

**Action Plan
for
Rejuvenation of River Churni
Nadia, West Bengal**

Priority – III

**Nodal Agency
Kolkata Metropolitan Development Authority
Department of Urban Development & Municipal Affairs
Government of West Bengal**

**Approved by
River Rejuvenation Committee, West Bengal
*(constituted in compliance to the order of the Hon'ble National Green Tribunal)***

**Submitted to
Central Pollution Control Board, Delhi**

JULY, 2020

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Executive Summary

Sl.	Description of Item	Details
1.	Name of the identified polluted river	River Churni
2.	Identified polluted stretch of the river	Santipur to Majhadia
3.	Total length of the polluted river	56 KM (approximately)
4.	Towns in the catchment of the polluted stretch of the river	Ranaghat
5.	Is river is perennial	Non perennial
6.	No. of drains contributing to pollution and names of major drains	Nine (9) nos., 2(Two) major drains are as follows - 1. Sreenathpur 2. Basko Khal
7.	Whether 'River Rejuvenation Committee' (RRC) constituted by the State Govt./UT Administration and If so, Date of constitution of 'RRC'	Yes. 07.01.2019
8.	Major Towns on the banks of the river with population	Ranaghat Population = 75365 (Census, 2011)
	a. Total water consumption and sewage generation in MLD	Total water consumption = 15.49 MLD Total sewage generation = 10.14 in MLD
	b. Total no. of existing STPs and the total capacities in MLD	Nil. However as an interim measure, in-situ treatment in the said 2 nos. of major drains have already been initiated in June, 2020.
	c. Gaps in sewage treatment in MLD and no. of towns not having STPs	Town=1, Gap=10.14 MLD
	d. Total MSW generation in TPA	9490 TPA
	e. Existing treatment and disposal facilities and total capacity	NIL
	f. Gap of MSW	9490 TPA
9.	Major industrial estates located with total no. of industries	NIL
	a. Total no. industries discharging wastewater directly/indirectly in to the river	6
	b. Total water consumption	52.85 KLD
	c. Total industrial effluent generation	32.37 KLD
	d. No. of industries having captive ETPs and their treatment capacity	No. of industries=6 Treatment capacity=32.37 KLD
	e. No. of CETP's and their treatment capacity	NIL
	f. Gap in industrial wastewater treatment	NIL
	g. Total HW generation in TPA in the catchment area	All hazardous waste generating industries are disposing their hazardous wastes through one (1) Common Hazardous Waste Treatment, Storage and Disposal Facility operating at Haldia.
h. Existing HW Treatment and Disposal Facilities and total capacity with life span		
10.	Action plan includes mainly covering aspect such as appropriate management of sewage, rain water harvesting, measures for regulating ground water use, protection and management of flood plain zone, plantation on both sides of the river, setting up of bio-diversity parks etc., as per Hon'ble NGT Orders dated 20.09.2018 and 19.12.2018	Whichever applicable has been taken into account.
11.	Responsible Organization (s) for implementation of proposed action	Table-6

	plans (Please enclose details as annexure)	
12.	Nodal Agency	Kolkata Metropolitan Development Authority of Urban Development and Municipal Affairs, Govt. of West Bengal Bikash Bhavan, Salt Lake, Kolkata-700091

Proposed Mechanism for execution of action plans:

This action plan implementation is to be monitored by the River Rejuvenation Committee (RRC) through meetings every month. The Central Monitoring Committee constituted by the Hon'ble NGT under the Chairmanship of the Secretary, Ministry of Jal Shakti, GoI also holds meeting in every month with the Chief Secretary/Principal Secretary, Environment of the State to assess progress of work. Every month Monthly Progress Report will be sent to Ministry of Jal Shakti, GoI.

An Environment Monitoring Cell in the Office of the Chief Secretary, WB has been constituted to oversee the progress of work.

Expected deliverables with respect to achieving goals:

Under the present circumstances, River Churni serves the purpose of water intake for municipal supply after treatment, fishery and irrigation. In addition, trade and other effluents generated within the catchment of the river are also to be controlled since they have a defined contribution for creating pollution in the river water.

Considering the importance of this river in Nadia district, rejuvenation of water quality of this river is extremely important as it is non perennial river. For achieving this objective, generated municipal sewage should be treated and discharged only when they comply with the prescribed standards. It has to be ensured that no industrial effluents are discharged without being properly treated and complying the discharged standards prescribed under the Environment (Protection) Rules, 1986. **The target for water quality for the stretch is to be fit at least for bathing purposes (i.e. BOD < 3 mg/l and FC < 500 MPN/100 ml).**

**Response of the RRC, WB on comments of the
Task Team for ensuring compliance to Hon'ble NGT (PB), New Delhi in OA No 673/2018
held during 26.02.2020 and 11.06.2020**

Comments of Task Team	Corresponding response(s) of RRC, West Bengal
Latest water quality of PRS covering all parameters not provided	Monthly water quality data for BOD & FC for the years 2017, 2018 and 2019 provided. Moreover, latest water quality of river Churni covering all parameters also provided for the months of Jan-May 2020.
Aspects such as Utilization of treated waste water, removal of encroachments not covered in action plan	Department of Urban Development and Municipal Affairs, GoWB has prepared a policy on use of treated wastewater. The policy is in final stage of preparation. The policy has been finalised and submitted.
Detailed gap analysis w.r.t present generation, projected generation existing infrastructure, existing capacity utilization, gap observed in the catchment for management of industrial effluent and waste management (solid waste, hazardous waste, C & D waste, bio-medical waste) need to be detailed in a separate table clearly.	Available information included in the report.
Measures taken on the pollution caused from international borders also be ascertained.	Ministry of External Affairs, GoI has taken up the matter with the Bangladesh Govt. Ministry of External Affairs, GoI has informed the State Govt. in the month of Sept. 2019 that the BD Govt. in the process of setting up ETP at various sugar mills and Darshna sugar Mills. (Refer Annexure J)
Timelines suggested for construction of STPs is not as per Hon'ble NGT, hence timelines be revised or additional time from NGT be sought for ensuring compliance to Hon'ble NGT orders.	All efforts are made to complete construction within the stipulated timeline. In case of any aberration from the same, additional time will be sought from NGT.

Background:

The West Bengal is the land of rivers. An intricate network of three major river basins (the Ganga, Brahmaputra and Subarnarekha) drain this State. Human settlement and related activities on the banks of the rivers have gradually increased over the years. Considering very reach ecological diversities of the water resources and the benefits of river network, most of the industrial development in this State took place near the rivers and the population density is also very high in these areas. As a result, these rivers receive liquid wastes like industrial discharges and municipal sewage and solid wastes are also dumped near the banks of the rivers.

Since early eighties, the West Bengal Pollution Control Board (WBPCB), in collaboration with the Central Pollution Control Board (CPCB), initiated monitoring of water quality of all important rivers, canals, ponds and reservoirs. The CPCB conducted water quality assessment based on available data have collected till 2016 to identify polluted river stretches in the entire country.

An application was registered before the Hon'ble National Green Tribunal, Principal Bench, New Delhi as O.A. No. 673/2018 on the basis of a news item dated 17.09.2018 in 'The Hindu' under the heading "More river stretches are now critically polluted: CPCB". The Hon'ble Tribunal was pleased to pass an order on 20.09.2018 identifying seventeen (17)

polluted river stretches in the State of West Bengal and categorized these polluted stretches in five priority classes (Table-1). The Hon'ble Tribunal directed the State to prepare action plans for rejuvenation of these 17 polluted river stretches for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e. BOD < 3 mg/l and FC < 500 MPN/100 ml). The Hon'ble NGT further directed on 19.12.2019 that action plans for rivers are to be reviewed by the CPCB before acceptance.

Table 1: Polluted river stretches in West Bengal

Sl. No.	Priority	River	Polluted Stretch identified	BOD (mg/L) when identified as polluted
1	I	Vidyadhari	Haroa Bridge to Malancha Burning Ghat	26.7 – 45.0
2	II	Mahananda	Siliguri to Binaguri	6.5 – 25
3	III	Churni	Santipur Town to Majhadia	10.3 – 11.3
4	III	Dwarka	Tarapith to SadhakBamdebGhat	5.6 – 17.0
5	III	Ganga	Tribeni to Diamond Harbour	5.0 – 12.2
6	IV	Damodar	Durgachak to Dishergarh	4.4 – 8.2
7	IV	Jalangi	Laal Dighi to Krishna Nagar	8.3
8	IV	Kansi	Midnapore to Ramnagar	9.9
9	IV	MathaBhanga	Madhupur to Gobindapur	8.5
10	V	Barakar	Kulti to Asansol	5.7
11	V	Dwarakeshwar	Bankura to Kushtia	1 – 5.6
12	V	Kaljani	Bitala to Alipurduar	6.0
13	V	Karola	Jalpaiguri to ThakurerKamat	3.9
14	V	Mayurakshi	Suri to Durgapur	5.2
15	V	Rupnarayan	Kolaghat to Benapur	3.1 – 5.8
16	V	Silabati	Ghatal to Nischindipur	3.8
17	V	Teesta	Siliguri to Paharpur	3.3

River Rejuvenation Committee:

In compliance to the direction of Hon'ble National Green Tribunal, Principal Bench, New Delhi in respect of O.A. No. 673/2018, the Government of West Bengal constituted the River Rejuvenation Committee (RRC) for preparation of such action plans for effective abatement of pollution, rejuvenation, protection and management of the identified polluted River stretches, for bringing the polluted river stretches to be fit at least for bathing purposes and identified the following components for such action plan, although all the components may not be applicable for all the polluted river stretches:

1. Identification of polluting sources
2. Trade and sewage generated in the catchment area of polluted river stretch
3. Functioning status of STPs/ETPs/CETP
4. Interception and Diversion of sewage carrying drains to the STP
5. Solid waste management including quantification and characterisation of solid waste, Bio-medical waste management, e-waste and processing facilities, quantification and characterisation of solid waste
6. Protection and management of Flood Plain Zones (FPZ)
7. Rain water harvesting, ground water charging
8. Adopting good irrigation practices
9. Address issues relating to ground water extraction
10. Maintaining minimum environmental flow of river and plantation on both sides of the river
11. Plantation on both sides of the river
12. Setting up of biodiversity parks on flood plains by removing encroachment.
13. Utilization of treated sewage so as to minimize extraction of ground or surface water

The Member Secretary, West Bengal Pollution Control Board is the Chairman, RRC and the Chief Executive Officer, Kolkata Metropolitan Development Authority is the Member-Convenor, RRC. The Committee is functioning under the supervision and coordination of Principal Secretary, Environment Department, GoWB.

The main causes of the river water quality deterioration are (1) Discharge of industrial wastewater (2) Discharge of municipal wastewater and (3) Pollution from nonpoint sources. Any action plan for any river stretch to improve its water quality then is required to address these three issues and address them primarily. In West Bengal there are forty eight (48) Grossly Polluting Industries (GPIs) and four hundred (400) odd Seriously Polluting Industries (SPIs). All these industries are under Consent administration of the WBPCB. The WBPCB inspects the GPIs every month and SPIs periodically to assess the environmental performance of these industries. All these industries are having Effluent Treatment Plant(s) inside the premises and the industrial wastewater generated are treated in these ETPs before being discharged either in to the river / canal or to local water bodies (Ponds & Wetlands) or to municipal drains/public sewer those are channelised to the canals. The river stretches in the State run through habitations of wide varieties and human activities. The habitations on the banks of these rivers also generate large quantities of sewage water regularly which are also drained through various discharges channels in to these rivers. As the rivers are not of perennial nature, during lean periods the water volume becomes less resulting in high pollution concentrations. Inadequacy in solid waste management facilities resulted in unscientific dumping of solid wastes on the banks and this is also a major source of river pollution. Since most of these rivers are having long stretches, agricultural runoffs also finally find their ways in to these rivers. The river water quality database of the WBPCB however shows no significant impact of such non-point source contribution in any of these river stretches.

Therefore, the action plan for river Churni need to be prepared for its catchment areas considering the discharges from industrial source, discharges from municipal outfalls, interception and diversion of sewage carrying drains to the STP, solid waste management, Bio-medical waste management, e-waste management, ground water management, rain water harvesting, ground water charging, maintaining minimum environmental flow of river, protection and management of Flood Plain Zones (FPZ), adopting good irrigation practices, plantation on both sides of the river, setting up of biodiversity parks on flood plains etc.

The RRC, WB sent the Action Plan for rejuvenation of river Churni to CPCB on 12.02.2020 and the Task Team in its 10th Meeting held on 26.02.2020 suggested some revision in the action. The RRC, WB approved the revised action in its 7th meeting held on 09.06.2020 and sent to CPCB on 09.06.2020 which was once again reviewed by the CPCB in its 12th Task Team meeting on 11.06.2020 and once again suggested some modifications.

Now, this action plan has been modified as per recommendation of the CPCB Task Team and the RRC, WB has approved this Action Plan in its 8th meeting held on 02.07.2020.

The River Churni:

The river Churni originates from river Mathabhanga at Majhdia of Nadia district and discharges at Ganga near Payradanga in Nadia district. This river has lost its perenniality as it has been disconnected from the source Padma river due to geological incident. The river stretch is in non-tidal region and receives only surface runoff and ground water discharge for its' flow in lean season.

Polluted stretch of river Churni:

The stretch of this river that has been identified as "Polluted" is Santipur to Majhadia, about 56.0 km in length. This river is non-perennial and tidal.

Table-2: Polluted stretch of river Churni

SL. No.	Name of the rivers/streams	Details	Identified polluted stretches	BOD (mg/L) when identified	Prioritywise
1.	Churni	The river Churni originates from river Mathabhanga at Majhdia of Nadia district and discharges at Ganga near Payradanga Nadia district. This river has lost its perenniality as it has been disconnected from the source Padma river due to geological incident. The river stretch is in non-tidal region and receives only surface runoff and ground water discharge for its' flow in lean season.	Santipur to Majhadia, about 56 km in length	10.3 – 11.3	III



Figure 1: Map showing the River Churni and Ranaghat

Major towns located on the bank of the polluted stretch:

Within the identified polluted river stretch, the major town located on the side of the river is Ranaghat town. As of 2011 India census, total population of the town is 75365.

Water quality assessment of river Churni:

The water quality status of the river Churni is monitored by the West Bengal Pollution Control Board under the National Water Monitoring Programme on monthly. The water quality of the river Churni for two criteria pollutants (BOD & FC) is given in Table-3.

Table-3: Water quality of river Churni

Location – Ranaghat		
Month - year	BOD (mg/L)	FC (MPN/100mL)
January – 2019	5.80	70,000
February – 2019	5.06	1,10,000
March – 2019	3.30	2,80,000
April – 2019	2.39	1,70,000
May – 2019	5.73	2,20,000
June – 2019	3.05	2,20,000
July – 2019	3.28	3,00,000
August – 2019	1.45	2,40,000
September – 2019	3.30	3,00,000
October – 2019	2.95	1,70,000
November – 2019	2.40	1,30,000
December – 2019	3.40	9,000
January – 2020	9.45	11,000
February – 2020	3.55	90,000

Latest water quality of river Churni:

Considering the impact of this river water to the ecosystem of Nadia district and the livelihood of the fishermen living on both sides of the river, revival of the water quality of this river is extremely important on context of its utility as it is non perennial river. The ultimate goal for beneficial use of rivers will determine the level of actions to be taken for maintaining the water quality. The water quality of river Churni during the first five months in the year 2020 (Jan-May) are also depicted Table-4.

For achieving this objective, generated municipal sewage should be treated to meet the required standards for outdoor bathing as notified by the Ministry of Environment, Forests & Climate Change, GoI for “Primary Water Quality Criteria for Bathing Water” vide GSR 7421 dated 25.09.2000. Also, the trade and other effluents generated within the catchment of river and generated from the catchment of the river which are ultimately joining and contributing to the pollution load in the river should be treated to meet the effluent discharge standards as stipulated above.

The target for water quality for the stretch is for organised outdoor bathing.

Table-4: Water quality of river Churni during Jan-May 2020

Monitoring Station Time Period	Ranaghat					Majhadia				
	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jan-20	Feb-20	Mar-20	Apr-20	May-20
Ammonia-N(mg/l)	0.1	0.13	0.13	0.13	0.12	0.13	0.12	0.12	0.13	0.12
BOD(mg/l)	9.45	3.55	7.8	2.9	8.45	5.45	4.21	6.18	6	6.25
Boron(mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Calcium(mg/l)	70	96.08	77.71	90	76.62	108	113.73	92.02	80	92.34
Chloride(mg/l)	11.57	14.46	19.99	13.9	11	8.68	12.54	14.99	11.91	10
COD(mg/l)	32.29	18	39	12.61	16.32	17.71	15	23	12.61	24.49
Conductivity(μ s/cm)	702.6	681.3	717.9	656.8	543.1	684.7	666.7	676.2	688.7	659.2
Dissolved O ₂ (DO)(mg/l)	5.5	6.5	1	4.6	3.4	0.8	2.8	3.1	0.4	1
E-coli(MPN/100ml)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Fecal Coliform(MPN/100ml)	11000	90000	140000	130000	8000	50000	30000	160000	130000	13000
Fecal Streptococci(MPN/100ml)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Fluoride(mg/l)	0.21	0.18	0.19	0.19	0.24	0.2	0.23	0.18	0.18	0.27
Magnesium(mg/l)	38	22.63	27.28	20.66	10.72	17.01	9.53	24.8	32.81	17.87
Nitrate-N(mg/l)	0.58	0.45	0.62	0.55	0.36	0.6	0.41	0.52	0.578	0.39
Nitrite N(mg/l)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
pH(Unit)	7.86	7.92	8.17	8.12	7.92	7.73	7.84	7.99	7.82	7.88
Phenolphthalein Alkalinity(mg/l)	NIL	Nil	27.98	30	NIL	NIL	Nil	13.99	10	4.66
Phosphate-P(mg/l)	0.02	0.12	0.091	0.073	0.024	0.04	0.087	0.072	0.098	0.036
Potassium(mg/l)	6.1	3.9	6.7	5.4	5.6	5.9	5.6	6.3	7.5	5.6
Sodium(mg/l)	19.7	19.4	23.6	19.7	19.8	16.3	16.9	17.5	16.2	16.2
Sulphate(mg/l)	8.59	7.72	8.93	7.1	12.31	6.56	8.28	7.36	7.91	12.46
Temperature($^{\circ}$ C)	19	24	27	32	30	19	26	27	33	32
Total Alkalinity(mg/l)	374	394.74	340.49	360	293.85	359.3	385.34	242.54	410	387.13
Total Coliform(MPN/100ml)	14000	130000	500000	240000	17000	90000	240000	300000	300000	23000
Total Dissolved Solids(TDS)(mg/l)	424	334	404	358	300	394	358	430	440	406
Total Fixed Solids(TFS)(mg/l)	88	50	104	298	248	68	68	53	400	286
Total Hardness as CaCo ₃ (mg/l)	335	333.33	306.12	310	235.29	340	323.53	331.63	335	303.92
Total Suspended Solids(TSS)(mg/l)	24	18	26	24	14	18	20	26	22	22
Turbidity(NTU)	19.9	19.8	28.7	6.94	11.9	19.3	9.92	8.91	13.6	9.08

Polluting Sources of River Churni:**Industrial wastewater treatment:**

There are six major water polluting industries (Table-5) located within the catchment area of the river Churni discharging directly or indirectly in to the river.

Table-5: Major water polluting industries located within the catchment area of the river Churni

Sl. No.	Name & Address of the unit	Water consumption in KLD		Waste Water Generation in KLD		
		Industrial	Domestic	Industrial	Domestic	Mixed
1.	Amson Textile Industries Ranaghat Municipality ,Ranaghat,PO & PS Ranaghat,Pin-741201	13.00	0.40	----	----	8.00
2.	Shree Durga Processing & Finishing Mills Pvt. Ltd. Vill, PO & PS Ranaghat,Pin- 741201	9.25	1.5	----	----	1.65
3.	Nutan Fulia Tantubay Samabay Samity Ltd. P.O.-2No. Natun Fulia P.S.- Santipur Dist.-Nadia Pin - 741402	3.6	0.5	3.0	0.4	0.00
4.	Tangail Tantujibi Unnayan Samabay Samiti Ltd. Santipur P.O.-Fulia P.S.- Santipur Dist.-Nadia Pin - 741402	7.20	1.20	6.00	0.90	0.00
5.	Fulia Tangail Bayan Silpa Samabay Samity Ltd. Samabay Sadan', Fulia, P.O. Fulia,Ps-Santipur, Dist-Nadia	4.20	0.50	3.50	0.420	
6.	PMA Handweaves Private Limited Nabala Gram Panchyat,Belemath,PO- Belemath,PS-Santipur,Dist- Nadia,Pin-741204	10.00	1.50	7.0	1.50	
	Total	47.25	5.6	19.5	3.22	9.65

Total industrial water consumption	: 52.85 KLD
Total industrial wastewater discharge	: 32.37 KLD
Existing industrial wastewater treatment facility	: 32.37 KLD
Gap in industrial wastewater treatment	: 0.00 KLD

All the industries have captive ETP and they comply with the effluent discharge standards. However identification work of new industries is under progress.

Municipal wastewater treatment:

The water quality status of the river, as influenced by the discharges of the sources is monitored on monthly basis at Ranaghat. On the basis of this data the stretch was identified as under priority III. During preparation of the current report, the water quality data of this stretch for last two years was analyzed using the latest "CRITERIA FOR PRIORITISATION OF POLLUTED RIVER LOCATION (DRAFT)" circulated by the Central Pollution Control Board (CPCB). Using data of last 24 determinations in two years (January 2017 to December 2019), the river stretch could be identified as Priority III (Moderately Polluted or Fair) with the last two years' average BOD data of 3.7 mg/L and Faecal Coliform value of 217500 MPN/100mL.

The following 09 (Nine) canals/drains are discharging large quantities of municipal wastewater in to the river.

DETAILS OF DRAINS CONTRIBUTING TO POLLUTION IN RIVER CHURNI :

Sl. No	Landmark of Drain / Outfall	Coordinate		Type Domestic/ industrial/ mixed	Flow (MLD)	BOD (mg/l)	FC (MPN/100ml)
		North	East				
1	Chaitanya Ghat	23°10'58.94"	88°33'58.08"	Mixed	0.518	59.50	300,000.00
2	RadharaniSebaSadan	23°10'48.49"	88°33'50.48"	Mixed	0.333	47.82	1,300,000.00
3	Nadia Samaj Pally	23°10'48.45"	88°33'50.49"	Mixed	1.296	54.24	210,000.00
4	ChhotoNajar	23°10'44.41"	88°33'43.77"	Mixed	0.091	71.30	190,000.00
5	Churipara	23°10'39.04"	88°33'33.10"	Mixed	0.822	70.00	160,000.00
6	Thanapara - I	23°10'38.83"	88°33'17.64"	Mixed	0.187	92.00	220,000.00
7	Thanapara - II	23°10'36.21"	88°33'15.64"	Mixed	0.456	58.00	140,000.00
8	Sreenathpur	23°10'25.03"	88°33'12.07"	Mixed	2.799	48.00	900,000.00
9	Basko Khal	23°11'2.63"	88°33'54.96"	Mixed	3.638	68.00	230,000.00

Action taken as interim measures for pollution abatement of River Churni-

As the interception & diversion network including setting up of STPs within Ranaghat Municipal Town is under Tendering stage, KMDA as an interim measure has taken up in-situ treatment in June 2020 in the below mentioned major 02(two) nos. out falling drains.

SL No	Name of the drain	Flow in MLD	Present Status
1	Sreenathpur	2.799	As an interim measures, in-situ treatment have been initiated in June, 2020.
2	Baskokhal	3.638	

Municipal solid waste management:

Present generation of waste in Ranaghat town is 26 TPD. Door-to-Door collection of solid waste is expected to be achieved shortly. Waste segregation at source is expected to be achieved within March 2021. Establishment of waste processing facility including Sanitary Land Fill (SLF) for the town will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016.

Hazardous waste management:

In West Bengal, there is one (1) Common Hazardous Waste Treatment, Storage and Disposal Facility operating at Haldia. The facility is capable of disposing all hazardous wastes generated in the State. All hazardous waste generating industries are disposing their hazardous wastes through the CHWTSDFs located at Haldia.

Bio-medical waste management:

In West Bengal, there are six (6) Common Bio-medical Waste Treatment, Storage and Disposal Facilities. All health care institutions within the catchment area of the river are disposing their bio-medical wastes through the Common Bio-medical Waste Treatment, Storage and Disposal Facility at Kalyani.

Construction & Demolition waste management:

Local ULB has been directed by the WBPCB and UD&MA Dept., GoWB to take necessary action as per C&D Waste Management Rules, 2016.

Ecological/Environmental Flow (E-Flow)

The river Churni has no freshwater up-stream flow. It receives runoff during monsoon and base flow is maintained from ground water pool during lean months. Afforestation, rainwater harvesting and reduction of ground water exploitation from flood plain could ensure the ecological flow in this river including discharge of appropriately treated industrial wastewater after meeting the STP discharge standard for surface water. At the location of Majhdia, flow of the river should be measured and record maintained by State Irrigation department.

Table-6: Action Plan with agencies responsible, time target and budgetary estimates

Departments /Agencies	Actions to be taken	Targeted timeline	Budgetary Estimate (Rs. In Lakh)
KMDA	Action plans for management of municipal wastewater discharge.	30.06.2021	4863
SUDA	<p>Action plans for management of Solid wastes & Plastic wastes in urban areas</p> <ul style="list-style-type: none"> • Door to Door collection of solid waste. • Waste segregation at household source. • Establishment of waste processing facility including SLF for the town will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016 • Development of IEC activities & capacity buildings of different stakeholder. • Draft Action Plan prepared to be ratified by State Level Technical Committee shortly 	<p>31.01.2021</p> <p>31.03.2021</p>	<p>1948</p> <p>Capital 1768</p> <p>O & M 1016 per year</p>
WBPCB	Action plans for industrial effluent management, management of Hazardous, Bio-medical and Electrical and Electronic wastes and inventorization of water polluting industries	Continuous process	0.00
IRD	<p>Protection and management of flood plain zones (FPZ) - The under mentioned 0.5 km bank protection will be completed by March-2021, by which 2000 people in 98 Ha of areas may be benefitted. Name of the work- Protection to the eroding right bank of river Churni at Bapujinagar G.P. Badkulla-II, P.S. Teharpur, Block- Hanskhali, Nadia under Nadia Irrigation Division.</p> <p>Maintaining minimum environmental flow of river - The river is non-perennial. There is no regulating structure exists on this river for regulation of river flow. The environmental flow is naturally maintained from the river flow which is a combination of surface flow and base flow.</p>	31.03.2021	156

DoF	Nursery work completed. Plantation work will start from July 2020.		30.09.2020	10.10	
DoAg	Good agricultural practice (Bio-village program, IPM demonstration etc.) Crop diversification (Demonstration with low water requiring crops etc.) Good irrigation practices (Micro irrigation with supplementary water management activities) Soil and water conservation (water harvesting structure, dug well, Gully plugging, Check dam etc.)		31.03.2022	196	
P&RD D	Surface water preservation programmes (e.g., Rainwater harvesting) for areas Areas identified - Majhdia, Batkulla, Aranghata, Bagula, Hijuli, Ranaghat and Coopers' Camp. To coordinate with Forest Department for providing lands for tree plantation and development of biodiversity parks.		31.03.2021	797	
DoIT	Quantification and Characterization	Installation of e-waste bin, Categorizing and Disposal	28-02-2021	10.6	
	Existing Infrastructure	Selection and Utilization of approved PROs for collection and Disposal			
	Detailed Gap Analysis	Monitoring & Management			
	Management Action Plan	Meeting with OEMs, other stake holders			
	Promotional	Sensitization Training			
		Promotional Documents, Training Materials			
Hoardings at river stretch					
SWID	GW Level & Quality Monitoring Real-Time GWL Monitoring through Installation of DWLR Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater		31-03-2021	30.5	
DoUD&MA	Utilization of treated waste water		Policy has been notified by Govt. of West Bengal on 30-06-2020. Action will be taken accordingly		

MED: Municipal Engineering Directorate, DoUD&MA, GoWB

SUDA: State Urban Development Agency, DoUD&MA, GoWB

WBPCB: West Bengal Pollution Control Board

DoIT: Department of Information Technology, GoWB

P&RDD: Panchayat & Rural Development Department, GoWB

SWID: State Water Investigation Directorate

IRD: Irrigation Department, GoWB

DoF: Forest Department, GoWB

DoAg: Agriculture Department, GoWB

DoUD&MA: Department of Urban Development & Municipal Affairs, GoWB

Annexure- A

DETAILS OF DRAINS CONTRIBUTING TO POLLUTION IN RIVER CHURNI

Sl. No.	Landmark of Drain / Outfall	Coordinate		Type Domestic/ industrial/ mixed	Flow (MLD)
		North	East		
1	Chaitanya Ghat	23 ⁰ 10'58.94"	88 ⁰ 33'58.08"	Mixed	0.518
2	Radharani Seba Sadan	23 ⁰ 10'48.49"	88 ⁰ 33'50.48"	Mixed	0.333
3	Nadia Samaj Pally	23 ⁰ 10'48.45"	88 ⁰ 33'50.49"	Mixed	1.296
4	Chhoto Najar	23 ⁰ 10'44.41"	88 ⁰ 33'43.77"	Mixed	0.091
5	Churipara	23 ⁰ 10'39.04"	88 ⁰ 33'33.10"	Mixed	0.822
6	Thanapara - I	23 ⁰ 10'38.83"	88 ⁰ 33'17.64"	Mixed	0.187
7	Thanapara - II	23 ⁰ 10'36.21"	88 ⁰ 33'15.64"	Mixed	0.456
8	Sreenathpur	23 ⁰ 10'25.03"	88 ⁰ 33'12.07"	Mixed	2.799
9	Basko Khal	23 ⁰ 11'2.63"	88 ⁰ 33'54.96"	Mixed	3.638

Annexure - B

- SEWAGE GENERATION FROM OUTFALLS**

Outfall no.	Dimension (mm)		Water Depth (mm)	Velocity (M/Sec)	Current Flow	Projected flow (2035)
	Width	depth			MLD	MLD
Chaitanya Ghat	2500	1750	247	0.068	0.518	0.682
Radharani Seba Sadan	1000	1650	15	0.400	0.333	0.497
Nadia Samaj Pally	600	600	15	0.429	1.296	1.46
Chhoto Najar	1200	1350	25	0.500	0.091	0.255
Churipara	350	600	15	0.200	0.822	0.986
Thanapara - I	900	1500	141	0.075	0.187	0.351
Thanapara - II	450	1200	12	0.400	0.456	0.62
Sreenathpur	600	1350	22	0.400	2.799	2.963
Basko Khal	1800	1500	36	0.500	3.638	3.802
Total Flow=					10.14	11.62

- Sewage generation of the Town**

Based on projected population of the Town and projected flow of the outfalls, waste water generation has been calculated. Current waste water generation is **10.14 MLD** and projected waste water generation in the year **2035** is **11.62 MLD**.

Annexure- C

Implementation of proposed STP at Ranaghat						
SL No.	Name of the project	No. of STP	Capacity in MLD	Timeline for completion	Estimated Project Cost (In INR)	Implementing Agency
1	Interception and diversion (I & D) network for existing drains falling in river Churni including Sewage Treatment Plant at Ranaghat Municipality	3	11.8	30.06.2021	48.63 Crore	KMDA

Annexure - D

SWM Action Plans for **Ranaghat Municipality**

Sl.	Key Components of Proposed Action Plans for Restoration of Identified Polluted River Stretches - <u>CHURNI</u>	Proposed Achievable Target	Proposed Time Targets to achieve target	Remarks
	Municipal Solid Waste Management			
	Commissioning of Integrated Waste Management Facilities or Sanitary Land Fills or Bio manure or Pellets making or Waste to Energy Plants	<ul style="list-style-type: none"> ➤ Door to Door collection of solid waste. ➤ Waste segregation at household source. ➤ Establishment of waste processing facility including SLF. ➤ Development of IEC activities & capacity buildings of different Stackholders. 	<ul style="list-style-type: none"> ➤ D 2 D collection of solid waste is expected to be achieved within March 2020. ➤ Waste segregation at source is expected to be achieved within Octo.2020 ➤ Present generation of waste in town is 26 TPD. Establishment of waste processing facility including SLF for town will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016 	<p>City specific Draft DPR have been prepared for implementation of SWM projects. Tentative Project cost is 19.48 Cr that includes collection, transportation and Processing of Waste.</p> <p>Litter bins are provided beside river banks. Accumulated garbage have been removed from the river banks. Intensive IEC activities including display of poster/banner, awareness campaign, capacity building of stakeholders are continuously organized by ULB.</p>

ACTION PLAN (2020-2021) ON GROUNDWATER INVESTIGATIONS, MONITORING AND MANAGEMENT AGAINST BLOCKS ADJACENT TO POLLUTED RIVER STRETCH IN WEST BENGAL BY SWID, GOWB

SI No	Name of River	District	No. of Blocks along polluted River Stretch	Action plan	Budgetary Provision (Rs)	Timeline	Action to be Taken up
1	Ganga	Nadia	Chakdah	GW Level & Quality Monitoring	10471.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
				Real-Time GWL Monitoring through Installation of DWLR		April'20 to March'21	
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater		April'20 to March'21	
		North 24 Parganas	Barrackpur-I, Barrackpur-II, BMC	GW Level & Quality Monitoring	21905.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
				Real-Time GWL Monitoring through Installation of DWLR	273368.00	April'20 to March'21	Tendered floated and may be completed within March'21
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater	5809237.00	April'20 to March'21	Continuing and may be completed within March'21
		Kolkata	KMC	GW Level & Quality Monitoring	91000.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
				Real-Time GWL Monitoring through Installation of DWLR	1366840.00	April'20 to March'21	Tendered floated and may be completed within March'21
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater	10059496.00	April'20 to March'21	Continuing and may be completed within March'21

	South 24 Parganas	Thakurpukur-Mahashtala, Budge Budge-I, Budge Budge-II, Falta, Shyampur, Diamond Harbour-I, Diamond Harbour-II	GW Level & Quality Monitoring	36207.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21	
			Real-Time GWL Monitoring through Installation of DWLR				
			Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater				
	Howrah	Bally-Jagacha, Sankrail, Uluberia-I	GW Level & Quality Monitoring	24444.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21	
			Real-Time GWL Monitoring through Installation of DWLR	136684.00	April'20 to March'21	Tendered floated and may be completed within March'21	
			Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater				
	Hooghly	Chinsura-Mogra, Singur, Srirampur-Urttarpara	GW Level & Quality Monitoring	34167.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21	
			Real-Time GWL Monitoring through Installation of DWLR				
			Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater				
2	Damodar	Purulia	Neturia, Santuri	GW Level & Quality Monitoring	15686.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
				Real-Time GWL Monitoring through Installation of DWLR			
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater			

Bankura	Saltora, Mejia, Barjora, Sonamukhi, Patrasayar	GW Level & Quality Monitoring	30748.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
		Real-Time GWL Monitoring through Installation of DWLR	683420.00	April'20 to March'21	Tendered floated and may be completed within March'21
		Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater			
Paschim Barddhaman	Jamalpur	GW Level & Quality Monitoring	6627.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
		Real-Time GWL Monitoring through Installation of DWLR			
		Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater			
Purba Barddhaman	Kahandagosh, Galsi- II, Barddhaman-I, Barddhaman-II, Raina II	GW Level & Quality Monitoring	33135.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
		Real-Time GWL Monitoring through Installation of DWLR	1640208.00	April'20 to March'21	Tendered floated and may be completed within March'21
		Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater			
Howrah	Amta-II, Bagnan-I, Bagnan-II, Shyampur- II	GW Level & Quality Monitoring	32592.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
		Real-Time GWL Monitoring through Installation of DWLR	546736.00	April'20 to March'21	Tendered floated and may be completed within March'21
		Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater	2167000.00	April'20 to March'21	Continuing and may be completed within March'21

	Hooghly	Arambag, Pursura, Khanakul-I, Khanakul-II	GW Level & Quality Monitoring	45556.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21		
			Real-Time GWL Monitoring through Installation of DWLR	1776892.00	April'20 to March'21	Tendered floated and may be completed within March'21		
			Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater					
	Purba Medinipur	Sahid Matangini, Tamruk, Nandakumar, Mahishadal, Sutahata	GW Level & Quality Monitoring	51265.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21		
			Real-Time GWL Monitoring through Installation of DWLR					
			Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater					
	3	Dwarka	Birbhum	Rampurhat-II	GW Level & Quality Monitoring	5730.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
				Real-Time GWL Monitoring through Installation of DWLR	273368.00	April'20 to March'21	Tendered floated and may be completed within March'21	
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater				
4	Churni	Nadia	Krishnaganj, Hanskhali, Ranaghat-I, Krishnagar-I	GW Level & Quality Monitoring	41882.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21	
				Real-Time GWL Monitoring through Installation of DWLR	3007048.00	April'20 to March'21	Tendered floated and may be completed within March'21	
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater				

5	Jalangi	Murshidabad	Berhampur, Hariharpara, Domkal, Nowda	GW Level & Quality Monitoring	27345.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
				Real-Time GWL Monitoring through Installation of DWLR			
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater			
	Nadia	Karimpur-II, Tehatta- I, Tehatta-II, Chapra, Nakashipara, Krishnagar-II, Krishnagar-I, Nabadwip	GW Level & Quality Monitoring	83765.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21	
			Real-Time GWL Monitoring through Installation of DWLR	5193992.00	April'20 to March'21	Tendered floated and may be completed within March'21	
			Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater	2324702.00	April'20 to March'21	Continuing and may be completed within March'21	
6	Kansai	Paschim Medinipur	Medinipur Sadar, Keshpur, Debra	GW Level & Quality Monitoring	25769.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21
				Real-Time GWL Monitoring through Installation of DWLR	273768.00	April'20 to March'21	Tendered floated and may be completed within March'21
				Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater			
	Purba Medinipur	Panshkura, Moyna	GW Level & Quality Monitoring	20506.00	April'20 to Jan'21	one set completed in Apr & May'20 and remaining 3 sets will be completed in Aug'20, Nov'20 & Jan'21	
			Real-Time GWL Monitoring through Installation of DWLR				
			Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater				
TOTAL				36171559.00			

Director
STATE WATER INVESTIGATION DIRECTORATE

**Status on Implementation of Action Plan for Restoration of Polluted River (Churni, Jalangi & Mathabhanga)
under Nadia District from MGNREGA**

Name of the District: Nadia

Contact details of District Nodal Officer:

Sl. No.	River	Activity to be monitored	Total no of Schemes taken or to be taken	Timeline	Financial Outlay (Rs. In Lakh)	Remarks
1	Churni	Water Conservation(Farm Pond)	87	March, 2021	180.443	
		Renovation Traditional Water Bodies	9	March, 2021	46.873	
		Ground Water Recharge Pit	151	March, 2021	26.059	
		Embankment Protection	35	March, 2021	85.944	
		Rain Water Harvesting Structure	0	March, 2021	0.000	
		Excavation/Re-Excavation of Canal	57	March, 2021	180.361	
		Bio Diversity Park	1	March, 2021	4.500	
		Construction of Field Channel	0	0	0.000	
		Canal Side Plantation	0	0	0.000	
		Block Plantation	2	March, 2021	2.184	
		IBS Plantation	416	March, 2021	155.887	
		Vetiver Plantation	59	March, 2021	114.390	
		District Total	817		796.641	
2	Mathabhanga	Water Conservation(Farm Pond)	36	March, 2021	72.256	
		Renovation Traditional Water Bodies	17	March, 2021	74.977	
		Ground Water Recharge Pit	0	March, 2021	0.000	
		Embankment Protection	0	March, 2021	0.000	
		Rain Water Harvesting Structure	0	March, 2021	0.000	
		Excavation/Re-Excavation of Canal	40	March, 2021	140.221	
		Bio Diversity Park	0	March, 2021	0.000	
		Construction of Field Channel	1	March, 2021	1.146	
		Canal Side Plantation	0	0	0.000	
		Block Plantation	1	March, 2021	1.092	
		IBS Plantation	15	March, 2021	14.959	
		Vetiver Plantation	14	March, 2021	26.335	
		District Total	124		330.987	
3	Jalangi	Water Conservation(Farm Pond)	450	March 2021	698.355	
		Renovation Traditional Water Bodies	45	March 2021	149.696	
		Ground Water Recharge Pit	2217	March 2021	260.999	
		Embankment Protection	372	March 2021	956.926	
		Rain Water Harvesting Structure	25	March 2021	3.500	
		Excavation/Re-Excavation of Canal	142	March 2021	504.032	
		Bio Diversity Park	3	March 2021	9.350	
		Construction of Field Channel	48	March 2021	48.368	
		Canal Side Plantation	42	March 2021	38.919	
		Block Plantation	18	March 2021	15.361	
		IBS Plantation	1316	March 2021	571.691	
		Vetiver Plantation	97	March 2021	148.347	
		District Total	4775		3405.544	

Financial Outlay of Action Plan in Polluted River Stretches

Annexure-G

Forestry Development, Forest Department

Sl. No.	River Name	District	Division	Stretch Identified	Town	Block/ Municipality	Mouza/ward	J.L. No.	Plot	Area in Hecture	Financial Outlay	Time line
1	Churni	Nadia	NMD	Near Radhakantapur Khewaghat	Ranaghat	Ranaghat I	Radhakantapur	23	1353	0.1	13,900.00	2019-20 to 2023-24
2				Opposite Kavetpara bathghat	Ranaghat	Ranaghat I	Majdia	125	1751	3.33	462,870.00	
3				Under Banali Bazar	Hanskhali	Hanskhali	Banali	15	1086	0.952	132,328.00	
4				Near Water Tower	Hanskhali	Hanskhali	Beargram	14	409	0.68	94,520.00	
5				Near Brick field	Hanskhali	Hanskhali	Hanskhali	53	45	0.54	75,060.00	
6				Lake side of Boro bridge	Hanskhali	Hanskhali	Satpota	54	1086	0.85	118,150.00	
7				Near Primary school	Hanskhali	Hanskhali	Goesh	56	1086	0.408	56,712.00	
8				Near Rever Pump	Hanskhali	Hanskhali	Gobindopur	33	410	0.405	56,295.00	
Sub Total										7.265	1,010,055.79	
9	Hoogly (Ganga)	North 24 Pargana	North 24 Pargana	Swami Vivekananda state Police Academy (Barrackpur Policeline Campus)	Barrackpur	Barrackpur	Barrackpur Cantonment			3	417,055.00	
10				Shyamnagar CESC	Shyamnagar	Garulia	Noapara	5		3	417,055.00	
Sub Total										6	834,110.00	

Action Plan

on

Inventorisation of Polluting Industries in the 17 Polluted River Stretches in West Bengal



West Bengal Pollution Control Board

'Paribesh Bhawan'

10A, Block – LA, Sector – III, Bidhannagar, Kolkata – 700 106

Ph: (033) 2335-9088, 2335-0261

Fax: (033) 2335-2813, 2335-6730

Email: wbpccnet@wbpcb.gov.in

Website: www.wbpcb.gov.in

Background

West Bengal Pollution Control Board is in the process of preparation of action plan for rejuvenation of the 17 polluted river stretches in compliance to the Hon'ble NGT (PB), New Delhi Order dated 19.12.2018 in O.A. No. 673/2018. Flow in these rivers receives discharge of municipal sewage as well as industrial effluent from various industries round the year.

Preparation of the Action Plan requires detailed study of industrial pollution control related to inventorisation of polluting industries located in the respective catchment areas and ascertaining the quantity and quality of effluent discharged to these rivers from these industries.

Objective

Preparation of action plan for rejuvenation of the polluting stretches of 17 rivers which include the Ganga, Vidyadhari, Mahananda, Kaljani, Karola, Teesta, Kanshi, Silabati, Rupnarayan, Dwarka, Damodar, Barakar, Dwarakeshwar, Mayurakshi, Jalangi, Mathabhanga and Churni. To carry out the detailed survey of the entire stretches of these 17 rivers, these have been distributed among five segments which are shown in Tables 1 to 5.

The geographical areas to be covered in the project is the catchment areas of the rivers flowing through the following major towns:

Table 1

Sl. No.	River	Stretch	Towns
1	Vidyadhari	Haroa Bridge to Malancha Burning Ghat	Haroa, Minakhan, Malancha
2	Ganga	Tribeni to Diamond Harbour	Kanchrapara, Hooghly, Naihati, Chandannagar, Bhatpara, Barrackpore, Baranagar, Kolkata, Howrah, Berhampur, Palta, Dakshineswar, Uluberia

Table 2

Sl. No.	River	Stretch	Towns
1	Mahananda	Siliguri to Binaguri	Siliguri
2	Kaljani	Bitala to Alipurduar	Hamiltanganj, Alipurduar
3	Karola	Jalpaiguri to Thakurer Kamat	Jalpaiguri
4	Teesta	Siliguri to Paharpur	Jalpaiguri, Siliguri

Table 3

Sl. No.	River	Stretch	Towns
1	Kansi	Midnapore to Ramnagar	Medinipur
2	Silabati	Ghatal to Nischindipur	Ghatal, Nischindipur
3	Rupnarayan	Kolaghat to Benapur	Bagnan, Kolaghat, Tamluk

Table 4

Sl. No.	River	Stretch	Towns
1	Dwarka	Tarapith to Sadhak Bamdeb Ghat	Chandipur, Tarapith, Margram
2	Damodar	Durgachakm to Dishergarh	Udayanarayanpur, Bagnan, Durgapur, Asansol
3	Barakar	Kulti to Asansol	Chittaranjan, Kulti, Burnpur, Asansol
4	Dwarakeshwar	Bankura to Kushtia	Bankura
5	Mayurakshi	Suri to Durgapur	Suri, Sainthia

Table 5

Sl. No.	River	Stretch	Towns
1	Jalangi	Laldighi to Krishnanagar	Krishnanagar, Chapra
2	Mathabhanga	Madhupur to Gobindapur	Majhdia, Krishnaganj, Durgapur, Swarnakali
3	Churni	Santipur Town to Majhdia	Ranaghat

Scope of Work

The primary aim of the study is to cover the following :-

Industrial Pollution Control

It includes

- (i) Inventorisation of Industries in the catchment areas of the rivers
- (ii) Categories of industries and effluent quality
- (iii) Treatment of effluents, compliance with standards and mode of disposal of effluents
- (iv) Regulatory Regime
- (v) Detailed gap analysis w.r.to industrial water consumption, waste water generation, existing infrastructure for treatment of industrial effluent (both captive ETPs/CETPs and their performance assessment), gap analysis w.r.to the industrial effluent management in the catchment area.

Duration: One (1) year

Time Schedule

Following time schedule shall be followed :

Deliverables	1	2	3	4	5	6	7	8	9	10	11	12
Site Visit and Sample Collection												
Analysis of samples												
Preparation and submission of draft report												
Review of report by WBPCB												
Submission of final report												

Deliverable: As per Annexure I

Manpower and other Logistic Requirement :

One (1) Consultant as part time basis, five (5) Engineers and seven (7) Junior Research Fellows, both on full time basis shall be engaged by the Board for the entire inventorisation work. Distribution of manpower shall be as follows:

Table Number	Manpower
1	Project Engineer – 1 Junior Research Fellow - 2
2	Project Engineer – 1 Junior Research Fellow - 1
3	Project Engineer – 1 Junior Research Fellow - 1
4	Project Engineer – 1 Junior Research Fellow - 2
5	Project Engineer – 1 Junior Research Fellow - 1

Qualification of the Consultant, Project Engineers & Junior Research Fellows :

- Consultant shall have EITHER teaching experience (at least total 20 years) in the rank of Professor in a reputed university with experience as Guide of PhD students working in environmental field OR he should have adequate experience (around 20 years) in carrying out such type of inventorisation work and preparation of detailed project report on industrial survey.
- Project Engineer - having Master Degree in Environmental Engineering from reputed university having computer proficiency and also proficiency in English language. The shall also have at least one year experience in such project work. They should be preferably from respective localities.
- Junior Research Fellow - having MSc. in Environmental Science from reputed university having computer proficiency and also in English language. The shall also have at least one year experience in such project work. They should be preferably from respective localities.

Scope of work of the Consultant:

The Consultant shall be responsible for overall coordination, supervision of the entire work including report preparation.

The In-charges of respective Regional Offices of the Board will be the nodal officers and Chief Engineer (Operation & Execution Cell) will be the overall Project Coordinator.

Details of nodal officers are given below:

Sl. No.	Name of Regional Office	Designation of In-charge
1	Barrackpore Regional Office	Senior Environmental Engineer
2	Asansol Regional Office	Senior Environmental Engineer
3	Durgapur Regional Office	Environmental Engineer
4	Kolkata Regional Office	Environmental Engineer
5	Salt Lake Regional Office	Environmental Engineer
6	Alipore Regional Office	Environmental Engineer
7	Howrah Regional Office	Environmental Engineer
8	Hooghly Regional Office	Environmental Engineer
9	Haldia Regional Office	Assistant Environmental Engineer
10	Siliguri Regional Office	Assistant Environmental Engineer
11	Malda Regional Office	Assistant Environmental Engineer

One vehicle for each of the five groups (as mentioned in Tables 1 to 5) shall be engaged during field survey on hiring basis. The concerned nodal officers (In-charges of respective regional offices) shall arrange such vehicles.

EMIS of the Board and files to be used as Secondary data source.

Selection of laboratories for analysis of samples: Project Co-ordinator shall select recognized laboratories of the Board for this job. Selected laboratory will provide the sample collection equipments, carry out analysis of collected samples from different industries and submit report. Analysis fee shall be as per existing rate of the Board.

Budgetary requirement:

1.0: Manpower requirement

Consultant – He will be engaged on part time basis and a lump sum of Rs.50,000/- (Rupees fifty thousand) per month will be paid.

Project Engineer – They will be engaged on full time basis and lump sum of Rs.25,000/- (Rupees twenty five thousand) per head per month will be paid.

Junior Research Fellow – They will be engaged on full time basis and lump sum of Rs.15,000/- (Rupees fifteen thousand) per head per month will be paid.

INVENTORISATION OF
POLLUTING INDUSTRIES IN THE 17 POLLUTED RIVER STRETCHES IN WEST BENGAL

2.0 :Financial outlay for 17 polluted river stretches

Sl. No.	River	Stretch	Towns	Financial outlay	Time line
1	Vidyadhari	Haroa Bridge to Malancha Burning Ghat	Haroa, Minakhan, Malancha	Rs. 50 lakhs + Sampling expenses; no. of samples x analysis charge; 100 samples = Rs.3 lakhs Conveyance; Rs. 5 lakhs Report preparation; Rs. 1 lakh. Contingency Rs. 10 percent of total cost = Rs. 6 lakhs. Total cost; Rs. 65 lakhs	1 year from the date of commencement of project.
	Ganga	Tribeni to Diamond Harbour	Kanchrapara, Hooghly, Naihati, Chandannagar, Bhatpara, Barrackpore, Baranagar, Kolkata, Howrah, Berhampur, Palta, Dakshineswar, Uluberia	Rs. 50 lakhs + Sampling expenses; no. of samples x analysis charge; 150 samples = Rs.4.5 lakhs Conveyance; Rs. 6.5 lakhs Report preparation; Rs. 1 lakh. Contingency Rs. 10 percent of total cost = Rs. 6.2 lakhs. Total cost; Rs. 70 lakhs	1 year from the date of commencement of project
2.	Mahananda	Siliguri to Binaguri	Siliguri	Rs. 60 lakhs Sampling	1 year from the date of

**INVENTORISATION OF
POLLUTING INDUSTRIES IN THE 17 POLLUTED RIVER STRETCHES IN WEST BENGAL**

	Kaljani	Bitala to Alipurduar	Hamiltanganj, Alipurduar	expenses; 100 samples = Rs.3 lakhs Conveyance; Rs. 7 lakhs Report preparation; Rs. 1 lakh. Contingency Rs. 10 percent of total cost = Rs. 7.1 lakhs. Total cost; Rs. 80 lakhs(approx.).	commencement of project
	Karola	Jalpaiguri to Thakurer Kamat	Jalpaiguri		
	Teesta	Siliguri to Paharpur	Jalpaiguri, Siliguri		
3.	Kansi	Midnapore to Ramnagar	Medinipur	Rs. 50 lakhs + Sampling expenses; no. of samples x analysis charge; 100 samples = Rs.3 lakhs Conveyance; Rs. 5 lakhs Report preparation; Rs. 1 lakh. Contingency Rs. 10 percent of total cost = Rs. 6 lakhs. Total cost; Rs. 65 lakhs	1 year from the date of commencement of project
	Silabati	Ghatal to Nischindipur	Ghatal, Nischindipur		
	Rupnarayan	Kolaghat to Benapur	Bagnan, Kolaghat, Tamluk		
4.	Dwarka	Tarapith to Sadhak Bamdeb Ghat	Chandipur, Tarapith, Margram	Rs. 60 lakhs Sampling expenses; 100 samples = Rs.3 lakhs	1 year from the date of commencement of project
	Damodar	Durgachakm to	Udayanarayanpur, Bagnan,		

INVENTORISATION OF

POLLUTING INDUSTRIES IN THE 17 POLLUTED RIVER STRETCHES IN WEST BENGAL

		Dishergarh	Durgapur, Asansol	Conveyance; Rs. 7 lakhs Report preparation; Rs. 1 lakh. Contingency Rs. 10 percent of total cost = Rs. 7.1 lakhs. Total cost; Rs. 80 lakhs (approx.).	
	Barakar	Kulti to Asansol	Chittaranjan, Kulti, Burnpur, Asansol		
	Dwarakeshwar	Bankura to Kushtia	Bankura		
	Mayurakshi	Suri to Durgapur	Suri, Sainthia		
5.	Jalangi	Laldighi to Krishnanagar	Krishnanagar, Chapra	Rs. 50 lakhs + Sampling expenses; no. of samples x analysis charge; 100 samples = Rs.3 lakhs Conveyance; Rs. 5 lakhs Report preparation; Rs. 1 lakh. Contingency Rs. 10 percent of total cost = Rs. 6 lakhs. Total cost; Rs. 65 lakhs	1 year from the date of commencement of project
	Mathabhanga	Madhupur to Gobindapur	Majhdia, Krishnaganj, Durgapur, Swarnakali		
	Churni	Santipur Town to Majhdia	Ranaghat		
Total				Rs. 4.25 crores.	

**INVENTORISATION OF
POLLUTING INDUSTRIES IN THE 17 POLLUTED RIVER STRETCHES IN WEST BENGAL**

Annexure-I

Report Format: Following Information is sought for by physical verification of the industries in the areas as well as other verifiable and authentic secondary data

Sl. No.	Details	Remarks
1.	Name & address of Industry – <ul style="list-style-type: none"> • Category–(Red/Orange/Green) • Type – (Water Polluting / Air polluting / Both) • Scale – (Micro /Small/ Medium/ Large) 	
2.	Consent Status (CFE, CFO, HWA, BMWA)	
3.	Total Water consumption	
4.	Total Waste Water generation	
5.	Status of ETP/CETP (treatment capacity, functional or not etc.)	
6.	OCEMS installation status	
7.	Gaps in treatment of industrial effluent	
8.	Information on Hazardous Waste Generation (type, quantity, method of disposal etc.)	
9.	Information on use of reactive dyes/non-reactive dyes by textile units	
10.	Source and Type of air pollution and its emission control system	
11.	Analysis of raw effluent and treated effluent	

Note : Analysis of raw effluent and treated effluent to be carried out for at least 10 % of the total industries to be surveyed.

A comprehensive report in the following format shall be submitted

Sl. No.	Details	Remarks
1	Number of Industries – <ul style="list-style-type: none"> • Category-wise –(Red/Orange/Green) • Type – (Water Polluting / Air polluting / Both) • Scale – (Micro /Small/ Medium/ Large) 	
2	No. of industries under Consent Administration	
3	Total Water consumption by the industries	
4	Total Waste Water generation by the industries	
5	No of units having captive ETPs (treatment capacity, functional or not etc.)	
6	Total no. of industries having OCEMS	
7	Gaps in treatment of industrial effluent	
8	Information on Hazardous Waste Generation (No. of industries, type, quantity, method of disposal etc.)	
9	Information on use of reactive dyes/ non-reactive dyes by textile units	
10	Feasibility for installation of CETP for clusters of industries	

Annexure – I

Industry Cluster Information for River Churni stretches –

Sl. No.	River Stretch Identified	Towns Identified	Name of the Cluster (if any)	Provision of ETP/CETP	Remarks
1	Santipur town to Majhdia	Ranaghat	Ranaghat Gold & Silver Cluster	No	No effluent discharges to adjoining river

Report on status on STP/CETP of Clusters for river Churni

Sl. No.	Name of Estate/Cluster Location	Status of STP/CETP	Remarks
1	Fulia Cluster Samabay Sadan, Fulia, Nadia	CETP has been set up with a biotech pond for recycling of effluent water by 3 Weavers' Co-operatives. CETP has the capacity of 2000lts discharging effluent water/day.	CETP with Bio tech pond has been set up for dyeing of cotton / silk/ woolen / linen yarn.

Item No. 06

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
(Through Video Conferencing)**

Original Application No. 471/2018 (EZ)
(Earlier O.A. No. 15/2014) (EZ)

Tribunal on its own motion

Applicant

Versus

Union of India.

Respondent(s)

Date of hearing: 04.11.2019

**CORAM: HON'BLE MR. JUSTICE S. P. WANGDI, JUDICIAL MEMBER
HON'BLE DR. SATYAWAN SINGH GARBYAL, EXPERT MEMBER
HON'BLE MR. SAIBAL DASGUPTA, EXPERT MEMBER**

For Applicant(s):

For Respondent (s): Mr. Gora Chand Roy Choudhury, Advocate for R-2
Mr. Surendra Kumar, Advocate for R-3
Mr. Surendra Kumar, Advocate for R-4
Ms. Paushali Banerjee, Proxy Counsel For Ms.
Arpita Chowdhury, Advocate for R-5
Mr. Bikas Kargupta, Advocate for R-6,8,9,10 & 11

ORDER

1. Affidavit has been filed on behalf Urban Development and Municipal Affairs Department in terms of our order dated 02.04.2019 with regard to specific questions relating to i) the establishment of STP by the Ranaghat Municipality area by the KMDA and ii), matter relating to the effluent discharge by sugar mills within the Bangladesh border of the Churni river.
2. In respect of the first question, it is informed that the only bid received shall be evaluated and is expected to be completed by

CE (P)
CE (OAE)

✓ CS

PA to Chairman

PA to MS

Ag

7/11/2019

Churni 6/4

11/11/2019

U.O. ND-1134(3)
7/11/2019

06.11.2019. On the second question relating to effluent discharge in the Bangladesh area, it has been informed that during the 5th Joint Consultative Committee Meeting (JCC), co-chaired by EAM and their Foreign Minister, it was conveyed by the Bangladesh side that steps for installation of ETP at Darsana Sugar Mills was under process. It is further stated that the matter is being taken up with the concerned Bangladesh authorities.

3. In view of the above nothing further remains to be considered in this case accept to direct the KMDA to expedite the process of establishment of the STP within six months from hence and for the State to follow up with the Ministry of External Affairs regarding construction of ETP by Bangladesh.
4. With the above observations and directions, the Application stands disposed off with no order as to costs.

S.P. Wangdi, JM

Dr. Satyawan Singh Garbyal, EM

Saibal Dasgupta, EM

4th November, 2019
O.A. 471/2018(EZ)
ag

Gmail

Additional Chief Secretary Environment <acsenvwb@gmail.com>

Pollution in Matharbhanga-Churni river- Establishment of Effluent Treatment Plants (ETP) at Darshana Sugar Mills

USBD <dsbd@mea.gov.in>

Mon, Sep 16, 2019 at 11:26 AM

To: CommFM MoWR <commer-mowr@nic.in>

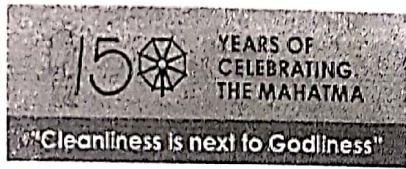
Cc: Sambharia SJ CER <sjcer1-mowr@nic.in>, CPCB NWMP <cpcb.nwmp@gmail.com>, acsenvwb@gmail.com, Sudhakar CPCB <asudhakar.cpcb@nic.in>, Hitesh Rajpal <dirbm@mea.gov.in>, Joint Secretary Bangladesh Myanmar MEA <jsbm@mea.gov.in>

Dear Sir,

This has reference to our offer to the BD Government on construction of an ETP at Darshana sugar mills to control the pollution in Matharbhanga-Churni river. BD Government has now informed that they will be constructing ETPs at various sugar mills and Darshana sugar mill is also included in the plan. A note verbale received from Bangladesh government in this regard is attached along with this mail. For kind info.

Best Regards,
Karun Bansal
Under Secretary (Bangladesh)
BM Division, Ministry of External Affairs
Tel: 011-23011809, Fax: 011-23014808

Sp Secy
JFO



9
16.9.19

NV to IHC 14.09.2019 Churni-Darshana ETP.pdf
552K

for kind inf.
Chairman, WBPCB

C.S
16/9

16/9

Churni R-9
2019/09/16

3700-EDL
16/09/2019

পররাষ্ট্র মন্ত্রণালয়
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
ঢাকা



MINISTRY OF FOREIGN AFFAIRS
GOVERNMENT OF THE
PEOPLE'S REPUBLIC OF BANGLADESH
DHAKA

19.00.0000.411.42.306.17-1221

The Ministry of Foreign Affairs, Government of the People's Republic of Bangladesh presents its compliments to the High Commission of India in Dhaka and with reference to the former's note verbale no: DAC/POL/111/03/2017 dated 13 January 2019 has the honor to convey that the relevant authorities of Bangladesh have intimated that in order to ensure proper treatment and management of waste generated from Sugar Mills in Bangladesh the Bangladesh Sugar and Food industries Corporation (BSFIC) has undertaken a project on establishment of Effluent Treatment Plants (ETP) at various sugar mills in Bangladesh. Darshana Sugar Mills is also included in this project.

In view of the above, the Government of Bangladesh while appreciating the gesture offered by the Government of India, has the honour to inform that the work of the ETP in connection with Darshana Sugar Mills is expected to be completed by the Government of Bangladesh.

The Ministry has the further honor to request the esteemed High Commission to share this information with the concerned authorities in India.

The Ministry of Foreign Affairs, Government of the People's Republic of Bangladesh avails itself of this opportunity to renew to the High Commission of India in Dhaka the assurances of its highest consideration.

Dhaka, 14 September 2019

High Commission of the Republic of India
Dhaka



ms/2937
18.06.19

3167-EDL
18.6.19 (12B)

Ministry of External Affairs
(BM Division)

Subject: Pollution in Churni river- OA No. 15/2014 (Tribunal on its own Motion- vs- Union of India)

Reference your communication No. EN/857/3C-52/2014 dated May 3, 2019 on the subject. The matter has been regularly taken up with concerned Bangladesh authorities, most recently during the 5th Joint Consultative Committee Meeting (JCC), co-chaired by EAM and their Foreign Minister, wherein Bangladesh side conveyed that steps for installation of ETP at Darsana Sugar Mills is under process.

2. A report had also been sought from Centre Pollution Control Board (CPCB) on the water quality in Churni river in this regard. The same was received in March 2019 (enclosed). The report mentioned that the organic pollution due to domestic discharges are not totally controlled yet.

3. The matter is being taken up by our Mission in Dhaka with the concerned Bangladesh authorities. We shall continue to inform you of the further updates on the matter.

Karun Bansal
(Karun Bansal)
Under Secretary (Bangladesh)
Tel: 23011809
Email: dsbd@mea.gov.in

Shri B. P. Gopalika, Principal Secretary, Government of West Bengal, PraniSampad Bhawan, 5th Floor, LB-2, Sect-III, Saltlake City, Kolkata-700 106. Tel. 23352742, Fax: 23350271, Email: acsenvwb@gmail.com

MEA ID No. I/ii/112/02/2017

June 14, 2019

West Bengal Pollution Control Board

Diary No. 55668
Date 18.6.19
Referred to: CS
Remarks:

[Signature]
Member Secretary

MS/PCB
[Signature]
1776

13th March, 2019

A-14011/1/2019 - WQM - I 17/191

To

Sh. Karun Bansal
Under Secretary (Bangladesh)
Ministry of External Affairs
BM Division, 68 B, South Block
New Delhi - 110001

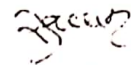
Sub: Pollution of Churni river

Sir,

This has reference to your letter of even no. dated 05/02/2019 on pollution in Churni river. An investigation has been carried out by CPCB, Regional Directorate - Kolkata during Feb, 2019 to ascertain the sources of contamination in river Churni. It has been concluded that the organic pollution due to domestic discharges are not totally controlled as indicated in river water quality. (copy enclosed)

It is therefore requested that Govt. of Bangladesh shall take up for controlling domestic discharges, as has been taken in case of industrial pollution control in river Churni in accordance with the existing water quality standards in Bangladesh.

Yours faithfully,



(A Sudhakar)
DH -WQM-I Division

Encl: as above

Annexure - I

Table - 1: Water quality of river Churni at Bijoypur

Parameters and Units	Values
pH	7.4
Conductivity ($\mu\text{s}/\text{cm}$)	658
Total Suspended Solids (mg/ l)	8
Total Dissolved Solids (mg/ l)	406
Dissolved Oxygen (mg/ l)	1.1
Bio-chemical Oxygen Demand (mg/ l)	19
Chemical Oxygen Demand (mg/ l)	60
Alkalinity (mg/ l)	350
Chloride (mg/ l)	17
Total Hardness (mg/ l)	320
Nitrite (mg/ l)	0.001
Nitrate (mg/ l)	0.03
Ammonical Nitrogen (mg/ l)	0.06
Phosphate (mg/ l)	0.5
Sulphate (mg/ l)	BDL
Sodium (mg/ l)	14.56
Potassium (mg/ l)	6.48
Iron (mg/ l)	2.33
Zinc (mg/ l)	0.09
Manganese (mg/ l)	0.24
Cobalt (mg/ l)	0.001
Arsenic (mg/ l)	BDL
Lead (mg/ l)	0.011
Nickel (mg/ l)	0.011
Mercury (mg/ l)	BDL
Total Coliform (MPN/ 100ml)	280000
Faecal Coliform (MPN/ 100ml)	14000

MS/22/18
06/05/19

122



Government of West Bengal
Department of Environment

PraniSampad Bhawan, 5th Floor, LB-2, Sect-III, Saltlake City, Kolkata-106.

No. EN/8573C-52/2014

Dated, Kolkata 3rd May, 2019.

From :: Additional Chief Secretary to the
Govt. of West Bengal.

To :: The Secretary,
Ministry of External Affairs,
South Block, New Delhi-110001.

CS ✓

Sub: O.A. No.15/2014 (Tribunal on its own Motion -vs- Union of India)

Sir,

Kindly find enclosed the order of National Green Tribunal, Principal Bench dated 02.04.2019, where the Tribunal in paragraph No.3 has noted that discharge of untreated effluents from Bangladesh is one of the major cause of pollution of River Churni and the State Govt. needs to address the matter with Ministry of External Affairs, Govt. of India and Ministry of Environment, Forest and Climate Change.

You are requested to kindly look into the matter and take steps to resolve the issue and comply with the order of the Tribunal.

Yours faithfully,

Encl: as stated

Sd/- I. Pandey

Additional Chief Secretary.

Copy forwarded for kind information necessary action to-

1. The Secretary, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh, New Delhi-110003.

2. The Member Secretary, West Bengal Pollution Control Board.

Additional Chief Secretary



MS/1454
19/03/19
17169
CPA/14011/1/2019 - WQM - I

To

The Member Secretary
West Bengal Pollution Control Board
Paribesh Bhavan
10A, Block-L.A., Sector III
Salt Lake City
Kolkata - 700 106

Sub: Pollution of Churni river

Sir,

This has reference to public grievance of Sh. Sudhir Kumar Roy dated 17.01.2019 on plight of river Mathabhanga and Churni due to discharge of effluent from industrial units in Bangladesh (copy enclosed). It has been observed that organic pollution in terms of domestic sewage generated in towns along river Churni in Bangladesh and India is responsible for contamination of river Churni.

An investigation has been carried out by CPCB, Regional Directorate - Kolkata during February, 2019 to ascertain the sources of contamination in river Churni. It has been concluded that the organic pollution due to domestic discharges are not totally controlled as indicated in river water quality in towns along river Churni especially Ranaghat district (copy of the report is enclosed).

It is therefore requested to initiate action in Ranaghat District for controlling river pollution due to domestic discharges.

Yours faithfully,

(A Sudhakar)
DH -WQM-I Division

Encl: as above

केन्द्रीय प्रदूषण नियंत्रण बोर्ड (121)
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, GOVT OF INDIA
13th March, 2019

West Bengal Pollution Control Board

Diary No. 2818C
Date 18.3.19
Referred to :
Remarks : CS

Member Secretary

WOM-2

Grievance Details

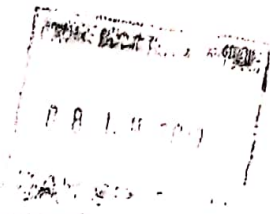
Registration Number : PMOPG/D/2019/0020099
Registration Date : 17 Jan 2019
Complainant's Name : Shri SUDHIR KUMAR ROY
Grievance Category : Environment Issues/Animal Welfare/ForestConservation
Letter No & Date : ,1/4/2019 12:00:00 AM
Client Status : General Public
Address : VILL PO PS KRISHNAGANJ,
-741506
State/UT : West Bengal
District : Nadia
Contact No. : ,
Attachment : Open
Grievance Description :

TV

||

76

(31)
M/o Environment



The Hon'ble Prime Minister of India,
South Block, Raisina Hill,
New Delhi - 110001.

Sub : Dying condition of the rivers Mathabhanga, Ichhamati and Churni.

Ref : The letter from the Deputy Director, Govt. of India, Vide Memo
No. J-27037/1/2014-NRCD-II dated 27th October, 2014

Sir,

With reference to the above I beg most respectfully to the fact once again regarding this pollution of Mathabhanga, Ichhamati and Churni rivers. Mathabhanga is a river which has started its journey from the river 'Padma' in Bangladesh and crossing the Kusthia district of Bangladesh it has entered into India near the village 'Gede', a 'Simanta Gram' of West Bengal, India, after just passing the 'Darshana Sugar Mill' of Bangladesh. The entire untreated effluents of the Sugar Mill are being discharged into the river Mathabhanga at regular intervals for years after years. As a result Mathabhanga along with its two linked rivers Ichhamati and Churni get severely polluted and as Churni is linked with the holy river 'Bhagirathi' (the Ganges) is also gets affected. The rate of pollution is beyond description. It's a matter of great regret, that the people of Bangladesh do not suffer from this problem, but the inhabitants of India residing on both the long shore of these rivers do not get rid of this problem. As this tremendous pollution is being created by the wastes of Darshana Sugar Mill of Bangladesh, this problem can be solved only by a symapthetic consultation among the highest level of the two countries treating the matter on the ground of international understanding.

It is learnt from office Memorandum Ref. No. 1/ii/112/02/2017, Ministry of External Affairs (B.M.) Division, Room No. 68B, South Block, New Delhi, Dated 07/06/2017 that Govt. of West Bengal has examined the pollution level of the river Churni and found it to be highly polluted and pollution data has been submitted to the Ministry of Water Resources, Bangladesh to take necessary action. But no step has yet been taken.

Under the circumstances, on behalf of the victims of this large area I fervently request you to make necessary arrangements for solving this problem and oblige.

Thanking you.

Yours faithfully,
Sudhir Kumar Roy
(SUDHIR KUMAR ROY)

Vill + P.O. + P.S. Krishnaganj,
Dist. Nadia, Pin - 741506, West Bengal

Dated : Krishnaganj, Nadia,
the 17th day of November 2018
January - 2019

Enclo :-

1. Copy of the letter sent to the Prime Minister dated 14.05.2015 10.06.2014.
2. Copy of the letter of Ministry of Environment, Forest & Climate Change, National River Conservation Directorate vide Memo No. J-27037/1/2014-NRCD-II dated 27th October, 2014.
3. Copy of the letter of Minister of External Affairs (B.M. Division) vide No. 1/ii/112/02/2017.

Copy forwarded to :-

1. The Hon'ble Chief Minister of West Bengal, Nabanna, Mandirtala, Howrah.
2. The Ministry of Environment, Forest & Climate Change, National River Conservation Directorate

To
The Hon'ble Prime Minister of India,
South Block, Raisina Hill,
New Delhi - 110 001.

Sub : Dying condition of the rivers Mathabhanga, Icchamati and Churni.

Hon'ble Sir,

We the people of Krishnaganj Block living on the shore and its neighbourhood regret to present the decaying state of the rivers Mathabhanga, Icchamati and Churni. These three vital streams are now wallowing along the beach with the scourge of pollutants like wastes of various kinds viz. offals grime, carcass refuse etc. Darshana Sugar-mill becomes a great menace to cause large scale pollution by discharging chemical wastes at regular intervals. Cultivators, traders, fishermen and bathers are greatly affected by it. Aquatic plants and animals are going to be totally obsolete. The swift current of the rivers are choked due to heavy surge of pollutants, accumulation of silt sedge and weeds of various kinds. The transparency of rivers is lost and it does not reflect the images of nice trouts and shrimps except pernicious worms and virus of water borne diseases. The one-time river shores as well as its fertile wombs become barren and unproductive. Having its connection with the Ganges, the purity of this holy river is also at stake. Living on the confluence of Mathabhanga, Icchamati and Churni we are shocked to mark their miserable plight. These rivers prove themselves to be repellent to disperse the shore-dwellers from their vicinity. These three rivers need immediate dredging as they are going to be choked with sediments and pollutants.

It is for your kind information that the matter has been brought to the notice of the concerned department with a plea for its remedial measure but it does not yield any result.

So, we fervently pray to you to look into the matter and take necessary step to restore them to their past glorious and prosperous state.

Dated 10.6.14
Krishnaganj,
Nadia.

Thanking you,

Yours faithfully,

Sudhir Kumar Roy
(ADHIR KUMAR ROY)

P.O.+Vill - Krishnaganj, Nadia, W.B.

Copy forwarded to :-

1. Hon'ble Chief Minister, Govt. of West Bengal,
Nabanna, Mandirtala, Howrah
2. Uma Bharati, Hon'ble Minister of Water Resource and River Development,
Govt. of India, Shram Sakti Bhaban, Rafi Marg, New Delhi-110001.



केन्द्रीय प्रदूषण नियंत्रण बोर्ड

(पर्यावरण वन, एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार)

CENTRAL POLLUTION CONTROL BOARD

(Ministry of Environment, Forests & Climate Change, Government of India)

Eastern Regional Directorate

502, Southend Conclave, 1582, Rajdanga Main Road, Kolkata - 700 107

No. EZO/F-463/NGRBA/2015

To,

The Member Secretary
Central Pollution Control Board
Parivesh Bhawan, East Arjun Nagar
New Delhi - 110032

Sir,

As desired the Inspection and Monitoring of River Churni was carried out between 7th -8th February, 2019. Report is enclosed for your kind perusal and necessary action please.

With regards

Encl: As above

Yours faithfully

(R.C. Saxena)
Regional Director
ERD, Kolkata

Rita Sah

CENTRAL POLLUTION CONTROL BOARD
Regional Directorate, Kolkata
Monitoring of Churni River

Sl. No.	Details	Status
1	Nature	Churni River Monitoring.
2	Reference	As per the directions of competent authority a reconnaissance survey of river Churni at Nadia district of West Bengal has to be carried out to assess the causes of pollution.
3	Date of Monitoring	7 th & 8 th February 2019
4	Monitoring Team from ERD, Kolkata	Mr. Asish Kr. Naskar, Scientist 'C' Mr. V Kiran Kumar, RA-III (NGRBA)
5	Detail of Monitoring	

As per the directions of competent authority a reconnaissance survey of river Churni at Nadia district of West Bengal has been carried out on 7th and 8th of February, 2019 to assess the causes of pollution.

Course of River Churni:

Churni River is an offshoot of Ganga-Padma, which flows southwest to join Hooghly River at Sibpur ghat under Anulia gram panchayat. The Churni River flows from Indo-Bangladesh Border at Bijoypur to Govindpur → Majdia → Ranaghat → Shibpur Ghat i.e. before confluence at River Hooghly. The catchment area of Churni River are Hanskali, Birnagar, Aranghata and Ranghat. Its length almost 56 kilometres from Indo-Bangladesh Border to confluence point at river Hooghly.

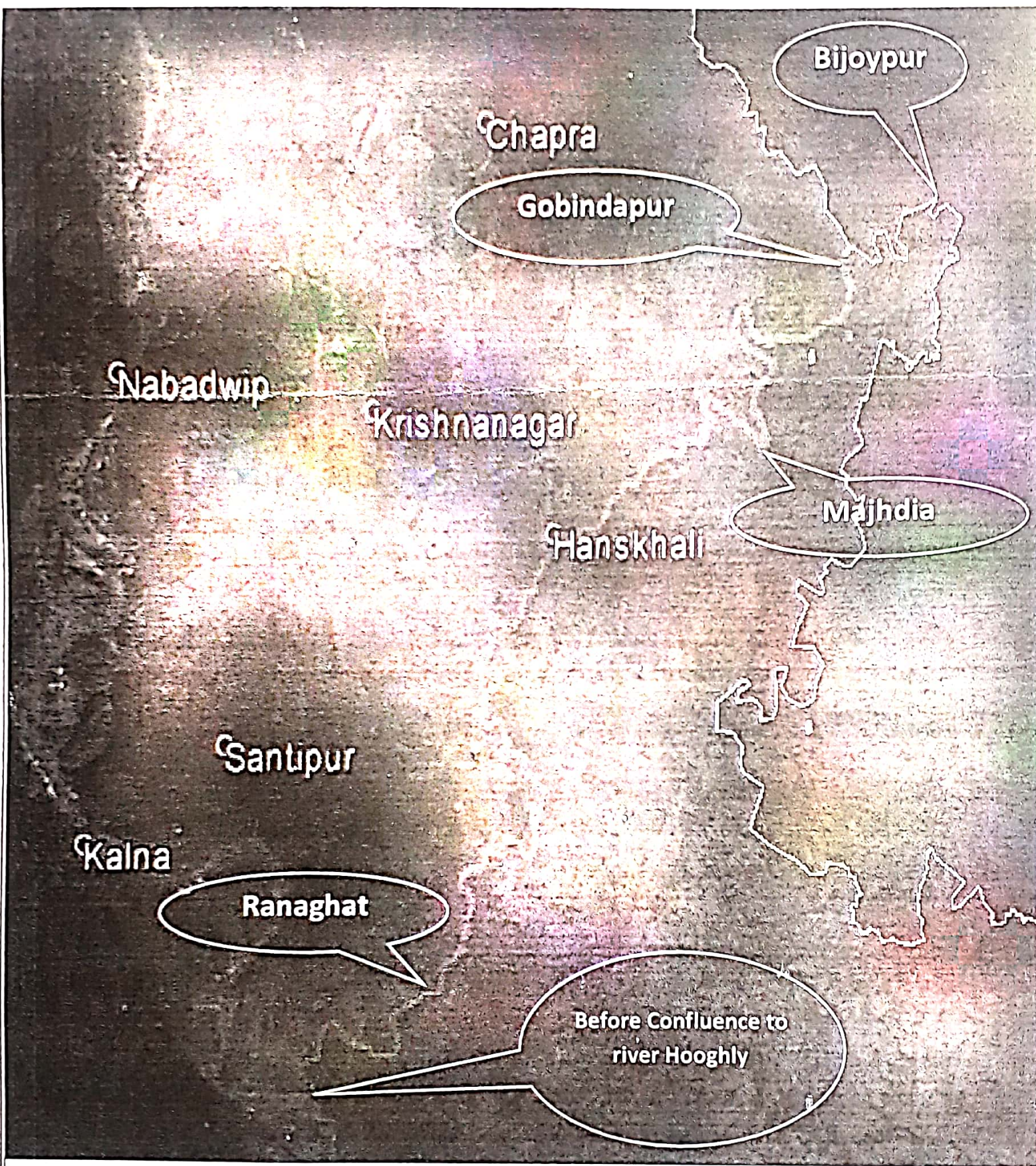
Demography throughout the Churni River Course:

As per Census by Govt. of India 2011 of the regions where the sampling points are located as follows:

Sl. No.	Area Name	Block	Under Local Bodies	Population(approx)
1	Bijoy Pur	Krishnaganj	Gram Panchayat	1093
2	Govind Pur	Krishnaganj	Gram Panchayat	2111
3	Majdia	Ranaghat - I	Gram Panchayat	2720
4	Ranaghat Town	Ranaghat	Municipality	75365
5	Shibpur Ghat	Ranaghat - I	Anulia Gram Panchayat	256

The Ranaghat is an Urban agglomeration coming under category of Class – I UAs/Towns and having highest population from other Town/Village areas. The average Literacy is 85.79%. This is the only area which has drainage system and drains in to the Churni River. Team surveyed both the banks of river Churni to identify domestic and industrial waste water discharge into river Churni. Except Ranaghat other catchments of river Churni gets surface runoff only during monsoon Season and other seasons the surface runoff accumulates in the nearby low lying area like Ponds/Ditches/ Canal etc.

At Ranaghat Municipality, team identified seven drains, among them four are major, which carry domestic waste water generated from different wards of Ranaghat Municipality. The details are given below:



Course of river Mat...

Inventorisation of Drains:

Sl. No.	Name of the Drain	Type	Perennial/Non perennial	Coordinates
1	Drain in front of Palchowdhary School, Ranaghat	Minor	Perennial	N 23 ^o 10 37.749 E 88 ^o 33 42.6798
2	Bhanga Ghat Drain at Ranaghat	Major	Perennial	N 23 ^o 11 06.03 E 88 ^o 33 52.47
3	Drain at samshan para Swargodwar road, Ranaghat	Minor	Perennial	N 23.1776840 E 88.5581175
4	Samshan ghat road, Ranaghat	Minor	Perennial	N 23.1777040 E 88.5581063
5	Drain at Churipara Ghat, Ranaghat	Major	Perennial	N 23 ^o 10 42.0654 E 88 ^o 33 33.72408
6	Bara Bazar ferry ghat drain, Ranaghat	Major	Perennial	N 23 ^o 11 3.90048 E 88 ^o 34 5.78028
7	Drain at Sadakpara (at Border of Ranaghat Municipality and Ejuli Gram Panchayat.)	Major	Perennial	N 23 ^o 10 25.79124 E 88 ^o 33 34.87284

Sampling locations:

Water samples were collected to assess the water quality of Churni River at four locations which are as follows:

Sl. No.	Location	Coordinates	Description of Location
1	BijoyPur	N 23.48178 E 88.76098	Indo-Bangladesh Border. Both the river Bank comes under Bangladesh and in the Left Bank Near about 200 mtrs. after the Indian land area starts and in this point there is no discharge from India throughout the Year except surface runoff if any and that also during rainy season. The Water quality of the collected sample from this point may be considered as the contribution of Bangladesh entirely.
2	GobindaPur	N 23.4837657 E 88.7332119	This is the Second point of sampling location situated in the downstream of Bijoypur and the distance is 2 to 2.5 Km. and up to this point the Left Bank of the river is under India and Right Bank is under Bangladesh. The area is dominated by cultivation only and the river gets only surface runoff in rainy season. No Drain or any Drainage system observed.
3	Ranaghat	N 23 ^o 10'47.56'' E 88 ^o 33'41.46''	This is the Third point of sampling location situated in the downstream of Gobinda pur and the distance is 38 to 42 Km. approx. From Gobinda pur to Ranaghat the river flows from the Indian territory only and from here the major source of Churni river water pollution is the sewage generated from the Ranaghat Urban agglomeration under Ranaghat Municipality.
4	Sibpur ghat	N23 ^o 08'08.12'' E88 ^o 30'08.76''	This is the Fourth or last point of sampling location situated in the downstream of Ranaghat and the distance is 10 to 12 Km. approx. In this river stretch some portion comes under Ranaghat Municipality and rest of the portion under Ranaghat Gram Panchayat. River received the untreated Sewage only.

Analysis Report

The present status of Churni river water quality stated in the table below:

Parameters	BijoyPur	GobindaPur	Ranaghat	Sibpur Ghat
pH	7.4	7.4	7.8	8.1
Conductivity ($\mu\text{s/cm}$)	658	664	710	613
TSS (mg/l)	8	14	12	26
TDS (mg/l)	406	390	398	312
DO (mg/l)	1.1	1.1	0.5	7.4
BOD (mg/l)	19	12	4	3
COD (mg/l)	60	44	21	15
Alkalinity (mg/l)	350	346	362	314
Chloride (mg/l)	17	18	16	20
T Hardness (mg/l)	320	317	337	285
$\text{NO}_2^{-\text{N}}$ (mg/l)	0.001	0.001	0.002	0.011
$\text{NO}_3^{-\text{N}}$ (mg/l)	0.03	0.02	0.26	0.09
$\text{NH}_3^{-\text{N}}$ (mg/l)	0.06	0.04	0.41	0.18
$\text{PO}_4^{-\text{P}}$ (mg/l)	0.5	0.11	0.19	0.25
SO_4 (mg/l)	BDL	3.0	8.0	11.0
Sodium (mg/l)	14.56	13.28	17.36	16.72
Potassium (mg/l)	6.48	5.76	6.28	4.96
Fe (mg/l)	2.33	1.74	5.1	1.39
Zn (mg/l)	0.09	0.09	0.2	0.16
Mn (mg/l)	0.24	0.19	0.5	0.23
Co (mg/l)	0.001	0.001	0.001	0.001
As (mg/l)	BDL	BDL	BDL	BDL
Pb (mg/l)	0.011	0.027	0.009	0.020
Ni (mg/l)	0.011	0.007	0.004	0.026
Hg (mg/l)	BDL	BDL	BDL	BDL
TC (MPN/100ml)	280000	350000	920000	6800
FC (MPN/100ml)	14000	22000	35000	200

BDL= Below detection limit.

6	Reasons for degradation of River water Quality	<ul style="list-style-type: none"> The above analytical report of Churni river water indicates that very low DO (Dissolved Oxygen), high BOD (Biochemical Oxygen Demand) and high Bacterial count (TC & FC) is prevailing in the entire stretch of the river. The Churni river at Bijoypur, the international border and entry point of India shows DO 1.1 mg/l very low from criteria value, BOD 19 mg/l very high from criteria value and comes under priority Class III. Bacterial density in this point is TC 280000 MPN/100 ml and FC 14000 MPN/100 ml which are also very high from the river water criteria value of CPCB. From the entry point itself the river is entering India with very high BOD load with severely contaminated by bacterial
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		<p>population and can be interpreted that there is definite discharge of untreated Sewage, open defecation, cattle bathing & other activities which are the regular features. Beside this the Jute rating may be one of the major sources of river water pollution in Bangladesh part during Jute harvesting and processing season.</p> <ul style="list-style-type: none"> • The Mathabhanga-Churni river when enters in India at Bijoypur where there is no discharge from India throughout the Year except surface runoff during rainy season, as per Test report it is evident that the river water is entering in to Indian part with high pollution load. Certainly it is happening due to discharge of untreated Sewage, garbage and liquid waste of household and Industrial waste contains organic and inorganic pollutants which are degrading the Churni river water quality at Bangladesh part. • The river water quality further degrading and degree of Bacteriological pollution (TC & FC) increased in the downstream of Bangladesh Border i.e. after Bijoypur to downstream of Ranaghat Municipality, near about 34 Km stretch mainly due to discharge of untreated domestic waste water but BOD load is decreased, the reason may be for the dilution by household waste water. • It is also observed that Solid Waste including Plastic etc. dumped in the river bank at Ranaghat municipal area. Photographs annexed. • Beside this there are point source of dyeing and bleaching/handloom cottage units which are also discharging there waste water in to the river through different drains but information gathered from the local people that numbers of such units closed their establishment due to present market constraint. However matter may be verified from WBSPCB.
7	Proposed action	<ol style="list-style-type: none"> 1. One RTWQM may be installed at Gobindapur Point with Camera to take the photograph of the Churni river water colour along with Data. As when the discharge taken place from the industries situated at Dharsana, Bangladesh then the colour of the river water changes to Black or Straw Yellow and this may be used as objective evidence to convince the claim of pollution taken place at Bangladesh. Accordingly information may be forwarded to the Bangladesh Authority. 2. In India action to be initiated to stop the discharge of untreated waste water from Domestic and Industrial sources to River Churni. All the drains to be diverted to the suitable place for proper treatment before discharging into the river Churni. 3. It may be recommended for feasibility study for diversion of all drains present in both sides of the river bank and development of treatment facility by expertise from reputed Govt. agencies for the purpose.

Place: Kolkata

Date : 27/2/19

(Asish Kumar Naskar, Sc (C'))

Signature

V. Kiran Kumar, R.A-III

Signature

Page | 5



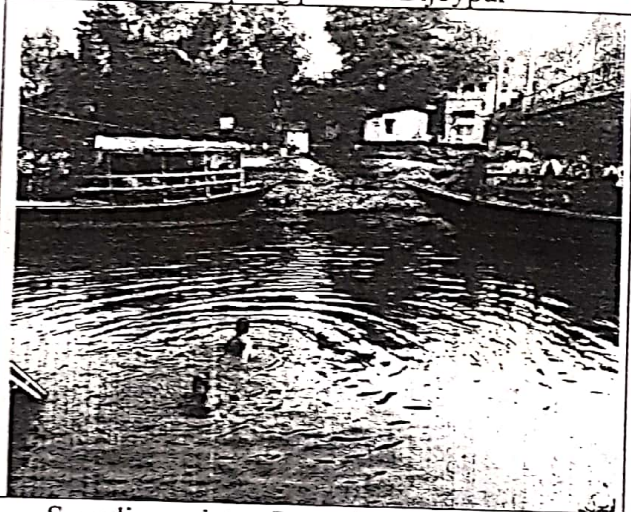
Indo-Bangladesh Border at Bijoypur



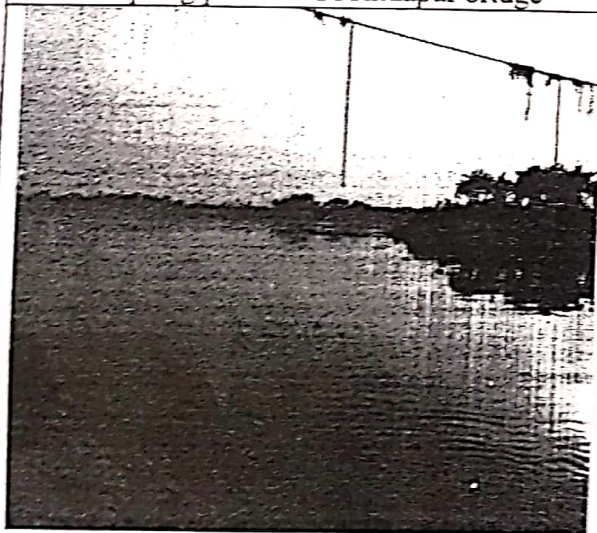
Sampling point at Bijoypur



Sampling point at Gobindapur bridge



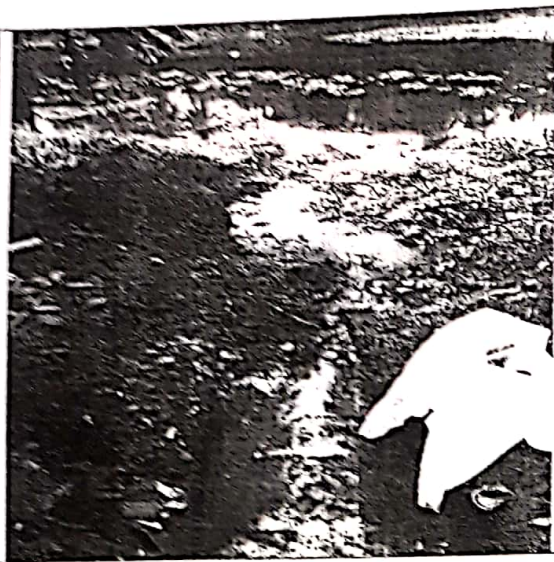
Sampling point at Ranaghat



Sampling point at before confluence point



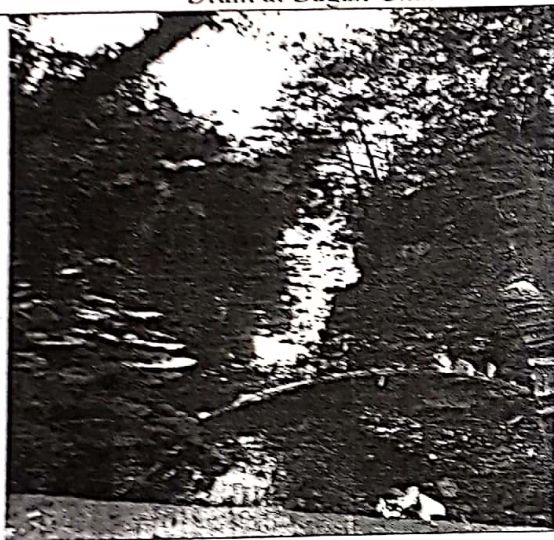
Drain at Paulchowdhary School, Ranaghat



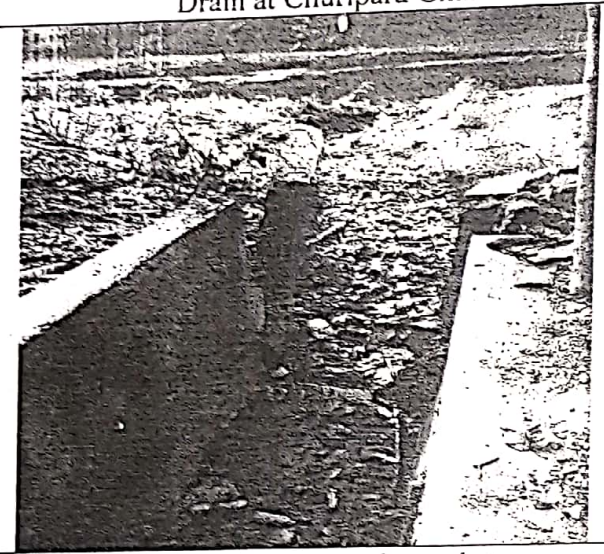
Drain at Bagan Ghat



Drain at Churipara Ghat



Drain at sadaak para



Drain at Barabazar ferry ghat



Drain at Samshan Ghat



Drain at samshan para road



केन्द्रीय प्रदूषण नियंत्रण बोर्ड

(पर्यावरण, एवं वन मंत्रालय, भारत सरकार)

CENTRAL POLLUTION CONTROL BOARD

(Ministry of Environment & Forests, Government of India)

Eastern Zonal Office

502, Southend Conclave, 1582, Rajdanga Main Road, Kolkata 700 107

No. EZO/F-463/NGRBA/2015/

Date: 16/07/2018

To

The Member Secretary
Central Pollution Control Board
Parivesh Bhawan, East Arjun nagar
New Delhi-110032

Subject: Matter raised under rule 377 in the Lok Sabha by Tapas Paul, Hon'ble M.P on Need to check the discharge of polluted water into the Jalangi River in West Bengal from Bangladesh side

Kind Attention: Sh. R.M. Bhardwaj, Sc-'E' & I/c WQM -I Division

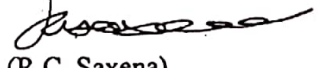
Sir,

With reference to the letter No. A-14011//1/2018-MON/ 6778 dated 04.07.2018, the CPCB ERD Kolkata team has carried out inspection of the said site during 10.07.2018 to 11.07.2018. The report is attached for your kind perusal and necessary action please.

Kind Regards,

Encl: As above.

Yours faithfully


(R.C. Saxena)
Regional Director



Subject: Matter raised under rule 377 in the Lok Sabha by Tapas Paul, Hon'ble M.P on Need to check the discharge of polluted water into the Jalangi River in West Bengal from Bangladesh side.

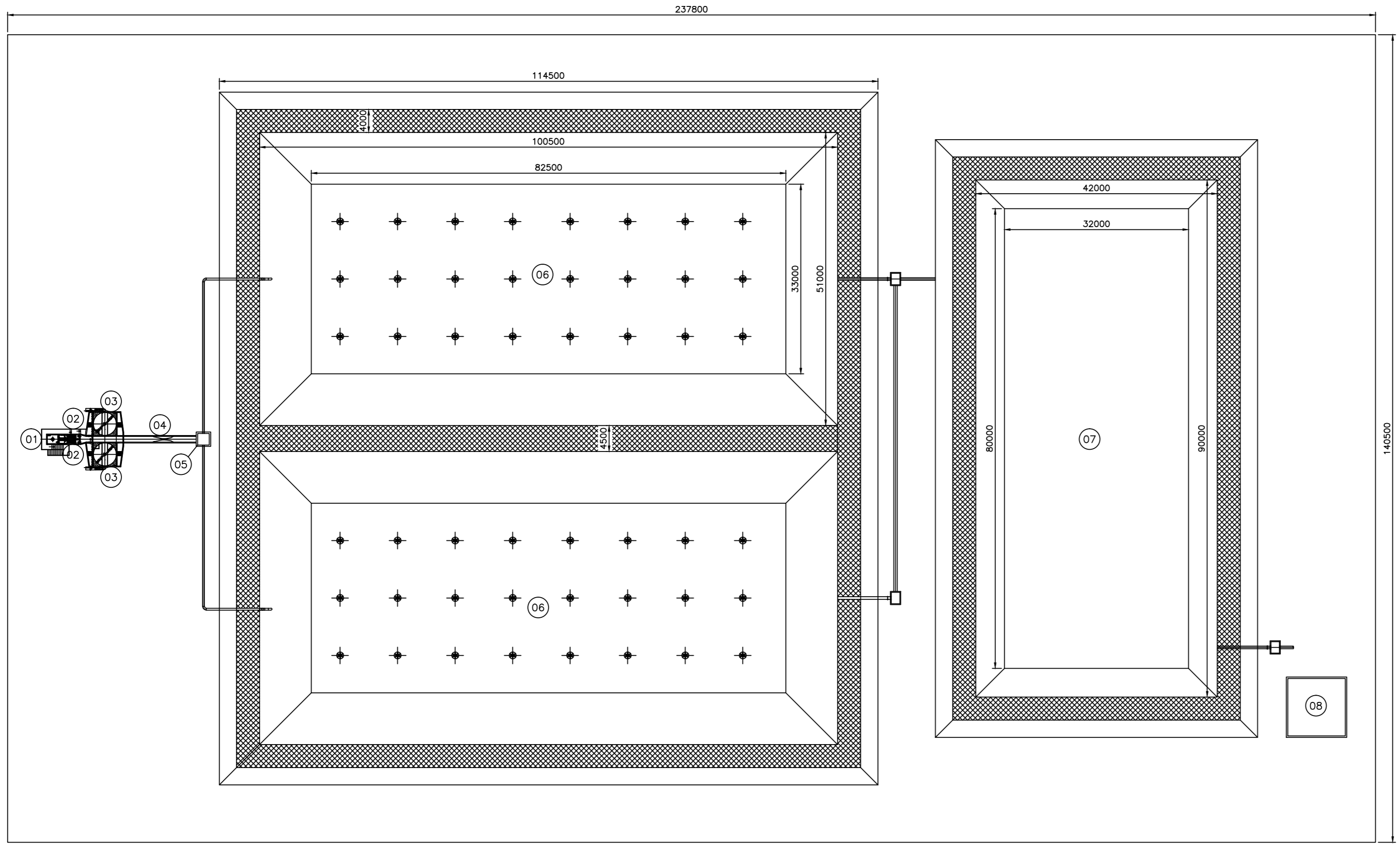
Date of Inspection: 10th and 11th of July 2018

Question	Answer
<p>Need to check the discharge of polluted water into the Jalangi River in West Bengal from Bangladesh side.</p>	<p>Jalangi is a cross-channel, earlier having its feeder connection with the Ganga near Jalangi town in the Murshidabad District adjacent of Indo-Bangladesh boarder and discharges into the Bhagirathi at Mayapur in Nadia District. But presently the river is disconnected from its feeder, the Ganga, and does not receive any upstream flow. A distributary of the Ganga, river Bhairav, having its source at Akharrigunj, discharges into Jalangi. This river also remains disconnected from the ganga excepting during high flood. So, the question of regular release of polluted water from Bangladesh through Jalangi does not arise nor any discharge observed as there was no flow of water.</p>
<p>Action to be taken on the captioned subject</p>	<p>Pollutant discharged from Bangladesh side is actually the other Cross-sectional river system i.e. Mathabhanga-Churni, originating from the Padma in Bangladesh entering India at GADE border and draining into the Ganga at Payrdanga in Nadia district carries huge quantity of highly polluting untreated industrial wastewater from the Bangladesh putatively from sugar mill(s) in Darshana.</p> <p>This issue has been reported by different stakeholders, West Bengal Pollution Control Board and the case is also dealt by NGT Eastern Bench.</p> <p>Also the matter of Churni river investigated and the Joint monitoring undertaken by CPCB & WBPCB and the matter is dealt by the External Affairs at present.</p>

Rita Laha

NO.	REFERENCE DRAWING	DRAWING NO.	REV.
1	PROCESS DESIGN CALCULATION & EQ. SIZING	--	0

NOTES:--
 1. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL LEVELS ARE IN METRES ONLY, UNLESS OTHERWISE NOTED.



PLANT LAYOUT
 SCALE 1:500

FOR DPR

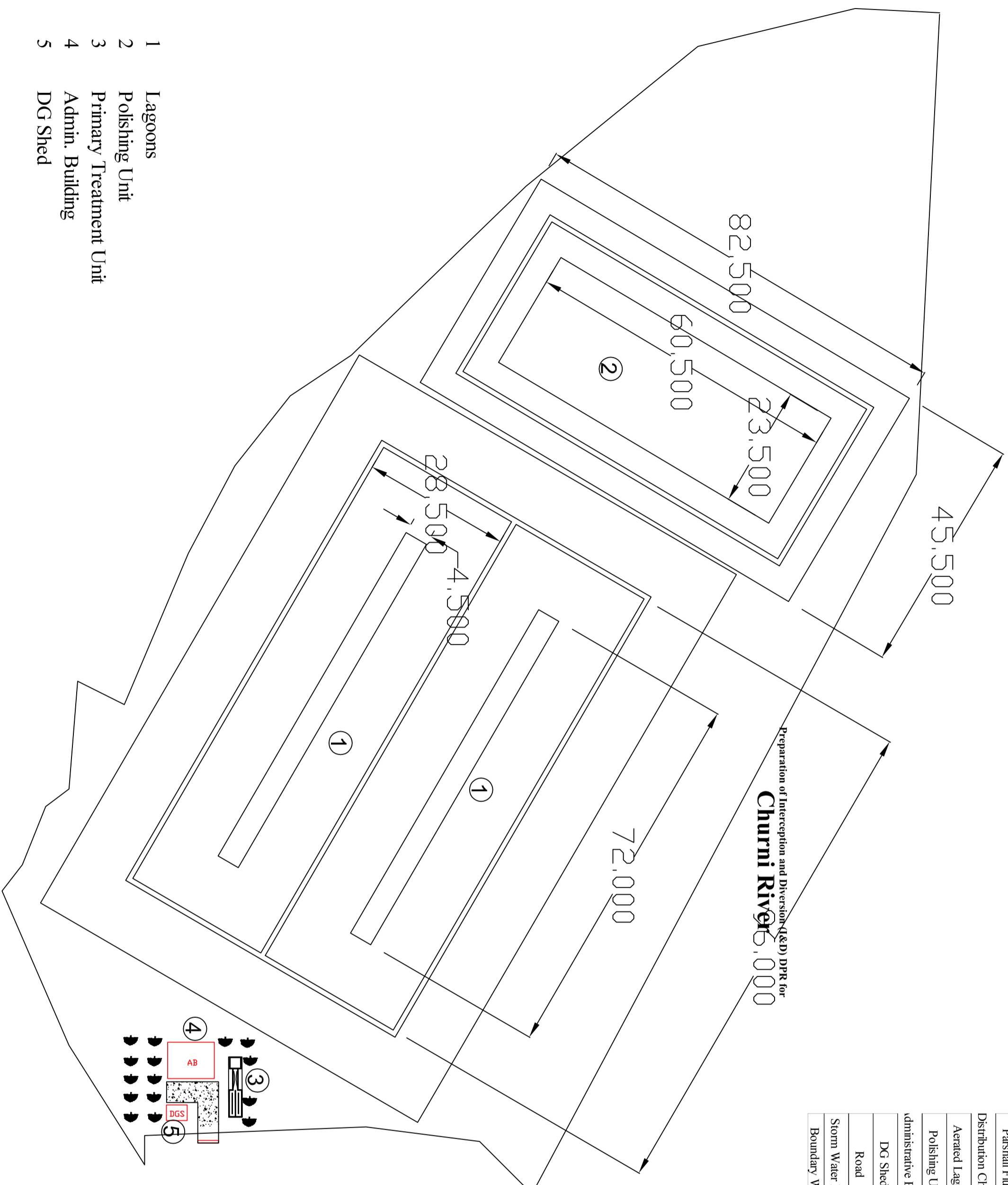
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REV. NO.	DATE	REVISION	DRAWN	CHK.	APPD.

CLIENT : --
 --
 PROJECT CONSULTANT :
 --
 PROJECT CONTRACTOR :
 --
 PROJECT : --
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CIVIL LIST			
SR. NO.	UNIT	SIZE	QTY
1	INLET CHAMBER	2 m L x 1.5 m x 2 m LD +0.5m FB	1
2	SCREEN CHAMBER	3.6 m L x 0.6 m W x 0.6 m LD +0.5m FB	1
3	GRIT CHAMBER	4 m L x 4 m W x 1 m LD +0.5m FB	1
4	PARSHALL FLUME	2.8 m Total Length x 0.25 m Throat Width	1
5	DISTRIBUTION CHAMBER	2 m L x 2 m W x 1.5 m LD +0.5m FB	1
6	FACULTATIVE LAGOON	100.5 m L x 51 m W x 4 m LD & 0.5 mfb	2
7	POLISHING LAGOON	90 m L x 42 m W x 2 m LD & 0.5 mfb	1
8	CHLORINATION ROOM	10 m X 10 m	1

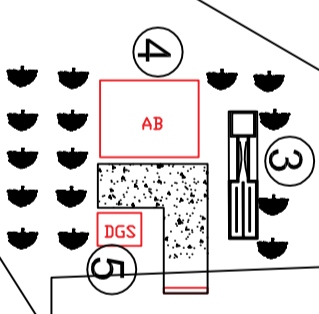
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	DRAWN	PVS
	CHECKED	PDP
	APPROVED	NDP
	DATE	28/05/18
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SHEET NO. 1 of 1		A2

Plant Layout of 5.2 MLD Aerated Lagoon, Brickfield



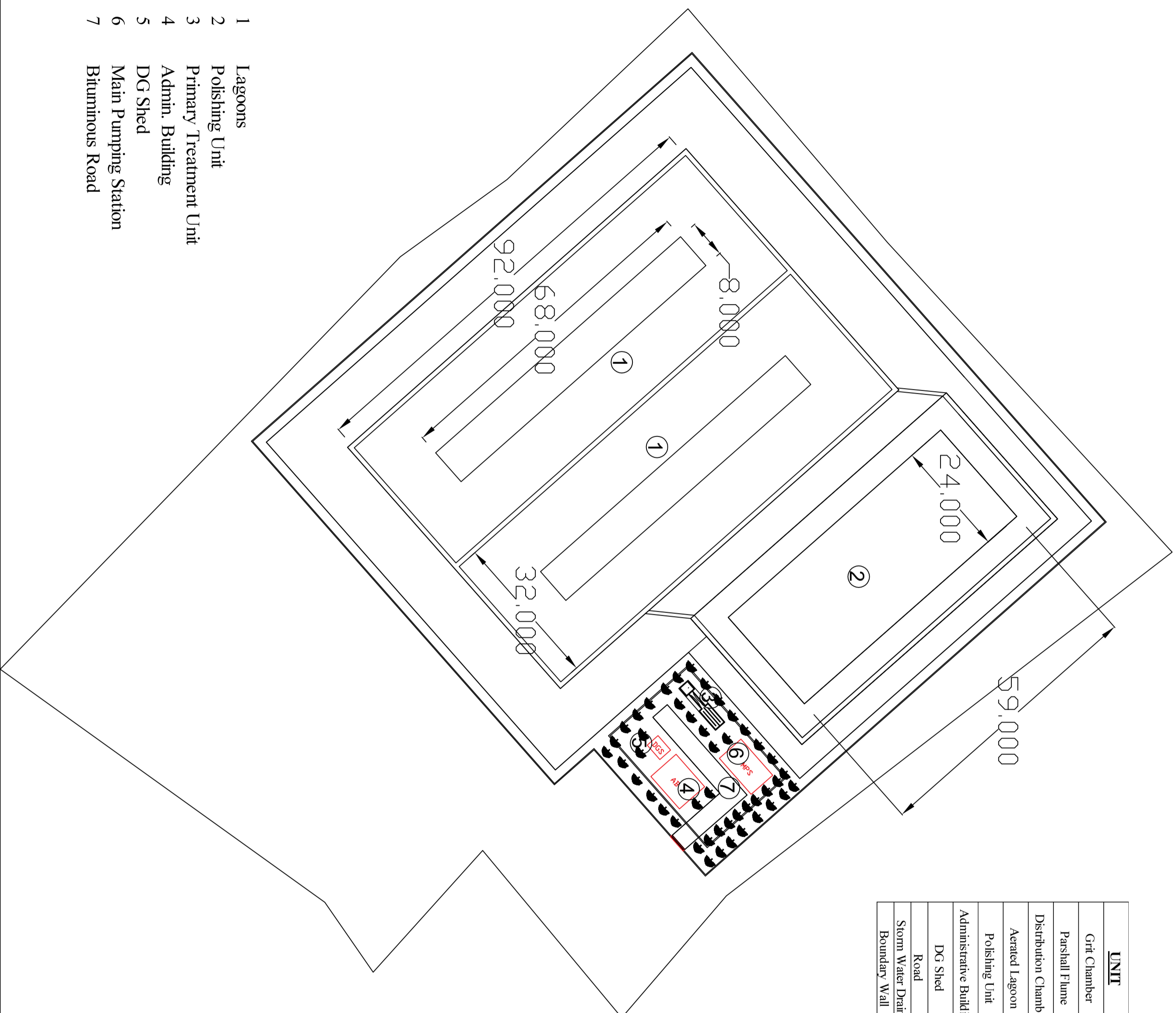
- 1 Lagoons
- 2 Polishing Unit
- 3 Primary Treatment Unit
- 4 Admin. Building
- 5 DG Shed

UNIT	Nos	Dimension
Grit Chamber	1	5m Length with 4 Nos of Channels of 0.5m Width + 1.5m Depth
Parshall Flume	1	2.8 m Total Length x 0.25 m Throat Width
Distribution Chamber	1	2m Length x 2m Width x 1.5m Liquid Depth + 0.5m Free Board
Aerated Lagoon	2	25m Width x 100m Length x 5m Liquid Depth + 0.5m Free Board + 0.5m Sludge Zone
Polishing Unit	1	30m Width x 60m Length x 3.5m Liquid Depth + 0.5m Free Board
Administrative Building	1	8m Length x 6m Width x 4m Height
DG Shed	1	3m Length x 2m Width x 2.5 Height
Road		4m Wide 20m Long Bituminous Road
Storm Water Drain		0.25m Width x 100m Long x 0.2m Depth
Boundary Wall		2m High 457m Long



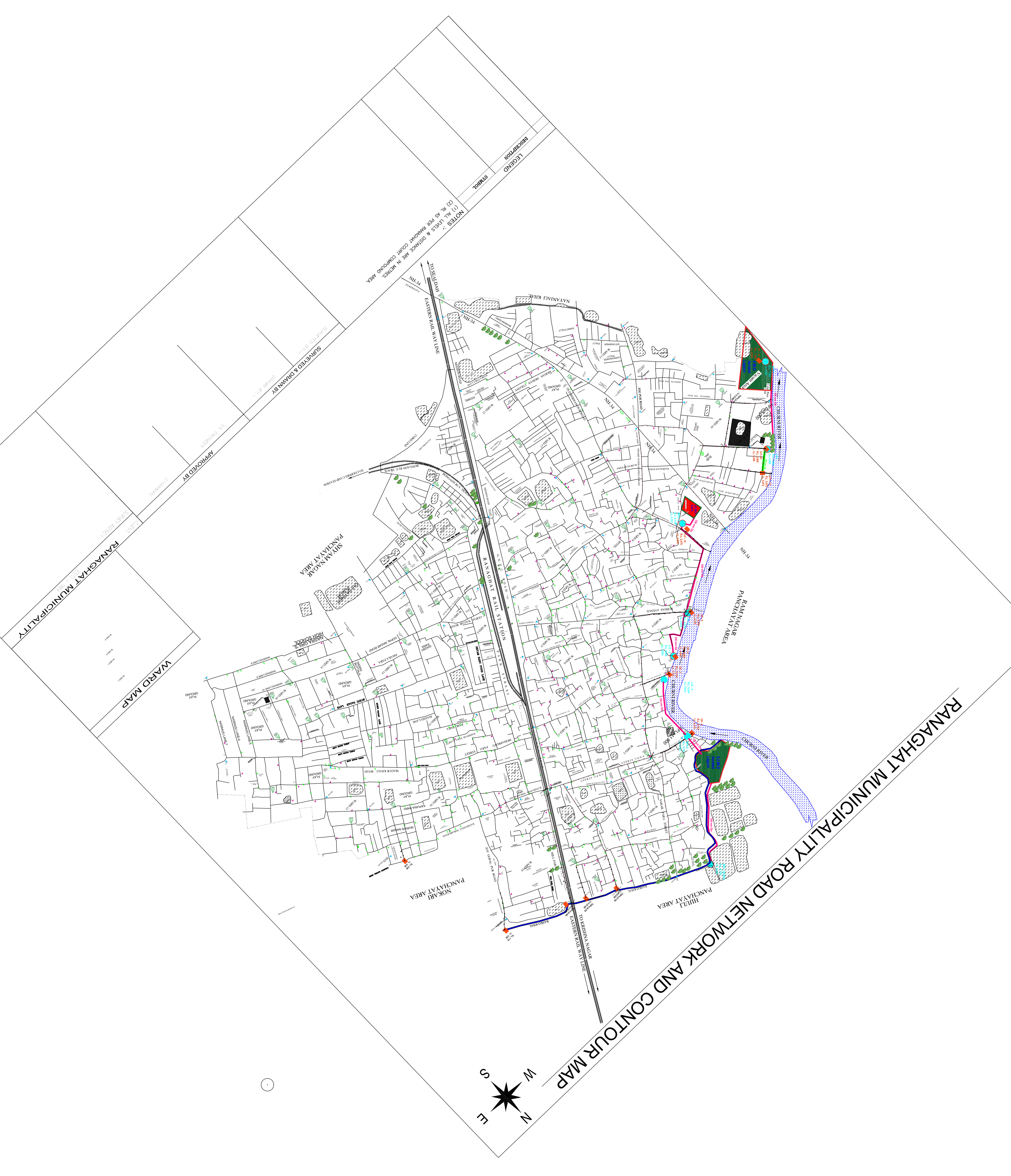
<p>REVISION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>REV NO</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> <p>PROJECT NO. EES/2018-19/18/D/08</p> <p>PROJECT Preparation of Interception and Diversion (I&D) DPR for Churni River</p> <p>CLIENT Municipal Engineering Directorate (MED)</p> <p>CONSULTANT Environmental Engineering Services Honey Tank Lane, Kovvada, Guntur District, G.P. Block, Chirala, Andhra Pradesh, India. Pin Code: 522409, 522409 Tel: +91-9830806733 Email: project@eesindia.net Website: www.eesindia.net</p> <p>SUB Churni River I&D D.P.R.</p> <p>TITLE Plan Layout of Aerated Lagoon, 5.2 MLD</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DATE</td> <td>DRAWN</td> <td>CHECKED</td> <td>APPROVED</td> <td>SCALE</td> </tr> <tr> <td>12.12.2017</td> <td>KM</td> <td>SC</td> <td>PM</td> <td> </td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DPR</td> <td>TENDER</td> <td>EXECUTION</td> </tr> <tr> <td>DATE : <input type="checkbox"/></td> <td>DATE : <input type="checkbox"/></td> <td>DATE : <input type="checkbox"/></td> </tr> </table> <p>DWG NO: EES/I&D/MSDW/02</p> <p style="text-align: right;">REV/0</p>	DATE	REV NO	DESCRIPTION																															DATE	DRAWN	CHECKED	APPROVED	SCALE	12.12.2017	KM	SC	PM		DPR	TENDER	EXECUTION	DATE : <input type="checkbox"/>	DATE : <input type="checkbox"/>	DATE : <input type="checkbox"/>	<p>PROJECT NO. EES/2018-19/18/D/08</p> <p>PROJECT Preparation of Interception and Diversion (I&D) DPR for Churni River</p> <p>CLIENT Municipal Engineering Directorate (MED)</p> <p>CONSULTANT Environmental Engineering Services Honey Tank Lane, Kovvada, Guntur District, G.P. Block, Chirala, Andhra Pradesh, India. Pin Code: 522409, 522409 Tel: +91-9830806733 Email: project@eesindia.net Website: www.eesindia.net</p> <p>SUB Churni River I&D D.P.R.</p> <p>TITLE Plan Layout of Aerated Lagoon, 5.2 MLD</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DATE</td> <td>DRAWN</td> <td>CHECKED</td> <td>APPROVED</td> <td>SCALE</td> </tr> <tr> <td>12.12.2017</td> <td>KM</td> <td>SC</td> <td>PM</td> <td> </td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DPR</td> <td>TENDER</td> <td>EXECUTION</td> </tr> <tr> <td>DATE : <input type="checkbox"/></td> <td>DATE : <input type="checkbox"/></td> <td>DATE : <input type="checkbox"/></td> </tr> </table> <p>DWG NO: EES/I&D/MSDW/02</p> <p style="text-align: right;">REV/0</p>	DATE	DRAWN	CHECKED	APPROVED	SCALE	12.12.2017	KM	SC	PM		DPR	TENDER	EXECUTION	DATE : <input type="checkbox"/>	DATE : <input type="checkbox"/>	DATE : <input type="checkbox"/>
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Plant Layout of 4.0 MLD Aerated Lagoon, Sreerathpur



UNIT	Nos	Dimension
Grit Chamber	1	4m Length with 4 Nos of Channels of 0.5m Width + 1.5m Depth
Parshall Flume	1	2.8 m Total Length x 0.25 m Throat Width
Distribution Chamber	1	2m Length x 2m Width x 1.5m Liquid Depth + 0.5m Free Board
Aerated Lagoon	2	20m Width x 80m Length x 5m Liquid Depth + 0.5m Free Board + 0.5m Sludge Zone
Polishing Unit	1	35m Width x 70m Length x 2m Liquid Depth + 0.5m Free Board
Administrative Building	1	8m Length x 6m Width x 4m Height
DG Shed	1	3m Length x 2m Width x 2.5 Height
Road		4m Wide 30m Long Bituminous Road
Storm Water Drain		0.3m Width x 111m Long x 0.2m Depth
Boundary Wall		2m High 464m Long

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">DATE</td> <td style="width: 50%;">DESCRIPTION</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table> <p>PROJECT NO. EES/2018-19/18/D/08</p> <p>PROJECT Preparation of Interception and Diversion (I&D) DPR for Churni River</p> <p>CLIENT Municipal Engineering Directorate (MED)</p> <p>CONSULTANT Environmental Engineering Services Infinity Think Tank, Govardh, Gopalpur, Orissa, India. Tel: +91-9830868733 Email: project@eesindia.net Website: www.eesindia.net </p> <p>SUB Churni River I&D D.P.R.</p> <p style="text-align: center;">Plan Layout of Aerated Lagoon, 4.0 MLD</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">DRAWN</td> <td style="width: 25%;">CHECKED</td> <td style="width: 25%;">APPROVED</td> <td style="width: 25%;">SCALE</td> </tr> <tr> <td style="text-align: center;">KM</td> <td style="text-align: center;">SC</td> <td style="text-align: center;">PM</td> <td> </td> </tr> <tr> <td>12.12.2017</td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>TENDER</td> <td>EXECUTION</td> <td> </td> <td> </td> </tr> <tr> <td>DATE :</td> <td>DATE :</td> <td> </td> <td> </td> </tr> </table> <p>DWG NO: EES/I&D/MSDV/02</p>	DATE	DESCRIPTION									DRAWN	CHECKED	APPROVED	SCALE	KM	SC	PM		12.12.2017				TENDER	EXECUTION			DATE :	DATE :			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">REV NO</td> <td style="width: 50%;">DATE</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table> <p>REV/0</p>	REV NO	DATE								
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WARD MAP

RANAGHAT MUNICIPALITY

WARD NO. 01

WARD NO. 02

WARD NO. 03

WARD NO. 04

WARD NO. 05

WARD NO. 06

WARD NO. 07

WARD NO. 08

WARD NO. 09

WARD NO. 10

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WARD NO. 47

WARD NO. 48

WARD NO. 49

WARD NO. 50

LEGEND

STANDARD

RECOMMENDATION

NOTES :-

1. ALL LINES & DESIGNATIONS ARE IN METRIC.

2. ALL LINES & DESIGNATIONS ARE IN METRIC.

3. ALL LINES & DESIGNATIONS ARE IN METRIC.



RANAGHAT MUNICIPALITY ROAD NETWORK AND CONTOUR MAP

Submission of revised Action Plan in respect of the observations of CPCB task team in their 13th meeting held on 10th July 2020

Sl. No.	Major Conditions of approving the action plan	River Ganga	River Churni
1.	Water quality of the polluted river stretches for Fecal Streptococci (FSC) whereas water quality of all drains to be analyzed for general parameters, heavy metals and Fecal coliform as well as Fecal Streptococci (FSC) and included in the report.	The detail water quality test report for Ganga Basin given in Annexure-VI(a) . (Detail report provided in Annexure-IX)	The test result for FC (farthest SSP) at Ranaghat-I block was 42,13 and 0 per 100 ml. (Detail report provided in Annexure-VI(b)) . (Detail report provided in Annexure-IX)
2.	Water quality of groundwater in the catchment for relevant parameters to be included.	Ranges of chemical parameters for different blocks under the River Ganga. (Detail report provided in Annexure-V)	Ranges of chemical parameters for different blocks under the River Churni. (Detail report provided in Annexure-V) .
3.	Bio-mining of existing dumpsites in the catchment of polluted river stretches need to be elaborated	Detail report on status of solid waste management & Preventing dumping of Municipal solid waste are given in Annexure-IV . (Detail report on Bio-mining provided in Annexure-X)	Detail report on status of solid waste management & Preventing dumping of Municipal solid waste are given in Annexure-IV . (Detail report on Bio-mining provided in Annexure-X)
4.	I & D of sewage from the identified drains to the nearby existing STPs or proposed STPs to be mentioned clearly in the report	<u>Under KMDA:</u> (Detail report provided in Annexure-A1) for 34 drains. <u>Under KMC</u> Reference Table-1 (detailed enclosed in Annexure-I)	<u>Under KMDA:</u> Details of drains contributing to pollution in river churni is mention at Annexure A5 (part-I) .

<p>5.</p>	<p>Watershed management, flood plain protection, ground water recharge, greenery, rainwater harvesting apart from measures for discharge of stored water from U/s of dams to be included as a part of proposal for e-flow maintenance in all the polluted river stretches</p>	<p>In left bank, 0.135 km bank protection work of Rs. 2.61 Crore is under running and 1.045 km bank protection work of Rs. 14.01 Crore will be taken during 2020-21. (Detail report provided at Annexure-II (a))</p> <p>In right bank, 0.900 km bank protection work of Rs. 6.21 Crore will be executed during 2020-21. (Detail report provided at Annexure-II (a))</p> <p>The river is a perennial river. The environmental flow is maintained through the release from the Farakka Barrage throughout the year. (Detail report provided at Annexure-II(b))</p> <p>Micro-irrigation with supplementary water management activities in different Blocks under Hooghly, Nadia, North 24Pargs, Howrah, South 24 Pargs districts.</p> <p>Targeted timeline : 2019-20 to 2021-22</p> <p>(Detail report provided at Annexure VIII(a))</p> <p>Various scheme e.g plantation on river bank, Plantation at Burning ghat, Nursery work from 2019-20 to 2021-22 in stretches of GANGA river taken up by MGNREGS. (Detail report provided at Annexure VII (a))</p> <p><u>KMC:</u></p> <p>Beside Plantation made are 11,922 in 2019 in KMC area, total number of shrubs and hedges planted in different gardens and</p>	<p>0.5 km bank protection work of Rs. 1.56 Crore will be taken up during 2020-21, by which 2000 people in 98 Ha of areas may be benefitted. (Detail report provided at Annexure-II (a))</p> <p>The river is non-perennial. There is no regulating structure exists on this river for regulation of river flow. The environmental flow is naturally maintained from the river flow which is a combination of surface flow and base flow. (Detail report provided at Annexure-II(b))</p> <p>Micro-irrigation with supplementary water management activities in different Blocks under Nadia district.</p> <p>Targeted timeline : 2019-20 to 2021-22</p> <p>(Detail report provided at Annexure VIII(b))</p> <p>GP wise various activities e.g, Plants vetiver grassess on the river bank, Tree plantation in the catchment area, Setting up of bio-diversity park etc along the polluted river stretches. (Detail report provided at Annexure VII (b))</p> <p>Advance (Nursery work) 100% completed. Creation of plantation,0%. Fund not received.</p> <p>(Detail report provided at Annexure III)</p>
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		<p>parks is about 20,000.</p> <p>Kolkata Municipal Corporation area located at the eastern side of the river Ganga and therefore KMC has the responsibility of plantation on the eastern side of the river only.</p> <p>During the ongoing monsoon of 2020 KMC has planned to plant about 50,000 saplings at different parts of the city to compensate the loss of greenery due to the cyclonic storm UMPHAN in the city.</p> <p>As of now about 7500 saplings have been planted at different parts of the city and its suburbs within the jurisdiction of KMC out of total target of 50,000 and the progress of plantation is going on with a view to fulfill the target.</p> <p>(Detail report provided at Annexure-I)</p> <p>Rain Water Harvesting is already incorporated in Building Rule 2009 which is as follows: Rule-144 Rain Water Harvesting and Tree Cover Rain Water Harvesting (RWH), RWH shall form a part the building and shall have to be included in the plan, either for direct use of the rain water or for ground water recharging or both, in case of (i) New building or buildings or any housing complex as per Environment Impact Assessment Guideline issued by State Government/ Government of India.</p> <p>(ii) Expansion of any existing building or buildings or housing complex, as per Environment Impact Assessment Guideline issued by State Government/ Government of India.</p> <p>This system shall comply with</p>	
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		<p>Central & State statutory requirements laid down in the relevant Acts & bye-laws. It is implemented for the buildings on area exceeding 20,000Sqm.</p> <p>(Detail report provided at Annexure-I)</p> <p>Advance (Nursery work) 100% completed. Creation of plantation,0%. Fund not received.</p> <p>(Detail report provided at Annexure-III)</p>	
6.	Specific funding agency for each action point to be included	<p><u>KMDA</u> Implementation of the STPs mentioned in Annexure-A3 on both bank of river Ganga will be under NMCG (GoI) funding and rest will be under State fund.</p> <p><u>KMC</u> Implementation of the STPs mentioned in Annexure-I, The project under KEIIP will be funded under ADB and rest will be under NMCG.</p>	<p><u>KMDA</u> Implementation of the STPs in Annexure-A4 and other work will be under state fund.</p>
7.	Short-term measures for drains such as phytoremediation/bio-remediation/nano bubbles treatment/aeration treatment and other options feasibility to be examined and adopted to improve water quality of polluted rivers depending on the local conditions	<p>56 drains have been identified.</p> <p>Out of 56 drains, 34 Drains are either connected or proposed to be connected to different STPs. (Details provided in Annexure-A1)</p> <p>For remaining 22 drains, as per the CPCB guidelines (published in Feb. 2020), the feasibility of the work in these channels will be completed by February 2021 taking into consideration of COVID-19 Pandemic and the ensuing monsoon period. The details of 22 drains provided in Annexure – A2.</p> <p><u>Under KMC</u></p>	<p>2 (Two) nos. of drains discharging maximum mixed wastewater have been identified at Ranaghat Municipal Town for interim measures -</p> <ol style="list-style-type: none"> 1. Sreenathpur 2. BaskoKhal <ul style="list-style-type: none"> ➤ Tender for Bio/Phyto - remediation work for these drains have been finalized. ➤ Work Order has been issued to the selected bidder on 25.06.2020. The Work has been started. Likely completion time December 2020.

		<p>Dhankheti khal is having tidal effect. Bio/Phyto remediation is not feasible.</p> <p>Tolly's Nullah: Bioremediation will not be taken up as it is under tidal regime.</p> <p>(Details provided in Annexure – I)</p>	<p>(Details report provided in Annexure –A5, Part-II)</p>
8.	<p>Timelines to be revised as per Hon'ble NGT order for all the proposed action plan and PERT chart also be included</p>	<p><u>KMC</u></p> <ol style="list-style-type: none"> 1. Implementation plan for construction of Sewage Treatment Plant at Bank Plot ,MG roar JOKA, Capacity -40 MLD. 2. Implementation plan for construction of Sewage Treatment Plant near WBSETCL, Joka, Capacity-45 MLD. 3. Implementation plan for construction of Sewage Treatment Plant at Rajpur Sonarpur, Capacity-30 MLD. <p>(Detail report of PERT chart provided at Annexure-I)</p> <p><u>KMDA</u></p> <p>(Detail report of PERT chart provided at Annexure-A6(a) & Annexure-A6(b))</p>	<p><u>KMDA</u></p> <p>Pert chart for the work of setting up of STPs for containment of pollution of river Churni at Ranaghat Municipality taken up by KMDA which are under Tendering stage.</p> <p>(Detail report of PERT chart provided at Annexure-A7)</p>

Annexure-VI (b)

**GOVERNMENT OF WEST BENGAL
PUBLIC HEALTH ENGINEERING DIRECTORATE
HABIBPUR SUB - DISTRICT LABORATORY UNDER RANAGHAT SUB - DIVISION
WATER QUALITY TEST REPORT**

Memo No :

Date : 18-8-2020

PARAMETER	DESIRABLE LIMIT	PERMISSIBLE LIMIT
pH	6.5 to 8.5	NO RELAXATION
IRON	0.3 mg/lit	1.0 mg/lit
ARSENIC	0.01 mg/lit	0.01 mg/lit
MANGANESE	0.1 mg/lit	0.3 mg/lit
TOTAL HARDNESS	200 mg/lit	600 mg/lit
TC		0/100 ml
FC		0/100 ml

Sl No	District	BLOCK	SCHEME NAME	DATE OF COLLECTION	ZONE	TW No.	Test Result_Pump House						Test Result_Farthest SSP		
							pH	Turbidity	Iron	Manganese	Total Hardness	Total Arsenic	Residual Chlorine (mg/l)	TC	FC
1	Nadia	Ranaghat-I	Par Niamatpur Water Supply Scheme	11/9/2019		2	7.17	4.99	0.93	0.54	340	0.06	0	47	42
2	Nadia	Ranaghat-I	Anulia Water Supply Scheme	11/9/2019		1	7.14	8.3	0.79	0.33	280	0.088	0	27	13
3	Nadia	Ranaghat-I	Anulia Water Supply Scheme	11/9/2019		2	6.97	6.16	2.38	0.55	404	0.093			
4	Nadia	Ranaghat-I	Kalaighata Water Supply Scheme	16/09/2019		1	7.18	6.87	0.95	0.36	256	0.082	0	5	0
5	Nadia	Ranaghat-I	Kalaighata Water Supply Scheme	16/09/2019		2	7.04	4.11	1.82	0.39	180	0.08			

SAMPLE COLLECTED BY : Facilitator

A. Kaliraj
WATER ANALYST
RANAGHAT SUB-DISTRICT LAB
RANAGHAT SUB-DIVISION, P.H.E Dte.

ASSISTANT ENGINEER
RANAGHAT SUB - DIVISION
P.H ENGINEERING DTE

Annexure-IX

Station ID	Stations	Date Of sampling	Time Of sampling	Ammonia-N(mg/l)
1764	CHURNI D/S OF RANAGHAT TOWN, WEST BENGAL	6/2/2020	11:30	0.14
2518	CHURNI, MAJHADIA	6/18/2020	10:20	0.13
1080	Ganga at Baharampore West Bengal	6/25/2020	10:10	0.13
1080	Ganga at Baharampore West Bengal	6/11/2020	12:40	0.13
1053	Ganga at Dakshmineswar, West Bengal	6/10/2020	12:30	0.16
1053	Ganga at Dakshmineswar, West Bengal	6/18/2020	12:30	0.46
1469	GANGA AT DIAMOND HARBOUR, WEST BENGAL	6/1/2020	12:30	0.12
1469	GANGA AT DIAMOND HARBOUR, WEST BENGAL	6/24/2020	13:45	0.38
1335	Ganga at Durgachak near Pathikhali, West Bengal	6/4/2020	13:15	BDL
1335	Ganga at Durgachak near Pathikhali, West Bengal	6/25/2020	12:05	0.27
1470	GANGA AT GARDEN REACH, WEST BENGAL	6/15/2020	12:45	0.13
1470	GANGA AT GARDEN REACH, WEST BENGAL	6/10/2020	12:10	BDL
10160	Ganga at Gorabazar	6/25/2020	11:20	0.11
10160	Ganga at Gorabazar	6/11/2020	13:00	0.12
1471	GANGA AT HOWRAH-SHIVPUR, WEST BENGAL	6/1/2020	12:20	0.15
1471	GANGA AT HOWRAH-SHIVPUR, WEST BENGAL	6/15/2020	13:05	0.15
10159	Ganga at Khagra	6/11/2020	12:25	0.12
10159	Ganga at Khagra	6/25/2020	9:46	0.11
2511	Ganga at Nabadip Ghoshpara near Monipurghat	6/2/2020	10:00	0.18
2511	Ganga at Nabadip Ghoshpara near Monipurghat	6/18/2020	13:25	0.19
10161	Ganga at Palta Shitalatala	6/3/2020	12:20	0.13
10161	Ganga at Palta Shitalatala	6/19/2020	14:35	0.14
1054	Ganga at Palta, West Bengal	6/19/2020	14:10	0.11
1054	Ganga at Palta, West Bengal	6/3/2020	11:55	0.12
1472	GANGA AT SERAMPORE, WEST BENGAL	6/19/2020	13:50	0.16
1472	GANGA AT SERAMPORE, WEST BENGAL	6/10/2020	14:15	0.14
2506	Ganga at Tribeni near burning ghat	6/23/2020	15:00	0.23
2506	Ganga at Tribeni near burning ghat	6/10/2020	12:25	0.19
1052	Ganga at Uluberia, West Bengal	6/1/2020	13:50	BDL
1052	Ganga at Uluberia, West Bengal	6/19/2020	14:30	0.27

BOD(mg/l)	Boron(mg/l)	Calcium(mg/l)	Chloride(mg/l)	COD(mg/l)	Conductivity(μ s/cm)	Dissolved O ₂ (DO)(mg/l)	E-coli(MPN/100ml)	Fecal Coliform(MPN/100ml)	Fecal Streptococci(MPN/100ml)	Fluoride(mg/l)	Magnesium(mg/l)	Nitrate-N(mg/l)	Nitrite-N(mg/l)
6	BDL	45.19	13	14.14	447.1	NIL	N.D.	13000	N.D.	0.26	9.53	0.5	N.D.
1.1	BDL	47.06	13	13.43	373.5	2.2	N.D.	40000	N.D.	0.26	16.68	0.48	N.D.
1.2	BDL	23.53	12	5.18	229.6	7	17000	130000	340	0.25	10.72	0.54	0.03
1.65	BDL	27.45	12	9.27	245.1	6.1	5000	50000	170	0.29	5.96	0.57	BDL
3.1	BDL	32.16	31.99	10	178.1	5.3	79000	140000	40	0.39	12.86	0.12	0.03
2.9	BDL	34.51	16.99	11	258.6	4.9	33000	70000	110	0.29	12.87	0.57	0.13
1.8	BDL	54.9	629.8	18	1686	6.5	4500	8000	20	0.23	28.59	0.75	0.01
1.5	BDL	39.22	314.9	17	1163	6.3	8000	11000	40	0.38	30.97	1.04	0.05
1.15	BDL	263	4526.3	15.36	5360	7.2	N.D.	3900	N.D.	0.48	183	1.03	0.03
1.6	BDL	271	942.97	14.23	3771	7.3	N.D.	2100	N.D.	0.42	183	1.31	0.08
2.2	BDL	28.24	16.99	11.47	236.2	5	13000	30000	68	0.29	6.19	0.69	0.01
3.1	BDL	41.57	28.99	13	202.3	5.9	49000	110000	20	0.3	4.76	0.2	0.03
1.3	BDL	29.41	12	6.15	219.1	7.5	27000	80000	300	0.23	5.96	0.47	0.02
1.7	BDL	31.37	11	7.27	253	6.2	9000	50000	40	0.27	9.53	0.53	0.003
1.6	BDL	28.24	28.99	11	214.3	4.9	70000	130000	80	0.29	16.67	0.47	0.01
2.05	BDL	29.8	17.99	12	230.5	5.2	13000	23000	78	0.29	7.62	1.47	0.01
1.75	BDL	23.53	12	12.25	239.7	6	11000	90000	20	0.28	8.34	0.47	0.002
1.5	BDL	21.57	13	6.02	219.6	7.4	34000	130000	800	0.23	13.1	0.54	0.04
2.3	BDL	25.54	11	8.08	310.1	6.2	4000	7000	800	0.25	8.34	0.44	0.002
2.8	BDL	21.57	12	9.34	238	6.4	14000	30000	130	0.26	9.53	0.52	0.01
2.5	BDL	27.51	14	9.09	352.7	6.5	70000	170000	900	0.27	7.15	0.49	BDL
3.5	BDL	23.53	14	14.85	243.6	5.7	21000	50000	2200	0.24	11.91	0.36	0.27
2.05	BDL	23.53	14	10.72	232.8	4.9	17000	80000	1700	0.21	7.15	0.35	0.03
2.9	BDL	27.51	13	11.11	350.1	6.1	30000	130000	500	0.28	8.34	0.56	0.02
2.75	BDL	29.41	16	8.06	228.1	5.6	11000	30000	500	0.18	7.15	0.44	0.05
2.2	BDL	37.26	15	11.84	247.4	5.6	14000	23000	1300	0.19	4.76	0.47	0.08
1.5	BDL	29.41	14	8.79	232	5.2	13000	17000	800	0.23	11.91	0.52	0.01
3.1	BDL	45.1	13	8.01	262.4	5.9	17000	30000	220	0.29	14.29	0.57	0.57
1.7	BDL	50.2	48.98	12	272.2	3.9	17000	22000	40	0.29	31.45	0.74	0.01
2.05	BDL	31.37	17.99	14	276.4	5.6	7800	13000	45	0.31	15.25	1.22	0.01

pH(Uni t)	Phenol pthalei n Alkanit y(mg/l)	Phosph ate- P(mg/l)	Potassi um(mg /l)	Sodiu m(mg/ l)	Sulpha te(mg/ l)	Tempe rature(°C)	Total Alkalini ty(mg/ l)	Total Coliform(MPN/100 ml)	Total Dissolv ed Solids(TDS)(mg/l)	Total Fixed Solids(TFS)(m g/l)	Total Hardne ss as CaCo3(mg/l)	Total Suspend ed Solids(TSS)(mg/l)	Turbidi ty(NTU)
7.84	9.12	0.06	5.7	19.5	17.14	29	196.17	50000	180	120	151.96	14	8.3
8.13	9.54	0.15	5.1	14.7	5.05	28	200.38	50000	316	194	186.28	22	19.2
7.87	NIL	0.08	4.2	11.8	26.43	29	89.69	170000	136	106	102.94	32	55.4
8	Nil	0.04	3.7	12.3	22.31	31	96.71	90000	118	72	93.14	14	17.1
7.32	NIL	1.83	3.52	8.5	22.27	33	104	220000	286	184	133.33	24	41.3
7.8	NIL	0.42	3.72	8.68	19.1	29	106	220000	150	122	139.22	8	15.9
8.11	NIL	1.37	11.89	134.43	14.76	30	200	13000	1284	2156	254.9	1116	620
7.39	NIL	0.05	10	111.97	74.51	31	160	22000	672	622	225.49	210	169
7.84	12	BDL	15.88	363.46	479.34	31	116	9400	6648	6596	1410	952	909
8.01	12	0.09	15.41	353.99	219.81	30	120	5800	2512	3350	1429	696	631
7.45	NIL	1.44	3.42	9.22	24.24	29	106	130000	202	180	96.08	50	26.7
7.37	NIL	1.28	3.42	8.14	31.14	32	102	170000	156	174	122.86	76	47.5
8.01	NIL	0.09	4.3	11.7	25.43	30	95.42	130000	138	118	98.08	48	57.3
8.08	Nil	0.04	3.6	12	22.37	31	98.54	160000	90	58	117.65	10	20.8
8.05	NIL	0.44	4.12	11.2	23.26	33	112	170000	120	164	139.22	50	37.5
7.31	NIL	BDL	3.32	8.32	22.62	29	102	110000	148	160	105.88	62	39.3
8.13	Nil	0.05	3.5	12.5	24.15	31	96.71	160000	74	78	93.14	8	15.5
7.85	NIL	0.09	4.4	11.7	24.41	29	101.78	170000	142	116	107.84	42	57.3
8.2	Nil	0.06	3.8	16.8	20.44	28	102.19	22000	152	146	98.04	36	28.8
7.97	Nil	0.09	3.6	15.1	22.47	29.5	97.33	50000	142	126	93.14	112	53.6
8.09	Nil	0.05	4.3	16.6	24.94	32	107.66	500000	132	126	98.04	22	37.1
8.15	Nil	0.08	4.5	14.8	22.75	32	95.42	80000	150	134	107.84	28	45.3
8.08	Nil	0.09	4.6	14.7	23.38	32	106.02	110000	140	130	88.24	26	51.2
8.15	Nil	0.06	4.8	16.8	28.32	32	113.14	170000	148	100	102.94	54	48.7
8.01	0	0.07	4.2	12.1	23.63	32	97.33	50000	122	112	102.94	20	36.6
8.03	0	0.12	4.2	13.5	19.49	32	94.89	300000	112	152	112.75	22	45.5
7.9	0	0.09	4.4	11.8	22.89	31	93.51	50000	214	166	122.55	48	58.2
8.06	0	0.06	4.7	12.4	18.6	32	104.01	50000	106	124	171.57	48	37.1
7.98	NIL	0.22	4.81	14.7	37.92	33	122	80000	172	198	254.9	62	27.9
7.92	NIL	0.79	3.62	9.13	19.91	31	104	80000	262	172	141.18	36	37.7

Annexure-V

CHEMICAL QUALITY PARAMETERS OF GROUNDWATER IN BLOCKS ACROSS POLLUTED RIVER STRETCHES IN WEST BENGAL

Name of the River	Blocks across the River Stretch	Ranges of Chemical Parameters (Lowest & Highest Value; Period: 2014-2018)																	
		pH		Sp. Conductivity in micromhos / cm at 25 °c		Total Dissolved Solids (T.D.S.) in mg/L		Chloride (as Cl) in mg/L		Carbonate Alkalinity as CaCO3 in mg/L		Bicarbonate Alkalinity as CaCO3 in mg/L		Total Hardness as CaCO3 in mg/L		Total Iron (as Fe) in mg/L		Arsenic (as As) in mg/L	
		Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon
VIDYADHARI	Haroa	7.70-8.11	7.58-7.93	591-908	785-2170	378-581	504-1390	21-78	35-574	0	0	300-460	350-490	210-390	260-450	Bdl-0.50	0.18-0.85	Bdl	Bdl
	Minakha	N.A	7.77-7.82	N.A	911-919	N.A	584-590	N.A	71-99	0	0	N.A	370-460	N.A	280-290	N.A	0.16-3.06	N.A	Bdl
MAHANANDA	Matigara	7.1-7.4	7.8-8.3	76-390	131-330	85-280	85-234	4.0-56.0	4.0-56.0	0	0	24-88	36-76	28-72	36-120	0.1-2.0	0.1-5.0	ND	ND
	Rajganj	7.6-7.9	7.8-8.1	81-250	110-470	81-250	52-162	4.0-36.0	4.0-12.0	0	0	24-76	40-68	16-104	40-92	0.3-5.0	0.5-5.0	ND	ND
	Phansidewa	7.3-7.4	7.7-8.3	110-510	160-1010	114-293	104-657	8.0-96.0	4.0-44.0	0	0	36-108	44-256	36-144	36-144	0.1-0.5	0.1-2.0	ND	ND
CHURNI	Krishnaganj	7.36-7.94	7.41-8.13	328-920	476-857	210-589	305-549	7.09-49.63	14.18-77.99	0	0	80-150	100-220	190-320	250-400	<0.05-4.44	0.84-9.84	0.008-0.12	0.01-0.18
	Hanskhali	7.36-8.02	7.38-7.96	354-757	353-978	227-484	226-626	7.09-35.45	7.09-63.81	0	0	90-180	80-250	150-310	170-380	<0.05-0.432	0.96-7.2	0.005-0.07	<0.005-0.09
	Ranaghat-I	7.46-8.04	7.34-8.08	355-1046	494-1040	227-669	316-666	7.09-70.9	14.18-77.99	0	0	80-170	110-260	170-420	230-440	0.12-12.08	0.05-11.04	0.005-0.12	0.01-0.20
DWARKA	Krishnagar-I	7.40-7.91	7.31-7.92	543-1066	409-1038	348-682	262-664	14.18-49.63	7.09-113.44	0	0	110-150	90-260	240-380	210-340	0.24-7.2	0.08-5.76	0.03-0.07	0.02-0.08
	Rampurhat-II	7.62-7.98	7.83-8.02	322 - 429	220 - 242	206 - 274	142 - 156	10 - 20	9 - 13	0	0	90 - 140	102 - 132	110 - 120	92 - 108	0.1 - 2.0	0.1-1.5	ND	ND
GANGA	Chinsura-Mogra	7.22-8.20	7.38-8.12	448-1662	444-1634	287-1063	284-1046	40-280	15-210	0	0	80-190	170-350	130-340	110-530	0.06-0.95	0.16-2.24	ND	ND
	Chakdah	7.48-8.07	7.5-8.14	369-846	490-848	236-542	313-543	7.09-49.63	7.09-42.54	0	0	70-140	110-200	160-310	210-370	<0.05-2.46	<0.05-5.92	0.01-0.07	0.01-0.10
	Barrackpore-I	7.82-8.16	7.38-8.11	565-803	317-1281	362-514	204-820	14-84	14-149	0	0	310-340	130-410	230-290	130-450	Bdl-0.02	0.02-3.56	Bdl-0.05	Bdl-0.025
	Singur	7.55-7.85	7.28-7.98	539-647	605-732	345-432	339-469	40-70	15-65	0	0	140-240	210-290	120-170	130-220	BDL-0.20	Bdl-1.73	ND	ND
	Srerampur-Uttarpara	7.35-7.75	7.39-7.88	303-2460	615-2730	194-1574	394-1748	70-620	30-735	0	0	100-190	190-290	120-410	180-530	0.09-1.59	Bdl-7.04	Bdl-0.005	Bdl
	KMC	7.12-8.20	7.39-8.23	300-4100	420-3240	192-2624	269-2074	21-1240	30-1020	0	0	170-800	320-710	106-838	110-810	0.3-42.0	0.5-55.6	Bdl-0.011	Bdl-0.01
	Sankrail	7.30-7.99	7.75-8.45	577-2320	607-834	370-1486	388-534	27-626	20-130	0	0	79-293	250-350	64-408	130-190	0.15-4.14	0.27-40-90	Bdl-0.01	Bdl-0.02
	Uluberia-I	7.23-8.26	7.42-8.08	334-2510	755-1605	214-1606	483-1028	20-714	45-345	0	0	63-242	120-300	84-448	120-300	0.27-2.05	0.06-3.80	Bdl	Bdl-0.02
	Thakurpukur-Maheshala	7.91-8.11	7.58-8.20	1156-4640	722-4660	740-2970	462-2980	128-1347	106-908	0	0	360-900	190-690	260-1100	210-400	0.03-3.0	0.10-2.06	Bdl-0.10	Bdl
	Budge Budge-I	7.54-7.76	7.66-7.89	1531-2370	324-366	980-1518	208-234	248-610	28-50	0	0	170-200	140-160	220-510	140-180	0.03-0.05	0.15-0.20	Bdl	Bdl
	Budge Budge-II	7.68-8.21	7.56-7.68	754-1426	370-580	484-914	238-372	135-326	50-128	0	0	159-171	183-232	200-230	150-170	0.1-0.3	0.1-0.2	Bdl	Bdl
Shyampur - I	7.24-8.05	7.78-8.06	332-922	556-765	212-590	356-490	22-92	45-90	0	0	75-334	140-160	68-152	150-160	0.12-0.21	0.09-26.4	Bdl	Bdl	
JALANGI	Berhampur	6.99-7.16	7.23-8.00	260-520	270-700	166-333	193-230	30-50	30-120	0	0	40-80	30 - 50	90-320	40-200	1.2-3.0	0.1-0.8	0.005-0.25	Bdl
	Hariharpura	7.23-8.09	7.35-7.89	440-860	210-690	282-550	100-230	20-130	20-140	0	0	60-90	60 - 110	260-390	50-360	3	0.2-0.7	0.025-0.1	Bdl
	Domkal	7.45-7.99	7.65-8.04	410-530	180-940	262-339	180-300	50-120	30-90	0	0	70-100	30 - 60	160-280	50-400	0.5-3.0	0.1-0.5	0.005-0.5	Bdl
	Nowda	7.23-8.12	7.45-7.89	490-700	160-1130	314-448	110-320	40-60	40-200	0	0	60-100	10 - 110	220-360	60-540	3.0-5.0	1.0-3.0	0.005-0.1	0.005-0.08
	Karimpur-II	7.37-7.56	7.26-7.87	670-982	556-1482	429-628	356-948	28.36-56.72	14.18-120.5	0	0	120-250	110-180	280-460	290-580	0.48-5	0.1-5.48	0.01-0.06	0.008-0.05
	Tehatta-I	7.11-7.6	7.21-8.06	350-990	367-838	224-635	235-536	7.06-63.81	7.09-63.81	0	0	70-170	90-170	170-450	180-410	0.42-9.04	0.12-7.2	0.01-0.05	0.008-0.06
	Chapra	7.16-8.19	7.36-8.18	460-692	439-1145	295-443	281-733	14.18-28.36	14.18-226.9	0	0	90-160	100-230	190-330	230-390	0.12-1.66	0.06-10.24	0.01-0.06	0.03-0.07
	Nakashipara	7.23-7.66	7.31-8.1	582-1148	451-999	372-735	289-639	14.18-85.08	14.18-106.35	0	0	100-150	100-230	240-460	220-420	0.2-2.62	<0.05-10.16	0.005-0.06	0.1-0.05
	Krishnagar-II	7.32-7.85	7.34-7.91	336-1355	297-996	215-867	190-637	7.09-148.89	7.09-92.17	0	0	80-140	80-240	140-390	120-410	<0.05-4.88	<0.05-4.04	0.02-0.09	0.005-0.08
	Krishnagar-I	7.40-7.91	7.31-7.92	543-1066	409-1038	348-682	262-664	14.18-49.63	7.09-113.44	0	0	110-150	90-260	240-380	210-340	0.24-7.2	0.08-5.76	0.03-0.07	0.02-0.08
	Nabadwip	7.38-7.89	7.43-7.62	574-648	558-710	367-414	357-454	21.27	21.27-42.54	0	0	110-130	140-210	250-260	250-290	0.06-1.62	0.24-7.08	0.005-0.03	0.005-0.03

CHEMICAL QUALITY PARAMETERS OF GROUNDWATER IN BLOCKS ACROSS POLLUTED RIVER STRETCHES IN WEST BENGAL

Name of the River	Blocks across the River Stretch	Ranges of Chemical Parameters (Lowest & Highest Value; Period: 2014-2018)																	
		pH		Sp. Conductivity in micromhos / cm at 25 °c		Total Dissolved Solids (T.D.S.) in mg/L		Chloride (as Cl) in mg/L		Carbonate Alkalinity as CaCO ₃ in mg/L		Bicarbonate Alkalinity as CaCO ₃ in mg/L		Total Hardness as CaCO ₃ in mg/L		Total Iron (as Fe) in mg/L		Arsenic (as As) in mg/L	
		Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon
KANSAI	Medinipur	7.86-8.53	7.75-8.53	50-620	60-760	32-398	38-486	15-85	20-85	0-60	0-70	35-220	40-245	40-140	25-200	0.02-1.39	0.01-2.4	ND	ND
	Keshpur	7.38-8.23	8.05-8.64	150-540	150-400	96-346	96-256	15-100	15-30	0	0-80	40-220	85-220	30-190	65-180	0.05-2.6	0.35-2.09	ND	ND
	Debra	8.32-8.55	7.94-8.03	240-370	330-440	154-238	212-282	15-20	15-20	0-70	0	160-245	210-270	80-110	120-150	0.37-1.78	0.2-1.52	ND	ND
	Panshkura-I	7.96-8.29	8.04-8.21	340-610	420-610	218-390	270-390	25-80	25-75	0	0	200-300	305-320	110-130	130-150	0.03-8.28	0.2-4.45	ND	ND
MATHA BHANGA	Moyna	7.73-8.29	7.96-8.39	380-1280	350-1650	244-820	224-1056	15-400	25-405	0	0-30	160-300	245-370	110-330	110-350	0.17-8.95	0.88-6.8	ND	ND
	Bagda	7.79-7.87	7.72-7.91	362-700	451-753	232-448	290-482	21-50	21-35	0	0	100-350	260-310	120-340	230-270	0.10-0.30	0.11-3.38	Bdl-0.025	Bdl-0.010
	Bangaon	8.05-8.15	7.73-8.08	785-1458	798-1271	504-934	512-814	35-121	21-128	0	0	470-550	390-540	190-410	140-310	0.02-0.50	0.54-0.79	Bdl-0.05	Bdl-0.10
	Gaighata	7.57-8.10	7.54-7.81	605-2130	650-2030	388-1364	416-1300	14-1163	14-1078	0	0	200-460	160-920	320-570	270-510	0.01-2.0	0.06-1.69	Bdl-0.25	Bdl-0.25
	Swarupnagar	7.50-7.98	7.33-7.80	612-955	1019-1814	392-612	654-1162	35-78	85-298	0	0	330-430	300-580	190-380	240-430	0.3-2.0	0.22-2.28	Bdl-0.025	Bdl
	Baduria	7.89-8.19	7.70-8.20	699-1187	671-1931	448-760	430-1236	28-149	28-245	0	0	270-570	280-590	90-330	60-410	0.08-0.30	0.04-0.16	Bdl-0.025	Bdl-0.025
	Deganga	7.83-8.21	7.53-7.87	521-799	576-845	334-512	370-542	14-57	14-21	0	0	190-470	320-440	260-400	250-350	0.01-0.80	0.03-3.82	Bdl-0.010	Bdl-0.025
BARAKAR	Kulti	7.58	7.86	205	987	132	632	44	81	0	0	97	294	76	247	0.23	0.11	Bdl	Bdl
	Asansol	7.38-8.10	7.72-7.90	1114-1546	841-1097	506-989	538-702	121-160	80-121	0	0	90-164	100-130	172-250	110-134	0.1-0.9	0.2-0.102	Bdl	Bdl
DWARAKESHWAR	Chatna	7.39-8.01	7.63-8.21	160-2000	300-960	102-1280	192-614	25-500	25-185	0	0	70-240	100-220	90-1050	140-400	0.04-3.8	0.04-3.45	ND	ND
	Indpur	7.68-7.83	7.69-7.78	550-1450	470-1080	352-928	302-692	80-305	60-195	0	0	140-230	100-160	200-470	150-420	0.12-6.24	0.38-5.88	ND	ND
	Bankura-I	7.52-8.11	7.84-8.01	210-2000	630-1460	134-1280	404-934	25-480	75-285	0	0	50-260	110-245	100-480	200-370	0.04-5.7	0.16-6.6	ND	ND
	Bankura-II	7.60-7.88	7.46-7.89	150-1330	260-1490	96-852	166-954	25-335	45-370	0	0	30-180	40-210	40-450	80-420	0.58-5.48	0.17-2.72	ND	ND
	Onda	7.44-7.96	7.42-7.89	200-1100	90-940	128-704	58-602	80-305	60-195	0	0	50-250	50-245	40-370	30-360	0.17-5.4	0.03-7.2	ND	ND
	Bishnupur	7.47-8.23	6.91-7.86	30-600	30-590	20-384	20-378	15-130	20-140	0	0	20-250	20-250	20-300	40-350	0.01-5.61	0.01-6.24	ND	ND
	Patrasayar	8.15-8.55	7.36-7.61	60-260	40-270	38-166	26-173	15-50	15-40	0-5	0	25-180	40-170	30-150	30-150	0.02-3.52	0.02-5.92	ND	ND
	Joypur	7.55-7.96	7.86-8.04	340-1310	380-1670	218-838	244-1070	50-270	40-380	0	0	80-220	150-270	90-300	200-410	0.14-0.64	bdl-0.42	ND	ND
	Indus	7.69-8.36	7.09-7.76	170-610	180-840	108-390	116-538	25-200	35-240	0-5	0	100-280	110-280	100-320	100-400	0.02-5.32	0.01-6.44	ND	ND
	Kotulpur	7.46-8.27	7.10-8.21	70-350	70-280	44-224	44-180	20-60	20-55	0	0	50-220	50-150	40-190	55-130	0.02-5.88	0.01-2.54	ND	ND
KALJANI	Kalchini	7.9-8.3	7.9-8.2	116-300	118-510	76-196	95-286	8.0-24.0	4.0-16.0	0	0	36-96	36-68	64-136	44-92	0.5-5	0.5-5.0	ND	ND
	Alipurduar - I	8.0-8.1	8.0-8.1	169-280	200-260	110-182	130-170	4.0-36.0	4.0-16.0	0	0	64-112	60-72	64-104	44-64	0.5-3.0	0.3-5.0	ND	ND
	Alipurduar - II	8.0-8.2	8.1-8.2	146-330	163-670	88.5-208	105-300	4.0-60.0	4.0-56.0	0	0	64-164	36-64	48-144	40-112	0.3-2.0	0.3-1.2	ND	ND
	Coochbehar - II	8.1-8.3	8.0-8.4	153-410	158-540	100-267	102-352	4.0-76	4.0-12.0	0	0	72-172	36-64	64-136	40-104	0.5-0.8	0.5-3.0	ND	ND
KARALA	Tufanganj - I	7.8-8.3	7.5-8.0	106-510	110-260	68-326	70-166	4.0-36	4.0-12.0	0	0	44-112	24-56	24-236	24-76	0.3-5.0	0.1-5.0	ND	ND
	Jalpaiguri	8.0-8.2	8.0-8.1	126-360	105-480	82-234	68-312	8.0-76.0	4.0-16.0	0	0	36-144	24-68	56-196	40-76	0.5-2.0	0.5-5.0	ND	ND
MAYURAKSHI	Suri - I	7.7-7.88	8.16-8.25	186-631	255-434	119-404	164-278	15-40	15-24	0	0	50-120	137-190	70-190	108-156	0.3-3.0	0.5-2.2	ND	ND
	Mahammadbazar	7.28-8.12	8.01-8.18	50-860	48-1372	32-550	32-878	10-120	5-196	0	0	10-210	20-483	10-280	14-356	0.2-3.0	0.6-1.6	ND	ND
	Sainthia	7.97-8.26	7.79-8.22	349-633	252-671	223-405	162-430	13-30	13-50	0	0	110-150	132-283	110-270	108-272	0.1-1.2	0.4-1.5	ND	ND
	Mayureswar-I	7.72-8.12	7.91-8.14	388-794	212-2200	248-508	136-1408	14-30	13-363	0	0	90-160	93-630	120-240	84-552	0.1-1.5	0.1-1.9	ND	ND
RUPNARAYAN	Labhpur	7.45-7.90	7.45-8.08	418-934	210-642	267-598	175-410	20-90	13-60	0	0	100-190	140-270	130-350	120-200	0.2-1.0	0.1-1.3	ND	ND
	Amta - II	7.30-8.76	7.75-8.44	572-2290	764-1594	366-1466	489-1020	37-171	50-225	0-38	0	71-284	200-460	56-404	130-290	0.11-1.94	Bdl-1.20	Bdl	Bdl
	Bagnan - I	7.40-8.22	7.76-8.33	70-1385	574-1353	46-886	367-866	12-305	30-235	0	0	21-330	30-270	16-192	130-270	0.14-4.38	Bdl-37.00	Bdl	Bdl-0.01
SILABATI	Bagnan - II	7.32-7.98	7.82-8.03	336-1403	499-725	216-898	319-464	22-215	35-90	0	0	96-301	130-180	68-160	150-210	0.19-7.80	0.11-0.66	Bdl	Bdl-0.01
	Ghatal	8.02-8.21	8.06-8.29	340-430	390-490	218-276	250-314	25-30	15-30	0	0	210-285	245-330	110-150	115-220	0.05-0.34	0.06-0.9	ND	ND

CHEMICAL QUALITY PARAMETERS OF GROUNDWATER IN BLOCKS ACROSS POLLUTED RIVER STRETCHES IN WEST BENGAL

Name of the River	Blocks across the River Stretch	Ranges of Chemical Parameters (Lowest & Highest Value; Period: 2014-2018)																	
		pH		Sp. Conductivity in micromhos / cm at 25 °c		Total Dissolved Solids (T.D.S.) in mg/L		Chloride (as Cl) in mg/L		Carbonate Alkalinity as CaCO ₃ in mg/L		Bicarbonate Alkalinity as CaCO ₃ in mg/L		Total Hardness as CaCO ₃ in mg/L		Total Iron (as Fe) in mg/L		Arsenic (as As) in mg/L	
		Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon	Pre Monsoon	Post Monsoon
TEESTA	Rajganj	7.6-7.9	7.8-8.1	81-250	110-470	81-250	52-162	4.0-36.0	4.0-12.0	0	0	24-76	40-68	16-104	40-92	0.3-5.0	0.5-5.0	ND	ND
	Mal	7.7-8.1	7.7-8.0	151-1430	99-290	83-930	82-930	8.0-600.0	4.0-12.0	0	0	36-80	24-52	60-112	44-72	0.1-1.2	0.3-3.0	ND	ND
	Jalpaiguri	8.0-8.2	8.0-8.1	126-360	105-480	82-234	68-312	8.0-76.0	4.0-16.0	0	0	36-144	24-68	56-196	40-76	0.5-2.0	0.5-5.0	ND	ND
DAMODAR	Neturia	7.86-7.95	7.75-7.81	150-300	420-540	96-192	270-346	15-20	25-65	0	0	30-150	100-285	50-70	100-210	0.23-0.54	0.09-0.26	ND	ND
	Santuri	7.89-8.04	7.41-8.15	500-1680	230-1500	320-1075	148-960	80-665	25-215	0	0	120-280	125-370	210-770	100-500	0.04-1.10	0.13-3.4	ND	ND
	Saltora	7.47-7.83	7.76-8.03	860-1740	810-1720	550-1114	518-1102	95-300	50-240	0	0	150-240	125-550	320-650	250-450	0.29-1.12	0.16-0.62	ND	ND
	Mejia	7.42-7.82	7.57-7.75	100-1720	1200-2250	64-1102	768-1440	15-280	200-350	0	0	50-190	125-210	30-600	300-900	0.7-3.54	0.4-1.29	ND	ND
	Barjora	7.49-7.93	7.48-8.06	80-1100	80-950	52-704	52-608	20-210	15-150	0	0	40-330	50-370	40-405	30-300	0.06-6.3	0.04-8.0	ND	ND
	Sonamukhi	8.04-8.55	7.11-7.91	30-200	40-260	19-128	26-166	15-35	15-40	0-5	0	30-130	20-150	30-120	25-125	0.27-6.08	0.14-6.16	ND	ND
	Patrasayer	8.15-8.55	7.36-7.61	60-260	40-270	38-166	26-173	15-50	15-40	0-5	0	25-180	40-170	30-150	30-150	0.02-3.52	0.02-5.92	ND	ND
	Khandaghosh	7.26-7.70	7.51-8.20	330-801	157-2270	212-514	100-1454	13-110	12-367	0	0	105-196	66-311	108-180	56-620	0.12-23.40	0.09-2.96	Bdl	Bdl
	Gatsi - II	7.26-7.70	7.51-8.20	330-801	157-2270	212-514	100-1454	13-110	12-367	0	0	105-196	66-311	108-180	56-620	0.12-23.40	0.09-2.96	Bdl	Bdl
	Barddhaman-I	7.31-8.24	7.60-8.12	245-593	264-575	158-380	170-368	12-100	9-32	0	0	59-180	108-190	84-192	80-124	< 0.05-1.70	< 0.05-4.52	<0.01-0.01	Bdl
	Barddhaman-II	7.43-7.87	7.81-7.93	336-440	382-490	215-282	244-314	16-36	14-40	0	0	92-120	132-165	128-146	104-130	1.2-8.50	0.82-1.6	Bdl	Bdl
	Jamalpur	7.44-7.83	7.72-8.20	339-590	294-633	218-378	188-406	8.0-16	10-44	0	0	142-205	104-190	104-172	92-132	<0.05-3.15	< 0.05-0.64	Bdl	Bdl
	Raina - II	7.80-8.23	7.96-8.17	560-1715	462-651	358-1098	296-396	36-419	10.0-64	0	0	171-385	116-215	68-172	92-128	< 0.05-0.62	< 0.05-4.88	Bdl	Bdl
	Arambag	7.43-8.00	6.95-7.54	244-816	143-1059	156-349	155-678	30-130	5-80	0	0	110-170	90-480	140-240	110-410	Bdl-50.2	Bdl-3.534	N.D	Bdl
	Pursura	7.41-8.00	7.02-7.96	477-1075	486-1242	305-688	311-795	30-300	10-185	0	0	100-210	130-410	150-280	170-380	Bdl-0.02	Bdl-5.44	N.D	Bdl
	Khanakul-I	7.51-7.86	7.13-7.34	534-855	545-622	342-547	349-398	50-120	15-70	0	0	120-190	170-300	180-280	140-190	Bdl-0.21	0.023-3.328	N.D	Bdl
	Khanakul-II	7.76-7.90	7.20-7.23	564-574	460-559	361-367	294-358	30-60	30-40	0	0	180-210	210-320	130-170	100-280	Bdl	0.2-0.432	N.D	Bdl
	Amta - II	7.30-8.76	7.75-8.44	572-2290	764-1594	366-1466	489-1020	37-171	50-225	0-38	0	71-284	200-460	56-404	130-290	0.11-1.94	Bdl-1.20	Bdl	Bdl
	Bagnan - I	7.40-8.22	7.76-8.35	70-1385	574-1353	46-886	367-866	12-305	30-235	0	0	21-330	36-270	16-192	130-270	0.14-4.38	Bdl-37.00	Bdl	Bdl-0.01
	Bagnan - II	7.32-7.98	7.82-8.03	336-1403	499-725	216-898	319-464	22-215	35-90	0	0	96-301	130-180	68-160	150-210	0.19-7.80	0.11-0.66	Bdl	Bdl-0.01
	Shyampur-II	6.92-7.91	7.82-8.09	62-628	522-712	40-402	334-457	10-145	30-75	0	0	19-142	150-230	16-208	170-210	Bdl-0.32	Bdl-9.92	Bdl	Bdl-0.01
	Shahid Matangani	7.92-8.11	7.72-8.02	690-1050	580-890	442-672	371-430	50-200	70-240	0	0	250-350	200-320	100-230	120-250	0.12-7.6	0.68-3.04	ND	ND
	Tamluk	7.94-8.31	8.02-8.19	320-870	700-1210	204-556	448-774	20-160	80-285	0	0	170-300	245-400	110-150	150-300	0.58-7.74	0.41-4.11	ND	ND
Nanadakumar	7.81-7.96	8.25-8.27	150-1090	950-950	102-698	628-628	80-300	180-185	0	0	50-280	310-340	80-230	190-200	0.12-2.3	0.11-2.1	ND	ND	
Mahishadal	7.99-8.05	8.2-8.36	790-1040	810-870	56-666	518-558	110-230	95-1300	0	0	240-280	220-330	120-170	160-200	0.39-5.8	0.49-0.64	ND	ND	
Sutahata	7.89-8.3	8.14-8.16	990-1520	1070-1310	634-972	686-838	200-430	205-330	0	0	200-300	245-305	120-200	160-190	0.37-7.52	1.12-1.58	ND	ND	

Sd/-
Senior Chemist
CCHL, SWID, Kolkata

Sd/-
Director-in-Charge
State Water Investigation Directorate

Annexure-IV

Revised Progress Report Regarding Polluting River Stretches for the Month of July, 2020 (Regarding O.A. No 673/2018)

Activity to be monitored Timeline Compliance status	River Ganga (42 Ganga Town)	River Churni (Ranaghat Town)
<p>i. <u>Status of solid waste management & details of processing facilities</u></p> <p>Details of existing infrastructure, Gap analysis, proposed facilities along with completion time line</p>	<p>Report provided in Annexure-I</p> <p>D 2 D collection of solid waste is expected to be achieved within January 2021.</p> <p>Waste segregation at source is expected to be achieved within March 2021</p> <p>Present generation of waste in towns (except KMC) is 3856 TPD. Establishment of waste processing facility including SLF for towns will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016.</p>	<p>D 2 D collection of solid waste is expected to be achieved within January 2021.</p> <p>Waste segregation at source is expected to be achieved within March 2021</p> <p>Present generation of waste in town is 26 TPD. Establishment of waste processing facility including SLF for town will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016.</p>
<p>vi) Preventing dumping of Municipal solid waste and scientific waste management including plastic wastes and decentralizing waste processing, including generated from hotels, ashrams etc.</p>	<p>To implement Scientific Solid Waste Management, SUDA had invited e-NIT no SUDA-366/2019/8156 dated 30.12.2019 for Bio Remediation of Legacy Waste and setting up of waste processing facilities including SLF for Cluster-I Project which caters to 2(two) Ganga Towns (Baranagar & Kamarhati). The 1st call was non responsive as no bidder have participated in the Bid. Thereafter 2ndCall for the same work was invited through e-NIT No. SUDA –366/2019(pt-I)/10738 dated 13.06.2020.</p> <p>Only one bidder has participated in the 2nd bid. Finance Deptt. Govt. of W.B. had given concurrence to accept single bid in 2nd call and accordingly LOA has been given to Bidder on 12.08.2020. In the mean time as actual processing of Solid Waste could take some time and considering the need for early removal of legacy waste at the Promodnagar dump site, UD&MA Department has engaged an expert agency for removal of legacy waste from dump site @ 600 TPD.</p> <p>Similarly SUDA had invited e-NIT no SUDA-369/2019/8430 dated 03.01.2020 for Bio Remediation of Legacy Waste and setting up of waste processing facilities (for Bhadreswar & Dankuni) for Cluster-4 Project which caters to 7(seven) Ganga Towns (Baidyabati, Bhadreswar, Champdani, Konnagar, Rishra, Serampore & Uttarpara-Kotrung). The 1st call was non responsive as no bidder had participated in the Bid.</p> <p>Thereafter 2ndCall for the same work was invited through e-NIT No. SUDA –369/2019(pt-I)/11167 dated 30.06.2020.</p> <p>Only one bidder has participated in the 2nd bid. Technical & Financial Bid to be opened shortly.</p> <p>SUDA has also invited e-NIT for 11 (eleven) other Ganga Towns (Uluberia, Panihati, Kalyani, Barrackpore, Chandannagar MC, Titaghar, Santipore, Nabadwip, DiamondHarbour, Chakda & Berhampur) in the month of July'2020 for Design,</p>	<p>SUDA has invited e-NIT for Ranaghat Town in the month of July'2020 for Design, build, construct, install, commissioning and transfer of Municipal Wet Waste processing facility based on Windrow Composting Technology/Bio-methanation Technology, setting up Semi Automatic Material Recovery Facility for Dry Waste, construction of Sanitary Landfill along with operation & maintenance for 10 years (Renewable) under Swachh Bharat Mission.</p> <p>Due to insufficient participation of bidders, above NIT stands cancelled and all Stand Alone DPRs will be revisited by the State Level Tusk Force Committee shortly. Thereafter modified fresh e-NIT will be floated.</p> <p>Report regarding Bio-mining of existing dumpsites of the town may be available from S&SWM Wing, Water & Sanitation Sector, KMDA as they have floated tender for engagement of agency.</p>

build, construct, install, commissioning and transfer of Municipal Wet Waste processing facility based on Windrow Composting Technology/Bio-methanation Technology, setting up Semi Automatic Material Recovery Facility for Dry Waste, construction of Sanitary Landfill along with operation & maintenance for 10 years (Renewable) under Swachh Bharat Mission.

Due to insufficient participation of bidders, above NITs stands cancelled and all Stand Alone DPRs will be revisited by the **State Level Tusk Force Committee** shortly. Thereafter modified fresh e-NIT will be floated.

Report regarding **Bio-mining** of existing dumpsites of these towns may be available from S&SWM Wing, Water & Sanitation Sector, KMDA as they have floated tender for engagement of agency.

Annexure-X

Part-I (For Ganga)

Status of removal of legacy waste through Bio-mining from the dumpsites for 42 identified Ganga towns:

There are a total of 42 identified towns in the state of West Bengal that are located beside the river Ganga and are presumed to be directly or indirectly responsible for polluting the river Ganga. These towns are:

- (1) *Baidyabati*
- (2) *Bansberia*
- (3) *Baranagar*
- (4) *Barrackpore*
- (5) *Berhampur*
- (6) *Bhadreswar*
- (7) *Bhatpara*
- (8) *Budge Budge*
- (9) *Chakdah*
- (10) *Champdany*
- (11) *Chandernagore MC*
- (12) *Dhuliyani*
- (13) *Diamond Harbour*
- (14) *Garulia*
- (15) *Gayeshpur*
- (16) *Haldia*
- (17) *Halisahar*
- (18) *Howrah MC*
- (19) *Hooghly-Chinsurah*
- (20) *Jangipur*
- (21) *Jiaganj-Azimganj*
- (22) *Kalyani*
- (23) *Kamarhati*
- (24) *Kanchrapara*
- (25) *Katwa*
- (26) *Khardah*
- (27) *Kolkata MC*
- (28) *Konnagar*
- (29) *Krishnanagar*
- (30) *Maheshtala*
- (31) *Murshidabad*
- (32) *Nabadwip*
- (33) *Naihati*
- (34) *North Barrackpore*
- (35) *Panihati*
- (36) *Pujali*
- (37) *Rishra*
- (38) *Santipur*
- (39) *Serampore*
- (40) *Titagarh*
- (41) *Uluberia*

(42) *UttarparaKotrung*

Now, as per direction of the authority, KMDA had floated 29 electronic-Request for Proposals, vide no. 06/SE(N)/S&SWM/W&S/KMDA of 2019-2020 (Sl. No.: 1 to 29) dated 16/03/2020, to remove the year-old indiscriminately dumped legacy waste through bio-mining and reclaim land of its dumpsites by using prevailing scientific methodology, located at 69 Urban Local Bodies comprising 29 clusters. Here, a total of 22 Ganga Towns, out of total of 69 ULBs, had been considered for removal of its legacy waste from their dumpsites.

In its 1st call of e-RfP, only 1 (one) such e-RfP/cluster, comprising 2 (two) above Ganga Towns, viz. **(1)Murshidabad and (2) Berhampore**, had been found responsive, out of 4 e-RfPs for 4 clusters that are found responsive.

Now, the 2nd call of e-RfP for the rest of clusters had been floated by KMDA, vide no. 03/SE(N)/S&SWM/W&S/KMDA of 2020-21(2nd call) (Sl. No. 1 to 25) dated 20.07.2020 for 63 nos. of ULB comprising 25 clusters. The last date of submission of Tender through online is 02/09/2020.

The name of the Ganga towns for which KMDA had floated e-RfP (2nd call) for removal of legacy waste through Bio-mining and reclamation of land for the dumpsites are (4) Chandannagar MC, (5) Hooghly-Chinsurah, (6) Uluberia, (7) Maheshtala, (8) Budge Budge, (9) Diamond Harbour, (10) Jiaganj-Azimganj, (11) Jangipur, (12) Krishnanagar, (13) Santipur, (14) Nabadwip, (15) Bhatpara, (16) Halisahar, (17) Kanchrapara, (18) Garulia, (19) Panihati, (20) Khardah, (21) Titagarh and (22) Barrackpore.

For rest of the Ganga ULBs, either SUDA had taken initiative for removal of legacy waste from their dumpsites or not having any waste to remove.

Part-II (For Churni)

Status of removal of legacy waste through Bio-mining from the dumpsite of Ranaghat that had been identified for polluting the river Churni, either directly or indirectly:

KMDA had floated e-RfP (2nd call), vide no. 03/SE(N)/S&SWM/W&S/KMDA of 2020-21(2nd call) (Sl. No. 10) dated 20.07.2020 (Package No. 11), for removal of its 65,374 MT of legacy waste forming a cluster with Birnagar and Taherpur Notified Area Authority. The last date of submission of Tender through online is 02/09/2020.

Annexure-A5

(For serial no. 4 regarding River Churni in respect of the observations of CPCB task team in their 13th meeting held on 10th July 2020)

Part-I

DETAILS OF DRAINS CONTRIBUTING TO POLLUTION IN RIVER CHURNI :-

Sl. No	Landmark of Drain / Outfall	Coordinate		Type	Flow (MLD)	BOD (mg/l)	FC (MPN/100ml)
		North	East	Domestic/ industrial/ mixed			
1	Chaitanya Ghat	23 ⁰ 10'58.94"	88 ⁰ 33'58.08"	Mixed	0.518	59.50	300,000.00
2	RadharaniSebaSad an	23 ⁰ 10'48.49"	88 ⁰ 33'50.48"	Mixed	0.333	47.82	1,300,000.00
3	Nadia Samaj Pally	23 ⁰ 10'48.45"	88 ⁰ 33'50.49"	Mixed	1.296	54.24	210,000.00
4	Chhoto Bajar	23 ⁰ 10'44.41"	88 ⁰ 33'43.77"	Mixed	0.091	71.30	190,000.00
5	Churipara	23 ⁰ 10'39.04"	88 ⁰ 33'33.10"	Mixed	0.822	70.00	160,000.00
6	Thanapara - I	23 ⁰ 10'38.83"	88 ⁰ 33'17.64"	Mixed	0.187	92.00	220,000.00
7	Thanapara - II	23 ⁰ 10'36.21"	88 ⁰ 33'15.64"	Mixed	0.456	58.00	140,000.00
8	Sreenathpur	23 ⁰ 10'25.03"	88 ⁰ 33'12.07"	Mixed	2.799	48.00	900,000.00
9	Basko Khal	23 ⁰ 11'2.63"	88 ⁰ 33'54.96"	Mixed	4.281	68.00	230,000.00

Note: Total 3 (Three) nos. of STP are proposed to be setup at Ranaghat and Total 9 (Nine) nos. of outfalling drains as mentioned above will be diverted into 3 (Three) nos. of STPs. 9 (Nine) nos. of drains will be catered into these STPs as per the following manner:

1. **STP-I:** (Capacity-5.2 MLD)- outfall 1,2 and 9 located at Chaitanya Ghat.
2. **STP-II:** (Capacity-2.6 MLD)- outfall 3,4 and 5 located at Silver Jubilee road.
3. **STP-III:** (Capacity-4 MLD)- outfall 6,7 and 8 located at Sreenathpur.

(For serial no. 7 regarding River Churni in respect of the observations of CPCB task team in their 13th meeting held on 10th July 2020)

Part-II

• **Action taken as interim measures for pollution abatement of River Churni-**

As the interception & diversion network including setting up of STPs within Ranaghat Municipal Town is under Tendering stage, KMDA as an interim measure has taken up in-situ treatment in June 2020 in the below mentioned major 02(two) nos. out falling drains which contribute maximum polluted discharge to river churni.

SL No	Name of the drain	Flow in MLD	Present Status
1	Sreenathpur	2.799	As an interim measures, in-situ treatment have been initiated in June, 2020. Work has been started and will be completed shortly.
2	Baskokhal	4.281	

Annexure-II (a)

Status of Implementation of Action Plan (2020-21) of Irrigation & Waterways Department, Govt. of West Bengal with respect to erosion and flood protection works envisaged in the Action Plan submitted by I&WD vide memo no.233-IW/O/IFC-4M-16/2015(PT) dated 26.06.2019 subsequently revised vide no-42-IW/O/IFC-4M-16/2015(Pt) dated 05.02.2020 to comply NGT order no- O.A. 673/2017 and O.A. 727/2018

Name of the State/UT : West Bengal

As on 31.07.2020

Contact details of the Nodal Officer : **Biplab Mukherjee,**

Deputy Secretary to the Govt. of West Bengal

Irrigation & Waterways Department

Phone & Fax - 033 2321 5211; email : ds-works@wbiwd.gov.in

A. Component :- Flood Plane Zone Protection and its Management

Sl. No.	River Stretches	Key components of proposed action plans for restoration of identified polluted river stretches in States/Uts	Cost in Rs. Lakh	Proposed Achievable Target	Proposed Time Targets for compliance	Present Status and or pendency in terms of %
5	Churni (Santipur Town To Majhadia)	Protection to the eroding right bank of river Churni at Bapujinagar G.P. Badkulla-II, P.S. Teharpur, Block- Hanskhali, Nadia under Nadia Irrigation Division.	156.00	Erosion protection at Badkulla-II, P.S. Teharpur, Block- Hanskhali, Nadia under Nadia Irrigation Division.	31.03.2021	Approval stage
6	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection to the severely damaged left bank of river Hooghly in between Chaiotanya Ghat and Kanch Mandir Ghat by providing cement concrete block pitching for a length of 170 mm and boulder sausage protection work for a length of 50 m within Ward no. 30 & 31 of Baranagar municipality in P.S. Baranagar, District North 24 Parganas.	152.08	Erosion protection at ward no. 30 and 31 of Baranagar Municipality in P.S.- Baranagar, District- North 24 Parganas.	31.03.2021	Under Tender stage
7	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection to the severely damaged left bank of river Hooghly in between Alambazar Government Quarter campus to Ramlochan Babu Ghat by providing cement concrete block pitching for a length of 215 m and reconstruction of 50 m guard wall in front of Bhabkunja Ashram undre Ward no. 4 of Baranagar municipality in P.S. Baranagar, District North 24 Parganas.	185.55	Erosion protection at ward no-04 of Baranagar Municipality in P.S-Baranagar, Dist- North 24 Pgs.	31.03.2021	Under Tender stage

Sl. No.	River Stretches	Key components of proposed action plans for restoration of identified polluted river stretches in States/Uts	Cost in Rs. Lakh	Proposed Achievable Target	Proposed Time Targets for compliance	Present Status and or pendency in terms of %
8	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection to the left bank of river Hooghly from Mangal Pandey Ghat to Malanch Tourist Lodge near Vivekananda State Police Academy for a length of 135 m including renovation of sluice under Barrackpore Municipality in P.S. - Barrackpore, Dist. - North 24 Pgs.	261.63	Erosion protection near Vivekananda State Police Academy under Barrackpore Municipality in P.S- Barrackpore, Dist-North 24 Parganas.	31.03.2020	completed
9	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection work to the left bank of Hooghly embankment at Sulapani Ghat near Harna Sluice for a length of 200m in Block - Diamond Harbour-I, P.S. Diamond harbour, Dist-South 24 Parganas.	688.00	Erosion protection under Block - Diamond Harbour-I, P.S. Diamond harbour, Dist-South 24 Parganas.	31.03.2021	Approval Stage
10	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection on left embankment of the Hooghly River for a length of 150 m by dumping Geo-Bag below L.W.L with slope protection by HDPE bags at pujali in P.S – Budge Budge , Dist- South 24 Parganas.	180.00	Erosion protection at pujali in P.S – Budge Budge , Dist- South 24 Parganas.	31.03.2022	Approval Stage
11	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection of Hooghly left embankment with Brick Block Pitching for a length of 250 M at Kanchantala Shasan Ghat kali Mandir within Ward No 140 of KMC in P.S – Nadial , Dist- South 24 Parganas	195.00	Erosion protection at Kanchantala Shasan Ghat kali Mandir within Ward No 140 of KMC in P.S – Nadial , Dist- South 24 Parganas.	31.03.2022	Approval Stage
12	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection to right embankment of Hooghly River at the confluence of Chapa Khal for a length of 210 m at Kalinagar in Block Uluberia -I, P.S. Uluberia, District Howrah.	195.18	Erosion protection at Kalinagar in Block Uluberia -I, P.S. Uluberia, District Howrah.	31.12.2020	completed
13	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection to right embankment of Hooghly River at Tetikhola for a length of 150 m in Block Shyampur-I, P.S Shyampur, District Howrah.	112.92	Erosion protection at Tetikhola in Block Shyampur-I, P.S Shyampur, District Howrah.	31.12.2020	completed

Sl. No.	River Stretches	Key components of proposed action plans for restoration of identified polluted river stretches in States/Uts	Cost in Rs. Lakh	Proposed Achievable Target	Proposed Time Targets for compliance	Present Status and or pendency in terms of %
14	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection to right embankment of Hooghly River at the confluence of Gouriganga Khal at Chalkashi for a length of 240 m in Block Uluberia-I, PS Uluberia, District Howrah.	156.72	Erosion protection at Chalkashi in Block Uluberia-I, PS Uluberia, District Howrah.	31.12.2020	85% completed
15	Hooghly/Ganga (Tribeni to Diamond Harbour)	Protection of Hooghly right embankment for a length of 300 m at Sirishtala, Gadiara, in Block Shyampur-I, P.S Shyampur, District Howrah.	156.40	Erosion protection at Block Shyampur-I, P.S Shyampur, District Howrah.	31.12.2020	completed
Total =			2439.48			

B. Mukhopadhyay
Deputy Secretary to the
Government of West Bengal.

Annexure-II(b)

Action Plan for 17 polluted River Stretches with regard to (a) Protection and management of flood plain zones (FPZ), (b) Maintaining minimum environmental flow of river, (c) River catchment / Basin Management.

Irrigation & Waterways Department

Sl no	Name of river	River stretch	Blocks	Action plan on the components		
				(a) Protection and management of flood plain zones (FPZ)	(b) Maintaining minimum environmental flow of river.	(c) River catchment / Basin Management
1	Vindhadhari	Haroa Bridge To Malanch Burning Ghat	Haroa, Minakhan & Malancha.	Total 2.30 km bank protection works amounting ₹ 11.70 Crore will be taken up at right bank of river Vindhadhari during 2020-21. (The details of works at Annexure II)	The river is a perennial river. There is no regulating structure exists on this river for regulation of river flow. The environmental flow is naturally maintained from the river flow which is a combination of surface flow and base flow.	Not related to I&WD
2	Mahananda	Siliguri to Binnaguri.	Siliguri Municipality, Rajganj and Phansidewa.	1.40 km bank protection work amounting ₹ 3.58 Crore is under running by which 18900 people under 112 Ha areas may be benefitted. (The details of works at Annexure I) 3.00 km bank protection work amounting ₹ 8.53 Crore will be taken up during 2020-21, by which 32000 people under 465 Ha areas may be benefitted. (The details of works at Annexure II)	Average flow about 15.00 cumec is being released from Mahananda Barrage throughout the day during lean season since last three year, for maintaining minimum environmental flow of river.	Not related to I&WD
3	Churni	Santipur Town To Majhadia	Haskhali Krishnaganj and Ranaghat-I & II	0.5 km bank protection work of ₹ 1.56 Crore will be taken up during 2020-21, by which 2000 people in 98 Ha of areas may be benefitted. (The details of works at Annexure II(a))	The river is non-perennial. There is no regulating structure exists on this river for regulation of river flow. The environmental flow is naturally maintained from the river flow which is a combination of surface flow and base flow.	Not related to I&WD
4	Dwarka	Tarapith To Sadhak	Rampurhat - II	For this stretch, Bank protection works are being taken by Tarapith-Rampurhat Development Authority (TRDA).	Same as Sl No-3	Not related to I&WD

		Bamdeb Ghat				
5	Ganga	Tribeni To Diamond Harbour	Bansberia Municipality, Kalyani, Naihati, Bandel, Barrackpur, Kolkata, Budge Budge, Uluberla, Bagnan-I,II.	In left bank, 0.135 km bank protection work of ₹ 2.61 Crore is under running and 1.045 km bank protection work of ₹ 14.01 Crore will be taken during 2020-21. (The details of works at Annexure II(a)) In right bank, 0.900 km bank protection work of ₹ 6.21 Crore will be executed during 2020-21. (The details of works at Annexure II(a))	The river is a perennial river. The environmental flow is maintained through the release from the Farakka Barrage throughout the year.	Not related to I&WD
6	Damodar	Durgachakm To Dishergarh	Raniganj, Neturia	In order to facilitate improved irrigation system, flood control management, minimised drainage congestion, the Irrigation & Waterways Department has taken up a major project “West Bengal Major Irrigation & Flood Management Project (WBMIFMP)” with a cost of ₹ 2768 crore, for betterment of 26.80 lakh people in Howrah, Hooghly and Bardhaman districts. Bank protection of all vulnerable spots under this stretches will be covered under the above mentioned West Bengal Major Irrigation & Flood Management Project (WBMIFMP).	There is no regulating structure in West Bengal. However there is a dam in Panchet over Dmodar river in Jharkhand under the control of DVC, which regulates the flow through this river. This release from the Dam, along with the contribution from the uncontrolled catchment of the d/s of the dam, maintains environmental flow in the river.	Not related to I&WD
7	Jalangi	Laal Dighi To Krishna Nagar	Krishnanagar Municipality, Krishnanagar-I & II	1.05 km bank protection work of ₹ 3.15 Crore will be taken up during next 2 years, by which 3500 people under 205 Ha areas may be benefitted. (The details of works at Annexure II)	Same as SI No-3	Not related to I&WD
8	Kansai	Midnapore To Ramnagar	Midnapur, Debra	1.5 km bank protection work of ₹ 3.62 Crore is under running by which 13800 people under 700Ha areas may be benefitted. (The details of works at Annexure II)	The discharge through Kansabati river is regulated from the major dam at Mukutmanipur, Bankura. The regulated release from dam, along with the contribution from the uncontrolled catchment of the d/s of the dam, maintains environmental flow in the river.	Not related to I&WD
9	Matha-	Madhupur	Krishnaganj	At present, there is no such vulnerable zone noticed in this	Same as SI No-3	No Not

	bhanga	To Gobindapur		stretch. However, protection work will be taken up as & when required.		related to I&WD
10	Barakar	Kulti To Asansol	Kulti & Asansol	At present, there is no such vulnerable zone noticed in this stretch. However, protection work will be taken up as & when required.	There is no regulating structure in West Bengal. However there is a dam in Mithon over Barakar river in Jharkhand under the control of DVC, which regulates the flow through this river. This release from the Dam, along with the contribution from the uncontrolled catchment of the d/s of the dam, maintains environmental flow in the river.	Not related to I&WD
11	Dwarakeshwar	Along Bankura	B.M., Bankura-I, Onda	A bank protection work of length 300 m of amounting ₹ 0.91 crore will be executed 2020-21 by which 790 people under 1.67 Ha area will be benefitted. (The details of works at Annexure II)	Same as SI No-3	Not related to I&WD
12	Kaljani	Bitala To Alipurduar	Kalchini, Alipurduar-I	2.92 km bank protection work of ₹ 4.44 Crore is under running by which 5900 people under 96 Ha areas may be benefitted. (The details of works at Annexure I) Further, 1.01 km bank protection work of ₹ 1.52 Crore will be taken during 2020-21, by which 3000 people under 74 Ha areas may be benefitted. (The details of works at Annexure II)	Same as SI No-3	Not related to I&WD
13	Karola	Jalpaiguri To Thakurer Kamat	Rajganj, Jalpaiguri Sadar	2.03 km bank protection work of ₹ 3.68 Crore is under running by which 9000 people under 102 Ha areas may be benefitted. (The details of works at Annexure I)	Same as SI No-3	Not related to I&WD
14	Mayurakashi	Suri To Durgapur	Suri-I, Durgapur	No such work envisaged for this stretch of river Mayurakshi. There is no such vulnerable zone noticed in both sides of Darakeswar River along Bankura Town. So at present no future plan is there for execution of protection work.	There is no regulating structure in West Bengal. However there is a dam in Massanjore over Mayurakashi river, which regulates the flow through this river. This release from the Dam, along with the contribution from the uncontrolled catchment of the d/s of the dam, maintains environmental flow in the river.	Not related to I&WD
15	Rupnarayan	Kolaghat To Benapur	Amta-II, Tamluk Municipality, Sahid	1.132 km bank protection work of ₹ 3.68 Crore is under running, by which 4600 people under 158 Ha areas may be benefitted. (The details of works at Annexure I) Further, 4.50 km bank protection work of ₹ 12.96 Crore will	The river is perennial river. There is no regulating structure exists on this river for regulation of river flow. The environmental flow is naturally	Not related to I&WD

			Matangini, Bagnan-I & II, Shyampur.	be executed during 2020-21. (The details of works at Annexure II)	maintained from the river flow which is a combination of surface flow and base flow.	
16	Silabati	Ghatal To Nischindipur	Ghatal	There is no such vulnerable zone noticed in both sides of Darakeswar River along Bankura Town. So at present no future plan is there for execution of protection work.	Same as SI No-3	Not related to I&WD
17	Teesta	Siliguri to Paharpur	Rajganj, Mal, Maynaguri and Jalpaiguri Sadar.	10.61 km bank protection work of ₹ 31.41 Crore is under running, by which 42000 people under 1580 Ha areas may be benefitted. (The details of works at Annexure I)	Depending on water availability, downstream release is regulated.	Not related to I&WD

Note :

1. There is no definite norm and guidelines on the amount of minimum environment flow to be maintained in a river, available with the Department. The State Environment Department may fix up the criteria on the amount of environment flow to be maintained.
2. For 17 river stretches, the financial involvement for taking of anti-erosion works in 2019-20 (details at Annexure-I) and in 2020-21 (details at Annexure-I) is ₹ **113.46 Crore**.
3. This report was earlier submitted to SPMG in February,2020 as Revised Action Plan of the Department on 17 polluted river stretches. The Annexure-I and annexure-II as mentioned in table above, are also enclosed with the latest status of July-2020.

(B. Mukhopadhyay)
Deputy Secretary to the
Govt. Of West Bengal.

Annexure-VIII(b)

3. Name of River---CHURNI (Modified Action Plan)

Polluted River Stretch	District	Block	Major Head of Works	Action to be Taken	Total Unit	Source of Fund	Targeted timeline	Budgetary EstimateRs in Lakh	Remarks
Santipur to Majhdia	Nadia	Hanskhali,santipur,Ranaghat-I	(a) Good Agricultural Practices	Bio village Program	6 nos. (72 ha)	State Dev. Fund	2019-20 to 2021-22	48.0	@8.0 Lakh/Program
				IPM Demonstration Centre	6 nos.	NFSM	Do	1.602	@0.2670 Lakh/DC
				Green manuring	160 ha	Farmer's own initiative	Do	0.0	
				SARP technique of rice cultivation	9 ha	ATMA	Do	0.90	@ 0.10 Lakh/ha
				SRI technique of rice cultivation	136 ha	ATMA,BGREI	Do	13.60	@ 0.10 Lakh/ha
				Awareness meeting	6 nos.	NFSM,BGREI,ATMA	Do	0.30	@0.05 Lakh
							Total		64.402
			(b)Crop Diversification (Demonstration on low water requiring	Pulse Demonstration Centre	1500ha	NFSM	Do	78.0	@0.0520 Lakh/ha
				Oilseed Demonstration Centre	1100ha	NFSM	Do	42.84	@0.03895

			crops)					Lakh/ha	
				Awareness meeting	6 nos.	NFSM, ATMA	Do	0.30	@0.05 Lakh
							Total	121.14	
			(c)Good Irrigation Practices	Micro-irrigation with supplementary water management activities	19.50 ha	PMKSY/BKSY	Do	10.80	
							Total	10.80	
							Total Bud. Est.(a+b+c)	196.342 Lakh	

Annexure-VII(b)

Status report for GP wise activities along Churni Polluted river stretches													
Sl. No.	River	Strech in KM	Distiricts	Blocks	Gram Panchayats	Action taken Report							
						Plants vetiver grassess on the river bank	Tree plantation in the catchment arae	Excavataion of farm pond ,re-excavation of traditional community water bodies across the identified strechs	Excavation of link canal and construction of pucca field channel	Setting up of SLWM units in convergence with SBM/MNB	Imposition of ban on plastic bag usage	Taking up IEC activities	Setting up of bio-diversity park
						Area in Km	Area in Ha	No.	No.	No.	No.	No.	No.
1	CHURNI	6.5 K.M.	Nadia	Krishnaganj	Krishnaganj	0	0.3	3	1	0	0	17	0
		6.00 K.M			Shibnnibas	0	1.3	3	1	0	0	10	0
	CHURNI	6.5 km	NADIA	HANSKHALI	MAYURHAT-II	1.5	0.36	6	1	0	3	2	0
		5.0km			BETNA	0.3	0.1	3	3	0	5	5	0
		4.8 km			GOBINDAPUR	0.1	0	3	1	0	4	5	0
		1.7km			MAMJOAN	0.3	.0.01	3	2	0	6	6	0
	CHURNI	2.5	Nadia	Ranaghat-I	Anulia	0	0	5	0	0	2	2	
		2.5			Habibpur	2.5	0	8	4	0	3	3	0
		1.5			KPGP	1.5	0.5	7	1	0	1	1	0
		12			KHISMA GP	0.5	1.21	24	8	0	5	5	0
		3			Nawpara Masunda	0	0	1	1	0	2	2	0
		1.5			Ramnagar-1	0.8	0	0	0	0	3	3	0
	CHURNI	9 KM	NADIA	RANAGHAT-II	RAGHUNATHPUR	2.4	0	6	1	0	0	0	1
		7 KM			HIJULI-I	3.5	0	7	7	0	0	0	0
		2.5 KM			RAGHUNATHPUR	0	0	9	2	0	0	0	0
	Total					13.4	3.67	88	33	0	34	61	1

Annexure-III

Monthly Progress Report Regarding Polluting River Stretches for the Month of July, 2020 (Regarding O.A. No 673/2018)

Activity to be monitored Timeline Compliance status	River Ganga	River Churni
i. Plantation on both sides of the river	Advance (Nursery work) 100% completed. Creation of plantation,0%. Fund not received.	Advance (Nursery work) 100% completed. Creation of plantation,0%. Fund not received.
ii. Setting up biodiversity parks on flood plains by removing encroachment	Not applicable for River Ganga	Not applicable for River Churni

Chief Conservator of Forests
Special Development Project

Status of STPs in Churni Town under KMDA						Annexure-A4	Month of July, 2020		
SL No	Govt. Authority	Project Reference / City/Town	No. of STPs	Location of STPs	Capacity in MLD	Present status	Commencement Date	Likely Date of Completion	Remarks
1	KMDA	Ranaghat	1	Sreenathpur	4	Tendering	-	-	DPR prepared. Administrative approval and financial sanction accorded by GoWB. In the 1st call of tender no bidders have participated. 2nd call of tender was invited and one Bidder had participated in the tender but due to higher rate quoted by the bidder the tender was cancelled. Hence the third call of the tender has been invited on 31.07.2020. Last date of submission 31st August, 2020.
2			1	Chaitanyaghat	5.2		-	-	
3			1	Silver Jubilee Road	2.60		-	-	
Tendering Stage			3		11.80				

Annexure-A5

(For serial no. 4 regarding River Churni in respect of the observations of CPCB task team in their 13th meeting held on 10th July 2020)

Part-I

DETAILS OF DRAINS CONTRIBUTING TO POLLUTION IN RIVER CHURNI :-

Sl. No	Landmark of Drain / Outfall	Coordinate		Type	Flow (MLD)	BOD (mg/l)	FC (MPN/100ml)
		North	East	Domestic/ industrial/ mixed			
1	Chaitanya Ghat	23 ⁰ 10'58.94"	88 ⁰ 33'58.08"	Mixed	0.518	59.50	300,000.00
2	RadharaniSebaSad an	23 ⁰ 10'48.49"	88 ⁰ 33'50.48"	Mixed	0.333	47.82	1,300,000.00
3	Nadia Samaj Pally	23 ⁰ 10'48.45"	88 ⁰ 33'50.49"	Mixed	1.296	54.24	210,000.00
4	Chhoto Bajar	23 ⁰ 10'44.41"	88 ⁰ 33'43.77"	Mixed	0.091	71.30	190,000.00
5	Churipara	23 ⁰ 10'39.04"	88 ⁰ 33'33.10"	Mixed	0.822	70.00	160,000.00
6	Thanapara - I	23 ⁰ 10'38.83"	88 ⁰ 33'17.64"	Mixed	0.187	92.00	220,000.00
7	Thanapara - II	23 ⁰ 10'36.21"	88 ⁰ 33'15.64"	Mixed	0.456	58.00	140,000.00
8	Sreenathpur	23 ⁰ 10'25.03"	88 ⁰ 33'12.07"	Mixed	2.799	48.00	900,000.00
9	Basko Khal	23 ⁰ 11'2.63"	88 ⁰ 33'54.96"	Mixed	4.281	68.00	230,000.00

Note: Total 3 (Three) nos. of STP are proposed to be setup at Ranaghat and Total 9 (Nine) nos. of outfalling drains as mentioned above will be diverted into 3 (Three) nos. of STPs. 9 (Nine) nos. of drains will be catered into these STPs as per the following manner:

1. **STP-I:** (Capacity-5.2 MLD)- outfall 1,2 and 9 located at Chaitanya Ghat.
2. **STP-II:** (Capacity-2.6 MLD)- outfall 3,4 and 5 located at Silver Jubilee road.
3. **STP-III:** (Capacity-4 MLD)- outfall 6,7 and 8 located at Sreenathpur.

(For serial no. 7 regarding River Churni in respect of the observations of CPCB task team in their 13th meeting held on 10th July 2020)

Part-II

• **Action taken as interim measures for pollution abatement of River Churni-**

As the interception & diversion network including setting up of STPs within Ranaghat Municipal Town is under Tendering stage, KMDA as an interim measure has taken up in-situ treatment in June 2020 in the below mentioned major 02(two) nos. out falling drains which contribute maximum polluted discharge to river churni.

SL No	Name of the drain	Flow in MLD	Present Status
1	Sreenathpur	2.799	As an interim measures, in-situ treatment have been initiated in June, 2020. Work has been started and will be completed shortly.
2	Baskokhal	4.281	

Annexure-A5

Pert chart for the work of setting up of STPs for containment of pollution of river Churni at Ranaghat Municipality taken up by KMDA					Start Date 30.06.18	MONTHS																																										End date 01.10.22					
Sl. No.	Description of work	Start Date	End Date	Months to complete	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1	DPR preparation	30-06-2018	28-01-2019	6	█																																																
2	Sanction of Fund	31-01-2019	01-03-2019	1								█																																									
4	Tendering & Finalization of Tender	04-03-2019	30-09-2020	18																			█																														
5	Survey, Design and drawing with vetting	01-10-2020	31-12-2020	2																											█																						
6	Construction of Diversion Structure	01-01-2021	01-06-2021	5																													█																				
7	Laying of Diversion pipeline	02-03-2021	23-04-2021	1																															█																		
8	Construction of LS & MPS	05-03-2021	07-03-2022	12																																	█																
9	Construction of STP works	01-01-2021	16-02-2022	13																													█																				
10	E/M works	03-09-2021	11-07-2022	10																																					█												
11	Testing & Commissioning	12-07-2022	01-10-2022	2																																															█		