

**EXECUTIVE SUMMARY OF
ENVIRONMENTAL IMPACT ASSESSMENT REPORT
FOR
EXPANSION IN EXISTING UNIT
OF
M/S. ARBUDA PLASTO CHEM PVT LTD.**

**(S. No. 191,P2/P1, At – Karannagar, Ta – Kadi,
Dist – Mehsana, Gujarat.)**



PREPARED BY

BHAGWATI ENVIRO CARE PVT. LTD.

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

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1. INTRODUCTION

M/s. Arbuda Plastochem Pvt. Ltd. has proposed to expand their manufacturing of chemical unit at S No. Survey no. 191, P-2/P-1, At- Karannagar, Ta –Kadi, Dist: Mehsana, Gujarat. In existing unit they are manufacturing Solvent yellow 33, solvent yellow 18 & solvent yellow 72 @2.5 MT /M. Now they are going to do expansion from 2.5 MT /M to 52.5 MT /M.

The Proposed expansion activity falls under Category “A” of EIA Notification issued in September – 2006. For that unit needs Environmental clearance from Ministry of Environment & Forest.

The total plot area is 4167 Sq. meter. From that existing constructed area is ~ 1500 Sq. meter. For proposed expansion, ~ 700 Sq. meters will be used for Installation of plant machineries, storage of raw material and Products. So, after expansion remaining open area will be 1666 Sq. meters. From that 1250 Sq. meter area is used for plantaion & Gardening purpose.

2. DETAILS OF PRODUCTS

Table: 01
Product Details

No.	Name of Product	Quantity in MT /M		
		Existing	Proposed	Total
1.	Solvent Yellow 33	2.0	20	22.0
2.	Solvent Yellow 93	0.0		
3.	Solvent Yellow 14	0.0	10	10.50
4.	Solvent Yellow 18	0.25		
5.	Solvent Yellow 43	0.0		
6.	Solvent Yellow 72	0.25		
7.	Solvent Yellow 163	0.0		
8.	Solvent Red 24	0.0		
9.	Acid Yellow 3	0.0	10	10
10.	Acid Yellow 17	0.0		
11.	Acid Yellow 42	0.0	10	10
12.	Acid Yellow 49	0.0		
13.	Acid Yellow 110	0.0		
	Total	2.5	50	52.5



3. WATER CONSUMPTION & WASTEWATER GENERATION/ DISPOSAL

Table: 02
Water Consumption and Wastewater generation

Water Consumption (Lit/Day)			Wastewater generation (Lit/Day)				
	Existing	Proposed	Total After Expansion		Existing	Proposed	Total after Expansion
Domestic	1000	1000	2000	Domestic	750	750	1500
Industrial				Industrial			
Process	800	900	1700	Process	500	2500	3000
Washing	100	600	700	Washing	100	600	700
Boiler	100	1000	1100	Boiler	50	100	150
Cooling	100	500	600	Cooling	Nil	100	100
Total	2100	4000	6100	Total	1400	4050	5450

- In process Ice will be used @ 3600 Kgs / Day. Due to that the process effluent qty. is higher than the process water consumption.

Table: 03
Mode of Disposal and Treatment

Sr. No.	Source	Quantity and mode of disposal
1.	Domestic sewage	Domestic effluent @ 1500 Liter / day will be disposed off through septic tank / soak pit system.
2.	Industrial wastewater	<ol style="list-style-type: none"> 1. The Industrial wastewater generated 3950 Liter / day will be treated in Effluent treatment plant having primary treatment unit. 2. Treated effluent will be discharged to CETP, Kalol after obtaining prescribed norms.

3. **DETAILS OF AIR EMISSION**

Table: 04
Flue Gas Stack Details

No.	Stack attached To	Stack Height (Meter)	Stack Diameter (Inch)	APC Measures	Pollutants		
					SPM Mg/NM ³	SO ₂ ppm	NO _x ppm
1.	Non IBR steam boiler	14	10	----	< 150 mg/NM ³	< 100 ppm	< 50 ppm
2.	Thermic Fluid Heater 2 lacs kcal/hr	11	12	----			
3.	Hot air generator 0.5 lacs kcal/hr	10	8	----			

Process Gas Stack Details:

There will be no process gas emission from our existing as well as proposed manufacturing activity.

Table: 05
Fuel Details

Sr.No	Name of Fuel	Quantity		Total after expansion
		Existing	Proposed	
1	Wood	60 Kg/Hr	65 Kg/Hr	125 Kg /Hr
2	Gas	25 M ³ /Hr	35 M ³ /Hr	60 M ³ /Day

4. **DETAILS OF HAZARDOUS WASTE GENERATION & ITS MANAGEMENT**

TABLE: 06
DETAILS OF HAZARDOUS WASTE GENERATION & ITS MANAGEMENT

No.	Type of Waste with Category No.	Qty.			Source of Generation	Collection	Treatment	Storage	Disposal/ Management
		Existing	Proposed	Total After Expansion					
1.	Distillation Residue (cat no:36.4)	0.480 MT/Yr	4.520 MT/Yr	5.0 MT/Yr	Distillation	H.D.P.E. bag	---	Solid waste storage area	Collection, Storage, Transportation & Disposal at CHWIF
2	Used oil (cat. No:5.1)	60 Lit/Yr	20 Lit/Yr	80 Lit/Yr	Lubrication of plant machineries	H.D.P.E. Carboys	---	Solid waste storage area	Use for lubrication of plant machineries or Sell to registered recycler
3	Discarded bags/drums (cat. No: 33.3)	600 Nos /Yr	900 Nos /Yr	1500 Nos /Yr	Raw material section	---	---	Solid waste storage area	Used for packing of ETP waste / Return back to raw material supplier
4	Process waste/residue (cat.no. 26.1)	0.720 MT/Yr	12.0 MT/Yr	12.720 MT/Yr	Process	H.D.P.E. Bags	-----	Solid waste storage area	Collection, Storage, Transportation & Disposal at T.S.D.F. site
5	ETP waste (cat no: 34.3)	---	12 MT /Yr	12 MT /Yr	Waste water Treatment	H.D.P.E. Bags	Natural Drying	Solid waste storage area	Collection, Storage, Transportation & Disposal at T.S.D.F. site

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 06 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 06 location for once in the study period. The monitoring activities were carried out at 06 sampling sites for the Month of January 2014 – March 2014.

2. AIR ENVIRONMENT

Baseline study indicates that AAQ in the surrounding study area with respect to PM_{2.5}, PM₁₀, SO₂, NO_x, 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 January 2014 – March 2014 season of the ambient air it indicates that due to establishment of proposed expansion project of M/s. Arbuda Plastochem 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 wood and natural Gas as a fuel. There will be no process gas emission from the existing as well as proposed manufacturing activity.

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

3. WATER ENVIRONMENT

Existing Bore well is a main source of water for the project. Base line data reveal that, the ground water quality is meeting with Drinking Water standards. The company proposes to use existing Bore well as source of water for both domestic as well as Industrial purpose.

After expansion total water consumption will be 6.100 KL/Day. From that the Domestic water consumption will be 2.0 KL/Day. The Industrial water consumption will be 4.1 KL/Day. After expansion total wastewater generation will be 5.450 KL/Day. From that 1.5 KL/Day Domestic wastewater will goes to soak pit via septic tank. The Industrial wastewater generated 3.950 KL/Day will be treated in Effluent treatment plant having primary and tertiary treatment unit. Treated effluent will be discharged to CETP, Kalol after obtaining prescribed norms.

It is concluded that due to discharge into CETP, Kalol, 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 expansion 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 expansion 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 sent to CETP, Kalol. 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 expansion 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 expansion activity will be carried out in existing unit, so, there will be no adverse impact on the ecological environment of the study area.

The total plot area is 4167 Sq. meter. From that existing constructed area is ~ 1500 Sq. meter. For proposed expansion, ~ 700 Sq. meter will be used for Installation of plant machineries, storage of raw material and Products. So, after expansion remaining open area will be 1666 Sq. meters. From that 1250 Sq. meter area is used for plantation & Gardening purpose.



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

The proposed expansion project will generate direct employment for 20 persons. The indirect employment will also be generated by way of transportation, shopkeepers and other casual employment for many people. Thus, the proposed expansion 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	Arbuda Plastochem Pvt. Ltd.
1.2	Air Quality	transportation of construction materials	Survey & observations; Levels of SPM, RSPM, SO ₂ and NO _x	Weekly	Arbuda Plastochem Pvt. Ltd.	GPCB/ Recognized Env. Agency
1.3	Public Health	Dust, Noise, Movement of labours	Regular medical checkup	Monthly	Contractors	Arbuda Plastochem 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	Arbuda Plastochem Pvt. Ltd.	GPCB/ Recognized Env. Agency
2.2	Effluent Quality	Quality of Treated effluent and discharge to CETP, Kalol.	ETP sample collection & quality analysis	Daily (Internal); Monthly (Third Party)	Arbuda Plastochem 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, VOC) as well as stack monitoring.	Ambient - Monthly (24 hourly); Stack – Monthly (third party)	Arbuda Plastochem 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)	Arbuda Plastochem Pvt. Ltd.	GPCB/ Recognized Env. Agency
2.5	Biological Environment	Horticulture/ Greenbelt Development	Survival rate of plants and shrubs	Quarterly	Arbuda Plastochem Pvt. Ltd.	GPCB/ Recognized Env. Agency
2.6	Solid Waste Management	Disposal of waste	Monitoring of waste collection, segregation and disposal	Fortnightly	Arbuda Plastochem Pvt. Ltd.	GPCB/ Recognized Env. Agency
2.7	Hazardous Waste Management	Hazardous waste as required by hazardous waste authorization	Monitoring of hazardous waste collection, segregation, storage and disposal	Fortnightly	Arbuda Plastochem Pvt. Ltd.	GPCB/ Recognized Env. Agency
		Generation of used drums, bags and records of their dispatch to approved vendors.	Maintain Records	Daily	Arbuda Plastochem Pvt. Ltd.	GPCB/ Recognized Env. Agency
		Generation of waste oil and their treatment	Maintain Records	Daily	Arbuda Plastochem 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 expansion project on them. Since the proposed expansion 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 Machineris	<ul style="list-style-type: none"> • Air • Noise • Socio Economic 	<ul style="list-style-type: none"> • 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: Arbuda Plastochem Pvt. Ltd.

OPERATIONAL PHASE:

M/s. Arbuda Plastochem 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	<ul style="list-style-type: none"> ○ Air • Land • Water • Noise 	<ul style="list-style-type: none"> • 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: Arbuda Plastochem Pvt. Ltd.

Environmental Management Plan: Operation Phase:

Activity	Environmental Impacts	Mitigation Measures	Remarks
Operation of Boiler	<ul style="list-style-type: none"> • Air • Noise • Water 	<ul style="list-style-type: none"> • 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: Arbuda Plastochem Pvt. Ltd.
Operation of Cooling Tower	<ul style="list-style-type: none"> • Air • Water • Noise 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Air • Water • Land 	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> Air • Water • Land 	<ul style="list-style-type: none"> • Work will be given to Trained/Approved Transports for the transportation of the raw materials/products. • TERM CARD 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	<ul style="list-style-type: none"> • Air • Land 	Ensure development and maintenance of proper green belt as proposed.	
Direct / Indirect Employment	<ul style="list-style-type: none"> • 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 expansion 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 expansion 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 expansion project of M/s. Arbuda Plastochem 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.

