferred	Download
4	SCA/5312/2016	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. R.SUBHASH REDDY</li> <li>o HONOURABLE MR.JUSTICE VIPUL M. PANCHOLI</li> </ul>	20/01/2017	N	ORDER	-	Y	Download
Connected Matters								
S. No.	CaseDetail	Status Name	Disposal Date	Action/Coram				
1	R/SCA/2702/2018	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
2	R/SCA/2720/2019	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
3	R/SCA/4055/2018	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
4	R/SCA/7669/2018	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
5	R/SCA/11525/2018	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
6	R/SCA/17039/2016	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
7	R/SCA/11208/2017	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
8	R/SCA/20606/2017	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
9	R/SCA/15891/2018	PENDING	-	<ul style="list-style-type: none"> <li>o HONOURABLE THE CHIEF JUSTICE MR. VIKRAM NATH</li> <li>o HONOURABLE MR.JUSTICE A.J. SHASTRI</li> </ul>				
Application / Appeal Matters								
NO DATA FOR APPLICATION / APPEAL MATTERS								
IA Details								
Office Details								
S. No.	Filing Date	Document Name	Advocate Name	Court Fee on Document	Document Details			
1	30/03/2016	VAKALATNAMA	ANSHUL N SHAH for PETITIONER(s) →	0	-JAYESHKUMAR SOMABHAI PATEL			
2	30/03/2016	MEMO OF PETITION/APPEAL/SUIT	MR NILESH P SHAH for PETITIONER(s) →	100	-JAYESHKUMAR SOMABHAI PATEL			
3	30/03/2016	VAKALATNAMA	MR NILESH P SHAH for PETITIONER(s) →	5	-JAYESHKUMAR SOMABHAI PATEL			
4	01/04/2016	ADDITIONAL FEE ON MEMO OF APPEAL/PETITION/SUIT	MR NILESH P SHAH for PETITIONER(s) →	500	-JAYESHKUMAR SOMABHAI PATEL			
Certified Copy								
NO DATA FOR CERTIFIED COPY								
Lower Court Detail								
NO DATA FOR LOWERCOURT DETAIL								
FIR Details								
NO DATA FOR FIR DETAILS								

ANNEXURE - XIII

**INDIA NON JUDICIAL**  
**Government of Gujarat**  
**Certificate of Stamp Duty**



Certificate No.	: IN-GJ38279704245191R
Certificate Issued Date	: 21-Nov-2019 10:57 AM
Account Reference	: CSCACC (GV)/ gjcsceg07/ GJ-BHJIY0148/ GJ-BH
Unique Doc. Reference	: SUBIN-GJGJCSCEG0718396158073515R
Purchased by	: SUBHLAXMI PIGMENT
Description of Document	: Article 5(h) Agreement (not otherwise provided for)
Description	: FOR UNDERTAKING
Consideration Price (Rs.)	: 0 (Zero)
First Party	: SUBHLAXMI PIGMENT
Second Party	: NA
Stamp Duty Paid By	: SUBHLAXMI PIGMENT
Stamp Duty Amount(Rs.)	: 300 (Three Hundred only)

CSC Gujarat  
ID: GJIYSAI0148U

**MA 0000811404**



1. The certificate should be verified on the website. Any discrepancy in the details on this Certificate and as available on the website renders it invalid.  
2. The onus of checking the legitimacy is on the users of the certificate.  
3. In case of any discrepancy please inform the Competent Authority.

**UNDERTAKING**

I Dhirajbhai Bhayani, Partner of M/s. Shubhlaxmi Pigments, Located Plot No.502, GIDC Panoli, Ta – Ankleshwar, Dist-Bharuch, Gujarat. Do hereby undertake as under:

- 1) We have applied for Environment Clearance to Gujarat State Level Environment Impact Assessment Committee, Gandhinagar.
- 2) As a part of EC process we have prepared an environmental Impact Assessment report.
- 3) No Borewell will be dug inside the premises.
- 4) Underground drainage connection will not be taken in the unit.
- 5) We will provide separate electric meter for waste water treatment system.
- 6) The ownership of EIA report remain with us.
- 7) The data presented in EIA report is true and describes all details of the project.
- 8) We will be responsible for any factual discrepancy in EIA report.
- 9) We will develop 40 % greenbelt area within & outside the premises of total plot area.
- 10) We will enhance CER fund allocation of 2 times.

I hereby give an undertaking that the above data and information in enclosures are true to the best of my knowledge and the same I believe to be true.

For, **Shubhlaxmi Pigments.**

*Dhirajbhai Bhayani*  
Authorized Signatory

Date: 21/11/2019

Place: Bharuch

SIGNED BEFORE ME

*M. B. Patel*  
M. B. PATEL  
B.Com., LL.B.  
ADVOCATE & NOTARY  
(Govt. of Guj.)



Reg No

1112017

Date

21 NOV 2019



सत्यमेव जयते

**INDIA NON JUDICIAL**  
**Government of Gujarat**  
**Certificate of Stamp Duty**

Certificate No. : IN-GJ41879630724880R

Certificate Issued Date : 29-Nov-2019 02:57 PM

Account Reference : IMPACC (SV)/ gj13043504/ ANKLESHWAR1/ GJ-BH

Unique Doc. Reference : SUBIN-GJGJ1304350425372769414334R

Purchased by : JYOTI OM CHEMICAL RESEARCH CENTRE PRIVATE LIMITED

Description of Document : Article 5(h) Agreement (not otherwise provided for)

Description : FOR EC APPLICATION

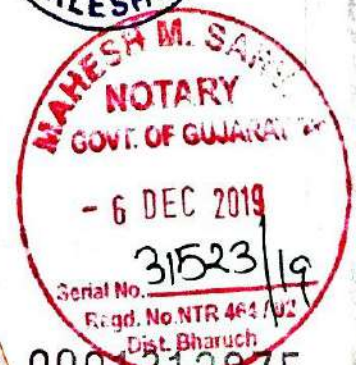
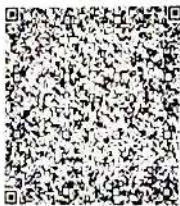
Consideration Price (Rs.) : 0  
(Zero)

First Party : JYOTI OM CHEMICAL RESEARCH CENTRE PRIVATE LIMITED

Second Party : Not Applicable

Stamp Duty Paid By : JYOTI OM CHEMICAL RESEARCH CENTRE PRIVATE LIMITED

Stamp Duty Amount(Rs.) : 300  
(Three Hundred only)



MA 0001312875

## Statutory Alert:

- The authenticity of this Stamp Certificate should be verified at [www.shclstamp.com](http://www.shclstamp.com). Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
- The validity and the legitimacy is on the users of the certificate.
- In case of any discrepancy please inform the Competent Authority.



### UNDERTAKING

I Dr. C.B. Upasani residing at 60, Daxinamurti society opp. Sunpharma research centre, Atladara, Vadodara – 390012, Gujarat, is Director of M/s. Jyoti Om Chemical Research Centre Pvt. Ltd. located at K-1 7705/2-4, GIDC Estate, Ankleshwar-393002 do hereby undertake as under:

- 1) We are Environment consultant of M/s. Shubhlaxmi Pigments, Panoli.
- 2) We are having Hon. Gujarat High Court stay order on notification no. S.O. 648 (E) dated 03/03/2016. Hence, we are entitled to carry out Environmental Impact Assessment studies and generate report based on that study.
- 3) The prescribed TOR of M/s. Shubhlaxmi Pigments, reference no. SEIAA/GUJ/TOR/5(f)/1061/2019 dated: -17<sup>th</sup> Jul, 2019 has been complied with and the data submitted is factually correct.
- 4) We have NABL certified laboratory ref. no. T-2675 to carry out analysis at Ankleshwar.
- 5) We are also GPCB recognized environment auditor.

I hereby give an undertaking that the above data and information in enclosures are true to the best of my knowledge and the same I believe to be true.

For, M/s Jyoti Om Chemical Research Centre Pvt. Ltd

Authorize Signatory

Date: 25/11/2019

Place: Ankleshwar



**MAHESH M. SARVAN**  
NOTARY  
(Govt. of Gujarat) INDIA.  
F-1, Indraprastha Complex,  
Near Vijaya Bank, GIDC, Ankleshwar-2,  
Reg. No. NTR - 464 / 02, Mo. 98284 10243

## મુખ્ય અધિકારીની કચેરી

(ગુજરાત ઔદ્યોગિક વિકાસ નિગમ)

### પાનોલી નોટિફાઇડ એરિયા

ફાયર સ્ટેશન બીલ્ડીંગ, જી.આઈ.ડી.સી., પાનોલી, તા. અંકલેશ્વર, જી. ભરૂચ, (ગુજરાત) ફોન : ૦૨૬૪૬ - ૨૭૨૭૪૭  
ઈ-મેલ : naofficerpanoli@yahoo.co.in

પત્ર ક્રમાંક નો એ ઓ/પાનોલી/ ૨૭૦

તારીખ : ૦૬/૧૧/૨૦૧૭

પ્રતિ,  
મે. સુભલક્ષ્મી પીગમેટ્સ,  
પ્લોટ : ૫૦૨,  
જી.આઈ.ડી.સી, પાનોલી,  
તા: અંકલેશ્વર

વિષય:- ગ્રીન બેલ્ટ ડેવલોપ કરવા બાબત.

સંદર્ભ:- આપના લેટર તા: ૦૫-૧૧-૨૦૧૬

મહાશય

ઉપરોક્ત વિષય અને સંદર્ભ જણાવવાનું કે, મે. સુભલક્ષ્મી પીગમેટ્સ પ્લોટ: ૫૦૨ ગ્રીન બેલ્ટ ડેવલોપ કરવા માટે લગભગ ૩૦૦ ચો.મી. જગ્યા માંગણી કરેલ છે. જેના અત્રેની કચેરીથી સ્થળ યકાસણી કર્યા બાદ આપના પ્લોટની સામેની બાજુ ગ્રીન બેલ્ટ ડેવલોપ કરવા માટે નીચેની શરતે મંજૂરી આપવામાં આવે છે.

૧. ડામર રોડની ધારથી ૨.૫૦ મીટર જગ્યા નિગમના રોડ પહોળા કરવા માટે, પાણી, ડ્રેનેજની લાઇન અને અન્ય યુટીલીટી ખુલ્લી રાખવાની રહેશે.

૨. જો ભવિષ્યમાં આ જગ્યામાં નિગમ/નોટિફાઇડ તરફથી ઉપયોગ કરવાની થાય તો આપની મંજૂરી વગર આ જગ્યા ઉપયોગમાં લેવામાં આવશે.

૩. આ જગ્યામાં કોઈ-પણ હયાત યુટીલીટીને ભંગાણ સર્જાય તો તેની સંપૂર્ણ જવાબદારી આપની રહેશે.

આભાર સહ.





Mfg. & Export of Phthlocynine Pigments

Plot NO. 502, G.I.D.C. PANOLI - 394 116. Ta. Ankleshwar, Dist. Bharuch (INDIA)

Phone : +91-2646-272506, 272856, Mob. : +91-98240 88655

E-mail : dhirajbhayani@rediffmail.com Web. :

Ref. No. :

Date :

## Environment Health & Safety Policy

We, M/s. Shubhlaxmi Pigment, engaged in the business of manufacturing of Synthetic Organic Chemicals, shall strive to ensure Environment, Health and Safety (EHS) performance related to our processes, products, and services through an effective implementation, monitoring and periodical review of the EHS objective, target and Management program.

Company is committed for the continuous improvements of its performance and ensures that the Employees at all levels are familiar with and apply this policy in all their industrial and commercial activity.

Company shall comply with all the Applicable Regulatory & Statutory requirement and recommendations of Regulatory Authorities and implemented the best Industrial practice. Company periodically assesses Risk involve in its operation(s) and during Change/Modification of the process to evaluate the impact on Environment, Health and Safety.

Company also communicate all the relevant information its customers, vendors, general public and authorities. It advice its customers about handling, use and disposals of its product.

Company strengthen pollution prevention and waste abatement practice and strive to provide a self and healthy environment.

Company implement an effective and standard EHS practices at the work, among employees and concerned stack holder prevent injuries and ill health of employees.

Company will establish non compliance/violation reporting system to the management. The company will share its experience whenever possible with other members of Industries.

For M/s. Shubhlaxmi Pigments

Mr. Dhirajbhai Bhayani  
(Partner)



502, G.I.D.C., PANOLI  
 TA. ANKLESHWAR, DIST. BHARUCH  
 PH (02646) 272856 Telefax : 272506 FAX (PP) (02646) 251479  
 Website : www.chemical house.com / shubhlaxmi pigment  
 E-mail : shubhlaxmi pigments@rediffmail.com

GPCB ID: 15712 UNIT: Ankleshwar  
 20<sup>th</sup> May, 2019

To,  
 Gujarat Pollution Control Board (Head Office)  
 Paryavaran Bhavan, Sector – 10 A,  
 Gandhinagar – 382 01

**Kind Attn.** : Mr. A.V Shah (Unit Head)  
**Subject** : Submission of compliance regarding your show cause notice  
**Reference** : Your letter dated 08/05/2019

Respected Sir,

We are in receipt of your above mentioned letter bearing Show Cause Notice; with reference to Board officials' visit and inspection of our plant on 18/01/2019. We have submitted reply regarding the same RO Office dated 19/01/2019. We have enclosed the submitted copy for your reference. Further, we would like to give you following clarifications:

1. Spent sulphuric acid (25%) generated during manufacturing process is stored separately and sold out to end users i.e M/s. Ashapura Chemicals, GIDC Panoli and M/s. Trexil Chemicals, GIDC Ankleshwar but unit has not submitted MoU & Rule 9 permission.

➤ As required by you, we enclose herewith following documents for your record and necessary action. Please note that currently we sell our spent Sulphuric Acid (25%) to M/s. Ashapura Chemicals, GIDC Panoli and M/s. Trexil Chemicals, GIDC Ankleshwar. In future we will send our spent Sulphuric Acid (25%) to M/s. Raj Enterprise and M/s. Shiv Dyestuff. We have enclosed MoU and Rule 9 application for them for your record.

Sr. No.	Unit	Permission / Documents	Annexure
1.	Ashapura Chemicals	Copy of MoU	Annexure-1
2.		Rule 9 permission	Annexure-2
3.	Trexil Chemicals	Copy of MoU	Annexure-3
4.		Rule 9 permission	Annexure-4
5.	Raj Enterprise	Copy of MoU	Annexure-5
6.		Rule 9 Application	Annexure-6
7.	Shiv Dyestuff	Copy of MoU	Annexure-7
8.		Rule 9 Application	Annexure-8

24/05/19  
 Gujarat Pollution Control Board  
 Head Office  
 Sector No. 10-A,  
 Gandhinagar-382001

28.5.19  
 received  
 Gujarat Pollution Control Board  
 RO Ankleshwar



502, G.I.D.C., PANOLI  
TA. ANKLESHWAR, DIST. BHARUCH  
PH. (02646) 272856 Telefax : 272506 FAX (PP) (02646) 251479  
Webside : www.chemical house.com / shubhlaxmi pigment  
E-mail : shubhlaxmi pigments@rediffmail.com

**GPCB ID: 15712 UNIT: Ankleshwar**

We hope the above details are meeting with your requirements and request you to inform us in case of any further details or clarifications.

Thanking you and looking forward to your kind consideration.

Sincerely Yours,  
**For, Shubhlaxmi Pigments,**

**Authorized Signatory**

**Encl.** As enclosed above

**CC To,**

Gujarat Pollution Control Board,  
Ankleshwar Cleaner Technology Development Center Building (ARAIL),  
1st Floor, Plot No:1501,  
GIDC Estate, Ankleshwar - 393 002,  
Dist: Bharuch.

**COMPLIANCE REPORT**

<b>Sr. No.</b>	<b>CONDITION</b>	<b>COMPLIANCE STATUS</b>			
<b>1.</b>	<b>Consent Order No. AWH -66826, Date of issue: 09/12/2014 Consent Valid up to 15/09/2019.</b>				
<b>2.</b>	The consent under Water Act-1974,Air Act-1981 & Authorization under Environment (Protection) Act, 1986 shall be Valid up to 15/09/2019 to operate industrial plant to manufacture following products:	Complies. The production is as per CCA permission quantity. Last three months production details are given below.			
	<b>Sr. No.</b>	<b>Products</b>		<b>Quantity MT/PM</b>	
	1	Pthalocynine Alpha Blue		5.0	
	2.	Pthalocynine Beta Blue		10.0	
	<b>BY PRODUCT</b>				
	3.	Spent Sulphuric Acid		105.0	
	<b>Production Quantity MT/M</b>	<b>Jan-2019</b>	<b>Feb-2019</b>	<b>March-2019</b>	
	Pthalocynine Alpha Blue	4.94	3.78	2.91	
	Pthalocynine Beta Blue	6.23	0.00	00	
	Spent Sulphuric Acid (By Product)	0.00	0.00	45.0	
<b>3</b>	<b>CONDITIONS UNDER THE WATER ACT:</b>				
3.1	The total quantity of industrial effluent shall not exceed 10.0 KL/Day.	Complied.			
3.2	The quantity of the domestic waste water shall not exceed 3.0 KL/Day.	Complied.			
3.3	The total water consumption for the industrial process and other ancillary operations shall be not exceed shall not exceed 16.00 KL/Day and water consumption for domestic purpose shall not exceed 3.0 KL/Day as mention in form D of consent application, submitted under water act-1974.	Actual water consumption details of last three months are attached below.			

	<b>Jan-2019</b>	<b>Feb-2019</b>	<b>March-2019</b>
<b>Water Quantity MT/M</b>	125	188	225
3.4	Unit shall affix of water meters as per Section 4(1) of the water (Prevention and Control of Pollution) Cess Act-1977 for the purpose of measuring and recording the quantity of water consumed at such places as may be required, within 15 days and it will be presumed that the quantity indicated by the meter has been consumed by the unit until the contrary is proved.	Noted By the Unit.	
3.5	The GIDC drainage connection given by a GIDC for discharge of industrial effluent shall be disconnected and the outlet shall be sealed.	Noted By the Unit.	
<b>4.0 TRADE EFFLUENT</b>			
4.1	The application shall be required to take storage facilities to store the effluent for at least 48 hours by providing acid propf brick lined impervious tanks/HDPE tanks.	Noted By the Unit.	
4.2	The applicant shall make fixed arrangement for loading the effluent from their collection tanks to the tanker of ETL The unit shall not keep any by-pass line or System or loose or flexible pipe line for loading the effluent into the tanker of PETL.	Noted By the Unit.	
4.3	Leachate from the hazardous solid waste, If any shall also be connected into a collection tank through leachate collection facilities and shall be conveyed along with industrial effluent	Noted By the Unit.	

	to CETP-PETL.	
4.4	Magnetic flow meter shall be installed at the inlet & outlet of effluent collection tank to measure quantity of effluent to lifted into a tanker o PETL.	Complied.
4.5	The entire quantity shall of industrial effluent shall have to be conveyed by PETL. In no circumstances the effluent either treated or untreated shall be discharge into GIDC drain or anywhere else.	Noted By the Unit.
4.6	Disposal system for storm water shall be provided separately. In no circumstances Storm water shall be mixed with the industrial effluent.	Noted By the Unit.
4.7	The applicant shall be responsible for loading its effluent into the tankers of the PETL for transporting the effluent. Due care shall be taken to avoid any leakage or spillage of effluent during loading the tanker.	Noted By the Unit.
4.8	If the effluent contains heavy metals, Phenols & cyanide the PETL member unit shall have to treat the effluent within its premises to conform the following standards.(Whichever applicable)	Noted By the Unit.
<b>SR No.</b>	<b>PARAMETER</b>	<b>PERMISSIBLE LIMIT</b>
1	Zinc	5.0 mg/L
2	Total Chromium	2.0 mg/L
3	Nickel	3.0 mg/L
4	Mercury	0.01 mg/L

M/s. SHUBHLAXMI PIGMENTS,PANOLI

5	Cyanide	0.2 mg/L	
6	Pesticides	Absent	
7	Phenolic Compounds	1.0 mg/L	
8	Lead	0.1 mg/L	
9	Copper	3.0 mg/L	
10	Hexavalent Chromium	0.1 mg/L	
11	Cadmium	1.0 mg/L	
12	Arsenic	0.2 mg/L	
13	Selenium	0.05 mg/L	
14	COD	3000 mg/L	
15	BOD	10000 mg/L	
16	Free Acidity	55000 ppm	
4.9	The applicant shall have to keep accurate records of quality of production of each quantity of water consumption, quantity of effluent generated and consumption of electricity on day to day basis and required to submit the complied record of one month to GPCB & PETL on or before fifth day of the succeeding month.	Complied.	
4.10	In case of shut down of plant for more than three says for any reason, the ETL unit member shall intimate to ETL authority & GPCB well in advance for the better operation & management of CETP.	Noted By Unit.	
4.11	Unit shall either stop or curtail its production activities if the effluent is not adequately treated by the PETL to conform to the standards specified by GPCB.	Complied.	
4.12	The authorized representative of ETL shall	Complied.	

M/s. SHUBHLAXMI PIGMENTS,PANOLI

	have right of entry at any time for the purpose of inspection and monitoring the effluent collection facilities/PETP (If required) of the applicant.	
4.13	In case of incinerators or incinerator, the flow measuring devices for mother liquor / toxic effluent / Non-biodegradable effluent, light diesel oil, Furnace oil, etc.i.e fuel used for combustion, air used for combustion shall be separately provided Incinerator temperature recording devices as well as gaseous flow measuring devices for scrubber shall also be provided These data of temperature & flow should be recorded every day & submitted to GPCB on monthly basis.	Complied.
4.14	The G1DC drainage connection given by the G1DC for discharge of industrial effluent shall be disconnected & the outlet shall be sealed.	Complied.
4.15.	If the PETL authority terminates the membership of CETP, the ETL member unit shall have to close down the manufacturing activities/industrial operation of the process plant immediately until the ETL membership is resumed.	Noted by the unit.
4.16	The applicant shall also comply with the General Condition (Whichever applicable from No.1 to 25) attached herewith.	Noted by the unit.
4.17	The applicant shall put up at the entrance a board displaying ETL membership number & date of joining of ETL, the name of	Noted by the unit.

	unit, particulars of the products/ process and the name of proprietor/partners /directors of the unit and the electricity consumer number as on the record of GEB.	
4.18	The Environmental Management Unit/Cell shall be setup to ensure implementation on and monitoring of environment safeguards and other conditions stipulated by statutory, authorities. The Environmental Management Cell/unit shall directly report to the Chief Executive of the organization and shall work as a focal point for internalizing environmental issued. These Cells also coordinate the exercise of environmental audit and preparation of environmental statements.	Noted by the unit.
4.19	The Environmental audit shall be out yearly and the environmental statements pertaining to the previous year shall be submitting to this State Board latest by 30th September every year.	Noted by the unit.
4.20	The Board reserves the right to review and/or revoke the consent and / or make modifications in the conditions which it seems fit in accordance with provisions of Water Act-1974.	Noted by the unit.
4.21	In case change of ownership /Management the name and address of new ownership/partner/director/proprietor should immediately be intimate to the board.	Noted by the unit.
4.22	The applicant shall have to submit every month	Noted by the unit.

M/s. SHUBHLAXMI PIGMENTS,PANOLI

	the certified copies of challans regarding the quantity of industrial effluent delivered per month to CETP of PETL.				
4.23	Unit shall strictly observed & comply to the standard for the discharge of trade effluent /sewage into amlakhadi as per notification No.P/111(3) Board's standards/33129,dated 30 <sup>th</sup> October ,2001.	Complied.			
4.24	Unit have to modify/improve performance of existing effluent treatment facility of efficiency & adequacy in order to comply with prescribed standards in respects of effective operation of effluent treatment plant with regards to notification NO.P/111(3)Board's standards /33129 dated 30 <sup>th</sup> October 2001 in fight or high court in SCS No.4473 of 97 dated 21/20/99.	Noted by the unit.			
<b>5.</b>	<b>CONDITIONS UNDER THE AIR ACT</b>				
<b>4.1</b>	The following shall be used as fuel in boiler 7 D.G Set respectively.	Complied.Flue gas emission is within limit.			
<b>Sr. No.</b>	<b>Fuel</b>	<b>Quantity</b>			
1.	Wood	4 MT/Month			
<b>5.2</b>	The flue gas emission through stack attached to boiler shall conform to the following standards:	Complied.			
<b>Sr. No</b>	<b>Stack ID/Stack attached to</b>	<b>Stack Height in Mt</b>	<b>Parameter</b>	<b>Perm Limit</b>	<b>Unit</b>
1	Boiler	11	PM	150	Mg/Nm3
2	Hot Air Generator	11	SO2	100	PPM
			NOx	50	PPM

M/s. SHUBHLAXMI PIGMENTS,PANOLI

5.3	There shall be no process emission from the manufacturing process as well as any other ancillary process.	Complied.															
4.5	The concentration of the following parameters in the ambient air within the premises of the shall not exceed the limits specified hereunder.	Complied.															
	<table border="1"> <thead> <tr> <th>Sr No.</th> <th>Parameter</th> <th>Permissible Limit (microgram/m3)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PM<sub>10</sub></td> <td>100</td> </tr> <tr> <td>2</td> <td>PM<sub>2.5</sub></td> <td>60</td> </tr> <tr> <td>3</td> <td>SO<sub>x</sub></td> <td>80</td> </tr> <tr> <td>4</td> <td>NO<sub>x</sub></td> <td>80</td> </tr> </tbody> </table>	Sr No.	Parameter	Permissible Limit (microgram/m3)	1	PM <sub>10</sub>	100	2	PM <sub>2.5</sub>	60	3	SO <sub>x</sub>	80	4	NO <sub>x</sub>	80	
Sr No.	Parameter	Permissible Limit (microgram/m3)															
1	PM <sub>10</sub>	100															
2	PM <sub>2.5</sub>	60															
3	SO <sub>x</sub>	80															
4	NO <sub>x</sub>	80															
5.5	The applicant shall operate industrial plant / air pollution control equipment very efficiently and continuously so that the gaseous emission always conforms to the standards specified in condition no. 5.2.2 & 5.2.3 above.	Noted By The Unit.															
5.6	The consent to operate the industrial plant shall lapse if at any time the parameters of the gaseous emission are not within the tolerance limits specified in the condition no. 5.2.2 & 5.2.3 above.	Noted By The Unit.															
5.7	The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be design by numbers such as S-1, S-2, etc. and these shall be painted/displayed to facilitate identification.	Noted By The Unit.															
5.8	The Industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75 dB(a) during day time and 70 dB (A) during night time. Daytime is reckoned in between 6a.m( and10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.	Noted By The Unit.															
6.	<b>GENERAL CONDITIONS -</b>																

M/s. SHUBHLAXMI PIGMENTS,PANOLI

6.1	Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.	Complied.		
6.2	Applicant shall also comply with the general conditions given in annexure 1.	Complied.		
6.3	Industry shall have to display the relevant information with regard to hazardous waste as indicated in the court's order in W.P.No.657 of 1995 dated 14 <sup>th</sup> October 2003.	Complied.		
6.4	Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, Including waste water and air emissions and solid hazardous waste generated within the factory premises.	Complied.		
7.	<b>AUTHORISATION FOR THE MANAGEMENT &amp; HANDLING OF HAZARDOUS WASTES FORM- 2 (SEE RULE 6(2) )</b>			
7.1	Number of authorization: AWH- <b>66826</b> ,Date of Issue : <b>09-12-2014</b>	--		
7.2	<b>M/s. SUBHLAXMI PIGMENTS.,</b> is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at <b>PLOT NO.502, GIDC ESTATE PANOLI,DIST : BHARUCH</b>	Noted by the Unit.		
<b>Sr No.</b>	<b>Waste</b>	<b>Quantity /Year</b>	<b>Schedule/ Month</b>	<b>Facility</b>
1.	ETP Waste	60 MT/Yr.	26.2	Collection,Storage,Transportation and disposal at TSDF BEIL.
2.	Used Oil	0.06 KL/Yr.	5.1	Collection,Storage,Transportation sale to register re-processors.
3.	Discarded Drums/Barrel bags liner	5 Nos/Yr. 2400 Nos/Yr.	33.3	Collection,Storage,Transportation,Decontamina

M/s. SHUBHLAXMI PIGMENTS,PANOLI

			tion.
7.3	The authorization is granted to operate a facility for collection, storage, within the factory premises and transportation and ultimate disposal of hazardous wastes selling to refiners and authorized recyclers consequently.	Noted By Unit.	
7.4	The authorization shall be in force for a period up to 15/09/2019.	Noted By Unit.	
7.5	The authorization is subjected to the conditions stated below and such other conditions as may be specified in the rules from time to time under the environment act-1986.	Noted By Unit.	
<b>8</b>	<b>TERMS AND CONDITIONS OF AUTHORISATION:</b>		
a.	The applicant shall comply with the provisions of the Environment (Protection) Act-1986 and the rules made there under.	Noted By Unit.	
b.	The authorization shall be produced for inspection at the request for an officer authorized by the Gujrat pollution control board.	Noted By Unit.	
c.	The person authorized shall not rent, lend, sell, and transfer of otherwise transport the hazardous and other wastes except what is permitted through this authorization.	Noted By Unit.	
d.	Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the persons authorized shall constitute a breach of this authorization.	Noted By Unit.	
E.	It is the duty of the authorized person to take prior permission of the Gujarat Pollution	Noted By Unit.	

M/s. SHUBHLAXMI PIGMENTS,PANOLI

	Control Board to close down the facility.	
f.	An application for the renewal of an authorization shall be made as laid down in rule 5(6)(ii).	Noted By Unit.
g.	Industry shall submit annual report within 15 days and subsequent by 31st January every Year.	Complied.
h.	Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court's order in W.P. No. 657 of 1995 dated 14th October 2003.	Complied.
i.	Industry shall have to display on-line data outside the main factory gate with regard to and nature of hazardous chemicals being handled in the plant, including waste water and air emission and solid hazardous waste generated within the factory premises.	Complied.
k.	Industry shall have to manage waste oil, discarded containers etc., process waste as per Amended Rules - 2003 and shall apply Authorization for all applicable waste as per Amended Rules-2003 with 15 days.	Complied.



भारत सरकार  
पर्यावरण एवं वन विभाग  
Government of India  
Ministry of Environment & Forests  
(IA Division)

Paryavaran Bhawan  
CGO Complex, Lodhi Road  
New Delhi - 110 003  
E-mail: [plahujarai@yahoo.com](mailto:plahujarai@yahoo.com)  
Telefax: 011: 2436 3973

F. No. J-11011/790/2008- IA II (I)

Dated: February 9, 2009

To,

M/s Shubhlaxmi Pigments  
502, GIDC, Panoli  
Taluk Ankleshwar,  
District Bharuch  
Gujarat

E mail: [shubhlaxmi\\_pigments@rediffmail.com](mailto:shubhlaxmi_pigments@rediffmail.com)

**Sub: Proposed Synthetic Organic Chemical at GIDC Estate, Panoli District Bharuch Gujarat by M/s Shubhlaxmi Pigment – environmental clearance reg**

Sir,

This has reference to your letter no. nil dated Nil received in the Ministry on 24<sup>th</sup> September, 2008 along with application in the form of form-1 and pre-feasibility report seeking environmental clearance under the provisions of EIA Notification, 2006.

2.0 The Ministry of Environment and Forests has examined your application. It is noted that M/s. Shubhlaxmi Pigments is an existing small scale unit involved in manufacturing of Phthalocyanine Alpha Blue (Synthetic Organic Chemical) with production capacity of 5 MT/month at Panoli GIDC Estate, Taluka Ankleshwar, Dist. Bharuch, Gujarat. The unit has also obtained Consent to Establish (NOC) for the manufacturing of Phthalocyanine Beta Blue with production capacity of 10 MT/Month. Now it is proposed to augment production capacity of existing products up to 65 MT/Month in the same premises. The land area available is 1575 m<sup>2</sup> out of which 235 m<sup>2</sup> is developed as green belt. No ecologically sensitive area exists within 10 km periphery of the project site and no R & R is involved in the project. No endangered species of flora and fauna has been reported. The cost of the project after proposed expansion will be Rs. 91.74 Lacs of which Rs. 2.28 Lacs will be earmarked for environmental protection measures.

3.0 The Details of products along with their production capacity are as under:

Sr. No.	Name of Product	Capacity MT/Month		
		Existing*	Proposed	Total
1.	Phthalocyanine Alpha Blue	5.0	25.0	30.0

2.	Pthalocyanine Beta Blue	10.0	25.0	35.0
Total		15.0	50.0	65.0

About 632 TPM of Spent Sulphuric acid will be produced as by-product after expansion.

4.0 Water requirement would increase from 18.5 m<sup>3</sup>/d to 46.5 m<sup>3</sup>/d after proposed expansion and will be met through GIDC water supply. At present industrial wastewater generation is 10.0 m<sup>3</sup>/d which will increase up to 28.5 m<sup>3</sup>/d after expansion. Entire industrial wastewater will be treated in own effluent treatment plant and after achieving the prescribed norms, the treated effluent will be sent to Common Effluent Treatment Plant (CETP) operated By M/s. Panoli Enviro Technology Ltd. (PETL), Panoli which will be discharged into GIDC drainage system leading to the Final Effluent Treatment cum Disposal Facility of M/s Bharuch Eco-Aqua Infrastructure Ltd. (BEAIL). The treated effluent from BEAIL will finally be disposed of into deep Sea through On-shore & Off-shore pipeline. Domestic effluent (3 m<sup>3</sup>/d) will be discharged into soak pit through septic tank. Power requirement at present is 45 HP, and will increase to 175 HP after expansion. Power will be supplied by Daxin Gujarat Vij Company Limited. No DG set is provided in the unit. Existing Steam boiler of 0.6 TPH will be used after proposed expansion and existing Hot Air Generator will remain stand – by and new hot air generator of higher capacity will be installed. At Present fire wood @ 1.5 MT/day is utilized as fuel in hot air generator and in Steam Boiler, which will increase up to 2.0 MT/day. Cyclone separator will be installed as air pollution control measure to hot air generator. The unit also proposes to switch over to the compressed natural gas for the fuel in HAG & Boiler by replacing whenever it is available to the unit. Adequate stack height is already provided to steam boiler and Hot Air Generator for dispersion of gaseous emissions.

5.0 About 60 MTPA of dried sludge from the effluent treatment plant will be sent to TSDF site operated by M/s. BEIL for final disposal. 20,000 no. / Annum of discarded bags/ liners and 20 nos/annum of drums / carboys from raw material storage and handling will be decontaminated and reused or sold to approved vendors. 10 Lit/Annum of spent oil from the plant and machinery will be reused as lubricant within plant premises or sold to MoEF approved recycler.

6.0 The project activity is listed at serial no. 5(f) of schedule of EIA Notification, 2006 and categorized under "A" or "B" category depending upon the location of the plant outside or inside the notified industrial area. In the instant case the plant is located within the notified industrial area, GIDC Panoli and covered under category "B". But the Panoli is an identified critically polluted area, hence, as per general condition of Environmental Impact Assessment Notification, 2006, the proposal was appraised at centre. As the unit is located in the industrial estate, the public hearing/ consultation of the project is not required as per para 7 (i)-III (b) Stage (3) – public consultation of EIA Notification, 2006.

7.0 The proposal was considered by the Expert Appraisal Committee in its 89th meeting held on 22<sup>nd</sup> -23<sup>rd</sup> December, 2008. The EAC (I) recommended the proposal for grant of environmental clearance .

8.0 Based on the information submitted by the project authorities, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification, dated 14<sup>th</sup> September 2006 subject to the compliance of the following Specific and General Conditions:

**A. SPECIFIC CONDITIONS:**

- i. The industrial effluent generation shall not exceed 28.5 m<sup>3</sup>/d. The company shall install own ETP. The treated effluent shall conform to the standards prescribed under Environment (Protection) Act, 1986. The domestic effluent (3.0 m<sup>3</sup>/d) shall be treated through septic tank/soak pit.
- ii. GPCB shall not permit any new discharges from new industries or expansion of existing industries in the area that lead to CETP till the said CETP meet the required standards and have adequate hydraulic capacities.
- iii. The company shall adopt cleaner production technology to minimize the quantity of fresh water requirement and process effluent generation.
- iv. The particulate emissions from the wood fired steam boiler and hot air generators shall be controlled by cyclone separator. The emissions shall be dispersed through stack of height as per the CPCB standards.
- v. The Company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans boundary movement) Rules, 2008 for management of hazardous wastes and prior permission from GPCB shall be obtained for disposal of solid / hazardous waste in the TSDF. The concerned company shall undertake measures for fire fighting facilities in case of emergency.
- vi. The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000. All Transportation of Hazardous Chemicals shall be *as per* the MVA, 1989.
- vii. Hazardous chemicals shall be stored in tanks in tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm. Solvent transfer shall be by pumps.
- viii. An area of 33% shall be developed as green belt. Selection of plants species shall be *as per* the Guidelines of CPCB.
- ix. The Company shall harvest surface as well as rainwater from the rooftops of the buildings and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.
- x. Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained *as per* the Factories Act.

**B. GENERAL CONDITIONS:**

- i. The project authorities shall strictly adhere to the stipulations made by the State Pollution Control Board.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- iii. At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.
- iv. The gaseous emissions (NO<sub>x</sub>, SO<sub>2</sub> and SPM ) and Particulate matter along with RSPM levels from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Stack monitoring for SO<sub>2</sub>,NO<sub>x</sub> and SPM shall be carried.
- v. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the up wind and downwind direction as well as where maximum ground level concentrations are anticipated.
- vi. Dedicated scrubbers and stacks of appropriate height as per the Central Pollution Control Board guidelines shall be provided to control the emissions from various vents. ~~The scrubbed water shall be sent to ETP for further treatment.~~
- vii. The company shall undertake following Waste Minimization measures.
  - > Metering and control of quantities of active ingredients to minimize waste.
  - > Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
  - > Use of automated filling to minimize spillage.
  - > Use of "Close Feed" system into batch reactors.
  - > Venting equipment through vapour recovery system.
  - > Use of high pressure hoses for equipment cleaning to reduce wastewater generation.
- viii. Fugitive emissions in the work zone environment, product, and raw materials storage area shall be regularly monitored. The emissions shall conform to the limits imposed by the State Pollution Control Boards/Central Pollution Control Board.

- ix. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- x. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis.
- xi. Usage of PPEs by all employees/ workers shall be ensured.
- xii. The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the project report submitted to the Ministry. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented.
- xiii. The company will undertake all relevant measures for improving the Socio-economic conditions of the surrounding area. CSR activities will be undertaken by involving local villages and administration
- xiv. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- xv. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- xvi. The project authorities shall earmark adequate funds to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.
- xvii. The implementation of the project vis-a-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry/SPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the website of the Company.
- xviii. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.



## GUJARAT POLLUTION CONTROL BOARD

Paryavaran Bhavan  
Sector - 10-A, Gandhinagar - 382 010  
Phone : 3222756, 3222095, 3222096  
Gram: CLEANWATER, Fax: (079) 3232156  
Website : www.gpcb.gov.in

By R.P.A.D.

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution) Act-1981 and Authorization under rule 3(c) & 5(5) of the Hazardous Waste (Management and Handling) Rules' 1989, amendment rules-2000, amended rules-2003 framed under the E(P) Act-1986.

And whereas Board has received consolidated application **26/09/2003** for the consolidated consent and authorization (CC & A) of this Board under the provisions / rules of the aforesaid Acts Consent & Authorization is hereby granted as under.

### CONSENT AND AUTHORISATION :

( under the provisions / rules of the aforesaid environmental acts )

To,  
M/s. SHUBHLAXMI PIGMENT,  
PLOT NO.502  
GIDC ESTATE,  
PANOLI  
DIST : BHARUCH.

1. Consent Order No. : **1049**, date of Issue 22/12/03
2. The consent under Water Act -1974 shall be valid up to **31/12/2004** for conveying the industrial effluent to the CETP of M/s. PETL for the treatment and disposal of treated effluent & The consent under Air Act - 1981, Authorization under Environment (Protection) Act, 1986 shall be valid up to **25/09/2008** to operate industrial plant for manufacture of the following products :

Sr. No.	Product	Max. Quantity
1.	Phthlocynine Alpha Blue	1.9 MT/Month
2.	BY Products : Spent Sulphuric Acid	40-45 KL/Month

### 3. CONDITION UNDER THE WATER ACT:

3.1 The quantity of industrial effluent shall not exceed **10 M<sup>3</sup>/DAY**.

3.2 The quantity of sewage shall be **3 M<sup>3</sup>/DAY**

### 3.3 TRADE EFFLUENT:

3.3.1 The applicant shall have to send entire trade effluent to M/s. Panoli Enviro Technology Limited, (PETL) as per agreement made with respective Authority at Panoli. (Other conditions relating to CETP with as Annexure-A.



# GUJARAT POLLUTION CONTROL BOARD

Paryavaran Bhavan

Sector - 10-A, Gandhinagar - 382 010

Phone 3222756, 3222095, 3222096

Gram: CLEANWATER. Fax: (079) 3232156

Website : www.gpcb.gov.in

- 3.3.2 Sewage shall be disposed of through septic tank/soak pit system.
- 3.3.3. Unit shall strictly observe & comply to the standards for the discharge of trade effluent / sewage in to Amlakhadi as per notification No.P/111(3) Board's standards /33129, dated 30<sup>th</sup> October, 2001.
- 3.3.4. Unit have to modify / improve performance of existing Effluent treatment facilities for efficiency & adequacy in order to comply with prescribed standards in respects of effective operation of effluent treatment plant with regards to notification No.P/111(3) Board's standards/33129 dated 30<sup>th</sup> October 2001 in light of High Court order in SCA No.4473 of 97 dated 21/10/99.

## 4. CONDITIONS UNDER THE AIR ACT:

- 4.1 The following shall be used as fuel in boiler / Hot Air Generator respectively.

Sr. No.	Fuel	Quantity
1.	Wood from NBR Boiler	2 MT/Month
2.	Wood from Hot Air Generator	2 MT/Month

- 4.2.1. The flue gas emission through stack attached to boiler / Hot Air Generator shall conform to the following standards:

Stack No.	Stack Attached To	Stack Height in Meter	Parameter	Permissible Limit
1.	Boiler	9	Particulate matter	150 mg/NM <sup>3</sup>
2.	Hot Air Generator	9	SO <sub>2</sub>	100 ppm
			NO <sub>x</sub>	50 ppm

- 4.2.2 There shall be no process emission from the manufacturing process as well as any other ancillary process.

- 4.2.3. The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder.

PARAMETER	PERMISSIBLE LIMIT
Suspended Particulate Matter	500 microgram per cubic meter
Oxides Of Sulphur	120 microgram per cubic meter
Oxides Of Nitrogen	120 microgram per cubic meter

- 4.2.4. The applicant shall operate industrial plant / air pollution control equipment very efficiently and continuously so that the gaseous emission always conforms to the standards specified in condition no.4.2.1 and 4.2.2. & 4.2.3. above.



# GUJARAT POLLUTION CONTROL BOARD

Paryavaran Bhavan

Sector - 10-A, Gandhinagar - 382 010

Phone : 3222756, 3222095, 3222096

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Website : www.gpcb.gov.in

4.2.5. The consent to operate the industrial plant shall lapse if at any time the parameters of the gaseous emission are not within the tolerance limits specified in the condition no.4.2.1 and 4.2.2. & 4.2.3, above.

4.3 The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1,S-2,etc.and these shall be painted/displayed to facilitate identification.

4.4 The Industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75dB(a) during day time and 70 dB(A) during night time. Daytime is reckoned in between 6a.m. and 10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.

## 5 GENERAL CONDITIONS: -

5.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.

5.2 Applicant shall also comply with the general conditions given in annexure-I

5.3 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court's order in W.P. No.657 of 1995 dated 14<sup>th</sup> October 2003.

5.4 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including waste water and air emissions and solid hazardous waste generated within the factory premises.

## 6. AUTHORISATION FOR THE MANAGEMENT & HANDLING OF HAZARDOUS WASTES Form-2 (See rule 3 (c) & 5 (5))

Form for grant of authorization for occupier or operator handling hazardous waste

6.1 Number of authorization: **1049** Date of issue: \_\_\_\_\_

6.1.1 M/s. SHUBHLAXMI PIGMENT is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at Plot No. 502, GIDC Estate PANOLI, Dist. BHARUCH.

Sr. No.	Waste	Quantity	Schedule-I	Facility
I	ETP Waste	30 MT/Y	26.2	Collection, Storage, Transportation, disposal

6.1.2 The authorization is granted to operate a facility for collection, storage at factory premises and transportation and ultimate disposal of Hazardous wastes at TSDF by M/s. BEIL.



## GUJARAT POLLUTION CONTROL BOARD

Paryavaran Bhavan

Sector - 10-A, Gandhinagar - 382 010

Phone : 3222756, 3222095, 3222096

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Website : www.gpcb.gov.in

- 6.1.3 The authorization shall be in force for a period up to **25/09/2008**.
- 6.1.4 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

### 6.1.5 TERMS AND CONDITIONS OF AUTHORISATION

- The applicant shall comply with the provisions of the Environment (Protection) Act - 1986 and the rules made there under.
- The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.
- The persons authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
- Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.
- It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
- An application for the renewal of an authorization shall be made as laid down in rule 5 (6) (ii).

For and on behalf of  
Gujarat Pollution Control Board

(V.R. PATEL)

ENVIRONMENTAL ENGINEER

NO.PC/BRCH/CC&A- 286/ 36886

ISSUED TO:

M/s. SHUBHLAXMI PIGMENT,  
PLOT NO. 502,  
GIDC ESTATE,  
PANOLI,  
DIST. BHARUCH.

123 DEC 2003



ANALYSIS REPORT FOR  
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board, Bharuch  
C-1/119/3, GIDC Phase-2  
Narmadanagar  
Bharuch-392015  
Tele:(0264)2246333

Sample ID:266917 - Analysis Completion:01/10/2019

ANNEXURE - XXI

Dyes and Dye- Intermediates / LAB Inward : 39281

TEST REPORT

Test Report No. : 39281

Date: 01/10/2019

1. Name of the Customer : Shubhlaxmi Pigments - 15712  
2. Address : 502, ,GIDC Estate, Panoli, Nr. Harigiri Paper Mill, Panoli.,N.A. /006-394116, Taluka : Ankleshwar, District : Ankleshwar, GIDC : Panoli  
3. Nature of Sample : REP-Representative/Grab, (Insp Type : APP-On Application)  
4. Sample Collected By : S.K.Vasava,SO  
5. Quantity of Sample Received : 5 lit  
6. Code No. of the Sample : 266917  
7. Date & Time of Collection & Inwarding : 19/09/2019 , (1450 to 1450) & 21/09/2019  
8. Date of Start & Completion of Analysis : 21/09/2019 & 01/10/2019  
9. Sampling Point : From treated w/w holding cum CETP-PETL disposal tank. ~  
10. Flow Details (Remarks) :  
11. Mode of Disposal : in to CETP-PETL through tanker  
12. Ultimate Receiving Body : No generation of industrial wastewater  
13. Temperature on Collection : 32 & pH Range on pH Strip :@7-8 on pH strip  
14. Carboys Nos for : - & Color & Appearance :Brownish  
15. Water Consumption & W.W.G (KLPD) : Ind :14.600 , Dom :3.000 & Ind :10.000 , Dom :3.000

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	32
2	pH	pH Units	4500 H+ B APHA Standard Methods 22nd edi.2012	1 – 14 pH value As or	7.59
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	30
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Methoc	10 – 200000 mg/L	3802
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Methoc	2 – 10000 mg/L	28
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	17.02
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	1141
8	Sulphate	mg/l	APHA(22nd edi)4500 SO4 E	2-40mg/l	1236
9	Chemical Oxygen Demand	mg/l	APHA (22nd Edition)- 5220 B Open Reflux Method-2	5.0- 50000 mg/l	168
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	0.4
11	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirme	05–50000 mg/l	37

**Laboratory Remarks** : freezed By:210-vig\_210 Dt.: 01/10/2019

K. I. Karelia,SSO

**Field Observation** : sample collected method as per is:3025.

Note :

- \* - These parameters are NOT covered under the scope of NABL.
- The results refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
- Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
- This report is not to be reproduced wholly or in part or used in any advertising media without the permission of the Board in writing.
- The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
- Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
- Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
- Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 22nd Edition by APHA.
- Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.



ANALYSIS REPORT FOR  
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board, Bharuch  
C-1/119/3, GIDC Phase-2  
Narmadanagar  
Bharuch-392015  
Tele:(0264)2246333

Sample ID:251386 - Analysis Completion:31/01/2019

Dyes and Dye- Intermediates / LAB Inward : 37050

TEST REPORT

Test Report No. : 37050

Date: 01/02/2019

1. Name of the Customer : Shubhlaxmi Pigments - 15712  
2. Address : 502, ,GIDC Estate, Panoli, Nr. Harigiri Paper Mill, Panoli.,N.A. /006-394116, Taluka : Ankleshwar, District : Ankleshwar, GIDC : Panoli  
3. Nature of Sample : REP-Representative/Grab, (Insp Type : ROU-Routine Visit)  
4. Sample Collected By : P R JADAV,SSA  
5. Quantity of Sample Received : 5 lit  
6. Code No. of the Sample : 251386  
7. Date & Time of Collection & Inwarding : 18/01/2019 , (1605 to 1605) & 21/01/2019  
8. Date of Start & Completion of Analysis : 21/01/2019 & 31/01/2019  
9. Sampling Point : From final treated w/w collection cum CETP-PETL disposal tank ~ --  
10. Flow Details (Remarks) : -  
11. Mode of Disposal : in to CETP-PETL Panoli  
12. Ultimate Receiving Body : No generation of industrial wastewater  
13. Temperature on Collection : 32 & pH Range on pH Strip :7 to 8 on PH strip  
14. Carboys Nos for : & Color & Appearance :light blue  
15. Water Consumption & W.W.G (KLPD) : Ind :14.600 , Dom :3.000 & Ind :10.000 , Dom :3.000

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	32
2	pH	pH Units	4500 H+ B APHA Standard Methods 22nd edi.2012	1 – 14 pH value As or	7.35
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Methoc	10 – 200000 mg/L	3490
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Methoc	2 – 10000 mg/L	56
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	16.80
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	294
8	Sulphate	mg/l	APHA(22nd edi)4500 SO4 E	2-40mg/l	1352
9	Chemical Oxygen Demand	mg/l	APHA (22nd Edition)- 5220 B Open Reflux Method-2	5.0- 50000 mg/l	840
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	1.2
11	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirme	05–50000 mg/l	274

**Laboratory Remarks** : freezed By:210-vig\_210 Dt.: 01/02/2019

K. I. Karelia,SSO

**Field Observation** : sample is collected as per method is : 3025

Note :

- \* - These parameters are NOT covered under the scope of NABL.
- The results refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
- Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
- This report is not to be reproduced wholly or in part or used in any advertising media without the permission of the Board in writing.
- The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
- Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
- Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
- Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 22nd Edition by APHA.
- Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

**EDS-(i)** TOR copy is not uploaded in form 2 at S. No. 6, Now PP submitted the Project in Category A Project. Please clarify.

Answer: We have uploaded TOR Copy as Annexure-I in EIA/EMP(Annexures) Report due to uploading space for TOR is not observing in Form 2 at S.No. 6 at site. Project is located critically polluted area (GIDC-Ankleshwar) as per HON'BLE NGT Order O.A. No. 1038/2018 dated 10/07/2019 & amp; O.A No. 1038/2018 dated 23/08/2019. As per Office Memorandum-Compliance of Hon"ble NGT order dated 19.08.2019 (published on 23.08.2019) in O.A. No. 1038 2018 - reg. Date:31/10/2019, we are applying as Category A-Project.

**EDS- (ii)** Please submit plan as per the Ministry's office memorandum 31st October, 2019 regarding projects located in Critically Polluted Area.

<b>Environment</b>	<b>Conditions</b>		<b>Compliance</b>
<b>Air</b>	i	Stack emission levels should be stringent that the existing standards in terms of the identified critical pollutants.	We will use Agro waste /Briquette & Natural gas as a fuel to control stack emission level. Please refer section 2.5.3 of chapter – 2, Table No. 2.8, at page no. 25.
	ii	CEMS may be installed in all large / medium red category industries (air polluting) and connected to SPCB and CPCB server.	Not required as unit is small scale industry.
	iii	Effective fugitive emission control measures should be imposed in the process, transportation, packing etc.	Raw materials will be stored in isolated storage area and containers will be kept tightly closed. To minimize fugitive emission, powder material will be allowed in a vessel through closed loop while liquid material will be charged through closed pipeline. Manufacturing activity will be carried out in closed reactors / vessels and regular checking and maintenance of the same will be carried out to avoid any leakages. Please refer section 2.6.2.3 of chapter – 2, Table No. 2.21, at page no. 34.
		Transportation of materials by rail/ conveyor belt, wherever feasible.	Shall be complied.
		Encourage use of cleaner fuels (pet coke/ furnace oil / LSHS may be avoided).	We will use Agro waste/Briquette & Natural Gas as a fuel (cleaner fuel) to control stack emission level.

	Best available technology may be used. For example, usage of EAF / SAF / IF in place of Cupola furnace. Usage of supercritical technology in place of subcritical technology.	Unit shall adopt Best Available Technology.
	Increase of green belt cover by 40 % of the total land area beyond the permissible requirement of 33% wherever feasible.	33.20 % area will be provided within plant premises. To comply with provision of 40% of green belt area, unit will develop 19.04 % of greenbelt in outside of the premises.
	Stipulation of greenbelt outside the project premises such as avenue plantation, plantation in vacant areas, social forestry, etc.	Unit will develop 19.04% of greenbelt area in outside of the premise.
	Assessment of carrying capacity of transportation load on roads inside the industrial premises. If the roads required to be widened, shall be prescribed as a condition.	Pucca road provided within industrial premises having adequate carrying capacity and well maintaining it.
Water	Reuse / recycle of treated wastewater, Wherever feasible.	Unit will maintain existing discharge.
	Continuous monitoring of effluent quality / quantity in large and medium red category industries (water polluting).	Unit will install flow meter at inlet & Outlet of ETP.
	A detailed water harvesting plan may be submitted by the project proponent.	As a part of CER activity, unit will provide Rain water harvesting system at surround village in study area.
	Zero liquid discharge wherever techno economically feasible.	Unit will maintain existing discharge.
	In case, domestic waste water generation is more than 10 KLD, the industry may install STP.	Not applicable as domestic waste water generation is less than 10 KLD.
Land	Increase of green belt cover by 40 % of the total land area beyond the permissible requirement of 33%, wherever, feasible for new projects.	33.20% area will be provided within plant premises. To comply with provision of 40% of green belt area, unit will develop 19.04% of greenbelt on the outside of the premises.
	Stipulation of greenbelt outside the project premises such as avenue plantation, plantation in vacant areas, social forestry, etc.	Unit will develop 19.04% of greenbelt on the outside of the premises.

		Dumping of waste (fly ash slag, red mud, etc.) may be permitted only at designated location approved by SPCBs / PCCs.	Shall be complied.
		More stringent norms for management of hazardous waste. The waste generated should be preferably utilized in co processing.	Waste generated having high Calorific value will send for Co-processing & low Calorific value waste will be either sent for Incineration or TSDF site.
Other Condition (additional)		Monitoring of compliance of EC conditions may be submitted with third party audit every year.	Shall be Complied.
		The % of the CER may be at least 1.5 times the slabs given in the OM dated 01. 05. 2018 for SPA and 2 times for CPA in case of Environmental Clearance.	Fund allotted for CER activity will be 1% of additional capital investment (Brownfield Field project). As project falls under CEPI area, unit will allot additional 1% fund towards CER activity. Therefore total fund allotted will be 2% of investment, which will be Rs. 2.21 Lakhs.

EDS- (iii) In S. No. 6 of Form 2, details of TOR/EC mentioned NIL, however it is case of expansion.

Reply: Unit have obtained TOR vide letter No. SEIAA/GUJ/TOR/5(f)/161/2019 dated 17th July 2019, EAC minutes of meeting dated 06.06.2019.

EDS- (iv) All old CTOs not uploaded to verify the violation, if any done by PP.

Reply: All old CTOs are uploaded.

EDS- (v) Details of Industrial Estate and its documents are not uploaded on Form 2.

Reply: Details of Industrial Estate and its documents are uploaded on Form 2.

EDS- (vi) In S. No. 2 of Form 2, the copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency has not been submitted.

Reply: Details In S. No. 2 of Form 2, the copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency has been submitted.

EDS- (vii) EIA report to be revised as per the terms of reference granted for the project, and shall conform to Appendix III of the EIA Notification, 2006.

Reply: Unit has revised EIA report as per the terms of reference granted for the project, and has conformed to Appendix III of the EIA Notification, 2006

EDS- (viii) PP mentioned the project details of M/s. JYOTI OM CHEMICAL RESEARCH CENTRE PVT. LIMITED in the EIA Report however the project is for M/s A-ONE CHEMICALS.

Reply : We have mentioned the project details of M/s. Shubhlaxmi Pigments.

EDS- (ix) In view of the above, PP/Consultant are requested to revise the application for grant of EC and accordingly revise the Form 2 along with EIA/EMP Reports. The EIA/EMP Reports shall match with the information as filled in Form 2.

Reply: In view of the above, we have revised the application for grant of EC and accordingly revise the Form 2 along with EIA/EMP Reports. The EIA/EMP Reports is matching with the information as filled in Form 2.