Original Application. No. 1038 of 2018, dated 13.12.2018

In the matter of

NEWS ITEM PUBLISHED IN "THE ASIAN AGE"

Authored by Sanjay Kaw
Titled
"CPCB to rank industrial units on pollution levels"

ACTION PLAN

For

Kala Amb Industrial Cluster

(For Severely Polluted Areas of Himachal Pradesh)

Submitted in compliance to the Hon'ble National Green Tribunal (NGT) order Dated 13th December, 2018

HP State Pollution Control Board
Him Parivesh, Phase – III, New Shimla - 171009

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0.1% of existing fuel by Biomass and Combustible Solid Waste (RDF and Plastic Waste) for all the major cement plants in the State.	
Annexure VIII – List of Water polluting industries.	
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Annexure X – List of industries situated in Kala Amb Industrial Area covered under Hazardous Waste Rules, 2016.	
Annexure XI – List of all the industries in Kala Amb Industrial Cluster w.r.t. consent status.	

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 Office Memorandums (OMs) dated 13.1.2010 and 15.3.2010 of MoEF, GOI, necessary directions were issued to prepare and final action plans for theses specified areas. Although as per the orders, no area of Himachal Pradesh was classified under Critically Polluted Areas, however 3 areas namely, Baddi, Kala Amb and Parwanoo were identified as Severely Polluted Areas.

The Hon'ble National Green Tribunal in its order dated 13th December, 2018 passed in Original ApplicationNo. 1038/2018 directed that all the State Pollution Control Boards should finalize a time bound action plans with regard to identified polluted industrial clusters (Critically and Severely Polluted Areas) in accordance with revised norms laid down by the Central pollution Control Board to restore environmental qualities within the norms.

A comprehensive remedial environmental action plan has been prepared in consultation with all the stakeholders, including Industrial Associations. The multi-disciplinary action plan is based on Prevention and Mitigation (PPM) principles emphasizing on a time bound implementation of effective measures. The key role of monitoring the action plan itself is proposed to be bestowed on a high-level steering committee, which will ensure collaborative efforts among various implementing agencies and industries.

We are hopeful that this will serve the purpose and help various agencies/ authorities to implement and monitor the Action Plans for the 3 industrial clusters/ areas of the state identified as Severely Polluted Areas.

Place: Shimla

Date: 18-03-2019

INTRODUCTION:

The Hon'ble National Green Tribunal (NGT) in its order dated 13-12-2018 passed in OA no. 1038/2018 observed that 3 industrial areas of Himachal Pradesh fall under the Severely Polluted Areas.

In compliance to the Hon'ble NGT order to prepare and finalize time bound action plans with regard to three Severely Polluted Areas of Himachal Pradesh namely Baddi, Kala Amb and Parwanoo which havebeen identified based on Comprehensive Environment Pollution Index (CEPI) criteria, anEnvironment Monitoring Committee (EMC) under the Chairmanship of Additional Chief Secretary (Environment, Science and Technology) to the Government of Himachal Pradesh have been constituted by the State Government videnotification no. STE-E(3)-34/2018 dated 11-01-2019(Copy enclosed at **Annexure-I**).

The committee comprises of:

1. Addl. Chief Secretary (EST) to the Govt. of Himachal Pradesh — **Chairman**
2. Pr. CCF (HOFF), Forest Department, H.P. — Member
3. Director, Environment, Science and Technology, H.P. — Member
4. Director, Industries Department, H.P. — Member
5. Director, Urban Development Department, H.P. — Member
6. Director, Rural Development Department, H.P. — Member
7. Engineer-in-Chief, I & PH, Department, H.P. — Member
8. Director, Health Department, H.P. — Member
9. Director, Transport Department, H.P. — Member
10. The Member Secretary, HPSPCB — **Convener**

After the above notification, the Environment Monitoring Committee (EMC) held its four meetings on 22nd January, 2019, 20th February, 2019, 1st March, 2019 and 8th March, 2019respectively (Copy of the minutes are enclosed**Annexure-II, III, IV, V**)

After detailed deliberations, the Environment Monitoring Committee (EMC) has finalisedthe action plans for 3 severely polluted areas of Himachal Pradesh.

Kala Amb Industrial Cluster

Chapter-1

Industries

1. Area Details

1.1 Brief history:

Kala Amb is a small town and an industrial area in Sirmaur District in the state of Himachal Pradesh, India.

Sirmaur is the southernmost district in the south-eastern region of Himachal Pradesh, India. It is largely mountainous and rural, with 90% of its population living in villages. Some of its popular towns include Nahan (the capital), Paonta Sahib and Suketi, the latter famous for the Shivalik Fossil Park where fossils over 85 million years old have been found.

There are six tehsils in this district, namely Nahan, Renuka, Shillai, Rajgarh, Pachhad and Paonta Sahib. The Giri River divides the district into two almost equal parts: Giripar and Giriwar. The major towns are Nahan, Paonta Sahib, Rajgarh and Shillai.

Sirmaur was an independent kingdom in India, founded in about 1090 by Raja Rasaloo of Jaisalmer, one of whose ancestors was named Sirmaur. It became an 11 Gun Salute princely state in British India, the premier ruler of the Punjab Hills, located in the region that is now the Sirmaur district of Himachal Pradesh. The state was also known as Nahan, after its main city, Nahan. Sirmaur was ruled by the chiefs of Rajput lineage, who used the title "Maharaja".

At present KalaAmb is an emerging town for industries as it hosts production units for paper, metal, chemicals, thread mills and air-conditioners; thus air pollution is quite a concern here.It is located 12 KM towards west from District headquartersNahan and 78 KM from State capital Shimla. This town is on the border of Himachal Pradesh and Haryana, hence half of the town falls in Haryana. However, the industrial area is situated in Himachal only. Kala Amb is increasing in area due to an increase in industrialization. Now the industrial boundaries of the town have reached upto village Trilokpur which is famous for BalaSundri Temple in northern India.

1.2 Location:

Kala Amb is a small town in Nahan Tehsil in Sirmaur District of Himachal Pradesh State, India. It is located 12 KM towards west from District headquarterNahan. 18 KM from Nahan. 78 KM from State capital Shimla
Kala Amb Pin code is 173030 and postal head office is Kala Amb. SalaniKatola (7 KM),AmbwalaSainwala (8 KM), Palion (8 KM), BarmaPapri (9 KM) ,Kaula Wala Bhood (10 KM) are the nearby Villages to Kala Amb. Kala Amb is surrounded by Naraingarh Tehsil towards west,Nahan Tehsil towards North, Shahzadpur Tehsil towards west, Raipur Rani Tehsil towards west.
Nahan,Babiyal, Jagadhri, Panchkula are the nearby Cities to Kala Amb.
This Place is in the border of the Sirmaur District and Ambala District. Ambala District Naraingarh is west towards this place. Also, it is in the Border ofother District Yamunanagar. it is near to the Haryana State Border.The latitude 30°30'0" N and 77°12'0" Eare the geo coordinates of the Kala Amb.

It houses 69 industrial sheds and other land use detail of the cluster is summarized in the Table given below:

Table-1 :Land use detail of the cluster

Sr. No.	Type of Plots	Total Nos.	Allotted	Vacant
1.	Industrial Shed	69	69	0
2.	Industrial Plot	0	0	0
3.	Housing Plot	0	0	0
4.	Commercial plots	0	0	0
5.	Housing Quarters	0	0	0
6	Shops	9	9	0
7.	Godown	0	0	0

Source: H.P. Industries Department.

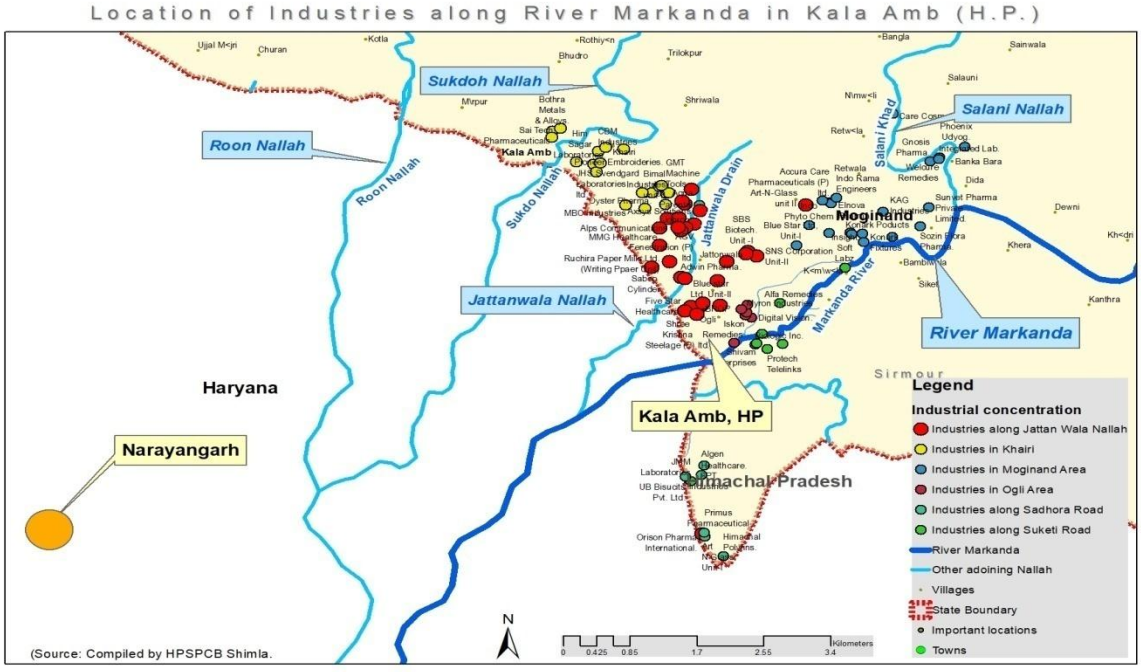
Table-2 :The details of total investment and employment are given as below

Sr. No.	Particulars	Present Status -2019
1.	Investment (Rs. In crore)	1182.56
2.	Employment Nos.	10155

Source: H.P.Industries Department

1.3 Location Map:

The town is situated at an average elevation of 305 metres. The map showing geographical location is as below:



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

Central Pollution Control Board (CPCB) in collaboration with Indian Institute of Technology (IIT), Delhi and other institutes formulated the concept for Comprehensive Environmental Pollution Index (CEPI) and has analysed the Environmental status of industrial clusters which were identified in consultation with the Ministry of Environment and Forests for CEPI analysis.

Kala Amb, is one of the severely polluted industrial clusters identified by CPCB and its **CEPI Score is 68.77**. This severely polluted industrial cluster needs further detailed study in terms of the extent of damage and formulation of appropriate remedial action plan.

	A1	**A2**	**A**	**B1**	**B2**	**B3**	**B**	**C1**	**C2**	**C3**	**C**	**D**	**Total**
Air	6.00	5.00	30.00	7.75	0.00	0.00	7.75	3.00	3.00	0.00	9.00	10.00	56.75
	A1	**A2**	**A**	**B1**	**B2**	**B3**	**B**	**C1**	**C2**	**C3**	**C**	**D**	**Total**
Water	3.00	5.00	15.00	8.00	1.50	3.00	12.50	3.00	4.00	5.00	0.00	15.00	54.50
	A1	**A2**	**A**	**B1**	**B2**	**B3**	**B**	**C1**	**C2**	**C3**	**C**	**D**	**Total**
Land	3.00	5.00	15.00	6.00	0.00	3.00	9.00	3.00	4.00	0.00	12.00	15.00	51.00

Source: CPCB report: EIAS/5/2009-10

- **Water Comprehensive Environment Pollution Index Score = 54.50**
- **Air Comprehensive Environment Pollution Index Score = 56.75**
- **Land Comprehensive Environment Pollution Index Score = 51.00**
- **Total Aggregate Comprehensive Environment Pollution Index Score = 68.77**

1.5 Geological features

Kala Amb is a small town and an industrial area in Sirmaur District in the state of Himachal Pradesh, India.The city is surrounded by Shiwalik Hills and River Markanda passes through it. The River Markanda originates in the Shivalik hills on the border of Haryana and Himachal Pradesh Stateand flows along Haryana and Punjab border before meeting with River Ghaggar in Haryana.

1.6. The Climate of the Region:

The climate of the region is mild and generally warm and temperate. The winters experience more rain than summers. This climate is considered to beCsai.e. *"hot dry-summer"* climates classified as *Csa* according to the Koppen-Geiger climate classification. The average temperature is 21 degree Celsius and annual average rainfall is about 2174mm.

1.7 Geological Pattern:

The region in general is the part of the lesser Himalaya and predominantly mountainous (except Dun Valley called as Kiar-da-dun in Tehsil Paonta Sahib) with deep valleys lying between ranges of varying elevation from 400m towards South East to 3640m towards North.

Geographically the district can be divided into three parts.
1. The Trans –Giri (Giri Par Region) (46% of the total area)
2. The Cis –Giri (Giri War Region)
3. Plains of Kiar-da-dun or Dun Valley

The Cis –Giri (Giri War Region) is intersected by three main ranges which run from north-west to south-east. Of them, first is the Sain Dhar which runs parallel to the river Giri and second is the Dharthi Dhar. Between these two Dhar, flows river Jalal. The third is quite a low range, which runs from around Kala Amb (to the south of Nahan) and forms an open valley with Dharthi Dhar. In the western half of this range flows the River Markanda.The Shiwalik Group, in general is composed of sandstones, conglomerates, clays and siltstones. The Upper Siwalik sediments, in general, and the Pinjore Formation, in particular, are well exposed in the Kala Amb area of Sirmaur district of Himachal Pradesh (Fig. 1), and are characterized by conglomerates, pebbles, clays, mudstones and friable sandstones.

1.8. Major water bodies

River Markanda enters Kala Amb at Bikram Bag and leaves at Sadhora Bridge. River Markanda is a tributary of the River Ghaggar, which as per legend is a part of the ancient Vedic Saraswati River basin system and is a small river of Nahan area, in the district Sirmour of Himachal Pradesh. There exists a large historic temple on the bank of the river, which is called Markandeshwar temple after the name of the famous Maharshi Markandeya.

Asreferred to the Hon'ble NGT orders (passed in OA No. 673 of 2018), River Markanda falls under Priority – II of designated criteria depending upon the level of Bio-chemical Oxygen Demand.

Sr. No.	River Stretch	Priority -III	BOD (mg/L)
1	River Markanda (Kala Amb to Naranyanpur)	Kala Amb	3.2-24

1.9.Ecological parks, sanctuaries, or any eco sensitive zone

Shivalik Fossil Park, also known as the Suketi Fossil Park, is a notified National Geo-heritage Monument fossil park in the Sirmaur district in the state of Himachal Pradesh. It has a collection of prehistoric vertebrate fossils and skeletons recovered from the upper and middle Siwaliks geological formations of sandstones and clay at Suketi.

The park is named after the Suketi village where it is located, at the site where the fossils were found, in the River Markanda valley, at the foot of the Himalayas. It is 22 kilometres southwest

of Nahan, the district headquarters of Sirmaur district. Kala Amb, a small industrial town, is 5 kilometres away on the Kala Amb-Bikramabad road. The park, extensively forested, is spread out over an area of 1.5 square kilometres at Suketi.

1.10Industry classification

Out of 391 functional units, which have been covered under purview of Consent Mechanism under Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 with authorization required under various Rules. There are 35number of industries in the Red category, 235 in Orange category and 121 in the Green category. Based on investment criteria, 345 small, 30 medium and 16 large scale units are located within the cluster.

In the Kala Amb industrial area, the major red category of industries is comprising of Pulp and Paper, Metal Finishing, Battery Scrap, Chemicals Industries and Dyeing.

Table-3: Bifurcation of industries based on pollution potential

Industries Detail	Red	Orange	Green	Total
Large	3	8	5	**16**
Medium	2	24	4	**30**
Small	30	203	112	**345**
Total	**35**	**235**	**121**	**391**

Table-4: Highly Polluting industries of17 categories

Sr. No.	Type of Industries	No. of Industries
1.	Pulp and paper industry	2
Total		**2**

Name of the Industries:

1. Ruchira Paper Mills, (Kraft Unit), Trilokpur Road Kala Amb.
2. Ruchira Paper Mills, (Writing & Printing Paper Unit), Trilokpur Road Kala Amb

1.10.1 Red category industries

There are total 35 nos. of units falling under Red category. Sector wise distribution of the Red category units is as below

Table-5

Industry Type **Name of sector**	**Red**
Dyeing	1
Paper and pulp	2
Chemicals industries	3
Battery Scrap	12
Metal Finishing	17
Total	**35**

1.10.2. Orange and Green category industries

There are 235units falling under Orange category and 121units falling under Green Category which does not have significant pollution load.

1.10.3. Grossly polluting industries

There is no grossly polluting industry in this industrial area and thus it does not have a significant role towards pollution at large for the entire components of Air, Water and Land.

Chapter-2

Ambient Env. Quality (Air/SW/GW)

2 (A)Air Quality

2.A.1 Present status of Air environment

The industries generating air pollution are mainly due to use of induction furnaces/boilers/thermic fluid heaters etc. (having Particulate Matter - PM, Oxides of Sulphur and Oxides of Nitrogen as pollutant). The main air pollutants of concern are PM_{10} and $PM_{2.5}$

All the air/emission emitting industries have installed the adequate air pollution control devices such as dust collectors/bag-filters/cyclone/wet scrubbers/dry scrubbers/Electrostatic Precipitator /alkaline wet scrubbers along with online continuous SO_2 monitoring systems/gravity settling chamber. Coal, pet coke, High-Speed Diesel, Wood, Furnace Oil, Rice husk, Diesel are the major fuels used in the utility installations like Induction Furnace/Rolling Mills/Boiler, Thermic Fluid Heater etc. which contribute to the Particulate Matter emission in the ambient air. Air pollutants like PM - represented as PM_{10}/ $PM_{2.5}$, SO2 and NOx are likely to be emitted from the above and can be considered as the key indicator pollutants. PM_{10} and $PM_{2.5}$ can be considered as indicators for the air environment.

2.A.2 Critical locations for air quality monitoring

At Present there are 2 ambient air quality monitoring stations which are in operation. Critical locations for air quality monitoring for special parameters and air toxics are identified at:

A. Kala Amb, (Existing station)

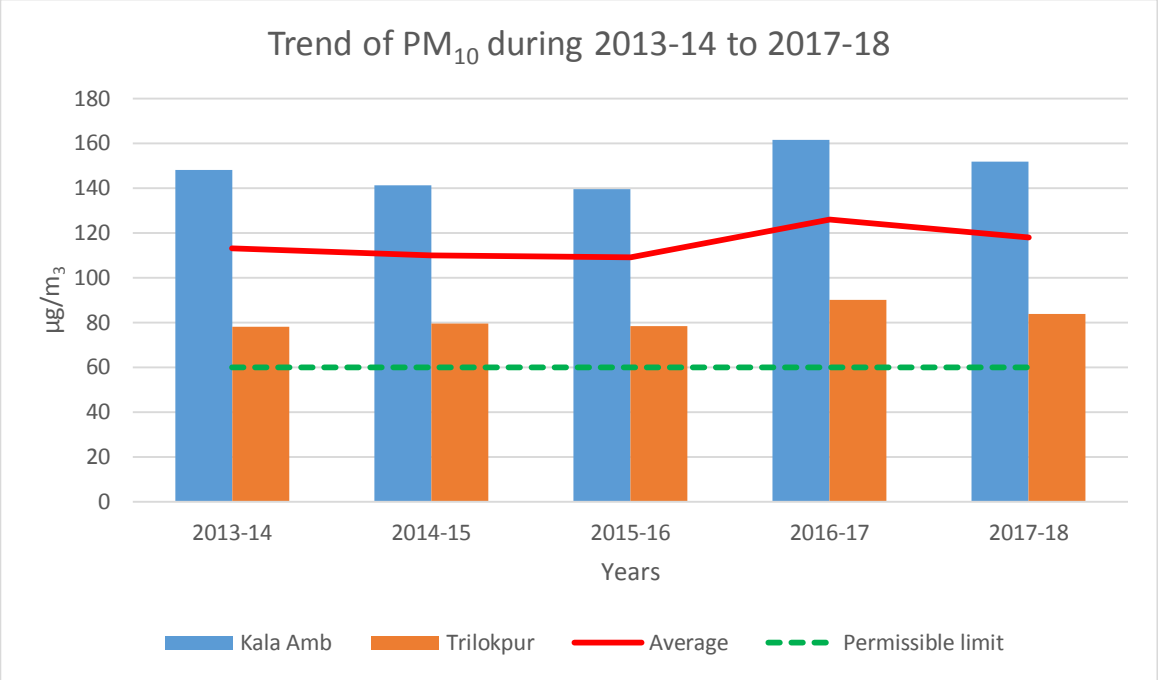
B. Trilokpur , (Existing station)

2.A.3Ambient Air Quality Status of Kala Amb–

Ambient air quality is being monitored at above 2 locations under National Ambient Air Quality Monitoring Program. The annual average values of SO_2 and NO_x at both the NAMP stations were observed well below the permissible limit. The annual average values of Respirable Suspended Particulate Matter (RSPM) (PM_{10}) at both the NAMP stations were observed above the permissible limit for the last 5 years. The trends of annual average of RSPM (PM10) for the last 5 years are shown below:

Table-6 :Annual Average values of PM 10 in µg/m^3 from 2013-14 to 2017-18

Name of Station	2013-14	2014-15	2015-16	2016-17	2017-18
Kala Amb	148	141.3	139.4	161.6	151.8
Trilokpur	78	79.6	78.5	90.2	83.9
Average	**113**	**110**	**109**	**126**	**118**



In compliance to the directions of Hon'ble NGT passed in OA NO. 681/2018 dated 08.10.2018 for the control of Air Pollution in Non-attainment Cities of Himachal Pradesh, the action plan prepared by Air Quality Monitoring Committee (AQMC) notified vide Notification no. STE-E (3)-22/2018 dated 17-11-2018, comprising of Director, Environment; Director, Industries; Director, Transport; Director, Urban Development; Director, Agriculture and Member Secretary, HP State Pollution Control Board)for Kala Amb industrial cluster with reference to air quality has already been approved by the Central Pollution Control Board vide their letter dated 12.02.2019.

Monitoring mechanism for implementation of action plan in Kala Amb Non-attainment city:

A committee comprising of following officers shall be responsible for implementation of approved action plan for the control of air pollution in the respective area and shall submit its report to the AQMC on monthly basis.

1.	Deputy Commissioner/District Magistrate, Sirmour	**Chairman**
2.	Superintendent of Police, Sirmour	**Member**
3.	Regional Transport Officer, Sirmour	**Member**
4.	Executive Engineer, HPPWD, Nahan	**Member**
5.	Gen. Manager, DIC Nahan	**Member**
6.	DFO, Forest Department, Nahan, Distt. Sirmour	**Member**
7.	Deputy Director, Department of Agriculture, Sirmour	**Member**
8.	Member Secretary, SADA, Kala Amb	**Member**
9.	BDO, Development Block, Nahan	**Member**
10.	Regional Officer, HPSPCB, Paonta Sahib	**Member Secretary**

2.A.4 Predominant sources

The industries have installed the adequate air pollution control devices as mentioned in the Schedule-I of Environment Protection Act, 1986 and as per directions given by Central Pollution Control Board from time to time.

Vehicular exhaust, Road Dust, Construction activities, Biomass and garbage burning, constructional activities and domestic fuel add substantially towards air pollution.

2.A.5 Source of Air emission viz industrial, domestic (Coal & Biomass burning), natural and Transport & Heavy Earth Movers

There are total of 50 air emitting industries in Kala Amb industrial cluster. Most of the industries use pet coke, coal, Furnace Oil, High Speed Diesel, Rice husk, wood, diesel as fuel. Bio-mass burning is also practised around the city and amounts to large emissions. Transportation of crushed stones and sand in open trucks lead to high levels of Suspended Particulate Matter (SPM) and Respirable Suspended Particulate Matter (RSPM).

2.A.5.1. Air/Emission emitting Industries in the area/cluster

Sector wise distribution of air emitting industries in Kala Amb are as below:

Table-7

Name of the sector	No. of industries
Red	19
Orange	31
Green	0
Total	**50**

The major types of air emitting industries are metal finishing, pulp and paper, steel/ferro alloy based industries and electroplating industries. The detailed of list of air emitting industry is enclosed as **Annexure-VI.**

2.A.6 Impact of activities of nearby area

This cluster is surrounded by habitation along with commercial centres, schools, hospitals and educational institutions. This cluster is located at a distance of approx. 18kms from the municipal limit and hence falls under the delegation of Special Area Development Authority (SADA).

2.A.7 Action Plan for compliance and control of pollution

2.A.7.1 Existing infrastructure facilities – Ambient air quality monitoringNetwork

Air quality is monitored at 2 locations in the industrial cluster on a regular basis. These two stations are being funded through National Ambient Air Quality Monitoring Program. The parameters monitored at these stations are SO2, NOX, SPM and RSPM. Ambient air quality monitoring is also carried out randomly by the Board's officers in the industrial clusters.

The parameters monitored at these stations are Sulphur Dioxide (SO2), Oxides of Nitrogen (NOX), Ozone (O3), Ammonia (NH3), Suspended Particulate Matter (SPM) and Respirable Suspended Particulate Matter (RSPM). Ambient air quality monitoring is also carried out randomly by the Board's officers in the industrial clusters.

Stack monitoring of process stack and boiler stacks is regularly carried out by the Board. It is mandatory for the industries to self-monitor stack emissions and submit report to the Board.

2.A.7.2 Pollution control measures installed at the individual sources of Pollution

The Board has laid down specific conditions to all industries like:

a. To provide specific height of stacks to their boilers on the basis of fuel consumption.
b. To provide dust collection system like dust collectors, cyclone dust collectors, bag house filters, multi cyclone, electrostatic precipitators etc on a case to case basis.
c. To provide adequate scrubbing system for process emissions on case to case basis.

The industries in industrial clusters have provided stacks of adequate height. The industries have installed the adequate air pollution control devices such as dust collectors/ bag filters/cyclone/wet scrubbers/dry scrubbers /Electrostatic Precipitator/multi-cyclone.

2.A.8 Technological Intervention

2.A.8.1 Inventorisation of prominent industries with Technological Gaps

Pharmaceutical formulations, Metal finishing, pulp and paper, Chemical industries, Cement industry industries and electroplating industries are identified as prominent type of industries contributing to highest pollution potential. Most of these industries have proper air pollution control systems to control emissions however, the maintenance is one of the issues.

A lot of fugitive emissions occur during improper storage and handling of the chemicals. Improper storage, handling and transportation of hazardous waste generated by these industries.

However, hazardous waste generated by the Industries is being sent to Total Solid waste Disposal Facility, Dabhota, Nalagarh, Solan which is approximately 102 kms driving distance

from Kala Amb industrial area. This leads to delay in moving the waste thereby contributing to fugitive emissions.

2.A.8.2 Identification of technology for air pollution control

The identification of proper technology can only be done after proper technical studies for identification of sources of emissions. However, all the air polluting units have provided adequate Air Pollution Control Devices (APCDs) as per the guidelines issued from time to time by Central Pollution Control Board and as mentioned in Schedule-I of Environment Protection Rules, 1986.

Providing online continuous emission monitoring system by all the Red-Large category industries of this cluster. Providing dust collectors and water scrubbing system by the industries using coal / briquette/ bagasse / bio-mass as fuel.

2.A.9 Need of infrastructure Renovation

2.A.9.1 Development/Construction of Pucca Pavement along the Roads

Kala Amb is an emerging town for industries as it hosts productions units for paper, metal, chemicals and textile units. This town is on the border of Haryana, hence half of the town falls in Haryana, but the Industrial area is situated in Himachal only. Construction of pucca pavement along the roads to avoid road dust needs to be carried out by HPPWD and Municipal Council. Tree plantation along the roads shall also be helpful for decreasing the road dust. The major contribution towards the air pollution in the area is due to vehicular emissions, road dust and constructional activities.

With regard to vehicular emissions regular checking of vehicular emissions and issuance of pollution under control certificate (PUC) may be checked by Transport Department. Development of green belts in open areas, gardens, parks/community places be carried out by Forest Department.

2.A.10 Managerial and Financial aspects – Cost and time estimates

Sr. No.	Description of Action Point	Implementation Period (short/mid/long term)	Implementation Agency	Cost	Time Frame
1.	Upgradation of existing Air Pollution Control Systems	Short term and continuous	HPSPCB	-	March, 2019
2.	Direction to the industry for improving the conditions of APCDs and increase in vigilance	Short term and continuous	HPSPCB	-	March, 2019
3.	Providing Online Continuous Emission Monitoring System in all red-large industries.	Long term	HPSPCB and individual industries	-	June, 2019
4.	Conversion of brick kiln	Mid term	HPSPCB	-	April, 2019

	to forced/induced draft.				
5.	Control of air pollution due to vehicles in the area.	Short term and continuous	Transport Department	10 lakhs.	March, 2019
6.	Restriction on open burning of municipal solid waste, biomass, plastic, agricultural/horticultural waste and display of hoardings for awareness.	Short term and continuous	Local bodies i.e. MC, Agriculture, Horticulture and BDOs.	-	March, 2019
7.	Providing air pollution control measures during demolition of old building and new constructions.	Short term and continuous	Local body	-	March, 2019
8.	Traffic management in the area.	Short term and continuous	Traffic and Transport Department	-	March, 2019
9.	Changing the fuel pattern of industry to cleaner fuel.	Long term	Industries Department and HPSPCB	-	30th June, 2019
10.	Construction of pucca pavement along the roads, tree plantation along the roads and development of green belts.	Long term	Public Work Department, Municipal Council, Forest Department	909.03 lakhs	June, 2019
11.	Action plan to minimize forest fires.	Mid-term and continuous	Forest Department	-	March, 2019
12.	Checking of adulteration of fuel	Short term and continuous	Department of Food and Civil Supplies	-	March, 2019
13.	Action against the industries operating without valid consent and authorisation required of the State Board.	Short term and continuous	HPSPCB	-	March, 2019
14.	Up-gradation of existing NAMP Stations for monitoring of 12 parameters from the MoEF/CPCB financial Assistance	Long Term	HPSPCB	-	June, 2019
15.	Public		HPSPCB		March,2019

	Awareness: Issue of advisory to public for prevention and control of air pollution Involvement of school and other academic institution in awareness program	Short Term		3.5 lakhs	
16.	Tree plantation along the roads	Long Term	PWD/Forest Department	10 lakhs	June, 2019

As the air pollution control equipment's to be installed at individual sources depends upon the nature and type of industries with quantum of pollution being emitted in the air. The cost of air pollution control measures is to be borne by individual industries hence no such funding is required. The air pollution in the cluster needs to be controlled through individual sources of the industry which can be achieved through rigorous monitoring and self-discipline.

Most of the industries carry out their stack monitoring sampling through agencies approved by MoEF & CC, Government of India; moreover, HPSPCB regularly monitors the industries and also take stack emission samples.

2.A.11 Government Support

To control forest fire hazard in the State which ultimately causes degradation of air quality, H.P. Government has made a decision by making it mandatory for all the major cement plants of the State to substitute 0.1 % of existing fuel by Biomass and Combustible Solid Waste (RDF and Plastic Waste). (Copy of approval is at **Annexure-VII)**

2.A.12 Agencies responsible for efficient Implementation

The Urban Development, Rural Development, Transport Department, District Administrations, Local Administration, Department of Civil Food and Supplies, Public Works Department, Forest Department, Agriculture Department, HP State Pollution Control Board, Transport Department along with industries and local bodies to follow-up for efficient implementation of the action plan.

2.A.13 Data linkages to SPCB/ CPCB (of monitoring devices)

The State Pollution Control Board was already having a facility for online data maintenance related to industrial records and monitoring records vide their online Him-XGN facility, which have now shifted to Online Consent Management and Monitoring System (OCMMS). The same shall be provided in the same. The continuous Air Quality monitoring systems that will be set up will be linked to SPCB and CPCB websites.

2.(B) WATER QUALITY

2.1 Present status of Water Environment:

The Kala Amb industrial area can be divided into four small zones as per drainage pattern :-

- **A.** Industries located on the right and left bank of River Markanda from Moginand to Kala Amb barrier.
- **B.** Industries located in Jattan- Wala Drain/Nallah catchment.
- **C.** Industries located in Khairi area.
- **D.** Industries located on Kala Amb - Sadhora Road in village Khari.

In Kala Amb area industrial development is mainly on the left and right bank of River Markanda along Kala Amb-Nahan Road and Kala Amb-Trilokpur Road.

There are total 94 effluent generating industries located in the catchment of River Markanda which are covered under the Water Act on account of potential for water pollution due to effluent generation. As per the details available, total industrial effluent generation is 5540.4 KLD (Trade and Domestic effluent) and the capacity of the ETP/STP provided is 7196 KLD. The treatment technology provided ranges from primary treatment system i.e. chemical treatment, precipitation/settling followed by dual media carbon filters, activated sludge process followed by dual media carbon filters, the chemical recovery system has also been installed in a paper mill, few industries have also provided RO systems. The treated effluent is being used in the process of gardening, flushing, wetting of roads etc.

M/s Ruchira Paper Mill (2 units) is the only industry in Kala Amb that fall under 17 categories of highly polluting industries and the said unit has installed real-time online continuous water quality monitoring station at the outlet of the ETP. The results of treated effluent are being displayed on the CPCB and State Pollution Control Board servers on real-time basis. In the catchment of Jattan Wala Drain, other industries are Pharmaceutical Formulation, Chemical Formulation, Metal Finishing etc. Out of total industries, 86 no. of industries have provided their individual Effluent Treatment Plants and also 06 no. of Captive Sewage Treatment Plants installed wherever the manpower is more than 150. Two industries have provided common ETP cum STP in their premises.

Table-7: Water Polluting Industries in Kala Amb (An Overview)

Sr. No.	**Type of unit**	**Number of units**
1.	Spinning & Dying Products	1
2.	Katha Factory	1
3.	Lime and chemicals	2
4.	Pulp & Paper	2
5.	Food Products	3
6.	Glass unit	3

7.	Cosmetic	4
8.	Miscellaneous Chemical	5
9.	STP	6
10.	Metal Finishing	18
11.	Pharmaceutical Formulation only	49
Total		**94**

I &PH Sub Division Nahan have assessed the Sewage Generation of Kala Amb and Moginand area which comes around 1.146 MLD. I&PH Nahan will provide the Sewerage Lines and Primary treatment to the domestic sewage generated from the Kala Amb and Moginand Area. I&PH Deptt has prepared the preliminary estimate for the laying of Sewerage Lines and primary treatment having tentative cost of Rs. 30.41 Crores.

Secondary treatment will be provided in the proposed Common Effluent Treatment Plant (CETP) of 10 MLD capacity with tentative cost of installation is 20 Crores.

The process of installation of CETP at Kala Amb is under progress. Land for CETP has already been identified. M/s Environ Technology Ltd., Ankleshwar has been assigned the task of preparation of DPR. An advance of Rs. 3.5 Lakhs has already been released to the agency for preparation of DPR by the Special Purpose Vehicle i.e. M/s Kala Amb Infrastructure Ltd. The matter regarding acquisition of land is under process with Director, Industries. The list of Water polluting industries is enclosed as **Annexure-VIII.**

2.B. 2 Water bodies/effluent receiving drains in the area

The main source of pollution in River Markanda includes Municipal, Commercial and Industrial waste from various industries and Kala Amb area. The Jattan-Wala Drain is the major contributor in degrading the water quality of River Markanda. Jattan Wala Drain receives municipal waste water from Kala Amb area as well as treated effluent from various industries. Area wise pollution load of various catchments has been given below:

Table-8: Details of Drains and Pollution Load

Sr. No.	Drain/Catchment	Flow in MLD	Avg. BOD (mg/l)	BOD load Kg/day
1.	Jattawala Nallah	7.586	90	**682.7**
2.	Salani Nallah	10.575	0.49	**5.18**
3.	Roon Nallah	25.225	0.62	**15.63**

2.B.3 Present levels of pollutants in water bodies

State Pollution Control Board is collecting the samples of Salani Khad, Markanda River downstream Salani Khad at Moginand, River Markanda upstream Kala Amb, Jattan Wala Drain before confluence to River Markanda and River Markanda Downstream Kala Amb on monthly basis.

As referred to the Hon'ble NGT orders (passed in OA No. 673 of 2018), River Markanda falls under Priority – II of designated criteria depending upon the level of Bio-chemical Oxygen Demand.

Sr. No.	River Stretch	Priority -III	BOD (mg/L)
1	River Markanda (Kala Amb to Naranyanpur)	Kala Amb	3.2-24

Table-9: Water Quality of River Markanda Upstream Kala Amb

Month	Year	Parameters					Water Quality Criteria for Bathing
		pH (6.5-8.5)	DO (in mg/L), 05 Mg/L or more	BOD (in mg/L), 03 Mg/L or less	TC (MPN) -	FC (MPN)	
January	2018	7.82	7.7	**0.4**	32.0		Complying
February	2018	7.96	7.7	**0.4**	34.0		Complying
March	2018	8.01	7.2	**0.3**	40.0		Complying
April	2018	8.13	7.4	**0.1**	26.0		Complying
May	2018	8.34	6.3	**1.8**	32.0		Complying
June	2018	8.19	6.8	**1.0**	25.0		Complying

July	2018	7.92	6.8	**1.0**	40.0		Complying
August	2018	8.36	7.6	**0.6**	40.0		Complying
September	2018	7.40	8.2	**0.5**	43.0		Complying
October	2018	7.86	8.2	**0.6**	41		Complying
November	2018	7.86	7.9	**1.0**	41.0		Complying
December	2018	7.86	7.9	**1.0**	41.0	17	Complying
January	2019	7.66	8.7	**0.7**			
February	2019						

Table : 10 Water Quality of River Markanda Downstream Kala Amb

Month	**Year**	**Parameters**					**Water Quality Criteria for Bathing**
		pH	**DO (in mg/L)**	**BOD (in mg/L)**	**TC (MPN)**	**FC (MPN)**	
January	2018	8.08	7.7	**0.8**	48.0		Complying
February	2018	8.08	7.6	**0.8**	58.0		Complying
March	2018	8.38	7.0	**0.6**	48.0		Complying

April	2018	7.70	7.2	**0.3**	31.0		Complying
May	2018	Source was found dry					
June	2018	8.39	6.4	**2.4**	38.0		Complying
July	2018	8.16	6.7	**0.6**	43.0		Complying
August	2018	8.32	7.7	**0.7**	46.0		Complying
September	2018	8.08	8.0	**0.7**	47.0		Complying
October	2018	8.11	9.2	**0.9**	70		Complying
November	2018	8.24	9.6	**1.8**	43.0		Complying
December	2018	7.8	7.9	**1.6**	43.0	21	Complying
January	2019						
February	2019						

Table : 11 Water Quality of River Markanda D/s Jattan Wala Nallah at Sadhora						**Water Quality for Bathing**
Month	**Year**	**Parameters**				
		pH	**DO (in mg/L)**	**BOD (in mg/L)**	**FC (MPN)**	

January	2018	7.08	1.8	**32.0**	>1600 >1600	Not complying
April	2018	7.52	Nil	**220.0**	>1600 >1600	Not complying
July	2018	7.50	6.2	**3.6**	>1600 >1600	Not complying
October	2018	7.80	3.8	**2.8**	>1600 >1600	Not complying
December	2018	7.72	7.4	**13.0**	>1600 >1600	Not complying
January	2019	7.78	6.4	**5.0**	>1600	Not complying
February	2019	7.88	5.8	**7.5**	> 16000(2.2×10^4)	Not complying

2.B.4 Sources of water pollution

2.B.4.1 Surface water:

There are 94 water polluting industries with total effluent being generated is **5540.4 KLD (Domestic and Trade Effluent)**. The major source of waste water generating units are Pulp and Paper industry Bulk Drugs, Breweries, Distilleries and some types of Chemical Industries.

2.B.4.2 Ground water:

The ground water is the main source for domestic and industrial use in the Kala Amb area. I&PH have collected 22 Nos. of Ground Water Samples from different Tubewells and Borewells. The results are complying with the norms for *Indian Standards for Drinking Water Supply (IS: 10500:2004)*. The details of sampling results are attacked as **Annexure-IX.**

2.B.4.3 Industrial:

There are 94 water polluting industrieswithtotal effluent generated is 5540.4 KLD (Domestic and Trade Effluent).

2.B.4.4 Domestic:

In Kala Amb, wastewater is being generated mainly from industrial, commercial and domestic activities. For the treatment of industrial effluents all the water polluting units have installed their respective ETPs. For the treatment of domestic sewage septic tanks/soak pits have been provided by individual households but due to inadequate capacity/improper design of septic tank/soak pits, sullage is flowing in the open drains and thereby degrading the water quality of River Markanda.

The individual households have the septic tank followed by soak pit. Total 06 industries have provided the captive Sewage Treatment Plants or Effluent cum Sewage Treatment Plant wherever manpower is more than 150. The sewage treatment system installed comprises of activated sludge process followed by sand and activated carbon filters. The treated sewage is being used by most of the industries in gardening, flushing and wetting of roads. List of industries having STPs have been tabulated as below :

List of Industries having STPs in Kala Amb

Sr. No.	Name of the unit	Address	Sub Catchment	Actual Discharge (in KLD)	STP Capacity (in KLD)
1	Blue Star Ltd, Unit-I	Village Moginand, Kala Amb	Moginand	8	15
2	Blue star Ltd, Unit-II	Village Manthapal, Kala Amb	Jattan Wala	8	15
3	Pidilite Industry Ltd.,(Unit -I)	Village Moginand, Kala Amb	Moginand	5	15
3	Pioneer Embroideries.	Vill. Kheri, Kala Amb.	Khairi	16	20
5	Sheela Foam.	Nahan Road, Kala Amb.	Jattan Wala	8	25
6	ShivomCotspin ltd.	Vill. Kheri Kala Amb.	Khairi	5	10
Total				**50**	**100**

2.B.5 Impact on surrounding area of the water

Total 07 noSamples have been taken by Team of HPSPCB & I&PH from the borewells in the vicinity of industries and the results are observed within permissible limit. Further 22 Nos of drinking water samples collected and are within the prescribed norms as per BIS Standard (IS 10500:2014) for Drinking Water Supply.

2.B.6Effluent Disposal Method- Recipient water bodies etc.

Discharge of treated trade effluent is not permitted into the water bodies. All the industries are directed to apply treated trade effluent with specific standards to land for

agriculture/ gardening purpose. Stringent standards for the treated effluent applied for gardening is imposed in the consent granted by the Board. After commissioning of the CETP, no individual industry will be permitted to discharge effluent over land.

2.B.7. Action Plan for compliance and control of pollution:-

2.B.7.1 Existing infrastructure facilities:

Total 06 industries have provided the captive Sewage Treatment Plants or Effluent cum Sewage Treatment Plant wherever manpower is more than 150. The sewage treatment system installed comprises of activated sludge process followed by sand and activated carbon filters. The treated sewage is being used by most of the industries in gardening, flushing and wetting of roads.

2.B.7.2. Pollution control measures installed by Industries

There are around 94 water polluting industries in Kala Amb area have installed effluent treatment plants or Sewage Treatment Plants in their respective industries. The treatment technology provided ranges from primary treatment system i.e. chemical treatment, precipitation/settling followed by dual media carbon filters, Activated sludge process followed by dual media carbon filters, the chemical recovery system has also been installed in a paper mill, few industries have also provided RO systems. The treated effluent is being used in the process of gardening, flushing, wetting of roads etc.

M/s Ruchira Paper Mill (2 units) is the only industry in Kala Amb that falls under 17 categories of highly polluting industries and the said unit has installed real-time online continuous water quality monitoring station at the outlet of the ETP. The results of treated effluent are being displayed on the CPCB and State Pollution Control Board servers on real-time basis.

2.B.8. Technological Intervention

2.B.8.1 Inventorisation of prominent industries with technological gaps

All the Red Large industries in the Industrial area shall provide online continuous effluent monitoring system.M/s Ruchira Paper Mill (2 units) is the only industry in Kala Amb that falls under 17 categories of highly polluting industries and the said unit has installed real-time online continuous water quality monitoring station at the outlet of the ETP. The results of treated effluent are being displayed on the CPCB and State Pollution Control Board servers on real-time basis.

2.B.8.2 Need of up gradation of existing facilities

I&PH Nahan will provide the Sewerage Lines and Primary treatment to the domestic sewage generated from the Kala Amb and Moginand Area. Secondary treatment will be provided in the proposed Common Effluent Treatment Plant (CETP) of 10 MLD capacity with tentative cost of installation is 20 Crores. I&PH Deptt has prepared the preliminary estimate for the laying of Sewerage Lines and primary treatment having tentative cost of Rs. 30.41 Crores. The process of installation of CETP at Kala Amb is under progress. Land for CETP has already been

identified. M/s Environ Technology Ltd., Ankleshwar has been assigned the task of preparation of DPR. An advance of Rs. 3.5 Lakhs has already been released to the agency for preparation of DPR by the Special Purpose Vehicle i.e. M/s Kala Amb Infrastructure Ltd. The matter regarding acquisition of land is under process with Director, Industries.

In compliance to the directions of Hon'ble NGT passed in OA NO. 673/2018 dated 20.09.2018 and 19-12-2018 for bringing all the 7 polluted river stretches to be fit at least for bathing purpose in Himachal Pradesh, the action plan prepared by State Pollution Control board for River Markanda at Kala Amb has already been recommended/approved by the Central Pollution Control Board vide their letter dated 25.02.2019.

2.B.9 .Action Plan- Managerial and Financial aspects-cost and time estimates

Short Term and Long Term Action Plan & Cost Estimates.

Sr. No.	Description of Action Point	Implementation Period (short/mid/long term)	Implementation Agency	Cost	Time Frame
1	Inventorization of Water polluting industries in the industrial area	Short term and continuous	HPSPCB	-	March , 2019
2	Proper design, execution of sewerage lines to be incorporated in the Proposed CETP at Kala Amb	Long term	IPH and Industry Department	30.40 Crores	January, 2021
3	Laying of sewerage network and setting up of STP	Long term	IPH Department	26.00 crores	January, 2022
4	Direction and action to be taken againstthe industry for improving the conditions of existing Water Pollution Control Devices and increase in vigilance	Short term and continuous	HPSPCB	-	
5	Providing Online Continuous Effluent Monitoring System in all Red-Large industries.	Long term	HPSPCB and individual industries	-	September, 2019
6	Action against the industries operating without valid consent and authorisation required of the State Board.	Short term and continuous	HPSPCB	-	March, 2019

7	Estimation of Industrial effluent generation and commissioning of CETP	Long term	State Govt., Department of industries, District Administration.	20 Crore.	January, 2022
8	Setting up of Solid Waste Management Facility at Kala Amb	Mid term	State Government, SADA Kala Amb.	3.5 Crore	January, 2022
9	Carrying assessment of ground water survey for quality and to identify over exploited and critical areas	Mid term	I & PH, HPGWA	-	July, 2019
10	Sampling of Tubewells, Bore wells, Hand Pumps in kala Amb	Short term and continuous	I& PH, HPSPCB	-	March, 2019
11	Sealing of contaminated Handpumps and found to be unfit for drinking purpose by the Public.	Short term	I &PH, HPGWA	-	April, 2019
12	Installation of one Continuous Real time Water Quality Monitoring Station.	Long term	IPH	30 lakhs	July , 2019
13	Plantation in flood plain zone and setting up of a Bio-diversity parks along river body.	Long term	Forest Department.	23 lakhs	-

2.B.10 Government Support for efficient implementation

Major concerns like sewage collection and treatment facility, municipal waste collection and treatment facility will be stressed upon. HPSPCB Board along with the industrial associations, Departments viz. Urban Development, Rural Development, Industries Department along with all local bodies will work in co-ordination for efficient implementation of the action plan.

2.B.11 Self monitoring system in industries (ETPs etc.)

In first phase, Red Large industries to provide online emission/effluent monitoring systems to carry out analysis of the effluent on real time basis.

2.B.12 Data linkages to SPCB/CPCB (of monitoring devices)

The State Pollution Control Board was already having a facility for online data maintenance related to industrial records and monitoring records vide their online Him-XGN facility, which have now shifted to Online Consent Management and Monitoring System (OCMMS). The same shall be provided in the same.

The continuous effluent monitoring systems that will be set up will be linked to SPCB and CPCB websites.

2(C) Waste Classification and Quantification

2.C.1. Solid Waste Generation and Management:

Total solid waste generation of Kala Amb area is approx. 3 to 4 Metric Tons per day. SADA, Trilokpur (Under District Administration) is the agency responsible for collection and disposal of solid waste. Dustbins have been provided by SADA, Trilokpur at various locations. Collected waste is then disposed of at Solid Waste Dumping Site of Municipal Council, Nahan.

In the First, Second and Third meetings of the District Level Special Task Force held under the Chairmanship of Deputy Commissioner, Sirmaur it has been decided that Member Secretary SADA, Trilokpur shall identify suitable land confiscated under section 118 of H.P Land reforms & Tenancy Act, 1972 for setting up of a Solid Waste Management Site at Kala Amb in consultation with SDM, Nahan and GM, DIC.

Further, Member Secretary, SADA, Trilokpur will invite Expression of Interest from interested parties by giving advertisement in leading newspapers for setting up a Solid Waste Management Site at Kala Amb.

With regard to setting up of waste processing facility at Kala Amb, Special Area Development Authority (SADA) has submitted that the possibility of a PPP mode project shall be explored for ensuring proper and scientific disposal of Solid Waste. Aproposal of Rs. 3.5 crores for the same has been submitted and pre-feasibility report shall be put in place by 15-04-2019.

Further, it has been reported that waste audit along-with mapping of shit-flow diagram (SFD) of all the Gram Panchayats falling in the catchment will be completed by 20th February, 2019. The Panchayats will prepare Action Plan on the basis of waste audit report. The Action Plan will be approved by District Swachh Bharat Mission Gramin and will be completed within six months of the approval of the plan.

In addition to this, a Helpline shall be developed by Rural Development in Rural Area and Urban Development in Kala Amb area for regular cleaning of Septic Tanks of Individual

Households through extraction device for Faecal Sludge and Septage through Tankers equipped with GPS facility. The Faecal Sludge and Septage shall be treated in Proposed CETP at Kala Amb.

As per the direction of EMC constituted in compliance to Hon'ble NGT order 13-12-2018 n OA no. 1038/2018, the Rural Department H.P. have been submitted action plan detailed data of Panchayats situated in peripheral areas of River Markanda.

2.C.2 Hazardous Waste Generation and Management:

There are around 203 industrial units in Kala Amb generating hazardous waste which have been covered under Hazardous & Other Waste (Management & Trans Boundary) Rules, 2016. The Hazardous Waste generated by various industries is being disposed off to Common disposal facility at scientific landfill site at Dhabota, Nalagarh, District – Solan (H.P).The list of industries falling under Kala Amb area covered under HW Rules 2016 is enclosed as**Annexure-X**

Details of the Hazardous Waste during the year 2017-18:

Sr. No.	Name of the Waste	Quantity of the Waste per annum
1.	ETP Sludge	128.748 MT
2.	APCD dust	26.736 MT
3.	Process residue	9.162 MT
4.	Used oil	710.5 MT
5.	Empty containers	33435 MT
6.	Ink Waste	58 kg
7.	Waste clothes	64 kg
8.	Oiled cotton	56 kg

2.C.3 Biomedical Waste Management:-

There is only one major Health care facility in Kala Amb. All the facilities have been covered under Bio Medical Waste Management Rules, 2016. The bio medical waste generated is being disposed off to Common Bio medical Waste Treatment facility (CBWTF) provided in the State ,named M/s Enviro Engineers, a Common Bio Medical Waste Disposal Facility located at Solan, H.P.

The State board has taken an initiative for making of provisions of GPS in the vehicles used by the CBWTF operators. For the monitoring of Dioxin,Furans and mercury and its compounds on annual basis, directions have been issued to all the CBWTFs. To have a vigil over pilferage of bio medical waste during collection and transportation, adoption of Bar code system is being initiated

For the management of domestic biomedical waste, the State board has asked the operators to create waste deposition facility.

2.C.4 Sewage and Septage Management for Rural Areas:

With respect to Rural Solid Waste management, Gram Panchayat Satiwala, Banklan, Bikrambag, Kala Amb, Devri and Amwala Saniwala in development block Nahan, district Sirmour and in the catchment area of River Markanda.

Director-cum- Spl. Secretary (RD) to the Govt. of H.P. vide letter no. SMG-19/2010-RDD- (SBM_G)- Review- dated 24th December, 2018 has informed that the Himachal Pradesh has achieved ODF status on 28th October, 2016. All the toilets in the state are Geo-tagged. No dysfunctional toilet reported so far. Presently, focus is to address the issues of Solid Liquid Waste Management (SLWM) in all Gram Panchayats falling in the catchment area of River Markanda having special focus on labour colonies, construction sites and peri-urban areas and to sustain ODF status.

As per the direction of EMC constituted in compliance to Hon'ble NGT order 13-12-2018 n OA no. 1038/2018, the Rural Department H.P. have submitted an interim report with regard to detailed standard operating procedure for SLWM in Gram panchayats along with shit flow diagram. The details the action plan is as below:

Step 1: The Up-Gram Sabha/ Gram Sabha may first discuss the prevailing system of SLWM in their Village /Panchayat and than identify the sources which generate the Solid/ Liquid waste.

I. **The Sources could be :**
- Household
- Market/Bazar
- Commercial establishments e.g. Hotel, Restaurant etc
- Institutions e.g School Hospital, Government Offices ,Temple etc.
- Tourist visiting the tourist spots
- Industries
- any other source

II. **House may further discuss the type of waste generated which could be** :
- Bio-degradable / Non bio-degradable
- Wet e.g. food item
- Dry –Plate , paper etc
- Hazardous material e.g.
- Bio Medical Waste
- E-Waste
- Liquid Waste

III. House may assess the **quantum** of waste generated so as to enable them to make plan for their disposal.

Step 2: House may discuss the present mode of collection, segregation and disposal of waste generated in their village /Panchayat and may opt for one of the following mode of collection and segregation suitable to their Gram Panchayat:

I. Mode of Collection

- Door to Door collection

- Collection at common point installing dustbins
- Construction of temporary Shed for collection of garbage.

II. Segregation – Segregation of waste is very important aspect. The waste could be segregated into dry/wet, bio-degradable/non degradable, hazardous, e-waste, bio-medical waste etc. If the waste is segregated it will help in effective disposal of the same. Segregation could be done at-

- At Source
- Segregation at common point

Step 3: Household may discuss what is the present mode of disposal of waste in their village /Panchayat and may prepare plan for the disposal of waste. Some of the options are**:**

I. **Disposal of Bio-Degradable**:
   - Vermin Composting/ Composting
   - Bio-Gas

II. **Disposal of Non-Bio-gradable**:
   - Reuse
   - Recycle
   - Selling waste to agency e.g. kabadiwala
   - Dumping –Land fill
   - Control burning
   - Incineration
   - EPR (Extended Producer Responsibility)-As per section 9 of the plastic waste management Rule, 2016 it is the primary responsibility of producer, importer or brand owner who introduce the product in the market to establish a system for collecting bag the plastic waste generated due to their products.

III. **Liquid Waste:** House may discuss what is the present mode of treatment of liquid waste in their village / Panchayat and may prepare plan for the treatment of waste. Some of the options are :
   - Construction of Individual Households treatment chamber.
   - Soak pits / common treatment chamber and common soak pit for four to five households
   - Construction of drains and community soak pits etc

Step: 4 ODF Sustainability Measures- The state of H.P. has been declared ODF in October, 2016. House should discuss whether there is any gap in ODF status of their village/Panchayat. In case of any gap noticed, SLWM plan should include the measures which need to be taken up to bridge this gap and develop a plan for ODF sustainability-

- Identifying the whether there are migrant labourer in their Village/GPs.

-whether migrant labourer have excess to toilets, if not, provision should be made to make it mandatory for contractor/those who engage labourer to provide toilet facility to them.

-Promoting twin pit technology instead of single pit/septic tanks in their GPs.

-Provision of bio-digester especially in construction of CSCs.

-Develop a plan by tying up with IPH Department for insuring piped water supplied for each household.

Step: 5 Natural Water Resource Management-Provision should be made in SLWM plan for effective management of natural water resources-

- Identifying the number of natural water resources in GPs.
- Plan should clearly specify at what time in the year these natural water resources will be cleaned.
- Regular testing of water and putting up of sign board indicating whether water is fit for drinking or not.

Step: 6 Setting up of institutional frame work-SLWM plan can be implemented successfully if the role and responsibility of every individual/ institution is clearly defined in the plan.

- The role and responsibility of Panchayat Pradhan/Up-Pradhan/Panch should be clearly specified.
- VWSC, Mahila Mandal, Yuvak Mandal and local NGOs, if any,should be made integral part of SLWM plan and their role and responsibility clearly stated in the plan.
- There should be mechanism for supervise of works.
- The success of plan will depend upon how effectively it is implemented. Therefore review of implementation of plan needs to be carried out from day one.
- In case of any gap noticed, there should be clear provision in the plan as to who will take initiative to set the things right.
- The plan should also contain the provision for penal action against the violators.

Step:7 Financial Provision-The plan can be effectively implemented only if sufficient funds to carried out different activities proposed is available with the GPs. House should identify the potential sources of fund available in their GP e.g.-

-The funds available under 14th finance commission can be utilized for development of infrastructure required under SLWM plan

-MP/MLA local area development fund could be rope in.

-Certain activities can be carried out in convergence with other schemes under RDD e.g. twin pit toilet can be constructed in convergence MGNREGA.

Raising of funds by imposing Sawchhta Cess.

-Funds under decentralized planning.

The Government of India has notified the plastic waste management Rules, 2016 to regulate the management of plastic waste generated in the country. As per the provision

of para-7 of the said Rule it is the duty of the Gram Panchayats to regulate the management of plastic waste and ensure that no damage is caused to the environment. GPs will also ensure that no open burning of plastic waste take place in their jurisdiction. They will also create awareness among all the stakeholders about their responsibility. Therefore, it becomes imperative that every GPs has SLWM plan in place.

2.C.5. Plastic waste: No unit in Kala Amb falls under the provisions of Plastic Waste Management Rules, 2016.

2.C.6. Co-processing of Waste:

All the major cement plants of the State are using RDF in the main cement kiln and as per the direction of the State board mandatory using 0.1 % of existing fuel substitution by Biomass and Combustible Solid Waste (RDF and Plastic Waste).

2 (D) Action Plan for Plantation by Forest Department

1. **Plantation and Maintenance Works**:- Site specific plan along-with cost estimate to carry out plantation activities for this stretch is as under:-

(i) Plantations:-

Table

S No	**Name of The Range**	**Name of the River within the Jurisdiction**	**Suitable Plantation Strategy along the Polluted River Bed**			
1	**Trilokpur**	Markanda (kala amb-Naraingarh)	**Year**	**Area**	**Norm**	**Estimated Amount**
			2019-20	2 ha notional basis (400 plants/Ha)	Rs 70000/ha	1,40,000/-
			2019-2020	Tree guard cost	@500/plan	4,00,000/-
				Watering and watch and ward of plant	Ls.	1,00,000/-
			Maintenance for 2020-21 onwards.		Ls.	1,60,000/-
Total (A)						**8,00,000/-**

(ii). Other Activities:-

Table

1	**Trilokpur**	Markanda	Vertical Gardening/Planting Model at KalaAmb (Forest Check post KalaAmb and Forest seed store KalaAmb). Pilot project which can be replicated by industries.	Ls.	5,00,000/-

			Catchment area treatment activities- Gully plugging along feeder streams of Markanda: Mainthapal Beat and Mandapa Beat using loose boulder check dam.	Ls.	10,00,000/-
			A : Road Side Plantation in and around the Kala Amb Area(Nahan –Kala Amb-Trilokpur Road) Cost of tree Guard. Cost of nursery & Other Maintenance (Watering of Plant, watch and ward)	2 Ha notional basis (400 plants/Ha)	5,00,000/-
2			**Free mitigation measures in the area :**		
			Removal of debris and slash in and around the area	L/s	1,00,000/-
			Fire control centre	L/s	1,00,000/-
			Hiring of fire fighting vehicle during fire season	L/s	2,00,000/-
			Deployment of fire watcher 900 days @225/-	L/s	2,02,500/-
			Fire fighting tools	L/s	1,00,000/-
Total (B)					**27,02,500/-**
G. Total (A+B)					**35,025,00/-**

2. **<u>Establishment of Biodiversity Parks</u>:** -Establishment of biodiversity park requires detailed study to find out feasibility to determine availability of the area in terms of extent and suitability for this purpose and also requires advance planning to determine the lay out design and technical aspects like choice of species to be grown and presences of right kind of edaphic and micro-climate condition.

In view of the above, the Forest Department will get a feasibility study done for establishment of Biodiversity Park in this stretch and submit cost plan for the same, if found feasible, within 90 days.

So far as the information on the species to be planted in this area, the list provided by HP State Pollution Control Board under Pollution Abating Plantation Abhiyan (PAPA) and species being raised in the nurseries of the Department are proposed as under.

Sr. No.	Botanical/Scientific Name	Common Names
1.	*Ficus religiosa*	Peepal
2.	*Terminalia arjuna*	Arjun
3.	*Terminalia bellerica*	Bhera
4.	*Syzgiumcumuni*	Jamun
5.	*Albizzia lebbek*	Siris
6.	*Azadirachtaindica*	Neem
7.	*Cinnamonumcamphora*	Muski Kapoor
8.	*Melia azedarach*	Mahaneem
9.	*Pongamiapinnata*	Karanj

10.	*Aegle marmelos*	Bael
11.	*Bauhinia variegata*	Kachnar
12.	*Cassia fistula*	Amaltas
13.	*Emblica officinalis*	Amla
14.	*Thevetianerifolia*	Pit kaner

3. <u>Regulation</u>:-

(a) Detection and removal of encroachments on forest lands is a regular activity of the Forest Department. Progress of removal of encroachments is also being monitored on continuous basis by the Hon'ble High Court of Himachal Pradesh in CWPIL No. 17 of 2014 and connected matters. The concerned field officers of the Forest Department, in whose jurisdiction this stretch falls, have been instructed to detect and remove encroachments on forest land in this stretch on priority.

(b) The concerned field officers of the Forest Department have been instructed to ensure that there is no illegal dumping of muck in to the forest land falling in this stretch.

Chapter-3

Health Statistics

3.1 Health Statistics:

There is one major Health Centre ESI Dispensary at Kala Amb. Kala Ambis an emerging town for industries as it hosts production units for paper, metal, chemicals, thread mills and air-conditioners; untreated and partially treated effluent from industrial units located at Kala Amb in Himachal Pradesh. As per data received from the Deptt. of Health & Family Welfare, most of the cases received in Kala Amb area were of ARI/Influenza, Acute Diarrhoea, Dog Bite and Enteric Fever. The detailed list of cases received at ESI Dispensary Kala Amb during 2016-17 to 2018-19 (till Nov) have been given below:

Diseases Prevalent in Kala Amb (Data Source: ESI Kala Amb)

Sr. No.	Diseases	2016-17	2017-18	2018-19 (Till Nov)
1	ARI/Influenza	1103	1114	852
2	Acute Diarrhoeal Disease	122	81	63
3	Dog Bite	42	42	25
4	Enteric Fever	14	99	0
5	Chicken Pox	9	19	8
6	Viral Hepatitis	0	4	0
7	Malaria	0	5	1
8	Dengue/DHF	0	15	0

A study of water borne diseases has been proposed by Department of Health in Kala Am area and details shall be as below:

Study area:

The study area covers 10 villages of Dhagera block under the sub-centres named Bikram Bag, Moginand and Kala amb:

i)	Johron	vi)	Ogli
ii)	Khari	vii)	Kalaamb
iii)	Mainthapal	viii)	Bikrambag
iv)	Jattan Wala	ix)	Devni
v)	Moginand	x)	Khadar ka Bag

Methodology:

To characterize the common health problems related to pollution residing near industrial area. The information will be collected by a door-to-door interview, using a questionnaire. The objective of the questionnaire was to inquire about the industrial pollution problems and diseases and the impact of discharged wastewater on public health. The data collected consists of a sample size of 200 in total (20 in each village). Questionnaire was prepared with different quarries regarding type of house, sanitary latrine usage ,means of waste disposal, health problems , fever, skin diseases and water borne diseases, non-communicable diseases and screening for cancers signs etc. (Questionnaire attached along with direction given to BMO Dhagera to engage their field staff to conduct survey in the above mentioned villages).

Questionnaire would be filled by ASHA worker supervised of ANM and verified by health supervisor of concern sub centre.

Water sample would be collected from each village for microbiological sampling for fecal contamination

Variable characteristics:

Age, sex, average family size, no of children less than 5 yrs ,type of house ,sanitary latrine usage and means of waste disposal, mobile number and adhar card number.

Survey period:

30 days w.e.f 25 Feb to 24th march 2019

3.2 Multispecialty Camps / IEC activities carried out :-

Health department is conducting IEC activities and health awareness camps in the industrial belt of Kala Amb through departments of PSM on routinely and multispecialty camps are also held routinely on monthly basis in industrial belt.

Front line Field workers of Dhagera block on routine basis carry out IEC activities and screening of diseases. NCD screening: A special drive of questionnaire based screening of all adult in age group above 30 yrs is in progress wherein general public is sensitized for Non communicable diseases like Diabetes, Hypertension and three type of cancer, oral, breast and cervix.

The department organized special camps in the concerned area and interacted with local population (Photos attached for reference). Front line (ASHA) carry out screening of all adult with screening card having 13 questionnaires. Medical Specialty camps were also organized on different dates of every month in industrial belt Kala Amb with following specialist / medical officers. :

1. Medical Specialist.
2. ENT Specialist.
3. Skin Specialist
4. Dental Specialist
5. Community Medicine Specialist.

Sample format for Questionnaire for water borne disease survey

District Sirmaur **Block Dhagera**

Demographic Profile : Name of Village_____

a. Name of Head of the family _____

b. Address _____

c. Total Member in the family _____

d. Children Less than 5 year of Age _____

e. Type of House Kacha / Pucca

f. Toilet usage In house / Common / none

g. Means of waste disposable Municipal Dustbin or Open area

h. Disease suffer from:

□ Diarrhoea □ Dysentery □ Jaundice

□ Typhoid/Prolonged Fever □ Skin Infection □ Eye Infection

□ Cough

□ Any other (specify)_____

Name of the patient(s)_____

_____

Duration of Illness_____

_____

Date:

Signature / Thumb Impression
Head of the Family

Signature
Health Worker / ASHA

राष्ट्रीय स्वास्थ्य मिशन हिमाचल प्रदेश द्वारा प्रायोजित

INTEGRATED APPROACH FOR PREVENTION AND CONTROL OF NCDs IN HIMACHAL PRADESH

(कैंसर, शुगर रोग, हृदय रोग, पक्षाघात, मानसिक स्वास्थ्य, आंखों, नाक, कान, गला, गुर्दे तथा श्वास की जांच व उपचार हेतु एकिकृत प्रयास)

(यह कार्ड नजदीकी स्वास्थ्य केन्द्र में रखा जाएगा। यह 10 वर्ष की अवधि के लिए है। 30 वर्ष से ऊपर आयु वर्ग ही इसके लाभ के पात्र होगें)

भाग (क) आशा कार्यकर्ता द्वारा प्रत्येक वर्ष भरी जाने वाली सूची।

(यह भाग लाभार्थी स्वयं या आशा कार्यकर्ता की मदद से भी भर सकता/सकती है)

1. लाभार्थी का नाम –
2. पिता/पति का नाम –
3. आयु–
4. लिंग–पुरूष/स्त्री /अन्य (कृप्या (✓) टिक करें)
5. आधार कार्ड नं0–
6. मोबाईल अथवा फोन नं0–

गांव पंचायत खण्ड जिला लाभार्थी की आधार संख्या प्रयोग करने की सहमति एवं हस्ताक्षर .....

सं0	प्रश्न	हां के लिए(✓) और नहीं के लिए(x) टिक करें। वर्ष (1 अप्रैल से अगले 31 मार्च तक)									
		वर्ष 2017–18	वर्ष 2018–19	वर्ष 2019–20	वर्ष 2020–21	वर्ष 2021–22	वर्ष 2022–23	वर्ष 2023–24	वर्ष 2024–25	वर्ष 2025–26	वर्ष 2026–27
1	क्या आप तम्बाकू का प्रयोग करते है? (धूम्रपान या खाने वाला तम्बाकू)										
2	क्या आपके घर/परिवार में कोई दूसरा व्यक्ति/ महिला धुम्रपान करता/करती है?										
3	क्या आप शराब/बीयर पीते हैं?										
4	क्या आप प्रतिदिन दो से भी कम बार सब्जी या फल खाते है? दो बार से कम के लिए (✓) टिक करें										
5	क्या आप प्रतिदिन 30 मिनट (लगातार) से भी कम व्यायाम/सैर/योग/दौड़/ शारीरिक श्रम करते है? 30 मिनट से कम के लिए (✓) टिक करें।										
6	क्या आप भोजन में तेज नमक खाते है? या मीठा ज्यादा खाते है? या ज्यादा तला हुआ /मसालेदार खाना खाते है?										
7	क्या आपके मुहं में या शरीर के किसी भी भाग में लम्बे समय से न भरने वाला कोई घाव या छाला है या शरीर के किसी भी भाग में गांठ/गिटली बनी हुई है?										
8	क्या आपके स्तन में कोई घाव/गांठ गिटली बनी हुई है? (केवल महिलाओं से पूछे) पुरूष के लिए (–) टिक करें।										
9	क्या आपकी योनी से बदबूदार पानी/मासिक धर्म के अतिरिक्त खून आता है या दर्द रहता है? या मासिक धर्म आने में कोई गडबड़ी है? (केवल महिलाओं से पूछे) पुरूष के लिए (–) टिक करें।										
10	क्या आपको सांस फूलने या बलगम में खून आने या खाना घूटने में तकलीफ या लम्बें समय से गला बैठने/बोलने में तकलीफ या अचानक वजन घटने या बार–2 पेशाब आने और भूख ज्यादा या कम लगने या पांव में सूजन की शिकायत रहती है?										
11	क्या आपको बहुत कम या बहुत अधिक नींद आती है या बिना कारण घबराहट/बेचैनी/डर/चिड़चिड़ापन /उदासी रहती है?										
12	क्या आपको बेहोशी के दौरे पडना/ चक्कर आना/ मुँह से झाग/आवाज का तुतलाना /मुँह टेढ़ा होने की शिकायत है?										
13	क्या आपको सुनने में कोई तकलीफ है या आपके किसी कान में लगातार दर्द/पीक/ पानी बहने की शिकायत रहती है?										
14	क्या आपकी नजर कमजोर है या आपको आंखों में लगातार दर्द/जलन या पानी बहने की शिकायत रहती है या रात को कम दिखने या किसी पूर्वज को काला मोतिया की शिकायत थी या है?										
15	क्या आप पूर्व में बी0पी0, शुगर, कैन्सर, हृद्य रोग या उपरोक्त किसी रोग से ग्रसित थे या क्या आपके परिवार में/ पूर्वजों को उपरोक्त कोई लक्षण/बीमारी है या थी?										
	आशा कार्यकर्ता के हस्ताक्षर/दिनांक										

नोट – प्रश्न एक से 15 तक यदि किसी का उत्तर 'हां' (✓) मे हो तो लाभार्थी को तुरन्त नजदीकी स्वास्थ्य कार्यकर्ता के पास भेजें और जांच करवाकर फार्म (ख) भरवाएं। यदि उपरोक्त सभी प्रश्नों के उतर नहीं (x) में है तो भी लाभार्थी को अगले तीन वर्ष में कम से कम एक बार स्वास्थ्य कार्यकर्ता से और पांच वर्ष में डाक्टर से जांच करवाने की सलाह दें।

(भाग ख के लिए पृष्ठ का पीछे वाला भाग देखें)

3.3 INFORMATION ON HEALTH STATISTICS

1. Name of the Polluted Industrial Area (PIA) : Kala Amb
2. Name of the major health center/organization : ESI Kala Amb
3. Address : ESI Dispensary, Nahan Road, Kala Amb, Distt. Sirmour

Health status data received from the Hospital

Sr. No.	Air Borne Diseases	No. of patients reported for the years				
		2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
1.	Asthma	35	24	29	-	-
2.	Acute Respiratory Infection	3829	1992	2967	-	-
3.	Bronchitis	256	220	224	-	-
4.	Cancer	-	-	-	-	-
	Water Borne Diseases					
1.	Gastroenteritis	-	-	-	-	-
2.	Diarrhoea	1311	215	185	81	85
3.	Renal Diseases	47	57	256	-	-
4.	Cancer	-	-	-	-	-

Deptt. of Health and Family Welfare, Distt. Sirmour organized the multi-specialty health camp in Kala Amb area on 07.12.2018.

Chapter- 4

Compliance of the Industries

4.1 Status of Consents under Water (Prevention & Control of Pollution) Act, 1974 /Air (Prevention & Control of Pollution) Act, 1981

All the industries in Kala Amb area are operating with the consent of the State Board as required under Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981. The list of industries is enclosed. If and when the unit is found violating the provisions of Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981necessary actions in form of directions and show cause notices are issued against the unit and compliance got done from them.List of the industries attached as **Annexure-XI.**

4.2 List of Industries complying/non complying with the Effluent Discharge Standards:

HPSPCB Paonta Sahib has collected 72 samples of different water polluting units from Kala Amb area during October to December, 2018. The results of 71 samples have been received so far. Out of 71 samples, parameters of 6 samples have been found above the prescribed limit. Notices have been issued to the defaulting units. Second samples of the units have been collected for future regulatory action. The detailed lists of industries along with their compliance status.Out of 72 samples 67 were taken from different industries, rest 05 samples are repeated on same industries.

INFORMATION ON POLLUTION SOURCES STATUS IN PIA

1. Name of the Polluted Industrial Area (PIA) : Kala Amb
2. Demarcated area of the PIA in sq. Km. : Approx. 9.5 Sq. Km
3. Number of 17 categories of industries covered under the area: 2
4. Number of Red category industries covered under the area : 35
5. Total human population :15,000 (as per census 2011)
   Number of workers – 11,664
   (source : Department of Labour and Employment, Himachal Pradesh)

Sr. No.	Category of Industries	Total number of units	Number of units with adequate facilities	Remarks, if any
1.	Large scale industries	16	16	All the Red-Large industries shall provide online continuous emission/effluent monitoring system.
2.	Medium &Small-Scale industries	375	375	-
3.	CETPs	0	0	A Common Effluent Treatment Plant of 5 MLD capacity is proposed.
4.	TSDF	0	0	-
5.	STPs	0	0	Septic tanks have been provided by the individual households/industries. IPH

				Nahan have prepared a preliminary report for providing a sewerage system for Kala Amb and Moginand.
6.	CBMWMF	0	0	-
7.	MSW management facilities	Total solid waste (3-4 tonne/day)generated is being disposed off at solid waste dumping site of Municipal Council, Nahan.	0	SADA Kala Amb have submitted a proposal of 3.5 crores for providing a Waste processing facility (3-4 tons/day).

Summary of proposed action points

Summary of proposed action points

Short Term Action Points (up to 1 year, including continuous Activities)

Sr. No.	Issue	Activity	Action	Implementing Agency	Time Limit
			WATER		
1	Standard flow meter at inlet and final outlet of ETP	To control overflowing of drainage pipeline, it is necessary to control the discharge of excessive quantity of w/w from the industrial units (i.e. the w/w discharge should be as per CCA condition). To check the quantity of w/w being discharged flow meter at the final outlet.	Identification of units Industrial Association will issue the circular to their members to provide the standard flow meter. HPSPCB will also issue notice to such units. Standard flow meter required to install at final outlet of ETP	HPSPCB and Industries Associations	June,2019
2	Water consumption from nonpermitted sources (e.g. borewell, tanker etc) or more than permitted quantity is to be identified	It is observed that many industrial units have no proper control over water consumption which not only increase the overall w/w generation but also tends to w/w disposal mismanagement. There-fore, it is necessary to direct unit to restrict water consumption as per the quantity mentioned in CCA application and to also to direct DIC to seal the non permitted bore wells.	Identification of source of water i.e. tanker, bore well etc. for its authenticity. Issue direction to stop unauthorized use of water by the industries.	HPGWA, Industries Department, I&PH Department	October,2019

Sr. No.	Issue	Activity	Action	Implementing Agency	Time Limit
3	Sealing of unauthorized discharge other than regular discharge of effluent.	All industrial units shall be directed to operate only one outlet through flow meter for effluent disposal so that unauthorized discharge can be checked. The concerned authority shall disconnect / seal such unauthorized discharge.	Concern authority will be sked to identify unauthorized outlet. All industrial units will be asked to submit notarized undertaking to HPSPCB with a copy to respective association stating that there is no unauthorized outlet.	Industries associations, HPSPCB	August, 2019
4	drainage connection required to be discontinued to permanently closed & non operative industrial units	drainage connection to be disconnected to permanently closed & non operative industrial units and certified byDIC and checked by HPSPCB. Careful monitoring of such units required to undertake by HPSPCB	Inventorization of the permanently closed and non-operative industrial units. Drainage connection to be disconnected of permanently closed & on operative industrial units and certified by industries Department and checked by HPSPCB. All zero discharge units will be asked to submit notarized undertaking to HPSPCB with a copy to respective association stating that there is no unauthorized outlet and observing zero discharge.	HPSPCB, DIC	June,2019
5	Identification of unauthorized connection to drainage line or discharge to water body	Intensive monitoring shall be carried out of the units, which are located on the bank / adjacent to water body	Unauthorized connection in drainage line to be checked and disconnected by competent authority and verified by HPSPCB. Third party monitoring is to be carried out	HPSPCB	May ,2019
6	Discharging of Effluent (Trade or	Surprise inspection to be conducted by a team of SPCB	Drive shall be initiated immediately	HPSPCB	March, 2019

Sr. No.	Issue	Activity	Action	Implementing Agency	Time Limit
	Domestic) during night hours				
7	Effluent being discharged meets the prescribed norms.	To provide online continuous effluent monitoring device on all Red-Large industries.	Device to be installed	HPSPCB and industries.	July, 2019.
8	Study on the impact on health	Probable health risk.	To carry out survey by reputed agency to know the impact	Health Department	May, 2019
			AIR		
1	Upgradation of air pollution control measures.	Air action plan for Kala amb area is under implementation. The industrial units shall be directed to upgrade APCM to meet the amended ambient air quality norms, if required.	Industrial units consuming solid fuel like coal, agro waste, etc. required to upgrade air pollution control system by installing bag filters /multi cyclone separator so that ambient air in the nearby area meet with the revised norms of PM2.5. To check air pollution control system attached to with respect to adequacy and if needed upgrade the same.	HPSPCB and Industries Associations and Individual Industries.	March, 2019
2	Inventorization of the air emitting industries which needs upgradation of their inferior fuel for switching to Cleaner Fuel	Studies need to be conducted		HPSPCB, Industries, Industries Department Authorized agency	May,2019

Sr. No.	Issue	Activity	Action	Implementing Agency	Time Limit
3	Plantation in the industrial estate	Concerned authority shall be asked to provide adequate green belt in the periphery as well as wherever possible within the estate.	Considering the present plantation as baseline datum, five years plan for plantation of industrial estate to be submitted by the DIC/ Association in consultation with Forest department. To allot unused plots, road side areas and other areas reserved for green belt within DIC and to sign MoU between DIC and association for plantation	Forest Department	January, 2021
4	Control of fugitive emissions.	Fuel handling, chemical storage are the major source of fugitive emission. Hence the industrial units should adopt good housekeeping practices.	Good practices like cleaner production and cleaner technology to be adopted in fuel handling, process control in closed system and to have better house keeping	HPSPCB and Individual industries with Industrial associations	March, 2019
5	Strengthening of ambient Air Quality Monitoring	Concerned agency shall be asked to operate the existing AAQMS regularly and also to increase the no of stations	Existing AAQMS to be strengthened to monitor AAQ as per new notification	CPCB and HPSPCB	October, 2019
6	Improvement in the air quality	Mild steel industry (Large scale) shall provide secondary fume extraction system.	Pollution control device to be installed	Industries	December, 2019
7	Study on the mpact on health	Probable health risk.	To carry out survey by reputed agency to know the impact	Health Department	May, 2019

Sr. No.	Issue	Activity	Action	Implementing Agency	Time Limit
HAZARDOUS WASTE					
1.	Checking of illegal transportation and dumping of Hazardous waste	TSDF operators/Industries Association shall be asked to keep vigil on their member units regarding timely and regular disposal of HAZ wastes	Vigil required to be kept on illegal transportation and dumping of hazardous waste.	HPSPCB	March, 2019
2.	CPCB guidelines for TSDF are to be strictly followed.	TSDF guidelines for waste quantity at site, sheds for different waste, fire fighting facility, working of incinerator etc are not properly observed.	TSDF operator will comply with requirement as per CPCB guidelines.	HPSPCB and TSDF	March, 2019
3.	Adoption of 3- R's (Reduce, Reuse, Recycle)	It is required to adopt 3-Rs for better management of Hazardous waste and co-incineration of incinerable hazardous waste in cement kiln.	Inventorisation of the solid/ Liquid Hazardous generated from the waste industries Creation of waste exchange center		March, 2019
4.	Common facility for collection, storage & transportation of incinerable waste generated from individual industrial units/ Bio-medical waste	Common facility for collection, storage & transportation of incinerable waste generated from individual industrial units shall be developed.	Common hazardous waste incinerator is to be installed.	HPSPCB	-
5.	Inventorization of the industries with Captive facility for	Industrial units having own incinerator (liquid and solid) required to upgrade/ install	Up gradation of captive incineration system.	Industries	September, 2019

Sr. No.	Issue	Activity	Action	Implementing Agency	Time Limit
	destruction of incinerable waste and upgradation of existing facilities.	adequate incineration system as per guidelines of CPCB.			
6.	Transportation of Hazardous waste	Hazardous waste shall be transported through only dedicated & well covered vehicles.	Vigil checking on transportation of hazardous waste.	HPSPCB and Industries	March, 2019
7.	Proper disposal of plastic waste	There is no proper management for disposal of plastic waste from paper industries	Development of co-incineration system	HPSPCB, Urban Development Deptt., Forest Deptt.	March, 2019
8.	Waste Minimization Measures	To reduce the quantity of waste material.	Industries shall install, • Metering and control of quantities of active ingredients to minimize waste. • Reuse of byproducts from the process as raw materials or as raw material substitutes in other processes. • Use of automated filling to minimize spillage. • Use of Close Feed system into batch reactors. • Venting equipment through vapour recovery system and APCM. • Use of high pressure hoses for equipment clearing to reduce waste water	HPSPCB, UD, I& PH, RD , MC , Local Bodies and Industries	With regard to the proposals submitted

Sr. No.	Issue	Activity	Action	Implementing Agency	Time Limit
			generation.		
Miscellaneous					
1.	Regular monitoring and sampling of water quality of River Markanda and various drains on monthly basis.			HPSPCB (Continuous process)	
2.	Surprise inspection and sampling of the units during night hours.			HPSPCB (continuous process)	
3.	Interlocking of all the Pollution Control devices with the manufacturing process.			HPSPCB(continuous process)	

Long Term Action Points (More than 1 year)

Sr. No.	Issue	Action	Implementing agency	Time limit
1.	Monitoring the area in addition to the progress of Paved road and Plantation	Construction of paved road and maintaining Ambient Air Quality during construction phase are the major source of fugitive emission.	Forest Department, PWD	Ongoing task till completion of the work
2.	Improvement of the Water quality	Installation of continuous Water Quality monitoring station	I&PH	31 July,2019

Financial implications on various Department/ Agencies

Sr. No.	Name of the Department	Work proposed	Estimated cost	Timeline for completion
1.	IPH	Kala Amb and Moginand area: Laying of Sewerage Network and Pre- treatment of Sewage	30.40 crore	31st January, 2022
		Trilokpur Area: Laying of Sewerage Network and setting up of Sewerage Treatment Plant	26.00 crore	31st January, 2022
		Installation of Continuous Water Quality Monitoring Station	30.00 lakhs	31st July,2019
2.	HPSIDC and Industries Department	Proposal for setting up of CETP	20.00 Crore	31st January, 2022
3.	Forest Department	Plantation and maintenance	23 Lakh and 28.00 Lakh	December, 2020 and July, 2020
		Fire fighting equipments	8.03 Lakh	December, 2020
4.	Transport Department	Regular checking of vehicular emission and issue of PUCs	10 Lakh	March, 2019
5.	PWD and Municipal Council Kala Amb	Construction of pucca pavement along the roads	879.03 Lakh	June, 2019
6.	PWD and Forest Department	Tree plantation along the roads	10 Lakh	June, 2019

7.	HPSPCB	Public Awareness	3.5 Lakh	March, 2019
8.	SADA Kala Amb	Completing the preliminary project report for setting up of Solid Waste Processing facility on PPP mode.	3.5 Crore	15th April,2019
9.	Municipal Council and HPSPCB	Regular check and control of burning of MSW and display of hoardings	2 lakhs	March, 2019

Pr. Chief Conservator of Forest (HoFF)
Forest Department, Himachal Pradesh

Director
Department of Rural Development
Himachal Pradesh

Director
Industries Department
Himachal Pradesh

Director
Transport Department
Himachal Pradesh

Director
Department of Urban Development
Himachal Pradesh

Director
Department of Environment, S & T
Himachal Pradesh

for **Director** 15/3/19
Department of Health
Himachal Pradesh
15/3/19

Engineer-in-Chief
Department of Irrigation and Public Health
Himachal Pradesh