Rajasthan State Pollution Control Board

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F.14 (99)Corres./RPCB/Plg/ 4464 Date: 23-7-2020

Secretary
Department of Environment
Government of Rajasthan
Jaipur

Sub: Regarding updating and modification of comprehensive Environmental Improvement Action Plans for critically polluted industrial clusters of Bhiwadi as per Hon'ble NGT order dated 13.12.2018.

Ref: i) Hon'ble NGT order dated 13.12.2018 in the original application No-1038/2018 in view of the news item titled "CPCB to rank industrial units on pollution levels" published in "The Asian Age" dated 06.12.2018.

ii) This office letter no. F-14(99)Corres/RSPCB/plg/1641 dt. 23/07/2019

Sir,

In reference to Hon'ble National Green Tribunal order dated 13.12.2018, it is requested that Hon'ble NGT Principal Bench New Delhi vide its order dated 13.12.2018 has directed to formulate action plans with regards to the critically polluted areas Pali, Jodhpur, Bhiwadi and severely polluted area Jaipur in the State of Rajasthan. Action Plan for Bhiwadi and Jaipur is being prepared by IIT, Kanpur and action plan for Pali and Jodhpur are being prepared by MNIT, Jaipur.

The State Board vide letter dated 23/07/2019 has forwarded action plans of the Bhiwadi and Jodhpur to DOE, GOR and requested for a meeting of all departments to discuss the draft action plans before being approved by the State Government, to be forwarded to CPCB for final approval. Thereafter, on the meeting dated 27/11/2019 under the chairmanship of Chief Secretary, GoR, it has been decided that a meeting of all the Stakeholder department may be called by State Pollution Control Board under the chairmanship of Chairperson, RSPCB to discuss the draft action plans.

In compliance to the said directions, a meeting was called by RSPCB on 10.01.2020 with all the Stakeholder departments and representative of industrial association in which IIT Kanpur and MNIT Jaipur has made presentation before the invitees regarding their study, findings and remedial measures suggested in the Draft Action Plan of Jaipur, Jodhpur, Pali and Bhiwadi.

MNIT, Jaipur has already submitted final action plan of the Pali and Jodhpur and same was forwarded by the State Board vide letter dated 02/06/2020 to DOE,GOR for approval from the State Government.

IIT Kanpur has submitted revised action plan for Bhiwadi on 17/07/2020 after incorporating the suggestions/Comments received during the presentation from various departments.

In view of above, it is requested that action plan of Bhiwadi to be approved from the State Government and to be forwarded to CPCB for final approval at the earliest.(Copy of revised action plan of Bhiwadi is Enclosed). Action Plan for Jaipur are being modified by IIT, Kanpur as per the suggestions/Comments received during the presentation and final reports are likely to be received by 31/07/2020.

Yours Sincerely

Encl.: As above.

(Dr Vijai Singhal)
Member Secretary

Comprehensive Environmental Pollution Abatement Plan: Bhiwadi

Final Report

Submitted to
Rajasthan State Pollution Control Board
Jaipur

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July 2020

Comprehensive Environmental Pollution Abatement Plan: Bhiwadi

Background

The Central Pollution Control Board (CPCB) in association with Indian Institute of Technology (IIT) New Delhi carried out an environmental assessment of industrial clusters across the country. Based on this, a Comprehensive Environmental Pollution Index (CEPI) was specified in 2009 to identify polluted industrial clusters in the country. The main objective of the above exercise was to identify polluted industrial clusters or areas in order to take concerted action towards pollution abatement and to centrally monitor them at the National level. A total of 88 industrial areas or clusters were identified by the CPCB in consultation with the Ministry of Environment & Forests (MoEF), Government of India (GoI).

Bhiwadi Industrial Cluster in Rajasthan was identified through this study as a Critical Industrial Cluster (CEPI Score: 82.91). This cluster needs a long term comprehensive environmental pollution abatement plan to improve its environmental performance. Accordingly a document titled, "FINAL ACTION PLAN – BHIWADI, Development of Comprehensive Environmental Pollution Abatement Action Plan for Critically Polluted Industrial Cluster" was prepared by PDCOR and IL&FS Environment and submitted to RSPCB in February 2013. This document suggested an Action Plan for environmental pollution abatement in Bhiwadi, Rajasthan. Various projects have been initiated and implemented by RSPCB in the Bhiwadi Industrial Cluster as per this Action Plan.

However, CPCB notified a revised formula for calculation of CEPI in 2016. The revised CEPI score of the Bhiwadi Industrial Cluster was calculated in 2018 as 79.63 using the revised CPCB methodology for CEPI calculation.

Consequently, the National Green Tribunal on 13/12/18 directed RSPCB to finalize time bound action plans with regard to identified polluted industrial clusters in accordance with the revised norms laid down by CPCB. RSPCB has appointed IIT Kanpur (vide letter No. F.14 (99) Corres. / RPCB/ Plg / 08-11 dated 2/4/2019) to update and modify the 2013 Action Plan for Bhiwadi prepared by M/s PDCOR in light of the revised CEPI evaluation methodology.

Accordingly, IIT Kanpur has prepared this report, wherein, 1) The current implementation status vis-à-vis the Action Plan presented in the M/s PDCOR report of February 2013 has been analyzed, and 2) a modified Action Plan for comprehensive environmental pollution abatement in future has been presented.

The present report is a modified version of the original February 2013 M/s PDCOR report and consequently has quoted extensively from that report. The modified Action Plan presented in this report is partly based on the Action Plan presented in the February 2013 M/s PDCOR report and also on information regarding present status vis-à-vis implementation of that Action Plan as reported by RSPCB.

Description

Bhiwadi is a growing industrial town in Rajasthan situated in the north of the state in Alwar District, bordering Haryana State. The identified industrial areas in Bhiwadi cluster include

Bhiwadi, Chopanki and Khushkhera. In order to have complete coverage of the industrial area, an impact zone of 3 kms around each industrial area is considered for the purpose of this study instead of the suggestion given by CPCB to depict an impact zone of 2 kms area around each of the industrial area. The major receptor in this area is the Bhiwadi town having population of 33,000 which lies within 1 km of the Bhiwadi Industrial Area. A detailed description of the geography and assessment of the environmental condition of the Bhiwadi industrial cluster are presented in ***Annexure I*** of this report.

RIICO is the main agency involved in Industrial Development. At present a total of about 5000 acres is under Industrial Development within the Bhiwadi Region. Industries in Bhiwadi Region are of varied nature. Major industries in this region include Forging, Galvanizing, Lead Recycling, Chemical and Pharmaceutical units.

Water Environment

The seasonal river, Sabi, is the only surface water source in this Region which is about 23 kms from the Bhiwadi industrial cluster. Groundwater is the major source of water in Bhiwadi region for all purposes. Water pollution in this region is mainly due to engineering, galvanizing, electroplating, chemical and pharmaceutical industries.

Bhiwadi industrial area has a network of open drains to collect wastewater from individual industries as well as serve as storm water drain. Domestic effluents are also discharged into these drains. The water from the drains is conveyed to a CETP, where it is treated. The treated water ends up in the low-lying areas, creating unhealthy and unsanitary conditions in the vicinity. The collecting drains are breached at a few locations. There is thus a need for proper wastewater and storm water disposal. Most of the major industries in the region have their own effluent treatment plants, and some of them claim to reuse most of their treated effluent for gardening and other purposes in their factory premises.

Under the National Water Monitoring Program, RSPCB has set up 5 stations in the Bhiwadi Region for regular monitoring. As per RSPCB records, nearly 90% of the units in Bhiwadi Industrial Area have full-fledged effluent treatment plants (ETP) within their individual premises.

Air Environment

Ambient Air quality monitoring is now carried out on a regular basis in Bhiwadi. Major contributors to air pollution in this Region are the industries. At present, Bhiwadi does not have any functional continuous air monitoring stations. At present, about 30 industries have installed appropriate air pollution control devices.

Land Environment

Major source of soil contamination observed in Bhiwadi is indiscriminate disposal of wastewater into open low lying areas and dumping of municipal as well as industrial solid waste into open lands. There is a need for a proper solid waste management system, for which a landfill site has been identified. Waste includes hazardous waste, biomedical waste, and municipal solid waste. The RSPCB is regularly conducting survey and inventorization of various waste sources and generation.

Bhiwadi lies in Alwar District and the hazardous waste generated in this District amounts to 6.21% of the total waste generated in the State. Hazardous waste generated in Bhiwadi region amounts to nearly 50% of the total hazardous waste generated in Alwar District. At present, all industries dispose off their hazardous waste at the Common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF) at Gudli in Udaipur.

Bhiwadi has very few and small scale health care establishments. Hence, biomedical waste generated in this Region is very low. However, there is a biomedical waste collection facility at all these establishments. There is a common incinerator for biomedical waste disposal at Alwar. All the Health Care Establishments in Bhiwadi are registered with this common facility.

CEPI Score

Presented below is the CEPI score originally assigned to the Bhiwadi Industrial Cluster by CPCB.

Parameter-wise CEPI Scores for Bhiwadi Industrial cluster

S. No	Parameter	A1	A2	A	B1	B2	B3	B	C1	C2	C3	C	D	Sub Index		Existing CEPI
1	Air	6	5	30	6	0	0	6	5	5	0	25	10	Air	71	82.91
2	Water	3	5	15	8	3	3	14	5	5	0	25	15	Water	69	
3	Land	3	5	15	7	3	4.5	14.5	5	3	0	15	15	Land	59.5	

As per the modified CEPI calculation methodology published in 2016 and based on current environmental conditions prevalent in Bhiwadi region presently, the CEPI score has been recalculated in 2018 as below.

The CEPI Score of Bhiwadi Industrial Cluster calculated as per Revised CEPI Methodology

Name of Polluted Industrial Areas (PIAs)	Env.	Criteria pollutants selected on the basis of monitoring carried out during 2018	EPI Score	CEPI Score	Status of Environment	Demarcation of boundaries / industrial clusters / potential impact zones
Bhiwadi	Air	PM_{10} $PM_{2.5}$ Pb	66.50	79.63	Ac_Wc_Ln	- RIICO industrial areas Phase I to IV - - Bhiwadi town - - Other surrounding industrial areas: Chopanki, Rampura Mundana, Khuskhera Phase I to III.
	Water	TKN T. Phos., BOD,	71.00			
	Land	T. Hard., T. Cr F	44.75			

Implementation Report on Action Plan given in M/s PDCOR Report

A document titled, "FINAL ACTION PLAN – BHIWADI, Development of Comprehensive Environmental Pollution Abatement Action Plan for Critically Polluted Industrial Cluster" was prepared by PDCOR and IL&FS Environment and submitted to RSPCB in February 2013. This document suggested an Action Plan for environmental pollution abatement in Bhiwadi, Rajasthan. Various projects have been initiated and implemented by RSPCB in the Bhiwadi Industrial Cluster as per this Action Plan.

The suggested action points for improvement of CEPI in the Bhiwadi Industrial Area as given in the above report and the present status regarding implementation of these action points as reported by RSPCB are given in a tabular form in ***Annexure II*** of this report.

Proposed Action Plan for Pollution Abatement

The modified Action Plan presented in this report is partly based on the Action Plan presented in the February 2013 report by M/s PDCOR and also on information regarding present status vis-à-vis implementation of that Action Plan as reported by RSPCB.

The necessity of preparing a revised Action Plan arose from the directions by the National Green Tribunal (NGT) in the hearing of the original application No. 1038/2018 dated 13/12/2018 as excerpted below,

...we direct the SPCBs/ Committees to finalize the time bound action plans with regard to identified polluted industrial clusters in accordance with the revised norms laid down by the CPCB to restore environmental qualities within norms. Such action plan be finalized within three months from the date of receipt of copy of this order. In case of any left- out/missed areas in addition to 100 areas also, SPCBs should undertake CEPI assessment and formulate action plans.., The entire NGT order is appended as ***Annexure III*** to this report.

The action plan also takes into consideration the office order issued by the RSPCB on, *...Mechanism of Environmental management of Critically and Severely Polluted Areas and Considerations of Activities/Projects in such Areas in Compliance with Hob'ble NGT order dated 23/8/2019 in the matter of OA 1038/218...* where in additional conditions were imposed regarding the functioning of red/orange category industries in severely and critically polluted areas of the state. This order is appended as ***Annexure IV*** to this report.

In addition the Action Plan takes into consideration the Notification No. F. 6(2) Industries / I / 2020 by the Department of Industries, Government of Rajasthan, notifying the scheme for establishment of integrated CETPs and up-gradation of existing CETPs (see ***Annexure V*** of this report). Industrial associations in critically/severely areas of the state can now avail funds for establishment of CETPs under this scheme.

The Action plan is presented separately for Water, Air and Land Environment and also suggests administrative mechanisms for coordination of activities necessary for effective implementation of the Action Plan.

Table IA. Suggested Short Term Action: Water
Bhiwadi Industrial Area
(Completion Deadline: April 2022)

	Objective	Environmental Benefits	Suggested Action	Responsibility
1.	Separation of industrial effluent, domestic effluent and storm water carrying conduits in the Bhiwadi Industrial Cluster.	Load on the CETP will be reduced. Main environmental benefit is the better treatment of industrial effluent which can then be reused / recycled. Prevention pooling of wastewater in open land due to channel blockage and overflow. Main environmental benefit is the prevention of land and groundwater pollution.	Separate closed conduit for conveyance of Industrial effluent in Bhiwadi Industrial area to CETP.	Bhiwadi Industrial Association (CETP SPV)
			Separate closed conduit for conveyance of Domestic effluent in Bhiwadi Industrial area to STP.	RIICO
			Cleaning, repair, lining and covering of existing open channels to only carry storm water.	RIICO
2.	Accurate accounting of effluent contributed by various industries for better monitoring of CETP influent and apportionment of CETP operation costs among various industries.	Accounting of water use and wastewater generation by individual industries. May lead to sharing the CETP operation costs in an equitable manner. Main environmental benefit is that water used is monitored and water conservation / recycling may be encouraged.	Installation of flow meter by the member units of CETP in Bhiwadi industrial area for monitoring the flow entering into closed conduit line from each of the member industrial units	Bhiwadi Industrial Association
3.	Ttreated effluent from CETP in Bhiwadi sent back to the industries for use in horticultural and/or reuse for industrial purposes.	Main environmental benefit is the reduction in groundwater extraction.	Installation of pipelines and pumping infrastructure for sending treated effluent back to industries	Bhiwadi Industrial Association (CETP SPV)

Table IA……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
4.	Proper disposal mechanism for excess treated effluent from CETP in Bhiwadi, (when not reused)	The treated wastewater should not pool on land or spread on agricultural fields. Main environmental benefit is the prevention of land and groundwater pollution.	Repair and O&M of the closed conduit pipe line from the CETP up to river Sabi for treated effluent discharge.	RIICO
5.	Regulation / restriction on groundwater abstraction by the industries in Bhiwadi.	Prevent over-exploitation of groundwater resources. Main Environmental benefit is to encourage water conservation, water reuse / recycling.	Fixing an upper limit for groundwater extraction for individual industrial units considering treated CETP effluent being made available to the industries for reuse	Bhiwadi Industrial Association, CGWB and RSPCB
6.	Monitoring of groundwater quality in Bhiwadi	Main environmental benefit is early warning regarding deteriorating groundwater quality.	Implementation of groundwater quality monitoring plan in and around residential settlements near Bhiwadi Industrial area.	CGWB and RSPCB
7.	Groundwater recharge in Bhiwadi	Main environmental benefit is to prevent depletion of groundwater resources.	Development of water recharging structures on storm water drains and in other areas for groundwater recharge in Bhiwadi Industrial Area	RIICO

Table IA……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
8.	Monitoring of the quality of discharge of primary treated effluent from old (before 10/7/19) Red and Orange category industries to the CETP	Major environmental benefit is that treated effluent from CETP will be suitable for reuse / recycling	Implementation of a monitoring program to ensure that the primary treated effluent from highly polluting industries does not contain high concentrations of heavy metals and other pollutants which may affect treated water quality from CETP to be reused/recycled in industries	Bhiwadi Industrial Association (CETP SPV) and RSPCB
9.	New (after 10/7/19) Red and Orange category units in Bhiwadi indistrial area follow water pollution control norms as stated in Office Order issued by RSPCB (see ***Annexure IV***)	Major environmental benefit is the reduction of water pollution by red/orange category industrial units in Bhiwadi industrial area	All new red/orange category units will have to submit action plans for compliance with Office Order issued by RSPCB (see ***Annexure IV***)	Individual industries and RSPCB

Table IB. Suggested Longer Term Actions: Water
(Surrounding Industrial Areas: Khushkhera, Chopanki, Rampura, Mundana)
(Completion Deadline: April 2024)

	Objective	Environmental Benefits	Suggested Action	Responsibility
1.	Establishment of zero liquid discharge (ZLD) CETP for Khushkhera and nearby industrial areas (capacity approx. 5-7 MLD)	Main environmental benefit is the prevention of land and groundwater pollution.	Establishment of ZLD based CETP with closed conduits for transport of primary treated industrial effluent to CETP and closed conduits for transport of treated effluent from CETP to industrial units for reuse	Industrial Association of this area (CETP SPV to be formed)

Table IB……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
2.	Establishment of zero liquid discharge (ZLD) CETP for Chopanki and nearby industrial areas (capacity approx. 5-7 MLD)	Main environmental benefit is the prevention of land and groundwater pollution.	Establishment of ZLD based CETP with closed conduits for transport of primary treated industrial effluent to CETP and closed conduits for transport of treated effluent from CETP to industrial units for reuse	Industrial Association of this area (CETP SPV to be formed)
3.	Accounting of effluent contributed by various industries for better apportionment of CETP operation costs among various industries.	Main environmental benefit is that water used is monitored and water conservation / recycling may be encouraged.	Installation of flow meter by the member units of CETP in these industrial areas for monitoring the flow entering into closed conduit line from each of the member industrial units	Respective Industrial Associations
4.	Proper disposal mechanism for excess treated effluent from CETPs above (if not reused)	The treated wastewater should not pool on land or spread on agricultural fields. Main environmental benefit is the prevention of land and groundwater pollution.	Repair and O&M of the closed conduit pipe line from the CETP up to river Sabi for treated effluent discharge.	Respective CETP SPVs
5.	Regulation / restriction on groundwater abstraction by the industries in these industrial areas.	Prevent over-exploitation of groundwater resources. Main Environmental benefit is to encourage water conservation, water reuse / recycling.	Fixing an upper limit for groundwater extraction for individual industrial units considering treated CETP effluent being made available to the industries for reuse	Respective Industrial Associations, CGWB and RSPCB

Table IB……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
6.	Monitoring of groundwater quality in these industrial areas.	Main environmental benefit is early warning regarding deteriorating groundwater quality.	Implementation of groundwater quality monitoring plan in and around residential settlements near these industrial areas.	CGWB and RSPCB
7.	Segregation of industrial and domestic effluent and storm water flows	Load on the CETP will be reduced. Main environmental benefit is the better treatment of industrial effluent which can then be reused / recycled.	Separate closed conduit for conveyance of domestic effluent in these industrial areas to STP.	RIICO
			Cleaning, repair, lining and covering of existing open channels to only carry storm water.	RIICO
8.	Groundwater recharge in these industrial areas	Main environmental benefit is to prevent depletion of groundwater resources.	Development of groundwater recharging structures on storm water drains and in other areas in these industrial areas	RIICO
9.	Monitoring of the quality of discharge of primary treated effluent from old (before 10/7/19) Red and Orange category industries to the CETPs	Major environmental benefit is that treated effluent from CETPs will be suitable for reuse / recycling	Implementation of a monitoring program to ensure that the primary treated effluent from highly polluting industries does not contain high concentrations of heavy metals and other pollutants which may affect treated water quality from CETP to be reused/recycled in industries	Associated Industrial Association (CETP SPVs) and RSPCB

Table IB……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
10.	New (after 10/7/19) Red and Orange category units in these indistrial area follow water pollution control norms as stated Office Order issued by RSPCB (see ***Annexure IV***)	Major environmental benefit is the reduction of water pollution by red/orange category industrial units in surrounding industrial areas	All new red/orange category units will have to submit action plans for compliance with Office Order issued by RSPCB (see ***Annexure IV***)	Individual industries and RSPCB

Table IIA. Suggested Short Term Action: Air
(Completion Deadline: April 2022)

	Objective	Environmental Benefits	Suggested Action	Responsibility
1.	Controlling emissions from industries operating boilers and furnaces using wood and other solid fuels (only those with no plans of shifting to cleaner fuels)	Main environmental benefits shall be the improvement of ambient air quality	Installation of bag filters for controlling particulate emissions.	Individual industrial units under monitoring by RSPCB
			Implementation of emission monitoring plan for strict compliance with prevalent emission standards	
2.	Reduction of emissions from induction furnaces	Main environmental benefits shall be in occupational safety and the improvement of ambient air quality	Installation of side-suction hoods for capturing fugitive emissions from induction furnaces	Individual industrial units under monitoring by RSPCB
3.	Reduction of fugitive emissions from industrial premises	Main environmental benefits shall be the improvement of ambient air quality.	Watering of unpaved and bare land within industrial premises.	Individual industrial units under monitoring by RSPCB
			Planting of vegetation on bare land within industrial premises.	
			Covered shed storage of industrial waste within industrial premises.	
			Covered storage of loose debris and construction material within industrial premises	
4.	Controlling emissions of road dust in the industrial area	Main environmental benefits shall be the improvement of ambient air quality	Planting of garden/plants and general maintenance of the land in front of industrial units, immediately outside its boundary. No dumping of industrial waste allowed on this land.	Individual industrial units under monitoring by RIICO
			Regular road repair in the industrial area	RIICO

Table IIA.....Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
5.	Prevention of Unscientific burning of industrial solid waste (both hazardous and non-hazardous) within industrial premises and anywhere within the industrial area	Main environmental benefits shall be the improvement in occupational safety and the improvement of ambient air quality	Surveillance plan to prevent unauthorized burning of industrial solid waste within industrial premises and anywhere else in the industrial area	Monitoring by RSPCB, RIICO and Local Self Government
6.	Strict prohibition in burning of industrial solid waste in boilers	Main environmental benefit shall be the reduction in the emission of hazardous pollutants into air		
7.	Strict surveillance to monitor all illegal activities contributing to air pollution in the industrial area	Main environmental benefit shall be the reduction in the emission of hazardous pollutants into air	Regular visits to industries by inspectors from RSPCB	RSPCB
			All reports of plainly visible gross air pollution must be investigated	
			Industries illegally running night shift must be checked.	
			Proper documentation of violation of environmental norms and illegal activity	
8.	New (after 10/7/19) Red and Orange category units in the industrial area follow air pollution control norms as stated in Office Order issued by RSPCB (see ***Annexure IV***)	Major environmental benefit is the reduction of air pollution by red/orange category industrial units in the industrial area	All new red/orange category units will have to submit action plans for compliance with Office Order issued by RSPCB (see ***Annexure IV***)	Individual industries and RSPCB

Table IIB. Suggested Longer Term Action: Air
(Completion Deadline: April 2024)

	Objective	Environmental Benefits	Suggested Action	Responsibility
1.	Shifting to cleaner fuels	Main environmental benefits shall be the compliance with air emission standards. Indirect benefits shall be improvements in the ambient air quality.	All boilers and furnaces in the industrial area using coal, wood, and other dirty solid fuels which should be shifted to natural gas or electricity.	Individual Industrial Units **and** Electricity and Gas Supplying Agencies **and** RSPCB
			All rotary furnaces having significant emissions and running on coal needs to be shifted to natural gas and electricity	
2.	Improved Construction and Demolition Practices	Main benefits shall be improvements in the ambient air quality.	Wet Suppression	Individual Industrial Units, RIICO and Monitoring by RSPCB
			Wind speed reduction (for large construction sites)	
			Waste should be properly disposed of. It should not be kept lying near the roads as it may contribute to road dust emission.	
			Proper handling and storage of raw material: covered storage and provide the windbreakers.	
			Vehicle cleaning and specific fixed wheel washing on leaving the site and damping down of haul routes. Vehicle transporting raw materials or waste materials should be covered.	
			Actual construction area should be covered by a fine screen.	
			No storage (no matter how small) of construction material near roadside (up to 10mfromthe edge of the road)	
			Sensitize construction workers and contract agency through Work shops.	

Table IIB……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
3.	Minimizing the use of DG sets and used of alternate energy for backup power	Reduction in noise and air pollution	Ensuring uninterrupted power supply Availability of renewable energy options	Electric Supply Authority **and** Rajasthan Renewal Energy Corporation Ltd
4.	Better air quality surveillance	Faster response to air quality issues	Installation of continuous real time regional ambient air quality monitoring station at a central location in the Industrial Area	RSPCB
5.	Better response to deteriorating air quality	Better preventive measures in case of deterioration of air quality	The GRAP System (Graded Response Action Plan) should be implemented: It is an emergency plan through which action can be taken according to air quality status.	RSPCB
6.	Strengthening RSPCB office in Bhiwadi	Better surveillance and monitoring of air quality	More manpower instruments. Strengthening of the laboratory.	RSPCB

Table III. Suggested Action: Land
(Industrial Areas: Bhiwadi, Khushkhera, Chopanki, Rampura, Mundana)
(Completion Deadline: April 2023)

	Objective	Environmental Benefits	Suggested Action	Responsibility
1.	Scientific disposal of non-hazardous industrial solid waste	Non-hazardous industrial solid waste generated in the area shall be recycled, reused, incinerated or otherwise disposed in a scientific manner in a landfill. Improvement in groundwater and air quality is expected. Land pollution will also be prevented.	Development of the solid waste dumping site in Bhiwadi as a proper solid waste disposal facility through the employment of a service provider.	Respective Industrial Associations should form a SPV for solid waste management. This SPV should employ the service provider for development of the solid waste dumpsite
2.	Segregation of non-hazardous industrial solid waste	Segregated collection helps in recycling, reuse and disposal of solid waste	A plan for segregation of industrial solid waste into various fractions before collection should be implemented	SPV for solid waste management should develop the plan for segregated solid waste collection in consultation with individual industries
3.	Collection of segregated non-hazardous industrial solid waste from all industries	Disposal of Hazardous solid waste in un-approved manner and unscientific burning of industrial solid waste shall be prevented.	Service providers should be employed for collection of segregated solid waste from all industries in the area	SPV for solid waste management should appoint the service provider for this purpose
4.	Prevention of unauthorized dumping / burning of non-hazardous industrial solid waste	Improvement in groundwater and air quality is expected. Land pollution will also be prevented.	A vigilance and inspection plan for ensuring	RSPCB

Table III……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
4.	Tree plantation to reduce fugitive dust emission	Environmental benefits include decrease in particulate concentration in air and consequent improvement in air quality.	Service providers to be employed for tree plantation drive and maintenance of the planted trees.	Joint responsibility of respective industrial associations and RIICO
5.	Beautification of the industrial areas	Environmental benefits include decrease in particulate concentration in air and consequent improvement in air quality.	Service providers to be employed for regular cleaning of streets and establishment and maintenance of parks and gardens	Joint responsibility of respective industrial associations and RIICO
6.	Proper management and disposal of Hazardous waste	Reduction in air water and land pollution and consequent improvement of CEPI score.	All industrial units in red / orange category must dispose of hazardous waste as per Hazardous Waste Management Rules. Additionally, new (after 10/7/19) Red and Orange category units in these industrial areas follow Hazardous Waste Management norms as stated in Office Order issued by RSPCB (see ***Annexure IV***)	This is the responsibility of individual industries. RSPCB is responsible for ensuring compliance.

Table IV. Suggested Action: Administrative
(Industrial Areas: Bhiwadi, Khushkhera, Chopanki, Rampura, Mundana)
(Deadline: December 2020)

	Objective	Benefits	Suggested Action	Responsibility
1.	Involvement of respective Industry Associations	Clear delineation of responsibilities and obligations of Industry Associations with regard to implementation of the Action Plan. Clear assignment of responsibilities in this regard to Industry Associations	Similar to the SPV for CETP in Bhiwadi, SPVs should also be set up for the proposed CETPs in Khuskeda and Chopanki. All SPVs should be fully responsible for collection, treatment and reuse / disposal of the treated effluent from the CETPs. An SPV should also be set up for non-hazardous industrial solid waste management in the entire industrial area Separate task forces to be formed by each Industry Association for effective implementation of various responsibilities assigned to them in this Action Plan	Industrial associations are responsible for forming the SPVs and task forces. RIICO should be involved in the facilitation of SPV formation.
2.	Involvement of RIICO	Streamlining of responsibilities and obligations of RIICO with regard to implementation of the Action Plan. Effective coordination between RIICO and Industry Associations for effective implementation of those points in Action Plan for which they have joint responsibility.	RIICO should form an internal task force for effective implementation of various responsibilities assigned to them in this Action Plan. A coordinating committee consisting of members of the RIICO and Industrial Association task forces should meet regularly to monitor progress on those points of the Action Plan where both RIICO and Industrial Association have joint responsibility	RIICO and Industrial Associations are jointly responsible.

Table IV……Continued

	Objective	Environmental Benefits	Suggested Action	Responsibility
3.	Involvement of RSPCB	Streamlining of responsibilities and obligations of RSPCB with regard to protection of groundwater resources as per the action plan Effective coordination between RSPCB and Industry Associations for effective implementation of those points in Action Plan for which RSPCB has monitoring responsibility.	RSPCB should initiate a coordinating mechanism with CGWB for protection of groundwater resources as per the action plan A coordinating committee consisting of members of the RSPCB and Industrial Association task forces should meet regularly to monitor progress on those points of the action plan where RSPCB has monitoring responsibility	RSPCB, CGWB and Industrial Associations are jointly responsible.
4.	Involvement of State Government	Improvement in coordination between Industrial Associations, RSPCB and RIICO regarding implementation of the Action Plan.	State government should form an apex monitoring committee comprising of representatives from the Industrial Associations', and RIICO task forces, RSPCB and high level State Government representatives to ensure time bound implementation of the Action Plan.	State Government is responsible.

Annexure I

Background

Bhiwadi is an industrial town in Rajasthan situated in the northern part of the State in Alwar District bordering Haryana State. It is around 70 km by road from New Delhi by NH-8 and 200 km by road from Jaipur. Bhiwadi is a Regional Centre/Priority Town of the National Capital Region (NCR) and forms part of the Regional Plan 2021 for NCR.

As of Census of India, 2011, Bhiwadi had a population of 1,05,000. Bhiwadi Industrial area includes Bhiwadi Phase I to V, Chopanki, Pathredi, Khushkhera and Tapukara. Land available in Bhiwadi is about 2000 acres in Bhiwadi, 977 acres in Khushkhera and 820 acres in Chopanki. Refer to Figure 1 for location of the Industrial Cluster in Bhiwadi Region.

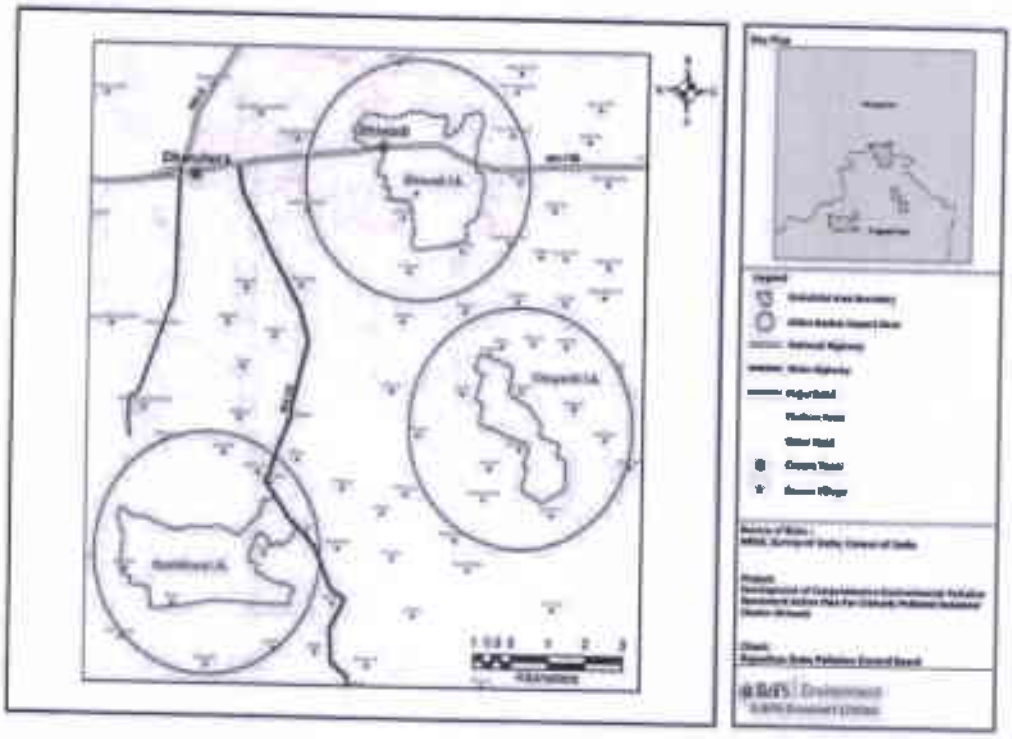

Figure 1. Bhiwadi Industrial Cluster Location Map

Climate is generally hot and dry. The maximum temperature in this region touches 47° C and the minimum goes to freezing point. Average temperature is 26° C. The winds are strongest (13.1 km/hr) in June and lightest (5.6 km/hr) in November. Humidity level is about 70%. The average rainfall in Bhiwadi Region is 500-700 mm. Bhiwadi receives rainfall only for two months – July and August. Bhiwadi falls in the Flood Prone Eastern Plain of the State.

The topography of Bhiwadi region consists of few hillocks of Aravalli series and the altitude varies from 150m to 300 m above mean sea level. There are a number of hills and protected forests in Bhiwadi region namely Gondhan forest, Chopanki forest, Kohri Kalan forest, Sarekalan forest and Banvan forest. Areas under various forest blocks of Bhiwadi Region are presented in Table-1 (source: IL&FS, 2012). There are no reserved forests in this area, however, around 1485 hectares are under protected forest. Dhonk, Ronj, Hingot, Dacer, Ber and Kareel are the major species of trees are present in this area. Further, a sizable amount of land (about 798 ha) is ravenous which is in urgent need of protection to improve the land quality.

Table 1: Area under Forest – Bhiwadi Region

Sr.No	Forest Block	Projected Forest	Unclassified Forest	Total Area
		Area In Hectares		
1	Banvan	45.94	0	45.94
2	Chopanki	218.75	0.18	218.93
3	Gunwalda	58.82	1.91	60.73
4	Udhanwas	214.97	0.14	215.11
5	Khori Kalan	289.75	0	289.75
6	Sarekalan	211.66	0.25	211.91
7	Ghatal	184.92	0	184.92
8	Khijarpur	78.42	0	78.42
9	Godhan	182.02	0.29	182.31
	Total Area	**1485.25**	**2.77**	**1488.02**

(Source: Forest Department, Alwar

In Bhiwadi region the soil is Alluvial Sandy soil with strength of SBC 8-10 tonne/m^2. The major group of rocks is pre-Aravalli comprising of schist, quartzite and granite. Alwar group consists of quartzite and schist. Major mineral found in district are Baryte, Building stones and Copper. District leads in the production of these minerals.

Impact Zone

Based on the suggestion in the *Framework of Model Action Plan for Critically Polluted Industrial Areas / Cluster* by CPCB, the geographical area of the industrial cluster and its impact zone has been considered here. A radius of 3 kms has been considered to fully cover the Industrial Clusters as well as the sensitive receptors in the area. Refer Figures 2, 3 and 4 for the maps of Bhiwadi, Khushkhera and Chopanki Industrial Areas, respectively, showing the sensitive receptors. The impact zone for the Bhiwadi Industrial Cluster does not have any ecologically sensitive features such as reserved forests, heritage sites, etc. The major receptor is the Bhiwadi town having population of 33,000 which lies within 1 km of the Bhiwadi Industrial Area.

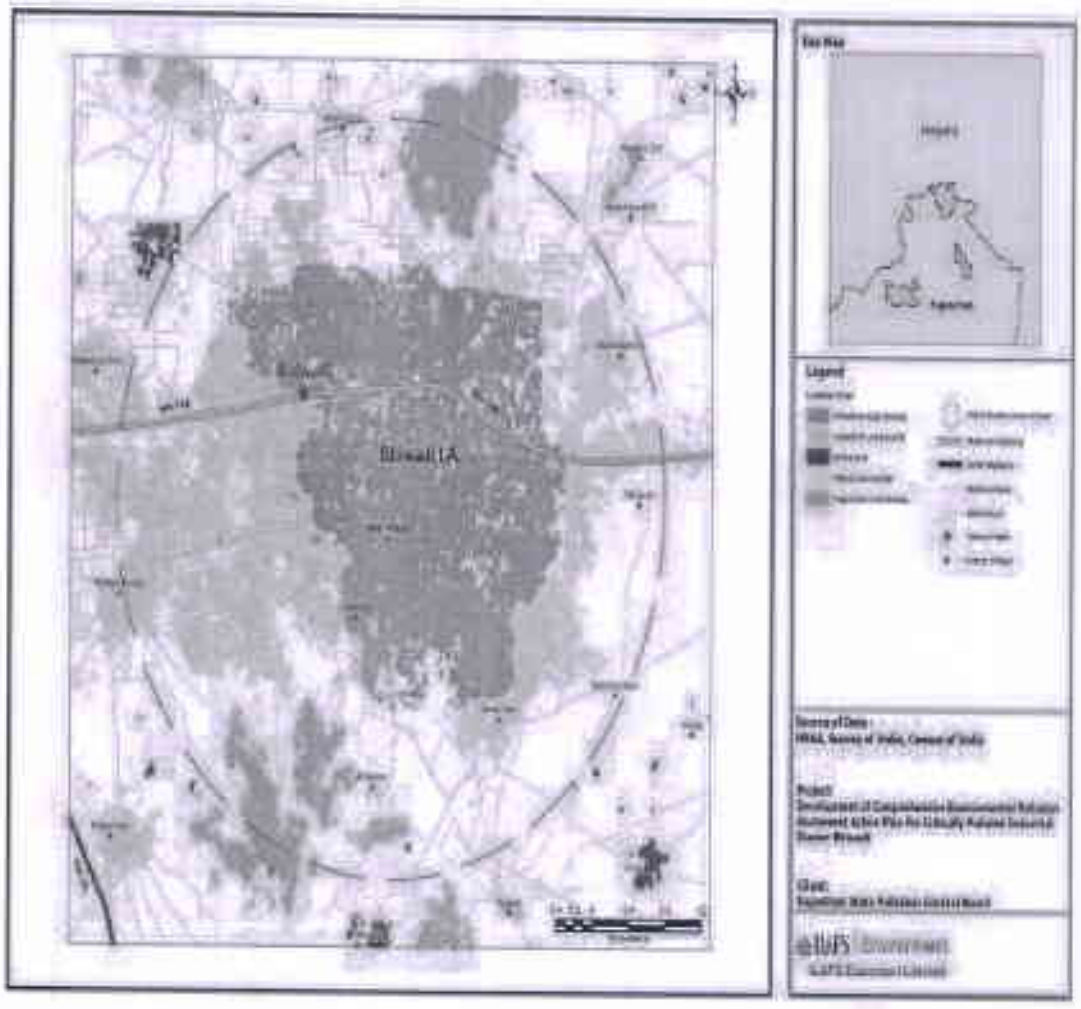

Figure 2. Location of Sensitive Receptors in Bhiwadi Industrial Area

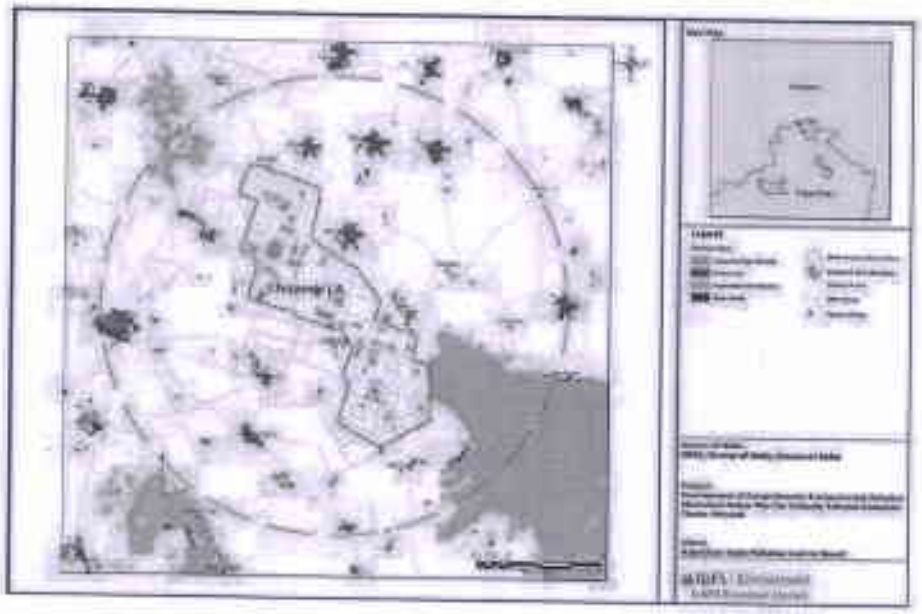

Figure 3. Location of Sensitive Receptors in Bhiwadi Industrial Area

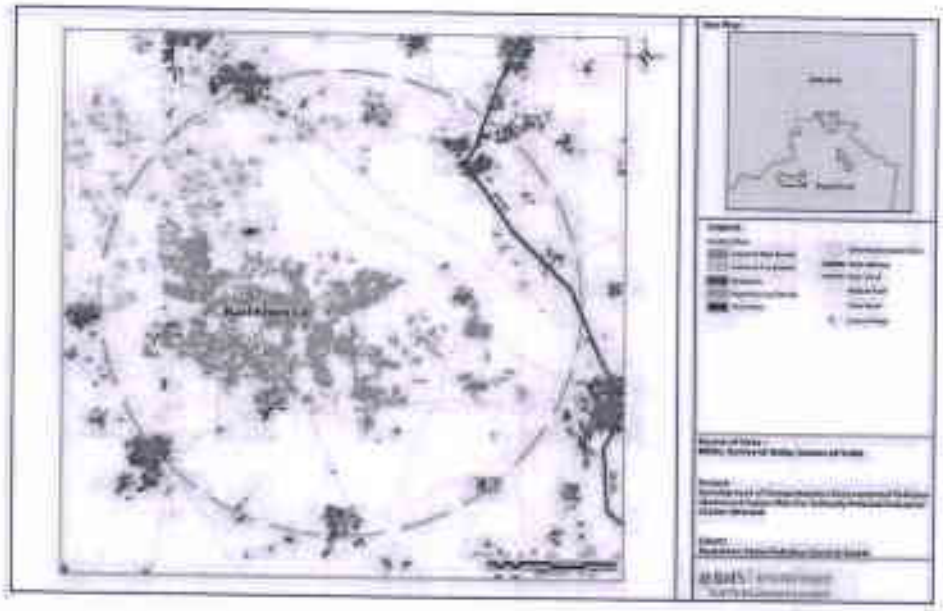

Figure 4. Location of Sensitive Receptors in Khushkhera Industrial Area

Industrial Development

Industries are playing a key role in employment generation in Bhiwadi region and have contributed largely to increase the share of secondary sector in the economy. RIICO is the main Agency involved in Industrial Development. The Industries in this Region are distributed in eight RIICO industrial estates. Out of these, three industrial areas form a part of the CEPI study; these include:

1. Bhiwadi- RIICO Industrial Area - Phase I to V, Kaharani and Rampur Mundana
2. Chopanki- RIICO Industrial Area - Chopanki and Pathredi
3. Khushkhera- RIICO Industrial Area - Khushkhera & Tapukara

In addition, some independent industries are operating on Bhiwadi-Alwar State Highway-25 (Tijara road); these do not form a part of this study and therefore have not been discussed in this report.

At present a total of about 5000 acres is under Industrial Development within the Bhiwadi Region. Bhiwadi, the oldest industrial area in Bhiwadi Region, is now saturated and there are no vacant plots anymore in Bhiwadi Industrial Area. The industrial areas in Chopanki and Khushkhera were established in 1995-1996. Realizing high potential of industrial development and investors' rising interest in the region two more industrial areas - Tapukara and Pathredi were developed in 2007. In 2009, Kaharani Industrial Area between Bhiwadi and Chopanki was developed. Very few vacant plots in different Industrial Areas testify fast development of industrial units in Bhiwadi Region. Kaharani Industrial Area established in 2009, has already started attracting big industrial houses for setting up their units. It is also pertinent to note that some of the industries in Bhiwadi Industrial Area are those which were directed to shift from Delhi under the Hon'ble Supreme Court orders.

There are total 1361 operating industries in Bhiwadi area. Of these, 512 are in red, 484 in orange and 384 in green categories (Table 2). Bhiwadi industrial area has the highest number of red category units and highly polluting units.

Table 2: Number of operational (category wise) industries in Bhiwadi industrial cluster (Source: Bhiwadi office RSPCB)

S. No	RIICO Industrial Area	Red category	Orange category	Green category	Total number of operational industries
1.	Bhiwadi	279	266	236	781
2.	Chopanki	80	62	37	179
3.	Kehrani	38	44	18	100
4.	Pahredi	5	14	6	25
5.	Tapukada	8	7	7	22
6.	Sare Khurd	1	4	0	05
7.	Karoli	2	2	2	06
8.	Khuskhera	99	86	58	243
9.	Total Industries	512	484	364	1361

Table 3 shows sector-wise distribution of operating industries. Major industry categories are induction and melting furnaces, engineering and fabrication and chemical.

Table 3: Sector-wise Operating industries (source: Bhiwadi Office, RSPCB)

S. No	Sector	Bhiwadi Industrial Area	Chopanki Industrial Area	Kehrani	Pathredi	Tapukada	Khuskhera
1.	Food & food processing	10	2	2			04
2.	Surface Treatment	71	9	6	01	01	03
3.	Induction & melting furnace	52	18	8		06	24
4.	Wire drawing (annealing)	28	12	5	02		01
5.	Wire drawing (without annealing)	07	1	5	05		02
6.	Wooden furniture	02	0	1			
7.	Engg & fabrication	58	23	13		02	09
8.	Textile	06	3	0			02
9.	Synthetic rubber / tyre	10	3	0	01	01	

Table 3....continued

S. No	Sector	Bhiwadi Industrial Area	Chopanki Industrial Area	Kehrani	Pathredi	Tapukada	Khuskhera
10.	Secondary lead	10	2	2			02
11.	Laminated sheets	07	3	2			
12.	Waste plastic processing	16	11	4			06
13.	Pharmaceutical	17	1	0			02
14.	Pesticide	01	5	0			02
15.	Organic chemical (formaldehyde)	08	2	0			04
16.	Oil refinery	01	0	0			
17.	Heat treatment	19	5	5			02
18.	e-waste	02	2	0			02
19.	Basic chemicals (molding powder, zinc oxide etc.	34	14	1			06
20.	Ceramic	09	0	0			
21.	Battery manufacturing & assembling	04	0	1			02
22.	Diary	01	0	2			01
23.	Dye	01	0	0			
24	Ink	03	0	0			
25.	Rolling mills (reheating)	13	2	0			03
26.	Beverages (bottling/manufacturing)	01	3	0			
27.	footwear	07	0	3			
28.	Fertilizer formulation	01	0	0			
29.	Resin	05	2	0			03
30.	Solvent extraction	02	1	0			

Table 3....continued

S. No	Sector	Bhiwadi Industrial Area	Chopanki Industrial Area	Kehrani	Pathredi	Tapukada	Khuskhera
31.	Paint	06	8	0			02
32.	Cosmetic items	04	0	1			01
33.	Foam manufacturing	06	1	1	01		02
34.	Plastic processing (virgin plastic)	68	9	10			03
35.	Forging	26	3	2			01
36.	Glass Manufacturing		0	1			
37.	Hazardous Waste Reprocessing		3	1			
38.	Paper		0	1			
39.	Miscellaneous	265	31	23	15	12	154
	Total	**781**	**179**	**100**	**25**	**22**	**243**

In addition, Karoili has four and Sarekhurd has five industries.

CEPI Score

As per the CEPI calculation of CPCB, Bhiwadi ranks 20th in the year 2018 in the list of country-wide critically polluted clusters under CEPI with scores air: 66.50, water: 71.00 and land 44.75 and overall CEPI score 79.63.

Assessment of Water Environment

There is no perennial river in this Region. The only seasonal river which flows through the western part of Bhiwadi Region is Sabi River. Sabi River is about 23 kms from the Bhiwadi Cluster. The river originates in the Sewar hills (Jaipur district) and flows in a general North-Eastern direction passing through Bansur, Behror, Mandawar, Kishangarh and Tijara tehsils. It carries away the water of the western slope of the central range of the Aravali hills.

Groundwater is the major source of water in Bhiwadi Region for all practical purposes. Groundwater is mainly found in old alluvium layer of the soil. It is one of the groundwater potential zones (Figure- 5,

6) where yielding in old alluvium varies from 50-200 m^3/day. Groundwater potential of the alluvial aquifers is good and equal everywhere due to uniform distribution of rainfall, effective porosity and geometry of the aquifers. As per Groundwater Department of Alwar district, groundwater is over exploited in entire Alwar district (Figures 5,6). Table 4 presents summary of effluent generation from industry and domestic sources in the industrial areas.

Figure 5. Groundwater Potential: Alwar District

Figure 6. Groundwater Status: Alwar District

Table 4: Summary of Effluent Generation (Trade & Domestic)

Industrial Area	Operational Industries	Generation (As per Consent Letter)		Total
		Trade (KL)	Domestic (KL)	
Bhiwadi	596	3028.01	1532.856	4560.87
Other than Bhiwadi				
Kaharani	48	546.65	230.53	777.18
Chopanki	135	1558.57	398.03	1956.60
Khushkhera	135	80.63	238.13	318.76
Tapukara	24	876.60	550.30	1426.90
Pathredi	18	408.70	186.90	595.60
Sarekhurd	4	500.80	45.80	546.60
Total	**364**	**3971.95**	**1649.69**	**5621.64**
G.Total	960	6999.96	3182.54	10182.50

Environmental Quality Data: CEPI Estimation

The RSPCB has monitored groundwater at designated stations under the National Water Monitoring Program. Tables below provide the water monitoring results in the last 3 years.

Name of Industrial cluster: Bhiwadi

A.Source

A.1 Information on A_1

A.1. List of primary toxin pollutant present (e.g.VOCs, Dioxins, PAHs, PCBs, benzene, Vinyl chloride, lead, Radionuclide, Cadmium, Metals, Phenols, pesticides, Ozone, $PM_{2.5}$,PM_{10}, refer USEPA class 2 and class 3) in ambient environment within 2.0 km radius of cluster

A.1.1 List of Primary toxin pollutant present around 2.0 km radius of cluster (for Ambient air average of monthly averaged data of CAAQMS, Bhiwadi, during the period from July 2017 to March 2019 and for Groundwater Average of annually averaged data of NWMP for 12 stations in Bhiwadi Phase I to V, sampling period April and October, 2018)

Sr. No.	Air (CAAQMS Data)			Ground water (NWMP Data)			Surface water	
1	Name	Conc.*	Standard Limit NAAQS, 2009	Name	Conc.*	IS-10500:2012	Name	Conc.*
	SO_2	46.88	80	Boron	0.36	1	NA	
2	NO_2	54.06	80	Calcium	51.89	200	NA	
3	CO	0.79	4	Chloride	296.76	1000		
4	NH_3	20.71	400	Fluoride	0.90	1.5		
5	Benzene	1.67	5	Magnesium	20.61	100		
				Potassium	1.78	No limit		
				Sodium	427.48	No limit		
				Zinc	0.49	15		
				Iron	0.19	0.3		
				Fecal coliform	3.0	No limit		
				Total Coliform	3.24	No limit		

A.1.2 List of secondary toxin pollutant present around 2.0 km radius of cluster (For Ambient air average of monthly averaged data of CAAQMS, Bhiwadi, during the period from July 2017 to March 2019 and for Groundwater Average of annually averaged data of NWMP for 12 stations in Bhiwadi Phase I to V, sampling period April and October, 2018)

S. N.	Air			Ground water			Surface water	
1	Name	Conc.*	Standard Limit NAAQS, 2009	Name	Conc.*	IS-10500:2012	Name	Conc.*
	PM_{10}	295.63	100	NH_3-N	0.91	0.5	NA	NA
2	$PM_{2.5}$	132.33	60	BOD	1.09	No limit		
3	O_3	29.12	180	COD	12.48	No limit		
				EC	1638.57	No limit		

	Fixed dissolved solids	878.29	No limit -		
	NO_3	2.24	45		
	PO^4	0.10	No limit		
	SO_4	295.14	400		
	Total Alkalinity	225.52	No limit		
	Total dissolved Solids	1225.43	500		
	Total Hardness	214.29	200		
	Total Kjeldahl Nitrogen	4.15	No limit		
	Total Suspended Solids	23.57	No limit		

A.2 Information on A_2

A.2.1 List of industry as per R17 category (as per CPCB website) within 10 km^2 area

S.N.	Type	Number
1	Aluminum Smelting	Nil
2	Basic Drugs & Pharmaceuticals Manufacturing	6
3	Chlor Alkali/ Caustic Soda	Nil
4	Cement (200TPD and above)	1
5	Copper Smelting	Nil
6	Dyes and Dye Intermediate	1
7	Fermentation (Distillery)	Nil
8	Fertilizer	Nil
9	Integrated Iron & Steel	Nil
10	Leather Processing including Tanneries	Nil
11	Oil Refinery	Nil
12	Pesticide Formulation & Manufacturing	2
13	Pulp & Paper (30TPD and above)	Nil
14	Petrochemical	Nil

15	Sugar	Nil
16	Thermal Power Plants	1
17	Zinc Smelting	Nil

A.2.2 List of industry as per R54 category (as per CPCB website) within 10 km^2 area

S. N.	Type	Number
1	Anodizing	4
2	Asbestos and asbestos based industries	Nil
3	Automobiles Manufacturing/assembling	2
4	Ceramic/refractories	12
5	Chemical, petrochemical and electro chemicals including manufacture of acids such as sulphuric acid, nitric acid, phosphoric acid, and so on	39
6	Chlorates, perchlorates, and peroxides	Nil
7	Chlorine, fluorine, bromine, iodine, and their compounds	Nil
8	Coke making, coal liquefaction, coal tar distillation or fuel gas making	Nil
9	Common effluent treatment plant	1
10	Dry coal processing/mineral processing industries like ore sintering, palletization, and so on	Nil
11	Explosives including detonators, fuses, and so on	Nil
12	Fermentation industry including manufacture of yeast, beer, and so on	3
13	Fire crackers	Nil
14	Foundries	3
15	Glass and fibre glass production and processing (excluding moulding)	1
16	Glue and gelatin	1
17	Heavy, engineering	13
18	Hospitals	59 (including govt. PHC's, CHC's & Non bedded Clinics)
19	Hot mix plants	Nil
20	Hydrocyanic acid and its derivatives	Nil
21	Incineration plants	Nil
22	Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black, and so on	Nil
23	Industrial or inorganic gases namely (a) chemical gases: acetylene, hydrogen, chlorine, fluorine,	1

	ammonia, sulphur dioxide, ethylene, hydrogen sulphide, phosphine, (b) hydrocarbon gases: methane, butane, ethane, propane	
24	Industry or process involving electroplating operations	29
25	Industry or process involving foundry operations	Already covered in other sectors of red categories
26	Industry or process involving metal treatment or process such as pickling, paint stripping, heat treatment, phosphating or finishing, and so on	85
27	Lead re-processing and manufacturing including lead smelting	14
28	Lime manufacturing	Nil
29	Lubricating oils, greases or petroleum- based products	2
30	Milk processing and dairy products (integrated project)	2
31	Mining and ore-beneficiation	25
32	Organic chemical manufacturing	8
33	Parboiled rice mills	Nil
34	Paints and varnishes (excluding blending/mixing)	2
35	Petroleum products manufacturing and oil/crude oil/residues reprocessing	Nil
36	Phosphate rock processing plants	Nil
37	Phosphorous and its compounds	Nil
38	Photographic films and chemicals	Nil
39	Pigments and intermediates	Nil
40	Potable alcohol (IMFL) by blending or distillation of alcohol	Nil
41	Power generating plants (excluding DG sets)	1 (captive power plant of SRF Ltd.)
42	Processes involving chlorinated hydrocarbons	1
43	Ship breaking	Nil
44	Slaughter houses and meat processing industries	Nil
45	Steel and steel products including coke plants involving use of any of the equipment's such as blast furnaces, open furnace, induction furnace or an arc furnace and so on, or any of the operations or processes such as heat treatment, acid pickling, roiling or galvanizing, and so on	42
46	Stone crushers	15
47	Surgical and medical products involving prophylactics and latex	Nil

48	Synthetic detergent and soap	Nil
49	Synthetic fibre including rayon, tyre cord, polyester filament yarn	1
50	Synthetic resins	13
51	Synthetic rubber excluding moulding	2
52	Tobacco products including cigarettes and tobacco processing	Nil
53	Vegetable oils including solvent extracted oils, hydrogenated oils	1
54	Yarn and textile processing involving scouring, bleaching, dyeing, printing or any effluent/emission-generating process	8

B. Pathways (within 2 kilometers of radius of cluster)

B.1 Information on surface and ground water quality

B.1.1 Regular monitoring parameters available for the latest year (2017)

S.N.	Water quality parameters	Mean concentration*		No. of samples exceeded standards (IS-10500:2012)		Total No. of samples	
		SW	GW	SW	GW	SW	GW
1.	pH	NA	7.45		Within limit	NA	
2.	Oil and grease		NT				
3.	Suspended solids		NT				
4.	DO		6.20		Within limit		
5.	COD		12.48		Within limit		
6.	BOD		1.09		Within limit		
7.	Elec. Conductivity (s/m)		1638.57		Within limit		
8.	TSS		23.57		Within limit		
9.	Nitrite- Nitrogen		NT				
10.	Nitrate- Nitrogen		2.24		Within limit		
11.	Total Nitrogen		NT				
12.	Free Ammonia		NT				
13.	Total residual chlorine		NT				
14.	Cyanide		NT				
15.	Fluoride		0.90		Within limit		
16.	Chloride		296.76		Within limit		
17.	Sulphate		295.14		Within limit		
18.	Sulphides		NT				
19.	Total Hardness (permissible		214.29		11 samples are		21

	limit is 200 mg/l)				out of limit		
20.	Phosphates		0.10		Within limit		
21.	SAR		NT				
22.	Total Coliforms (MPN/100)		3.24		Within limit		
23.	Fecal coliforms (MPN/100)		3.0		Within limit		

*All Mean concentration in mg/ L unless specified otherwise; DO not applicable for ground water (SW-Surface water, GW- ground water)

B.1.2 Special parameters

S.N.	Water quality parameters	Mean concentration*		No. of samples exceeded standards (IS-10500:2012)		Total No. of samples	
		SW	GW	SW	GW	SW	GW
1.	Total phosphorous	NA	NT	NA		NA	
2.	TKN		4.15		Within limit		
3.	Total ammonia- Nitrogen (permissible limit is 0.5 mg/l)		0.91		19samples are out of limit		21
4.	phenol		NT				
5.	Surface active agents		NT				
6.	Anionic detergents		NT				
7.	Ogano-chlorine pesticides		NT				
8.	PAH	NA	NT			NA	
9.	PCB		NT				
10.	AND PCT		NT				
11.	Zinc		0.49		Within limit		
12.	Nickel		NT				
13.	Copper		NT				
14.	mercury		NT				
15.	Manganese		NT				
16.	Iron		0.19		Within limit		
17.	Vanadium		NT				
18.	Selenium		NT				
19.	Boron		0.36		Within limit		
20.	Bio assay (Zebra fish) test (for specified sample only)		NT				

*All Mean concentration in mg/ L unless specified otherwise; DO not applicable for ground water (SW-Surface water, GW- ground water)

B.2 Air Quality (CAAQMS Data from July 2017 to March 2019)

S. N.	Air quality parameters	Mean conc.*	Standard Limit NAAQS, 2009	No. of samples exceeded standards (Standard Limit NAAQS, 2009)	Total No. of samples
1.	SO_2	46.88	80 µg/m³/24 hours	All within limitexcept One (October 2017)	19 months
2.	NO_2	54.06	80 µg/m³/24 hours	All within limitexcept One (April 2018)	19 months
3.	PM_{10}	295.63	100 µg/m³/24 hours	All the months	19 months
4.	$PM_{2.5}$	132.33	60 µg/m³/24 hours	All the months	19 months
5.	O_3	29.12	180 µg/m³/ hour	All within limit	19 months
6.	Lead	No Sensor	1 µg/m³/24 hours		
7.	CO	0.79	4 mg/m³/hour	All within limit	19 months
8.	Ammonia	20.71	400 µg/m³/24 hours	All within limit	19 months
9.	Benzo (a) pyrene	No Sensor	1 ng/m³/annum		
10.	Benzene	1.67	5 µg/m³/annum	All within limitexcept Two months (December 2018 and March 2019)	19 months
11.	Arsenic	No Sensor	6 ng/m³/annum		
12.	Nickel	No Sensor	20 ng/m³/annum		

(*All conc. are average mean of monthly average during the period from July 2017 to March 2019)

C. Receptor

C.1 Impact on human health (Data provided by Sri Vanayak Hospital, S-63, Dhaba Complex, Bhiwadi and CHC Bhiwadi for the years 2017-18 and 2018-19 respectively)

C.1.1 List the number of cases recorded for specified disease related to air pollution

S.No.	Disease	2017-18	Total of both Hospitals	2018-19	Total of both Hospitals	Grand Total
1.	Asthma	16 + 967	983	13 + 1068	1081	2064
2.	Bronchitis	16 + 1651	1667	11 + 2115	2126	3793
3.	Cancer	1 + 0	1	0	0	1

4.	Acute respiratory Infections	14 + 10390	10404	13 + 11827	11840	22244
5.	COPD	17 + 509	526	12 + 871	883	1409
6.	Ischemic Heart Disease	0	0	0	0	0

C.1.2. List the no. of cases recorded for specified disease related water pollution

S.N.	Disease	2017-18	Total of both Hospitals	2018-19	Total of both Hospitals	Grand Total
1.	Gastroenteritis	58 + 73	131	21 + 67	88	219
2.	Diarrhea	14 + 157	171	4 + 179	183	354
3.	Renal (kidney) malfunction	24 + 19	43	10 + 23	23	76
4.	Cancer	0	0	0	0	0

Water Pollution and Effluent Management

Water pollution in this region is mainly due to engineering, galvanizing, electroplating, chemical and pharmaceutical industries. Textile industries which are largely water polluting, are very few in number in the Bhiwadi Region. Wastewater from the industries after primary treatment within premises is transported to the CETP through open drains. Treated waste water from the CETP is disposed off in the Sabi River which is 23 km away.

There is no piped sewerage system for management of domestic sewage. Many a times the sewage from industrial as well as residential areas had outfall into drains meant for industrial effluent, thus reaching the CETP. This has increased the load on the existing CETP. Domestic sewage in some areas gets accumulated in low lying lands as stagnant water leading to unhygienic conditions.

Quantity of industrial effluent generated in the Bhiwadi Industrial Cluster is about 6MLD. In addition, domestic effluent from the Bhiwadi town amounts to about 3-4 MLD. Wastewater generated from the industries flows through open storm water drains in most of the industrial areas. Present status, as provided by RSPCB, in Bhiwadi industrial areas is as follows,

1. Wastewater flows up to CETP through open drains which are not being maintained properly and are in damaged condition. Therefore, untreated effluent finds its own way from the damaged drains and gets accumulated in the form of cess pools in open lands near the drains.

2. Besides wastewater from CETP has been found to flow occasionally towards residential colonies of Bhiwadi, particularly when untreated effluent is by passed from the CETP either because of shutdown / break down or power failure or in the situation of excess volume of effluent reaching at inlet to CETP.

3. At present treated and/or partially treated effluent is discharged into *nallah* directly or through pipe line and the same ultimately finds its way into the agriculture fields in the surrounding villages.

4. Wastewater disposed off in this manner sometimes flows into agricultural fields across the boundary with Haryana. This has created some interstate disputes.

5. The domestic effluent generated from Bhiwadi Town and nearby residential colonies have their outfall into the open drains due to absence of any sewerage system. Due to this the volume of effluent reaching the CETP has always been found in excess of the designed capacity, i.e. 6 MLD

Effluent Management Infrastructure

Under the National Water Monitoring Program, RSPCB has set up 5 stations in the Bhiwadi Region. These stations include hand pumps located at Ghatal Village, Santhalka Village, Alupur Village, Indraprastha Public School and M/s Kundan Edibles. Pre-monsoon and post-monsoon monitoring is carried out on a regular basis at all these stations. In addition, specific industrial areas should also be considered for establishment of new monitoring stations. This will help in regular and more specific monitoring of water level and quality in this Region.

In the year 2003-04, Bhiwadi Industrial Development Authority (BIDA) constructed a CETP of 6 MLD capacity to treat the effluent from industries. The project cost of Rs. 122.25 lakhs was met through grant under ASIDE with Rs. 61.12 lakhs grant from GoI and Rs. 61.13 lakhs grant from State Government. A Samiti of entrepreneurs from Bhiwadi I. A. was formed in 2007 in the name of Bhiwadi Jal Pradushan Niwaran Avum Anusandhan Samiti for undertaking the work of up-gradation/modification of existing CETP and its operation and maintenance. In February 2010, the CETP was upgraded with the addition of Physico-Chemical Treatment. The CETP is still inadequate and inefficient to treat the entire effluent from Bhiwadi Industrial Cluster up to the desired standards. There is no provision for biological treatment and sludge handling at the existing CETP.

This CETP serves only the Bhiwadi Industrial Area and does not cover industries in Chopanki and Khushkhera. Industries in these areas are less effluent generating units, however, in the absence of a treatment facility wastewater is being disposed off in the low-lying areas. Chopanki and Khushkhera are at a lower level compared to Bhiwadi hence, one CETP at Bhiwadi cannot serve other industrial areas. Independent CETPs serving industries in Chopanki and Khushkera are required. A detailed study shall have to be conducted for determining the capacity of the CETPs in these areas and their appropriate locations to better serve the waste water treatment needs.

Presently, open drains have been provided for carrying the industrial effluent to the CETP. These open drains are being used for direct discharge of domestic effluent and untreated effluent from industries. Due to this, there is increased load on the CETP.

Assessment of Air Environment

Ambient Air quality monitoring is not carried out on a regular basis in Bhiwadi. Bhiwadi is not included under the National Ambient Air Quality Monitoring Program (NAAQM); hence there is no regular monitoring station in this Region. The nearest monitoring station is Alwar.

Aside from the high background air pollution in the region, major contributors to air pollution in this Region are the industries. Major industries in Bhiwadi Industrial Area include forging, galvanizing, chemical and pharmaceutical units. Other units contributing majorly to air pollution include lead battery recycling units.

Industries in this Region mainly use husk, coal, pet coke, furnace oil, Light Diesel Oil (LDO), High Speed Diesel (HSD), wood, Low Sulphur Heavy Stock (LSHS), LPG, etc. as fuel. In addition, unauthorized waste material used as fuel by many small-scale units is adversely affecting the air quality in this Region. This material is carpet waste/fibers being sourced at a low cost from automobile industries in Rewadi and Manasar in the National Capital Region (NCR).

As per a study conducted by CPCB in 2006, Lead concentration in ambient air was found in the range of 0.99μg/m^3 to 13.21 μg/m^3. This may be because of inadequate air pollution control system in the recycling industrial units of lead battery scrap. Concerned about the high ambient levels of lead, RSPCB is presently carrying out air quality analysis to quantify the traces of lead in ambient air. Health studies need to be conducted to assess the impact of lead pollution on the local population.

Air pollution due to movement of heavy vehicles was observed during the field visit. Unpaved roads and improper road conditions contribute to ambient air pollution.

Assessment of Land Environment

Soil contamination studies have not been conducted for Bhiwadi Region. Industrial wastewater at many pockets in Khushkhera and Chopanki areas drains into open low-lying areas. Productive agricultural land is rendered unusable due to stagnation of waste water in these areas. Wastewater from the low-lying areas flows further downstream into areas of Haryana State. This has created local agitation and cross-border issues between Rajasthan and Haryana. Other source of soil contamination is indiscriminate dumping of municipal as well as industrial solid waste into open lands. Groundwater contamination studies have not been conducted in the Bhiwadi Region.

Hazardous Waste

The RSPCB is regularly conducting survey, inspections of hazardous waste generating units for compliance of Hazardous Waste (MH & TM) Rules, 2008 and subsequent amendments. The RSPCB has identified 785 units up to end of June 2010 which is covered under the HW (MH & TM), 2008. Out of identified 785 industries, 115 industries are closed since long or dismantled or closed subsequent to the directions issued by the RSPCB for violation of the provisions of HW (MH & TM)

Rules, 2008; 28 industries discontinued their hazardous waste generating process, 62 units are identified under pharmaceutical/pesticides formulation sector which are generating bare minimum quantity of hazardous waste in form of off-specification products during formulation or expiry of products and 97 units generate hazardous waste as spent oil from their D.G. Sets, compressors or system. Thus the number of potential hazardous waste generating units in the State is only 483.

Hazardous waste generated in Alwar District amounts to 6.21% of the total waste generated in the State. Total Hazardous Waste (HW) generation in Alwar District is about 11043.26 MTA (metric tonnes per annum). Hazardous waste generated in Bhiwadi region amounts to nearly 50% of the total hazardous waste generated in Alwar District.

At present, there is no infrastructure availability for disposal of hazardous waste in the Bhiwadi Industrial Clusters. All industries send their hazardous waste to the Common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF) at Gudli Village in Udaipur, which is currently the only hazardous waste disposal site in the State.

Hazardous waste also includes the sludge from the CETP. The CETP in Bhiwadi is registered with the CHWTSDF at Udaipur. A hazardous waste collection van comes to the CETP premises every alternate day to collect the process waste. Most of the industries in this Region are also registered with the CHWTSDF at Udaipur; collection vehicle visits the industry premises once in 90 days as per regulations.

RIICO also manages solid waste in its industrial areas through private contractors. This includes cleaning of drains twice in a year, cleaning of area once in a year, cleaning of dustbins twice a month and regular cleaning of roads and dead animals in the industrial areas through another private agency. In addition, individual industries have their own arrangements; they generally employ private contractors for the purpose. There is no designated sanitary landfill site to dispose-off industrial or municipal waste. Thus, silt, construction debris, fly ash etc. are being dumped indiscriminately.

Annexure II

Current Status of Action Plan prepared by M/S PDCOR

Suggested Short Term Action: Water

	Action Points	Present Status
1.	Augmentation of capacity existing CETP (6 MLD to 15 MLD)	CETP having 9 MLD capacity is operational throughout the year except during rains. The CETP was upgraded in the year 2017 by introducing diffused aeration system and capacity augmentation from 6 MLD to 9 MLD of the biological treatment unit, Now the treated effluent from CETP is meeting the standards prescribed under EP Act'86 for disposal into inland surface water. Since STP has been installed, there is no need to augment it to 15MLD.
2	The disposal of treated waste water of CETP, Bhiwadi - Completion of work related to laying down closed conduit pipe line up to river Sabi	Treated effluent from CETP is pumped up to Matila village after which effluent was to flow under gravity in closed conduit pipeline laid down by RIICO for disposal of effluent up to Sabi River (Total Distance approx 23 KM from CETP). This closed conduit underground pipeline was blocked by farmers at various places immediately after its commencement in the year 2011-2012. Eventually, effluent destined for Sabi River for ultimate disposal, bulged out from closed conduit pipeline and gets accumulated in low lying areas/depressions and in borrow pits.

	Action Points	Present Status
3.	Segregation of trade & Domestic effluent	For conveyance of industrial effluent from individual industries to the CETP, closed conveyance system is to be put in place in the Bhiwadi Industrial Area so that there is no mixing of rain water and domestic waste water with the industrial effluent. Similarly, for distribution of CETP treated water to Member Industries parallel closed conveyance system is to be laid down. An action plan for up-gradation of CETP for RO with reject disposal system and closed conveyance system (To and from) has been prepared. The Govt. of India has sanctioned Rs. 146.00 Crores for implementation of the above action plan.
4.	Development of Recycling and reuse of treated effluent	
5.	Installation of flow meter by the member units of CETP for monitoring the flow entering into closed conduit line from each of the member industry	Under planning and implementation
6.	Development of sewerage system including STP (4 MLD)	STP of capacity 4 MLD has been established by BIDA and making efforts to utilize the treated sewage for horticulture use.
7.	Regulation on groundwater abstraction by the industries	Consent is granted only after industry obtains approval from Central Groundwater Authority.
8.	Monitoring of groundwater quality	RSPCB is conducting pre and post monsoon groundwater sampling and analysis under NWQMP
9.	Development of recharging structures for groundwater recharge	RICO is enforcing this condition in the industries, though not fully implemented.

	Action Points	Present Status
10.	Assessment of the quality of the treated effluent of major highly polluting industries	Industries having a flow of more than 100 KLD have installed full-fledged ETP. RSPCB has formed vigilance squads to monitor for excessive emissions and clandestine night effluent discharges.

Suggested Long Term Action: Water

	Action	Present Status
1.	Capacity enhancement of CETP for Bhiwadi by, 1) enhancing the capacity of 6 MLD to 15 MLD, or 2) Development separate CETP of 10 MLD	CETP having 9 MLD capacity is operational. The CETP was upgraded in the year 2017 to 9 MLD of the biological treatment unit. Since 4MLD STP has been installed, there is no need to augment it to 15MLD.
2	Development of CETP for Khushkhera and Tapukada (capacity Approx. 5-7 MLD)	Under Planning RIICO has to install commission and operate
3.	Development of CETP for Chopanki and Kaharani (approx. 5-7 MLD)	Under Planning RIICO has to install commission and operate (Land acquired)
4.	Development of CETP (approx. 5-7 MLD) for Pathredi	Under planning Rico has to do it
5.	Closed Conduit Conveyance system to carry wastewater from industries to CETP in Bhiwadi	Under planning. The Govt. of India has sanctioned Rs. 146.00 Crores for implementation of the above action plan.

Suggested Short Term Action: Air

	Action	Present Status
1.	Development of ambient air quality and stack emission monitoring facilities by the State board	There are three manual and one continuous air quality monitoring station have been installed and are being operated.
2	Performance monitoring of major air polluting industries for assessment of compliance of the notified air emission standards.	The schedule for monitoring by RSPCB: Red category once in a year; orange category once in two years
3.	Improvement and up gradation of APCM in induction furnaces & lead recycling industrial sectors	Fume extraction automized. One industry, Shri Shyam krip has installed state-of-the-art horizontal hood collection; other industries are likely to follow. Lead processing industries have installed pulsed jet bag filters
4.	Installation and operation of air monitoring stations at the periphery of each industrial area	This has not been done. This exercise can be taken up periodically with portable analyzers.
5.	To check the illegal use of wastes substances as fuels by the industries	RSPCB regulary checks the fuel usages. Use of Pet coke has been banned and enforced.
6.	Rapid study on Epidemiological to assess the impacts of the ambient lead pollution in various target group	Not required as per RSPCB as there is no major uncontrolled lead processing industry

Suggested Long Term Action: Air

	Action	Present Status
1.	Shift to cleaner fuels	In process some industries are on PNG (about 50%) other have been directed and will shift to PNG when gas and infrastructure is available.
2.	Installation of continuous real time ambient air quality monitoring station at Bhiwadi	One CAQMS has been installed and operating.

Suggested Action: Land

	Action	Present Status
1.	Identification & development of a Site for MSW Treatment & Disposal	Land has been identified by municipal corporation.
2.	Augmentation of treatment and disposal facility for Bio-medical Waste	No available as biomedical waste is being sent to Alwar at waste incinerator facility. RSPCB gives authorization only after certification/approval from Alwar facility.
3.	Tree Plantation for Greening the Area	Industry has been asked to develop 1/3 of land as green cover which is part of consent condition.

Suggested Action: Capacity Building

	Action	Present Status
1.	Capacity Building for prevention & control of Pollution	Separate wing should be created for MSW disposal at municipal corporation. The RSPCB office should be strengthen with adequate manpower.

Annexure III

Item No. 05 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 1038/2018

News item published in "The Asian Age" Authored by Sanjay Kaw Titled
"CPCB to rank industrial units on pollution levels"

Date of hearing: 13.12.2018

CORAM: **HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON**
HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

ORDER

1. The matter has been taken up on the basis of news item titled "CPCB to rank industrial units on pollution levels" authored by Mr. Sanjay Kaw published in the Asian Age dated 06.12.2018. Out of 88 identified industrial clusters, 43 industrial clusters in [redacted] States having Comprehensive Environmental Pollution Index (CEPI) score of 70 and above were identified as Critically Polluted Areas (CPAs). Further, 32 industrial clusters with CEPI scores between 60 and 70 were categorized as Seriously Polluted Areas (SPAs), and this was based on evaluation of CEPI carried out in the year 2009-10. In a later evaluation, the number of identified polluted industrial clusters went up to 100 in the year 2017-18.

2. CEPI is based on evaluation of environmental parameters including ambient air, surface water and health related statistics. Based on such study, directions have been issued by the Central Pollution Control Board (CPCB) under Section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 for installation of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and

Real Time Water Quality Monitoring Stations (RTWQMS) at various locations.

3. Revised CEPI (2016) is comprised of the following components:

Component A	Scale of Industrial Activity	20 marks
Component B	Status of Ambient Env. Quality (Air/SW/GW)	50 Marks
Component C	Health related statistics	10 Marks
Component D	Compliance status of industries	20 Marks

4. As per direction of CPCB dated 26.04.2016, addressed to the State Pollution Control Boards (SPCBs), the SPCBs are required to take steps to ensure prevention, control and abatement of pollution in critically polluted industrial clusters by installing Environmental Quality Monitoring Systems for which purpose action plan in respect of monitoring mechanism are to be evolved, in the manner stated in the said order. Forty Three (43) Critically Polluted Areas and 32 Severely Polluted Areas were identified based on CEPI criteria in the Year 2009 are as follows:

S.No.	Name of States	Clusters with CEPI >70 (43 Critically polluted Areas)	Clusters with CEPI 60-70 (32 Severely polluted areas)
1.	Andhra Pradesh	Vishakhapatnam (70.82)	Vijayawada (60.57)
2.	Bihar	–	West Singhbhum (67.30)
3.	Chhattisgarh	Korba (83.00)	Raipur (65.45)
4.	Delhi	Najafgarh-Drain Basin (79.54) including Anand Parbat, Naraina, Okhla, Wazirpur	–
5.	Gujarat	Ankleshwar (88.50), Vapi (88.09), Ahmedabad (75.28), Vatva (74.77),	Vadodara (66.91), Rajkot (66.76)

		Bhavnagar (70.99), Junagarh (70.82)	
6.	Haryana	Faridabad (77.07), Panipat (71.99)	–
7.	Himachal Pradesh	–	Baddi (69.07), Kala Amb (68.77), Parwanoo (63.83)
8.	Jharkhand	Dhanbad (78.63)	Jamshedpur (66.06), Saraikela (65.38), Ramgarh (65.11), Bada Jamtara (64.47)
9.	Karnataka	Mangalore (73.68), Bhadravati (72.33)	Raichur (68.07), Bidar (67.64), Pinia (65.11)
10.	Kerala	Greater Kochin (75.08)	–
11.	Madhya Pradesh	Indore (71.26)	Dewas (68.77), Nagda-ratlam (66.67), Pithampur (65.09)
12.	Maharashtra	Chandrapur (83.88), Dombivalli (78.41), Aurangabad (77.44), Navi Mumbai (73.77), Tarapur (72.01)	Nashik (69.23), Chembur (69.19), Pimpari - Chinchwad (66.06)
13.	Orissa	Angul-Talchar (82.09), IB-Valley (74.00) Jharsuguda (73.34)	Paradeep (69.26)
14.	Punjab	Ludhiana (81.66), Mandi Govindgarh (75.08)	Batala (68.59), Jalandhar (64.98)
15.	Rajasthan	Bhiwadi (82.91), Jodhpur (75.19), Pali (73.73)	Jaipur (66.82)
16.	Tamil Nadu	Vellore-North Arcot (81.79), Cuddalore (77.45), Manali (76.32), Coimbatore(72.38)	Tirupur(68.38), Mettur (66.98)
17.	Telangana	Patancheru-Bollaram (70.07)	–
18.	Uttar Pradesh	Ghaziabad (87.37), Singrauli (81.73), Noida (78.90), Kanpur (78.09), Agra (76.48), Varanasi-Mirjapur (73.79)	Moradabad (64.71), Aligarh (63.53), Ferozabad (60.51)
19.	Uttarakhand	–	Haridwar (61.01)

20.	*West Bengal*	*Haldia (75.43), Howrah (74.84), Asansole (70.20)*	*Durgapur (68.26)*

5. Purpose of economic development in any region is to provide opportunities for improved living by removing poverty and unemployment. While industrial development invariably creates more jobs in any region, such development has to be sustainable and compliant with the norms of environment. In absence of this awakening or tendency for monitoring, industrialization has led to environmental degradation on account of industrial pollution. It is imperative to ensure that steps are taken to check such pollution to uphold statutory norms. Adequate and effective pollution control methods are necessary.

6. Dust, smoke, fume and toxic gas emissions occur as a result of highly polluting industries such as thermal power plants, coal mines, cement, sponge iron, steel and ferrow alloys, petroleum and chemicals unless right technology is used and precaution taken. Industry specific clusters have not only become hazardous but also cause irreparable damage to our ecology and environment, thus breaching the environment's carrying capacity, adversely affecting public health.

7. In *Karnataka Industrial Areas Development Board vs. C. Kenchappa & Ors*[1], the Hon'ble Supreme Court observed, as guiding rules for Sustainable Development, that humanity must take no more from nature than man can replenish and that people must adopt lifestyles and development paths that work within the nature's limit. In *Vellore Citizens Welfare Forum Vs. Union of India*[2], the Hon'ble Supreme Court recognized the Precautionary Principle and explained that environmental measures by the State Government and the

[1] (2006) 6 SSC 383
[2] AIR 1996 SC 2715

statutory authorities must anticipate, prevent and attack the causes of environmental degradation.

8. This Tribunal has applied the same principles in deciding matters[3] before it in terms of Section 20 of the National Green Tribunal Act 2010.

9. In view of above, we direct the SPCBs/ Committees to finalize the time bound action plans with regard to identified polluted industrial clusters in accordance with the revised norms laid down by the CPCB to restore environmental qualities within norms. Such action plan be finalized within three months from the date of receipt of copy of this order. In case of any left- out/missed areas in addition to 100 areas also, SPCBs should undertake CEPI assessment and formulate action plans.

10. The action plan may thereafter be looked into by the CPCB and steps taken for implementation so as to ensure that all the industrial clusters comply with laid down parameters as per the Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981. The CPCB will be the Nodal agency. Meanwhile, CPCB will forward Assessment Report for 100 areas carried out during 2017-2018 to MoEF & CC before 28.02.2019 for appropriate action.

11. Needless to say that it will be open to the SPCBs/Committees and CPCB to take coercive measures including recovery of compensation for the damage to the environment on 'Polluter Pays' principle as well as also to direct taking of such precautionary

[3] Aditya N. Prasad & Ors. Vs. Union of India & Ors., Original Application No. 147/2016, Order dated 01.11.2018; We the People, Th. Gen. Secretary Vs Union of India & Ors. Original Application No. 214/2017, Order dated 01.11.2018; Westend Green Farms Society Vs. Union of India & Ors., Original Application No. 400 of 2017, Order dated 02.11.2018; Saloni Ailawadi Vs Union of India & Ors, Original Application No. 509/2015, Order dated 16.11.2018; Shantanu Sharma Vs Union of India & Ors, Original Application No. 117/2014, Order dated 20.11.2018; Dr. Arun Kumar Sharma Vs. Ministry of Environment, Forest and Climate Change & Anr., Original Application No. 312 of 2016, Order dated 26.11.2018.

measures as may be necessary on the basis of 'Precautionary principle'.

12. CPCB may serve copy of this order on all the SPCBs and the Committees who may furnish the same to the concerned Chief Secretaries. Ministry of Environment, Forest and Climate Change (MoEF&CC) may take necessary steps on its part based on CPCB Report for 100 areas mentioned above in accordance with law. The Report on the action taken by the CPCB and MoEF&CC in the matter may be furnished to this Tribunal by e-mail at ngt.filing@gmail.com before 31.05.2019. Copies of this order be sent by e-mail to CPCB and MoEF&CC for compliance.

13. The action plan to be prepared in the States may be done by the Committee constituted by the Chief Secretary within one month from today as several Departments may be involved in the exercise. The final preparation of the action plan including its execution may be overseen by the Chief Secretary of the concerned State, along with the other connected major environmental issues of the States, such as pollution of river stretches, non-attainment cities in terms of air quality and solid waste management, utilization of treated sewage, covered by order of this Tribunal dated 20.09.2018 in Original Application No. 673/2018, News Item Published in 'The Hindu' authored by Shri. Jacob Koshy titled 'More river stretches are now critically polluted: CPCB', order dated 08.10.2018 in Original Application No. 681/2018, News Item Published In 'The Times of India' Authored by Shri. Vishwa Mohan Titled "NCAP with Multiple Timelines to Clear Air in 102 Cities to be released around August 15", order dated 20.08.2018 in Original Application No. 606/2018, Compliance of Municipal Solid Waste Management Rules, 2016 and order dated 27.11.2018 in Original Application No. 148/2016, Mahesh Chandra Saxena Vs. South Delhi Municipal Corporation &

Ors. The Chief Secretary will take meetings on all these issues once in three months (quarterly) and will forward Report to NGT by e-mail.

14. List for consideration of report of MoEF&CC and the CPCB on 08.07.2019.

Adarsh Kumar Goel, CP

K. Ramakrishnan, JM

Dr. Nagin Nanda, EM

December 13, 2018
Original Application No. 1038/2018
AG

Annexure IV

RAJASTHAN STATE POLLUTION CONTROL BOARD
4, Institutional Area, Jhalana Doongari JAIPUR-302 004
Phone: 5101871,5101872, Fax: 5159694, 5159695

Office Order

Mechanism for environmental management of critically and severally Polluted Area and considerations of activities/projects in such areas in compliance to Hon'ble NGT order dated 23.08.2019 in the matter of O.A. No. 1038/2018.

With reference to CPCB letter no. CPCB/IPC-VI/CEPI/NGT/2019 dated 25.10.2019 mechanism prepared by MoEF&CC for grant of Consent to Establishment and Consent to Operate to those projects / activities of Red /Orange categories located in CPAs/SPAs which are not covered under the provisions of the EIA notification, 2006 has been delineated.

Accordingly, it is required to prescribe additional conditions deemed fit in the CTE / CTO of the projects / activities of Red/ Orange categories in the CPAs / SPAs identified in the state.

1. Areas on which this mechanism shall be applicable

Sr. No.	Name of Polluted Industrial Areas (PIAs)	Demarcation of boundaries/industrial clusters
1	Bhiwadi	- RIICO industrial areas Phase I to IV - Bhiwadi town -Other surrounding industrial areas: Chopanki, Rampura Mundana, Khuskhera Phase I to III
2	Jaipur	Sitapura industrial area, Bais Godam industrial area, Kataripura industrial area, Sudarshanpura industrial area, Mansarovar industrial area, Malviya industrial area.
3	Jodhpur	- Industrial areas including Basni Areas (Phase-I & II), Industrial Estate, Light & Heavy industrial areas, industrial areas behind new Power House, Mandore, Bornada, Sangariya and Village Tanwada & Salawas. -Jodhpur city
4	Pali	- Existing Industrial Areas: Mandia Road, Punayata Road, Sumerpur -Pali town
5	Sanganer Industrial Area	Textile Units in Industrial Areas in Sanganer town

2. **Specific Conditions to be stipulated for the projects/units located within the Critically Polluted Areas (CPAs)/ Severely Polluted Areas (SPAs) mentioned in clause (1)**

A. Additional conditions under Air (Prevention & Control of Pollution) Act, 1981:

i. Unit shall adhere to stringent air pollutants standards i.e. 80 % of existing process emission standards in the CPA and 90 % of existing process emission standards in case the SPA.

ii. Only cleaner fuel such as liquid fuels (other than FO), PNG, CNG or LPG will be a used as a fuel in boilers, thermic fluid heaters, furnaces and other utilities.

iii. Unit shall install and commission Continuous Emission Monitoring System- CEMS (as per CPCB guidelines for relevant parameters) which shall be connected with RPCB/CPCB server (In case of large and medium red category industries only)

iv. Unit shall adhere to sector specific guidelines/ SOP published by RPCB / CPCB from time to time for stone crushers, mineral grinding units etc. for effective control of fugitive emissions.

v. Unit shall provide green belt in 40 % of the plot area using concept of the social forestry and will develop green belt outside project premises in adjacent areas wherever adequate land is not available within the industrial premises.

vi. Unit shall provide wall to wall carpeting in vehicle movement areas within premises to avoid re-entrainment of road dust.

vii. Unit shall undertake regular cleaning and wetting of roads for control of fugitive dust emissions

viii. Burning of non-hazardous waste shall not be practiced inside or outside the industry premises

B. Additional conditions under the Water (Prevention & Control of Pollution) Act, 1974

i. That all the industrial effluent will have to be treated and re-cycled in the process by establishing Zero Liquid Discharge (ZLD) plant along with arrangements for scientific management of RO rejects.

ii. In case the domestic waste water generation in the industry is more than 10 KLD, the unit shall install separate Sewage Treatment Plant (STP) of adequate capacity and treated sewage shall be reused/recycled to the maximum extent. However, for industries connected with common STP at the terminal point, individually STPs may not be required subject to the condition that the common STP at the terminal point is complying with the prescribed discharge standards under the Water Act, 1974. In all such cases, only scientifically designed oil and grease traps will be installed.

iii. Unit shall only use treated effluent for preparation of lime and other slurry in ETP. No fresh water shall be utilized in ETP for this purpose.

iv. In case of large and medium Red category industries, the unit shall install system for continuous monitoring of effluent quality / quantity as per CPCB guidelines for

relevant parameters and shall be connected to RPCB and CPCB servers. In case of ZLD units, PTZ camera will installed at the effluent outlet.

v. Unit shall submit detailed rain water harvesting plan based on the quantity of raw water consumption.

C. Additional conditions under the Hazardous Waste Management Rules

i. Unit shall dispose its hazardous wastes through co-processing /pre- processing to the extent possible prior to its disposal through incineration/ landfill as per provisions of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 201 6.

ii. Unit shall explore utilization of hazardous waste for gainful purposes.

iii. Unit shall strictly comply with all the measures specified in guidelines/SOPs issued by RPCB/CPCB for management and recycling of the re-cycleable hazardous wastes.

iv. Unit shall carry out transportation of hazardous wastes through authorized vehicles only.

3. Industries/Projects located in the identified CPA/SPA will submit a time bound action plan for compliance of the aforesaid additional conditions along with a Bank Guarantee of 10% of the cost of the additional pollution control equipments/arrangements required to be installed subjected to minimum Bank Guarantee of Rs 50, 000 (Only in the cases of Consent to Operate).
4. All the GIC/ROs will ensure that the relevant additional conditions as above are prescribed while granting CTE / CTO to Red / Orange categories of industries/projects in all the identified CPAs/SPAs.
5. This mechanism will be applicable only on those projects/industries for which consent to establish has been granted/to be granted after 10.07.2019 or consent to establish was granted before 10.07.2019, however, first consent to operate was granted/to be granted after 10.07.2019. However, this will not apply on the projects/industries which were already operating with prior consent of the State Board on or before 10.07.2019 and have applied for renewal of consent.

This bears approval of the competent authority

(Shailaja Deval)
Member Secretary

F.14(99)corres/Plg (VI)/2709 - 2716 Dated 26-12-2019

Copy to the following for information and necessary action:

1. PS to Chairperson, RSPCB, Jaipur.

2. Chief Environmental Engineer/Chief Scientific Engineer, RPCB, Jaipur
3. Member Secretary, SEAC, Jaipur.
4. Group Incharge, SWMC/HOP/Planning/BMW/Hazardous/ Textile/ CPP/ MUID/Plastic/ Mines, SCMG&DS/ CD&Project/ EC/VTR/DF RSPCB, Jaipur.
5. Regional Officer, Regional Office, RSPCB, Jaipur (South)/ Jaipur (North)/ Alwar/ Bhiwadi/ Balotra/ Bharatput/ Bhilwara/ Bikaner/ Jodhpur/ Pali/ Kota/ Chittorgarh/ Kishangarh/ Sikar/Udaipur.
6. Group Incharge (IT), to upload on the State Board website.
7. Master File.

Member Secretary

Annexure V

सत्यमेव जयते

राजस्थान राजपत्र विशेषांक	RAJASTHAN GAZETTE Extraordinary
साअधिकार प्रकाशित	*Published by Authority*
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भाग-1(ख)

महत्वपूर्ण सरकारी आज्ञायें।

Industries (Group-1) Department

Notification

Jaipur, February 27, 2020

No. F. 6(2)Industries/I/2020:-The Department of Industries, Government of Rajasthan, hereby notifies the Scheme for Establishment of Integrated CETPs and Up-gradation of Existing CETPs in view of the Budget Declaration (Year 2019-20) No. 75. The Scheme will be in effect with the date of its publication in Gazette of the Government of Rajasthan.

The Scheme shall be as follows:-

Scheme for Establishment of Integrated CETPs and Up-gradation of Existing CETPs

1.0 Introduction:

In the textile sector of the country, Rajasthan enjoys a prominent place. Hand prints of Sanganer, tie and dye works of Jodhpur & Jaipur, dyeing and printing works of Pali, Balotra, Jodhpur and processing work of Bhilwara are both nationally and internationally recognized. In addition to these areas, industrial clusters located in Bhiwadi, Neemrana, Kishangarh, Kota, etc., are important.

Waste water generated in these clusters is treated using Effluent Treatment Plants (ETPs) at individual unit's level and at Common Effluent Treatment Plants (CETPs) at a cluster level. Most of the CETPs do not have the facility of waste water recycling and therefore treated water cannot be reused. Further, except few CETPs, all the existing CETPs are having facilities to treat the effluent only up to secondary level. In absence of perennial rivers and very less flow, disposal of the treated water has become a major issue. Also, absence of closed conduit pipelines to carry waste water to treatment facility and recirculation pipeline to distribute the treated water to individual units for reuse is an issue which needs to be addressed on a priority basis.

Pollution issues have become extremely important nowadays and an acute need was felt for planning an appropriate strategy for prevention and control of water of pollution. Further, such prevention and control activities require adequate technical knowhow and financial means. To fructify the vision of the sustainable development of the industries of Rajasthan Hon'ble Chief Minister announced in the State Budget 2019-20 that a scheme will be launched for up-gradation, development and setting up of new Common Effluent Treatment Plants(CETPs) in the industrial clusters of the state.

With an aim to provide financial assistance in compliance of Hon'ble NGT directions, for up gradation of existing CETPs and setting up of new CETPs and related infrastructure, as per the Budget announcement for the year 2019-20, a scheme is formulated whereby a corpus fund of Rs. 200.00 crore has been created. This fund shall have equal contribution from following :

RIICO-50%

RSPCB-50%

During the subsequent financial years, the corpus may be extended and replenished with additional funds on need based assessment and after due consultation with RSPCB and RIICO.

The CETPs will be considered for one time grant, either for establishment of new CETP or up-gradation / expansion of existing CETP. The preference will be given only for the up-gradation of existing CETPs, if the funds remain in balance after up-gradation of existing CETPs, new CETPs may be considered for funding under the scheme. The following scheme will be implemented for the purpose of funding from this Corpus Fund.

This scheme is integrated with the process of collection and treatment of waste water and disposal of solid waste (Sludge) after treatment. The assistance will also be provided for collection mechanism and treatment of solid waste.

There will be three types of CETPs:-

a. Old Industrial Areas which have CETPs but require up-gradation.

b. Old Industrial areas which do not have CETPs but require new CETPs to be set up.

c. New Industrial Areas which require new CETPs to be set up.

1.1 Present scenario of CETPs in Rajasthan- As per the assessment done by the State Boa\rd, need for up-gradation or establishment of new CETPs in various areas is assessed as follows:

Sr. No.	Name of the old Industrial Area where CETP is required	Capacity of the CETP required (MLD)	Where up-gradation / New CETP	Total estimated cost (Cr.)	Maximum Cost to be borne from Corpus Fund (Cr.)
1.	CETP Pali-IV	12 MLD	Existing CETP, Up-gradation (RO Plant)	100	50
2.	Bituja	15 MLD	Existing CETP, Up-gradation (RO Plant)	130	50
3.	Jodhpur, Sangneria Ind. Area	12 MLD	Existing CETP, Up-gradation (RO Plant)	100	50
4.	Jodhpur (new CETP, Salawas)	25 MLD	New CETP	300	50
5.	Bikaner, Bicchiwal Ind. Area	4 MLD	New CETP	48	24
6.	Bikaner, Karni Ind. Area	4 MLD	New CETP	48	24
7.	Hanumangarh	2 MLD	New CETP	24	12
8.	Ganganagar	2 MLD	New CETP	24	12
	Total	**76 MLD**		**774**	**272**

2. Funding under this scheme:

At present, the Integrated Textile Processing Scheme (IPDS) of Ministry of Textiles, GoI is applicable for Textiles sector. Since this scheme is available for textile clusters only, CETPs

catering to other sectors or for heterogeneous industrial areas there is no option for getting financial assistance/ grant.

2.1 Funding pattern for Up-gradation of existing CETPs:

2.1.1 To cater to such CETPs, for which financial assistance is not available elsewhere, Maximum 50 crore or 50% of the required financial assistance per CETP, whichever is less, will be made available as a grant under this scheme.

2.1.2 For tertiary level CETPs to be upgraded upto ZLD facility, assistance shall be provided at the rate of Rs. 3 crore per MLD with capping of Rs. 50 crore per project. (Cost estimation per MLD@ Rs. 9.00 Cr. per MLD).

2.1.3 For secondary level CETPs to be upgraded upto ZLD facility, assistance shall be provided at the rate of Rs. 3.5 crore per MLD with capping of Rs. 50 crore per project.

2.1.4 Rs. 20 lacs per km for effluent conveyance system and Rs. 15 lacs per km for treated water re-circulation system including restoration work, if any, as considered by the Technical Evaluation Committee with an overall capping of Rs. 5 crore per project.

2.1.5 All the above grant will be subjected to a maximum funding of upto 50% of the component wise project cost.

2.1.6 In case financial assistance is obtained for any CETP project from any of the schemes of GoI, the state share of financial assistance shall be borne by the State Government as being done earlier and no part of the state share will be borne under the scheme.

3. Funding pattern for Establishment of New CETPs:

3.1 Financial assistance for establishment of new CETPs shall be provided at the rate of Rs. 4.5 crore per MLD with an overall capping of Rs. 50 crore per project including laying of effluent conveyance, treated water re-circulation system and management of solid waste. The above grant will be subjected to a maximum funding of upto 50% of the component wise project cost.

3.2 Following broad categories of projects will qualify for funding under the scheme:

3.2.1 CETPs which are presently treating effluent up to secondary level/tertiary level and propose to upgrade/ setup ZLD facility for reuse of treated water including installation of RO and reject management facilities.

3.2.2 New CETPs which propose to setup ZLD facility for reuse of treated water including installation of RO and reject management facilities.

3.2.3 Installation of efficient sludge handling, drying or reuse arrangements including laying down of conveyance line for both carrying effluent for treatment and for carrying treated water for reuse by the individual units

3.2.4 Introduction of advance technology to improve effluent quality/reduce sludge quantity.

3.2.5 Any other project of up-gradation which is found suitable by Technical Evaluation Committee.

3.2.6 CETPs which are already more than 10 years old and applying for up-gradation will be required to submit certificate from a reputed government Technical Institution regarding suitability of civil structure and existing equipment for up-gradation.

3.2.7. Grant towards restoration of infrastructure damaged during lying of pipeline will be considered as per decision of the Technical Evaluation Committee.

3.3 Financial assistance under the scheme shall not be available for the following (Negative List);

a. For procurement of land for the project.

b. For meeting recurring or operation and maintenance costs.

c. Any liability towards time and cost over runs.

d. Retrospective funding.
e. Preliminary and pre-operative expenses
f. Consultancy services
g. CETPs which have not formed SPVs as per the guidelines issued by the State Board.
h. CETPs proposed to be established by Private Industrial Estates/Parks
i. Any CETP for which funding has been approved under the IPDS scheme of Ministry of Textile, GoI or any other scheme.

3.4 Pre requisites before filing application for financial assistance under the Scheme:

a. Application to be filed only by SPV registered under Company Act.

b. Submission of DPR as per the checklist.

c. Land is in undisputed possession of SPV and converted for the purpose of setting up of CETP.

d. Environment Clearance from competent authority has been obtained.

4.0 Project Management Agency (PMA):

The roles and responsibilities of PMA will include the following:

a. Preparation of Detailed Project Report (DPR) and getting the same vetted by the Technical Evaluation Committee.

b. Assist the SPVs in selection of agencies for preparation of bid documents and procurement procedure to appoint various contractors.

c. Monitor the implementation of the project and submit periodical progress reports to RSPCB and RIICO.

d. Ensure timely completion of project and Assist the SPV in achieving financial closure. PMA will be permitted to work as a contractor in the implementation of the project and also act as the O&M agency after execution. However, the expert/institution which has evaluated the DPR as part of the TEC cannot be appointed as PMA.

e. The project report shall have the provision of 3-5% as administrative expenses for hiring of PMA. These expenses shall be borne by the SPV.

For the purpose of this scheme, any agency/institution recognized by MoEF & CC or Ministry of Textile (MoT), Government of India, or by the state Government for the purpose shall be engaged as Project Management Agency by the SPV. The SPV will ensure that DPR is prepared as per the prescribed checklist annexed with the guidelines. TEC will not accept incomplete DPR which are not as per the Check list.

5. Technical Evaluation Committee (TEC):

5.1 Projects received for financial assistance will be evaluated for its technical/financial feasibility and its practical utility by the Technical Evaluation Committee comprising the following members:

I. Chief Environmental Engineer (RSPCB) - Chairperson

II. Nominee of Department of Environment, GoR - Member

III. GM (E.M.), RIICO - Member

IV. Concerned Regional Officer, RSPCB - Member

V. General Manager, DIC - Member

VI. Concerned Unit Head, RIICO -Member

VII. Additional/Joint Director Industries - Member Secretary

5.2 TEC may invite any other expert as special invitee, if required Members/Institutions recognized/empanelled by MoEF & CC or Ministry of Textile (MoT), Government of India or by the state Government for the purpose will be engaged by the SPV who will evaluate the DPR and present to TEC. The Expert Member/Institution will also assist the TEC during disbursement of funds. In case an expert member/ agency is involved in the evaluation process, SPV shall pay a fees in form of evaluation charges not more than 1% of the estimated project cost.

6.0 State Level Approval Committee (SLAC):

6.1 Projects forwarded by TEC will be examined and approved by State Level Approval Committee The SLAC will consist of the following:

1. Chief Secretary - Chairman
2. Addl. Chief Secretary (Finance) - Member
3. Addl. Chief Secretary (Industries) - Member
4. Addl. Chief Secretary (Environment) - Member
5. Managing Director (RIICO) - Member
6. Member Secretary (RSPCB) - Member
7. Commissioner Industries- Member Secretary

6.2 Besides the above, the SLAC may invite concerned SPV or any other technical expert/government official as special invitee depending on the need.

7.0 Timelines for Project Evaluation/Approvals:

7.1 Evaluation of the Project by TEC and forwarding its recommendations to the SLAC-30 days after receipt of the complete proposal as per the check list from the SPV

7.2 Approval of the project by SLAC – Within 30 days after receipt of evaluation report from TEC.

8.0 Minimum Eligibility Criteria for the Bidders:

8.1 After final approval of the project, the SPV will call for the bids. To ensure that only reputed and qualified agencies take part in the bidding process, following minimum eligibility criteria is laid down for the bidders:

8.2 The agency should have minimum experience of 5 years in Design, Engineering, Supply, Installation, Testing and Commissioning of CETPs of similar types for which bids are being invited

8.3 It should have completed minimum 3 similar project of at least 50% capacity at the time of publication of the bid.

8.4 Any experience in Operation & Maintenance (O&M) of CETPs will be desirable

8.5 Average turnover of the agency for past three years should be equal to bid estimated cost for the project for which bids are being invited.

8.6 It should be a limited company/firm Registered in India.

8.7 The bidder should not have any history or on-going litigation / blacklisted for bidding by any entity (Private or Government).

9.0 Release of Fund:

First instalment of 25 % of the grant will be released provided that 50 % of the share of the SPV for the project is made available by them upfront by way of bank deposit/ expenses at site. Remaining part of the grant will be released in three instalments of 25 % each against 25 % matching fund made available by the SPV during the second and third instalment and the final instalment will be released after completion of the project.

Provisions of GF&AR and RTPP Act and Rules will be followed in spending the assistance provided under the scheme and will be subjected to all applicable statutory audits.

10.0 Project Monitoring during Implementation of the Project:

SPV will be responsible for timely implementation of the project. It will file monthly progress report in the format prescribed by the Technical Evaluation Committee (TEC). Concerned Regional Officer, RSPCB and Unit Head, RIICO and GM, DIC will jointly inspect the CETP to physically assess the progress of implementation every quarter. SLAC will also review the progress from time to time.

11.0 Submission of Utilization Certificate:

SPV will submit Utilization Certificate (UC) in the prescribed format before release of the next instalment.

The Industries (Group-1) Department shall be the Administrative Department of the Scheme. This bears the approval of Finance Department vide ID No. 102000414 dated: 04.02.2020.

by order of the Governor,
Neetu Barupal,
Deputy Secretary to the Government

Annexure-I

FORMAT FOR UTILIZATION CERTIFCICATE

Title of the Project

1. Name of the SPV
2. Order no. and date of approval the Project
3. Amount received under the Project (with details of sanction issued)
4. Total amount that was available for expenditure
5. Actual expenditure incurred
6. Unspent balance

Certified that the expenditure of Rs.....lacs (Rupees.....) only mentioned against column (6) was actually incurred on the project for the purpose for which it was sanctioned.

Managing Director
SPV

Annexure-II

Checklist for Preparation of DPR for the Up-gradation of the existing CETP or Establishment of new CETP

1. Executive summary of the project – giving a prima- facie idea of the objectives of the proposal, use of resources, justification, etc.
2. Details of the SPV formed for setting up the CETP or for up-gradation of the existing CETP.
3. Justification for selecting the proposed unit size.
4. Land requirement for the project including its break up for various purposes, its availability and optimization.
5. Topographical survey and geotechnical investigation of the identified land.
6. Details of proposed layout clearly demarcating various units/industries connected with the CETP along with turnover/ employment of the industrial area/ cluster
7. Expected quantity of wastewater from each industry along with characteristics of effluent and proposed segregation of streams, if any, from individual member industries.
8. Details of metering arrangements at Individual units and at the CETP along with establishment of SCDA system.
9. Details of mode of effluent collection system either by tankers and/or pipeline, etc. and monitoring protocol.
10. Details on physical, chemical and biological characteristics of the combined effluent and its concentrations and the basis for the same.
11. Details of existing/proposed continuous monitoring facilities, if any.
12. Details of the proposed treatment schemes at CETP along with built-in provisions to deal with quantitative and qualitative fluctuations.
13. Details of O&M Agency employed/proposed to be employed and its qualification/experience in operation of the CETPs.
14. Details of power consumption and stand-by arrangements like the diesel generator (DG) sets.
15. Gross cost estimates of the proposed CETP/up-gradation of the CETP along with cost of its various components.
16. Details of Primary Treatment Plants installed/to be installed by the member units.
17. Details of laboratory set up in the CETP.
18. Management plan for solid/hazardous waste generation, storage, utilization and disposal.
19. Detailed plan of treated wastewater disposal/ reuse/ utilization / management.
20. O&M cost of the CETP along with acceptance from members to bear the cost.
21. Litigation if any, pending against the project and /or any direction /order passed by any Court of Law related to the environmental pollution and impacts in the last two years, if so, details thereof.

Government Central Press, Jaipur.