# Comprehensive Environmental Pollution Abatement Action Plan Junagadh Industrial Cluster - Gujarat

**Gujarat Pollution Control Board**
**Gandhinagar**
**2010**

# INDEX

# FOREWORD

Need of action plan is justified to control pollution in any area where pollution sources are identified, pollutants are measured, assessed and found exceeding permissible limits. To implement such action plans is a duty of any SPCB and all concerned agencies/stakeholders.

After declaration of critically polluted areas by OMs dated 13.1.2010 and 15.3.2010 of MoEF, GOI and imposing temporary moratorium for a period upto August 2010, the action plans for these specified areas (industrial clusters) are desired by the CPCB and MoEF, GOI.

In Gujarat, six areas – Ankleshwar, Vapi, Ahmedabad, Vatva, Bhavnagar and Junagadh – are identified by above OMs as critically polluted. GPCB started quick actions, expanded its infrastructure, decided and declared main points to control pollution at source, prepared action plans including these points and finalized the same in consultation with main stakeholders and issued necessary directions. These action plans were sent to MoEF on 19.4.2010. Meanwhile, by letters dated 19.4.2010 and 18.5.2010, CPCB suggested TOR to make the action plans. Accordingly the action plans are revised.

Consultative meetings were held with various stakeholders including the industries associations, CETP/TSDF operators, NGOs, CPCB and GIDC authorities, who have helped to improve the action plans.

We are thankful to the CPCB and MoEF to have recognized the wholehearted efforts by GPCB team, DoEF, GIDC, VW&EMCL industries of Vapi and all other concerned.

We are hopeful that this will serve the purpose and help various agencies/ authorities to implement and monitor the Action Plans for the six industrial clusters/ areas of the state.

We are also hopeful that the implementation of these Action Plans would bring in the positive results in other clusters also.

Place: Gandhinagar — Dr.K.U.Mistry

Date: 30-10-2010 — Chairman, GPCB

**COMPREHENSIVE ENVIRONMENTAL POLLUTION ABATEMENT ACTION PLAN FOR JUNAGADH CLUSTERS (GUJARAT)**

# 1. INTRODUCTION

## 1.1. Area Details including brief history (background information)

### 1.1.1. The Junagadh District

Junagadh Industrial Cluster encompassing Industrial area-8782.07 sq. Km. It is located on 20.44 – 21.40 North latitude and 69.4-71.05 East longitude. Current district existence came from dated 19-4-1949 by merger of Junagadh and surrounding Deshi Rajawada. In these Rajawada's Junagadh, Manavadar, Mangrol, Bantva, Sardargadh were prominent. Total area of this district as per new district division is 8782.07 sq. KM. It is made of 14 talukas. This is hilly mountains region with dense forest and in south west it is covered by Arabian sea. Thus, this district is endowed by natural wealth like Gir Forest, mountainous region, wide grounds and through it flowing rivers & beautified by water falls. This district is famous for its animal king (Vanraj) lions. There is a different attraction for foreign tourist, Junagadh city and Girnar mountains have historical and religious importants, Sovereign king Ashok during his time in that language which is known as "Ashok Shilalekh", though Archeological department, it is maintained and kept. Besides these, Narsinh Mehta's varenda/choro/otlo, Bhavnath mahadevs ancient temple,Mrugi Kund,Damodar Kund, Jain Dera,Ambaji Mataji temple and Gorakhnath Tunks & other tunks etc are having their special and own ancient important located on "Girnar Parvat". .Famous all over India, Somnath Mahadev's Mandir is one among the 12 Jyotirlings, which has religious and historical importantance, is available in Junagadh district of Gujarat. This district is made up of total 915 villages . The region's climate is hot –dry & coastal area with humidity. Agricultural University located in the Junagadh.

### 1.1.2. The identified critically polluted industrial clusters in Junagadh District

The Junagadh industrial development is installed in four clusters viz. GIDC–1, GIDC–2, other industrial estate as Jay Bhavani & Jay Bhuvneshwari adjoining to GIDC- 2 and some units located in private survey numbers of Sabalpur village. These clusters have been listed with score Air CEPI 53.25, Water CEPI 52.50 and Land CEPI 59.50 with ranking 41 in the report with overall CEPI as 70.82.

The salient features of these clusters are as below:

| Name of Estate | Area in square meter | Date of establish ment | Total plot/shed | Distance from Central Bus - Stand |
|---|---|---|---|---|
| GIDC-1 (Dolatpara) | 142900 | 1962 | 152 | 3.8 Km |
| GIDC-2 (Sabalpur) | 858900 | 1986-87 | 538 | 5.3 Km |
| Jay Bhavani Industrial Estate, | 70314 | 31-7-87 | 65 | 5.7 Km |

| | | | | |
|---|---|---|---|---|
| (Sabalpur) | | | | |
| Jay Bhuvneshwari Industrial Estate (Sabalpur) | 67380 | 2-12-89 | 32 | 6.7 Km |

## 1.2. Location

These clusters currently fall under Municipal Corporation Limits.

- GIDC Junagadh (I & II) (I-Dolatpara, II-Sabalpur),
- Jay Bhavani Industrial Estate,
- Jay Bhuvneshwari Industrial Estate
- Sabalpur areas industrial cluster, Junagadh, Gujarat

## 1.3. Digitized Map with Demarcation of Geographical Boundaries and Impact Zones

Digitized Map with Demarcation of Geographical Boundaries and Impact Zones is attached as **Annexure – 5**

## 1.4. CEPI Score (Air, Water, Land and Total)

| **Industrial Cluster / Area** | **Air** | **Water** | **Land** | **CEPI** |
|---|---|---|---|---|
| Junagadh Clusters | **53.25** | **52.50** | **59.5** | **70.82** |

Ranking 41 in the report with overall CEPI as 70.82.

## 1.5. Total population and sensitive receptors (hospitals, educational institutions, courts etc) residing in the area comprising geographical area of the cluster and its impact zone (minimum 2 km) and health impact related data

- Total Population of Junagadh city – 308038,
- Two main villages are falling under these regions which are Sabalpur and Dolatapara.
- In Sabalpur : Approx 2400 persons
- In Dolatpara : Approx 3500 with total no. of House hold 440 Nos. and Dolatpara having 680 Nos. of dwelling resident..
- **There are no major sensitive receptors like hospitals, schools, temples, religious monuments or ecologically sensitive locations in immediate vicinity of these industrial clusters. However, the major hospitals, schools, are located within the 5 Km peripheral area in Junagadh city.**

**Health Impact Related Data**

As per the information available from the office of the CDHO of District Panchayat Office, Junagadh and office of the National Institute of occupational health, Ahmedabad, they have stated that no incidence of death due to pollution or occupational disease or poisoning is recorded in their office. ESI dispensary are provided in industrial cluster.

## 1.6. Eco-geological features Impact Zones [the area comprising of geographical area of the cluster and its impact zone (minimum 2 km)]

### 1.6.1 Major Water Bodies (Rivers, Lakes, ponds, etc.)

There is river Lol passing through the Sabalpur area, which is nonperennial.

Urban River and Gudajali River is passing through the village Sabalpur. This river is non Perennial River. Sudarshan Talav and Narshih Talav exist within the region and also Sonrakhi stream, Hasnapur Dam and Willingdon Dam are constructed within the region.

### 1.6.2 Ecological parks, Sanctuaries, flora and fauna or any eco sensitive zones

Girnar Sanctuary and Forest situated within 5 KM distance.

### 1.6.3 Buildings or Monuments of Historical/archaeological/religious importance

Various places of religious as well as historical importance are situated within 5 km from these clusters.

## 1.7. Industry classification and distribution (no. of industries per 10 sq. km area or fraction)

### 1.7.1 Highly Polluting industries (17 categories)

| Cluster | No. |
|---|---|
| Sabalpur Area | 1 |
| GIDC_I | 1 |
| GIDC_II | 0 |
| JayBhavani Estate | 1 |
| Jay Bhuvneshwari Estate | 1 |
| Total | 4 |

### 1.7.2 Red category industries (54 categories)

| Cluster | Small | Medium | Large | Total |
|---|---|---|---|---|
| Sabalpur Area | 4 | 0 | 0 | 4 |
| GIDC_I | 0 | 0 | 0 | 0 |
| GIDC_II | 10 | 0 | 0 | 10 |
| JayBhavani Estate | 0 | 0 | 0 | 0 |
| Jay Bhuneshwari Estate | 0 | 0 | 0 | 0 |
| TOTAL | 14 | 0 | 0 | 14 |

### 1.7.3 Orange and Green category industries

**Orange Category**

| Cluster | Small | Medium | Large | Total |
|---|---|---|---|---|
| Sabalpur Area | 2 | 0 | 0 | 2 |
| GIDC_I | 1 | 0 | 0 | 1 |
| GIDC_II | 4 | 0 | 0 | 4 |
| JayBhavani Estate | 0 | 0 | 0 | 0 |
| Jay Bhuneshwari Estate | 0 | 0 | 0 | 0 |
| TOTAL | 7 | 0 | 0 | 7 |

**Green Category**

| Cluster | Small | Medium | Large | Total |
|---|---|---|---|---|
| Sabalpur Area | 9 | 0 | 0 | 9 |
| GIDC_I | 4 | 0 | 0 | 4 |
| GIDC_II | 11 | 0 | 0 | 11 |
| JayBhavani Estate | 3 | 0 | 0 | 3 |
| Jay Bhuneshwari Estate | 9 | 0 | 0 | 9 |
| TOTAL | 36 | 0 | 0 | 36 |

### 1.7.4 Grossly polluting industries

There are no grossly polluting industries in the area which are directly discharging effluent into River with high COD concentration or on land for plantation.

## 2. WATER ENVIRONMENT

### 2.1 Present status of water environment

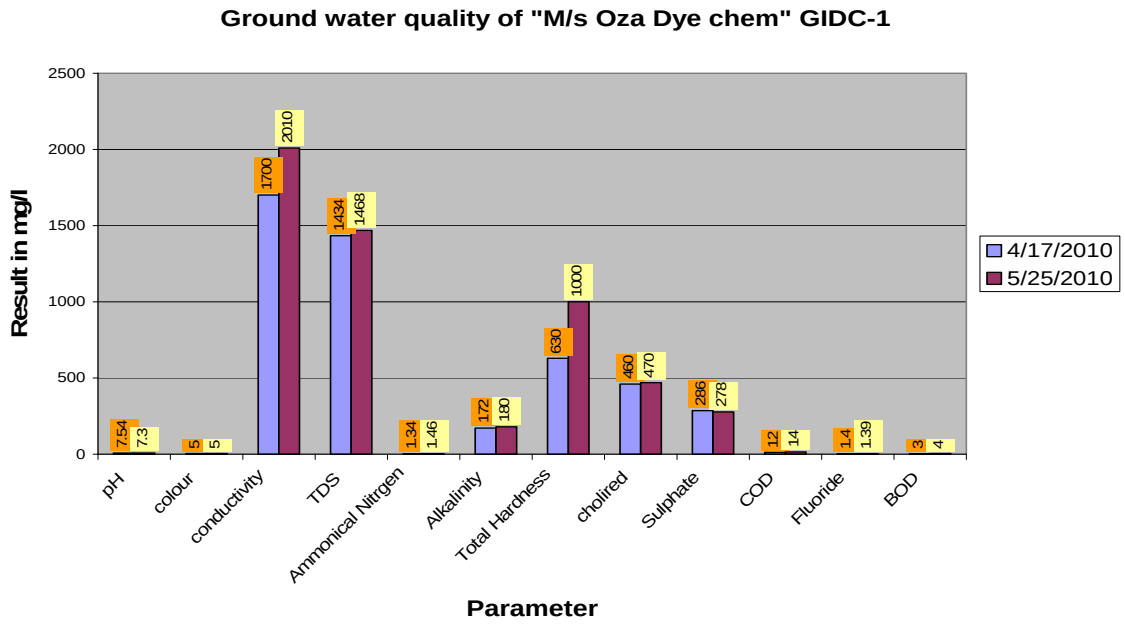
### 2.1.1 Water bodies / effluent receiving drains in the area important for water quality monitoring :

No any direct discharge by any units in to the river, most of the units are zero discharge units & the rest are reusing after treatment for plantation purpose. The one year analytical data of the samples collected from the bore wells within the clusters are as under which reflects the present water environment.

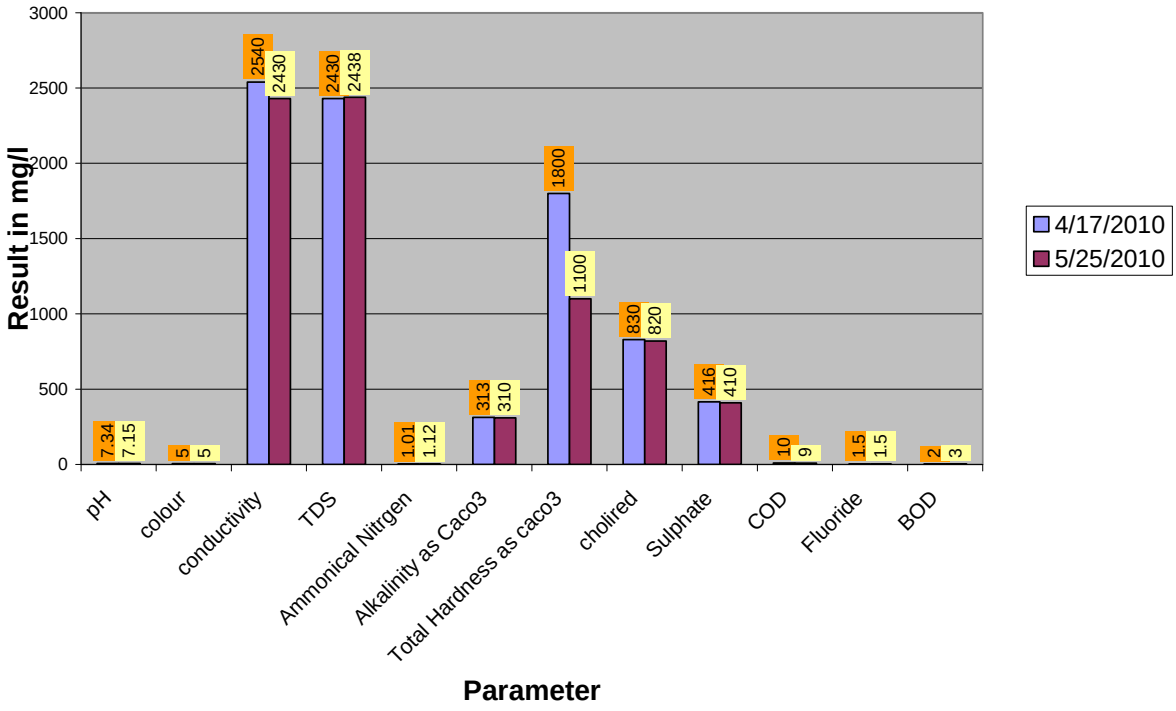
The competitive analytical statement is as **Annexure-2**

### 2.1.2 Present levels of pollutants in water bodies / effluent receiving drains / ground water

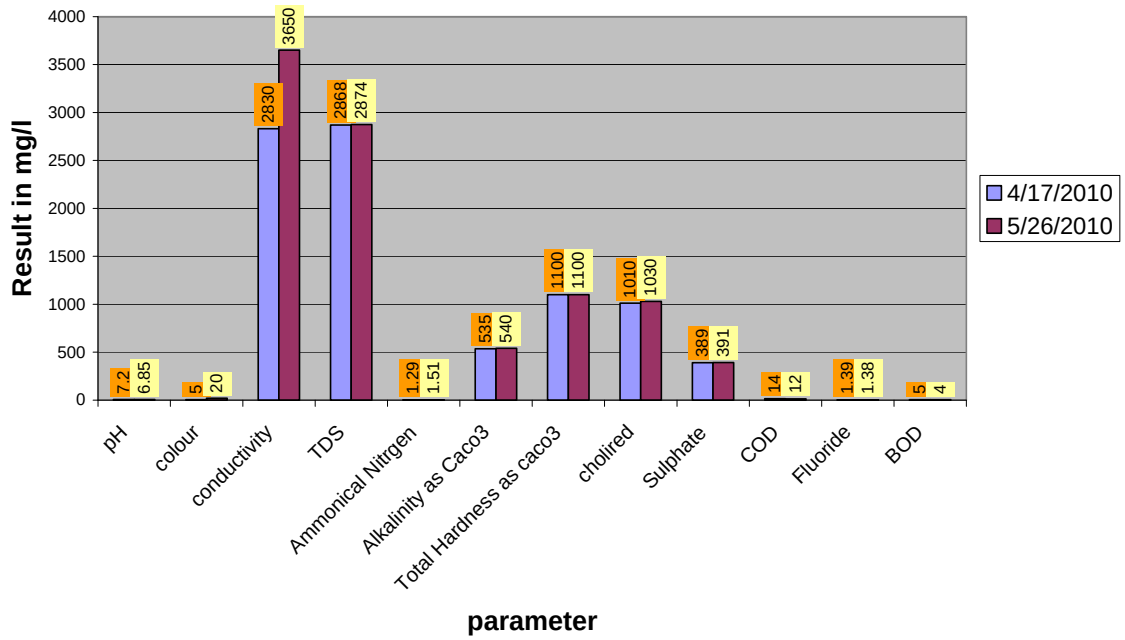
The competitive analytical statement of ground water samples are as **Annexure-2.** The Graphical data are as under:



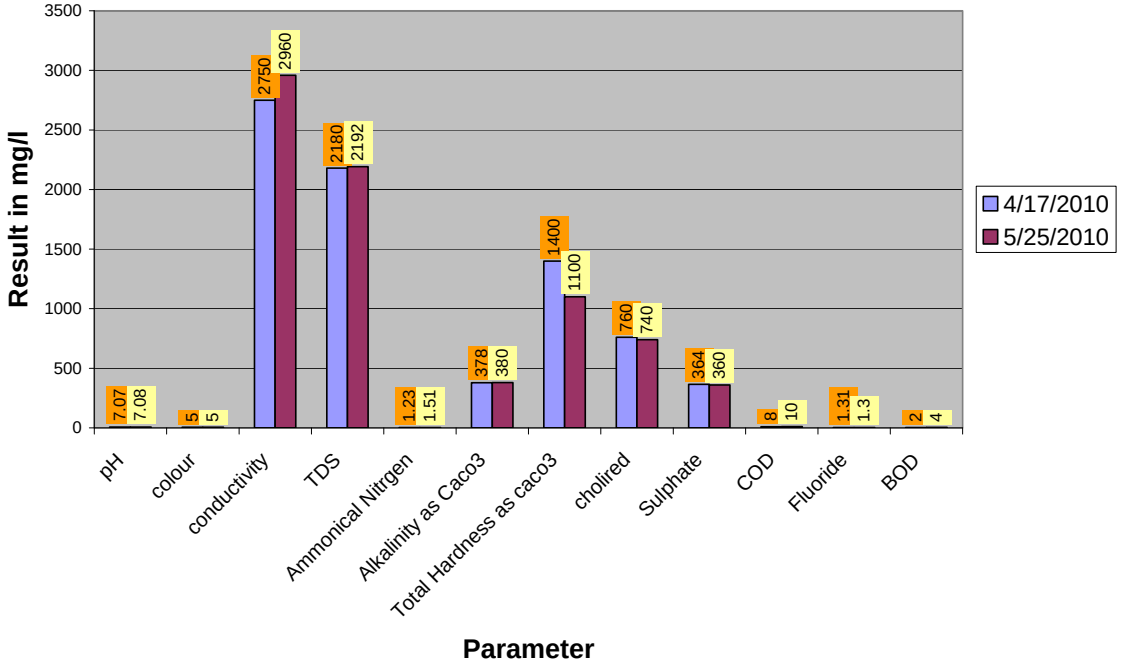
## Ground water quality of "M/s Kohinoor Assesories (GIDC-II)



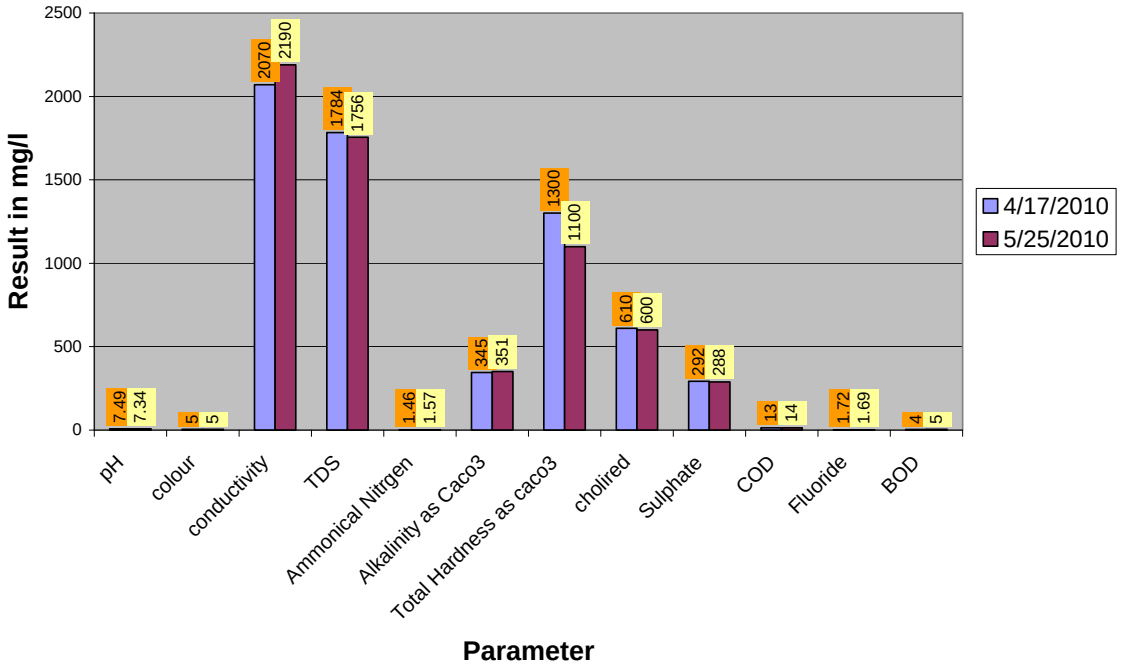

## Ground water quality of "M/sAjanta Chemicals" (Jay Bhuvneshwari Ind. Estate )



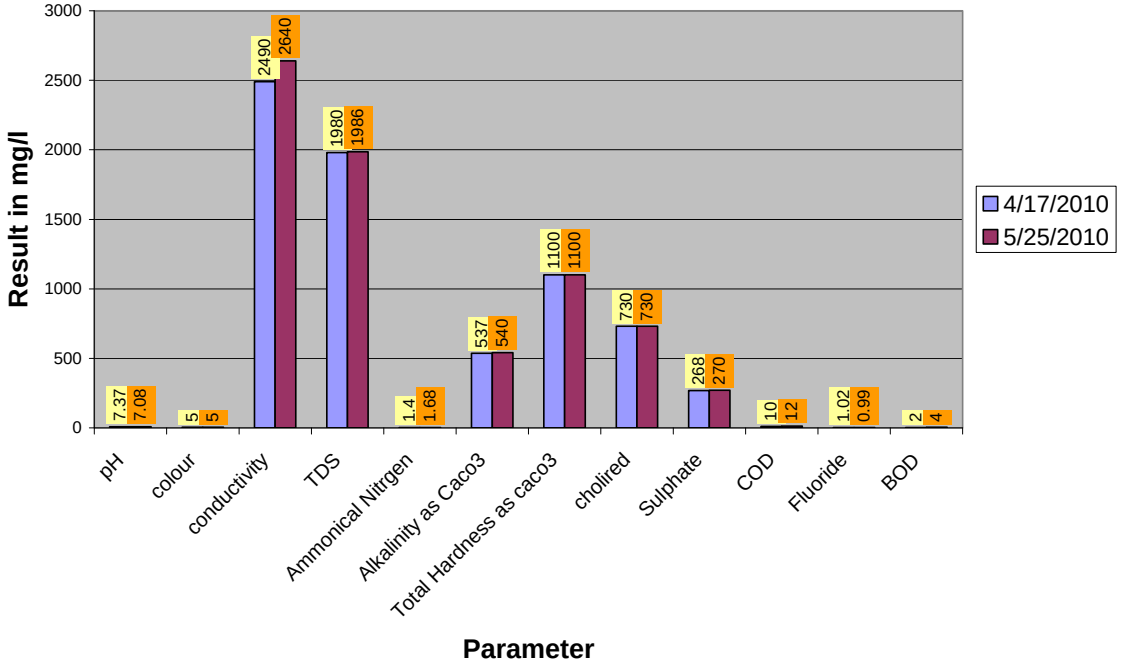
## Ground water quality of "M/s Diamon Industries" (GIDC-II)



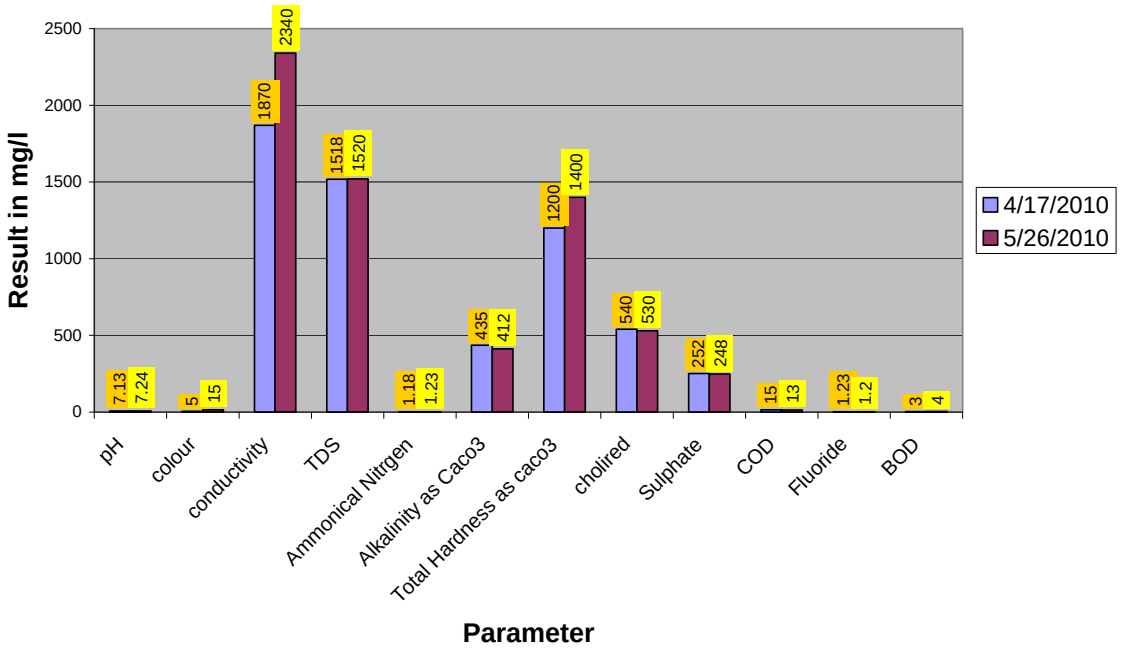

## Ground water quality of "M/s Creative Casting Ltd." (GIDC-II)

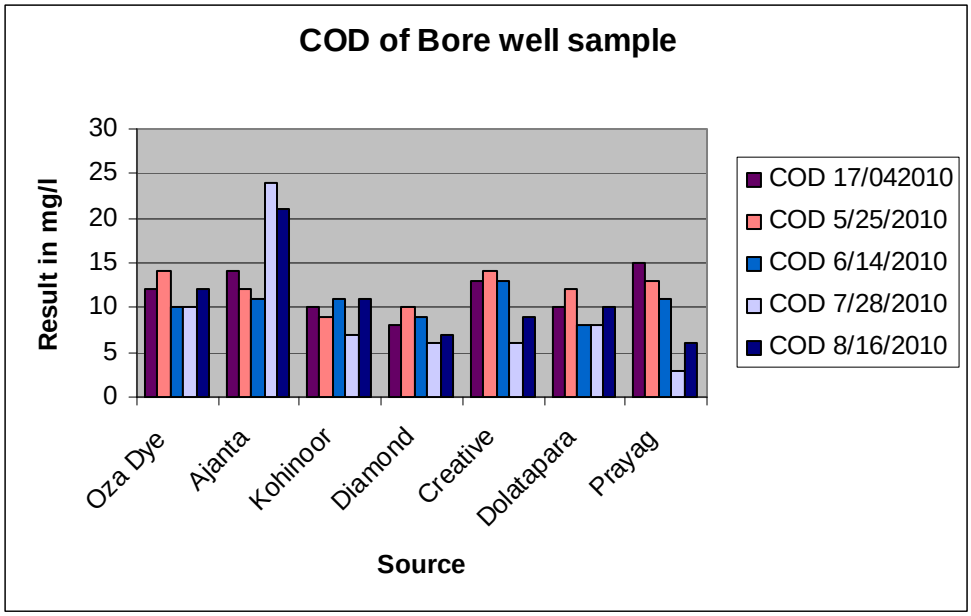


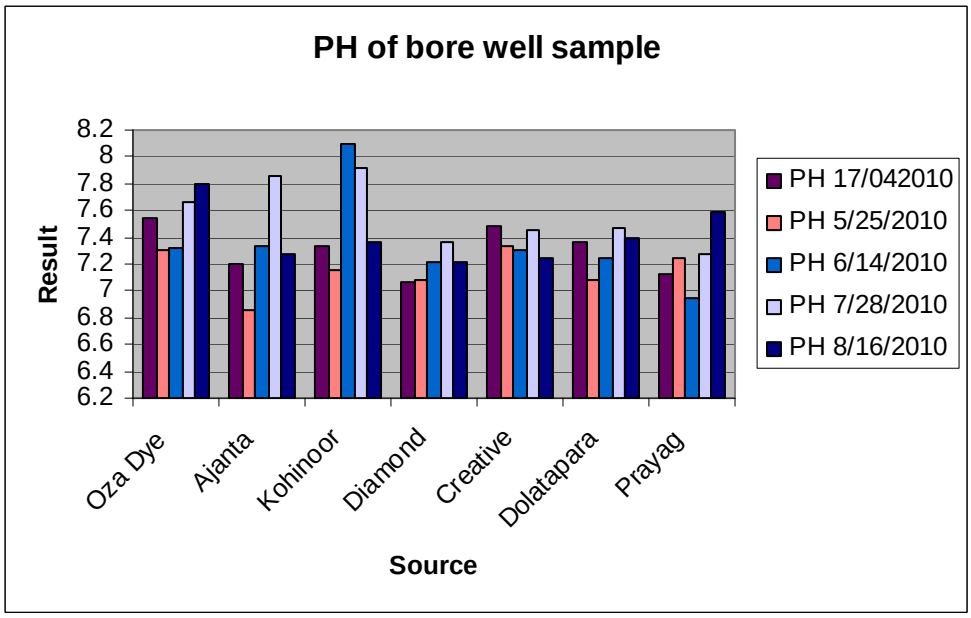
**Ground water quality of "Village Dolatpara"**

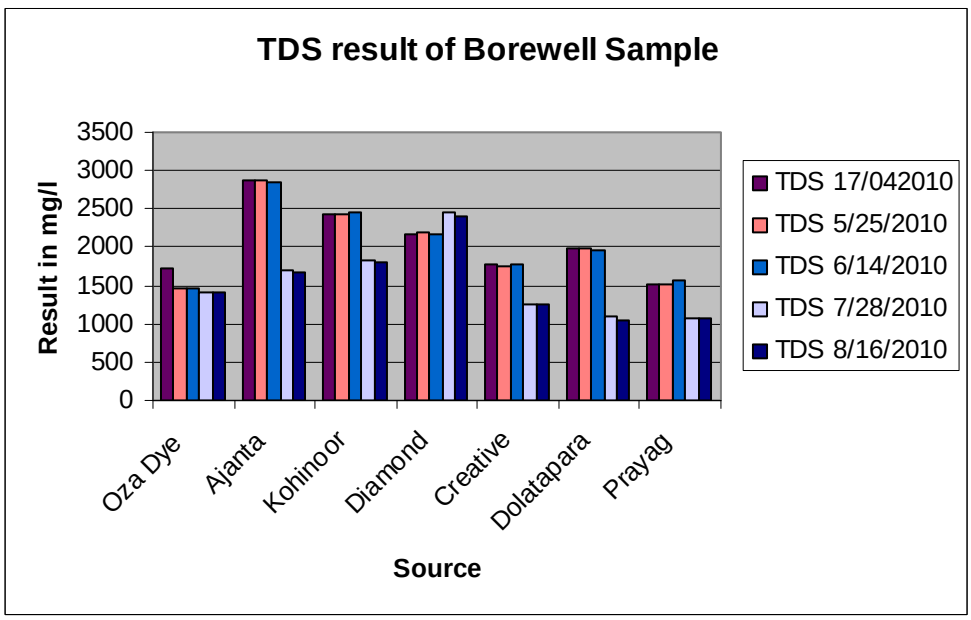


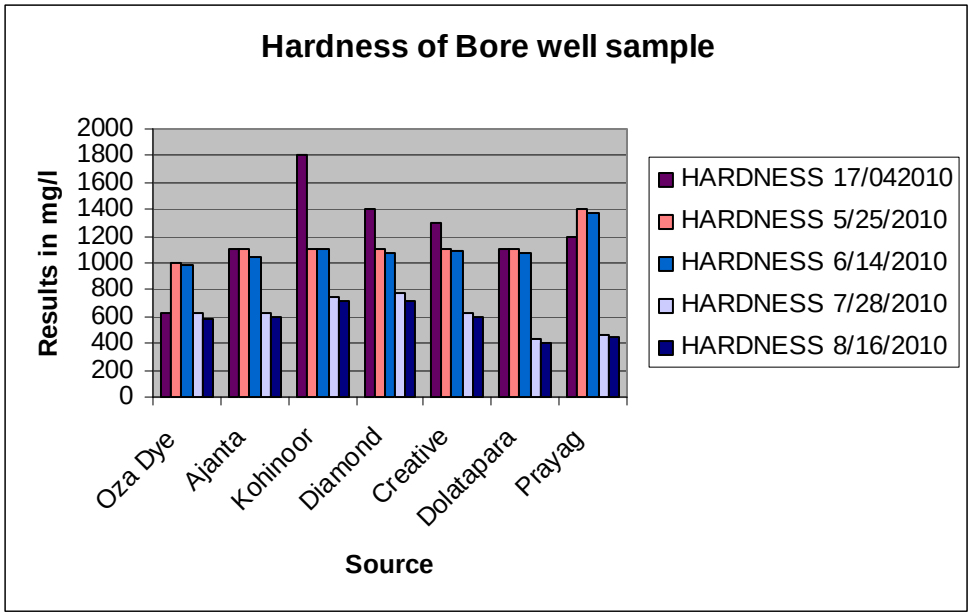

**Ground water quality of "M/s Prayag Proteins ind." (Jay Bhavani Ind. Estate, Sabalpur)**

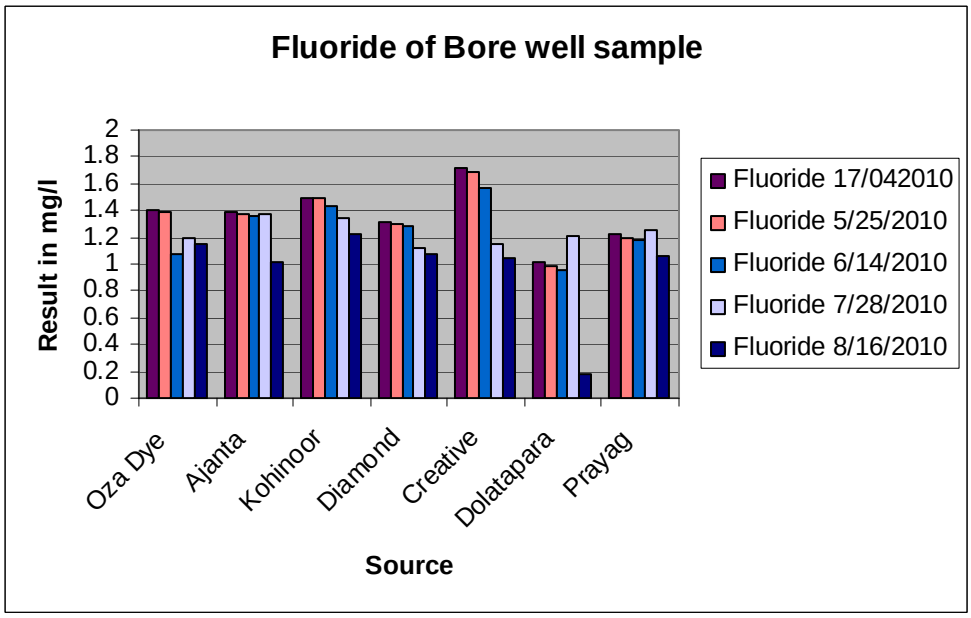


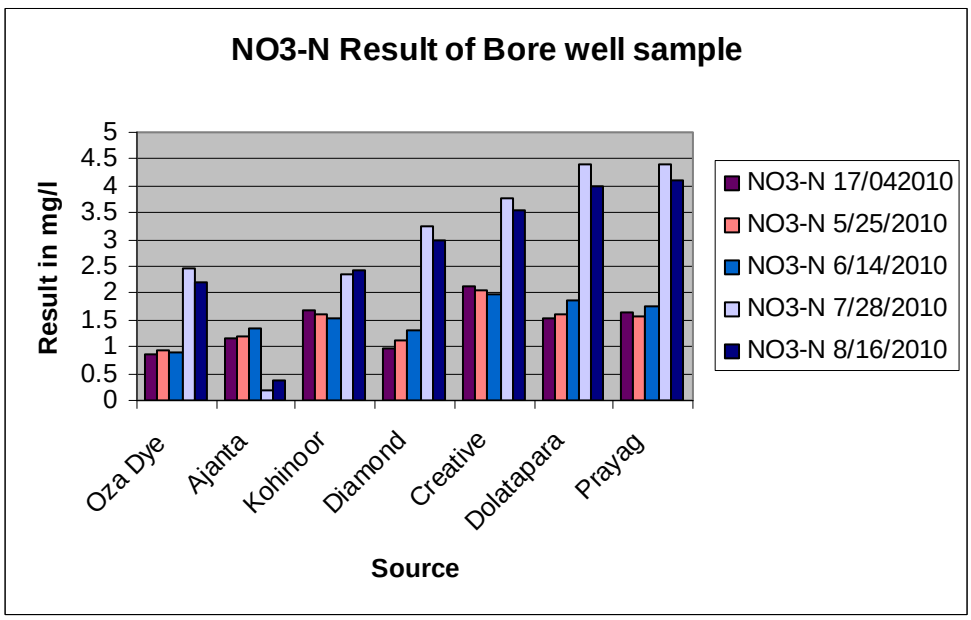

COD of Bore well sample
Result in mg/l
30
25
20
15
10
5
0
Oza Dye
Ajanta
Kohinoor
Diamond
Creative
Dolatapara
Prayag
Source
COD 17/042010
COD 5/25/2010
COD 6/14/2010
COD 7/28/2010
COD 8/16/2010

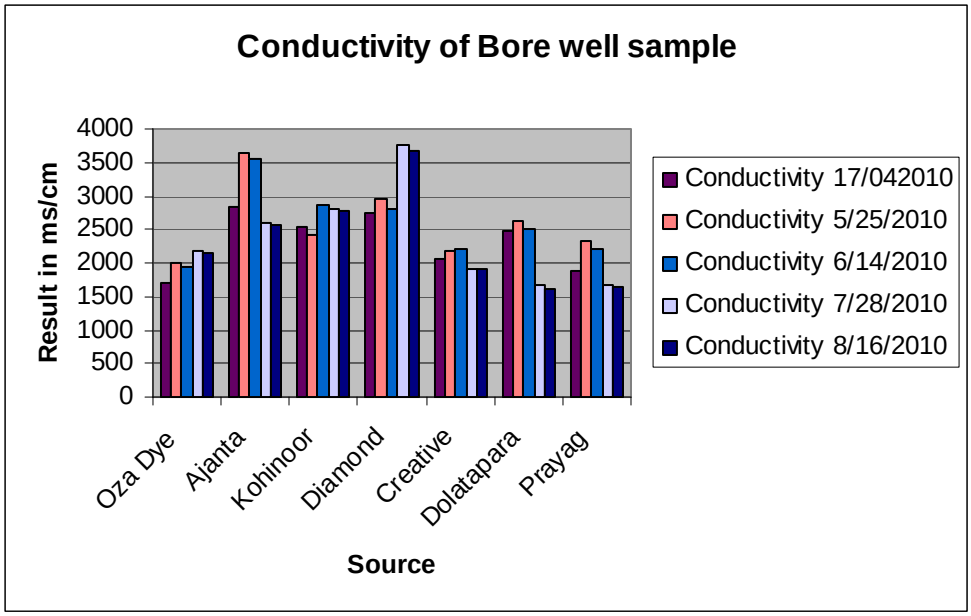

PH of bore well sample
Result
8.2
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
Oza Dye
Ajanta
Kohinoor
Diamond
Creative
Dolatapara
Prayag
Source
PH 17/042010
PH 5/25/2010
PH 6/14/2010
PH 7/28/2010
PH 8/16/2010

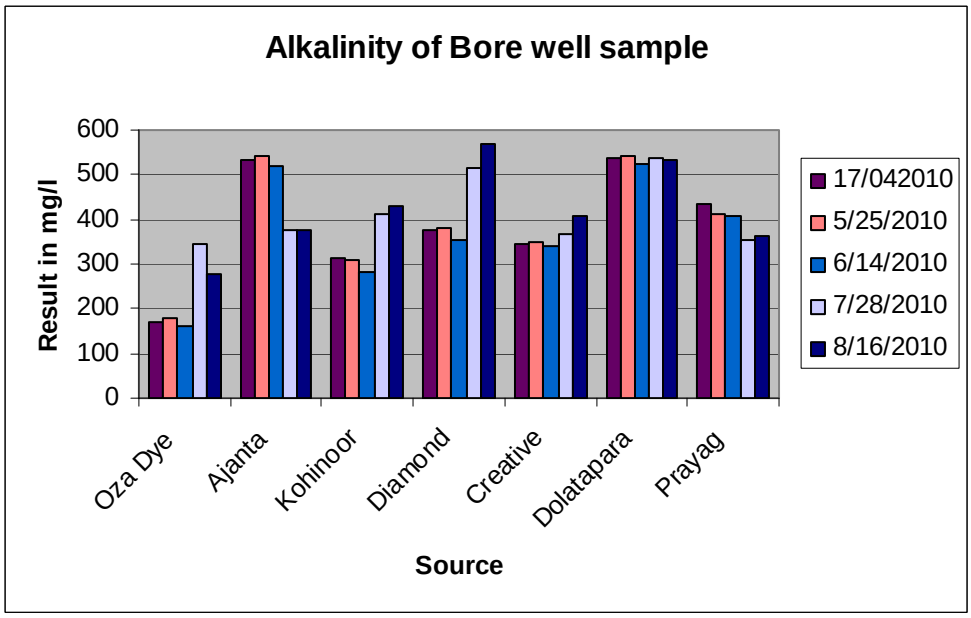

TDS result of Borewell Sample
Result in mg/l
3500
3000
2500
2000
1500
1000
500
0
Oza Dye
Ajanta
Kohinoor
Diamond
Creative
Dolatapara
Prayag
Source
TDS 17/042010
TDS 5/25/2010
TDS 6/14/2010
TDS 7/28/2010
TDS 8/16/2010


Hardness of Bore well sample
Results in mg/l
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Oza Dye
Ajanta
Kohinoor
Diamond
Creative
Dolatapara
Prayag
Source
HARDNESS 17/042010
HARDNESS 5/25/2010
HARDNESS 6/14/2010
HARDNESS 7/28/2010
HARDNESS 8/16/2010


Fluoride of Bore well sample
Result in mg/l
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Oza Dye
Ajanta
Kohinoor
Diamond
Creative
Dolatapara
Prayag
Source
Fluoride 17/042010
Fluoride 5/25/2010
Fluoride 6/14/2010
Fluoride 7/28/2010
Fluoride 8/16/2010


NO3-N Result of Bore well sample
Result in mg/l
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Oza Dye
Ajanta
Kohinoor
Diamond
Creative
Dolatapara
Prayag
Source
NO3-N 17/042010
NO3-N 5/25/2010
NO3-N 6/14/2010
NO3-N 7/28/2010
NO3-N 8/16/2010




### 2.1.3 Predominant sources contributing to various pollutants

The predominant sources of water pollution in Junagadh cluster is the illegal wastewater discharge problem which is mainly due to washing of used empty plastic bags (mainly of cement & lime) by plastic lumps manufacturing small scale units falling under green category in the area.

Only small scale units are situated in these clusters. And most of units are zero discharge units which discharge their only domestic w/w in septic tank/ soak pit system. And remaining units are reusing the w/w for plantation purpose. One Dye intermediates unit has its own incinerator.

## 2.2 Sources of Water Pollution

### 2.2.1 Industrial

Sabalpur Area Effluent Generation from industrial operations: **63.6 KLD**

GIDC-1 Effluent Generation from industrial operations: **0.0 KLD**
GIDC-2 Effluent Generation from industrial operations: **4.5 KLD**
Jay Bhavani Estate Effluent Generation from industrial operations: **3.8 KLD**
Jay Bhuvneshwari Estate Effluent Generation from industrial operations: **12.6 KLD**
**TOTAL: 84.5 KLD**

### 2.2.2 Domestic

The industrial domestic waste water is disposed into soak pits within premises. The domestic sewage from residential societies within the area and from the surrounding areas is disposed off into soak pits/septic tank and the quantity of the same is about 50.85 KLD.

### 2.2.3 Others (Agricultural runoff, leachate from MSW dump, illegal dump site etc.)

There is no such source of water pollution from the area since there is no Agricultural runoff or MSW dump site within the area.

### 2.2.4 Impact on surrounding area (outside the CEPI Area) on the water courses/ drainage system of the area under consideration.

Due to the percolation of treated waste water by on-land irrigation as well as illegal discharge from Plastic lumps manufacturing small scale units, the under ground strata may be directly or indirectly affected.

## 2.3 Details of water polluting industries in the area / cluster

In this area all are small scale units. The details of waste water generation units are as under:

**Sabalpur Area**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 5 | 0 | 0 | 5 |
| Orange | 2 | 0 | 0 | 2 |
| Green | 0 | 0 | 0 | 0 |
| Total | 7 | 0 | 0 | 7 |

**GIDC-1**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 1 | 0 | 0 | 1 |
| Orange | 1 | 0 | 0 | 1 |
| Green | 1 | 0 | 0 | 1 |
| Total | 3 | 0 | 0 | 3 |

**GIDC-2**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 5 | 0 | 0 | 5 |
| Orange | 1 | 0 | 0 | 1 |
| Green | 7 | 0 | 0 | 7 |
| Total | 13 | 0 | 0 | 13 |

**Jay Bhavani Industrial Estate**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 1 | 0 | 0 | 1 |
| Orange | 1 | 0 | 0 | 1 |
| Green | 0 | 0 | 0 | 0 |
| Total | 2 | 0 | 0 | 2 |

**Jay Bhuvneshwari Industrial Estate**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 1 | 0 | 0 | 1 |
| Orange | 0 | 0 | 0 | 0 |
| Green | 9 | 0 | 0 | 9 |
| Total | 10 | 0 | 0 | 10 |

## 2.4 Effluent Disposal Methods– Recipient water bodies etc.

Most of the units have installed individual effluent treatment plants to achieve GPCB norms and they are discharging their treated wastewater within the factory premises for on land irrigation/plantation. However, there are also illegal discharges during washing of used empty plastic bags (mainly cement & lime) by plastic lumps manufacturing small scale units falling under green category in the area.

## 2.5 Quantification of wastewater pollution load and relative contribution by different sources viz industrial/ domestic

It is not possible to quantify the waste water pollution load because of the waste water generating industries are mainly discharging their treated waste water within the premises for on land irrigation/plantation and domestic effluent goes to soak pit system. However periodic bore well water samples collected by the Board. The Analytical date is given as **Annex-2**

## 2.6 Action Plan for compliance and control of pollution

### 2.6.1 Existing infrastructure facilities –water quality monitoring network, ETPs, CETPs, Sewerage Treatment Plant of industry (STPs), surface drainage system, effluent conveyance channels/ outfalls etc.

**A. CETP –** There is no any CETP in the clusters.
There is no need of CETP because the quantity of effluent generation from the clusters is not substantial for consideration of a common facility for treatment of effluents. Hence Individual treatment and disposal by units situated in these cluster is the best feasible option.

**B. TSDF FOR SOLID WASTE DISPOSAL** :
There is no any TSDF in the clusters. Generated hazardous wastes of the units are disposed off at common TSDF site at Vatva & Naroda.

**C. INCINERATION & SPRAY DRYER FACILITY**:
Two units have spray drying facility in which water

scrubber is provided as APCM.

One unit has its own incinerator for waste water in

which scrubber is provided as APCM.

**D. BMW:**
One CBWMF situated in Dolatpara Estate (M/s. Girnar Biomedical Waste Services).This site has 596 members of Junagadh District, waste water treatment facility, Autoclave capacity 80 kg/hrs & incinerator of 50 kg/hrs capacity.

### 2.6.2. Pollution control measures installed by Industries

Most of the units have installed individual effluent treatment plants to achieve GPCB norms and they are discharging their treated wastewater within the factory premises for on land irrigation/plantation. However, some units are required to install the ETP. The details of ETP provided are as below:

**A. WATER** –
The industries situated in Junagadh region are discharging the wastewater from their process/ utilities. Most of the units have installed individual effluent treatment plants to achieve GPCB norms and they are discharging their treated wastewater within the factory premises for on land irrigation/plantation. However, some units are required to install the ETP. The details of ETP provided are as below:

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| RED | 15 | 0 | 0 | 15 |
| ORANGE | 7 | 0 | 0 | 7 |
| GREEN | 16 | 0 | 0 | 16 |
| TOTAL | 38 | 0 | 0 | 38 |

**B. Air** –

The industries situated in Junagadh region are generating air pollutants, mainly from the utility section like boilers/ thermic fluid heaters etc. Most of the major industries have installed the adequate air pollution control devices such as dust collectors/ settling chamber/ bag filters. However, some units are required to install the same. The details of APCM are as below:

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| RED | 16 | 0 | 0 | 16 |
| ORANGE | 6 | 0 | 0 | 6 |
| GREEN | 14 | 0 | 0 | 14 |
| TOTAL | 36 | 0 | 0 | 36 |

Note: At present there is no any Medium or

Large scale unit located in these cluster.

**C. Hazardous Waste** –

Generated hazardous waste of individual industries are stored in hazardous waste storage facility within plant and disposed off to common TSDF site located at Vatva & Naroda.

### 2.6.3 Technological Intervention

#### 2.6.3.1 Inventorisation of prominent industries with technological gaps

On the basis of the observations / findings of monitoring by GPCB pollution potentiality of industrial units of these estates, total 17 units are identified. These industries have been asked to submit their plans along with financial outlay and accordingly estate wise proposed investment is 41.5 lakhs.

### 2.6.3.2 Identification of low cost and advanced cleaner technology for pollution control

**Adoption of Advance Technologies for up-gradation of environmental quality of clusters:**

One dyes intermediate unit has upgraded the incineration as per CPCB guideline. Other units are going to upgrade their ETP facilities, as per point 2.6.3.1.

### 2.6.4 Infrastructure Renewal

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### 2.6.4.1 Details of existing infrastructural facilities

Most of the units have installed individual effluent treatment plants to achieve GPCB norms and they are discharging their treated wastewater within the factory premises for on land irrigation/plantation

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| RED | 15 | 0 | 0 | 15 |
| ORANGE | 7 | 0 | 0 | 7 |
| GREEN | 16 | 0 | 0 | 16 |
| TOTAL | 38 | 0 | 0 | 38 |

### 2.6.4.2 Need of up gradation of existing facilities

Total 17 units have been asked to up grade the existing EMS within time limit and submit the time bond program along with financial outlay.

### 2.6.4.3 De-silting of water tanks, drains, rivulets, etc.

Not applicable as no such common facility in these clusters.

### 2.6.4.4 Construction of lined drains/ connections

These are fall under the GIDC and rest of the area fall in the Junagadh Municipal corporation. Recently GIDC has launched the bid for the construction of road & drainage. The work of the same has been allotted.

### 2.6.4.5 Treatment and management of contaminated surface water bodies

No any type of discharge from industries in to nearby water body. Storm water run off and the domestic waste water from village sabalpur ultimately goes to river lol, however it is non perennial river.

There is no any such contaminated surface water bodies therefore treatment & management of contaminated surface water bodies is not required in the area.

### 2.6.4.6 Rejuvenation/ Management Plan for important eco-geological features

The river flowing in this area are mostly non perennial river. There is no rejuvenation plan specifically for River but actions as narrated above are taken / proposed to be taken to prevent carry over of effluent / contaminated rain water into them.

### 2.6.4.7 Carrying of effluent from industrial units located in non-industrial locations to CETP facilities by lined drains/pipelines only and prevention of their disposal into city sewerage/ surface drain

There is no requirement of such type of facility as Individual treatment and disposal by member units is the best feasible option so far. The river flowing in this area are non perennial river.

### 2.6.4.8 Installation of Gen sets at CETPs

There is no requirement of installation of Gen sets, as no any CETP exist in the clusters.

### 2.6.5 Managerial and Financial aspects

### 2.6.5.1 Cost and time estimates

Identified individual units have submitted their upgradation programmes along with estimated cost. The estimated cost of proposed measures at this juncture works out to Rs. 41.5 lakhs with time limit as per **ANNEXURE-4**

### 2.6.5.2 Identified Private/ Public sector potential investors & their contribution/ obligation

Identified individual industrial units have submitted their EMS upgradation plan along with its financial outlay, summary of which is attached as **ANNEXURE -4**

### 2.6.5.3 Government Budgetary support requirement

GIDC has launched the bid for the construction of road & drainage. The work of the same has been allotted

### 2.6.5.4 Hierarchical and structured managerial system for efficient implementation

For efficient implementation of the action plan, periodical follow – up & review meetings have already been conducted by Gujarat Pollution Control Board.

### 2.6.6 Self monitoring system in industries (ETPs etc.)

The industrial units are regularly monitored by SPCB Authorities. Industrial units falling under schedule-I & II of the Environmental Audit Scheme submit their environmental audit report. Environmental audit is carried out by the third party monitoring agency which are approved by state Board.

### 2.6.7 Data linkages to SPCB/ CPCB (of monitoring devices)

Data linkages of monitoring devices to GPCB have already been taken up. The software and hardware required and currently available is being identified after which further action will be taken accordingly.

## 3 AIR ENVIRONMENT

### 3.1 Present status of Air environment supported with minimum one year analytical data

### 3.1.1 Critical locations for air quality monitoring

One ambient air quality monitoring station is operated in each industrial estate and sample is collected as per CPCB protocol. The details are as follows:

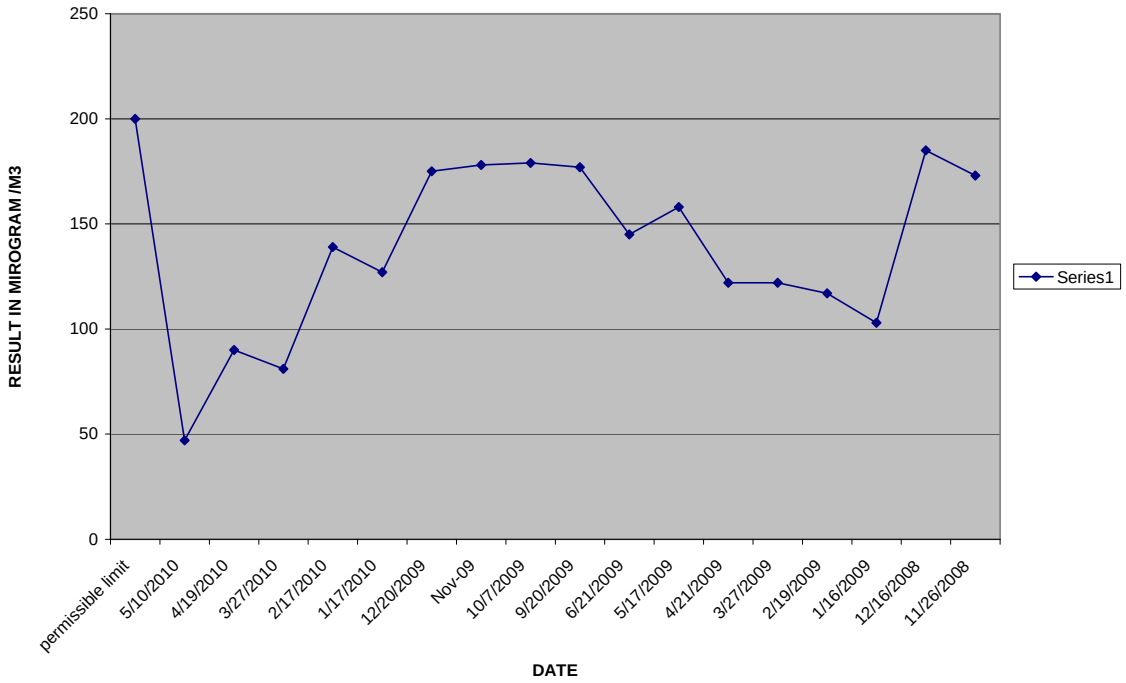
| |
|---|
| AAQM carried out in jay bhavani ind.estate,sabalpur |
| AAQM carried out in GIDC-II,Sabalpur |
| AAQM carried out in Jay Bhuneshwari,Sabalpur |

### 3.1.2 Present levels of pollutants in air (routine parameters, special parameters and air toxics relevant to the area in three categories- known carcinogens, probable carcinogens and other toxic)

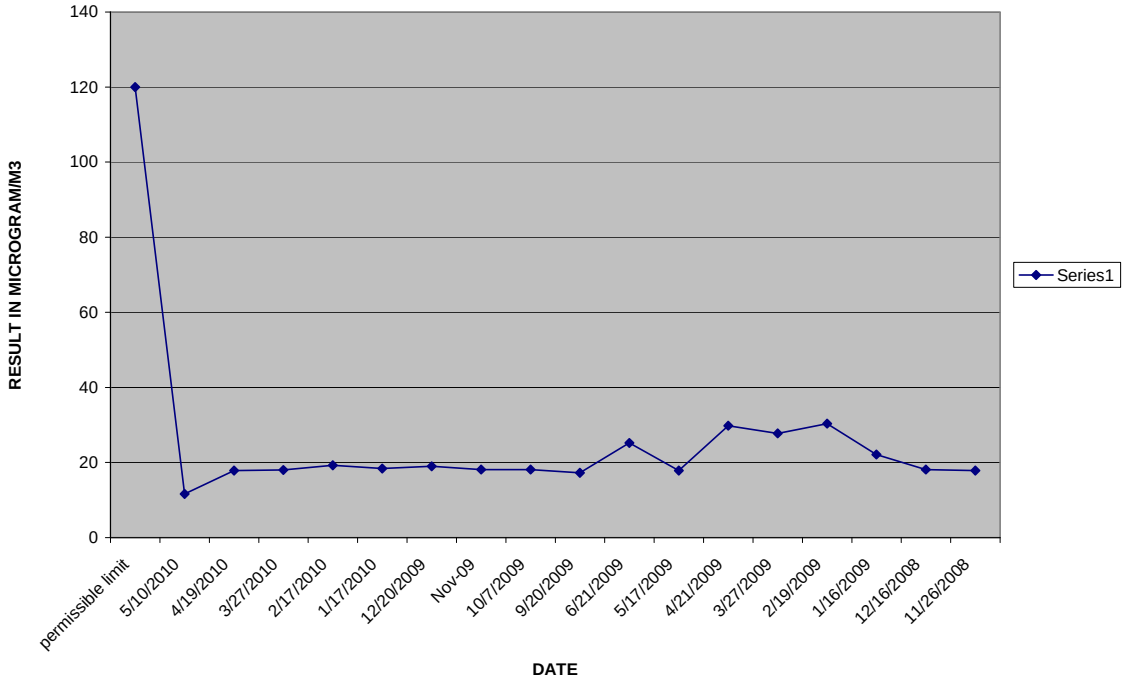
Board is regularly measuring the Ambient Air Quality of the industrial estate. The Analysis Report of the same is attached as **Annexure- 3**

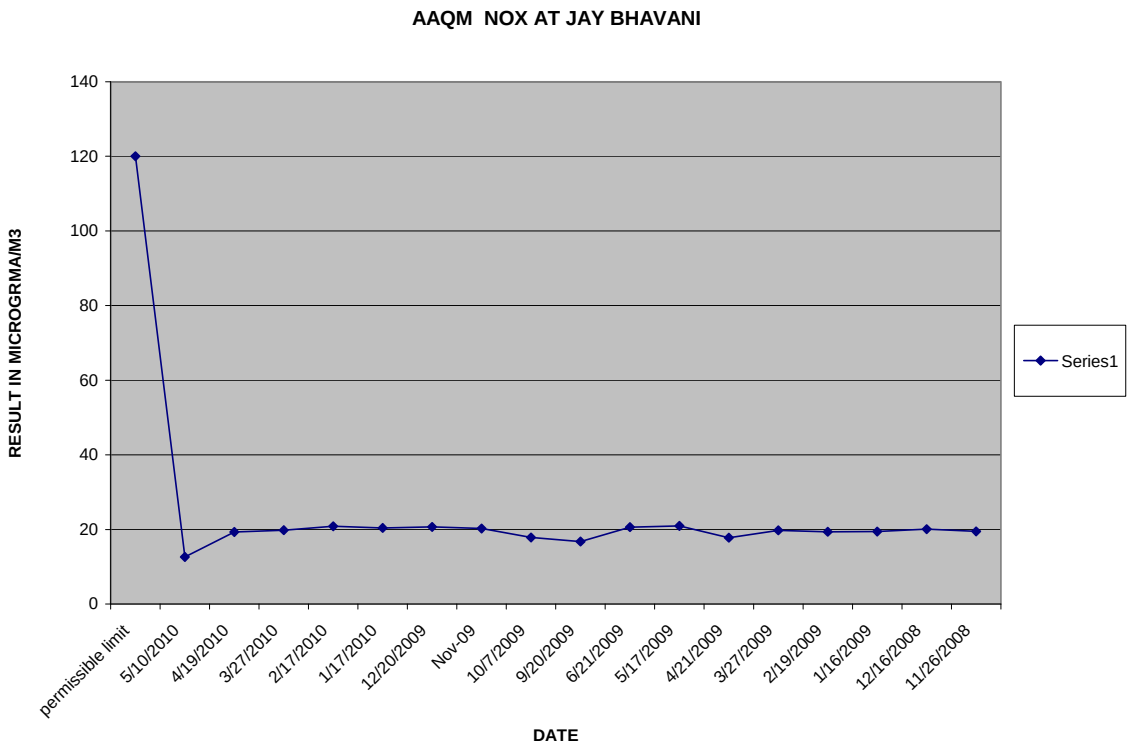
Graphical data are as under:

**AAQM AT-RSPM JAY BHAVANI**




**AAQM-SOX AT JAY BHAVANI**






### 3.1.3 Predominant sources contributing to various pollutants

The predominant sources contributing to various pollutants are:

**A.** Industrial flue gas and process emissions

**B.** Vehicular emissions from the vehicles moving in and around the cluster

**C.** Natural sources.

## 3.2 Sources of air Pollution

**Industrial Pollution:**

These clusters mainly comprises of three Dyes & Dye Intermediates, Engineering, edible oil refineries, cement, casting & Plastic units. The major probable air pollutants are PM, $SO_2$, NOx, etc.

**Vehicular Pollution:**

- In year 2006-07 out of 25565 vehicles, 655 switched over to cleaner fuel LPG
- In year 2007-08 out of 23632 vehicles, 833 switched over to cleaner fuel LPG
- In year 2008-09 out of 24821 vehicles, 311 switched over to cleaner fuel LPG
- In year 2009-10 out of 27029 vehicles, 292 switched over to cleaner fuel LPG

- Up to 30/6/2010 out of 7455 vehicles, 76 switched over to cleaner fuel LPG
- In Junagadh District, no any CNG filling station.
- There are two LPG filling station located in Junagadh city.

- There are 4- PUC centers in Junagadh city area.

The Junagadh Clusters are located on State Highway which is one of the busiest highway of this region. The movement of heavy vehicles and other traffic passing through the Highway also contribute to air pollution.

These areas being industrial areas there is continuous movement of heavy vehicles carrying raw materials, products etc. Hence the vehicular exhaust as well as the fugitive emission due to such movement also contributes towards the air pollution in the said industrial cluster.

## 3.3 Air Polluting Industries in the area/ cluster

**Sabalpur Area**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 5 | 0 | 0 | 5 |
| Orange | 1 | 0 | 0 | 1 |
| Green | 9 | 0 | 0 | 9 |
| Total | 15 | 0 | 0 | 15 |

**GIDC-1**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 1 | 0 | 0 | 1 |
| Orange | 0 | 0 | 0 | 0 |
| Green | 2 | 0 | 0 | 2 |
| Total | 3 | 0 | 0 | 3 |

**GIDC-2**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 5 | 0 | 0 | 5 |
| Orange | 2 | 0 | 0 | 2 |
| Green | 2 | 0 | 0 | 2 |
| Total | 9 | 0 | 0 | 9 |

**Jay Bhavani Industrial Estate**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 1 | 0 | 0 | 1 |
| Orange | 0 | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Green | 2 | 0 | 0 | 2 |
| Total | 3 | 0 | 0 | 3 |

**Jay Bhuvneshwari Industrial Estate**

| Category | Small | Medium | Large | Total |
|---|---|---|---|---|
| Red | 1 | 0 | 0 | 1 |
| Orange | 0 | 0 | 0 | 0 |
| Green | 0 | 0 | 0 | 0 |
| Total | 1 | 0 | 0 | 1 |

The numbers of industrial units shown above include all industrial units having flue gas emission and / or process emissions.
There are no major organic industries, which can have process emissions. The contribution to air emissions is mainly from the flue gas. 'Seed coats of Ground nut' and 'Wood' are the major fuels used in the utility installations like Boiler, TFH etc. "Seed coats of Ground nut" are usually being used in edible Oil Industry.

Hence, main air pollutants of concern are PM10 and PM2.5 (a recent amendment to the NAAQS). Most of the major industries have installed the adequate air pollution control devices such as dust collectors/ settling chamber/ bag filters. However, some units are required to install the same.

Moreover, it can be noted from the observed ambient air levels that the levels of SO2 and NOx are very well within the norms and only Particulate Matter represented as PM10/ PM2.5 are the parameters of concern.

## 3.4 Impact of activities of nearby area on the CEPI Area

The industrial estates namely Sabalpur & Dolatpara are located on State Highway which is one of the busiest highway of this region. The movement of heavy vehicles and other traffic passing through the Highway would definitely contribute to air pollution load. However, industries are using "seed coats of ground nut" and wood as fuel which is one of the main reasons for increase of SPM level. Hence emphasis has been laid on abatement of air pollution from industrial activities.

## 3.5 Quantification of the air pollution load and relative contribution by different sources

Quantification of air pollution load as well as relative contribution by different sources can be worked out by carrying out source apportionment study of the region as per TOR given by CPCB. However, ambient air quality data is available and has been produced in the previous paragraphs. The said data would indicate that there is improvement in air quality of the region in terms of concentration of SPM while other major parameters like SO2 and NOX are found within the National Ambient air Quality standards.

## 3.6 Action Plan for compliance and control of pollution

### 3.6.1 Existing infrastructure facilities – Ambient air quality monitoring network

At present we have total three stations to monitor the ambient air quality. 1) Set up at Jay Bhavani Industrial Estate 2) set up at Jay Bhuvneshwari Indusrial estate 3) set up at GIDC-II.

As stated earlier, ambient air quality monitoring is carried out at three locations in this region in a year under SAMP (State Air Monitoring Programme). Details are given in para 3.1.1.

### 3.6.2 Pollution control measures installed by the individual sources of pollution

The industries situated in Junagadh clusters are generating air pollutants, mainly from the utility section like boilers/ thermic fluid heaters etc. Most of the major industries have installed adequate air pollution control devices such as dust collectors/ settling chamber/ bag filters. However, some units are required to upgrade the same. Status report for the upgradaton is attached as annexure- The details of APCM are as below:

Individual units having air pollution potential have provided cyclone/multi cyclone separator/ water scrubber/Bag filter as APCM for flue gas emission. Chemicals industries have provided scrubbers for the process emission, if any. The details of APCM are as below:

- Number of industries having Scrubbers for gaseous emission : 3 units
- Number of industries having incineration facility : 1 unit
- Number of industries having APCM for flue gas emission : 16 units

Note: At present there is no any Medium or Large scale unit located in this cluster.

### 3.6.3 Technological Intervention

#### 3.6.3.1 Inventorisation of prominent industries with technological gaps

There are no major Air polluting industries, which can have process emissions. The contribution to air emissions is mainly from the flue gas. 'Ground nut husk' and 'Wood' are the major fuels used in the utility installations like Boiler, TFH etc. "Ground nut husk" are usually being used in edible Oil Industry.

Hence, main air pollutants of concern are PM, SO2 and NOx. Most of the major industries have installed the adequate air pollution control devices such as Cyclone separator/ dust collectors/ settling chamber/ bag filters. However, some units are required to upgrade the same to meet with the revised NAAQM norms.

#### 3.6.3.2 Identification of low cost and advanced cleaner technology for air Pollution control

There are no major Air polluting industries, which can have process emissions. The contribution to air emissions is mainly from the flue gas. 'Ground nut husk' and 'Wood' are the major fuels used in the utility installations like Boiler, TFH etc. "Ground nut husk" are usually being used in edible Oil Industry.

#### 3.6.3.3 Introduction and switch over to cleaner fuel

At present there is no any source available for the cleaner fuel for the particular industries.

### 3.6.4 Need of infrastructure Renovation

#### 3.6.4.1 Development of roads

Recently GIDC has launched the bid for the construction of road & drainage. The work of the same has been allotted.

### 3.6.5 Impact on CEPI score after installation/ commissioning of full fledged air pollution control systems

The impact has been calculated based on the proposed actions and it is attached as **ANNEXURE-1**

### 3.6.6 Managerial and Financial aspects- Cost and time estimates

These points are already covered above under point no. 2.6.5

### 3.6.7 Self monitoring system in industries (Stacks, APCDs)

The industrial units themselves regularly submit analysis reports of their own emission sources. Industrial units falling under schedule-I and II of the Environmental Audit Scheme submit their environmental audit report. Environmental audit is carried out by the third party monitoring agency.

### 3.6.8 Data linkages to SPCB/ CPCB (of monitoring devices)

Data linkages of monitoring devices to GPCB have already been taken up.

## 4 LAND ENVIRONMENT (Soil and Ground Water)

### 4.1 Soil contamination

Currently there is no soil contamination identified in the area as all the hazardous waste generated from the industrial units is disposed into TSDF and at present there is no any illegal hazardous waste dumping site.

### 4.1.1 Present status of land environment supported with minimum one year analytical data

Currently there is no such data available for land environment.

### 4.1.2 Critical locations for land/ soil pollution assessment and ground water monitoring

Since the land / soil pollution assessment is not being done any such locations are not identified.

**4.1.3 Present levels of pollutants in land/soil and ground water (routine parameters, special parameters and water toxics relevant to the area in three categories – known carcinogens, probable carcinogens and other toxics)**

Present level of pollutants in land / soil are not being analysed currently since any such illegal hazardous waste dumps do not exist in the said cluster.

**4.1.4 Predominant sources contributing to or posing danger of pollution of land and ground water such as hazardous/toxic wastes or chemicals dumps/storage etc.**

Presently there are no such hazardous or toxic wastes or chemical dumps or storage etc in the area which pose danger of pollution of land and ground water.

**4.1.5 Sources of Soil Contamination**

There are no sources of soil contamination currently.

**4.1.6 Types of existing pollution**

Presently no such pollution exists in the area.

**4.1.7 Remedies for abatement, treatment and restoration of normal soil quality**

There is no such current proposal for abatement, treatment and restoration of normal soil quality since such pollution does not exist in the area presently.

## 4.2 Ground water contamination

**4.2.1 Present status/ quality of ground water:**

The compiled analysis reports of samples collected from various ground water sources within the cluster are already attached as **Annexure – 2.**

**4.2.2 Source Identification (Existing sources of Ground water Pollution)**

Currently there are no identified sources of Ground Water Pollution in the said cluster.

**4.2.3 Ground water quality monitoring program**

GPCB regularly collects ground water samples under Ground Water Quality Monitoring Program and various Action Plans. Currently samples are collected from 7 locations under this program.

**4.2.4 Action Plan for control of pollution including cost/ time aspects**

There is no proposed action plan for control of ground water pollution since presently there is no such source in the area.

**4.2.5 Treatment and management of contaminated ground water bodies, etc.**

There are no contaminated ground water bodies in the cluster hence any such proposal is not being made.

**4.2.6 Impact on CEPI score after abatement of pollution**

As per **ANNEXURE-1**

## 4.3 Solid waste Generation and management

### 4.3.1 Waste classification and Quantification

#### 4.3.1.1 Hazardous waste

The major hazardous waste generated from individual industries are inorganic in nature, which have provided proper storage facilities prior to its final disposal at TSDF. There is no Common TSDF site for the industrial cluster in the area. The individual industries at Junagadh have obtained the membership of TSDF site located at Vatva, Ahmedabad. As regards to the other wastes like used oil and discarded containers, the used oil is sent to the registered used oil recyclers and the discarded containers are sent to the various authorized scrap vendors in the state or sent back to the supplier.

#### 4.3.1.2 Bio-medical waste

No bio-medical waste generating hospitals exist in the cluster. However a common bio-medical waste disposal facility is in operation at plot no. 1746, GIDC, Dolatpara, Junagadh, managed by M/s Girnar Biomedical Waste Services, for treatment and final disposal of BMW generated from medical centers of the Junagadh region.

#### 4.3.1.3 Electronic waste

There is no E-waste generation potential in the cluster, considering the nature of the existing industries.

#### 4.3.1.4 Municipal solid Waste/ Domestic Waste/ Sludges from ETPs/ CETPs/ STPs and other industrial sources

The management of municipal solid waste is done by the Jungadh Municipal Corporation, which is transported to M/s Hanjar bio tech for final disposal.

#### 4.3.1.5 Plastic waste

In these clusters some plastic recycling units are situated where segregated plastic waste converted into granules/plastic lumps for the recycle.

#### 4.3.1.6 Quantification of wastes and relative contribution from different sources

| Sr. No. | Category | Jay Bhuvneshwari Industrial Estate MT/Year | Jay Bhavani Industrial Estate MT/Year | GIDC-1 MT/Year | GIDC-2 MT/Year | Sabalpur area MT/Year |
|---|---|---|---|---|---|---|
| 1 | 5.1 | 0.1 | | | 0.132 | 0.134 |
| 2 | 12.1 | | | | 0.006 | |
| 3 | 12.8 | | | | 0.02 | |
| 4 | 26.1 | | 0.018 | | | 0.120 |
| 5 | 26.2 | 0.12 | | | | |
| 6 | 33.3 | 3000 Nos. | 70 Nos. | 2 MT | 3150 Nos. | 4.4 MT |
| 7 | 34.1 | | | | 10 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | 34.3 | 0.3 | | 2.4 | 2.52 | 545.1 |
| 9 | 34.4 | | | | | 9 |
| 10 | 36.2 | | | | 0.48 | 108 |

- Recyclable - 16.76 MT/Annum
- Incinerable - 4500 KL/Annum (only liquid effluent)
- Landfillable - 908 MT/Annum

Note: There is no incinerable Haz. Waste generating unit in above clusters.

### 4.3.2 Identification of waste minimization and waste exchange options

As of now there is no Centralized Industrial Waste Exchange and By-product Recovery Facility for handling of waste within the clusters.

### 4.3.3 Reduction/ Reuse/ Recovery/ Recycle options in the co-processing of wastes.

Only plastic waste is being recycle by plastic reprocessing units situated in these clusters.

### 4.3.4 Infrastructure facilities

#### 4.3.4.1 Existing TSDF/ Incineration facilities including capacities

Junagadh industrial clusters have no any common infrastructure facilities like TSDF/Incineration.

#### 4.3.4.2 Present status/ performance and need of up gradation of existing facilities including enhancement of capacities

Generated hazardous waste of individual industries are stored in hazardous waste storage facility within plant and disposed off to common TSDF site located at Ahmedabad .

#### 4.3.4.3 Treatment and management of contaminated waste disposal sites, etc.

At present there is no any illegal hazardous waste disposal site in the cluster.

#### 4.3.4.4 Impact on CEPI score after proper management of Solid Wastes.

As per **ANNEXURE-1**

## 5 PPP Model

### 5.1 Identification of project proposals (for both the options i.e. technology intervention and infrastructure renewal) for implementation under the PPP mode under the Action Plan.

The identified industries have proposed various measures including strengthening of on –going actions. The proposed cost works out to Rs. 41.5 lakhs. These measures include EMS up gradation by individual industries in these clusters.

### 5.2 Identification of stakeholders/ agencies to be involved and to evolve financial and managerial mechanisms for implementation of PPP projects.

The major stakeholders for the implementation of PPP projects can be :

- **a.** GPCB
- **b.** CPCB
- **c.** State Government
- **d.** Central Government
- **e.** Industrial Association
- **f.** Industrial Units
- **g.** NGOs
- **h.** Other allied agencies

## 6 Other infrastructural Renewal measures:

### 6.1 Green Belts

Greenbelt needs to be developed all around the area.

### 6.2 Development of Industrial Estate(s)

There is no plan for development of any industrial estate within the cluster presently.

### 6.3 Development/ shifting of industries located in the non- industrial areas to the existing/ new industrial estates.

There is no plan or proposal for development or shifting of industries located in non-industrial areas to existing or new industrial estates.

## 7 Specific Schemes:

### 7.1 GIS-GPS system for pollution sources monitoring

GPCB is on procedure to procure latest devices for GIS-GPS system for pollution source monitoring. The same will be integrated into the existing XGN system for better results.

### 7.2 Hydro-geological fracturing for water bodies rejuvenation

Currently there is no such proposal for water bodies rejuvenation.

### 7.3 In-situ remediation of sewage

In all the industrial units it is disposed by in-situ remediation through septic tank - soak pit system.

### 7.4 Utilization of MSW inert by gas based brick kilns

There is no such proposal currently as there are no brick kilns within the cluster.

### 7.5 Co-processing of wastes in cement industries

Not Applicable, as no any type of Haz. Waste generates which desirable for co-incineration.

## 8 Public awareness and training Programmes

This is an ongoing process and public awareness and training programmes are regularly arranged by GPCB.

## 9 Overall Impact of installation/ commissioning of pollution control equipments/ measures on the CEPI score

Scenario of environmental quality in the clusters of has been documented in previous paras along with remedial measures that are taken or are being taken. To achieve the further improvement in the quality of the environment, specific issues have been considered under the Action Plan which has been derived after due deliberations with various stakeholders. It is expected that timely implementation of Action Plan will fetch the improvement in all the three components of environment and on the basis of the same predicted score of CEPI is tabulated and attached as **ANNEXURE-1**

## 10 Assessment of Techno-economical feasibility of pollution control systems in clusters of small/medium scale industries.

Such assessment is not required since only small scale industries are situated in these clusters and already have pollution control systems.

## 11 Efforts shall be made to encourage use of Bio-compost and Bio-Fertilizer alongwith the chemical fertilizer in the state to minimize the unutilized chemical fertilizer run-off into the natural water resources from agriculture fields (through Govt. policy)

There are no such units in the area hence not applicable.

## 12 Summary of proposed action points:

### 12.1: Short term Action Points (Up to one year, including continuous activities)

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| **WATER** | | | | | | |
| 1 | Sealing of unauthorized discharge other than regular discharge<br><br>Standard magnetic Flow Meter With Totalizer, | All industrial units shall be directed to operate only one outlet through flow meter for effluent disposal so that unauthorized discharge can be checked. Concerned authority shall disconnect / seal such unauthorized discharge. | Concern authority will be asked to identify unauthorized outlet. | Concerned industries,<br>Industries Association ,<br>GIDC,<br>GPCB. | Ongoing process | - |
| | | | All industrial units will be asked to submit notarized undertaking to GPCB stating that w/w discharge must be routed through standard magnetic flow meter only. | Concerned industries | 31.8.2010 & on going activity | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| 2 | Zero discharge units (Recyclable/reuse plastic processing units) – not to have Drainage connection | GIDC/JMC shall be asked to disconnect the drainage connection (if any) to the industrial units which have issued CCA with zero discharge condition. | Inventorisation of the units having consent under water Act for zero discharge. | Industries Association ,<br><br>GPCB | 30.09.2010& on going | - |
| | Scrutiny of recycle, reuse and unauthorized discharge unit specifically for the plastic processing units having recycling facility. | | Review the condition specifically for multi products, V.S. manufacturing unit. | GPCB | 31.12.2010 | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| | | | Direction to be issued to all zero discharge industrial units as certified by GIDC/JMC and checked by GPCB and will be asked to submit<br><br>notarized undertaking to GPCB with a copy to respective association stating that there is no unauthorized outlet and complying zero discharge. | Concerned industries | 31.12.2010 | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| **B) AIR** | | | | | | |
| 1 | **Installation /upgradation** of air pollution control measures | The industrial units shall be directed to upgrade APCM, to achieve prescribed norms by the industrial units/ amended Ambient Air Quality Norms, as required.<br>Monitoring and sampling of industrial units having liquid incinerator and common biomedical waste facility incinerator i.e. there is upgradaiton of such APCM<br>**Note: there is no hazardous waste incineration facility in this area** | Industrial units consuming solid fuel like coal, agro waste, etc., required to upgrade air pollution control system by installing bag filters, cyclones so that ambient air in the nearby area meet with the revised AAQ norms.<br>. | Concerned industries<br>GPCB & third party Agencies. | 31.12.2010. | To be borne by the concerned industry. Association may assist individual units. |
| | | | Modification and upgradation of installed Bag filters & cyclone separators as APCM. | Prominent agency | 31.12.2010 | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| 2 | Plantation in the industrial estate (Green Belt development) | Concerned authority shall be asked to provide adequate green belt in the periphery as well as wherever possible, within the GIDC | Considering the present plantation as baseline datum, five years plan for plantation of industrial estate to be submitted by the GIDC/ association in consultation with Forest department. | Industrial Association,<br><br>GIDC, Forest dept. | 31.12.2010, ongoing process. | |
| 3 | Restriction on using<br><br>unauthorized fuel. | The industrial units shall be directed to use the fuel as per the consented condition. | units shall use authorized fuel as per consent. | Concerned industries,<br><br>GPCB | 31.12.2010 | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| 4 | Control of fugitive emission | It is observed that fuel handling, chemical storage, the processes like pickling are the major source of fugitive emission hence the industrial units shall be directed to adopt better housekeeping practices | Good practices like cleaner production and cleaner technology to be adopted in fuel handling system and house keeping. | Concerned industries, GCPC & GPCB | 31.12.2010, ongoing process | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| 5 | Ambient Air Quality Monitoring | Concerned agency shall be asked to operate the existing AAQMS regularly and also to increase the nos. of stations | Existing 1 nos of AAQMS to be strengthened to monitor AAQ as per new notification.<br><br>New 2 nos of AAQMS stations have already installed since May-2010. | GPCB,<br><br>Industries Association | 31.12.2010 & ongoing process | |
| | | Vehicular Air Pollution. | From year 2006 to 30/06/2010, out of 108502 nos ,2167 nos of vehicles has been converted in to cleaner fuel (LPG)<br><br>In Junagadh, no CNG gas supply facility. | RTO, GPCB | Ongoing process | |
| 6 | Air Quality Load | | As per TOR given by CPCB | IIT, NEERI, GPCB, Concern Industries. | Two Year | |
| 7 | Source Apportionment Study | | | | | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| C | **Land & soil pollution** | | | | | |
| 1 | **Hazardous Waste** | | | | | |
| | Checking of illegal transportation and dumping of Hazardous waste (particularly for plastic waste) | TSDF operators/Industries Association shall be asked to keep vigil on their member units regarding timely and regular disposal of HAZ wastes at approved TSDF site | Vigil check required to be kept on illegal transportation as per TREM card and dumping of hazardous waste. Cleaner Production programme shall be implemented to reduce the quantity. | RTO, GPCB Concerned industries, Industrial Association, | On going process | |
| 2. | Adoption of 4- R's<br><br>(Reduce, Recover, Reuse, Recycle) | It is required to adopt 4-R"s for better management of Hazardous waste and Co-incineration of incinerable hazardous wastes in cement kiln. | Inventorisation of the various Hazardous waste generated from the industries | GPCB, Concern industries,<br><br>Gujarat Cleaner Production Centre | 31.12.2010 & ongoing process. | |

| Sr No | Activity | Issue | Action | Implementing Agency | Time limit | Financial implication & outlay |
|---|---|---|---|---|---|---|
| 3 | Regular sampling & monitoring of surface /sub surface resources. | Ground water quality in the area shall be studied. (quality, area covered & quantity) from where CPCB authorized officials collected samples as discharge is not permitted outside the premises of industries due to land lock area.<br>Note: Major water intensive unit as well as illegal hazardous waste dumping is not situated in the area. | Assessment of ground water quality in GIDC/Industrial cluster already started since April-10. Board has fixed seven location of this area and regularly operated on monthly basis. The sample collected of ground water since April-10. Analysis Report attached here with. | GPCB | Ongoing activity | |

**ANNEXURE-1**

**Expected Reduction in CEPE Score Based on Action Plan Framed by GPCB**

| **Sub - component** | **Basis for sub - component rating** | **Max** | **CEPI as published in CPCB document of Dec.2009** | | | **Expected Reduction in CEPI based on GPCB Action Plan** | | | **Justification for expected reduction in Score** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Air | water | Land | Air | water | Land | Air | water | Land |
| **A1** | Based on the data on the presence of toxins | **6** | 5.75 | 3 | 3 | 2 | 3 | 3 | **Air** Only PM identified as parameter for Air **Group B** with no penalty as sox and Nox not identified as Toxin. | ---- | ----- |
| **A2** | Based on the scale of industrial activities | **5** | 5 | 5 | 5 | 5 | 5 | 5 | As scale of industries are falling in the category of **Moderate for all Criteria Air, Water and Land** | | |
| **A** | A1*A2 | **30** | 28.75 | 15 | 15 | 10 | 15 | 15 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **B1** | Based on the pollutant concentration data(Ambient Pollutant Concentration) | **8** | 4 | 6 | 8 | 4 | 6 | 8 | **Air** SOx, Nox and PM are found with in limit as per previous standard, however as per revised AAQ norms, PM is considered as Moderate and the rest as Low with no penalty. | **Water** TDS is parameter has exceedence factor between 0.5 and 1.0 hence all three are as Moderate with no penalty | **Land** Being deep ground water level TDS is bound to be there in ground water, No HW is found dumped as industries using TSDF located in other districts |
| **B2** | Based on the impact on people (Evidence* of adverse impact on people) | **6** | 0 | 3 | 0 | 0 | 0 | 0 | **----** | **Water** Since w/w is being recycled, results in to no effect in vicinity | **-----** |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **B3** | Based on the impact on eco-geological features( reliable evidence of adverse impact on eco-geological features) | **6** | 0 | 3 | 3 | 0 | 3 | 3 | No change in eco-geological feature is considered due to land use pattern- and considered as evidence of symptoms of exposure with no significant damage | | |
| **B** | B1+B2+B3 | **20** | 4 | 12 | 11 | 4 | 9 | 11 | | | |
| **C1** | Based on potentiallyaffected population) | **5** | 3 | 3 | 3 | 1.5 | 1.5 | 1.5 | **Water**: Since looking to the scale of units & w/w is being recycled. results in to no effect in vicinity. i.e. <10000 . | **Air**: Considering the fuel being used (i.e Husk) & up gradation of APCM as per action plan, no effect in vicinity. | **HAZ**: H.W. generating units are member of TSDF. hence no effect in vicinity.(i.e. <10000 |
| **C2** | (Based on the level of exposure) | **5** | 3.5 | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | No reduction is considered as all monitored parameters has SNLF as 0 with low level of exposure | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **C3** | Based on the risk to sensitive receptors | **5** | 0 | 0 | 5 | 0 | 0 | 5 | Reduction is considered as no any sensitive people identified, however Gir National Park is @ 3 KM from the clusters. | | |
| **C** | (C1*C2) + C3 | **30** | 10.5 | 10.5 | 18.5 | 5.25 | 5.25 | 11.8 | | | |
| **D** | Based on the information on pollution control facilities | **20** | 10 | 15 | 15 | 0 | 0 | 0 | **Air-** Small is considered as inadequate while common facility is not applicable for Air hence is considered as adequate | Reduction is considered for water as most of the unit has recycling facility results in to no effect in vicinity no risk to sensitive receptors and considering the less cumulative discharge of w/w from the clusters, CETP is not feasible. | All the haz. waste generating units are the member of TSDF & considering less quantity of haz. waste generation, the TSDF in this area is not feasible. |
| **CEPI** | A+B+C+D | **100** | 53.25 | 52.5 | 59.5 | 19.25 | 29.3 | 37.8 | | | |
| | max.CEPI | | 59.5 | | | 37.75 | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Aggregated CEPI | | 70.82 | | | 41.26 | | | After implementation of this Action Plan for short term period the CEPI score is predicted as 41.26. However infrastructure improvement will further reduce the CEPI Score**.** |

**ANNEXURE-2 (Groundwater analysis carried out by GPCB, Junagadh)**

| **Source** | **Well water sample of Oza dyes Ind. nr. GIDC-I Junagadh** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date of collection** | | **IS-10500:1991(FR)** | **17/04/2010** | **25/05/2010** | **14/06/2010** | **28/07/2010** | **16/08/2010** |
| **parameter** | **unit** | **Permissible Limit** | | | | | |
| **Temperature** | **Centigrade** | | 28 | 30 | 28 | 27 | 27 |
| **pH** | **pH unit** | 6.5-8.5 | 7.54 | 7.3 | 7.32 | 7.67 | 7.79 |
| **colour** | **Pt.Co.Scale** | 25 | 5 | 5 | 5 | 5 | 20 |
| **conductivity** | **ms/cm** | - | 1700 | 2010 | 1930 | 2170 | 2160 |
| **TDS** | **mg/l** | 2000 | 1434 | 1468 | 1450 | 1412 | 1402 |
| **Ammonical Nitrgen** | **mg/l** | - | 1.34 | 1.46 | 0.34 | 0.28 | 0.36 |
| **Alkalinity as Caco3** | **mg/l** | 600 | 172 | 180 | 163 | 344 | 276 |
| **Total Hardness as caco3** | **mg/l** | 600 | 630 | 1000 | 990 | 630 | 580 |
| **Chloride** | **mg/l** | 1000 | 460 | 470 | 470 | 440 | 430 |
| **Sulphate** | **mg/l** | 400 | 286 | 278 | 260 | 268 | 269 |
| **COD** | **mg/l** | - | 12 | 14 | 10 | 10 | 12 |
| **Fluoride** | **mg/l** | 1.5 | 1.4 | 1.39 | 1.07 | 1.19 | 1.15 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **BOD** | **mg/l** | - | 3 | 4 | <5 | <5 | <5 |
| **NO3-N** | **mg/l** | 45 | 0.86 | 0.93 | 0.9 | 2.48 | 2.22 |
| **NO2-N** | **mg/l** | - | 0.02 | 0.009 | 0.014 | 0.007 | 0.012 |

| **Source** | **Borewell water sample of Ajanta Chemical,JayBhuneshwari ind.estate,Sabalpur** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date of collection** | | **IS-10500:1991(FR)** | **17/04/2010** | **26/05/2010** | **14/06/2010** | **28/07/2010** | **16/08/2010** |
| **parameter** | **unit** | **Permissible Limit** | | | | | |
| **Temperature** | **Centigrade** | | 28 | 30 | 29 | 27 | 27 |
| **pH** | **pH unit** | 6.5-8.5 | 7.2 | 6.85 | 7.33 | 7.86 | 7.27 |
| **colour** | **Pt.Co.Scale** | 25 | 5 | 20 | 5 | 5 | 50 |
| **conductivity** | **ms/cm** | - | 2830 | 3650 | 3540 | 2600 | 2580 |
| **TDS** | **mg/l** | 2000 | 2868 | 2874 | 2852 | 1696 | 1678 |
| **Ammonical Nitrgen** | **mg/l** | - | 1.29 | 1.51 | 0.28 | 0.28 | 0.28 |
| **Alkalinity as Caco3** | **mg/l** | 600 | 535 | 540 | 520 | 376 | 376 |
| **Total Hardness as caco3** | **mg/l** | 600 | 1100 | 1100 | 1050 | 620 | 590 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Chloride** | **mg/l** | 1000 | 1010 | 1030 | 1110 | 630 | 620 |
| **Sulphate** | **mg/l** | 400 | 389 | 391 | 372 | 229 | 221 |
| **COD** | **mg/l** | - | 14 | 12 | 11 | 24 | 21 |
| **Fluoride** | **mg/l** | 1.5 | 1.39 | 1.38 | 1.36 | 1.38 | 1.01 |
| **BOD** | **mg/l** | - | 5 | 4 | <5 | <5 | <5 |
| **NO3-N** | **mg/l** | 45 | 1.14 | 1.2 | 1.34 | 0.18 | 0.38 |
| **NO2-N** | **mg/l** | - | 0.014 | 0.011 | 0.009 | 0.009 | 0.012 |

| **Source** | **Borewell sample of Kohinoor AssessoriesP.Ltd. GIDC-II,Sabalpur** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date of collection** | | **IS-10500:1991(FR)** | **17/04/2010** | **25/05/2010** | **14/06/2010** | **28/07/2010** | **16/08/2010** |
| **parameter** | **unit** | **Permissible Limit** | | | | | |
| **Temperature** | **Centigrade** | | 29 | 29 | 29 | 28 | 27 |
| **pH** | **pH unit** | 6.5-8.5 | 7.34 | 7.15 | 8.09 | 7.92 | 7.37 |
| **colour** | **Pt.Co.Scale** | 25 | 5 | 5 | 5 | 5 | 5 |
| **conductivity** | **ms/cm** | - | 2540 | 2430 | 2880 | 2810 | 2780 |
| **TDS** | **mg/l** | 2000 | 2430 | 2438 | 2452 | 1828 | 1812 |
| **Ammonical Nitrgen** | **mg/l** | - | 1.01 | 1.12 | 0.31 | 0.28 | 0.31 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Alkalinity as Caco3** | **mg/l** | 600 | 313 | 310 | 281 | 411 | 432 |
| **Total Hardness as caco3** | **mg/l** | 600 | 1800 | 1100 | 1110 | 740 | 710 |
| **Chloride** | **mg/l** | 1000 | 830 | 820 | 810 | 610 | 600 |
| **Sulphate** | **mg/l** | 400 | 416 | 410 | 416 | 306 | 308 |
| **COD** | **mg/l** | - | 10 | 9 | 11 | 7 | 11 |
| **Fluoride** | **mg/l** | 1.5 | 1.5 | 1.5 | 1.43 | 1.34 | 1.22 |
| **BOD** | **mg/l** | - | 2 | 3 | <5 | <5 | <5 |
| **NO3-N** | **mg/l** | 45 | 1.67 | 1.62 | 1.53 | 2.36 | 2.42 |
| **NO2-N** | **mg/l** | - | 0.023 | 0.018 | 0.012 | 0.008 | 0.012 |
| **Hexavalent Chromium** | **mg/l** | | | | | | BDL |
| **Total Chromium** | **mg/l** | | | | | | BDL |
| **Nickel** | **mg/l** | | | | | | N.R. |

| **Source** | **Borewell sample of Diamond Auto Assessories,GIDC-II,Sabalpur** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date of collection** | | **IS-10500:1991(FR)** | **17/04/2010** | **25/05/2010** | **14/06/2010** | **28/07/2010** | **16/08/2010** |
| **parameter** | **unit** | **Permissible Limit** | | | | | |
| **Temperature** | **Centigrade** | | 28 | 29 | 28 | 28 | 27 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **pH** | **pH unit** | 6.5-8.5 | 7.07 | 7.08 | 7.21 | 7.37 | 7.21 |
| **colour** | **Pt.Co.Scale** | 25 | 5 | 5 | 5 | 5 | 5 |
| **conductivity** | **ms/cm** | - | 2750 | 2960 | 2820 | 3760 | 3680 |
| **TDS** | **mg/l** | 2000 | 2180 | 2192 | 2176 | 2450 | 2392 |
| **Ammonical Nitrgen** | **mg/l** | - | 1.23 | 1.51 | 0.34 | 0.31 | 0.34 |
| **Alkalinity as Caco3** | **mg/l** | 600 | 378 | 380 | 352 | 514 | 570 |
| **Total Hardness as caco3** | **mg/l** | 600 | 1400 | 1100 | 1080 | 780 | 720 |
| **Chloride** | **mg/l** | 1000 | 760 | 740 | 750 | 920 | 900 |
| **Sulphate** | **mg/l** | 400 | 364 | 360 | 351 | 315 | 296 |
| **COD** | **mg/l** | - | 8 | 10 | 9 | 6 | 7 |
| **Fluoride** | **mg/l** | 1.5 | 1.31 | 1.3 | 1.28 | 1.12 | 1.08 |
| **BOD** | **mg/l** | - | 2 | 4 | <5 | <5 | <5 |
| **NO3-N** | **mg/l** | 45 | 0.97 | 1.11 | 1.3 | 3.26 | 2.98 |
| **NO2-N** | **mg/l** | - | 0.008 | 0.011 | 0.018 | 0.013 | 0.01 |
| **Hexavalent Chromium** | **mg/l** | | | | | | BDL |
| **Total Chromium** | **mg/l** | | | | | | BDL |
| **Nickel** | **mg/l** | | | | | | N.R. |

| **Source** | **Borewell water sample of Creative casting ltd.GIDC_II ,Dolatapara** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date of collection** | | **IS-10500:1991(FR)** | **17/04/2010** | **25/05/2010** | **14/06/2010** | **28/07/2010** | **16/08/2010** |
| **parameter** | **unit** | **Permissible Limit** | | | | | |
| **Temperature** | **Centigrade** | | 29 | 30 | 28 | 28 | 27 |
| **pH** | **pH unit** | 6.5-8.5 | 7.49 | 7.34 | 7.31 | 7.46 | 7.25 |
| **colour** | **Pt.Co.Scale** | 25 | 5 | 5 | 5 | 5 | 5 |
| **conductivity** | **ms/cm** | - | 2070 | 2190 | 2210 | 1920 | 1920 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TDS** | **mg/l** | 2000 | 1784 | 1756 | 1778 | 1246 | 1242 |
| **Ammonical Nitrgen** | **mg/l** | - | 1.46 | 1.57 | 0.36 | 0.31 | 0.31 |
| **Alkalinity as Caco3** | **mg/l** | 600 | 345 | 351 | 342 | 368 | 408 |
| **Total Hardness as caco3** | **mg/l** | 600<br>1300 | 1100 | 1090 | 620 | 590 | |
| **Chloride** | **mg/l** | 1000 | 610 | 600 | 620 | 480 | 470 |
| **Sulphate** | **mg/l** | 400 | 292 | 288 | 279 | 148 | 150 |
| **COD** | **mg/l** | - | 13 | 14 | 13 | 6 | 9 |
| **Fluoride** | **mg/l** | 1.5 | 1.72 | 1.69 | 1.57 | 1.15 | 1.04 |
| **BOD** | **mg/l** | - | 4 | 5 | <5 | <5 | <5 |
| **NO3-N** | **mg/l** | 45 | 2.13 | 2.04 | 1.99 | 3.78 | 3.56 |
| **NO2-N** | **mg/l** | - | 0.015 | 0.012 | 0.009 | 0.011 | 0.013 |

| **Source** | **Handpumpwater sample of village Dolatpara** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date of collection** | | **IS-10500:1991(FR)** | **17/04/2010** | **25/05/2010** | **14/06/2010** | **28/07/2010** | **16/08/2010** |
| **parameter** | **unit** | **Permissible Limit** | | | | | |
| **Temperature** | **Centigrade** | | 29 | 29 | 28 | 27 | 27 |
| **pH** | **pH unit** | 6.5-8.5 | 7.37 | 7.08 | 7.25 | 7.47 | 7.4 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **colour** | **Pt.Co.Scale** | 25 | 5 | 5 | 5 | 5 | 5 |
| **conductivity** | **ms/cm** | - | 2490 | 2640 | 2520 | 1670 | 1610 |
| **TDS** | **mg/l** | 2000 | 1980 | 1986 | 1972 | 1088 | 1048 |
| **Ammonical Nitrgen** | **mg/l** | - | 1.4 | 1.68 | 0.28 | 0.28 | 0.28 |
| **Alkalinity as Caco3** | **mg/l** | 600 | 537 | 540 | 522 | 537 | 535 |
| **Total Hardness as caco3** | **mg/l** | 600 | 1100 | 1100 | 1070 | 430 | 410 |
| **Chloride** | **mg/l** | 1000 | 730 | 730 | 720 | 360 | 350 |
| **Sulphate** | **mg/l** | 400 | 268 | 270 | 263 | 186 | 176 |
| **COD** | **mg/l** | - | 10 | 12 | 8 | 8 | 10 |
| **Fluoride** | **mg/l** | 1.5 | 1.02 | 0.99 | 0.95 | 1.21 | 0.18 |
| **BOD** | **mg/l** | - | 2 | 4 | <5 | <5 | <5 |
| **NO3-N** | **mg/l** | 45 | 1.53 | 1.62 | 1.85 | 4.41 | 3.99 |
| **NO2-N** | **mg/l** | - | 0.01 | 0.014 | 0.02 | 0.012 | 0.008 |

| **Source** | **Borewell water sample of Prayag protiens ind.,Jay Bhavani Ind.Estate,Sabalpur** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date of collection** | | **IS-10500:1991(FR)** | **17/04/2010** | **26/05/2010** | **14/06/2010** | **28/07/2010** | **16/08/2010** |
| **parameter** | **unit** | **Permissible Limit** | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Temperature** | **Centigrade** | | 29 | 29 | 28 | 27 | 27 |
| **pH** | **pH unit** | 6.5-8.5 | 7.13 | 7.24 | 6.95 | 7.27 | 7.59 |
| **colour** | **Pt.Co.Scale** | 25 | 5 | 15 | 5 | 5 | 5 |
| **conductivity** | **ms/cm** | - | 1870 | 2340 | 2220 | 1660 | 1650 |
| **TDS** | **mg/l** | 2000 | 1518 | 1520 | 1568 | 1082 | 1072 |
| **Ammonical Nitrgen** | **mg/l** | - | 1.18 | 1.23 | 0.31 | 0.28 | 0.31 |
| **Alkalinity as Caco3** | **mg/l** | 600 | 435 | 412 | 409 | 355 | 363 |
| **Total Hardness as caco3** | **mg/l** | 600 | 1200 | 1400 | 1370 | 470 | 450 |
| **cholired** | **mg/l** | 1000 | 540 | 530 | 550 | 420 | 420 |
| **Sulphate** | **mg/l** | 400 | 252 | 248 | 263 | 128 | 121 |
| **COD** | **mg/l** | - | 15 | 13 | 11 | 3 | 6 |
| **Fluoride** | **mg/l** | 1.5 | 1.23 | 1.2 | 1.18 | 1.26 | 1.06 |
| **BOD** | **mg/l** | - | 3 | 4 | <5 | <5 | <5 |
| **NO3-N** | **mg/l** | 45 | 1.63 | 1.58 | 1.76 | 4.39 | 4.12 |
| **NO2-N** | **mg/l** | - | 0.011 | 0.016 | 0.01 | 0.011 | 0.009 |

**PERMISSIBLE LIMIT AS PER IS: 10500:**

**ALK: 600, BOD: NS, CHL: 1000, COD: NS, COL: 25, COND: NS, FLU: 1.5, NH3: NS, NITRITE: NS, NITRATE; 100, Ph: 8, PHO: NS, SUL: 400, T.H.: 600, TDS: 2000, TKN: NS**

**ANNEXURE-3**

**TABLE NO.-2**

| Source | AAQM CARRIED OUT IN JAY BHAVANI IND.ESTATE,SABALPUR | | | |
|---|---|---|---|---|
| Parameter | Nox | RSPM | Sox | SPM |
| Unit | Microgram/m3 | Microgram/m3 | Microgram/m3 | Microgram/m3 |
| Permissible limit | 120 | 200 | 120 | 500 |
| Date of collection | | | | |
| 26/11/2008 | 19.47 | 173 | 17.85 | 308 |
| 16/12/2008 | 20.06 | 185 | 18.14 | 320 |
| 16/01/2009 | 19.42 | 103 | 22.12 | 202 |
| 19/02/2009 | 19.36 | 117 | 30.35 | 223 |
| 27/03/2009 | 19.76 | 122 | 27.77 | 227 |
| 21/04/2009 | 17.79 | 122 | 29.78 | 233 |
| 17/05/2009 | 20.96 | 158 | 17.86 | 289 |
| 21/06/2009 | 20.63 | 145 | 25.22 | 274 |
| 20/09/2009 | 16.74 | 177 | 17.28 | 312 |
| 07/10/2009 | 17.84 | 179 | 18.14 | 325 |
| 19/11/2009 | 20.23 | 178 | 18.13 | 374 |
| 20/12/2009 | 20.7 | 175 | 18.98 | 382 |
| 17/01/2010 | 20.4 | 127 | 18.41 | 277 |
| 17/02/2010 | 20.83 | 139 | 19.27 | 292 |
| 27/03/2010 | 19.79 | 81 | 17.99 | 197 |
| 19/04/2010 | 19.32 | 90 | 17.85 | 240 |
| 10/05/2010 | 12.61 | 47 | 11.62 | 182 |

| Source | AAQM carried out in GIDC-II,Sabalpur |
|---|---|

| Parameter | Nox | RSPM | Sox | SPM |
|---|---|---|---|---|
| Unit | Microgram/m3 | Microgram/m3 | Microgram/m3 | Microgram/m3 |
| Date of collection | | | | |
| 25/05/2010 | 20.58 | 79 | 19.55 | 251 |

| Source | AAQM carried out in Jay Bhuneshwari,Sabalpur | | | |
|---|---|---|---|---|
| Parameter | Nox | RSPM | Sox | SPM |
| Unit | Microgram/m3 | Microgram/m3 | Microgram/m3 | Microgram/m3 |
| Date of collection | | | | |
| 26/05/2010 | 16.92 | 86 | 16.51 | 272 |

**ANNEXURE-4**

| Sr.No | GPCB ID | Name of Industry or Stakeholder* | Detail of directions issued@ | Date of direction issued | Directions issued by whom + | Time limit for compliance as per Action Plan | Inspecting officers ( Name & Designation) | Status of compliance and date# | Date of compliance completed | Expenditure for EMS in Rs. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1 | 17219 | GIRNAR BMW SERVICE | 1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA DEE H.K.SHAH SSA | 30/9/2010 | 3,5 completed, 1,2,4 Under progress | Rs. 1.6 lakhs |
| 2 | 25283 | MARUTI ENTERPRISE | 1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA DEE H.K.SHAH SSA | 30/9/2010 | 1,3,5 completed, 2,4 Under progress | Rs. 1.10 lakhs |
| 3 | 17272 | PATEL REMEDIES | 1)Plantation 2)house keeping | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA | 30/9/20 | completed | Rs. 1.80 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | PVT. LTD | up gradation | | | | DEE<br>H.K.SHAH<br>SSA | 10 | | lakhs |
| 4 | 17280 | S.K.INDUSTRIES | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>H.K.SHAH<br>SSA | 30/9/2010 | 2,3,4,5 completed ,<br>1<br>Under progress | Rs. 2.4 lakhs |
| 5 | 17199 | CREATIVE CASTING LTD | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>H.K.SHAH<br>SSA | 30/9/2010 | Completed but mechanical flow meter provided | Rs. 2.5 lakhs |
| 6 | 33196 | DIAMON AUTO ACCESSORIES | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>R.V.CHAUHAN<br>DEE | 29/9/2010 | 1,2,4 under progress,<br>3,5 completed | Rs. 1.25 lakhs |
| 7 | 17193 | CASTECH FOUNDRY PVT LTD | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE | 30/9/2010 | Completed but mechanical flow | Rs. 2.2 lakhs |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | gradation & 5)plantation | | | | H.K.SHAH<br>SSA | | meter provided | |
| 8 | 17267 | OZA DYES IND | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | G.M.SADHU<br>RO<br>R.V.CHAUHAN<br>DEE | 28/9/2010 | 1,2,4 completed,<br>3,5<br>Under progress | Rs. 1.0 lakhs |
| 9 | 25916 | JAGDISH EXPORT IND | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>H.K.SHAH<br>SSA | 30/9/2010 | Completed but mechanical flow meter provided | Rs. 2.45 lakhs |
| 10 | 30966 | KHIMJI JAMNADAS OIL CAKE | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>R.V.CHAUHAN<br>DEE | 29/9/2010 | 1,2,4 under progress,<br>3,5 completed | Rs. 1.4 lakhs |
| 11 | 25986 | SAURASTRA GAS CO | 1)Plantation<br>2) House keeping upgradation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>H.K.SHAH | 30/9/2010 | Completed but not applied for CCA | Rs. 1.1 lakhs |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SSA | | | |
| 12 | 25983 | MOTAN INDUSTRIES | To control 1)fugitive emission,<br>2) housekeeping up gradation & 3)plantation & 4)stack height rising | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>R.V.CHAUHAN<br>DEE | 29/9/2010 | 2,3 completed<br>1,4 under progress | Rs. 2.9 lakhs |
| 13 | 26036 | KUMAR ABRASIVE | To control 1)fugitive emission, 2)housekeeping up gradation & 3)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>H.K.SHAH<br>SSA | 30/9/2010 | 2,3 completed<br>1, under progress | Rs. 1.05 lakhs |
| 14 | 11951 | AJANTA CHEMICAL | 1)house keeping up gradation & 2)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA<br>DEE<br>R.V.CHAUHAN<br>DEE | 29/9/2010 | completed | Rs. 1.25 lakhs |
| 15 | 17279 | RELIABLE DYE CHEM | 1)Flow meter, 2)Energy meter, 3)house keeping<br>4)ETP up | 14/7/10 | RO | 30/9/2010 | G.M.SADHU<br>RO<br>R.V.CHAUHA | 28/9/2010 | completed | Rs. 15 lakhs |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | gradation & 5)plantation | | | | N DEE | | | |
| 16 | 17291 | SUN CHEM IND | 1)house keeping up gradation & 2)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA DEE R.V.CHAUHAN DEE | 29/9/2010 | Completed | Rs. 1.2 lakhs |
| 17 | 26189 | KOHINOOR ACCESSORIES | 1)Flow meter, 2)Energy meter, 3)house keeping 4)ETP up gradation & 5)plantation | 14/7/10 | RO | 30/9/2010 | B.G.SUTREJA DEE R.V.CHAUHAN DEE | 29/9/2010 | 1,,4 under progress, 2,3,5 completed | Rs. 1.3 lakhs |

* Sheet for industries and stakeholders (Common facilities) will be separate.

@ Type of Directions can be Flow meter, ETP provision or up gradation , APCM provision or up gradation, TOC, $NH_3N$ reduction, COD reduction,

Authorized Fuel etc.

\+ Regional officer, Common Facility operator, Industries Association etc.

\# Status seen by Inspecting officer and the date of that inspection.

**Annexure - 6**

## Compliance of suggestion given by CPCB for Junagadh cluster vide letter dated 20/09/2010

| S. No. | Suggestion | Compliance |
|---|---|---|
| Specific Suggestion | | |
| 1 | Gujarat Pollution Control Board should also be involved as the implementing agency for control of fugitive emissions by keeping a vigil on the concerned industries. | **Included in Action Plan (para no. 12)** |
| General Suggestion | | |
| 1 | Small scale dying units should adopt cleaner technology of using $Na_2SO_4$ instead of NaCl | **No such industry situated in clusters** |
| 2 | Detailed health impact study should be carried out through a reputed agency. | **---** |
| 3 | CEPI should be evaluated for the same criteria pollutants considered by CPCB and various indices should be considered as per the standard guidelines mentioned in CPCB documents. | **Annexure-1** |
| 4 | CEPI should be evaluated on the basis of the real time data after | **Annexure-1** |

| | | |
|---|---|---|
| | implementation of short term and long term action plans. | |
| 5 | Present status and future plan for greenbelt development should be incorporated as per the norms fixed in the master plan of the area with respect to area under greenbelt, no. and type of saplings. | **Asked R.O to collect Details** |
| 6 | Demographic details and water drainage pattern and road networks in 2 km buffer zone should be incorporated. | **Asked R.O to prepare** |
| 7 | Sector-wise and Industry-wise action points should be incorporated. | **As per Annexure-4** |
| 8 | Odour Problem resulting from VOC should be addressed alongwith capacity building of SPCB for VOC monitoring. | **Not Applicable.** |
| 9 | Managerial and financial plans should be incorporated. | **As per Annexure-4** |
| 10 | GPS based tracking system for transport of hazardous waste should be incorporated. | **Not applicable** |
| 11 | Layout of the industrial area of Junagarh enclosed at Annexure-I is not readable and needs to be prepared properly. | **Submitted and it is readable.** |
| 12 | Online monitoring system linked with regional office and head office | **Not applicable** |

| | | |
|---|---|---|
| | should be included in plan. | |
| 13 | DG sets should be provided at all pumping stations/ETPs/STPs to avoid overflow of untreated effluent during power failure in all clusters. | **Considering the quantity of w/w generation is less than 10 M3/day, Not Applicable** |
| 14 | Resource management plan/future development/managerial plan for new sitting of industries should also be incorporated. | **N.A.** |
| 15 | Quantification of pollutants needs to be done including solvent consumption of industries. | **There are three Edible oil refineries, which is used hexane in the solvent extraction plant. EO used by one dyes & dye intermediate unit.** |
| 16 | Possibility of co-processing of hazardous waste may be explored and the same may be incorporated. | **As per Para 7.5** |

## Suggestions / comments of Steering Committee:

1. Need for demarcation of Geographical boundaries and the impact zones in a digitized map.----- ***AS PER ANNEXURE-1***
2. Long term and short term plans along with sector and region-wise action points have to be defined clearly with time line, cost and responsible implementing agencies/ stakeholders. .----- ***AS PER ANNEXURE-1***
3. Major industry-based action plans should be prepared so that the problems of individual units could be identified and action points (long term and short term) be implemented within stipulated time-frame. ***AS PER ANNEXURE-4***
4. Functioning of CETP/FETP/EPL/PETL in Ankleshwar should be reviewed and design should be re-checked on the basis of COD load, carbonaceous BOD, refractive COD through performance study.--- **NA**
5. Appropriate action points should be incorporated in action plan to control flow of sewage in Amla Khadi and Chhapre Khadi in Ankleshwar. --- **NA**
6. Groundwater quality should be assessed properly and taken into consideration and remedial measures should be incorporated for the improvement in groundwater quality. ----- **INCLUDED (AS PER ANNEXURE-2)**
7. Quantification of pollution from non-point sources should be done and baseline data of VOC should be collected.--- **NA**
8. Short-term and long term awareness programme should be incorporated. ***AS PER PARA NO. 12***
9. Online monitoring system linked with regional office and head office at-least at two stations (Ankleshwar and Panoli) should be included in plan.--- **NA**
10. Scheme of plantation with clear defined policy should be incorporated to control odour problem in Ankleshwar. .--- **NA**
11. GPS based transportation and tracking system for hazardous waste should be ensured. .--- **NA**
12. Action plans should clearly be defined with short term and long term actions including technological improvement in small scale sector and budgetary requirement for various works. ***AS PER PARA NO.12***
13. DG sets should be provided at all pumping stations/ETPs/STPs to avoid overflow of untreated effluent during power failure in all clusters. --- ***NA***
14. Efforts should be made for technological intervention (Green/clean technology) in all the industrial clusters where SSI's using old technology exist in cluster.
15. Efforts should be made for complete utilization / recycling of treated effluent in the industries and discharge in deep sea should be avoided for resource conservation. --- ***NA***
16. Industrial and domestic waste should be treated separately. ***AS PER PARA NO. 12***
17. Action points for proper functioning of TSDF/CETP and FETP should be prepared. ***---NA***
18. Sectoral/regional/micro level plans for reduction/reuse/recycling of wastewater /awareness and control of fugitive emission for non-point sources should be prepared. ***AS PER PARA NO. 12***

19. Action points for Groundwater management/VOC/HAPS control /noise pollution control should be incorporated in plan. ***-- -NA***

20. Resource management plan/future development/managerial plan for new sitting of industries should also be incorporated. ***INCLUDED IN SPECIFIC SUGGESTION***
21. Quantification of pollutants needs to be done including solvent consumption of industries.***---- NA***
22. Health Impact Assessment Study to be undertaken. ***--------- COMMON TO ALL***
23. Plan of Green Belt development to be incorporated.--------- .***---- NA***
24. Impact on CEPI score after implementation of short term and Long term Action points should be estimated. ***AS PER ANNEXURE-4***
25. Review of locations of existing Air, Water and Ground water monitoring stations and need of new stations with regard to density of Industries. ***COMMON TO ALL***
26. Monitoring of all STPs and CETPs must be conducted regularly and should be recorded. .***---- NA***
27. Plan for Municipal Solid Waste, plastic waste, Bio-medical and Hazardous Waste quantification and management. Present status need to be mentioned.
28. GPS based continuous transportation and tracking system for hazardous waste in Ankleshwar. .***---- NA***
29. The plastic waste management in Vapi through co-processing in Cement Kiln would be more environment friendly rather than its conversion into Diesel to avoid sludge disposal problem. .***---- NA***
30. Vehicular pollution and Traffic management should be addressed in the action plan. ***AS PER PARA NO. 3.2***
31. Magnetic flow meters/ electric meters with recorders should be used for flow measurements. ***AS PER PARA NO. 12***
32. Action for reducing consumption of fresh water by the industries as per CREP recommendations based on consumption per unit production.***-----NA***
33. Action regarding capacity building of SPCB to ensure proper monitoring and compliance of action points.------***COMMON TO ALL***
34. Adoption of Principles of reduce, reuse, recycle & recover in action plan. ***AS PER PARA NO. 12***