Minutes of the 542nd meeting of the State Level Expert Appraisal Committee held on 19th December 2022 through Video Conference (VC) on National Informatics Centre (NIC).

In the wake of recent crisis of COVID-19, the agenda of the present meeting was mailed to expert Committee in advance and a Video conference meeting on NIC was organised in this regard on 19/12/2022 at 13.30 hrs.

The 542nd meeting of the State Level Expert Appraisal Committee (SEAC) was held online by Video conferencing on 19th December 2022 at 13.30 hrs. Following members joined the meeting:

1.	Shri Akshay Kumar Saxena, Chairman, SEAC
2.	Dr. S. C. Pant, Vice Chairman, SEAC
3.	Shri D. C. Chaudhari, Member, SEAC
4.	Shri J. K. Vyas, Member, SEAC
5.	Shri Anand Zinzala, Member, SEAC
6.	Shri B. M. Tailor, Member, SEAC
7.	Shri D. M. Thaker, Secretary, SEAC

The Committee considered the applications made by project proponents, additional details submitted as required by the SEAC/SEIAA and details furnished in the Form-1, PFR, EMP reports etc. The applicants made presentations on the activities to be carried out along with other details furnished in the Form-1, PFR, EIA-EMP reports and other reports.

1.	SIA/GJ/IND2/404760/2022	**M/s. Madura Technical Fabrics Limited.** Survey Nos. 3584, 3607, 3716, 3717, 3720, 3724, 3728, 3743, 3750, 3831, 4089, 4090, 4109, 4188, 4122 & 5226, Village-Karajgam, Tal-Umbergaon, Dist.-Valsad, Gujarat-396155	EC

Category of the unit: **5(d)**

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	Application for taking Environmental Clearance under Cat.B2 for new proposed project.
1.2. Proposal no.	SIA/GJ/IND2/404760/2022
1.3. Category of Project :	B2

1.4. Date of application : (Online accepted by SEAC)	2nd November 2022
1.5. Documents Submitted by Project Proponent(PP)	Online documents uploaded on 2nd November 2022
1.6. TOR No. & Date :	Not Applicable
1.7. Technical expert / Environmental Consultant :	M/s. Precitech laboratories Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	542nd SEAC Meeting held on 19th Dec 2022.
1.9. ADS vide letter dated :	--
1.10. Reply Submitted by PP dated:	--
1.11. Revised Consideration SEAC Meeting No. and Date:	--
1.12. Compliance of Existing EC & CCA	Not Applicable as only CTE is obtained

2) This is an existing unit and now proposed for expansion in manufacturing of manmade fibres as mentioned below:

Sr. No.	Product	CAS Number	Quantity (TPM)			End use
			Existing	Proposed	Total	
1.	N-6, N-66, PET - Tyre Cord Fabrics*	--	*2,400	1,200	**3,600	Conveyor tyre, belts and the mechanical rubber goods industry.
2.	N-6, N-66, PET - Dipped Tyre Cord Fabrics	--	--	or 3,600		
3.	N-6, N-66 Yarn	--	--	1,800	1,800	
4.	PET Yarn	--	--	1,500	1,500	
	Total	--	**2,400**	**4,500**	**6,900**	

Note:

1. *Product no 1 & 2 do not require EC.*
2. **CTE is obtained for product no. 1 vide CTE No. 119744, dated 7th July 2022 for production capacity of 2400 MT/month.*
3. ***The total production capacity of Product no. 1 & 2 will not be more than 3600 TPM.*

3) The project falls under Category B2 of project activity 5(d) as per the schedule of EIA Notification 2006 and its amendment dated: 24.12.2013 in which it is mentioned that “All manmade fibre manufacturing units producing fibres from granules or chips.” Is considered as B2 category project.

4) The proposal was considered in the SEAC video conference meeting dated 19.12.2022.

5) Project proponent (PP) and their Technical Expert M/s Precitech laboratories Pvt. Ltd.remain present during video conference meeting.

6) PP submitted satellite map showing that there is no any villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Karajgam is @ 1 Km. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.

7) PP submitted that Karajgam Village Pond @ 550 m from the proposed unit boundary.
8) Committee noted that unit has obtained only CTE for existing unit hence CCR is not applicable.
9) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
10) Since, the unit falls in B2 category as per the MoEF&CC's OM dated: 24.12.2013, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
11) Committee asked to submit the following details:
    - ✓ Justification regarding compliance of siting criteria as per GPCB guideline dated: 05.06.2022.
    - ✓ Revised layout mentioning separate entry & exit of 6 m width, upgradation of OHC, etc.
    - ✓ Details of villages in which CER activities are proposed.
    - ✓ Upgradation of OHC as per applicable Act & Rules.
12) Later on PP submitted the following details through email dated: 20.12.2022.
    - ✓ **Justification regarding compliance of siting criteria as per GPCB guideline dated: 05.06.2022:** We wish to clarify that the existing project viz. Weaving - which does not attract EC and for which CTE is obtained, falls under the Orange category and as per the revised siting criteria issued by GPCB on 5th June 2022, 250m distance needs to be maintained from sensitive locations. A pond is located at an approximate distance of 430m (W) from the building where the weaving section is to be housed. No other sensitive locations fall within 250m from the Weaving area. The proposed project viz manufacturing of Nylon Yarn & PET yarn (Extrusion & Spinning area), which requires EC under Sector 5(d)-Manmade fibre manufacturing and falls under Cat B2, is proposed to be housed in a small section of the existing building. The manufacturing of Yarn falls under the Red category. As per the siting criteria, 500m distance needs to be maintained from the sensitive locations. A pond is located at an approximate distance of 550m (W) from the building area where the Yarn extrusion and spinning is to be housed. No other sensitive locations fall within 500m from the Yarn manufacturing area. Further, Goggle images showing distance of the pond from the Weaving area and from the Yarn manufacturing area is submitted. Moreover, we have also obtained a distance certificate from Karajgam Gram panchayat, which is also submitted.
    - ✓ Revised layout mentioning two entry & exit of total 14 m width and upgradation of OHC from 30 Sq m to 60 Sq m.
    - ✓ Details of villages in which CER activities are proposed.
    - ✓ Upghradation of OHC from 30 Sq m to 60 Sq m with full time medical officer.
13) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A	Total **cost of Proposed** Project	

(Rs. in Crores):

Total Project Cost
369.05

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	56.00
Building	
Machinery	291.05
Env. & Safety	20.00
Miscellaneous	2.00
Total	

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Sr. No.	Purpose	Capital cost (INR in Crore)
1.	Land	11.00
2.	Building	45.00
3.	Dipping project	61.80
4.	Spinning project	94.50
5.	Weaving project	100.35
6.	Utility Support	24.40
7.	Electrification and Administrative set-up	10.00
8.	Environment Protection (including ETP, APCD etc.)	18.00
9.	Safety, Occupational health and other	2.00
10.	Green belt development	2.00
	Total	**369.05**

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B **Land / Plot ownership details:**
(Linking between Land ownership and PP is required.)

B-1 **In case of outside GIDC only -**

Siting Criteria

Sr. no.	Environmental Sensitivity	Name/Specific details	Aerial Distance in Km
1	Habitat (Residential Area)	Karajgam	1 km
2	Eco sensitive zones	Not Available	--
3	Wild life Sanctuaries/ National Parks	Not Available	--
4	Water Bodies		
	River	Darotha River	≈ 4.8 km(E)
		Damanganga River	≈ 6.6 km (NE)
	Natural Nallah/Drain	Not Available	--
	Lake/Pond/Wetlands	Village Pond	≈ 550 m (W)
	Water supply Tanks/Reservoirs	Not Available	≈ 1.2 km
	Canal	Damanganga canal	1.2 km

5	Protected Monuments/Heritage sites/Public Buildings etc.	Not place within 5km	≈ 7.0 km(N) ≈ 16.3 km (NE)
6	National/State Highway OR Express way	NH48	≈ 5.5 km (E)
7	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	Not applicable	≈ 7.5 km (W) (Shore line)
8.	Ground water table in meter	5 km radius	≈ 10 m
9.	Railway Line	Bhilad Railway station	≈ 5.5 km (SE)
10.	Air Port	Airport-Daman	≈ 14.5 km (N)

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B-2

Detailed land area:

The land is purchased from private owners. NA documents of land are attached as Annexure-3 with application. Also, installation is ongoing as per CTE obtained for Non-EC Products.

Total Land area: 73500.00 Sq.m.

Floor-wise land area break-up table

Sr.no	Description	FF (m^2)	SF (m^2)	TF (m^2)
4.	Canteen Area	30.00	30.00	--
13.	Spinning	3160.00	1225.00	1225.00
Sr. no. as per Area Adequacy table.				

Area Adequacy table:

Sr No	Components	Area required (Sq m)	Area Provided (sq m)	Percentage
1.	Office/Admin building/Lab Building	150.00	150.00	0.20
2.	Production Area			
2(a)	Conversion Area-1	8967.00	8967.00	12.20
2(b)	Conversion Area-2	5490.00	5490.00	7.47
2(c)	Dipping Area 1	1211.00	1211.00	1.65
2(d)	Dipping Area 2	2174.00	2174.00	2.96
2(e)	Spinning	3160.00	3160.00	4.30
3.	Finished Goods Storage Area	578.00	578.00	0.79
4.	Raw Material Storage Area	567.00	567.00	0.77
4(a)	Warehouse & Store	1022.00	1022.00	1.39
5.	Hazardous waste Storage	60.00	60.00	0.08
6.	ETP / STP/ MEE/ RO etc. area	1712.00	1712.00	2.32
7.	Green Belt Area	24225.00	24225.00	32.96
8.	Parking, Road Area and Margins	11732.00	11732.00	15.96
9.	Tank Farm*	189.00	189.00	0.25
10.	Security Cabin	19.00	19.00	0.03

11.	Utility Block			
11(a)	Utility area (Cooling tower)	1182.00	1182.00	1.61
11(a)	Boiler for MEE	34.00	34.00	0.05
12.	OHC	60.00	60.00	0.08
13.	Open area	5779.00	5779.00	7.88
14.	Others, if any (Fire Pump House, Reservoir, Substation & Canteen Area)	5189.00	5189.00	7.05
	Total	**73500.00**	**73500.00**	**100.00**
Note: Area for liquid Nitrogen storage & LDO storage.*				

Comments:

- SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3 **Green belt area**

	Total (Sq. meter)
Area in Sq. meter	24225.00
% of total area	32.96

Comments:

- The PP shall develop green belt within premises (24225 Sq. m i.e. 32.96 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C **Employment generation**

Total
700

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Bifurcation of Employment generation

Phase of project	**Type of workers**	**Nos. of workers**			
		General	**1st Shift**	**2nd Shift**	**3rd Shift**
Man-power requirement as per existing CTE					
During operations	Managerial	3	2	2	2
	Skilled	30	20	20	20
	Semi-skilled (Contractual)	31	10	10	10

Additional man-power requirement for proposed project					
During Construction	Contractual				80
During Commissioning	Contractual/ In-house				25
During operations	Managerial	6	4	4	4
	Skilled	90	50	50	50
	Semi-skilled (Contractual)	57	40	40	40

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D **WATER**

D-1 **Source of Water Supply**

The fresh water to be sourced from Damanganga Canal Distry.

Letter no. DCDD-3/PB-2/Madura-Karajgam/Pro-NOC/2646 dated 30th Sep 2022

Comments:

Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

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Category	Fresh water (KLD)	Recycle/ Recirculation water (KLD)	Total water (KLD)	Remarks
(A) Domestic	25.00	15.00	40.00	15KLD & 50KLD Recycled water from STP & RO.
(B) Greenbelt development	00.00	50.00	50.00	
(C) Industrial				
Mfg. Process	115.00	0.00	115.00	--
DM Regeneration	15.00	0.00	15.00	--
Washing	10.00	0.00	10.00	--
Boiler	15.00	30.00	45.00	30 KLD boiler condensate will be circulated.
Cooling Tower	520.00	315.00	835.00	315KLD Recycled water from RO & MEE.
Industrial Total	**675.00**	**345.00**	**1020.00**	--
Grand Total (A+B+C)	**700.00**	**410**	**1110.00**	--
Note: All values in KLD				

Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-3 **Wastewater generation (KLD)**

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Category	Wastewater generation (KLD)	Remarks
(A) Domestic	35.00	Will be treated in STP & reused to in

		greenbelt development & domestic purpose.
(B) Industrial		
Mfg. Process	100.00	Diverted to ETP
DM regeneration	15.00	Diverted to ETP
Washing	10.00	Diverted to ETP
Boiler blowdown	5.00	Diverted to ETP
Cooling Tower blowdown	220.00	Diverted to ETP & RO
Total industrial wastewater	**350.00**	**--**
Total wastewater	**385.00**	**--**

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Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.
- The water consumption of cooling tower is 835 KLD out of which 615 KLD will be the losses and 220 KLD will be the blow down which will be treated in ETP and RO.

D-4 Break-up of wastewater disposal & facility (For Domestic)

The domestic wastewater (35 KLD) will be sent to STP (Capacity: 40 KLD), treated water from STP will be recycled back to greenbelt development & in domestic activity.

Sr.No.	Name of unit	Quantity (Nos.)	Volume of unit (m^3)
Capacity: 40 kL/day.			
1	Oil & grease trap	1	4
2	Collection cum Equalization Tank	1	14
3	Aeration Tank	1	23
4	Secondary settling tank	1	8
5	Clarified water Tank	2	5
6	Sand Filter	1	2 kL/hr
7	Activated carbon	1	2 kL/hr
8	Treated water tank	1	13
9	Nutch Filter (2 Nos.)	2	1 kL each
10	Sludge Storage Area with Shed	1	8.55 Sq. meter

Comments:

- Domestic wastewater generation shall not exceed 35 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

D-5 **Break-up of wastewater disposal & facility (For Industrial)**

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Sr.	Quantity KLD	Facility

no.		
1	350 KLD	• 150 KLD wastewater from industrial activity will be diverted RO after treated in ETP & 200 KLD Cooling Tower blowdown will be directly diverted to RO. • 280 KLD RO permeate will be sent to cooling tower & 30 KLD will be sent for green belt development. 40 KLD RO reject will be sent to MEE for further treatment, after that 35 KLD MEE condensate will be sent to Cooling Tower & 5 KLD will be salt/ losses. • Hence the Unit will be ZLD.
Total	350 KLD	• Unit will be ZLD.

Capacity of ETP will 150 KLD and the ETP will be followed by Primary, Secondary & Tertiary treatment.

Design of Effluent Treatment Plant (Flow: 150 kL/day)

Sr. no.	Name of unit	Quantity (Nos.)	Volume of unit (m^3)
Capacity: 150 kL/day.			
1	Oil & grease trap	1	13.00
2	Collection cum Neutralization tank	1	75.00
3	Primary settling tank	1	25.00
4	Aeration tank	1	800 m^3
5	Secondary settling tank	2	33.00
6	Clarified water Tank	2	19.00
7(a)	Activated carbon	1	8.00 m^3/hr
7(b)	Sand Filter	1	8.00 m^3/hr
8	Treated water tank	1	50 Sq.m.
9	Sludge sump	1	14.00 kL
10	Filter press	1	36" x 36"
11	Sludge Storage Area	1	50 Sq.m
12	RO	--	350 KLD
13	MEE	--	40 KLD

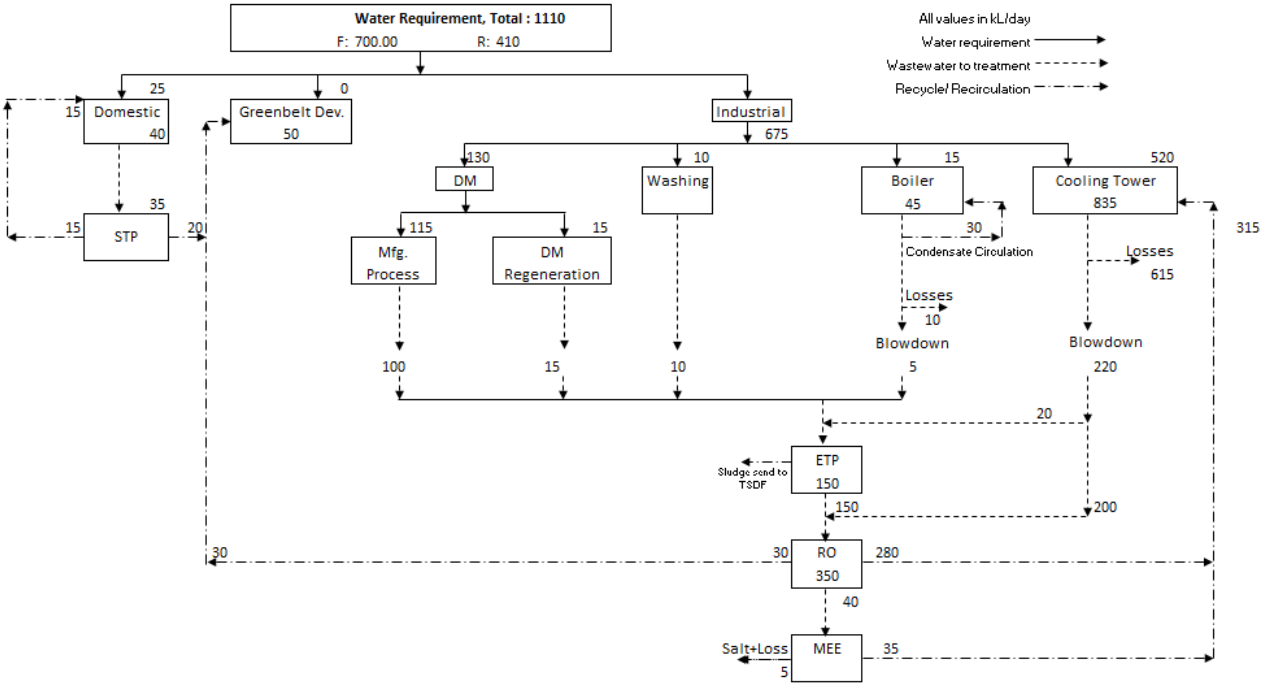
Mechanism/methodology for Segregation/ bifurcation of Streams (concentrated i.e high COD and/or high TDS etc and dilute streams i.e low COD and/or low TDS etc) generated from same source i.e process/washing/others:

No wastewater segregation will be required. All wastewater streams will be diverted to ETP & RO from collection tank.

Comments:

1. Management of Industrial effluent shall be as under:
   - ✓ 150 KLD industrial effluent (100 KLD process effluent, 15 KLD DM Plant effluent, 10 KLD washing effluent, 5 KLD boiler blow down and 20 KLD cooling tower blow down) shall be treated in primary, secondary & tertiary ETP. 150 KLD Treated effluent and 200 KLD cooling tower blow down shall be treated in RO.
   - ✓ Out of 310 KLD RO permeat, 30 KLD shall be reused for gardening or plantation and 280 KLD shall be reused within cooling tower.
   - ✓ 40 KLD RO reject shall be treated in in-house MEE. 35 KLD MEE condensate shall be reused within cooling tower.

D-6	**Simplified water balance diagram**



D-7	Summary

Summary of water requirement	**Quantity** (KLD)	Remarks
Total water requirement for the project **(A)**	1110 KLD	--
Quantity to be **recycled (B)**	410 KLD	--
Total **fresh water** requirement **(C)**	700 KLD	--
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

E	**AIR**
E-1	Power (Electricity) requirement : 12000 kVA
E-2	**Flue gas emission details**

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Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	DG Set – 2 Nos. x 910 kVA	11 m	Diesel	120 L/Hr	PM, SO_2 &NO_2	Adequate stack height
2	Steam Boiler – 3 nos. x 850 kg/hr. (2 working + 1 standby)	30 m	LDO or NG	LDO: 112 L/hr. (56 L/hr for each) or NG: 3500 SCM/day (1750 SCM/day for each)	PM, SO_2 & NO_2	Adequate stack height

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E-3	Process gas

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Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	Heating Ovens at Dipping Plant	NO_2 & CO	H: 36 m D: 0.6 m	Adequate stack height will be provided.
Note: *There will be no generation of any process gas during production, but process emission may arise from Heating Ovens, which will be installed at dipping plant.*				

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E-4	Fugitive emission details with its mitigation measures.

Sr. No.	Source	Probable Pollutant Emission	Control measures
1.	Storage of Formaldehyde	VOC	• Carry out workplace area monitoring to find ou concentration level in ambient air. • Close handling system. • Provision of breather valve cum flame arrester.
2.	Flange joints of pipeline, pump & motors.	VOC	• Routine & periodic inspection to check leakage • Follow SOP for maintenance. • Pumps & motors mechanical seal type
3.	Loading /unloading at storage area	VOC	• Loading/ unloading of liquid materials in tanks will be done through pipeline. It will be done in a closed system. • Hopper will be provided for transfer of solid material.
4.	Handling of raw material bags in storage area	PM	• Provision of exhaust ventilation in plant area. • Provision of PPE • Good housekeeping will be maintained.

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Comments for E2, E3 & E4:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	Solvent management, VOC emissions etc.
F-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

No solvent will be used in process and there will be no recovery of solvents. Formaldehyde will be used as additive in very small quantity in dipping process.

F-2	VOC emission sources and its mitigation measures for achieving maximum solvent recovery and minimize VOC generation:

F-2	VOC emission Sources and its Mitigation Measures.		
Sr. No.	**Emission Source**	**Probable Pollutant Emission**	**Control measures**
1	Storage of Formaldehyde	VOC	• Carry out workplace area monitoring t find out concentration level in ambier air. • Close handling system. • Provision of breather valve cum flam arrester.
2	Flange joints of pipeline, pump & motors.	VOC	• Routine & periodic inspection to chec leakage. • Follow SOP for maintenance. • Pumps & motors mechanical seal type
3	Loading /unloading at storage area	VOC	• Loading/ unloading of liquid materials i tanks will be done through pipeline. will be done in a closed system. • Hopper will be provided for transfer c solid material.

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F-3	LDAR proposed:

The Following methodology to be adopted during LDAR study:

- Identify the Chemical streams that must be monitored.
- Types of components (pumps, valves, connectors, etc.) to be monitored
- Frequency of monitoring.
- Actions to be taken if a leak is detected.
- Length of time in which an attempt to repair the leak must be performed.
- Actions that must be taken if a leak cannot be repaired within guidelines.
- Record-keeping and reporting requirements.

F-4	LDAR for specific solvent :

There is no solvent will be used.

	Comments for F-1, F-2, F-3 & F-4
	➢ No solvent shall be used.
G	**Hazardous waste**
G-1	**Hazardous waste management matrix**

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Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Annum)	Management of HW

1	Used Oil	Plant & Machinery	Cat. 5.1	10 kL/annum	Collection, Storage, Transportation & Disposal by selling to registered recyclers.
2	Used Bags/ Drums	Process	Cat. 33.1	350 MT/annum	Collection, Storage, transportation & disposal to authorized Decontamination facility.
3	ETP waste	ETP	Cat.35.3	170 MT/annum	Collection, Storage, Transportation & Disposal to TSDF site – BEIL, Ankleshwar.
4	MEE Salt	MEE	Cat. 35.3	410 MT/annum	

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Comments:

- Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

G-2	Non- Hazardous waste management matrix

Type of waste	**Source**	**Quantity**	**Method of disposal**
Recyclable Yarn waste	Process	290 MT/month	it will be recycled back or sold to registered recycler. or Collection, Storage, Transportation & recycle to GPCB authorized recycler
Fabric waste	Process	280 MT/month	
STP Sludge	STP	5 MT/annum	Used as manure in greenbelt development.

Comments:

- STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

a) Storage of Hazardous chemicals in Tanks

As example given below.

Sr. no	**Name of Chemical**	**Capacity of Tank**	**Number of Tanks**	**Hazardous Characteristics of Chemical**
TANK FARM (NON-PESO)				
1	Formaldehyde	10 kL	2	Toxic
2	Liquor Ammonia	5 kL	2	Toxic
TANK FARM (PESO)				
4	--	--	--	--
5	--	--	--	--

6	--	--	--	--
7	--	--	--	--

Safety Measures for PESO Underground storage tank farm:

b) Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Sr. no	Name of Chemical	Capacity of Drum/Bag/ Cylinder/ Glass Bottle	Number of Drum/Bag/ Cylinder/ Glass Bottle	Hazardous Characteristics of Chemical
Not Applicable				

c) Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	• Fire-hydrant system will be installed in case of any fire situation.
CORROSIVE & CHEMICALS	• Store corrosive chemicals below eye level to reduce the hazards should a vessel spill, leak or rupture.
TOXIC CHEMICALS	• Proper ventilation will be available which help to remove any fumes. • Separate area will be provided for storage of toxic chemicals. • Exhaust will be provided at ground level in storage area. • OHC facility with Doctor and male nurse will be provided and maintained.
REACTIVE CHEMICALS	• There will be no used of Reactive chemicals.

- **Applicability of PESO:** Not Applicable.

Comments:

- ***PESO not applicable***

H-2	Types of hazardous Processes involved and its safety measures:

As example given below.

Types of process	Safety measures including Automation
Amination	Not Applicable
Bromination	Not Applicable
Chlorination	Not Applicable
Hydrogenation	Not Applicable
Nitration	Not Applicable
Sulphonation	Not Applicable

H-3	Details of Fire Load Calculation

Total Plot Area:	91972.00 Sq.m
Area utilized for plant activity:	45397.70 Sq.m
Area utilized for Hazardous Chemicals Storage:	198.00 Sq.m
Number of Floors:	Ground floor + 2nd floor
Water requirement for firefighting in KLD:	1760 L/min, Require 211.20 kL/hr
Water storage tank provided for firefighting in KLD:	625 kL
Details of Hydrant Pumps:	Jokey Pump 10.8 m^3/hr Electric Pump 273 m^3/hr Diesel Pump 273 m^3/hr
Nearest Fire Station:	Sarigam Fire Station (2 km)
Applicability of Off Site Emergency Plan:	--

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 625 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

Unit will obtain Fire NOC after receipt of EC.

H-5 Details of Occupational Health Centre (OHC):

-

Number of permanent Employee:	357
Number of Contractual person/Labour:	238
Area provided for OHC:	60 Sq. m.
Number of First Aid Boxes:	17 Nos.
Nearest General Hospital:	Rotary Hospital, Sarigam. Moreover, full time availability of Medical officer.
Name of Antidotes to be store in plant:	--

-

Comments

- Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

H-6 Details of Emergency measures proposed and preparedness action for chemicals and fire explosion etc.

- In case of fire Emergency may be declared and on-site emergency plan to be brought into action and services from outside agencies to be requisitioned, if considered necessary.
- Evacuate the area immediately & Inform the area in charge.
- Affected area to be cordoned off.
- Try to control situation at department level with available resources with full PPEs.

- All necessary measures will be taken during the emergency.
- If fire found uncontrollable condition call fire brigade and mutual aider for help.
- All hazardous activates stop at site.
- Do not enter in fire area/ Hazardous area.
- Use foam fire extinguishers for firefighting of Flammable Chemicals fire.

I Details of Membership for Common Facility:

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency Date of Issue and validity of membership
01	CETP	Not Applicable
02	TSDF site	NOC letter was obtained on 28th Oct 2022 from BEIL INFRASTRUCTURE LIMITED.
03	Common Hazardous Waste Incineration Facility	Not Applicable
04	Common Spray Drying Facility	Not Applicable
05	Common MEE Facility	Not Applicable
06	Common Conveyance System	Not Applicable
07	PESO permission	Not Applicable
08	FIRE permission	Will be obtained
09	Health Certificate	Will be obtained

J Reduce / Reuse / Recycle measures adopted.

(a) Reduce

Sr. No.	Item	Quantity	% percentage
--	--	--	--

(b) Reuse

Sr. No.	Item	Quantity	% percentage
1	Fresh water requirement to be reduce by reuse of Boiler condensate circulation.	30 KLD	2.70 %

(c) Recycle

Sr. No.	Item	Quantity	% percentage
1	Fresh water requirement to be reduced by recycle of treated wastewater in Greenbelt development, Domestic activity & as make-up water in cooling tower.	380 KLD	34.23 %

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K EMP Details

Sr. No	Unit	Detail	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Wastewater	Installation cost ETP, RO, MEE and	18.00	2.53

2	Air	Stack for boiler, TFH & DG set.		0.07
3	Hazardous Management	Membership cost of TSDF.	0.02	0.02
4	Fire & Safety	Installation of the Fire hydrant system, Alarm System, Extinguishers, Sprinkler System etc.	1.25	0.02
		Installation cost of DCS system	14.50	0.75
5	Green Belt Development	Capital cost for Green belt development	2.00	0.70
6	Occupational Health	Provision of OHC with full time availability of Medical officer & PPE kit. Periodic medical examination & provision of oxygen cylinder.	0.75	0.25
7	Noise Control	Installation of DG set with acoustic enclosures. Maintenance cost for DG set and others machinery & equipment.	1.20	0.12
8	VOC Control & LDAR	Cost for VOC Control & LDAR	0.05	0.05
9	Environment Monitoring Program	Environmental monitoring for Ambient air, Stack air, Workplace monitoring, Noise level & water & wastewater.	--	0.02
10	CER Activity	Provision for CER fund @1% of the project cost.	3.69	--
Total			**41.46**	**4.53**
Note: All above values in Crores				

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

L	**Details of CER** -

Total cost of Project (Rs in Crores)	**Total Cost of CER (Rs in Crores or Lakhs)**	**Percentage (%)**
369.05 Cr.	3.69 Cr.	1 %

PP shall carry out CER activities as below:

- ✓ The company has allocated a budget of 1% of the total cost for the social-development activities under the Corporate Environment Responsibility in Karajgam & Billiya village in activities such as Beautification, Renovation & Cleaning of Village pond, Installation of Rainwater harvesting systems & Recharge well development, Installation of Solar Panels & Solar Street lights, Installation of RO plant for Village, Provide Computer System, Benches & Toilet to School & Cost allocation Under Swachbharat mission.
- ✓ Fund allocation for Karajgam & Billiya village is given in below table.

Sr. No.	**Details**	**Amount in Lakhs (INR)**					
		Total	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**5th Year**
1	Beautification, Renovation &	20	10	10	--	--	--

	Cleaning of Village pond						
2	Installation of Rainwater Harvesting Systems & Recharge Well development	50	20	20	10	--	--
3	Installation of Solar Panels & Solar Street Lights	54	20	20	14	--	--
4	Installation of RO Plant for Village	50	--	20	20	10	--
5	Provide Computer System, Benches & Toilet to School	50	--	20	20	10	--
6	Greenbelt Development (Gram Panchayat, Primary School & in village etc.)	50	--	--	20	20	10
7	Contribution under Swachhbharat Mission	95	--	--	--	40	55
	Total	**369**	**50**	**90**	**84**	**80**	**65**

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14) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. PP shall use only granules or chips for manufacturing of manmade fibres.
2. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. **Safety & Health:**
   a) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
   b) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
   c) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
   d) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
   e) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
   f) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
   g) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
   h) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
   i) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
   j) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

5. Total water requirement for the project shall not exceed 1110 KLD. Unit shall reuse 410 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 700 KLD and it shall be met through Damanganga canal water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

6. The industrial effluent generation from the project shall not exceed 350 KLD.
7. Management of Industrial effluent shall be as under:
   - ✓ 150 KLD industrial effluent (100 KLD process effluent, 15 KLD DM Plant effluent, 10 KLD washing effluent, 5 KLD boiler blow down and 20 KLD cooling tower blow down) shall be treated

in primary, secondary & tertiary ETP. 150 KLD Treated effluent and 200 KLD cooling tower blow down shall be treated in RO.

- ✓ Out of 310 KLD RO permeate, 30 KLD shall be reused for gardening or plantation and 280 KLD shall be reused within cooling tower.
- ✓ 40 KLD RO reject shall be treated in in-house MEE. 35 KLD MEE condensate shall be reused within cooling tower.

8. Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises.
9. Unit shall feed wastewater to in-house MEE only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.
10. Domestic wastewater generation shall not exceed 35 KL/day for proposed project and it shall be treated in STP. Out of 35 KLD treated sewage, 20 KLD shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB and 15 KLD shall be reused for domestic purposes.
11. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
12. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
13. Unit shall provide ETP, STP, RO & MEE with adequate capacity.
14. The unit shall provide metering facility at the inlet and outlet of ETP, STP, RO & MEE and maintain records for the same.
15. Proper logbooks of ETP, STP, RO & MEE; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

16. Unit shall not exceed fuel consumption for boilers and D G Set as per the point no. E-2 as mentioned above.
17. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
18. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
19. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - ➢ Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive

emission during vehicular movement.

- Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
- A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

20. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
21. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

22. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
23. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
24. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
25. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
26. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
27. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

28. The PP shall develop green belt within premises [24225 Sq. m. i.e. 32.96% of total plot area] as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

29. The project proponent shall carry out the entire activities of Rs 3.69 Crores [Beautification, Renovation & Cleaning of Village pond, Installation of Rainwater harvesting systems & Recharge well development, Installation of Solar Panels & Solar Street lights, Installation of RO plant for Village, Provide Computer System, Benches & Toilet to School & Cost allocation Under Swachbharat mission in Karajgam & Billiya village] proposed under CER shall be part of the Environment Management Plan (EMP) as per the

MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

30. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

31. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
32. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
33. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
34. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
35. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
36. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
37. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

2.	SIA/GJ/IND2/408505/2022	**M/s Selan Exploration Technology Ltd** Onshore Exploration of Oil and Gas from 10 Nos of Exploratory wells and 1 No of Early production well in Karjisan Filed Block CB-ONHP-2018/4 in Cambay Basin of Mahesana District	EC

Category of the unit: **1(b), B2**

Project status: **New**

1) Details of application:

1.1. Type of application:	Application for EC

1.2. Proposal no.	(Proposal No-SIA/GJ/IND2/408505/2022)
1.3. Category of Project :	B2 Category
1.4. Date of application : (Online accepted by SEAC)	13.12.2022
1.5. Documents Submitted by Project Proponent(PP)	Cover letter, Authorization Letter by Competent Authority, Prefeasibility Report. Risk Assessment Report.
1.6. TOR No. & Date :	N/A
1.7. Technical expert / Environmental Consultant :	Eco Chem Sales & Services
1.8. SEAC Meeting No. and Date:	542nd Meeting dated 19/12/2022.
1.9. ADS vide letter dated :	N/A
1.10. Reply Submitted by PP dated:	N/A
1.11. Revised Consideration SEAC Meeting No. and Date:	N/A
1.12. Compliance of Existing EC & CCA	N/A

2) The proposed project is onshore Oil and Gas Exploration and Appraisal including early production in Karjisan Filed Block (5 Sq Km) in Cambay Basin of Mahesana District of Gujarat.

3) The Karjisan Filed Block CB-ONHP-2018/4 is located in Cambay Basin of Mahesana District of Gujarat. It encloses an area of 5 Sq.Km and is bounded by the points having following coordinates provided in below Table. The proposed project is green field in nature. The onshore oil and gas exploration & appraisal and early production is expected to carry out Drilling of 10 Nos. exploratory (including appraisal) wells and the exploratory and appraisal wells will be drilled to explore the reservoirs up to a maximum depth of 1700 m. After successful drilling and discovery of hydrocarbon, 01 no. of Early Production Unit (EPUs) for produced well fluid processing and production of up to 200 m^3/day of Crude Oil and 100000 m^3/day of Natural Gas will be set up.

Apex Co-ordinates of Block CB-ONHP-2018/4 boundary (as per RSC)

Apex Points	Longitude	Latitude
1.	72°28'02.00" E	23°23'32.00" N
2.	72°29'10.00" E	23°23'32.00" N
3.	72°29'10.00" E	23°22'11.00" N
4.	72°28'02.00" E	23°22'11.00" N

Source: PSC

4) The proposed well locations with Village and Taluka/Tehsil as follows:

Proposed Well Locations

S. No.	Well Id	Latitude (N)	Longitude (E)	Village	Taluka/ Tehsil	District	Present Land use	Road Infrastructure	Forest/ Wildlife Sanctuary/ National Park	Nearest River/ Waterbodies	Major human establishments etc	Industries etc
1	KJ_AP_1	23°23'4.77"	72°28'26.85"	Karjisan	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana Village Road – 0.31 km, SSE	Nil	Dangarva Lake, 1.33 km, SW	Karjisan Village, 0.81 km, NE	Nil
2	KJ_AP_2	23°22'46.46"	72°28'26.35"	Karjisan	Kadi	Mehsana	Agricultural Land	On Dangarva-Karjisana Village Internal Road	Nil	Dangarva Lake, 1.02 km, SWW	Karjisan Village, 0.81 km, NE	Nil
3	KJ_AP_3	23°22'50.07"	72°28'42.61"	Karjisan	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana Village Road – 0.18 km, NNW	Nil	Karjisan Lake, 1.18 km, NEE	Karjisan Village, 0.36 km, NE	Nil
4	KJ_AP_4	23°22'18.13"	72°28'42.59"	Karjisan	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana Village Road – 1.15 km, N	Nil	Dangarva Lake, 1.49 km, NWW	Karjisan Village, 1.26 km, NE	Nil
5	KJ_AP_5	23°22'25.55"	72°28'36.04"	Karjisan	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana Village Road – 0.88 km, NW	Nil	Dangarva Lake, 1.25 km, NWW	Karjisan Village, 1.22 km, NE	Nil
6	KJ_AP_6	23°22'17.76"	72°28'19.75"	Dangarva	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana illage Road – 0.93 km, NNW	Nil	Dangarva Lake, 0.90 km, NW	Dangarva Village, 0.89 km, NWW	Nil
7	KJ_AP_7	23°22'37.25”	72°28'15.56"	Dangarva	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana Village Road – 0.32 km, NNW	Nil	Dangarva Lake, 0.66 km, SWW	Dangarva Village, 0.80 km, SWW	Nil

8	KJ_AP_8	23°22'54.10"	72°28'13.79"	Dangarva	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana Village Road – 0.18 km, SE	Nil	Dangarva Lake, 0.83 km, SW	Dangarva Village, 0.89 km, SWW	Nil
9	KJ_AP_9	23°23'20.63"	72°28'23.55"	Dangarva	Kadi	Mehsana	Agricultural Land	Hadvi-Dangarva Village Road - 0.49 km, NWW	Nil	Hadvi Lake, 0.93 km, NNW	Karjisan Village, 1.00 km, SE	Nil
10	KJ_AP_10	23°22'48.55"	72°29'0.88"	Karjisan	Kadi	Mehsana	Agricultural Land	Dangarva-Karjisana Village Road – 0.26 km, NNW	Nil	Karjisan Lake, 0.78 km, NE	Karjisan Village, 0.23 km, NE	Nil

5) The project falls under Category B2 of project activity 1(b) as per the schedule of EIA Notification 2006 and amendment dated 16.01.2020.
6) The proposal was considered in the meeting dated 19.12.2022.
7) During the meeting dated 19.12.2022, the project was appraised based on the information furnished in Form – 1, Pre-Feasibility Report, Environment Management Plan, details submitted by e-mail and presentation made before committee. PP and Technical Expert M/s Eco Chem Sales & Services remain present during video conference meeting and made presentation before committee.
8) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 236 (E) dated 16.01.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
9) Committee asked to submit the following details
   - ✓ Revised CER details focusing on environmental aspects.
   - ✓ Production Sharing Contract, from MoPNG and the Mining Permission from the Govt. of Gujarat for the Karjisan Gas & Oil Field Block.
10) Later on PP submitted the following details through email dated: 22.12.2022.
   - ✓ Revised CER details focusing on environmental aspects.
   - ✓ Production Sharing Contract, from MoPNG and the Mining Permission from the Govt. of Gujarat for the Karjisan Gas & Oil Field Block.
11) Committee found presentation and submission of project proponent satisfactory.
12) PP submitted salient features of the project including Water, Air and Hazardous waste management are as under.

S. No.	Particulars	Details

A	**Total cost of Proposed Project (Rs. in Crores):**	INR 140.06 Crore (INR 138.84 Crores/Drilling of 10 wells & INR 1.22 Crores/EPU)
	Details of EMP	

1. Air Emissions and Control Measure

The emissions to the atmosphere from the drilling operations shall be from the diesel generator, flaring (during testing) and gas engine generator, flaring and gas fired heater for early production. The maximum GLCs for SO_2, NOx and PM_{10} after implementation of the proposed project will be within the prescribed standards for Ambient air quality. However, the maximum GLCs are occurring during test flaring which is for a period at each location. Further considering that the maximum GLCs occur which is in the vicinity of the site boundary, no impact on outside environment is envisaged. Based on the above details, it can be inferred that proposed project would have an insignificant impact on the prevailing ambient air quality.

2. Noise Emissions and Control Measure

The source of noise generation would be the operation of rig and diesel generator sets, flaring and early production activities. The noise generation work however is transient and limited to the drilling period only. Adequate control measures will be taken to minimize exposure of noise to drilling personnel.

3. Wastewater Treatment and Disposal

During drilling operations, approximately 40 KLD of wastewater will be generated as a result of rig wash and dewatering of spent mud, effluents from washing of drill cuttings, floor washings, pump, seal leakages etc. Domestic wastewater generated during drilling (about 12 KLD) will be treated through a mobile STP system.

The drilling wastewater will be treated through mobile ETP and treated effluent will be passed through ultra-filtration followed by Reverse Osmosis plant (if needed). If required water will be reused back in drilling mud preparation, housekeeping, washing and sanitation usage. The rejects of about 20% generated from RO systems will be dried through solar evaporation system. Thus, the entire operation will be of zero liquid discharge concept.

During the early production 2.00 KLD wastewater would be generated due to domestic activity from each early production location. Apart from that 225.00 KLD (considering 70% water cut) produced water and 10.00 KLD from washing etc. will be generated during processing of well fluid from each early production location.

Domestic effluent is collected from toilets, washrooms, kitchen in porta cabins, and connected through pipes to STP system and treated water will be reuse within premises.

The produced water after separation from sub-surface well fluid will be treated further (through physico-chemical treatment system) and the treated produced water is reinjected (as per the requirement) into the hydrocarbon reservoir to maintain the pressure and sustain production of crude oil and Natural Gas. The excess treated effluent (i.e. produced water) and effluent from associated activities of early production will be disposed-off by re-injection in abandoned well and / or will be sent to CETP nearby as per the advice by GPCB.

4. Solid & Hazardous Waste treatment and disposal

Spent SBM drilling mud and used oil and other hazardous waste will be collected in HDPE lined pit and disposed as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (through Co processing in cement kiln as fuel/raw material substitute, common Hazardous waste TSDF or HW processing facility or Brick manufacturing (from drill cutting) facility approved by GPCB).

Environmental Management Plan (EMP) Cost

A) Drilling: The tentative budget for implementation of EMP including environmental monitoring would be Rs. 20.00 lakhs for each well drilling.

EMP Budget for Each Well Drilling

Sl. No.	Particulars	Approx. Budget/Well (INR) in Lakh	
		Capital Cost (INR) in Lakh	Recurring Cost (INR) in Lakh
1.	Air Quality Management	-	2.00
2.	Noise Monitoring & Control	-	0.75
3.	Surface and Ground Water Quality	-	1.25
4.	Soil Quality	-	0.50
5.	Waste Management	-	2.50
6.	Greenbelt / Plantation	-	0.50
7.	Fire Control System – Fire Hydrant, Fire Extinguisher etc.	-	2.50
		Sub Total (1 to 7)	**10.00 Lakhs**
8.	**EMP Cost for Wastewater Treatment**		

	Installation of Mobile ETP	Drilling a well is short term activity for about 60 days, so permanent installation of ETP is not feasible. Mobile ETP would be deployed at drilling site on rental basis.	Operation & Maintenance of ETP
	Installation of Mobile STP	Drilling a is short term activity for about 60 days, so permanent installation of STP is not feasible. Mobile STP would be deployed at drilling site on rental basis.	Operation & Maintenance of STP
		Sub Total (8)	**10.00 Lakhs**
		Total = A (1 to 8)	**20.00 Lakhs**

B) Early Production: The tentative budget for implementation of EMP including environmental monitoring would be Rs. 22.00 lakhs/annum at each location of early production.

EMP Budget for Each Early Production Location

Sl. No.	Particulars	Approx. Budget/Annum/EPU Location (INR) in Lakh	
		Capital Cost (INR) in Lakh	Recurring Cost (INR) in Lakh
1.	Air Quality Management	-	9.50
2.	Noise Monitoring & Control	-	
3.	Surface and Ground Water Quality	-	
4.	Soil Quality	-	
5.	Waste Management	-	0.50
6.	Greenbelt / Plantation	-	0.50
7.	Fire Control System – Fire Hydrant, Fire Extinguisher etc. (provided already during drilling phase)	-	0.50
		Sub Total (1 to 7)	**11.00 Lakhs**
8.	**EMP Cost for Wastewater Treatment**		
	Installation of ETP	Operation and Maintenance of ETP	11.00 lacs
	Installation of STP	Operation and Maintenance of STP	
		Sub Total (8)	**11.00 Lakhs**
		Total = B (1 to 8)	**22.00 Lakhs**

C) CER Budget: Rs. 210 Lakhs towards CER activities over the period of 3 - 4 years.	
Total = C (CER Budget (in Lakhs INR))	**210.00 Lakhs**
Total Cost of EMP including CER = (A + B + C)	**252.00 Lakhs**

-

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

Details of CER as per OM dated 30.09.2020	As below…

SELAN will comply with the 1st May 2018 and subsequent 30/09/2020 OM w.r.t. CER and the cost will be assessed on actual project capex expenditure of that particular financial year.

CER Expenditure Outlay: Shall be as spent in various Environment & Social development cost based on the assessed needs of the estimated project cost over a period of 3 - 4 years. The indicative expenditure for each year shall be as follows:

Investment	Cost Allocation
Total Project Cost (in Crore INR)	140.06
Total CER Cost (in Crore INR) (3 - 4 years)	2.10

Based on the initial needs assessment the CER expenditure would be allocated for putting up adequate infrastructure creation for. (i) Public Health (ii) Environment; (iii) Renewable energy (iv) Tree Plantation

Sl. No.	CER Activities	Village Name	Unit (Number)	Unit Cost (In Lacs INR)	Cost Allocation (INR Lacs)	CER Budget (In Lacs INR)			
						Y1	Y2	Y3	Y4
Public Health									
1	Safe drinking water supply through installation of RO plant (Capacity 1000 Liter/day) with Annual Maintenance Contract	Chhaatral, Pansar, Nardipur, Langhanaj, Karjisan	5	8	40.00	20.00	20.00	--	--
Environment									
2	Sanitation facility (Community Toilet complex with four seat with	Karjisan, Dangarva, Kaiyal, Veda, Jhulasan, Veda	9	12	108.00	27.00	27.00	27.00	27.00

	Septic Tank and Soak pit)								
Renewable Energy									
3	Solar street light and solar panel on public building	Karjisan, Navi Sedhavi, Vadasma, Laksmipura, Hadvi, Dangarva, Gumasan, Saldi	27	2.2	59.40	20.00	20.00	9.70	9.70
Tree Plantation									
4	Tree plantation activity (Trees with tree guard, O&M Cost including Menpower) on surrounding villages road	Ghumasan, Karjisan, Saldi, Dangarva, Hadvi	260	1000	2.60	1.30	1.30	--	--
Total					**210.00**	**68.30**	**68.30**	**36.70**	**36.70**
Grand Total						**210.00**			

B	**Total Plot Area** (Sq. Meter)	40,000 – 90.000 Sq. m./well pad (drill site)
	Green belt area (sq. meter)	13,200 - 29,700 Sq. m./well pad (drill site) in case of discovery
C	**Employment Generation**	During drilling Manpower will be required for each well (80 Approx.) and 15-20 in Early Production
D	**Water**	
i	Source of Water Supply (GIDC Bore well, Surface water, Tanker supply etc.)	Water requirement will be sourced by Water Tankers from locally approved/authorized sources. No Bore Well will be drilled for ground water extraction for this project as the water requirement is very minimal and only for short period of time**.**
	Status of permission from the concern authority.	Water requirement will be sourced by Water Tankers from locally approved/authorized sources. No Bore Well will be drilled for ground water extraction specifically for this project as the water requirement is very minimal and only for short period of time.
ii	**Water consumption (KLD)**	

Category	**Quantity, KLD**	**Remarks**
A. For Drilling		

1. Domestic	15 KLD/well	For each well drilling
2. Gardening	--	Considered under miscellaneous use
3. Industrial		For each well drilling
Process - Drilling water consumption for mud preparation	600-1000 KL/well (WBM) and 150-300 KL/well (SBM) = 22 KLD/well (Approx.)	--
Washing - Jet wash – washing of drill cuttings at shale shaker Preparation of cementing materials	20 KLD/well 10 KLD/well	--
Boiler	--	--
Cooling	--	--
Others - General housekeeping / washing	15 KLD/well	--
Miscellaneous use (cooling, dust suppression, etc.)	5 KLD/well	
Industrial Total	**72 KLD/well**	**For each well drilling**
Total (1 + 2 + 3)	**87 KLD/well**	**For each well drilling**
B. Early Production		
a. Water for Domestic use	3 KLD	For each early production location
b. Industrial use	12 KLD	For each early production location
Total (a + b)	**15 KLD**	For each EPU location

1. **Total water requirement** for the project: 87 KLD (for each well drilling); 15 KLD (For each early production location)
2. Quantity to be recycled: 44 KLD (for each well drilling – 12 KLD Domestic + 32 KLD Industrial); 2 KLD (For each early production location)
3. Total **fresh water** requirement: 43 KLD (for each well drilling); 13 KLD (For each early production location)

(Total water requirement = Fresh water + Recycled water)

Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

iii **Wastewater Generation (KLD)**

Drilling Operation/Activities:

Category	Wastewater, KLD	Remarks
1. Domestic	12 KLD/well	From each well drilling
2. Industrial		
Process - Effluent from Drilling Operation	40 KLD/well	--

Washing	--	--
Boiler	--	--
Cooling	--	--
Others	--	--
Total Industrial Wastewater	40 KLD/well	Allowed into METP followed by RO
Total [A + B]	52 KLD/well	From each well drilling

Early Production Phase:

Category	Wastewater, KLD	Remarks
1. Domestic	2 KLD/EPU	From each early production location
2. Industrial		
Process- Produced Water) Early Production	225 KLD/EPU	From each early production location
Washing	10 KLD/EPU	--
Boiler	--	--
Cooling	--	--
Others	--	--
Total Industrial Waste Water	**235 KLD/EPU location**	--
Total [A + B]	**237 KLD/EPU Location**	--

Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

iv. Treatment facility within premises with capacity

[In-house ETP (Primary, Secondary, Tertiary), MEE, Stripper, Spray Dryer, STP etc.

Wastewater will be treated in ETP (consisting of physicochemical treatment, Ultra filtration (UF) & RO (if needed) of 50 KLD capacity and the treated water would be used for drilling mud preparation, housekeeping, dust suppression, toilet flushing, gardening and other misc. use and 20% of RO Rejected will be dried through solar evaporation pond.

Industrial: Produced water after separation from sub-surface fluid well will be treated further (through physio-chemical treatment system) and the treated produced water will be reinjected (as per the requirement) into the hydrocarbon reservoir to maintain the pressure and sustain production of crude oil. The excess treated effluent (i.e. produced water) and effluent from associated activities of early production will be disposed-off by re-injection in abandoned well and / or will be sent to CETP nearby as per the advice by GPCB.

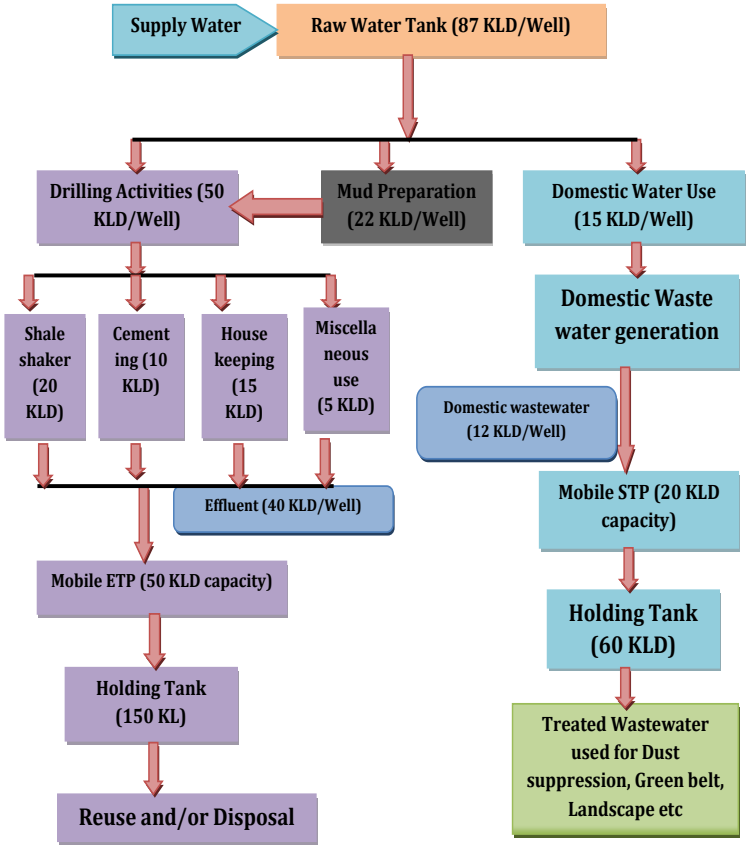
Treatment scheme including segregation at source.

Maximum care will be taken for resource optimization, wherever possible with an aim of:

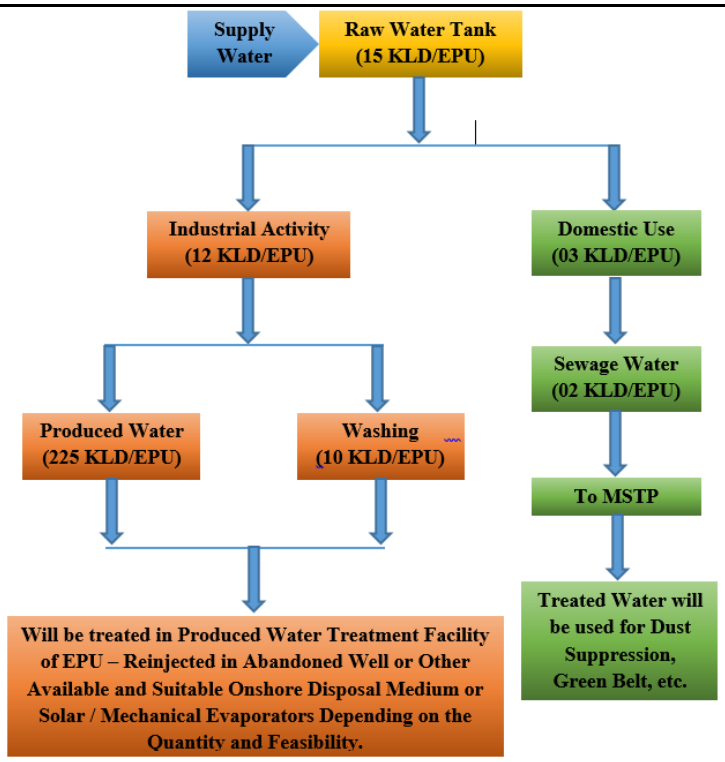
		1. Resource Conservation 2. Elimination of Waste Streams 3. Minimizing Waste 4. Reuse / Recycle of Wastes 5. The drill cutting (associated with Water based mud) from the drilling operations will be used for filling low lying areas as a sub grade construction material in construction of well pads, brick manufacturing, etc. 6. Drilling cutting excluding those from WBM will be sent for co-processing in cement kiln and brick manufacturing. 7. Synthetic base mud will be re-used in further drilling activities.
		Note: (In case of CETP discharge) : **Management of wastewater 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.** Not Applicable
		Brief note on adequacy of ZLD (In case of Zero Liquid Discharge): Wastewater from drilling activities will be treated through ETP (consisting of physicochemical treatment, Ultrafiltration (UF) & RO (if needed) and recycled. Treated effluent will be used for drilling mud preparation, housekeeping, dust suppression etc. No Discharge to the Surface, in principle ZLD concept will be implemented.
v	**Mode of Disposal & Final meeting point**	
	Domestic:	Domestic sewage will be treated in Sewage Treatment Plant and the treated water would be used for dust suppression, green belt, etc.
	Industrial:	Wastewater from drilling activities will be treated in Effluent Treatment Plant. Wastewater will be treated through ETP and treated effluent will be passed through ultra-filtration followed by Reverse Osmosis plant if required). The treated water will be reused in drilling mud preparation, housekeeping, washing and sanitation usage. Wastewater from early production activities will be treated in Produce water treatment facility of EPU and would be disposed-off using either a nearby down hole disposal well (by reinjection in abandoned well) or other available and suitable onshore disposal medium or solar / mechanical evaporators depending on the quantity and feasibility.
		Comments: ➢ Domestic wastewater generation shall not exceed 12 KLD per driiling well and 0.2 KLD per Early production unit (EPU) for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for dust suppression and gardening & plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB. ➢ Management of Industrial effluent shall be as under: ✓ 40 KLD effluent generated per well from drilling activities shall be treated in

	primary ETP followed by UF & RO and shall be reused within premises for drilling mud preparation, housekeeping, washing and sanitation usage. ✓ 235 KLD effluent generated per well from early production activities shall be treated in Produce water treatment facility of EPU and shall be disposed-off using either a nearby down hole disposal well (by reinjection in abandoned well) or other available and suitable onshore disposal medium or solar / mechanical evaporators depending on the quantity and feasibility.
vi	In case of Common facility (CF) like CETP, Common Spray dryer, Common MEE etc. **Name of CF** • Membership of CETP will be obtained post Environmental Clearance/CTE.
	Membership of Common facility (CF) **(For waste water treatment)**
	Membership of CETP will be obtained post Environmental Clearance/CTE.
vii	**Simplified water balance diagram with reuse / recycle of wastewater**

For Well Drilling Activity:



For Early Production Facility:



viii Reuse/Recycle details (KLD)

Total reuse - 44 KLD (during Well Drilling Activity)

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.
Jet wash – washing of drill cuttings at shale shaker	Drilling mud preparation, housekeeping, washing, greenbelt and sanitation usage	COD – 100 mg/l BOD – 30 mg/l TDS – 2100 mg/l	--
Domestic wastewater			--

Total reuse - 02 KLD (during Early Production Facility)

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.
Domestic wastewater	Dust Suppression, Green Belt etc.	COD – 100 mg/l BOD – 30 mg/l TDS – 2100 mg/l	--
			--

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.

S. 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)
	Drilling Well Site location					
1.	Camp Site - 2 x 350 KVA (1W + 1S)	6	HSD	3 - 4	PM_{10}, NO_X	Exhausts of diesel generators will be positioned at a sufficient height to ensure dispersal of exhaust emissions; Periodic maintenance of DG sets will be undertaken
2.	Drilling Rig - 3 x 1000 KVA (2W + 1S) or 2 x 1850 KVA (1W + 1S)	10	HSD	15 - 18	PM_{10}, NO_X	
3.	Liquid Mud Pump (LMP) – 3 x 500 KVA (2W + 1S)	6	HSD	2 - 3	PM_{10}, NO_X	
4.	Radio Room - 2 x 100 KVA (1W + 1S)	10	HSD	1 - 2	PM_{10}, NO_X	
5.	Well Testing Flare Stack	30	--	--	PM_{10}, NO_X, SO_2	Engineering controls to ensure complete combustion of gas; No cold venting. Flaring will be done with combustion efficient elevated flare tip; and Location of flare stacks to be chosen considering the sensitive receptors adjoining the site.
6.	Diesel Fired Heater - Treater or IWBH (Induced Water Bath Heater) with Well Testing / Extended Well Testing Setup – 1 x 350 KVA	6	HSD	3 KLD	PM_{10}, NO_X, SO_2	
	Each Early Production Location					
7.	Gas Engine Generator / DG - 1 MW	10	Natural Gas	283.16 m^3/hr	PM_{10}, NO_X	Exhausts of diesel generators will be positioned at a sufficient height to ensure dispersal of exhaust emissions. Periodic maintenance of DG sets will be undertaken
8.	EPU Requirement - 1 x 500 KVA (Emergency Backup)	6	HSD	0.12 KLD	PM_{10}, NO_X, SO_2	
9.	Flaring for each Early Production Location	30	Natural Gas	71 m^3/hour	NO_X, SO_2	
10.	Dual Fuel (Diesel / Gas) Fired Heater - Treater or IWBH	6	Natural Gas Or	0.25 MMSCFD Or	PM_{10}, NO_X, SO_2	

	(Induced Water Bath Heater) - 1 x 800 KVA		HSD	4 KLD		
11.	Natural Gas Fired Heater for TEG regeneration (attached with dehydration unit) - 1 x 250 KVA	6	Natural Gas	0.40 MMSCFD	NO_X, SO_2	
12.	Compressor (Gas Engine Driven) 2 x 800 KVA (1W + 1S)	6	Natural Gas	0.23 MMSCFD	NO_X, SO_2	

-

ii Process gas emission details i.e. Type of pollutant gases (SO_2, HCl, NH_3, Cl_2, NO_x etc.)

Sr. No.	Specific Source of Emission (Name of the Product & Process)	Type of Emission	Stack / Vent Height (meter)	Air Pollution Control Measures (APCM)
1	None			

-

iii **Fugitive emission** details with its mitigation measures:
As below: None

Comments for E-i2, E-ii & E-iii:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, no Process gas emission, no fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F **Hazardous wastes** (as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.

i **During Drilling Operation:-**

S. No.	Type / Name of Hazardous Waste	Specific Source of Generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules	Quantity (MT/Annum)	Management of HW
1	Drill Cuttings excluding those from	Drilling	HW Sch-I	500-1500 tons/well	Collection in HDPE lined pit and disposal as

				WBM		Cat. 2.1		per Hazardous Waste Rules, 2016 (Co-processing in Cement Kiln as fuel substitute, Common Hazardous Waste TSDF, HW Processing facility) / Brick Manufacturing Unit
			2	Drilling Mud containing Oil (SBM)	Drilling	HW Sch-I Cat. 2.3	250-500 tons/well	Collection in HDPE lined pit and disposal as per Hazardous Waste Rules, 2016 (Co-processing in Cement Kiln as fuel substitute, Common Hazardous Waste TSDF, HW Processing facility)
			3	Used Oil / Spent Oil	Others	HW Sch-I Cat. 5.1	1-2 tons/well	Collection, Storage, Transportation and sold to registered re-refiners
			4	Sludge containing Oil and other Drilling Waste	Others	HW Sch-I Cat. 2.2	250-500 tons/well	Collection, Storage, Transportation and Disposal to GPCB authorized TSDF Site or authorized Co-processing / Pre-processing facility
			5	Spent Chemical	Drilling	HW Sch-I Cat. 32.1	0.60 tons/well	Collection in HDPE lined pit and disposal in Co-processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility
			6	Wastes or	Drilling	HW	0.50 tons/well	Disposal in Co-

	Residues containing Oil		Sch-I Cat. 5.2		processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility
7	Empty Barrels / Containers / Liners Contaminated with Hazardous Chemicals / Wastes	Drilling	HW Sch-I Cat. 33.1	50 nos./well	Will be sent to recyclers
8	Chemical Sludge from Wastewater Treatment	Drilling	HW Sch-I Cat. 35.3	120 tons/well	Collection in HDPE lined pit and disposal in Co-processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility

During Early Production:-

S. No.	Type / Name of Hazardous Waste	Specific Source of Generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules	Quantity (MT/Annum)	Management of HW
1	Oily Sludge / Residues	Well work over, crude storage tank bottom cleaning	HW Sch-I Cat. 2.2	20 Ton/Year	Collection in HDPE lined pit and Disposal in Co-processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility
2	Waste Oil (Slop Oil)	Well work over, crude storage tank bottom cleaning	HW Sch-I Cat. 4.3	2 Ton/Year	Waste oil will be sent CPCB authorized Recyclers / HW Processing Facility
3	ETP Sludge	ETP operation	HW Sch-I	120 Ton/Year	Collection in HDPE lined pit and Disposal in

			Cat. 34.2		Co-processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility
4	Used Oil / Spent Oil	D. G. sets maintenance and other misc.	HW Sch-I Cat 5.1	1 KL/yr	Used oil will be sent CPCB authorized Recyclers
5	Oil Contaminated Filters, Cottons, Rags, Gloves, Etc.	Misc. main-tenance	HW Sch-I Cat. 3.3	0.30 ton/yr	Will be sent CPCB authorized Recyclers.
6	Waste / Residues Containing Oil	Well work over	HW Sch-I Cat. 5.2	0.50 KL/yr	Disposal in Co-processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility
7	Spent Chemicals	Well work over	--	0.60 tons/yr	Disposal in Co-processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility
8	Spent Carbon	ETP / STP	HW Sch-I Cat. 36.2	3 tons/yr	Disposal in Co-processing in Cement Kiln / Common Hazardous Waste TSDF / HW Processing Facility
9	Discarded Containers / Barrels / Liners Contaminated With Hazardous Waste	Well work over	HW Sch-I Cat. 33.1	50 Nos./yr	Collection, Storage, Transportation and Sold to Registered Recyclers

Comments:

- Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.

	➢ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
ii	Membership details of **TSDF, CHWIF** etc. **(For HW management)** — Membership or MOU of TSDF/ Hazardous waste processing facility/ Brick manufacturing facility/ Cement Manufacturing with co-processing will be obtained post Environmental Clearance/ CTE Details of Non-Hazardous waste & its disposal (MSW and others)

iii

Nature of waste	**Quantity during Drilling Activities**	**Mode of Disposal**
Drill cuttings associated with WBM	250-750 tons/well	Collection into HDPE lined pit. Use for subgrade construction materials, disposal into low lying areas; Co-processing in cement kiln / brick manufacturing
Spent WBM	250-500 tons/well	Collection into HDPE lined pit. Use for subgrade construction materials, disposal into low lying areas; Co-processing in cement kiln/brick manufacturing
Domestic waste	2 – 2.5 Kg/Day	Shall be sent through contractor to approved municipal site / nagarpalika / gram panchayat site
Non-combustible waste containing metallic residues	1-1.2 ton/well	To be disposed of their registered vendors on periodic basis.
Packaging wastes including drums, wooden pallets, plastic containers, plastic foils.	1 ton/well	To be analysed for the trace/heavy metals content before disposing suitably
Left over chemicals and materials, scrap metal, sludge, scales, batteries, spent lubricants, filters etc.	250-300 kg/well	Scrap metal and recoverable material to the salvages before dispose of balance material the registered vendors
Cement, grit, blasting and painting wastes.	500 kg/well	To be disposed of their registered vendors on periodic basis.

G	**Solvent management**, VOC emissions etc.
i	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc. (Details in Table Format)
	• Not applicable
ii	VOC emission sources and its mitigation measures
	• Not applicable

H **Details regarding storage of Hazardous Chemicals**

Storage Details	**Name of Major Hazardous Chemicals**	**Remarks**
Storage Tanks – 45 KL	Crude Oil	Only temporary storage - during EPU stage
Drum / Barrel Storage –	HSD	For D. G. set only

	200 Lit		

Applicability of PESO: Temporary storage of Diesel for drilling. Approval from PESO will be obtained prior to start of drilling operation.

13) **Recommendation by SEAC:**

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

SPECIFIC CONDITIONS:

1. Project proponent (PP) shall obtain separate Environmental Clearance for commercial drilling and exploration as this proposal is for drilling of Exploration activity only as per EIA Notification 2006 and amendment dated 16.01.2020 [Category B2 of activity 1(b)]
2. No drilling shall be carried out in protected areas.
3. The company shall make all arrangements at the drilling site to prevent runoff of any oil containing waste into the nearby water bodies. Separate drainage system shall be created for oil contaminated and non-oil contaminated. Effluent shall be properly treated and treated waste water shall confirm to CPCB/GPCB standards.
4. Drill cuttings separated from drilling fluid shall be adequately washed and disposed according to HWMH rule, 2016. No effluent /drilling mud /drill cutting shall be discharged /disposed off into nearby surface water bodies. The company shall comply with the guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR. 546 dated 30 the August ,2005
5. Oil spillage prevention and mitigation scheme shall be prepared. In case of oil spillage/ contamination, action plan shall be prepared to clean the site by adopting proven technology. The recyclable waste (oily sludge) and spent oil shall be disposed of to the authorized recyclers.
6. After completion of drilling activities, in case of non-availability of hydrocarbons the site shall be restored back to its normal condition as per the prevailing Rules/Guidelines/Site restoration policy.
7. PP shall adopt best drilling practices and drilling operations shall be designed in such a way that there is no chance of contamination of ground water aquifer.

8. PP shall take all precautionary measures to avoid any contamination of ground water.
9. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
10. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
11. The project proponent must strictly adhere to the stipulations made by the Gujarat Pollution Control Board, State Government and/or any other statutory authority.
12. The company shall develop a contingency plan for H2S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H2S detectors in locations of high risk of exposure along with self-containing breathing apparatus.
13. Company shall prepare operating manual in respect of all activities, which would cover all safety & environment related issues and measures and measures to be taken for protection. One set of environment manual shall be made available at the drilling site /project site. Awareness shall be created at each level of management. All the schedules and results of environmental monitoring shall be available at the project site office. Remote monitoring of site should be done.

14. Safety & Health:

a) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
b) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labor within premises.
c) The consequence arising out of incidents such as Well Blow Out, Fire, Explosion, Natural Calamities etc. shall be accurately predicted with the help of latest technique available by various Risk Analysis Studies and unit shall submit Disaster Management Plan (DMP) to the concern authority based on such probable scenarios.
d) Personal Protective Equipments (PPEs) shall be provided to workers and its usage shall be ensured and supervised.
e) First Aid Box shall be made readily available in the unit.
f) Occupational health surveillance of the workers shall be done and its records shall be maintained. Pre-employment and periodical medical examination for all the workers shall be undertaken on regular basis as per Factories Act & Rules.
g) The company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed.
h) Blow out preventer system shall be installed to prevent well blowouts during drilling operations.
i) Emergency response plan shall be based on the guidance prepared by OISD, DGMs and Govt. of India.

WATER

15. (a) Total water requirement for the project (drilling activities) shall not exceed 87 KLD per well. Unit shall reuse 44 KLD per well of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 43 KLD per well and it shall be met through local tanker water supply.
    (b) Total water requirement for the project (early production activities) shall not exceed 15 KLD per well. Unit shall reuse 2 KLD per well of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 13 KLD per well and it shall be met through local tanker water supply.
16. PP shall not dig borewell for fresh water requirements.
17. The industrial effluent generation from the project shall not exceed 275 KLD per well (40 KLD from drilling activities and 235 KLD from early production activities).
18. Management of Industrial effluent shall be as under:
    - ✓ 40 KLD effluent generated per well from drilling activities shall be treated in primary ETP followed by UF & RO and shall be reused within premises for drilling mud preparation, housekeeping, washing and sanitation usage.
    - ✓ 235 KLD effluent generated per well from early production activities shall be treated in Produce water treatment facility of EPU and shall be disposed-off using either a nearby down hole disposal well (by reinjection in abandoned well) or other available and suitable onshore disposal medium or solar / mechanical evaporators depending on the quantity and feasibility.
19. PP shall obtain prior permission for disposal of treated effluent.
20. Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall not be any industrial wastewater discharge from the unit.
21. Domestic wastewater generation shall not exceed 14 KLD for proposed project (12 KLD from drilling activities and 2 KLD from early production activities) and it shall be treated in STP. Treated sewage shall be utilized for dust suppression and gardening & plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
22. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
23. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
24. The unit shall provide metering facility at the ETP & STP and maintain records for the same.
25. Proper logbooks of ETP & STP; treated effluent reused in gardening/ plantation; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

26. Unit shall not exceed fuel consumption for flaring and D G Set as per the point no. E-i as mentioned above.
27. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by

GPCB.

28. There shall be no process gas emission from drilling & exploration activities and other ancillary operations.
29. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities fromtime to time (e.g. Directors of IndustrialSafety& Health). Following indicativeguidelines shall also be followed to reducethe fugitive emission.

    - Internal roads shall be either concreted or asphalted or paved properly toreducethe fugitive emission during vehicular movement.
    - Air borne dust shall becontrolled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

30. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
31. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx and VOCs shall be carried out in the impactzoneand its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found toexceed the prescribed limits, necessary additionalcontrol measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

32. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
33. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
34. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
35. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
36. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

NOISE:

37. The company shall make all arrangement for control of noise from the drilling activities.
38. The overall noise level in and around the plant area shall be kept well within the standards by providing noise control measures including engineering control like acoustic insulation, hoods, silencers,

enclosures etc. on all source of noise generation. The ambient noise level shall confirm to the standards prescribed under Environment (Protection) Act & Rules, 1986 amended from time to time.

39. Noise levels for workers shall be as per the Factories Act & Rules.

GREEN BELT AND OTHER PLANTATION:

40. The unit shall develop green belt within premises as per the CPCB guidelines. However, if the adequate land is not available within the premises, the unit shall take up adequate plantation on road sides and suitable open areas in GIDC estate or any other open areas in consultation with the GIDC / GPCB and submit an action plan of plantation for next three years to the GPCB.

41. Drip irrigation / low-volume, low-angle sprinkler system shall be used for the green belt development within the premises.

OTHERS:

42. The project proponent shall also comply with any additional condition that may be imposed by the SEAC or the SEIAA or any other competent authority for the purpose of the environmental protection and management.
43. Necessary permissions as mandated under water (Prevention and control of Pollution) act, 1974 and the Air (prevention and control pollution) Act, 1981, as applicable from time to time, shall be obtained from the State Pollution Control Board.
44. The project proponent shall allocate the separate fund of Rs 2.1 Crores [Safe drinking water supply through installation of RO plant (Capacity 1000 Liter/day) with Annual Maintenance Contract; Sanitation facility (Community Toilet complex with four seat with Septic Tank and Soak pit); Solar street light and solar panel on public building and Tree plantation activity (Trees with tree guard, O&M Cost including Menpower) on surrounding villages road] proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
45. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

46. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
47. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will

exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

48. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
49. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
50. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
51. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
52. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

3.	SIA/GJ/IND3/247923/2021	**M/s Narmada Organics** Plot No: C-345/2, Saykha Industrial Estate,G.I.D.C.392012, Dist. : Bharuch	EC (Refer back)

Category of the unit: **5 (f)**

Project status: **Expansion**

1) Project proponent (PP) has submitted online application vide no. SIA/GJ/IND3/247923/2021 dated: 28.12.2021 and SEAC has accepted on dated 29.03.2022 for obtaining Environmental Clearance.
2) PP has applied for Environmental clearance and the SEAC recommended the project for grant of Environmental clearance vide this office letter no. EIA-10-2021-IND2/4663 dated: 03.11.2022 for conditions as mentioned therein.
3) The case was referred back by the SEIAA, Gujarat vide Letter No. SEIAA/GUJ/EC/2902/2022 dated 08.12.2022 with the following point:
    1. Details of Existing EC & Comments on CCR (Certified Compliance Report) of IRO is not given in recommendation letter.
    2. Details of Methodology for segregation of high COD & Low COD streams from the source of generation (process) are not given.
    3. Capacity of ETP is not given.
    4. There are total 712 nos. of product propose. How is it possible to manufacture in only on manufacturing plant, Please Clarify.
    5. Details of CER are missing in EMP Table.
4) Project proponent submitted reply vide email dated 17.12.2022 with supporting documents.
5) The case was reconsidered in the SEAC meeting dated 19.12.2022.
6) PP and Technical expert M/s. Eco Earth Technologies remained present during video conference

meeting dated: 19.12.2022.

7) PP presented the following details:

1. Details of Existing EC & Comments on CCR (Certified Compliance Report) of IRO are not given in recommendation letter.

Reply:

✓ Unit has Obtained Environmental Clearance letter vide SEIAA/GUJ/EC/5(f)/60/2021 on dated 10/02/2021 which is converted into Consent to Established (CTE) issued on dated 18/02/2021. Unit has not obtained Consent to Operate (CTO) till date; therefore CCR is not applicable as per MoEF&CC's OM dated: 08.06.2022.

2. Details of Methodology for segregation of high COD & Low COD streams from the source of generation (process) are not given.

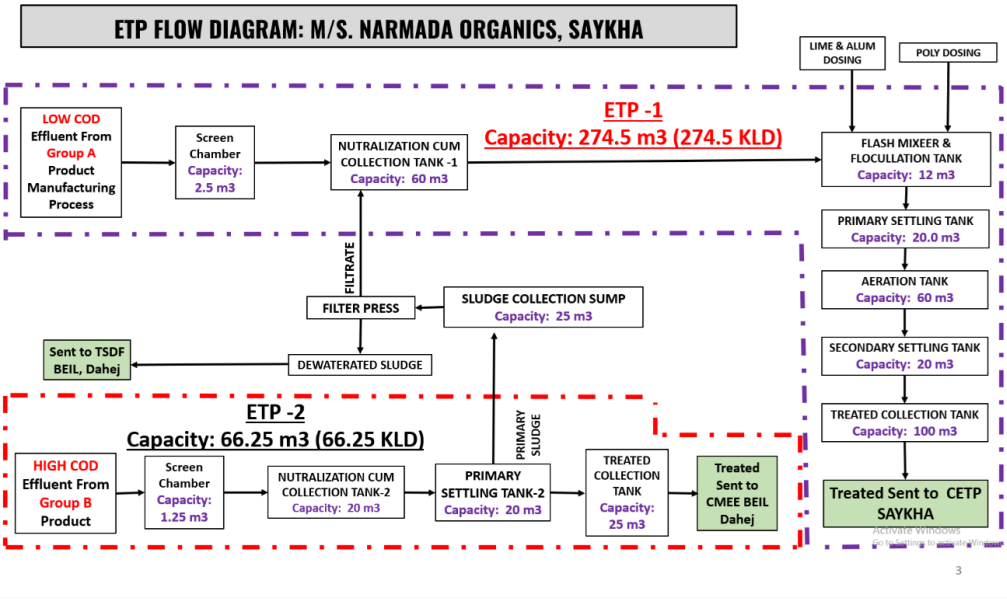
Reply:

✓ As per the Propose Grouping **Group A are Low COD Effluent** Generation products and **Group B is High COD Effluent** Generation Products. As per the Proposal at a time 2 Products will be manufactured one from each Group, where individual machineries like GLR & SSR Reactor, Column Condensers, Receiver Flask, Centrifuge, for each group will be dedicated and Separately 2 Products will be manufacture at a time. Further, unit will provide separated Collection Channel line for High COD & Low COD effluent line from Product plant and Each Stream has a Separated Effluent Collection Tank, For Low COD Collection cum Neutralization tank -1 & For High COD Collection cum Neutralization Tank – 2.

3. Capacity of ETP is not given.

Reply:

✓ The details of capacity of ETP is as under:



ETP Design Capacity

CIVIL PRIMARY + SECONDARY ETP FOR LOW COD EFFLUENT							
S. N.	NAME OF UNIT	Length	Width	Height	F.B	M3	RETAINTION TIME (Hrs.)
1	Screen chamber	1.3	1.3	1.5	0.5	2.5	3
2	Neutralization tank Cum Collection tank	3.0	4.0	5.0	0.5	60	8
3	Flash mixer & Flocculator	2.0	2.0	3.0	0.5	12	4
4	Primary Clarifier	3.20 Ø x (2.50 + 0.50 FB)				20	8
5	Aeration Tank	4.0	3.0	5.0	0.5	60	28
6	Secondary Clarifier	3.20 Ø x (2.50 + 0.50 FB)				20	8
7	Sludge Collection Sump	2.0	2.5	5.0	0.3	25	7
8	Holding Tank (Treated Water)	4.0	5.0	5.0	0.5	100	48
9	Foundation for Filters, Blowers & Pumps, Centrifuge System, PSF, ASF	As Per Requirements					

CIVIL PRIMARY ETP FOR HIGH COD EFFLUENT							
S. N.	NAME OF UNIT	Length	Width	Height	F.B	M3	RETAINTION TIME (Hrs.)
1	Screen chamber	1.0	1.0	1.25	0.5	1.25	3
2	Neutralization tank cum Collection tank	2.0	2.0	5.0	0.5	20	8

3	**Primary Sedimentation tank**	**3.20 Ø x (2.50 + 0.50 FB)**				**20**	**8**
7	**Holding Tank (Treated Water)**	**2.5**	**2.5**	**4.0**	**0.5**	**25**	**48**

4. There are total 712 nos. of product propose. How is it possible to manufacture in only on manufacturing plant, Please Clarify.

Reply:

✓ Unit Process & Equipments, Machinery for Pharmaceutical Products are same. Unit will install GLR & SSR Reactor, Column Condensers, Receiver Flask, Centrifuge, dedicated For Each Group and Separately 2 Products will be manufacture at a time and separate stream segregation will be done from production plant. For manufacturing 712 Products Equipments, Unit Operation & Unit Process are same therefore unit can manufacture 712 products in a 1 manufacturing plant. Unit will manufacture 2 Products at a time only. 712 Product applied based on market demand of Region & Country; Unit will not manufacture all 712 products at a single time. Unit will manufacture 2 products at time only.

5. Details of CER are missing in EMP Table.

Reply:

✓ The revised EMP table mentioning details of CER is as under:

Sr. No	Unit	Detail	Capital Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crores per Annum)
1	Wastewater	ETP (Primary + Secondary)	0.18	0.063
		CETP	0.05	0.01
		Rain water harvesting Tank/Fire water Tank 200 KLD	0.02	0.001
2	Air	MCS, Scrubber & APCMS	0.15	0.012
3	Hazardous Management	Membership & Disposal + Incineration	0.10	0.2058
		Transportation	0.05	
4.	Fire & Safety	Fire hydrant & Pipeline system	0.18	0.008
		Fire extinguisher & Foam trolley	0.12	0.002
		Distributed Control System (DCS)	0.25	0.012
5	Green Belt Development	150 Tress	0.02	0.02
6.	Occupational Health	Training	0.01	-
		Safety equipment/PPEs./Fire Suits	0.09	0.02
7.	Noise Control	Noise Monitoring & Control	0.033	0.005
8.	VOC Control & LDAR	VOC Monitoring & Installation of Sensor	0.023	0.005

9	Environment Monitoring Program	AWH Env. Monitioring	0.10	0.01
10	CER Activity	Activity	0.224	-
Total			**1.60**	**0.3738**

8) Committee found the presentation and submission for the project satisfactorily.

After detailed discussion, it was decided to recommend the project to SEIAA, Gujarat for grant of Environmental Clearance with conditions unchanged via Recommendation Letter forwarded from SEAC vide No. EIA-10-2021-IND2/4663 dated: 03.11.2022.

4.	SIA/GJ/IND3/403535/2022	**M/s Deepak Cellulose Pvt. Ltd.** Plot No.115,115/1, New GIDC Gundlav, Tal.: Valsad, Dist.: Valsad, 396035	EC

Category of the unit: **5(f)**

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/403535/2022
1.3. Category of Project :	B1
1.4. Date of application : (Online accepted by SEAC)	02/12/2022
1.5. Documents Submitted by Project Proponent(PP)	EIA Report with EMP, PFR, Form - 2
1.6. TOR No. & Date :	SIA/GJ/88805/2022 19-05-2022
1.7. Technical expert / Environmental Consultant :	M/s. Eco Chem Sales & Services
1.8. SEAC Meeting No. and Date:	542nd meeting date- 19/12/2022
1.9. ADS vide letter dated :	-
1.10. Reply Submitted by PP dated:	-
1.11. Revised Consideration SEAC Meeting No. and Date:	-

2) This is an existing unit and now proposed for expansion in manufacturing of synthetic Organic Chemicals as mentioned below:

S. No.	Product	CAS No.	Capacity, TPM			End use of product
			Existing	Proposed	Total	
GROUP: I						

1	Cellulose Acetate Phthalate (CAP)	9004-38-0	2.5	2.5	5.0	Coating of solid dosage forms like Tablets and Granules for Capsules
2	Hydroxy propyl methyl Cellulose Phthalate (Hypromellose Phthalate) (HPMC-P)	9050-31-1	10.0	12.0	22.0	Coating of solid dosage forms like Tablets and Granules for Capsules
3	Hydroxypropyl Methyl Cellulose Acetate Succinate (Hypromellose Acetate Succinate) (HPMC-AS)	71138-97-1	2.0	5.5	7.5	Coating of solid dosage forms like Tablets and Granules for Capsules
4	Hydroxypropyl Methyl Cellulose Tri Mellitate (HypromelloseTrimellitate) (HPMC-T)	9004-62-0	0.5	0	0.5	Enteric coating of solid dosage forms like Tablets and Granules for Capsules
GROUP: II						
5	Hydroxypropyl Methyl Cellulose (Hypromellose) (HPMC-Low viscosity)	9004-65-3	15.0	0	15.0	Coating of solid dosage forms like Tablets and Granules for Capsules
GROUP: III						
6	Acrylic Co- polymer emulsion	9063-87-0	50.0	0	50.0	Moisture resistant coating for solid dosage forms
GROUP: IV						
7	Hydroxypropyl Methyl Cellulose phthalate (Hypromellose phthalate) Dispersion (HPMC-P Dispersion)	9050-31-1	5.0	0	5.0	Coating of solid dosage forms like Tablets and Granules for Capsules
8	Sodium Acetate	6131-90-4	83.25	0	83.25	Additives in food, industry and preservative
	Total		**168.25**	**20.0**	**188.25**	

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 19.12.2022.
5) Project proponent (PP) and their Technical Expert M/s Eco Chem Sales & Services remain present during video conference meeting.
6) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period March-2022 to May-2022. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx and CO at Eight

locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD View". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

7) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
8) Earlier PP has obtained EC. Unit is having Valid CCA of the Board for existing plant valid upto dated: 31.12.2025. PP submitted point wise self-compliance report for EC & CC&A for existing plant. PP submitted that there is one SCN issued by GPCB on dated: 05.02.2021 and reply of same is submitted. Further, there is no legal court case and public complaint against unit.
9) Committee noted that as per MoEF&CC's OM dated: 08.06.2022, Certified Compliance report of IRO-Gandhinagar is mandatory. PP informed that IRO-Gandhinagar has carried of inspection of the existimng unit on dated: 25.11.2022 but the CCR is awaited.
10) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
11) PP submitted salient features of the project including Water, Air and Hazardous waste management.
12) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.

After detailed discussion, the Committee unanimously decided to consider the proposal in upcoming SEAC meeting upon submission of following details:

1. Certified Compliance report of Concern authority as per MoEF&CC's OM dated: 08.06.2022 for existing project.
2. Copy of concern authority permission for development of greenbelt outside the plant premises.
3. Details of area adequacy for storage of raw materials, finished goods, utilities, production area, hazardous waste storage area, ETP, etc.

5.	SIA/GJ/IND3/408257/2022	**M/S. Loxim Industries Limited (Unit-II)** Plot No. DP- 120, DP-125 to 129/2, Saykha,Vagra- 380009, Bharuch	EC

Category of the unit: **5 (f)**

Project status: **New**

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	**SIA/GJ/IND2/408257/2022**
1.3. Category of Project :	'B' [Synthetic Organic Chemicals Industry]
1.4. Date of application : (Online accepted by SEAC)	09/12/2022
1.5. Documents Submitted by Project Proponent(PP)	Form-1 Pre feasibility report EMP
1.6. TOR No. &Date :	SEIAA/GUJ/TOR/5(f)/1739/2019 Dated 5 Dec 2019
1.7. Technical expert / Environmental Consultant :	**M/s. En-vision Environmental Services, 201-301, Union Trade Center(UTC), Nr. Apple Hospital,Udhana Darwaja, Surat**
1.8. SEAC Meeting No. and Date:	542nd EC Presentation dated: 19th Dec 2022 via VC SEAC meeting
1.9. ADS vide letter dated :	---
1.10. Reply Submitted by PP dated:	--
1.11. Revised Consideration SEAC Meeting No. and Date:	--

2) This is a new project proposed for manufacturing of synthetic organic chemicals (dyes and dyes intermediates) as mentioned below:

Sr. No.	Product	CAS Number	Capacity, TPM	End use
1	Solvent Blue 104	116-75-6	**100**	**Dyeing of Nylon Fabric**
2	Solvent Green 3	128-80-3		
3	Solvent Violet 13	81-48-1		
4	Solvent Violet 44	87209-55-0		
5	Solvent Violet 59	6408-72-6		
6	Solvent Blue 35	17654-14-2		
7	Solvent Blue 36	14233-37-5		
8	Solvent Blue 78	2475-44-7		
9	Solvent Red 135	20749-68-2		
10	Solvent Red 139	61969-49-1		
11	Solvent Orange 60	6925-69-5		
12	Solvent Red 179	6829-22-7		
13	Solvent Red 207	10114-49-5		
14	Solvent Yellow 163	13676-91-0		

ACID DYES				
Sr.	**NAME OF THE**	**CAS No.**	**Capacity, TPM**	**End use**

No.	PRODUCTS		Crude Dye	
1	Acid Blue 111	6420-90-4	50	Dyeing of Nylon Fabric
2	Acid Blue 25	6408-78-2/2786-71-2/37218-11-4		
3	Acid Blue 281	226923-51-9		
4	Acid Blue 225	12216-97-6		
5	Acid Blue 260	62168-86-9		
6	Acid Black 194- 24709	61931-02-0		
7	Acid Black 107/KBL- 24703	12218-96-1		
8	Acid Black 207- 24710	84145-95-9		
9	Acid Black 210	99576-15-5		
10	Acid Black 63- 24708	32517-36-5		
11	Acid Blue 193/Navy MBR-24404	12392-64-2		
12	Acid Blue 171-24407	51053-44-2		
13	Acid Blue 277	25797-81-3		
14	Acid Blue 284-24405	61814-66-2		
15	Acid Blue 324- 24408	88264-80-6		
16	Acid Brown 282- 24601	12219-65-7		
17	Acid Green 73	12219-93-1		
18	Acid Orange 144	61814-64-0		
19	Acid Orange 156	68555-86-2		
20	Acid Red 182- 24305	61901-42-6		
21	Acid Red 211	12239-05-3		
22	Acid Red 260	12239-07-5		
23	Acid Red 315	12220-47-2		
24	Acid Red 361	61931-22-4		
25	Acid Red 405	83833-37-8		
26	Acid Red 414	172287-09-7		
27	Acid Violet 90- 24801	6408-29-3		
28	Acid Yellow 137-24105	72827-84-0		
29	Acid Yellow 151	12715-61-6		
30	Acid Yellow 199- 24106	70865-20-2		
31	Acid Yellow 220- 24102	71603-79-7		
32	Acid Yellow 246	119822-74-1		
33	Acid Yellow 59	5601-29-6		

DISPERSED DYES

Sr.No.	NAME OF THE PRODUCTS	CAS No.	Capacity, TPM	End use
			Crude Dye	
1	Disperse Red 60	17418-58-5	416	Dyeing of Polyster Fabrics
2	Disperse Blue 60	12217-80-0		
3	Disperse Blue 56	12217-79-7		
4	Disperse Navy Blue 79 (3G)	12239-34-8		
5	Disperse Orange 25 (RL)	31482-56-1		
6	Disperse Red 167 (Red 2B)	61968-52-3		
7	Disperse Red 91	12236-10-1		
8	Disperse Red 92	72363-26-9		
9	Disperse Red 146	59763-30-3		
10	Disperse Red 191	103657-51-8		

11	Disperse Red 4	2379-90-0		
12	Disperse Yellow 211 (4G)	86836-02-4		
13	Disperse Violet 99 (3R)	212955-32-3		
14	Disperse Violet 26	6408-72-6		
15	Disperse Violet 31	6408-72-6		
16	Disperse Violet 57	1594-08-7		
17	Disperse Blue 62	53989-05-2		
18	Disperse Blue 77	20241-76-3		
19	Disperse Blue 25	2475-46-9		
20	Disperse Blue 3	2475-46-9		

PIGMENT DYES

Sr. No.	NAME OF THE PRODUCTS	CAS No.	Capacity, TPM	End use
			Crude Dye	
1	Pigment Red 122	980-29-7	**100**	**Dyeing of Cotton Fabric**
2	Pigment Yellow 135	----		
3	Pigment Red 177	4051-63-2		

DIRECT DYES

Sr.No.	NAME OF THE PRODUCTS	CAS No.	Capacity, TPM	End use
			Crude Dye	
1	Direct Base Brown 1	1052-36-6	**50**	**Dyeing of Cotton Fabric**
2	Direct Black HRS	----		
3	Direct Black 168	85631-88-5		
4	Direct Black 179	143549-91-1		
5	Direct Black 22	6473-13-8		
6	Direct Black 62	6473-13-8		
7	Direct Blue 273	70956-20-6		
8	Direct Blue 281	77907-25-6		
9	Direct Blue 290	110444-91-2		
10	Direct Blue 299	----		
11	Direct Blue 71	4399-55-7		
12	Direct Blue 80	12222-00-3		
13	Direct Blue 85	70210-31-0		
14	Direct Blue 67/SF	3354-97-0		
15	Direct Blue 279/SM	72827-89-5		
16	Direct Brown 44/SBR	6252-62-6		
17	Direct Green 26/78	8003-79-0		
18	Direct Orange 102	6598-63-6		
19	Direct Orange 118	60202-34-8		
20	Direct Orange 15	1325-35-3		
21	Direct Orange 34	12222-37-6		
22	Direct Orange 603R	12217-64-0		
23	Direct Red 16	6227 02 7		
24	Direct Red 227	17791-81-0		

25	Direct Red 239/CAS	28706-25-4		
26	Direct Red 254/2B	6300-50-1		
27	Direct Red 80/F3B	08-10-10		
28	Direct Red 81	09-11-10		
29	Direct Red 83	15418-16-3		
30	Direct Red 89	12217-67-3		
31	Direct Violet 66	04-03-98		
32	Direct Violet 35	6227-20-9		
33	Direct Yellow 106	12222-60-5		
34	Direct Yellow 6	1325-42-4		
35	Direct Yellow 11	1325-37-7		
36	Direct Yellow 137	71838-47-6		
37	Direct Yellow 142	71902-08-4		
38	Direct Yellow 157	72705-26-1		
39	Direct Yellow 86	50925-42-3		

Reactive Dyes

Sr.No.	NAME OF THE PRODUCTS	CAS No.	Capacity, TPM	End use
			Crude Dye	
1	Reactive Blue 19	2580-78-1	**50**	**Dyeing of Cotton Fabric**
2	Reactive Blue 49	12236-92-9		
3	Reactive Blue 198	124448-55-1		
4	Reactive Black – 5	1222-25-1		
5	Reactive Black 31	12731-63-4		
6	Reactive Blue – 171/HEXL	77907-32-5		
7	Reactive Blue 203	147836-71-9		
8	Reactive Blue 220	147826-71-9		
9	Reactive Blue 221	93051-41-3		
10	Reactive Blue 222	93051-44-6		
11	Reactive Blue 250/RGB	93951-21-4		
12	Reactive Blue 28/ 3R	12225-45-5		
13	Reactive Brown 18/GR	12225-73-9		
14	Reactive Orange 107 /RNL	90597-79-8		
15	Reactive Orange 122	12220-12-1		
16	Reactive Orange 16/3R	12225-88-6/20262-58-2/12769-09-4		
17	Reactive Orange 1N	6522-74-3		
18	Reactive Orange 2N	12236-86-1		
19	Reactive Orange 3N	12225-83-1		
20	Reactive Orange 72	71902-15-3		
21	Reactive Orange 84	91261-29-9		
22	Reactive Orange 96 / Yellow 103	85567-07-3		
23	Reactive Red EHS 237- 1304 B-1	17752-85-1		

24	Reactive Red 278/CD	---		
25	Reactive Red 120	61951-82-4		
26	Reactive Red 141	61931-52-0		
27	Reactive Red 194	23354-52-1		
28	Reactive Red 195	93050-79-4		
29	Reactive Red 198	145017-98-7		
30	Reactive Red 222	93051-45-7		
31	Reactive Red 23	12769-07-2		
32	Reactive Red 2445-1304 B-2	41423-92-1		
33	Reactive Red 410	98114-32-0		
34	Reactive Red 49	12237-02-4		
35	Reactive Violet 5/5R	12226-38-9		
36	Reactive Yellow 145/MER	93050-80-7		
37	Reactive Yellow 15/GR	12226-47-0		
38	Reactive Yellow 160.1	---		
39	Reactive Yellow 17/G	20317-195		
40	Reactive Yellow 24/RTN	12226-51-6		
41	Reactive Yellow 37/HNL	12237-16-0		
42	Reactive Yellow 42/FG	12226-63-0		
43	Reactive Yellow 135/HE6G	77907-38-1		
44	Reactive Yellow 57/ME4GL	61969-35-5		
45	Reactive Yellow 84/HE4R	61951-85-7		
46	Reactive Yellow 98_2/1104B-2	---		
47	Reactive Yellow V1/1104B-1	----		

INTERMEDIATE

Sr. No.	NAME OF THE PRODUCTS	CAS No.	Capacity, TPM	End use
			Crude Dye	
1	2-4 Dibromo 1- Amino AQ	81-49-2	25	Captive Use In Manufacturing process of dyes and/or Sale to Actual Users
2	1 Amino AQ	82-45-1	350	
3	Bromamine Acid	116-81-4	200	
4	1 Amino 2 Bromo 4 Hydroxy AQ	116-82-5	25	
5	PNTOSA (Para Nitro Toluene Ortho – Sulphonic Acid)	121-03-09	150	
Formulated Dyes				
1	Formulated Dyes		1284	
Total production			**2800**	

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 19.12.2022.
5) Project proponent (PP) and their Technical Expert M/s En-vision Environmental Services remain present during video conference meeting.
6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water

balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.

7) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period December-2021 to February-2022. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx and CO at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD View". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).
8) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
9) Committee asked to submit the following:
    - ✓ GIDC water supply letter
    - ✓ Justification regarding higher wastewater generation than water consumption.
    - ✓ Mechanism or methodology for segregation of streams.
    - ✓ Revised EMP including cost of CER as capital cost instead of recurring cost.
    - ✓ Layout with 6m peripheral road for easy of movement of vehicles during emergency
10) Later on PP submitted following details through email
    - ✓ **Justification regarding higher wastewater generation than water consumption**: Total industrial water requirement will be 720.0 KLD and wastewater generation will be 795.0 KLD. There are some chemicals like Sulfuric Acid, Hydrochloric acid, Sodium Hydroxide etc; are most commonly used for the synthesis of Intermediate products. These chemicals contains water contents which released as a waste water and also in some reaction, water molecules will be generated during the reaction and that will be distilled out and drained as effluent. Therefore, there will be higher waste water generation than water consumption.
    - ✓ Revised EMP including cost of CER as capital cost instead of recurring cost.
    - ✓ Revised layout with 6m peripheral road for easy of movement of vehicles during emergency.
11) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
12) Compliance of the ToR found satisfactory.
13) PP presented salient features of the project including Water, Air and Hazardous waste management are submitted.

After detailed discussion, the Committee unanimously decided to consider the proposal in upcoming SEAC meeting upon submission of following details:

1. Copy of GIDC letter for water supply.
2. Mechanism or methodology for segregation of streams.

6.	SIA/GJ/IND3/66078/2017	**M/s. Associated Dyestuff Pvt. Ltd. (Unit-IV)** Plot No. DP-2 (part), Saykha Ind. Estate, Saykha, Vagra, Dist.: Bharuch.	EC (Refer Back)

Category of the unit: **5 (f)**

Project status: **Expansion**

1) Project proponent (PP) has submitted online application vide no. SIA/GJ/IND3/66078/2017 dated: 07.03.2022 and SEAC has accepted on dated 26.08.2022 for obtaining Environmental Clearance.
2) PP has applied for Environmental clearance and the SEAC recommended the project for grant of Environmental clearance vide this office letter no. EIA-10-2022-IND3/4706 dated: 17.11.2022 for conditions as mentioned therein.
3) The case was referred back by the SEIAA, Gujarat vide Letter No. SEIAA/GUJ/EC/2922/2022 dated 14.12.2022 with the following point:
    1. Details of previous EC and its compliance (Certified Compliance Report) of IRO, MoEF & CC is not given.
    2. Details of amination, sulphonation and its safety measures are not given.
    3. Total treated waste water - 660 KLD to be discharged into CETP Saykha but, membership obtained only for 200 KLD, please clarify.
    4. Data of waste water management in table D-5, D-6 (water balance diagram) and comments at the bottom of table D-7 are not matched.
4) Project proponent submitted reply vide email dated 17.12.2022 with supporting documents.
5) The case was reconsidered in the SEAC meeting dated 19.12.2022.
6) PP and Technical expert M/s. Envisafe Environment Consultants remained present during video conference meeting dated: 19.12.2022.
7) PP presented the following details:
    1. Details of previous EC and its compliance (Certified Compliance Report) of IRO, MoEF & CC is not given.

    Reply:

    - ✓ PP has presented that CCR of RO-GPCB was presented in SEAC meeting dated: 13.10.2022. Committee noted that the CCR was discussed in SEAC meeting dated: 13.10.2022 but it was inadvertently skipped in deliberation in MOM dated: 13.10.2022.
    - ✓ PP has submitted CCR of RO-GPCB dated: 25.07.2022 in which it is mentioned that unit has obtained CTE-fresh for the manufacturing of synthetic organic chemicals and has started the

construction but plant is not yet commissioned.

2. Details of amination, sulphonation and its safety measures are not given.

Reply:

✓ The manufacturing of proposed products (Pigments) in phase-2 does not involve amination and sulphonation process. The manufacturing of pigments involves unit processes like chlorination, nitration, hydrogenation. The details of manufacturing process and process safety measures are already submitted earlier. The same is mentioned in SEAC MOM dated: 13.10.2022 and recommendation letter dated: 17.11.2022.

3. Total treated waste water - 660 KLD to be discharged into CETP Saykha but, membership obtained only for 200 KLD, please clarify.

Reply:

✓ Unit already have obtained the membership for the discharge of 200 KLD into CETP Saykha and also have approval for the additional discharge of 460 KLD. Please note that unit have planned to setup project in phase manner and it is expected to have full discharge of 660 KLD within next 5-6 years. Further unit assure you that they will obtain the membership for 660 KLD before the commissioning of the plant.

✓ PP also submitted demand Note of GIDC for provisional membership of CETP-Saykha mentioning 660 KLD proposed quantity is approved dated: 24.06.2022.

4. Data of waste water management in table D-5, D-6 (water balance diagram) and comments at the bottom of table D-7 are not matched.

Reply:

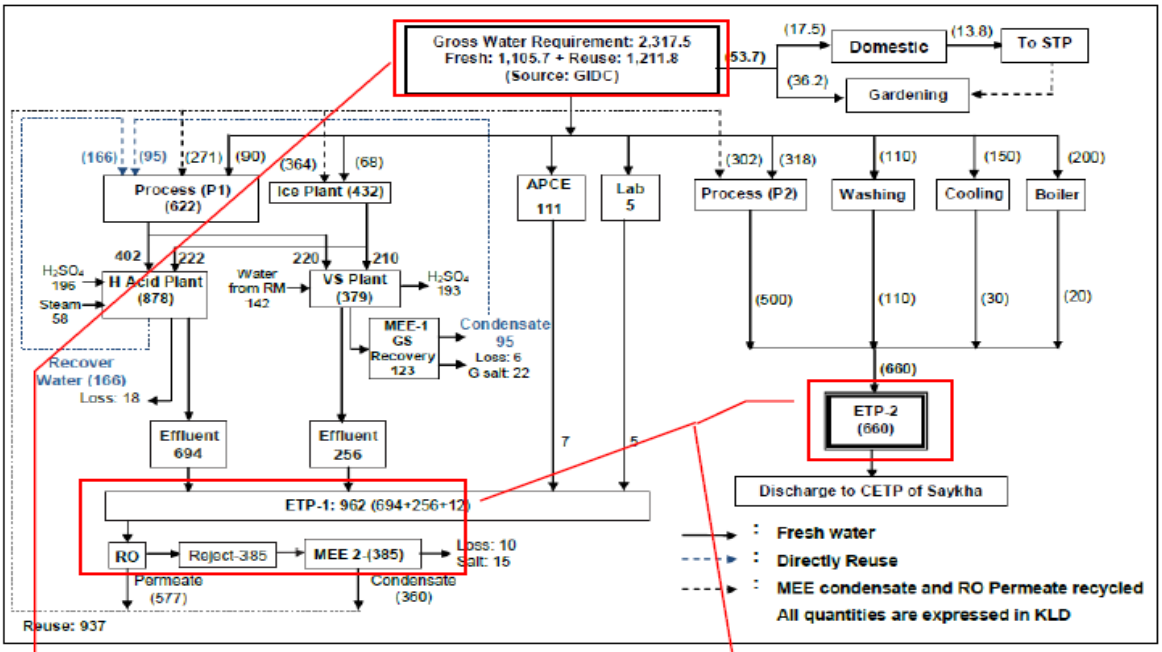
✓ There is no discrepancy's in section D-5, D-6 and D-7 for the waste water management. The D-5, D-6 and D-7 are as under:

D-5	**Break-up of waste water disposal & facility (For Industrial)**

Sr. no.	**Quantity KLD**	**Facility**
1	962	Treatment in ETP-1 followed by RO and MEE and reused within the process.
2	660	Treatment in ETP-2 and disposal by sending to CETP of Saykha.
Total	**1,622**	

-

D-6	**Simplified water balance diagr**



Section D-7: Summary of water requirement
Total water requirement for the project **(A):** 2,317.5 KLD
Quantity to be **recycled (B):** 1,211.8 KLD
Total **fresh water** requirement **(C):** 1,105.7 KLD

Section D-5
Ind.eff. gen: 1622 KLD
962 will be treated in ETP-1, RO & MEE
660 KLD treated in ETP-2 and send to CETP-Saykha

D-7 Summary

Summary of water requirement	Quantity, KLD	Remarks
Total water requirement for the project **(A)**	2,317.5	
Quantity to be **recycled (B)**	1,211.8	Industrial: 1,198.00 Domestic: 13.80
Total **fresh water** requirement **(C)**	1,105.7	
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

8) Committee found the presentation and submission for the project satisfactorily.

After detailed discussion, it was decided to recommend the project to SEIAA, Gujarat for grant of Environmental Clearance with conditions unchanged via Recommendation Letter forwarded from SEAC vide No. EIA-10-2022-IND3/4706 dated: 17.11.2022.

7.	SIA/GJ/IND3/71298/2022	**M/s. Tridev Industries Pvt. Ltd.** Plot No. D-2/CH134, GIDC Industrial Estate, Dahej, Dist.: Bharuch, Gujarat	EC

Category of the unit: **5 (f)**

Project status: **Expansion**

1) DETAILS OF APPLICATION:

1.1. Type of application:	Environmental Clearance (EC) - Expansion
1.2. Proposal no.	SIA/GJ/IND3/71298/2022
1.3. Category of Project :	5 (f) – B1
1.4. Date of application : (Online accepted by SEAC)	09/12/2022
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. & Date :	File no - SIA/GJ/14701/2022 Date - 26 Jan 2022
1.7. Technical expert / Environmental Consultant :	M/s. Green Circle Inc.
1.8. SEAC Meeting No. and Date:	542nd SEAC Meeting, 19/12/2022
1.9. ADS vide letter dated :	-
1.10. Reply Submitted by PP dated:	-
1.11. Revised Consideration SEAC Meeting No. and Date:	-

2) This is an existing unit proposed for expansion of manufacturing of synthetic organic chemicals as mentioned below:

Sr. No.	Name of Product	CAS No.	Quantity MT/Month			End Use of products
			Existing	Proposed	Total	
1	Drying of Ketonic Resin	25054-06-2	100	-	100	**Use** of this **resin** in ball point pen inks
2	Drying of poly Vinyl Butyl Resin	9002-86-2	50	-	50	**Use** of this **resin in wood bonding**
3	Printing Ink & Coatings	78-93-3	300	-	300	water-borne **printing inks**
4	Ketonic Resin	25054-06-2	250	-150	100	excellent light resistance
5	Polyamide Resin	63428-84-2	100	-	100	aerospace, automotive, oil & gas
6	Maleic Resin	94581-16-5	100	-	100	**use** in Paints, Surface Coating, Inks
7	Poly Vinyl Butyl Resin	9002-86-2	100	-50	50	**use** in printing inks due to its good flexibility
8	Adhesion Permoter(TA-10)		50	-	50	-

9	MF Resin	82115-62-6	100	-	100	laminates for countertops and cabinets and surface coatings for automobiles
10	Water Based Additive	80584-91-4	200	-	200	seeking increased durability
PROPOSED						
11	Phenolic Resin	9003-35-4	-	1500	1500	durable binders and adhesives in structural wood panels
11.1	pure phenol-novaloc	9003-35-4				Manufacturers **us e phenolic** resins
11.2	Pure Phenol - resole	9003-35-4				**use** or addition of a curing agent
11.3	Alkyl Phenol Formaldehyde Resin	9003-35-4				used in rubber products
12	Epoxy Resin	90598-46-2	-			Paints & coatings application for its mechanical and protective properties.
12.1	Solid Epoxy Resin	24969-06-0				
12.2	Solution Cut Grade Epoxy Resin	24969-06-0				
12.3	Liquid Epoxy Resin	24969-06-0				
12.4	Modified Epoxy Resin	24969-06-0				
13	Terpene Phenolic Resin	25359-84-6	-			with high softening point and good stick ability, particularly suitable to be used in making chloronorgutta rubber
14	Polyamide Resin	63428-84-2	-			aerospace, automotive, oil & gas, wire enamel coatings, electrical & electronics
14.1	co solvent grade polyamide resins	68410-23-1				**Use** in gravure inks and lacquers.
14.2	Alcohol soluble polyamide resins	63428-87-2				**resin** is used with pigment additives,
14.3	reactive polyamide resins	63428-84-2				combination with liquid epoxy for solvent less coatings for steel
15	Acrylic Resin	9063-87-0	-	1500	1500	manufacturing coatings, paints, adhesives,

						sealants	
15.1	Styrene Acrylate Co-Polymers Solids (Resins) & Styrene maleic anhydride solid/derivativs & Styrene AA Terpolymer	9011-13-6				For use in Interior/Exterior Paints, wood plastic composites are the automotive and building **industrie s**,	
15.2	Styrene Acrylate Co-Polymers liquid/Emulsions/s olutions/PU Emulsions (Resins)	25133-97-5				for the construction **indu stry** or binders for paper coatings	
16.	Polyester Resin	113669-95-7	-			Reinforcement, roofing, concrete, and composites of household structures, factories, buildings, and mass transit applications.	
16.1	Polyester polyols	53637-25-5				insulation, flammability, and structural performance are	
17	Rosin Based Derivative	8050-09-7				used as rigid monomers to co-polymerize	
17.1	Modified Phenolic Resin & Rosin Oil	8006-64-2				used in disk brake caliper piston, brake linings, clutch facing, automotive felts, brake pads, drum linings, oil filters	
17.2	Maleic Resin & Turpentine	94581-16-5	-			used in Spirit soluble varnishes Marking Paints, Liquid Inks etc. Solubility	
17.3	Sytrene Maleic Anhydride Resin	9011-13-6				in automobile parts, small appliances, and food-service trays.	
17.4	Estergum &Rosin Oil	8050-31-5				emulsifier and stabilizer or density adjustment agent	
18	Aldehyde Resin	9011-05-6	-			**End**	

						use applications include fiberglass insulation, decorative
18.1	PTSA Aldehyde Resin	28931-47-7				Use in corrosion of **end user's** machinery and reactors
19	UV Monomer (Ester of diol and acrylates)	29570-58-9	-			applications include packaging, multilayer films and adhesives
20	Polyurethane & Its Dispersions	9017-09-8	-	600	600	Automotive refinishing, Industrial coating
20.1	Non Solvent Adhesive (Chemical Reaction type)	9017-09-8				
20.2	Non Solvent Adhesive (Non Chemical reaction type)	9017-09-8				
20.3	Solvent based Adhesive	9017-09-8				
21	Oil Based Polyester Polyol	53637-25-5	-	500	500	re usually high-performance adhesives **based** on crystalline
22	Acrylic Polyol	79-10-7	-	300	300	Acrylic polyol for the formulation of bi-component polyurethane coatings (PU 2K) such as primers
23	Alkyd Resin	63148-69-6	-	600	600	As the film-forming agent in some paints and clear coatings.
24	Oligomers	2386-87-0	-	500	500	separate according to MM it is necessary to **use** silica gel
25	Amine Synergist	10287-53-3	-	100	100	are used in UV-curable coatings
26	UV Varnish	246-386-6	-	500	500	**using** an **ultravio let** drying
27	Alkyl Ketene Diamer (AKD)	144245-85-2	-	300	300	has been widely used by manufacturers of paper

28	Organic Titanates		-	500	500	**Coating & crosslinking polymers**
28.1	Tetra Isopropoyl Titanate (TiPT)	546-68-9				
28.2	Tetra n-Butyl Titanate (TnBT)	5593-70-4				
28.3	Tetra Ethyl Titanate (TET)	3087-36-3				
29	TiPT Derivatives	546-68-9	-			**Coating & crosslinking polymers**
30	Electrolytes	7447-41-8	-	1500	1500	**Use electrolytes** to conduct electrical charges
30.1	TetraEthylAmmoniumTetraFluoroBorate Solution	429-06-1				used to prepare other salts in aqueous **solutions**
30.2	TriEthyl MethylAmmonium TetraFluoroBorate Solution	69444-47-9				**use** in electrochemical double
31	Phase Transfer Catalyst	63393-96-4	-			Synthesis, R&D, drug formulation, and laboratory applications
31.1	TetraButyl Ammonium Bromide	1643-19-2				Used as a phase transfer catalyst.
31.2	TetraButyl Ammonium Chloride	1112-67-0				**Uses** of the substance or mixture and **uses** advised against.
31.3	TetraButyl Ammonium Acetate	10534-59-5				**uses** of the substance or mixture and **uses** advised against
32	Lithium based Derivatives	-	-			-
32.1	Lithium Bromide (Anhydrous & Solution)	7550-35-8				As refrigerant
32.2	Lithium Chloride/Lithium Fluoride	7447-41-8/7789-24-4				Used in automotive sector
33	Wire Enamal A (type I/II/III) **1.** PTA (Purified Terephthalic Acid)- Type I	100-21-0				**Insulation & Coating of wire**

	2. DMT (Dimethyl Terephthalate)- Type II **3.** PET (Polyethylene Terephthalate)- Type III					
33.1	Wire Enamel (B)	120-61-6				**Insulation & Coating of wire**
34	Ketone Aldehyde Resin	25054-06-2	-	500	500	improves drying properties, and increases solids content
	Total Quantity (MT/Month)		**1350**	**8700**	**10050**	

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 19.12.2022.
5) Project proponent (PP) and their Technical Expert M/s Green Circle Inc. remains present during video conference meeting.
6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
7) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period December-2021 to February-2022. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx and CO at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD View". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).
8) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
9) Earlier PP has obtained EC from SEIAA dated: 31.05.2016. Unit is having Valid CCA of the Board for existing plant issued on dated: 15.12.2020 valid up to dated: 21.09.2025. PP submitted that there are no legal actions taken by GPCB in last three years, legal court case and public complaint against unit.
10) PP submitted CCR of MoEF&CC IRO-Gandhinagar dated: 28.11.2022. Committee noted that out of total

79 conditions, 59 are complied, 6 are partly complied, 9 are agreed to comply and 5 conditions are noted by unit.

11) Committee asked to submit the following:

- ✓ Justification regarding drastic increase in production capacity from 1350 MTPM to 10,050 MTPM.
- ✓ Time bound action plan for partially complied conditions as mentioned in CCR of IRO-Gandhinagar dated: 28.11.2022.
- ✓ Methodology/mechanism for segregation of streams.

12) Later on PP submitted following details through email on dated 20.12.2022

- ✓ **Justification regarding drastic increase in production capacity from 1350 MTPM to 10,050 MTPM.**

1.	Existing Production Capacity	1350 MT/Month
2.	Proposed Production Capacity	8700 MT/Month
3.	Total after Proposed Expansion	10050 MT/Month

Justification for the plant area for existing & proposed manufacturingarea

1. Existing Process Building –1 (G+2) – 500 m2
2. Proposed Process Building – 2 (G+2) – 500 m2
3. Proposed Process Building – 3 (G+2) – 500 m2

- Existing production 1350 MT/Month is being carried out in existing process building -1. After proposed expansion, total 10050 MT/Month production will be carried out in the proposed process building – 2 & 3.
- Unit is having adequate area and also machineries and utilities for the proposed expansion.
- Also, there is a huge demand for resins. The demand for products intended to be manufacture is increasing in the country. By expanding this unit M/s. Tridev Industries Pvt. Ltd. will be able to meet the demand of various products locally. The project will save forex as certain products import will be reduced.
- Required Plant Machineries & Utilities details are provided below:

Sr. No	List of Machinery / Equipment	Capacity	Quantity	Existing / proposed
1		10 kL	2	Existing
2		6.3 kL	2	Existing
3		5 kL	2	Existing

4	GLR Reactor	3 kL	2	Existing
5		1.5 kL	2	Existing
6		10 kL	1	Proposed
7		6.3 kL	1	Proposed
8		5 kL	1	Proposed
9		3 kL	1	Proposed

- ✓ Time bound action plan for partially complied conditions as mentioned in CCR of IRO-Gandhinagar dated: 28.11.2022 is submitted.
- ✓ Methodology/mechanism for segregation of streams is submitted.

13) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.

14) Compliance of the ToR found satisfactory.

15) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A	Total **cost of Proposed** Project (Rs. in Crores):	

Total Project Cost
15.0 Cr.

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	0.12
Building	2.50
Machinery	5.40
Env. & Safety	1.738
Miscellaneous	5.242
Total	**15.0**

-

B	**Land / Plot ownership details:** (Linking between Land ownership and PP is required.)
B-1	**In case of outside GIDC only -**

Siting Criteria

Sr. no.	Environmental Sensitivity	Name/Specific details	Aerial Distance in Km
1	Habitat (Residential Area)	Jolwa Village	5 km
2	Eco sensitive zones	Not Applicable	-

3	Wild life sanctuaries/National Parks	Not Applicable	-
4	Water Bodies		
	River	Narmada River	12 km
	Natural Nallah/Drain	-	-
	Lake/Pond/Wetlands	-	-
	Water supply Tanks/Reservoirs	-	-
	Canal	-	-
5	Protected Monuments/Heritage sites/Public Buildings etc.	Not Applicable	-
6	National/State Highway OR Express way	NH 8 SH 6	38 KM 2 KM
7	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	Not Applicable	-
8.	Ground water table in meter	Jolwa Village	45 metes
9.	Railway Line	Dahej Railway Station	5.5 KM
10.	Air Port	Vadodara Air Port	114 km

B-2 **Area adequacy**

Area Adequacy table:

Sr. No.	Particulars	Criteria for Storage	Inventory Required (MT / KL)	Area Required sq.m.	Area Provided sq.m.
1	Finished product storage area	Drums :200 No. 200 Lit/each) (0.5 MT/1M2)	40	80	500
		Bag :16000 No. 50 Kg/each) (2.0 MT/1M2)	800	400	
2	Raw Material Storage area	Drums: 1865 No. (200 Lit/each) (0.5 MT/1m2)	373	746	750+500 = 1250 (Drum Storage & Bag Storage)
		Bags: 4220 No. (50 Kg/each) (1.0 MT/1m2)	211	211	
3	Tank farm	50 KL 2 Nos. 40 KL 2 Nos. 25 KL 1 Nos. 20 KL 3 Nos. 5 KL 1 Nos. 1 KL 1 Nos.	271	550	900
3	Hazardous Waste Storage Area		50	100	150
4	ETP		1500	500	1500
5	Utility – 0.8 & 1 TPH			325	500

	Boiler (3 No. Working 2 Stand By) & 4 LakhKcal/Hr & 2 LakhKcal/Hr TFH (2 Working & 1 Stand By)				
	Total		3245 MT / KL	2912 Sq. m.	4800 Sq. m.

M/s. Tridev Industries Pvt. Ltd.		
Plot No. D-2/CH134, GIDC Industrial Estate, Dahej, Dist.: Bharuch, Gujarat, India. 392130		
Sr. No.	**Building**	**Area**
1	Security Cabin - 1	8
2	Security Cabin 2	8
3	DG Set	16
4	OHC (Gr. FL) + Admin (Fr. FL.)	50
5	Exiting Process building -1 (G+2)	500
6	Proposed Process building-2 (G+2)	500
	Proposed Process building-3 (G+2)	500
7	Tank Farm	900
8	Existing Raw Material Storage 1	750
9	Proposed Raw Material Storage 2	500
10	Finish Goods	500
11	ETP	1500
12	Haz. Waste Storage	150
13	Boiler & Utility	500
14	Green Belt	4593
15	Road	2927.14
16	Fire water Reservoir (500 KL)	0
17	Fire water Pump	16
	Total Area	**13918.14**

Comments:

- SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3	**Green belt area**

	Total (Sq. meter)
Area in Sq. meter	4593 Sq. m. (Approx.33 % of total plot area) (In side of plant premise)
% of total area	33%

Comments:

The condition shall be given that -

- The PP shall develop green belt within premises (4593 Sq. m i.e. 33 % of the total plot area) as per submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C	**Employment generation**

Construction: 20 Nos.
Operation: 70 Nos.

Existing	Proposed	Total
30	40	70

D	**WATER**
D-1	**Source of Water Supply** GIDC Dahej Water Supply (GIDC/GM GR-I/CG/ANK/ALT/357 dated 19.04.2022) **Comments:** ➢ Prior permission from concerned authority shall be obtained for withdrawal of water.
D-2	**Water consumption (KLD)**

Sr. No.	Fresh Water Consumption	Quantity KL/Day			Remarks
		Existing KLD	Proposed KLD	Total KLD	
1	Domestic	5.0	8	13	
2	Gardening	5.0	-	5	
3	Industrial				
	Process	53.6	131.72	185.32	
	Washing	68.7	*20	88.7	*20 KL Reuse for washing from Boiler & Cooling tower Blow Down
	Boiler	14	18	32	
	Cooling	5	5	10	
	Other	-	2.0	2.0	
	Total Industrial	141.3	176.72	318.02	
	Total 1+2+3	151.3	184.72	336.02	

Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-3	**Waste water generation (KLD)**

Sr. No.	Waste Water Generation	Quantity KL/Day			Remarks
		Existing KLD	Proposed KLD	Total KLD	
1	Domestic	4.0	5.0	9.0	
2	Gardening	-	-	-	
3	Industrial				
	Process	70.20	137.86 + **9.67	217.73	**9.67 High Cod effluent 208.06 Low COD effluent

	Washing	68.7	*20	88.7	
	Boiler	6.4	9.6	16	Reuse For washing Purpose
	Cooling	0.5	3.5	4.0	
	Other(Scrubber)	-	2.0	2.0	
	Total Industrial	**145.8**	**182.63**	**328.43**	
	Total 1+2+3	**149.8**	**187.63**	**337.43**	

-

Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

9 KLD Domestic Waste Water will be treated in ETP and send to CETP Dahej.

Comments:

- Domestic wastewater generation shall not exceed 9 KL/day for proposed project and it shall be treated in ETP and sent to CETP-Dahej. It shall not be disposed off through soak pit/ septic tank.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

-

Sr. no.	**Quantity KLD**	**Facility**
1	9.67	Process High COD Effluent will be send to CMEE, Dahej after Primary Treatment.
2	208.06	Process Low COD effluent will be send to CETP Dahej after Primary & Secondary Treatment.
3	88.7	Washing Low COD effluent will be send to CETP Dahej after Primary & Secondary Treatment.
4	16	Reuse for washing purpose
5	4.0	Reuse for washing purpose
6	2.0	Scrubbing Solution will be reuse with in the premises.
Total	328.43	296.76 Industrial + 9 Domestic Total=305.76 KLD Effluent will be send to CETP Dahej 9.67 KLD will be send to CMEE, Dahej. 20 KLD effluent will be reuse for washing purpose. 2 KLD scrubbing solution will be reuse with in the premises.

- **Details of mechanism of segregation of High COD stream and Low COD Stream.**

For proposed expansion project, total industrial wastewater generation is 328.43 KLD. Out of which, 318.76 KLD (208.06 KLD from manufacturing process + 110.7 KLD from Washing and Utilities) is dilute wastewater generation stream and remaining 9.67 KLD is concentrated wastewater generation stream from manufacturing process.(Product No. 18.1 - PTSA Aldehyde Resin).

Mechanism for Collection and Treatment of Concentrated Effluent Stream:

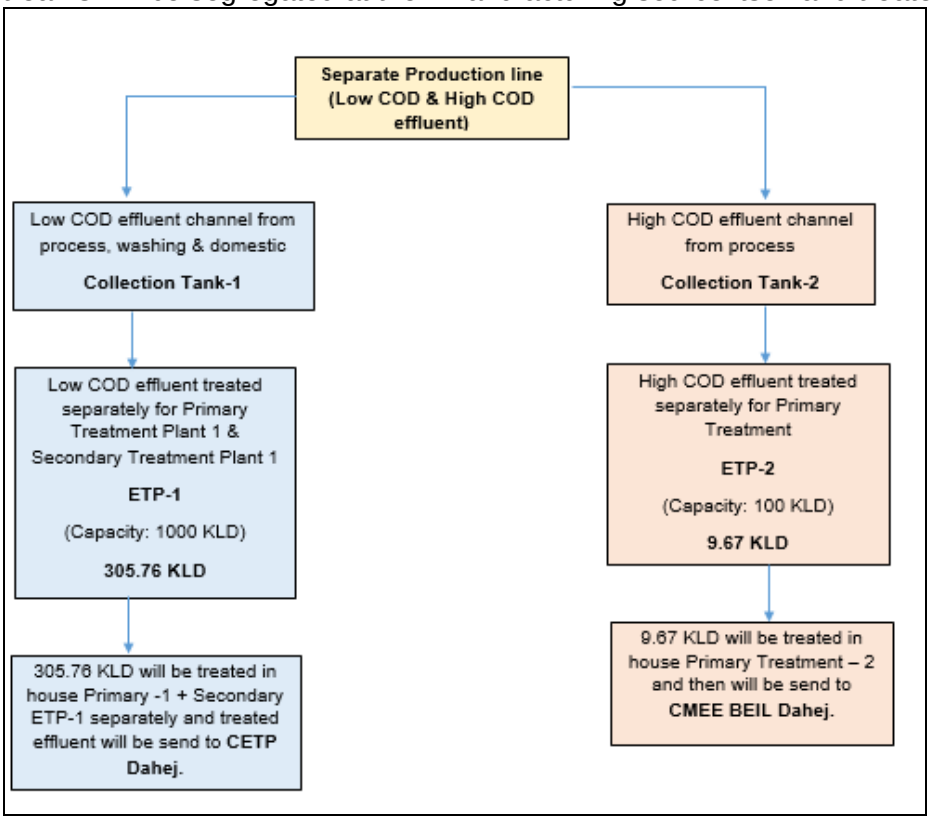
Unit has proposed to provide 3 separate manufacturing blocks. Existing one block is provided for existing production in which only low COD effluent is generated. Production block-2 and Production block-3 is reserved for proposed expansion manufacturing process.

The concentrated stream will be generated during manufacturing PTSA Aldehyde Resin. A dedicated colour coded pipeline network will be provided for transfer of concentrated effluent into dedicated tank before feeding into ETP and CMEE BEIL Dahej. During manufacturing process of PTSA Aldehyde Resin effluent generated from this reactor will directly sent to collection tank through dedicated colour coded pipeline. This way, concentrated effluent will be segregated from the source itself.

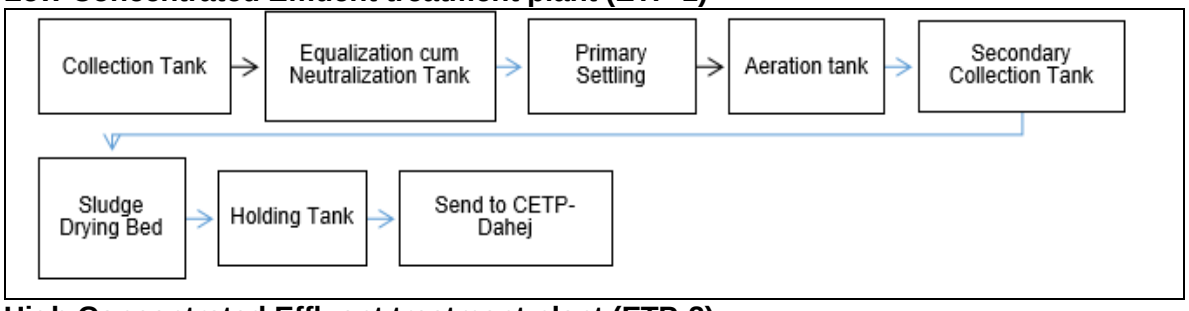
Mechanism for Collection and Treatment of Dilute Effluent Stream:

Dilute effluent will be generated from Existing production unit and proposed production unit exempted product no. 18.1 PTSA Aldehyde Resin. A Dedicated coaded pipeline will be provided for transferred to collection tank of dilute effluent.

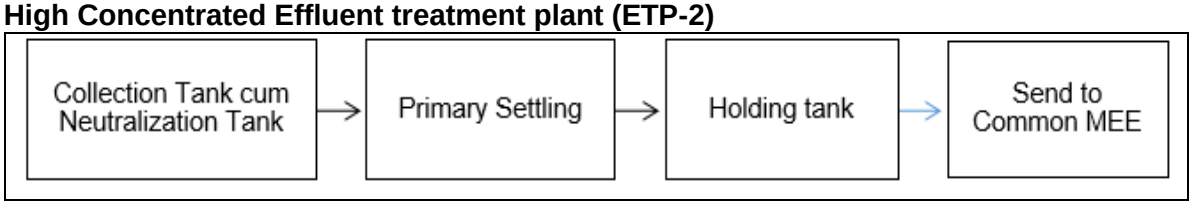
Hence, both the streams will be segregated at their manufacturing source itself and treated separately.



Low Concentrated Effluent treatment plant (ETP-1)



High Concentrated Effluent treatment plant (ETP-2)



Effluent Parameters for Dilute Stream (Low COD)

Sr. No.	Parameters	Unit	Before Treatment (Combined Effluent from Process, washing & Domestic)	After Primary & Secondary Treatment	Permissible Limit of CETP-Dahej
1	pH	--	7-8	6.9-7.2	6.0 – 7.5
2	T.S.S.	mg/l	1000-1200	120-160	<400
3	C.O.D.	mg/l	2500-3500	750-1050	<3500
4	T.D.S.	mg/l	4000-5000	4000-5000	<10000

Effluent Parameters for Concentration Stream (High COD)

Sr. No.	Parameters	Unit	Before Treatment	After Primary Treatment	Permissible Limit of CMEE - Dahej
1	pH	--	5.5-6.5	6.5-7.5	6.5-7.5
2	T.S.S.	mg/l	1200-1500	250-350	<500
3	C.O.D.	mg/l	4000-5000	850-1000	<75000
4	T.D.S.	mg/l	6000-8000	6000-8000	<75000

Technical specification of Effluent treatment plant (High COD stream)

Sr. No.	Equipment Name	Dimensions(M)	F.B.	Volume	Quantity (Nos.)
1	Collection cum Neutralization Tank	5.0 X 4.0 X 2.0	0.5	40	1
2	Oil & Grease Trap	4.0 X 5.0 X 0.5	0.5	10	1
3	Primary settling Tank	4.0 X 2.0 X 1.25	0.5	10	1
4	Holding Tank	5.0 X 4.0 X 2.0	0.5	10	1

Technical specification of Effluent treatment plant (Low COD stream)

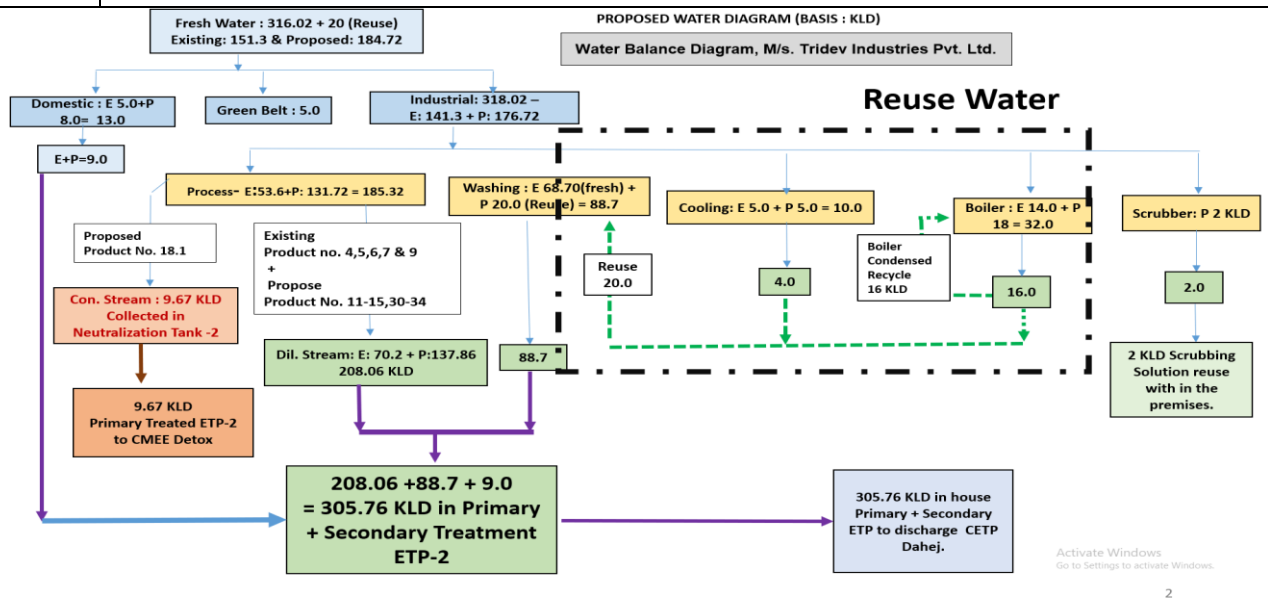
Sr. No.	Equipment Name	Dimensions(M)	F.B.	Volume	Quantity (Nos.)
1	Collection cum Neutralization Tank	6.0 X 6.0 X 5.5	0.5	310	1
2	Oil & Grease Trap	2.5 X 2.0 X 2.0	0.5	10	1
4	Settling Tank	6.0 X 6.0 X 5.0	0.5	180	2
5	Aeration Tank	6.0 X 4.5 X 5.0	0.5	135	1
7	Sludge Drying bed	-	-	-	1
8	Effluent Transfer Pump	-	-	-	2
9	Sludge Transfer pump	-	-	-	1

Comments:

1. Management of Industrial effluent shall be as under:
   - ✓ **Concentrated Stream (9.67 KLD):**
     - 9.67 KLD process effluent shall be treated in primary ETP and sent to CMEE-BEIL, Dahej for further treatment and disposal.
   - ✓ **Dilute Stream (327.76 KLD)**

- 296.76 KLD process and washing effluent and 9 KLD domestic effluent shall be treated in primary & secondary ETP. Total 305.76 KLD treated effluent shall be sent to CETP-Dahej for further treatment and disposal.
- 20 KLD boiler and cooling tower effluent shall be reused in washing.
- 2 KLD scrubbing effluent shall be reused within premises.

D-6	**Simplified water balance diagram**



D-7	Summary

Summary of water requirement	**Quantity** KLD	Remarks
Total water requirement for the project **(A)**	336.02	-
Quantity to be **recycled (B)**	20	-
Total **fresh water** requirement **(C)**	316.02	-
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

E	**AIR**
E-1	Power (Electricity) requirement : 400 KVA
E-2	**Flue gas emission details**

Sr. No.	**Stack attached to**	**Stack Height**	**Fuel**	Quantity of Fuel MT/Day	**APCM**	**Parameter with Limit**
Existing						
1	Thermic fluid Heater (2 Lakh Kcal/hr)	11	Natural Gas	770 SCM/Day	Stack Height is provided.	PM < 150 mg/Nm^3 SO_2 < 100 mg/Nm^3 NO_x < 50 mg/Nm^3
2	Steam Boiler (800 Kg)	11		1850 SCM/Day		

3	DG Set (125 KVA)	11		60 Lit/hr		
Proposed						
4	Thermic Fluid Heater (4 lakh Kcal/Hr) (1 Working + 1 Stand By)	11	Natural Gas	2250 SCM/Day	Stack Height is provided.	PM < 150 mg/Nm^3 SO_2 < 100 mg/Nm^3 NO_x < 50 mg/Nm^3
5	Steam Boiler (1 TPH) {(1 working + 1 Standby) }	11		2400 SCM/Day		
6	Steam Boiler (800 Kg) {(1 working + 1 Standby) }			1850 SCM/Day		
7	D G Set 250 KVA (2 No.)	11	Diesel	100 Lit/hr		

E-3 Process gas

Sr. No.	Specific source of emission	Stack Height (m)	Parameter & Permissible Limit	APCM
1	Reaction Vessel	18 (Above Ground Level)	NH_3 < 175 mg/Nm^3 HCL < 20 mg/Nm^3	Water Scrubber

-

E-4 Fugitive emission details with its mitigation measures.

- Airborne dust at all transfers operations/ points will be controlled either by spraying water or providing enclosures.
- Adequate ventilation will be provided.
- Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions.
- Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
- Periodic monitoring of work area will be carried out to check the fugitive emission.
- Stand by pumps will be provided on all scrubbers. Besides, scrubbers will be equipped with on-line pH meter with hooter system for better operational control.
- Close feeding system will be provided for centrifuges. Centrifuge and filtrate tank vents will be connected to vent chillers.
- Minimum number of flanges, joints and valves in pipelines.
- Regular inspection of floating roof seals and proper preventive maintenance of roofs and seals for tanks.
- Fugitive emission over reactors, formulation areas, centrifuges, chemical loading, and transfer area will be collected through hoods and ducts by induced draft and controlled by scrubber/ dust collector.
- Dedicated scrubber will be provided are used for fugitive emissions to control.
- For dust emissions bag filter will be provided.
- Enclosures to chemical storage area, collection of emission from loading of raw materials in particular solvents through hoods and ducts by induced draft, and control by scrubber / dust collector to be ensured.

Comments for E2, E3 & E4:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Solvent management, VOC emissions etc.**
F-1	**Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.**

Sr. No	Name of Product	Name of Solvent	Quantity MT/MT	Recovery	Loss	% Recovery
1	Phenol Formaldehyde Resin - RESOLE	Xylene	0.1	0.095	0.05	95
2	Terpene Phenolic Resin	Toluene	0.46	0.437	0.023	95
3	Polyurethane	Ethyl Acetate	0.7	0.67	0.03	96
4	Aldehyde Resin	Xylene	0.06	0.058	0.002	97
5	Tetraethyl Ammonium Tetrafluoroborate Solution	Acetone	0.04	0.038	0.002	95
6	Triethyl Ammonium Tetrafluoroborate Solution	Acetone	0.02	0.0192	0.008	96
7	Tetra butyl Ammonium Bromide	Acetonitrile	0.4	0.398	0.002	99

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F-2	**VOC emission sources and its mitigation measures for achieving maximum solvent recovery and minimize VOC generation:**

F-2	**VOC emission Sources and its Mitigation Measures.**

Measures for achieving maximum solvent recovery and minimize VOC generation:

- VOC analysers will be provided to detect any solvent leakages during storage and handling.
- Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions of VOCs.
- Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
- Ensure minimum number of flanges, joints and valves in pipelines.
- Proper preventive maintenance of roofs and seals for tanks
- Monitoring and preventive maintenance of valves, flanges, joints, etc.

F-3 LDAR proposed:

In addition to LDAR program, following safety measures will be taken to prevent losses of solvent in atmosphere.

• To achieve more than 95% recovery, unit will provide vacuum distillation, double condensers with second condenser using chilled water as cooling media. The condensers shall be provided with sufficient Heat Transfer Area and residence time for maximum recovery

• VOC detectors will be installed to detect any solvent leakages during storage and handling.

• In awarding, storage and consumption of solvents in various products shall be measured through Level Transmitters and Load cells weighing systems resp. The quantity at each stage shall be reconciled periodically to arrive at Losses.

S.N.	Component	Frequency of monitoring	Repair Schedule	Preventive Measures
1.	Pump Seal	Monthly	Repair shall 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.	Coupled mechanical / magnetic seal pumps will be used
2.	Valves and Flanges	Quarterly		Diaphragm types valves / Magnetically actuated , seal – welded valve will be used
3.	Compressor seals	Quarterly		Entirely enclosed type compressor will be used
4.	Open – ended lines	Quarterly		Open – ended line is equipped with a cap, blind flange , plug, or a second valve
5.	Pressure relief devices	Yearly		-
6.	Visual inspections for pumps	Weekly	Immediately	-

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F-4 LDAR for specific solvent :

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Sr. No.	Solvent Name	Type of Storage	Mode of Transfer	Charging	Sources of Leakage	Mitigation Measure For find out leakages	Mitigation Measure (If leakages shall be occur)	Action taken for prevention of leakages
1.	Xylene	Tank (25 KL)	By Pump & Fix Pipe line	Direct Vessel	• Leak from pump (Occur at seal) • Leak from tank • Leak from Connectors • Leak from open ended lines	•For using Gas Detector by PID Sensor technology.	•Stop pumping in case of leakage detected in pump and replacement of new pump •Replacement of old seal with new seal in mechanical type pump in case of	•Check Thickness of tank •Using fix pipeline for solvent transfer •Minimum use of Connectors & Joins •Provided sufficient Space (Solvent

							leakage in seal.	Unloading area) for Solvent Tanker
2	Toluene	Drum (200 lit/each)	By Pump	Direct Vessel	• Leak from pump (Occur at seal) • Leak from Connectors • Leak from open ended lines	•For using Gas Detector by PID Sensor technology.	•Stop pumping in case of leakage detected in pump and replacement of new pump •Replacement of old seal with new seal in mechanical type pump in case of leakage in seal.	•Minimum use of Connectors & Joins •Provided sufficient Space (Solvent Unloading area) for Solvent Tanker
3	Ethyl Acetate	Drum (200 lit/each)	By Pump	Direct Vessel	• Leak from pump (Occur at seal) • Leak from Connectors • Leak from open ended lines	•For using Gas Detector by PID Sensor technology.	•Stop pumping in case of leakage detected in pump and replacement of new pump •Replacement of old seal with new seal in mechanical type pump in case of leakage in seal.	•Minimum use of Connectors & Joins •Provided sufficient Space (Solvent Unloading area) for Solvent Tanker
4	Acetone	Drum (200 lit/each)	By Pump	Direct Vessel	• Leak from pump (Occur at seal) • Leak from Connectors • Leak from open ended lines	•For using Gas Detector by PID Sensor technology.	•Stop pumping in case of leakage detected in pump and replacement of new pump •Replacement of old seal with new seal	•Minimum use of Connectors & Joins •Provided sufficient Space (Solvent Unloading area) for Solvent

							in mechanical type pump in case of leakage in seal.	Tanker
5	Acetonitrile	Drum (200 lit/each)	By Pump	Direct Vessel	• Leak from pump (Occur at seal) • Leak from Connectors • Leak from open ended lines	•For using Gas Detector by PID Sensor technology.	•Stop pumping in case of leakage detected in pump and replacement of new pump •Replacement of old seal with new seal in mechanical type pump in case of leakage in seal.	•Minimum use of Connectors & Joins •Provided sufficient Space (Solvent Unloading area) for Solvent Tanker

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Comments on F-1 to F-4:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).
-

G	**Hazardous waste**
G-1	**Hazardous waste management matrix**

-

Sr. no.	Name of hazardous Waste	Category	Quantity MT/Annum			Hazardous waste Management
			Existing	Propose	Total	
1	**ETP Sludge**	**34.3–SCH-1**	6	19	25	Collection Storage Transport to Co-process unit or disposal at TSDF Site
2	**Used Filter Cloth**	**35.1–SCH-1**	0.6	0.9	1.5	
3	**Spent Oil/Used oil**	**5.1–SCH-1**	0.036	0.054	0.09	Collection storage transport to

						authorized recycler or reuse as a lubricants.
4	**Discarded Containers (Bag/Barrel/Drum)**	**33.3–SCH-1**	12	80	92	Collection storage transport & send to authorized recycler or decontamination unit.
5	**Process Waste & Resin waste**	**23.1–SCH-1**	30	335.36	365.36	Collection, storage, transport & send to Co-process unit or CHIWF site.
6	**NH_4CL**	**15-B SCH-II**	**-**	5610	5610	Collection, Storage & transport & send to Authorized end users registered under **Rule 9.**
7	**HCL**	**15-B SCH-II**	**-**	3840	3840	Collection, Storage, and reused as neutralizing agent in ETP. Or Collection, Storage, and reused as Raw material Or Transportation and sell to authorized end users registered under **Rule 9.**
8	**Spent Solvent**	**23.2- SCH-1**	**-**	1309.78	1309.78	Collection, Storage & reuse within the premises or send to end user.
9	**Distillation Residue**	**23.1- SCH-1**	0.1	0.5	0.6	Collection storage Transport & Send to CHIWF Site or Co-process unit.

-

Comments:

- Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

G-2	Non- Hazardous waste management matrix

1. Fly Ash generation not applicable as unit will use Natural Gas as a Fuel.
2. STP sludge generation will be not applicable as Domestic effluent will be treated in ETP.

Comments:

- No flyash or STP sludge generation.

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

a) Storage of Hazardous chemicals in Tanks

As example given below.

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
TANK FARM (NON-PESO)				
1	Cyclohexanone	50	1	Flammable
2	Formaldehyde	40	1	Corrosive, flammable
3	Dimmer	5	1	Corrosive
4	Fatty acid	25	1	None
5	Xylene	25	1	Flammable
6	Butyl acrylate	20	1	Flammable monomer
7	Vinyl acetate	20	1	Flammable monomer
8	Hydrochloric Acid	20	1	Corrosive, Irritant

Safety Measures for PESO Underground storage tank farm:

b) Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Sr. No.	Names of Chemicals	Hazardous characteristics of chemicals	Nos. of Drums/Bags /tanks	Max. Quantity to be stored MT	State & operating pressure & temperature	Storage	Capacity Individuals	MOC/ Remark
1.	Cyclohexanone	Flammable	2	50	NTP	Tank	50 KL/each	SS 304
2.	Formaldehyde	Corrosive, flammable	2	40	NTP	Tank	20 KL/each	HDPE
3.	Dimmer	Corrosive	1	5	NTP	Tank	25 KL/each	SS
4.	Fatty acid	None	1	25	NTP	Tank	25 KL/each	HDPE
5.	Xylene	Flammable	1	1	NTP	Tank	25 KL/each	HDPE
6.	Butyl acrylate	Flammable monomer	1	20	NTP	Tank	25 KL/each	HDPE
7.	Vinyl acetate	Flammable monomer	1	20	NTP	Tank	25 KL/each	HDPE
8.	Hydrochloric Acid	Corrosive, irritant	1	20	NTP	Tank	25 KL/each	HDPE
9.	Amine	irritant	50	10	NTP	Drums	200 Lit/each	HDPE
10.	Gum Rosin	irritant	50	10	NTP	Drum	200 Lit/each	HDPE
11.	n- Butaldeyade	Flammable	25	5	NTP	Drum	200 Lit/each	HDPE
12.	Acetyl acetone	Flammable	50	10	NTP	Drum	200	HDPE

							Lit/each	
13.	t-Iso propyl Ntitrate	Flammable	25	5	NTP	Drum	200 Lit/each	HDPE
14.	Butanol	Flammable monomer	25	5	NTP	Drum	200 Lit/each	HDPE
15.	Methyl acrylic acid	irritant	25	5	NTP	Drum	200 Lit/each	HDPE
16.	Acrylic acid	Flammable	25	5	NTP	Drum	200 Lit/each	HDPE
17.	DI butyl maleate	Flammable monomer	25	5	NTP	Drum	200 Lit/each	HDPE
18.	Para Formaldehyde	Flammable	75	15	NTP	Drum	200 Lit/each	HDPE
19.	Sulphuric Acid	irritant	75	15	NTP	Drum	200 Lit/each	HDPE
20.	Toluene	Flammable , irritant, health hazard	50	10	NTP	Drum	200 Lit/each	HDPE
21.	Benzyl Alcohol	irritant	25	5	NTP	Drum	200 Lit/each	MS/GI
22.	Di Butyl Phthalate	Toxicity	15	3	NTP	Drum	200 Lit/each	HDPE
23.	Terpene	Flammable	50	10	NTP	Drum	200 Lit/each	HDPE
24.	Phenol	Corrosive	100	20	NTP	Drum	200 Lit/each	GI/MSH DPE
25.	Ethyl Acetate	Flammable , irritant	50	10	NTP	Drum	200 Lit/each	GI/MSH DPE
26.	Isopropyl Alcohol	Flammable	100	20	NTP	Drum	200 Lit/each	GI/MSH DPE
27.	Isophoronedia mine	Corrosive, Flammable	15	3	NTP	Drum	200 Lit/each	GI/MSH DPE
28.	Stannous Octate	Toxic	10	2	NTP	Drum	200 Lit/each	GI/MSH DPE
29.	Acetylacetone	Flammable , Toxic	75	15	NTP	Drum	200 Lit/each	GI/MSH DPE
30.	Benzyl Peroxide	Flammable , irritant	20	4	NTP	Drum	200 Lit/each	GI/MSH DPE
31.	Styrene Monomer	Flammable	100	20	NTP	Drum	200 Lit/each	GI/MSH DPE
32.	Acrylate Monomer	Flammable , irritant	100	20	NTP	Drum	200 Lit/each	GI/MSH DPE
33.	Hexane	Flammable , irritant	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
34.	Pentaerythritol/ Glycerine	irritant	50	10	NTP	Drum	200 Lit/each	GI/MSH DPE
35.	Butry ladehyde	Flammable	15	3	NTP	Drum	200 Lit/each	GI/MSH DPE
36.	Polyamines	Toxic, corrosive	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
37.	TMPTA	irritant	10	2	NTP	Drum	200 Lit/each	GI/MSH DPE

38.	Acetic acid	Corrosive, Flammable	50	10	NTP	Drum	200 Lit/each	GI/MSH DPE
39.	Hydrofluoric acid	Corrosive, irritant	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
40.	Tetra Ethyl Ammonium Hydroxide	Corrosive, irritant	50	10	NTP	Drum	200 Lit/each	GI/MSH DPE
41.	Fluoroboric Acid	Corrosive, irritant	10	2	NTP	Drum	200 Lit/each	GI/MSH DPE
42.	Tri-n-Butyl Amine	Flammable	10	2	NTP	Drum	200 Lit/each	GI/MSH DPE
43.	Butyl Bromide	Flammable	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
44.	Acetonitrile	Flammable	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
45.	Methanol	Flammable , Toxic	75	15	NTP	Drum	200 Lit/each	GI/MSH DPE
46.	Tetra Butyl Ammonium Hydroxide	Corrosive, irritant	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
47.	Dibutyl Maleate	Corrosion, irritant	10	2	NTP	Drum	200 Lit/each	GI/MSH DPE
48.	Epoxy Resin	irritant	100	20	NTP	Drum	200 Lit/each	GI/MSH DPE
49.	Lewis Acid	Toxic, Irritant	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
50.	Polypropylene Glycol	Flammable	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
51.	Castor Oil	Flammable	50	10	NTP	Drum	200 Lit/each	GI/MSH DPE
52.	Ammonia	Corrosive, Toxic	50	10	NTP	Drum	200 Lit/each	GI/MSH DPE
53.	Fluoroboric Acid	Corrosive, Irritant	25	5	NTP	Drum	200 Lit/each	GI/MSH DPE
54.	Caustic soda Flakes	irritant	400	20	NTP	Bags	50 kg/each	HDPE
55.	Fumeric acid	irritant	100	5	NTP	Bags	50 kg/each	HDPE
56.	Penta Erythritol	irritant	40	2	NTP	Bags	50 kg/each	HDPE
57.	Poly vinyl Alcohol	None	200	10	NTP	Bags	50 kg/each	HDPE
58.	Melamine	harmful	200	10	NTP	Bags	50 kg/each	HDPE
59.	P-Tertiary Butyl Phenol	irritant	100	5	NTP	Bags	50 kg/each	HDPE
60.	Epichlorohydrin	Corrosive, irritant, Flammable	100	5	NTP	Bags	50 kg/each	HDPE
61.	Lewis Acid	Corrosive, irritant	100	5	NTP	Bags	50 kg/each	HDPE
62.	Poly Propylene	irritant	60	3	NTP	Bag	50	HDPE

	adipate					s	kg/each	
63.	Adipic Acid	irritant	100	5	NTP	Bags	50 kg/each	HDPE
64.	Metal Catalyst	irritant	20	1	NTP	Bags	50 kg/each	HDPE
65.	Maleic Anhydride	Corrosive	100	5	NTP	Bags	50 kg/each	HDPE
66.	Acid Anhydride	Flammable, irritant	200	10	NTP	Bags	50 kg/each	HDPE
67.	Zirconium sulphate	Corrosive, irritant	100	5	NTP	Bags	50 kg/each	HDPE
68.	Aluminum sulphate	Corrosive	100	5	NTP	Bags	50 kg/each	HDPE
69.	Lithium carbonate	Toxic, irritant	200	10	NTP	Bags	50 kg/each	HDPE
70.	Potassium Hydroxide	Corrosion, irritant	300	15	NTP	Bags	50 kg/each	HDPE
71.	Fumaric Acid	Corrosion, irritant	200	10	NTP	Bags	50 kg/each	HDPE
72.	Bisphenol A	Toxic	400	20	NTP	Bags	50 kg/each	HDPE
73.	Hexane Diol	irritant	200	10	NTP	Bags	50 kg/each	HDPE
74.	Tri Methylol Propane	Toxic	100	5	NTP	Bags	50 kg/each	HDPE
75.	Isopathalic Acid	Irritant	100	5	NTP	Bags	50 kg/each	HDPE
76.	Urea	Irritant	400	20	NTP	Bags	50 kg/each	HDPE
77.	Activated carbon	Flammable, Irritant	100	5	NTP	Bags	50 kg/each	HDPE
78.	Pure Terephthalic Acid	Irritant	300	15	NTP	Bags	50 kg/each	HDPE

c) <u>Safety details of Hazardous Chemicals:</u>

Type of Hazardous Chemicals	**Safety measures**
FLAMMABLE & EXPLOSIVE	• Storage shall be cool, well ventilated away from sources of ignition or heat. Prevent accumulation of static charge. Protect material from direct sunlight. • Store in original container. Keep containers tightly closed and upright when not in use. • Proper label and identification board /stickers shall be provided in the storage area. • Conductive drum pallets shall be provided. • Drum handling trolley / stackers/fork lift shall be used for drum handling. Separate dispensing room with local exhaust and static earthing provision shall be made. • Ground container and transfer equipment to eliminate static electric sparks. • Smoking and other spark, flame generating item shall be banned near storage

	area. FLP type light fittings shall be provided. • Handling of materials from Drum shall be done only through Mechanical Transfer System only. • Training shall be provided to employees for safe storage, handling and transpiration. • When using, do not eat, smoke or drink. • Fire Hydrant with monitor, fire proximity suits, automatic sprinkler system, Safety shower & eye wash unit shall be installed nearby area. • Provision of Respiratory protective equipment (airline respirator & SCBA) & personal protective equipment shall be available. • For spills involving small volumes of dilute solution of Methanol, the following cleaning procedure can be used • Wear appropriate personal protective equipment (PPE) • Remove any ignition source from the spill area; • Clean the spill area with a mixture of water and soap • Dry the spill area with paper towels Onsite emergency plan prepared and mock drill shall be carried out. Safety sign board displaying Do's and Don'ts in local language.
CORROSIVE& CHEMICALS	• Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. • Corrosive substances shall not be allowed to come in contact with materials that may react. • All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances shall be protected by suitable coatings, impervious to and unaffected by corrosives. • All containers or receptacles shall be clearly labelled to indicate their contents and shall bear the danger symbol for corrosives. • Adequate ventilation and exhaust arrangement whether general or local, shall be provided whenever corrosive toxic gases or dust are present. • Personal protective devices shall be used. • First aid treatment facilities shall be provided and all concerned shall be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. Safety showers and eye washers shall be provided.
TOXIC CHEMICALS	• Storage shall be cool, well ventilated away from sources of ignition or heat. Prevent accumulation of static charge. Protect material from direct sunlight. • Store in original container. Keep containers tightly closed and upright when not in use. • Proper label and identification board /stickers shall be provided in the storage area. • Conductive drum pallets shall be provided. • Drum handling trolley / stackers/fork lift shall be used for drum handling. Separate dispensing room with local exhaust. • Ground container and transfer equipment to eliminate static electric sparks. • Handling of materials from Drum shall be done only through Mechanical Transfer System only. Unloading procedure shall be prepared and implemented. • Training shall be provided to employees for safe storage, handling and transpiration. • Safety shower & eye wash unit shall be installed nearby area. • Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory protective equipment (airline respirator & SCBA) etc. shall be provided to operator • For spills involving small volumes, the following cleaning procedure can be

	used • wear appropriate personal protective equipment (PPE) • clean the spill area with a mixture of water and soap • Neutralizing agent shall be kept ready for tackle any emergency spillage Onsite emergency plan prepared and mock drill shall be carried out. Safety sign board displaying Do's and Don'ts in local language.
REACTIVE CHEMICALS	• Store minimum quantities. • Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources. • Spillage control; bund, spray, blanket, containment. Drain to collection pit. • Decontamination and first-aid provisions, e.g. neutralize/destroy, fire-fighting • Contain/vent pressure generated to a safe area. • Split-up stocks into manageable lots, e.g. with reference to fire loading/spillage control. • Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles. • Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks. • Shall ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting. • Label (name and number); identify loading/unloading/transfer couplings. • Provide appropriate fire protection (sprinkler, dry powder, gas). Shall ensure adequate access for both normal and emergency purposes with alternative routes

- **Applicability of PESO:** Not Applicable.

Comments:

- **PESO not applicable**

H-2	**Types of hazardous Processes involved and its safety measures:**
Not Applicable	
H-3	**Details of Fire Load Calculation**

Total Plot Area:	13918.14 m2
Area utilized for plant activity:	1500 sq. m.
Area utilized for Hazardous Chemicals Storage:	150 Sq. m.
Number of Floors:	Ground floor + 02
Water requirement for firefighting in KLD:	478.2 Liter/minute
Water storage tank provided for firefighting in KLD:	500 KL U/G tank
Details of Hydrant Pumps:	Fire hydrant line is available and diameter of main hydrant line is 6 inch. Main pump : 1000 Lit/min Jockey Pump: 1000 Lit/Min with 8 Kg/cm2 pressure.
Nearest Fire Station :	SEZ fire station 6.3 Km
Applicability of Off Site Emergency Plan:	Bharuch District

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Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 500 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**

Unit will obtain Fire NOC after receipt of EC and before getting CTO.

H-5	Details of Occupational Health Centre (OHC):

-

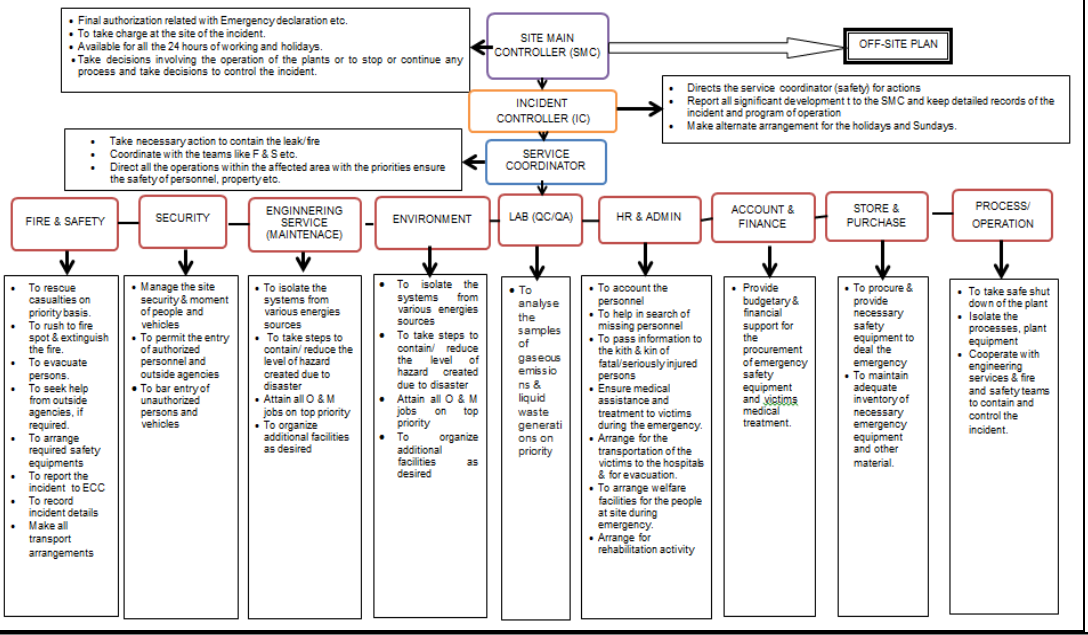
Number of permanent Employee:	01
Number of Contractual person/Labour:	-
Area provided for OHC:	50 m^2
Number of First Aid Boxes:	20
Nearest General Hospital:	PHC Dahej
Name of Antidotes to be store in plant:	Folic Acid, Ethanol, Sodium Thiosulfate, Deferoxamine, Pyridoxine etc will be provided.

-

Comments

- Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

H-6	Details of Emergency measures proposed and preparedness action for chemicals and fire explosion etc.



I	Details of Membership for Common Facility:

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency Date of Issue and validity of membership
01	CETP	GIDC/FF/WD/BRH/1780 dated 23/03/2021 GIDC/BRC/DEE/DRG/83 dated 21/04/2022
02	TSDF site	BEIL Infrastructure Limited. Ref. BEIL/ANK/2022 dated 24/09/2022
03	Common Hazardous Waste Incineration Facility	-
04	Common Spray Drying Facility	Not Applicable
05	Common MEE Facility	BEIL Infrastructure Limited.

		Ref. BEIL/ANK/2022 dated 24/09/2022
06	Common Conveyance System	Not Applicable
07	PESO permission	Not Applicable
08	FIRE permission	Unit will obtained after getting receipt of EC.
09	Health Certificate	Unit will obtained after getting receipt of EC.

J **Reduce / Reuse / Recycle measures adopted.**

(c) Reuse

Sr. No.	Item	Quantity	% percentage
1	Water	20	5.95

K **EMP Details**

Sr. No	Unit	Detail	Capital Cost (Rs. In Crores)	Operating Cost/ Month (Rs. In Crores)	Maintenance Cost / Month (Rs. In Crores)	Total Recurring Cost / Month (Rs. In Crores)
1	Waste Water	Low COD ETP-1 (1000 KLD) High COD ETP-2 (100 KLD)	0.35	0.06	0.033	0.093
		CETP	0.15	0.05	0.03	0.08
		Rain water harvesting 500 KLD	0.04	-	0.005	0.005
2	Air & LDAR	LDAR, VOC & Stack & Noise	0.075	0.018	0.004	0.022
3	Hazardous Management	Membership & Disposal + Incineration	0.078	0.002	0.0278	0.0748
		Transportation	0.05	0.045		
4	Fire & Safety	Fire hydrant & Pipeline system	0.18	0.01	-	0.008
		Fire extinguisher & Foam trolley	0.10	0.005	0.005	0.002
		Distributed Control System (DCS)	0.25	0.012	0.01	0.022
5	AWH Monitoring	In house Monitoring	0.01	0.01	-	0.01
6	Green Belt Development	Tress	0.05	0.03	0.02	0.05
7	Occupational Health	Training	0.03	0.001	-	0.001
		Safety equipment/PPEs./Fire Suits	0.075	0.01	0.01	0.02
8	CER Activities	as per OM dated 01/05/2018	0.15	--	-	-
Total			1.588	0.253	0.1448	0.3878

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

L | **Details of CER -**

Type of Activities	Yearly amount to be spent in CER activities (Rs. In Lakh)			Total amount to be spent (Rs.)
	1st Year	2nd Year	3rd Year	
Solar Street lights provided in Jageshwar Village	2.0	2.0	2.0	6.0
Drinking & sanitation facilities in schools of Ambetha and Muler village	1.0	2.0	2.0	5.0
Donation in schools and for education aids in Jolva and Muler villages	2.50	1.0	0.50	4.0
Total	**5.50**	**5.0**	**4.50**	**15.0**

16) **DELIBRATION AND RECOMMENDATION:**

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.
f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.
g) Grinding and cutting of building materials in open area shall be prohibited.
h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
2. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
5. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
6. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
7. All measures shall be taken to avoid soil and ground water contamination within premises.
8. **Safety & Health:**
   a) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
   b) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
   c) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
   d) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
   e) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

f) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

g) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

h) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

i) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

j) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.

k) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

9. Total water requirement for the project shall not exceed 336.02 KLD. Unit shall reuse 20 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 316.02 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 328.43 KLD.
11. Management of Industrial effluent shall be as under:
    - ✓ **Concentrated Stream (9.67 KLD):**
      - 9.67 KLD process effluent shall be treated in primary ETP and sent to CMEE-BEIL, Dahej for further treatment and disposal.
    - ✓ **Dilute Stream (327.76 KLD)**
      - 296.76 KLD process and washing effluent and 9 KLD domestic effluent shall be treated in primary & secondary ETP. Total 305.76 KLD treated effluent shall be sent to CETP-Dahej for further treatment and disposal.
      - 20 KLD boiler and cooling tower effluent shall be reused in washing.
      - 2 KLD scrubbing effluent shall be reused within premises.
12. Treated waste water shall be sent to common facilities (CETP, Common MEE, Spray dryer etc.) only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
13. Domestic wastewater generation shall not exceed 9 KL/Day for proposed project and it shall be treated in ETP and sent to CETP-Dahej. It shall not be disposed off through soak pit/ septic tank.
14. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
15. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent sent to common facilities; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

16. Unit shall not exceed fuel consumption for Steam Boiler, Fluid Bed Dryer and D G Set as per the point no. E-2 as mentioned above.
17. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
18. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
19. PP shall use approved fuels only as fuel in boilers.
20. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of IndustrialSafety& Health). Following indicativeguidelines shall also be followed to reducethe fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly toreducethe fugitive emission during vehicular movement.
    - Air borne dust shall becontrolled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
21. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
22. Forcontrol of fugitive emission, VOCs, following steps shall be followed :
    a. Closed handling and charging system shall be provided for chemicals.
    b. Reflux condenser shall be provided over Reactors / Vessels.
    c. Pumps shall be provided with mechanical seals toprevent leakages.
    d. Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
23. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
    - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
24. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, HCl, NH_3 and VOCs shall be carried out in the impactzoneand its records shall be maintained. Ambient air quality levels shall not

exceed the standards stipulated by the GPCB. If at any stage these levels are found toexceed the prescribed limits, necessary additionalcontrol measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

25. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
26. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
27. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
28. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
29. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

30. The PP shall develop green belt within premises (4593 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

31. The project proponent shall carry out the activities of Rs 15 Lakhs [Solar Street lights provided in Jageshwar Village; Drinking & sanitation facilities in schools of Ambetha and Muler village and Donation in schools and for education aids in Jolva and Muler villages] proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
32. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Green Circle Inc and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

33. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
34. Project proponent shall appoint a key person in the organization who shall be responsible for compliance

of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

35. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
36. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
37. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
38. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
39. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

8.	SIA/GJ/IND3/74515/2022	**M/s. BVC Specialities Private Limited** Plot No. D3/5/2, GIDC Estate, Dahej-III – 392 130 , District: Bharuch	EC (Refer Back)

Category of the unit: **5 (f)**

Project status: **Expansion**

1) Project proponent (PP) has submitted online application vide no. SIA/GJ/IND3/74515/2022 dated: 27.05.2022 and SEAC has accepted on dated 02.08.2022 for obtaining Environmental Clearance.
2) PP has applied for Environmental clearance and the SEAC recommended the project for grant of Environmental clearance vide this office letter no. EIA-10-2021-IND2/4709 dated: 17.11.2022 for conditions as mentioned therein.
3) The case was referred back by the SEIAA, Gujarat vide Letter No. SEIAA/GUJ/EC/2931/2022 dated 16.12.2022 with the following point:
    1. Justification not given regarding drastic reduction of industrial w/w generation- 573 kld against ind. w/c-1537 kld.in EMP.
    2. In table D-3 waste water generation from APCM mentioned '00', but in water balance diagram it is mentioned 4 KLD, please clarify. &
    3. Bleed liquor quantity mentioned in Hazardous waste matrix- 792 kl/year + 1008 kl/year, total-1800 kl/year i.e. 4.93kld, it is not matched with the quantity mentioned in water balance diagram i.e. 4 kld, please clarify.
    4. Details of hazardous process of bromination and its safety measures not given
4) Project proponent submitted reply vide email dated 17.12.2022 with supporting documents.

5) The case was reconsidered in the SEAC meeting dated 19.12.2022.

6) PP and Technical expert M/s. Siddhi Green Excellence Pvt. Ltd. remained present during video conference meeting dated: 19.12.2022.

7) PP presented the following details:

1. Justification not given regarding drastic reduction of industrial w/w generation- 573 kld against ind. w/c-1537 kld.in EMP.

Reply:

✓ The detailed clarification for reduction of wastewater generation 573 KLD with compared to total water consumption 1537 KLD is as under. Quantity of waste water generation from Utility (Boiler blow down + cooling tower blow down) shall be decreased with respect to water consumption required for cooling tower and boiler.

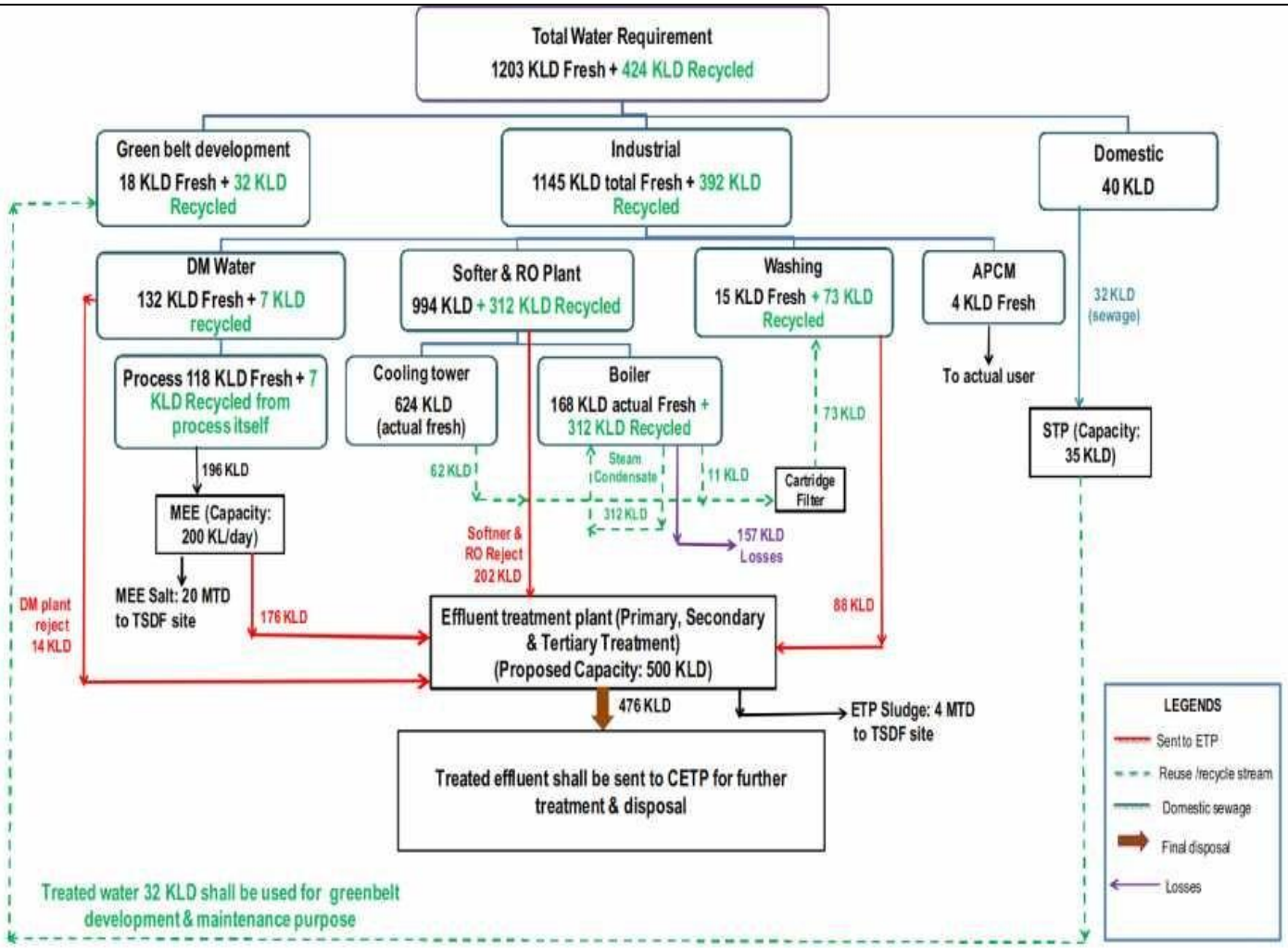
Note:

*7 Nos. Cooling tower (4 nos. Of 600 TR each, 2 nos. Of 500 TR each & 1 no. 1000 TR) and 4 nos. Boilers of 10 TPH capacity each

Category	Total Water requirement (KLD)	Recycle Water (KLD)	Fresh Water requirement from GIDC(KLD)	Waste water generation (KLD)	Remarks (for water consumption quantities)	Remarks (Waste water Disposal scenario)
(A) Domestic	40	--	**40**	32	--	Sewage shall be treated in STP and treated effluent (32 KLD) shall be used for greenbelt development & maintenance purpose.
(B) Gardening	50	32	**18**	--	**Recycled Quantity:** Fresh quantity: 18 KLD	--
(C) Industrial						
Process	139	7	**132**	210	DM water shall be utilized in manufacturing process purpose. 14 KLD DM plant Reject shall be sent to ETP for further treatment. **Total fresh water requirement: 132 KLD, Recycled quantity: 7 KLD**	14 KLD DM plant reject shall be sent to ETP for further treatment. 196 KLD Process effluent shall be sent to in- house MEE. 20 MTD MEE Salt shall be disposed to TSDF site & 176 KLD MEE Distillate shall be treated in own ETP consisting of Primary, Secondary & Tertiary treatment and treated water shall be sent to CETP for further treatment & disposal.

Boiler	540	312	**228**	71	**Fresh feed water quantity to softner & RO: 994 KLD + recycled quantity: 312 KLD** Softner & RO shall be installed for Boiler & Cooling tower Make-up feed. 994 KLD raw water shall be feeded to Softner & RO for each batch. 202 KLD softner & RO Reject shall be sent to ETP for further treatment. 168 KLD Softner & RO Permeate shall be sent to Boiler as Make-up feed for each batch & 624 KLD Softner & RO Permeate shall be sent to Cooling tower as Make-up feed for each batch. **Recycled quantity: 312 KLD (Boiler condensate)** **Fresh water requirement for boiler: 228 KLD.**	**Total waste water generation: 275 KLD** **1) Total 73 KLD utility blow down (**Boiler blow down recycled: 11 KLD Cooling tower blow down recycled: 62 KLD) shall be passed through cartridge filter and shall be used for washing purpose and then shall be given Primary, Secondary & Tertiary treatment in ETP. **2) 202 KLD** softner & RO Reject shall be sent to ETPfor further treatment.
Cooling	766	0	**766**	204		

Water Balance Diagram



2. In table D-3 waste water generation from APCM mentioned '00', but in water balance diagram it is mentioned 4 KLD, please clarify.
3. Bleed liquor quantity mentioned in Hazardous waste matrix- 792 kl/year + 1008 kl/year, total-1800 kl/year i.e. 4.93kld, it is not matched with the quantity mentioned in water balance diagram i.e. 4 kld, please clarify.

Reply of 2 & 3:

✓ As scrubbing solution shall be sell to actual users, hence effluent generation from APCM mentioned '00' in table D-3 and 4 KLD mentioned quantity in water balance diagram is the quantity of water consumption for APCM and it is mentioned as sold to actual users. The details of bleed liquor Process emission of HBr & HCl gas shall be generated from Pharma products (Product no. 1 to 24) only and same is mentioned as bleed liquor generated from scrubber Sr No: 13 & 14 in hazardous waste table. The justification of quantity of hazardous waste generation are as under:

For HBr : 2.77 KLD (Gas emission: 1.10 MT/d + water consumption for APCM: 1.67 KLD)

For HCl : 2.16 KLD (Gas emission: 0.660 MT/d + water consumption for APCM: 1.5 KLD)

- ✓ Total Bleed liquor quantity 4.93 KLD = 1.76 MT/Day quantity of gases + 3.17 KLD quantity of water.

Hazardous waste				
Name	**per batch (Kg)**	**per month (MT)**	**per Annum (MT)**	**Disposal Facility**
30-35% HCl solution	**2226**	**66**	**792**	**To ETP for neutralisation purpose or to actual users having Rule 9**
40-45% HBr solution	**746**	**84**	**1008**	**to actual users having Rule 9**
Total	**2972**	**150**	**1800**	

4. Details of hazardous process of bromination and its safety measures not given

Reply:

- ✓ Bromine shall not be used directly as raw material and therefore Bromination process shall not be involved during production. Unit will purchase raw material like 4-bromomethyl-2-cyano-biphenyl, 1-Bromopropane etc. directly from open market.

8) Committee found the presentation and submission for the project satisfactorily.

After detailed discussion, it was decided to recommend the project to SEIAA, Gujarat for grant of Environmental Clearance with conditions unchanged via Recommendation Letter forwarded from SEAC vide No. EIA-10-2021-IND2/4709 dated: 17.11.2022.

9.	SIA/GJ/IND3/68290/2017	**M/s. Aarti Industries Ltd (Unit II).** Plot No. Z/103/C, GIDC Notified Industrial Estate, SEZ-II, Dahej- 392130, Taluka Vagra, Dist. Bharuch	EC (Refer Back)

Category of the unit: **5 (f)**

Project status: **Expansion**

1) Project proponent (PP) has submitted online application vide no. SIA/GJ/IND3/68290/2017 dated: 08.03.2022 and SEAC has accepted on dated 10.05.2022 for obtaining Environmental Clearance.
2) PP has applied for Environmental clearance and the SEAC recommended the project for grant of Environmental clearance vide this office letter no. EIA-10-2021-IND2/4527 dated: 19.10.2022 for conditions as mentioned therein.
3) The case was referred back by the SEIAA, Gujarat vide Letter No. SEIAA/GUJ/EC/2771/2022 dated 22.11.2022 with the following point:
    1. ETP capacity is not given in recommendation letter
    2. Methodology of segregation of high COD and low COD streams at source of generation are not given
    3. Details of Certified Compliance Report (CCR) of lRO, MOEF &CC is not given.
    4. Details of hazardous process of sulphonation & safety measures are not given.

5. Clarify regarding ind w/w reduction 667 KLD against industrial water consumption 2316 KLD.

4) SEIAA has inadvertently on Parivesh portal refer back the Proposal No: SIA/GJ/IND2/28351/2018 (EC-Amendment application which is already been delisted in SEAC MOM dated: 09.01.2020) instead of Proposal No: SIA/GJ/IND3/68290/2017 for which refer back letter has been issued to SEAC on dated: 22.11.2022.

5) Further, on parivesh portal the status of the Proposal No: SIA/GJ/IND3/68290/2017 is shown as "Awaiting EC" hence the case was considered offline.

6) Project proponent submitted reply vide email dated 26.11.2022 with supporting documents.

7) The case was reconsidered in the SEAC meeting dated 19.12.2022.

8) PP and Technical expert M/s. ENPRO Enviro Tech and Engineers Pvt. Ltd. remained present during video conference meeting dated: 19.12.2022.

9) PP presented the following details:

1. ETP capacity is not given in recommendation letter

Reply:

✓ It is to note that, details regarding capacity of various ETP components were provided during EC appraisal presentation held on 9th June, 2022 (Sr. No. 02) in 438th SEAC meeting. In addition to this, details regarding the same have been also provided in final EIA report in Section 2.8 in chapter 2 on page number 2.71. However, the same was not mentioned in prescribed SEAC format. Now, the details of ETP capacity are as under:

Sr. No.	Particular	Capacity
1	ETP 1	60 KLD
2	ETP 2	200 KLD
3	ETP 3	250 KLD
4	MEE	65 KLD
5	DEE	50 KLD
6	RO-I	165 KLD
7	RO-II	310 KLD
8	RO-III	71 KLD

Technical Specification of ETP:

-

Sr. No.	Particular	Capacity	MOC
Process Stream ETP-2			
1	DCP Equalization tank	50 m^3	PPFRP
2	DCP Equalization tank	50 m^3	PPFRP
3	Primary treated Effluent Tank	50 m^3	PPFRP
4	Neutralization Tank-A	4.5 m^3	RCC with AR Tile Lining
5	Neutralization Tank-B	4.5 m^3	RCC with Epoxy Painting

6	Filter Feed Tank	52.7 m^3	RCC with Epoxy Painting
7	Filtrate Tank	33 m^3	RCC
8	DCP filter press	12 m^3/hr	PP plate MSEP Frame
9	Extractor feed Collection POT	1 m^3	CS
10	Raffinate collection pot	1 m^3	CS
11	Caustic solution feed Tank	1 m^3	SS 304
12	Distillation Column Feed Tank	10 m^3	CS
13	Recovered Xylene Vessel	5 m^3	CS
14	Bottom Collection Vessel	5 m^3	SS 304
15	Xylene feed vessel	10 m^3	CS
16	Extraction column	Height-14.5 m DIA-0.6 m	CS
17	Distillation Column	Height-11.9 m Dia-0.8 m	CS
18	Primary condenser	25 m^2	SS316 tubes
19	Secondary condenser	3 m^2	SS316 tubes
20	Reboiler	52 m^2	SS316 tubes
21	Sodium sulfate equalization Tank	10 m^3	PPFRP
22	Drain Sump	30 m^3	RCC with Epoxy Painting
Process Stream ETP-1			
1	DCA Equalization Tank	50 m^3	PPFRP
2	Oil Separation Tank	3 m^3	RCC with Epoxy Painting
3	Oil Collection Tank	1 m^3	MS with Epoxy Painting
4	Flash Mixer Tank	4.5 m^3	RCC with Epoxy Painting
5	Flash Mixer Tank	4.5 m^3	RCC with Epoxy Painting
6	Flocculation Tank	4.5 m^3	RCC with Epoxy Painting
7	Primary Clarifier Tank	17.66 m^3	RCC with Epoxy Painting
8	DCA Sludge Storage Tank	4.32 m^3	RCC with Epoxy Painting
9	Anoxic Tank-A	4 m^3	RCC with Epoxy Painting
10	Anoxic Tank-B	4 m^3	RCC with Epoxy Painting
11	SBR Tank-A	68 m^3	RCC with Epoxy Painting
12	SBR Tank-B	68 m^3	RCC with Epoxy Painting
13	PSF	5 m^3	MS/EP
14	ACF	5 m^3	MS/EP
Utility Stream			
1	Utility equalization tank	56 m^3	MS
2	Flash Mixer Tank-A	3.375 m^3	RCC with Epoxy Painting
3	Flash Mixer Tank-B	3.375 m^3	RCC with Epoxy Painting
4	Flocculation Tank	4.5 m^3	RCC with Epoxy Painting
5	Primary Clarifier Tank	67 m^3	RCC with Epoxy Painting
6	Intermittent Storage Tank	10 m3	MS with Epoxy painting
7	Utility Filter Feed Tank	30 m^3	RCC with Epoxy Painting
8	Pressure Sand filter	15 m^3/hr	MS with Epoxy painting
9	Utility Filter press	0.8 m^3/hr	PP plate MSEP Frame
Dosing skids			
1	DAP Dosing Tank WITH SKID	0.35 m^3	SS 316L

2	Urea Dosing Tank WITH SKID	0.35 m^3	SS 316L
3	HCl Dosing Tank WITH SKID	0.35 m^3	PPFRP
4	PAC Dosing Tank WITH SKID	0.35 m^3	SS 316L
5	Alkali Solution Tank WITH SKID	0.35 m^3	PPFRP
6	PE Dosing Tank WITH SKID	0.35 m^3	SS 316L
7	Lime solution preparation tank	9.37 m^3	RCC
8	Dolomite solution preparation tank	9.37 m^3	RCC with Epoxy Painting
9	Sodium bicarbonate solution preparation tank	9.37 m^3	RCC with Epoxy Painting

2. Methodology of segregation of high COD and low COD streams at source of generation are not given

Reply:

✓ Unit has proposed to provide separate manufacturing blocks for proposed products. Separate effluent collection network with colour coding will be provided for effluent collection and treatment to each manufacturing blocks. Unit has proposed to treat total 667 KLD industrial wastewater into stream wise manner. Details regarding stream segregation at sources and stream wise schematic ETP flow diagram were provided during EC appraisal presentation held on 9th June, 2022 (Sr. No. 02) in 438th SEAC meeting and Same has been also provided in EIA report in Section 2.8 in chapter 2 on page number 2.69 but no mentioned in prescribed SEAC format. However, detailed segregation of streams are as under:

Effluent Stream	Quantity	Characteristics	Source	Treatment method/Disposal Method:
Process Effluent to ETP - 1: (Capacity: 60 KLD)	255 KLD	Low COD LOW TDS (Biodegradable)	197 KLD (DCA- 40 KLD, 25 KLD DCNB, 132 KLD DCP) Process Effluent + 25 KLD from Scrubbers + 33 KLD from washing	Effluent will be collected in the equalization tank and feed into the Flash mixer for pH correction by dosing alkali. Oil is separated from the oil separation chamber and water will be collected in the primary settling tank by following the dosing of PE. From the top of primary treated tank effluent will undergo COD reduction in the Anoxic and SBR tanks (Biological treatment). After biological treatment effluent water will go tertiary treatment through Activated carbon filter and pressure sand filter and treated Effluent water will be discharge to GIDC drainage Pipeline.
Process Effluent to ETP - 2: (Capacity: 200 KLD)				Effluent will be collected in the equalization tank and then feed in the Neutralization tank for pH adjustment by dosing lime solution. After neutralization feed is fed into the filter press from where Sludge will be separated and filtered water will be collected in the primary treated water tank. From primary treated water tank water will be sent for phenol reduction by following extraction, Distillation and Biological treatment. After

				biological treatment effluent water will be sent to tertiary treatment through Activated carbon filter and pressure sand filter and treated Effluent water will be discharge to GIDC drainage Pipeline.
High TDS Stream	65 KLD	High TDS Low COD	52 KLD process effluent DCP plant and 13 KLD from Scrubbers	will be collected in the equalization tank and directly will be sent to MEE/DEE/ATFD and MEE condensate will be recycled in process and cooling tower make up.
Utility Effluent to ETP-3: (Capacity: 250 KLD)	193 KLD	Low COD Low TDS	164 KLD from Cooling Blow Down and 29 KLD from Boiler Blow Down	will be collected in the equalization tank and feed into the Flash mixer for pH correction by dosing alkali following PSF/Filter Press. Treated water will be sent to RO. RO permeate will be reused within plant premises and RO reject will go tertiary treatment through Activated carbon filter and pressure sand filter and treated Effluent water will be discharge to GIDC drainage Pipeline.
Softener and DM Reject to RO (Combined Capacity: 546 KLD)	154 KLD	High TDS Low COD	82 KLD Softener Reject and 72 KLD DM Plant Reject	will be treated in RO plant and RO Permeate will be recycled in Cooling tower make up and RO Reject will be treated in tertiary treatment.

Detailed Process effluent segregation of streams:

Source	Stage in manufacturing process	Effluent (KLD)	Characteristics	TreatmentUnit
DCP Plant	Hydrolysis	108	Low COD LOW TDS (Biodegradable)	ETP-1 &ETP-2
	Moisture Removal Column	2.7		
	ATFE	0.3		
	Acid Purification	21		
DCA Plant	Layer Separation	40		
DCNB Plant	Washing & Layer	25		
Total		**197**		
DCP Plant	Neutralization	26	High TDS Low COD	MEE
	Washing	26		
Total		**52**		

3. Details of Certified Compliance Report (CCR) of lRO, MOEF &CC is not given.

Reply:

- ✓ Unit has received Certified EC Compliance Via File No. J-11/11-2022-IROGNR on dated 02/05/2022 in which, there is no Non-Complied Condition and 2 Partly Complied Conditions out of 116 conditions. Details regarding the same was provided in during **EC appraisal presentation** (438th SEAC meeting held on 9th June, 2022 (Sr. No. 02)), **SEAC format** (Section 5. Compliance status of the existing project: Sr. No. 3 i.e., Certified Compliance Report (CCR) from the concern authority (RO-Bhopal/ZO-CPCB/MS-GPCB) for existing EC as per the MoEFCC's Circular No. J-11013/6/2010-IA-II (Part) vide dated 07/09/2017.
- ✓ PP has presented that CCR of IRO-Gandhinagar was presented in SEAC meeting dated: 09.06.2022. Committee noted that the CCR was discussed in SEAC meeting dated: 09.06.2022 but it was inadvertently skipped in deliberation in MOM dated: 09.06.2022. In SEAC meeting dated: 09.06.2022, Committee noted that out of 116 conditions, it is mentioned that "it has observed during site inspection that no non-compliance was observed during the visit. Certain partly compliances have been observed which needs necessary and time bound action for early compliance in repect of the relevant conditions." PP also presented action plan for partly complied conditions. Committee found the submission satisfactorily.

4. Details of hazardous process of sulphonation & safety measures are not given.

Reply:

- ✓ The details of sulphonation and its safety measures are as under:

Sulphonation Process	• HAZOP and pre-start up safety review will be conducted before starting first batch. • DCS based auto process controlling system will be provided. • SO3 detector has been installed in the process/storage area. • Training of MSDS of all chemicals involved. • Scrubbing system provided in process area. • Trained persons will handle chemicals and process as it involved chemicals. • For emergency purpose dumped tank has been provided. • Fire hydrant, Fire extinguishers, Fire Tender, Fire Detector provided the industries. • Control / slow charging of chemicals through dedicated line and control valves. • Batch process control record will be filled for following safety in all stage. • Cooling and chilling both systems will be provided in reactor with standby arrangement. • Two temperature indicators and pressure gauges will be installed on reactor. • High temperature and pressure stirrer locking system will be provided. • Safety valve will be provided on the jacket. • Thickness and hydraulic testing will be carried out periodically. • Regular preventive maintenance will be carried out for all equipment.

5. Clarify regarding ind w/w reduction 667 KLD against industrial water consumption 2316 KLD.

Reply:

- ✓ Reasons for this major difference between water consumption and wastewater generation are as below:
  a. Cooling Tower: 1334 KLD water loss has proposed in form of evaporation loss during cooling tower operation.
  b. Boiler (30 TPH): Due to Recycling of Boiler Condensate i.e., 461 KLD
- ✓ Component wise comparison between water consumption and wastewater generation with calculations are as under:

Particular	Sourced Through	Water Consumption (KLD)	Wastewater Generation (KLD)	Remarks
Process	Total:	234	249 KLD	
	Softener:	139*		
	AIL U-I:	45 (F)		
	MEE Condensate:	50 (R)		
Scrubber	Softener:	31*	38 KLD	
Washing	From Softener	33*	33 KLD	
Cooling Tower	Total:	1576	164 KLD	**1334 KLD Eva. Loss** + 86 KLD in SSF from which 78 KLD will be recycled
	Softener:	1245*		
	SSF:	78 (R)		
	MEE Condensate:	10 (R)		
	RO Permeate:	243 (R)		
Boiler	DM Plant	288*	29 KLD blow down	**461 KLD Recycle** + 259 KLD Evaporation loss
Softener	GIDC	1530 (F)	82 KLD	139 KLD will be sent to process + 31 KLD will be sent to Scrubbers + 1245 KLD will be sent to cooling Tower + 33 KLD will be sent to washing
DM Plant	GIDC	360 (F)	72 KLD	288 KLD will be sent to Boiler
Total		**2316 [1935 (F)+ 381 (R)]**	**667**	

Note *: It is to note that the, entire requirement of fresh water for Scrubber, Washing, Cooling tower and partial requirement for process i.e., 139 KLD is proposed to be sourced through Softener Plant. In addition to this, entire fresh water requirement for Boiler is proposed to be sourced through DM plant only. Thus, bifurcation for total fresh water requirement i.e., 1935 KLD will be as mentioned below:

Softener Plant:	1530 KLD
DM plant:	360 KLD
AIL (U-I):	45 KLD
Total Industrial:	**1935 KLD**

	-

6. Justification not given regarding drastic reduction of industrial w/w generation- 573 kld against ind. w/c-1537 kld.in EMP.

Reply:

- ✓ The detailed clarification for reduction of wastewater generation 573 KLD with compared to total water consumption 1537 KLD is as under. Quantity of waste water generation from Utility (Boiler blow down + cooling tower blow down) shall be decreased with respect to water consumption required for cooling tower and boiler.

10) Committee found the presentation and submission for the project satisfactorily.

After detailed discussion, it was decided to recommend the project to SEIAA, Gujarat for grant of Environmental Clearance with conditions unchanged via Recommendation Letter forwarded from SEAC vide No. EIA-10-2021-IND2/4527 dated: 19.10.2022.

10.	SIA/GJ/IND1/407868/2022	**M/s. Goodluck Metallics** **(Unit of Goodluck India Limited)** Survey No. 495, Village: Sikra, Tal: Bhachau & Dist.: Kutch-370140	TOR

Category of the unit: **3(a)**

Project status: **Expansion**

1) DETAILS OF APPLICATION:

1.1. Type of application:	TOR-Expansion
1.2. Proposal no.	SIA/GJ/IND1/407868/2022
1.3. Category of Project :	3(a) – B1
1.4. Date of application : (Online accepted by SEAC)	07/12/2022
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. & Date :	Applied for TOR
1.7. Technical expert / Environmental Consultant :	M/s. San Envirotech Pvt. Ltd
1.8. SEAC Meeting No. and Date:	542nd SEAC Meeting, 19/12/2022
1.9. ADS vide letter dated :	-
1.10. Reply Submitted by PP dated:	-
1.11. Revised Consideration SEAC Meeting No. and Date:	-

2) This is an existing unit proposed for expansion of manufacturing of secondary metallurgical processes as mentioned below:

Sr. No.	Name of Products	Quantity (MTPM)		
		Existing	Proposed	Total
1	Steel Tubes & Pipes (Black & Galvanized) & Precision Tubes	6000	11000	17000
2	CGL Sheet (Continuous Galvanizing Line)	6000	0.0	6000
3	Fabricated & Painted Structure	0.0	7500	7500
4	Steel Tube & Pipes (Black) (Tube Mill- 2.5")	0.0	4000	4000
5	Steel Forging	0.0	4000	4000
6	Coil Pickling	0.0	20000	20000
7	Cold Rolling Mill	0.0	20000	20000
8	Color Coating & Galvanizing Line	0.0	15000	15000
	Total	**12000**	**81500**	**93500**

3) The project falls under Category B of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC Video conference meeting dated 19/12/2022.
5) During the meeting dated 26.11.2020, the project was appraised based on the information furnished in Form – 1, Pre-Feasibility Report, Environment Management Plan and details submitted by e-mail.
6) Project proponent and technical expert M/s San Evirotech Pvt Ltd remains present during video conference meeting dated 19.12.2022.
7) Committee noted that this is an expansion project and existing unit is of Steel Tubes & Pipes (Black & Galvanized) & Precision Tubes -6000 MTPM and CGL Sheet (Continuous Galvanizing Line)-6000 MTPM manufacturing unit. Unit is located at Survey No. 495, Village: Sikra, Tal: Bhachau & Dist.: Kutch-370140, outside Notified area. Unit is having valid CCA of GPCB valid up to dated: 22.09.2023.
8) PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Sikara is @ 1 Km. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
9) PP submitted CC&A self-compliance report for existing plant. PP submitted that there is no legal court case and public complaint against unit.
10) Committee noted that for existing unit PP is having valid CCA of GPCB, now unit has applied for TOR-expansion from production capacity 12000 MTPM to 93500 MTPM, hence MoEF&CC's OM dated: 20.07.2022 is not applicable. Hence Public hearing is applicable.
11) Committee asked justification regarding utilization of lead as raw material upon which PP reply that lead will be used as raw material in galvanizing process. PP has proposed product No: 8-Color Coating &

Galvanizing Line- 15000 MTPM (1,80,000 MTPA).

12) Committee noted that lead is a heavy metal and it is covered under toxic secondary metallurgical processes. Further, as per EIA Notification, 2006 all toxic and heavy metal secondary metallurgical processes > 20,000 MTPA is categorized as Category 'A" project.

After detailed discussion, the Committee unanimously decided to consider the proposal in upcoming SEAC meeting upon submission of following details:

1. Justification regarding lead proposed as raw material and applied for non-toxic secondary metallurgical processes rather than applying for toxic and heavy metal secondary metallurgical processes > 20,000 MTPA as Category 'A" project.

The meeting ended with a vote of thanks to the chair.

***

Minutes approved by:

1.	Shri Akshay Kumar Saxena, Chairman, SEAC	
2.	Dr. S. C. Pant, Vice Chairman, SEAC	
3.	Shri D. C. Chaudhari, Member, SEAC	
4.	Shri J. K. Vyas, Member, SEAC	
5.	Shri Anand Zinzala, Member, SEAC	
6.	Shri B. M. Tailor, Member, SEAC	
7.	Shri D. M. Thaker, Secretary, SEAC	