Action Plan for Rejuvenation of River Kalyani, Rudrapur, Distt. US Nagar (Uttarakhand)

(River Stretch: Downstream of Pantnagar)

Priority-III

Approved by

Uttarakhand River Rejuvenation Committee

June, 2019

Action Plan: No. 5

Action Plan

for Rejuvenation of

River Kalyani

(River Stretch: Downstream of Pantnagar)

Rudrapur, Distt. US Nagar

(Uttarakhand)

Priority -III

Approved by by

Uttarakhand River Rejuvenation Committee
(Constituted in compliance of order of the Hon'le NGT)

June, 2019

INDEX

1. INTRODUCTION

River Kalyani originating from the Tanda forest area of district Nainital and passing through agriculture fields of Pantnagar areas and followed by Integrated Industrial Estate (IIE), Pantnagar. River Kalyani receives wastewater from Common Effluent Treatment Plant (CETP) having installed capacity of 4.0 MLD, however, presently CETP receiving about 1.5 MLD to 1.8 MLD wastewater from 236 industrial Unit. About 286 industrial units are not connected with CETP as conveyer system is not available for those industries; however, individual industrial units have made their effluent treatment plant (ETP) as per requirement. About 11.5 Km length of River Kalyani along the IIE Pantnagar and downstream of Pantnagar is identified as polluted river stretch. River Kalyanai receives treated wastewater from CETP through its storage lagoon and other industrial units where conveyer system is not available. Apart from these sources, it also receives municipal drains from residential areas of Rudrapur city located downstream of Integrated Industrial Estate (IIE), Pantnagar.

2. WATER QUALITY GOALS:

It is an important aspect for maintain wholesomeness of river Kalyani in context of meeting designated water quality criteria. The natural flow of river Kalyani is very low. As it passes through IIE Pantnagar, it receives industrial wastewater and CETP outlet discharge as well as wastewater from residential areas. It is pertinent to mention that because of low natural flowing water during most of the time, even if the industries located in industrial estate meet the prescribed discharge norms as stipulated under the Environment (Protection) Rules, 1986**, it would not be possible to achieve river water quality of Class 'B'.**

Water Quality Characteristics of River Kalyani:

River quality monitoring is being carried out by the Uttarakhand Environment Protection and Pollution Control Board at upstream of IIE Pantnagar at Nagla Road, Pantnagar and downstream at Siidcukl Chowki, Pantnagar. Water quality dataa collected in the year 2018 are as given blow:

A. River Kalyani at upstream of Pantnagar at Nagla road, (US Nagar).

Month	pH	BOD (mg/L)	COD (mg/L)	DO (mg/L)
Jan-18	7.2	3.2	18	8.2
Feb-18	7.2	2.2	16	8
Mar-18	River Dry			
Apr-18	River Dry			
May-18	River Dry			
Jun-18	7.2	3.2	8	7.2
Jul-18	7.6	2.6	16	7.2
Aug-18	7.6	1.8	18	7.8
Sep-18	7.5	4	14	7.2
Oct-18	7.3	8	28	6.2
Nov-18	7.2	4.2	18	6.8
Dec-18	7.4	3.2	10	6.4
Average (Range)	**7.35** (7.2-7.6)	**3.6** (1.8-8)	**16.22** (8-28)	**7.22** (6.2-8.2)

B. River Kalyani at downstream of Pantnagar (US Nagar).

Month	pH	B.O.D. (mg/L)	C.O.D. (mg/L)	D.O. (mg/L)
Jan-18	7.9	8.2	38	5.20
Feb-18	7.4	6	36	5.20
Mar-18	6.98	20	84	1.80
Apr-18	6.86	80	304	0.60
May-18	7.1	52	200	1.20
Jun-18	6.4	48	190	1.20
Jul-18	7.3	44	152	1.80
Aug-18	7.8	30	118	3.20

Sep-18	6.9	34	138	2.80
Oct-18	7.3	36	130	2.00
Nov-18	7.6	26	88	2.60
Dec-18	6.8	30	80	2.80
Average (Range)	**7.19** (6.4-7.9)	**34.51** (6-80)	**129.83** (36-304)	**2.53** (0.60-5.20)

Basis of Proposed Action Plan for rejuvenation of river Kalyani:

River Kalyani is a spring fed river and river water quality before entering into IIE, Pantanagar, as such not receives any direct source of pollution. Deterioration in water quality is reported mainly because of industrial wastewater and CETP outlet domestic wastewater from residential colonies. Efficient operation of CETP as well as effluent treatment plants of industries which are not connected with CETP, along with interception, diversion and treatment of domestic wastewater drains are matter of grave concerned. Therefore, action plan for prevention and control of pollution of river Kalyani has been prepared based on the following components:

3. IDENTIFICATIO OF SOURCE OF WATER POLLUTION:

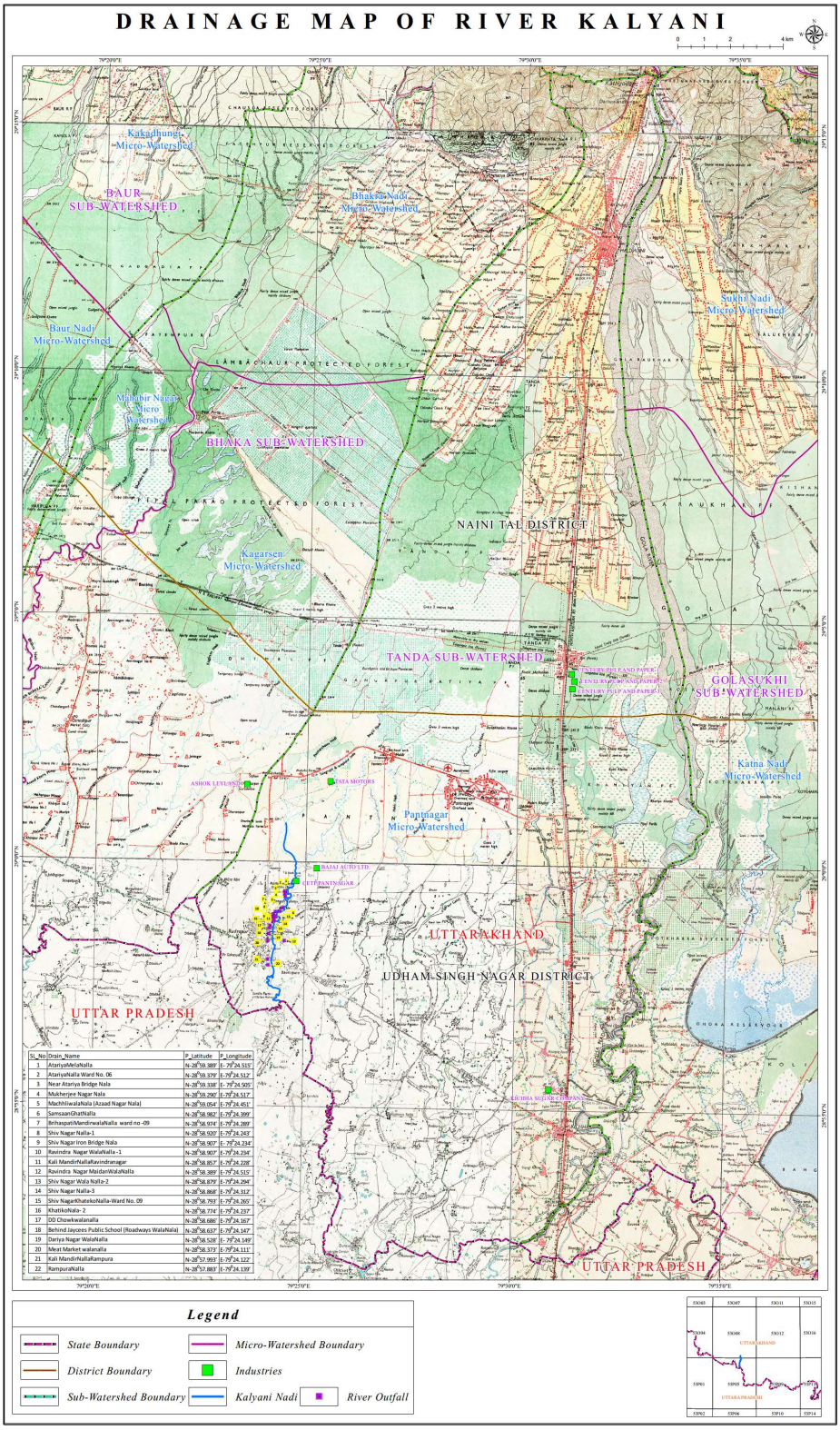
The proposed action plan for rejuvenation of river Kalyani consisting following components:

3.1 Source Control:

Source control includes industrial pollution control and treatment and disposal of domestic sewage as detailed below:

(a) Industrial Pollution control:

i. Identification of pollution potential industries.



Sl_No	Drain_Name	P_Latitude	P_Longitude
1	AtariyaMetaNalla	N-28°59.389'	E-79°24.515'
2	AtariyaNalla Ward No. 06	N-28°59.379'	E-79°24.512'
3	Near Atariya Bridge Nala	N-28°59.338'	E-79°24.505'
4	Mukherjee Nagar Nala	N-28°58.290'	E-79°24.517'
5	MachhliwalaNala (Azaad Nagar Nala)	N-28°58.054'	E-79°24.451'
6	SamsaanGhatNalla	N-28°58.982'	E-79°24.399'
7	BrihaspatiMandirwalaNalla ward no -09	N-28°58.974'	E-79°24.289'
8	Shiv Nagar Nalla-1	N-28°58.920'	E-79°24.243'
9	Shiv Nagar Iron Bridge Nala	N-28°58.907'	E-79°24.234'
10	Ravindra Nagar WalaNalla -1	N-28°58.907'	E-79°24.234'
11	Kali MandirNallaRavindranagar	N-28°58.857'	E-79°24.228'
12	Ravindra Nagar MaidanWalaNalla	N-28°58.389'	E-79°24.515'
13	Shiv Nagar Wala Nalla-2	N-28°58.879'	E-79°24.294'
14	Shiv Nagar Nalla-3	N-28°58.868'	E-79°24.312'
15	Shiv NagarKhatekoNalla-Ward No. 09	N-28°58.793'	E-79°24.265'
16	KhatikoNala- 2	N-28°58.774'	E-79°24.237'
17	DD ChowkwalaNalla	N-28°58.686'	E-79°24.167'
18	Behind Jaycees Public School (Roadways WalaNala)	N-28°58.637'	E-79°24.147'
19	Dariya Nagar WalaNalla	N-28°58.528'	E-79°24.149'
20	Meat Market walanalla	N-28°58.373'	E-79°24.111'
21	Kali MandirNallaRampura	N-28°57.993'	E-79°24.122'
22	RampuraNalla	N-28°57.883'	E-79°24.139'

ii. Sector specific categorization of industries.
iii. Assessment of Water consumption and wastewater discharge and gap in treatment of industrial effluent.
iv. Provision of wastewater treatment system.
v. Efficient Operation of CETP of IIE Pantnagar.
vi. Establishment of leftover networking of conveyor system of CETP.

(b) Sewage Management:

i. Estimation of quantity of sewage generated and requirement of treatment capacity.
ii. Gap analysis in terms of sewage generation, existing installed treatment capacity and required treatment capacity.
iii. Identification of municipal drains & their discharge in the catchment of river Kalyani.
iv. Interception and diversion of municipal drains to STP.
v. Treatment and disposal of septage and controlling open defecation.

(c) Solid Waste Management:

i. Implementation of Door-to-Door collection.
ii. Source segregation as biodegradable and non-biodegradable wastes.
iii. Identification of suitable site for setting up common waste processing and secure landfill facility.
iv. Transportation, disposal and treatment facilities of municipal solid wastes generated from town in accordance of provisions of the Solid Waste Management Rules, 2016.
v. Restriction on illegal disposal of solid waste along the river bank and flood plain zones.
vi. Prohibition on burning of solid wastes.
vii. Implementation of Construction and Demolition Wastes Management Rules.

3.2 Groundwater Water Quality:

i. Periodic groundwater quality assessment at strategic locations.

3.3 Flood Plain Zone.

i. Flood plain zoning.

3.4 Ecological/Environmental Flow (E-Flow)

i. Maintaining E-Flow.

4. RIVER KALYANI REJUVENATION PLAN:

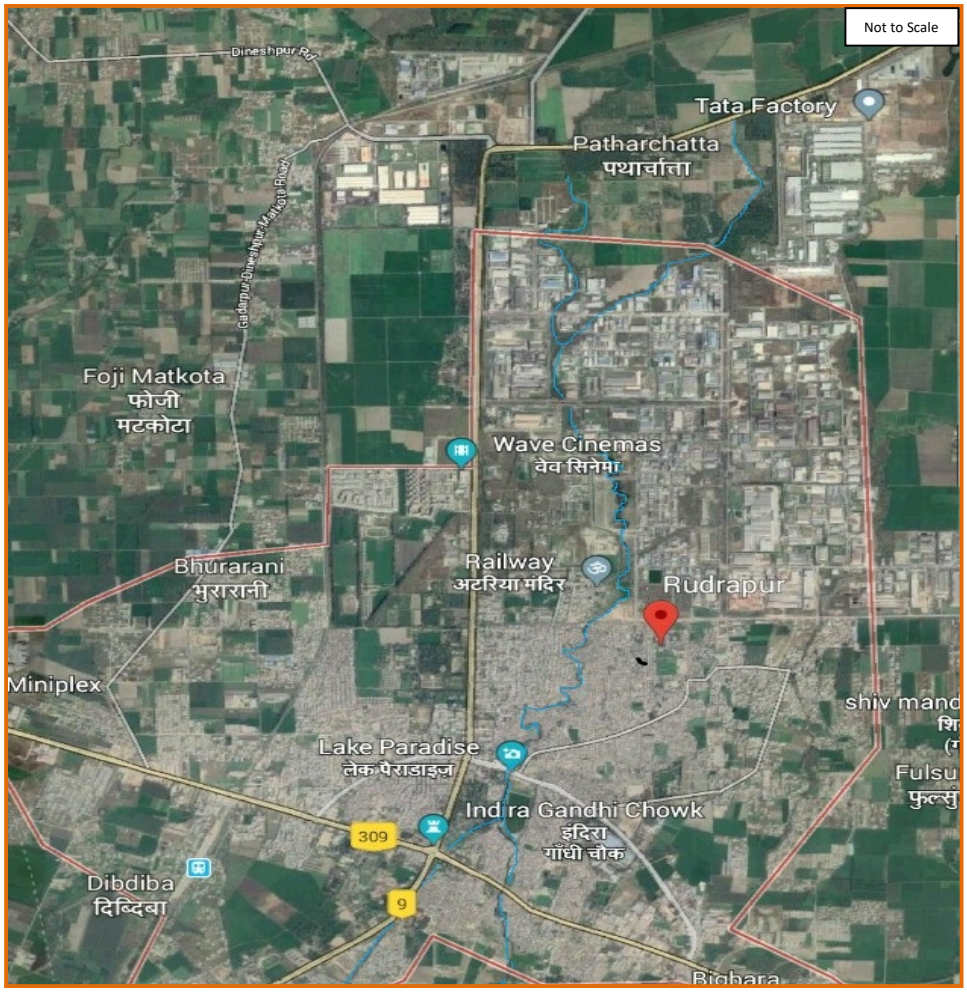
Following are the action plan for rejuvenation of river Kalyani as detailed below:

4.1 Industrial Pollution Control:

The UEPPCB is vigil on operation of Common Effluent Treatment Plant (CETP) and individual effluent treatment plants of industries which are located in the area where connectivity to CETP is not available. Grossly polluting industries (GPIs) and other red categories of water polluting industries are motoring closely. There are 03 GPIs operating in the catchment of river Kalyani .Details of GPIs are given as below:

SN	Industry Name	Water Consumption (KLD)	Waste Water Generation (KLD)	Status of Treatment Plant
1	Tata Motors Ltd., Sector-1, IIE, Pantnagar (US	4600	3840	Operational ETP

	Nagar)			
2	Ashok Leyland Ltd, IIE, Plot No. 1, Sector-12, Pantnagar (US Nagar).	1500	610	Operational ETP
6	Bajaj Auto Ltd., Plot No. 2, Sector-10, IIE Pantnagar (US Nagar)	395	300	Operational ETP



Google image of IIE, Pantanagar and Rudrapur town along with river Kalyani.

All above 3-GPIS are automobile manufacturing units and having individual efficient wastewater treatment systems and provisions of reuse of treated waster in process and other utilities have been made.

GPIs are being monitored in every quarter apart from other surprise inspection. Online effluent monitoring systems have also been provided at effluent outlet and real time data are being transmitted to Central Pollution Control Board and UEPPCB.

4.2 Networking of Conveyor system of CETP:

There are total of 523 Nos. of industries, out of which 499 industries in operation and 24 industries are under construction in the IIE Pantnagar. 243 Nos. of industries are connected with CETP through common conveyor system, while 255 nos. of industries are not connected with CETP due to non-availability of conveyor network. SIIDCUL has proposed to provide conveyor network of about of 8 Km with approximate cost of Rs. 10.00 Crore. It is proposed that networking would be completed by August, 2020.

Regular monitoring of CETP outlet will be carried out in order to comply outlet discharge standards as specified under Environment (Protection) Rules, 1986 as amended (**Annexure-1)**. CETP inlet effluent quality standards have also been prescribed by the Uttarakhand Environment Protection and Pollution Control Board and every contributing industry shall maintain inlet standards all the time (**Annexure-2)**.

Environmental Surveillance Squad (ESS) also formed at head office level in order to make surprise inspection.

Strengthening of ESS will be carried out for effective surveillance.

Industrial hazardous waste management: Recyclable hazardous wastes, mainly used oil /contaminated barrels are being recycled through registered recyclers, while landfillable waste is being disposed thorough M/S Bharat Oil and Waste Management Pvt. Ltd. located at Laksar, Distt. Hardiwar with an installed capacity of 667 MT/month landfill. Incinerable waste is either disposed through common incinerator of 1000 MT/month incineration capacity or through co-processing in cement kilns.

4.3 Sewage Management:

About 26 MLD sewage is generated from the entire city. At present there is no sewerage facility in the town. 125 KLD capacity Septage Treatment Plant is proposed for Rudrapur city under AMRUT project. Proposal of about Rs. 6.09 Cr. is under tendering process. People have own septic tank system & supernatant from these septic tanks is disposed of into nearby drains. Uttarakhand Peyjal Nigam have identified 22 major drains of the town and draining into river Kalyani. Details of those drains are as given below:

a. Discharge measurement and BOD concentration of drains:

S. No	Name of Drain	Discharge (MLD)	BOD (mg/L)
1	Atariya Mela Nalla ($28^0$59.389'N, $79^0$24.515'E)	0.23	34
2	Atariya Nalla Ward No. 06 ($28^0$59.379'N, $79^0$24.512'E)	3.22	24
3	Near Atariya Bridge Nala ($28^0$59.338'N, $79^0$24.505'E)	0.51	32

4	Mukherjee Nagar Nala (28^{0}59.290'N, 79^{0}24.517'E)	0.93	36
5	Machhliwala Nala (Azaad Nagar Nala) (28^{0}59.054'N, 79^{0}24.451'E)	5.27	31
6	Samsaan Ghat Nalla (28^{0}58.982'N, 79^{0}24.399'E)	3.22	38
7	Brihaspati Mandirwala Nalla ward no -09 (28^{0}58.974'N, 79^{0}24.289'E)	2.59	24
8	Shiv Nagar Nalla-1 (28^{0}58.920'N, 79^{0}24.243'E)	0.04	36
9	Shiv Nagar Iron Bridge Nala (28^{0}58.907'N, 79^{0}24.234'E)	0.06	34
10	Ravindra Nagar WalaNalla -1 (28^{0}58.907'N, 79^{0}24.234'E)	0.04	30
11	Kali Mandir Nalla Ravindra nagar (28^{0}58.857'N, 79^{0}24.228'E)	0.16	32
12	Ravindra Nagar MaidanWala Nalla (28^{0}58.389'N, 79^{0}24.515'E)	0.29	38
13	Shiv Nagar Wala Nalla-2 (28^{0}58.879'N, 79^{0}24.294'E)	0.04	32
14	Shiv Nagar Nalla-3 (28^{0}58.868'N, 79^{0}24.312'E)	0.04	34
15	Shiv Nagar Khateko Nalla-Ward No. 09 (28^{0}58.793'N, 79^{0}24.265'E)	0.04	30
16	Khatiko Nala- 2 (28^{0}58.774'N, 79^{0}24.237'E)	0.16	48
17	DD Chowk walan alla (28^{0}58.686'N, 79^{0}24.167'E)	2.00	28
18	Behind Jaycees Public School (Roadways Wala Nala)	0.16	33

Nala is. The	(28°58.637′N, 79°24.147′E)		
19	Dariya Nagar Wala Nalla (28°58.528′N, 79°24.149′E)	0.23	34
20	Meat Market wala nalla (28°58.373′N, 79°24.111′E)	6.26	26
21	Kali Mandir Nalla Rampura (28°57.993′N, 79°24.122′E)	1.11	38
22	Rampura Nalla (28°57.883′N, 79°24.139′E)	2.00	30

b. Proposed Interceb. Interception and Diversion of drains and construction of Sewage Treatment Plant:

SN	Items	Quantity
1	Nala Tapping Chamber	22 Nos.
2	Gravity main 200mm to 700 mm dia D.I. K-7 pipe	4110 m
3	Sewage Pumping Station (MPS)	2 Nos.
4	Rising main 500mm & 600 mm dia DI K-9 pipe	500 m
5	Sewage treatment plant of 26 MLD & 18 MLD Capacity (capacity of STP is taken for 10 year design discharge)	2 Nos.
6	Approach road	800 mtr
7	Land acquisition	20769 Sqm.
8	Campus Boundary wall	Job
9	Necessary provision for Transmission line, Transformer and Generator set.	Job
10	15 Years Operation and maintenance of Works.	Job

c. Cost estimation of proposed interception, diversion and treatment of 22 drains:

SI	Description	Total Cost of works (Rs. in Lacs)
1	Cost of STP 26 MLD& 18 MLD	6960.00
2	Transformer and Transmission line (E&M Works)	3513.23
3	Cost of Rising Main	176.91
4	Cost of Gravity main (Sewer line & Appurtenant works)	1901.06
5	Cost of Nalas tapping chamber	51.00
6	Cost of R.C.C. retaining wall below compound wall plantation around STP campus, Approach road to STP site.	1071.54
7	Land acquisition charges	2662.41
8	Operation and maintenance of works for 15 years	**18408.45**
	Sub Total	**34744.60**
	Project preparation and supervision 8% as per norms	**1083.21**
	Total	**35827.81**
	Say Rs.	**35828.00**

Total estimated cost of above proposed activities is: **Rs. 35828.00 Lacs.**

Time line: Proposal has been submitted to the State Government for allocation of funds. Proposed activities will be completed within two years from sanction and release of funds.

4.4 Solid Waste Management:

About 36.30 MTPD solid wastes is generated from the Rudrapur city. Nagar Nigam, Rudrapur is statuary body responsible for management of solid wastes as per provisions of Solid Waste Management Rules, 2016 as amended. The population of Rudrapur town is 175723 as per census of 2011. Nagar Nigam is divided into 40 wards. Partial door to door collection is being undertaken. Nagar Nigam has approved Bye Laws for user charges and implemented. It is proposed to process and dispose solid waste of Rudrapur town with Haldwani cluster for which DPR of Rs. 19.05 Crore has been approved by Urban Development directorate. DPR of Rs. 3.84 Crore for legacy waste has also prepared.

Nagar Nigam, Rudrapur:	
Total Population	175723 (as per 2011 census)
No. of municipal wards	40
Total waste generation	36.30 MTPD
Door to Door collection	40 wards
Bye Laws for user charges	Approved and being implemented.
Realization of user charges	~ Rs. 2.89 Lacs per month.
Identification of land for waste processing and disposal facility	Solid waste of town is proposed to process and disposed through Haldwani Cluster. RFP has been floated for development of waste processing and disposal facility for Haldwani cluster.

Time line: The time line for setting up solid waste processing and disposal facility for Haldwani Cluster is March, 2021.

Construction and Demolition waste shall be disposed in river bed or road side. Necessary directions have already been issued to concerned local body for identification of site.

4.4 Ground Water Quality:

So far contamination of groundwater is not reported in the area, however groundwater quality monitoring shall be carried out at least twice in the year (winter: December-January and summer: May-June) at strategic locations to ascertain quality of groundwater.

4.5 Flood Plan Zone (FPZ):

River Kalyani is spring fed water body and flash floods are occurring only during monsoon months, therefore flood plain zoning is not required for river Kalyani.

4.6 Environmental Flow (E-Flow):

River Kalyani carrying very less natural water during non-monsoon months. Wastewater from industries and CETP outlet increases the flow of river. Therefore, it would be difficult to maintain natural environmental flow in the river.

4.7 Monitoring of Action Plan:

The proposed Action Plan will be monitored by the River Rejuvenation Committee (RRC) constituted by Government of Uttarakhand vide Office order dated 05.12.2018, under the overall supervision and co-ordination of Principal Secretary, Forest & Environment, Govt. of Uttarakhand.

5. ACTION PLAN:

Identified activities and concerned authorities for initiating actions and the time limits and budgetary requirements:

SN	Action plan for rejuvenation of river Kalyani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Budgetary Requirement (Rs. In Lacs)	Remarks
1. Industrial Effluent Management:					
a)	Routine /surprise inspection GPIs and Red category of industries for ensuring compliance of effluent discharge standards as prescribed under E (P) Rules, 1986, as amended.	Special Environmental Surveillance Task Force / UEPPCB	One month	Nil	Continuous activity.
b)	Strengthening of Environment Surveillance Squad (ESS) of UEPPCB	UEPPCB	Three month	Nil	Continuous activity.
c)	Monitoring of drains carrying industrial wastewater and CETP outlet.	UEPPCB	Two month.	Nil	Continuous activity.
2. Networking of Conveyor System of CETP:					
a)	Establishment of leftover 8 Km. conveyor networking leading to CETP.	SIIDCUL	August, 2020	1000.00	---

3. Sewage Management:					
a)	Interception and diversion of 22-drains.	Uttarakhand Peyjal Jal Nigam	Two year from sanction of funds.	**35828.00**	Proposed activities will be completed in two years from sanction and release of funds.
b)	Installation of 2-Nos. of STPs at – Rampura Trenching Ground (18 MLD) and Ravindra Nagar Maidan (26 MLD).	Uttarakhand Peyjal Jal Nigam			
c)	Operation and Maintenance of 2 Nos. of STPs for 15 years; Operation and Maintenance of 3 Nos. I&D Works for 15 years; Land acquisition etc. expenses.	Uttarakhand Peyjal Jal Nigam			
4. Solid Waste Management:					
a)	Door to door collection of solid waste in all 40 wards of town.	Nagar Palika Parisad, Rudrapur.	October, 2019	Nil	Facility for Solid waste processing and disposal is proposed through Haldwani cluster.
b)	Source segregation of wastes in all 40 wards of town.	Nagar Palika Parisad, Rudrapur.	April, 2020		
c)	Setting up solid waste processing facilities.	Nagar Palika Parisad, Rudrapur.	March. 2020		
5.Groundwater Quality:					
a)	Groundwater quality monitoring at during summer	UEPPCB	Two months.	-	-

	(May-June) and winter (December-January).				
6. Flood Plain Zone:					
a)	River Kalyani is spring fed water body and floods are occurring only during monsoon months, therefore flood plain zoning is not required for river Kalyani.				
7. Environmental Flow:					
a)	River Kalyani is non-perennial water body and apart from monsoon months there is very low natural water flows into the river. Therefore, it is not feasible to maintain environmental flow in the river Kalyani.				

****

Annexure-1

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 1st January, 2016

S.O. 4(E).—In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:—

1. **Short title and Commencement.**—(1)These rules may be called the Environment (Protection) Amendment Rules, 2015.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in Schedule-I,—

(a) the serial number 41 and the entries relating thereto, shall be omitted;

(b) for serial number 55 and the entries relating thereto, the following serial number and entries shall be substituted, namely:—

S. No.	Industry	Parameter	Standards		
(1)	(2)	(3)	(4)		
"55.	**Common Effluent Treatment Plants(CETP)**				
	A. Inlet Quality Standards	For each Common Effluent Treatment Plant (CETP), the State Board will prescribe Inlet Quality Standards for General Parameters, Ammonical-Nitrogen and Heavy metals as per design of the Common Effluent Treatment Plant (CETP) and local needs & conditions.			
	B: Treated Effluent Quality Standards		Max. permissible values (in milligram/litre except for pH and Temperature)		
			Into inland surface water	On land for irrigation	Into sea
		General Parameters			
		pH	6 - 9	6 - 9	6 - 9
		Biological Oxygen Demand, BOD_3, 27 °C	30	100	100
		Chemical Oxygen Demand (COD)	250	250	250*
		Total Suspended Solids (TSS)	100	100	100
		Fixed Dissolved Solids (FDS)	2100✡	2100✡	NS*

Specific parameters			
Temperature, °C	Shall not exceed more than 5°C above ambient water temperature	Shall not exceed more than 5°C above ambient water temperature	Shall not exceed more than 5°C above ambient water temperature
Oil & Grease	10	10	10
Ammonical –Nitrogen	50	NS*	50
Total Kjeldahl Nitrogen (TKN)	50	NS*	50
Nitrate- Nitrogen	10	NS*	50
Phosphates, as P	5	NS*	NS*
Chlorides	1000	1000	NS*
Sulphates, as SO_4	1000	1000	NS*
Flouride	2	2	15
Sulphides, as S	2	2	5
Phenolic compounds (as C_6H_5OH)	1	1	5
Total Res. Chlorine	1	1	1
Zinc	5	15	15
Iron	3	3	3
Copper	3	3	3
Trivalent Chromium	2	2	2
Manganese	2	NS*	2
Nickel	3	NS*	3
Arsenic	0.2	NS*	0.2
Cyanide, as CN	0.2	NS*	0.2
Vanedium	0.2	NS*	0.2
Lead	0.1	NS*	0.1
Hexavalent Chromium	0.1	NS*	0.1
Selenium	0.05	NS*	0.05
Cadmium	0.05	NS*	0.05
Mercury	0.01	NS*	0.01
Bio-assay test	As per industry-specific standards	As per industry-specific standards	As per industry-specific standards

*NS-Not specified

Notes:

1. *Discharge of treated effluent into sea shall be through proper marine outfall. The existing shore discharges shall be converted to marine outfalls. In cases where the marine outfall provides a minimum initial dilution of 150 times at the point of discharge and a minimum dilution of 1500 times at a point 100 m away from discharge point, then, the State Board may relax the Chemical Oxygen Demand (COD) limit:

Provided that the maximum permissible value for Chemical Oxygen Demand (COD) in treated effluent shall be 500 milligram/litre.

2. Maximum permissible Fixed Dissolved Solids (FDS) contribution by constituent units of a Common Effluent Treatment Plant (CETP) shall be 1000 milligram/litre. In cases where Fixed Dissolved Solids (FDS) concentration in raw water used by the constituent units is already high (i.e. it is more than 1100 milligram/litre) then the maximum permissible value for Fixed Dissolved Solids (FDS) in treated effluent shall be accordingly modified by the State Board.
3. In case of discharge of treated effluent on land for irrigation, the impact on soil and groundwater quality shall be monitored twice a year (pre- and post-monsoon) by Common Effluent Treatment Plants (CETP) management. For combined discharge of treated effluent and sewage on land for irrigation, the mixing ratio with sewage shall be prescribed by State Board.

4. Specific parameters for some important sectors, selected from sector-specific standards

Sector	Specific Parameters
Textile	Bio-assay test, Total Chromium, Sulphide, Phenolic compounds
Electroplating Industries	Oil & Grease, Ammonia-Nitrogen, Nickel, Hexavalent Chromium, Total Chromium, Copper, Zinc, Lead, Iron, Cadmium, Cyanide, Fluorides, Sulphides, Phosphates, Sulphates,
Tanneries	Sulphides, Total Chromium, Oil & Grease, Chlorides
Dye & Dye Intermediate	Oil & Grease, Phenolic compounds, Cadmium, Copper, Manganese, Lead, Mercury, Nickel, Zinc, Hexavalent Chromium, Total Chromium, Bio-assay test, Chlorides, Sulphates,
Organic chemicals manufacturing industry	Oil & Grease, Bio-assay test, Nitrates, Arsenic, Hexavalent Chromium, Total Chromium, Lead, Cyanide, Zinc, Mercury, Copper, Nickel, Phenolic compounds, Sulphides
Pharmaceutical industry	Oil & Grease, Bio-assay test, Mercury, Arsenic, Hexavalent Chromium, Lead, Cyanide, Phenolic compounds, Sulphides, Phosphates."

Annexure-2

HEAD OFFICE
Uttarakhand Environment Protection and Pollution Control Board
29/20, Nemi Road, Dalanwala, Dehradun (Uttarakhand)
उत्तराखण्ड पर्यावरण संरक्षण एवं प्रदूषण नियंत्रण बोर्ड
29/20, नेमी रोड, डालनवाला, देहरादून (उत्तराखण्ड)

OFFICE ORDER

In pursuance to notification of the Ministry of Environment, Forests and Climate Change, Govt. of India vide S.O.- 4(E) of 1st January, 2016, the Uttarakhand Environment Protection and Pollution Control Board (UEPPCB), Dehradun hereby prescribe following inlet quality standards for **Common Effluent Treatment Plant (CETP)** located at the Integrated Industrial Estate (IIE), Pantnagar, Distt. US Nagar, Uttarakhand, based on the design parameters submitted by CETP operator to UEPPCB:

1. Inlet effluent quality standards for CETP, IIE, Pantnagar, Distt. US Nagar shall be as given below:

S.N.	Parameters	Concentration (Maximum)
1.	pH	5.5 – 9.0
2.	BOD	550 mg/L
3.	COD	1100 mg/L
4.	Total Dissolved Solids (TDS)	2100 mg/L
5.	Total Suspended Solids (TSS)	1500 mg/L
6.	Oil & Grease	20 mg/L
7.	Phenolic Compounds (as C_6H_5OH)	5.0 mg/L
8.	Ammonical Nitrogen (as N)	50.0 mg/L
9.	Cynide (as CN)	2.0 mg/L
10.	Hexavalent Chromium (as Cr^{+6})	2.0 mg/L
11.	Total Chromium (as Cr)	2.0 mg/L
12.	Copper (as Cu)	3.0 mg/L
13.	Lead (as Pb)	1.0 mg/L
14.	Nickel (as Ni)	3.0 mg/L
15.	Zinc (as Zn)	15.0 mg/L
16.	Arsenic (as As)	0.2 mg/L
17.	Mercury (as Hg)	0.01 mg/L
18.	Cadmium (as Cd)	1.0 mg/L
19.	Selenium (as Se)	0.05 mg/L
20.	Fluoride (as F)	15.0 mg/L
21	Boron (as B)	2.0 mg/L
	Radio Active Materials	
22.	Alpha Emitters, micro curie/mL	10^{-7}
23.	Beta Emitters, micro curie/mL	10^{-8}

2. To achieve above limit, individual contributing units are required to pre-treat their wastewater/effluent before discharging to common conveyance system. All contributing industries shall ensure compliance of above limits with immediate effect.
3. CETP outlet quality standards shall be as per treated effluent quality standards notified under the Environment (Protection) Rules, 1986 as amended 01.01.2016.

This issues with approval of Competent Authority of the Board.

(S.P. Subudhi)
Member Secretary

Contd..... Page-2