Annexure: A

EXECUTIVE SUMMARY OF

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR

PROPOSED UNIT

OF

M/S. USHANTI COLOUR CHEM PVT LTD.

**(Plot. No. C-18, GIDC Estate, Saykha, Ta – Vagra,
Dist – Bharuch, Gujarat.)**

PREPARED BY

BHAGWATI ENVIRO CARE PVT. LTD.

[ISO 9001, ISO 14001 & OHSAS: 18001 CERTIFIED COMPANY]

CORPORATE OFFICE

28, 29, 30, Parmeshwar Estate II, Opp. AMCO Bank,
Phase I, GIDC Estate, Vatva, Ahmedabad – 382445. Gujarat, India
Phone No: +91 79 29295043, 40083051/52 **Fax:** +91 79 40083053
, **Email:** bhagwatienviro@gmail.com , bhagwatienviro@yahoo.com
URL: www.bhagwatienviro.com

1. INTRODUCTION

M/s. Ushanti Colour Chem Pvt. Ltd. has proposed manufacturing unit at Plot no. C-18, Saykha Industrial Estate, Ta. Vagra, Dist: Bharuch, Gujarat. In proposed unit they are planning to manufacture Synthetic Organic Chemical @ 2735 MT/M and by-product generation is @ 124.45 MT/Day.

Proposed unit is located in GIDC Estate, Saykha but at present GIDC Saykha is not declared as notified industrial Estate So, According to EIA notification dated 14th September 2006, by Ministry of Environment & Forest (MoEF), Government of India, their Proposed manufacturing activity is falls under Synthetic Organic Chemicals – Schedule 5(f)) & cat -B. For that unit needs Environmental clearance from State Level Environment Impact Assessment Authority, Gandhinagar, Gujarat.

The total plot area is 33559.69 Sq. meter. From that Proposed constructed area will be ~ 14109 Sq. meter, Road Area will be 3995.00 Sq. meter, Parking Area will be 580.69 Sq. meter , gardening area will be 11550.00 Sq. meter and Open Area will be 3325.00 Sq. meter .

2. DETAILS OF PRODUCTS

Table: 01
Product Details

Sr. No.	Name of Product	Quantity in MT / M.
1.	Vinyl Sulphone	300
2.	CPC	500
3.	Alpha Blue	200
4.	Beta Blue	200
5.	CPC Green 7	200
6.	Dyes	250
7.	Direct Turquoise Blue 86	500
8.	Direct Turquoise Blue FBL -199	
9.	Reactive Blue G	
10.	Reactive Turquoise Blue H5G	
11.	Reactive Blue 72	
12.	MPDSA	40
13.	DASDA	50
14.	MUA	50
15.	H-Acid	200
16.	Gamma Acid	40
17.	DASA	50
18.	FC Acid	40
19.	NMJ Acid	25
20.	K Acid	50

21.	Sulpho Tobias Acid	40
	Total	2735

Table: 02

List of By-product with its quantity

Sr. No.	Name of existing By Product	Quantity in MT / Day.
1	Hydrochloric Acid	75
2	Ammonium Sulphate	17.35
3	Ammonium Carbamate	28.60
4	NaOCl	3.5
	Total	**124.45**

3. WATER CONSUMPTION & WASTEWATER GENERATION/ DISPOSAL

Table: 03
Water Consumption and Wastewater generation

Water Consumption (KL/Day)		**Waste Water generation (KL/Day)**	
Domestic	15	Domestic	10
Industrial			
Process & Scrubber	781	Process & Scrubber	585
Washing	65	Washing	65
Boiler	60	Boiler	6
Cooling Make up	50	Cooling	5
Gardening & Plantation	50	Gardening & Plantation	--
Total water Consumption [A]	**1021**	**Total [A]**	**671**
Spent acid consumption **[B]**	104	Spent acid generation **[B]**	469
Ice **[C]**	203	By product **[C]**	124.45
Water from raw material **[D]**	117	Moisture loss **[D]**	26.55
Total	**1445**	**Total**	**1291**

- For the proposed manufacturing activity the total water consumption will be 1021 KL /Day. From that domestic water consumption will be 15 KL per day and Industrial water consumption will be 1006 KL per day.

- From that we will get 608 KL /Day treated effluent from Nano Filtration and MEE condensate. So, the required fresh water consumption will be 413 KL /Day. Fresh water will be met by GIDC Estate, Saykha.

- Domestic effluent @ 10 KL per day will be disposed to soak pit via septic tank system.
- Industrial low concentrated effluent from process, washing, boiler blow down, cooling blow down @ 496 KL per day will be treated in proposed effluent Treatment Plant consisting of primary, secondary and tertiary units.
- After treated in ETP, the treated effluent sent to Nano Filtration. The input quantity of Nano Filtration will be 496 KL /Day.
- The NF rejected @ 100 KL /Day will be mix with high concentrated effluent @ 165 KL /Day. So, total 265 KLPD will be sent to MEE. The input quantity of MEE will be 265 KL/Day.
- From that the quantity of condensate water will be 212 KL /Day and Evaporation Residue will be 53 KL /Day.
- That Evaporation Residue will be sent to centrifuge. From that ~ 10.6 KL ML generated and that will be spray dried in spray dryer. The sludge will be `~ 42.4 MT.
- High concentrated effluent @ 165 KLPD will be evaporated in Multi Effect Evaporator along with Nano filter reject and the condensate of MEE will be recycled. MEE residue will be sent to centrifuge and ML of centrifuge will be spray dried in spray dryer.
- From scrubber, spent acid will be generated, which will be reused in Process again.

Table: 04
Mode of Disposal and Treatment

Sr. No.	Source	Quantity and mode of disposal
1.	Domestic sewage	Domestic effluent @ 10000 Liter / day will be disposed off through septic tank / soak pit system.
2.	Industrial wastewater	• Industrial low concentrated effluent from process, washing, boiler blow down, cooling blow down @ 496 KL per day will be treated in proposed effluent Treatment Plant consisting of primary, secondary and tertiary units. • After treated in ETP, the treated effluent sent to Nano Filtration. The input quantity of Nano Filtration will be 496 KL /Day. • The NF rejected @ 100 KL /Day will be mix with high concentrated effluent @ 165 KL /Day. So, total 265 KLPD will be sent to MEE. The input quantity of MEE will be 265 KL/Day. • From that the quantity of condensate water will be 212 KL /Day and Evaporation Residue will be 53 KL /Day. • That Evaporation Residue will be sent to centrifuge. From that ~ 10.6 KL ML generated and that will be spray dried in spray dryer. The sludge will be `~ 42.4

		MT. • High concentrated effluent @ 165 KLPD will be evaporated in Multi Effect Evaporator along with Nano filter reject and the condensate of MEE will be recycled. MEE residue will be sent to centrifuge and ML of centrifuge will be spray dried in spray dryer.

***Please Note:**

At presently unit will be zero discharge. But in case in future CETP is there in Saykha GIDC, then we will discharge our Low concentrated effluent to CETP after obtaining prescribed norms.

4. DETAILS OF AIR EMISSION

Table: 05
Flue Gas Stack Details

Sr. No.	Stack Attached To	Stack Ht. m	APC Measures	Pollutants & Permissible Limit	
				Parameter	Standard / Prescribed Norms
1.	Steam Boiler (3 MT/hr)	33	Multi Cyclone Dust collector and Bag Filter	SPM (mg/ Nm^3)	<150 mg/NM^3
2	Hot air Generator - I (10 lacs Kcal)	33	Multi Cyclone Dust collector and Bag Filter		
3	Hot air Generator – II (10 lacs Kcal)	33	Multi Cyclone Dust collector and Bag Filter	SO_2 (ppm)	<100 ppm
4	Thermic Fluid Heater (20 lacs kcal)	33	Multi Cyclone Dust collector and Bag Filter	NO_X (ppm)	<50 ppm
5	DG Set	11	----		

Process Gas Stack Details:

Table: 06
Process gas Stack Details

No.	Stack attached To	APCD System	Stack Height	Pollutants
1.	Reaction vessel	Three Stage Scrubber system	11 m	HCl <= 20 mg/NM^3
2	Reaction vessel	Three Stage Scrubber system	11 m	NH_3 <= 175 mg/NM^3
3	Reaction vessel	Three Stage Scrubber system	11 m	SO_2 <= 40 mg/NM^3
4	Reaction vessel	Scrubber system	11 m	HCl <= 20 mg/NM^3
5	Reaction vessel	Scrubber system	11 m	SO_2 <= 40 mg/NM^3 NO_2 <= 25 mg/NM^3
6	Spray dryer -I	Wet scrubber	11 m	SPM <= 150 mg/NM^3
7	Spray dryer - II	Wet scrubber	11 m	SPM <= 150 mg/NM^3

Table: 07
Fuel Details

Sr.No	Name of Fuel	Consumption
1	Coal /Lignite (steam boiler)	1620 kg/hr
2	Coal /Lignite (Hot Air Generator 1& 2)	300 kg/hr
3	Coal /Lignite (Thermic Fluid Heater)	350 kg/hr
4	HSD (DG Set)	20 liter/hr

5. DETAILS OF HAZARDOUS WASTE GENERATION & ITS MANAGEMENT

TABLE: 08
DETAILS OF HAZARDOUS WASTE GENERATION & ITS MANAGEMENT

No.	Type of Waste with Category No.	Qty.	Source of Generation	Collection	Treatment	Storage	Disposal/ Management
1.	ETP Waste/ Evaporation Residue/ Spray drying Powder (Cat. No.: 35.3)	1160 MT/M	Effluent Treatment Plant	Manual for less quantity & By pump for high quantity	Solar Drying	Packed into HDPE Bags, store into storage area	Dispose to TSDF Site.
2	Spent Oil/Used Oil (Cat. No.: 5.1)	25 L/Yr	Plant Machineries	Manual	-	Separate store into SWSA after filling into drums.	Used Oil will be reused as a lubricant in plant machineries. Spent oil sell to authorized recycler.
3	Discarded Containers (Bag, Barrel, Drum) (Cat. No.: 33.1)	15000 - 18000 Nos./M	Production Section	Manual	Washing & Drying	Store into SWSA.	Return back to raw material supplier or used for packing of ETP waste.
4	Spent Acid (Cat. No.: 26.3)	469 KL /Day	Production Section	By Pump	---	In storage tanks	Reuse in plant and balance qty. Will be sold to authorized industries.
5	Gypsum Sludge (Cat. No.: 26.1)	920 MT / M	Mfg. Of H Acid	Manual	Solar Drying	Store into SWSA.	Will be sold to authorized industries.
6	Iron Sludge (Cat. No.:26.1)	135 MT / M	Mfg. Of H Acid and DASDA	Manual	Solar Drying	Store into SWSA.	Will be sold to authorized industries.

1. ENVIRONMENTAL PARAMETER MONITORING STUDY AREA/ STUDY PERIOD

The study area for detailed studies is an area within a radius of 10 Kms. Ambient air quality monitoring were carried out at 08 locations within the study area of 5 km aerial coverage from project site as the Center. The ground water monitoring, noise level monitoring, Soil analysis were carried out at 08 location for once in the study period. The monitoring activities were carried out at 08 sampling sites for the Month of October 2015 – December 2015.

2. AIR ENVIRONMENT

Baseline study indicates that AAQ in the surrounding study area with respect to $PM_{2.5,}$ PM_{10}, SO_2, NO_X, HCl, NH_3, and VOC are well within the stipulated permissible limits as prescribed by the latest National Ambient Air Quality (NAAQ) Standards for the respective industrial residential rural areas.

Maximum evaluated 24 hourly GLC from the ISCST-3, when added to the 98-percentile concentration of each parameter monitored during October 2015 – December 2015 season of the ambient air it indicates that due to establishment of proposed project of M/s. Ushanti Colour Chem Pvt. Ltd.., ambient air quality of the surrounding study area will be well within the NAAQ standards for the respective Industrial, residential rural areas. Company will use Coal / Lignite/HSD as a fuel. There will be process gas emission from process vessel and spray dryer as shown in Table No.06.

It is concluded that there will be no long term impacts on the surrounding ambient air environment.

3. WATER ENVIRONMENT

The source of water for the Proposed project will be GIDC Estate, Saykha. Base line data reveal that, the ground water quality is meeting with Drinking Water standards. The company proposes to use proposed source of water for both domestic as well as Industrial purpose.

Water Consumption:

Total water consumption will be 1021 KL per Day. From that domestic water consumption will be 15 KL per day and Industrial water consumption will be 1006 KL per day.

- Industrial low concentrated effluent from process, washing, boiler blow down, cooling blow down @ 496 KL per day will be treated in Effluent Treatment Plant then it will be recycled after Nano Filtration.

- High concentrated effluent @ 165 KLPD will be evaporated in Multi Effect Evaporator along with Nano filter reject and the condensate of MEE will be recycled. MEE residue will be sent to centrifuge and ML of centrifuge will be spray dried in spray dryer.
- From scrubber, spent acid will be generated, which will be reused in Process again.

Wastewater Generation &Disposal:

- For the proposed manufacturing activity the total water consumption will be 1021 KL /Day.
- From that we will get 608 KL /Day treated effluent from Nano Filtration and MEE condensate. So, the required fresh water consumption will be 413 KL /Day. Fresh water will be met by GIDC Estate, Saykha.
- The low concentrated stream will be 496 KL /Day. That will be treated in proposed effluent Treatment Plant consisting of primary, secondary and tertiary units.
- After treated in ETP, the treated effluent sent to Nano Filtration. The input quantity of Nano Filtration will be 496 KL /Day.
- The NF rejected @ 100 KL /Day will be mix with high concentrated effluent @ 165 KL /Day. So, total 265 KLPD will be sent to MEE. The input quantity of MEE will be 265 KL/Day.
- From that the quantity of condensate water will be 212 KL /Day and Evaporation Residue will be 53 KL /Day.
- That Evaporation Residue will be sent to centrifuge. From that ~ 10.6 KL ML generated and that will be spray dried in spray dryer. The sludge will be `~ 42.4 MT.

It is concluded that due to zero discharge unit, there will be no significant impacts on the surrounding water environment.

4. NOISE ENVIRONMENT

Base line data indicates that noise levels in the ambient air environment are within the prescribed norms. The industry will provide adequate noise control measures such as mufflers & silencers at the air inlet/outlet, anti vibration pad for equipment with have extreme vibration etc. Ear plugs & ear muffs will be provided to the workers where noise level will remain extremely high.

Thus, there will be short term, reversible impact on the noise environment due to the proposed project.

5. LAND ENVIRONMENT

Air pollution, water pollution and solid waste pollute soil and causes direct/indirect effect on soil. Since all necessary air pollution control measures have been provided and based on the results of the dispersion model for the ground level concentration of various pollutants after the commissioning of the proposed Project, there will not be any adverse impact of air pollution on soil.

Industrial effluent will be treated into ETP and finally treated effluent will be used in Plant and high concentrated effluent will be spray dried to achieve zero discharge unit. Therefore no impact on soil environment is anticipated.

All necessary control measures will be provided for handling, storage and safe disposal of solid/hazardous waste, which will be generated from the proposed project. Thus, there will not be any significant impact of solid waste on the soil Environment.

6. ECOLOGY

Impacts on terrestrial ecosystem due to the operation of plant occur mainly from air emissions. Air pollutants can impact adversely on the biotic and abiotic components of the ecosystem and may include injurious effects when concentration of these pollutants exceed from permissible limit.

Since the proposed activity will be carried out in proposed unit, so, there will be no adverse impact on the ecological environment of the study area.

The total plot area is 33559.69 Sq. meter. From that Proposed constructed area will be ~ 14109 Sq. meter, Road Area will be 3995.00 Sq. meter, Parking Area will be 580.69 Sq. meter , gardening area will be 11550.00 Sq. meter and Open Area will be 3325.00 Sq. meter .

The company will also develop plantation as per the MoEF guidelines all along the periphery of plant so that these trees perform as natural barrier for bring down the fugitive emission and also stop carryover of dust along with wind current.

7. SOCIO-ECONOMIC ENVIRONMENT

Due to Proposed project, 50 nos. of local peoples and outside peoples will get employment during the construction phase and additional 40 peoples will be employed during the operation phase. The indirect employment will also be generated by way of transportation, shopkeepers and other casual employment for many people. Thus, the

proposed project will have long term- irreversible positive impact on the employment pattern of the study area.

8. ENVIRONMENTAL PARAMETER MONITORING

Environmental parameter monitoring facility of the proposed expansion project is as given below:

S. No.	Aspect	Source of Impact	Monitoring Method and it's Parameters	Frequency	Executing Agency	Monitoring Agency
1.0	**Construction Phase (As the construction area is small so, steel structure will be used in the existing unit, hence the impact will be very less)**					
1.1	Local Manpower Absorption	Construction Work	Contractor's report No. of people working in the project	Daily	Contractor	Ushanti Colour Chem Pvt Ltd.
1.2	Air Quality	transportation of construction materials	Survey & observations; Levels of SPM, RSPM, SO_2 and NO_x	Weekly	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
1.3	Public Health	Dust, Noise, Movement of labours	Regular medical checkup	Monthly	Contractors	Ushanti Colour Chem Pvt Ltd.
2.0	**Operation Phase**					
2.1	Water Quality & Quantity	Surface & Ground water quality within the Project Area	Surveys, sample collection & field measurement;	Quarterly	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
2.2	Effluent Quality	Quality of Treated effluent and ML of centrifuge before spray drying.	ETP sample collection & quality analysis	Daily (Internal); Monthly (Third Party)	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency

S. No.	Aspect	Source of Impact	Monitoring Methods and Parameters	Frequency	Executing Agency	Monitoring Agency
2.3	Air Quality	Emissions from utility and process	Air quality monitoring at 2-3 location within (SO_2, NO_x, SPM, RSPM, CO, HC, HCl, NH_3, VOC) as well as stack monitoring.	Ambient - Monthly (24 hourly); Stack – Monthly (third party)	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
2.4	Noise Level	Noise level compliance with respect to industrial standards	Ambient Equivalent Sound Pressure Levels (Leq) in day and Night time at 4 to 6 location.	Monthly (Third Party) and fortnightly (internal)	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
2.5	Biological Environment	Horticulture/ Greenbelt Development	Survival rate of plants and shrubs	Quarterly	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
2.6	Solid Waste Management	Disposal of waste	Monitoring of waste collection, segregation and disposal	Fortnightly	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
2.7	Hazardous Waste Management	Hazardous waste as required by hazardous waste authorization	Monitoring of hazardous waste collection, segreg ation, storage and disposal	Fortnightly	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
		Generation of used drums, bags and records of their dispatch to approved vendors.	Maintain Records	Daily	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency
		Generation of waste oil and their treatment	Maintain Records	Daily	Ushanti Colour Chem Pvt Ltd.	GPCB/ Recognized Env. Agency

9. ADDITIONAL STUDIES

We have carried out socio-economic study of the study area to evaluate impact of proposed project on them. Since the proposed project is a small scale unit so, it is beneficial to local people.

10. ENVIRONMENTAL MANAGEMENT PLAN

The environmental management plan is the plan for effective environmental management prepared by project proponents. Environmental Management Plan of the company is given in the following table:

Activity	Environmental Impacts	Mitigation measures	Remarks
Construction Phase:			
Erection of Plant Machineries	• Air • Noise • Socio Economic	• Well maintained vehicles will be used. • Metalled Road for Vehicle Movement • Well maintained equipment will be utilized to prevent noise generation. • Local labour will be hired for the work so that housing arrangement will be avoided.	Implementation responsibility: Ushanti Colour Chem Pvt Ltd.

OPERATIONAL PHASE:

M/s. Ushanti Colour Chem Pvt Ltd. has planned all the necessary steps to control Water Pollution, Air Pollution, noise pollution as well as Hazardous Waste Pollution. The detailed mitigation measures planned during operation phase of the project are as follows:

Activity	Environmental Impacts	Mitigation measures	Remarks
Manufacturing of Products	o Air • Land • Water • Noise	• Ensure proper handling of all chemical by introducing spill control procedures. • Ensure usages of PPE's by workers. • Strictly following the appropriate spill control procedures. • The charging of the hazardous chemical will be done through very carefully. • MSDS of Raw material & products will be displayed at storage & handling area. • Water usage will be strictly by putting water meter plant wise. • Monitored data will be analyzed and reviewed time to time. • Contaminated solid waste will be sent to approve TSDF Facilities. • Storage area will be designed in line with the factory Act requirement.	Implementation responsibility: Ushanti Colour Chem Pvt Ltd.

Environmental Management Plan: Operation Phase:

Activity	Environmental Impacts	Mitigation Measures	Remarks
Operation of Boiler, Thermic Fluid Heater	• Air • Noise • Water	• Ensure proper preventive maintenance of fuel firing system and optimization of air fuel ratio. • Ensure proper maintenance of machinery to reduce noise level • After clean up of spillage ensure that disposed it properly. • Provision of Adequate Stack Height. • Ensure usage of Personal Protective Equipments.	Implementation responsibility: Ushanti Colour Chem Pvt Ltd.
Operation of Cooling Tower	• Air • Water • Noise	• Ensure proper maintenance of machinery to reduce noise level • Blow down is being sent in ETP provided within premises	

Environmental Management Plan: Operation Phase

Storage, Handling & Transportation of Raw materials and Products	• Air • Water • Land	• Chemical to be stored in accordance with the rules and regulations of the Safety Department. • Separate storage area for solid/liquid raw materials. • Install proper facilities to prevent rain/storm water contamination during the storage of solid raw materials. • Ensure disposal of used drums, bags as per the rules/regulations.	
Transportation of all the raw materials, finished products & hazardous wastes.	Air Water Land	• Work will be given to Trained / Approved Transports for the transportation of the raw materials/products. • TERMCARD will be followed. • Ensure availability of MSDS of all the raw materials and finished products to the Off-site Emergency team.	
Development and maintenance of green belt	• Air. • Land	Ensure development and maintenance of proper green belt as proposed**.**	
Direct / Indirect Employment	• Socioeconomic issue	Continue policy of local employment according to the skill and availability of the manpower	

CONCLUSION

The study brings out the followings:

- The proposed project will have easy access to basic infrastructure facilities, availability of land, fuel, transportation network, power availability, environmental compatibility and well developed pollution control systems.

- Environmental Impact Assessment shows that proposed project activity will not have any significant impact on existing ambient air quality, ground water quality and noise level.

- Risk to flora, fauna and soil is negligible due to location of project activity and proposed effective environmental management plan for management and handling of air pollution, hazardous wastes and wastewater.

- Additional greenbelt on available open land area will be further more developed within the plant premises; there will be positive impact on the ecological environment of the study area.

- There will be Socio-economic benefits due to creation of direct/indirect employment.

Thus, it is concluded that proposed project of M/s. Ushanti Colour Chem Pvt Ltd. Will have negligible impact on environment and will become beneficial to the local people after implementation of the mitigation measures and environmental management plan.