adani

Ports and Logistics

O/C

PCB ID: 37436

APSEZL/EnvCell/2023-24/049 **Date: 11.09.2023**

To,
Member Secretary
Gujarat Pollution Control Board
Paryavaran Bhavan,
Sector-10-A, Gandhinagar-382010

Dear Sir,

Sub: Environmental Statement for the financial year ending 31st March, 2023 for **M/s Adani Ports and Special Economic Zone Limited (SPM & Pipeline for Crude Oil Terminal)**

Ref: **PCB ID: - 37436, Consent Order No. WH-117830, issued on: 29/03/2022, Valid up to: 26/04/2027**

With reference to the above-mentioned subject and reference, please find enclosed Environmental Statement in Form V prescribed under Rule 14 of the Environment (Protection) Rules 1986, for M/s **Adani Ports and Special Economic Zone Limited (SPM & Pipeline for COT), Mundra, Dist. Kutch - 370421** for the financial year ending 31st March 2023.

Thank you,

Yours faithfully,

For **Adani Ports and Special Economic Zone Limited**

Authorized Signatory

Encl: As above.

Copy to: The Regional Officer, Gujarat Pollution Control Board, Gandhidham

14/09/2023

Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar-382010

Adani Ports and Special Economic Zone Ltd
Adani House,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India
CIN: L63090GJ1998PLC034182

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Fax +91 2838 25 51110
info@adani.com
www.adani.com

(PCB ID: 37436)

FORM V
(See Rule 14)

Environmental Statement for the Financial Year ending 31st March 2023

PART – A

(i)	Name and address of the Owner/ Occupier of the Industry Operation or Process	:	Mr. Sujalkumar Shah CEO – Mundra & Tuna Port Adani Ports and SEZ Limited 4th Floor, Adani House, Mundra, Kutch – 370421. Ph No. (02838) 255000
(ii)	Industry Category Primary (STC Code) Secondary (STC Code)	:	Red-Large NA NA
(iii)	Production Capacity	:	SPM and Pipeline for Crude Oil Terminal: 25.0 MMTPA
(iv)	Year of Establishment	:	2005
(v)	Date of last Environment Statement submitted	:	31/08/2022

(PCB ID: 37436)

PART – B

Water and Raw Material Consumption

(i) Water Consumption

Water Consumption Cu. Mtr./Day	Average
Process	Nil
Cooling	Nil
Domestic	1.0 m^3/day

Name of Products	Process Water Consumption per unit of Product Output	
	During the current financial year (2021-22)	During the current financial year (2022-23)
Single Point Mooring (SPM) for Crude Oil Handling and transporting through pipeline*	--	--

*** Unit does not go under any manufacturing process. The unit involves single point mooring system and pipeline for transporting Crude Oil from SPM to Storage Terminal of IOCL. There is no industrial water consumption for storage and handling.**

(ii) Raw Material Consumption

Name of Raw Material	Name of Products	Consumption of Raw Material per Unit of output	
		During the current financial year (2021-22)	During the current financial year (2022-23)
--	Crude Oil Handling and transporting through pipeline*	6.99 MMT	6.18 MMT

*** Unit does not go under any manufacturing process. Hence there is no any raw material consumption.**

(PCB ID: 37436)

PART – C

Pollutants discharged to Environment/Unit of Output
(Parameters as specified in consent issued)

Pollutants	Quantity of pollutants discharged (Mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water	• Nil		
(b) Air	• Nil • Marine water quality monitoring is being done on regular basis. • Refer **Annexure – 1** for marine water quality.		
Particulate Matter (mg/Nm^3)			
Sulphur Dioxide (PPM)			
Nitrogen Oxide (PPM)			

*** There is no wastewater generation and air emission from the said facility.**

PART – D

Hazardous Wastes
(As specified under Hazardous and Other Wastes Management Rules 2016)

Hazardous Wastes	Total Quantity (Kg)	
	During the current financial year (2021-22)	During the current financial year (2022-23)
(a) From Process	--	--
(b) From Pollution Control facilities	--	--

PART – E

Solid Waste

Solid Waste	Total Quantity Generated (MT/Annum)	
	During the current financial year (2021-22)	During the current financial year (2022-23)
a) From Process (Ash)	Nil	Nil
b) From Pollution Control facilities	-	-
(C-1)Quantity recycled or reutilized within the unit	Details is Attached as **Refer Annexure – 2**	
(C-2) Sold		
(C-3) Disposed		

Note: Above Quantity shown is waste generated / disposed from entire Adani Ports & SEZ Limited.

PART - F

Please specify the characterization (in terms of Composition and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes:

- Single Point Mooring (SPM) is installed in sea which is approx 6.0 nautical mile away from the sea shore, Entire SPM pipeline is buried underground, total pipeline length is 15.4 km including 8.6 km inside the open sea and 6.8 km on landward side. The operation is taken care in deep sea and there is no any Hazardous Waste generation. The crude from deep sea to the dedicated tank farm of IOCL transported by off-shore and on shore pipelines.

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

- Disaster Management plan is in place and implemented and updated on regular basis.
- Oil spill contingency plan is in place to handle Tier 1 level oil spills considering different accident scenarios, and the vulnerable areas are identified and mitigation plan is prepared & updated on regular basis.
- Oil spill mock drills are conducted regularly as per schedule.
- Offshore/Onshore pipeline Cathodic Potential (CP) survey is being done as per schedule.
- Regional Level Pollution Response exercise "SWACHCHH SAMUDRA-NW 2022" was carried out by Indian Coast Guard on 12th April, 2022 at Vadinar, Gujarat. All participants from various Oil Handling Agencies and Stakeholders (ICG, RELIANCE, ESBTL, OOCL, APSEZ, BORL, VOTL (NAYARA) were participated in this exercise.

(PCB ID: 37436)

PART – H

Additional measures /investment/ proposal for environmental protection including abatement of pollution, prevention of pollution.

- Adequate plantation has been done as part of environment protection and abatement of pollution. Organization has dedicated team under the Horticulture department, who takes care of plantation and landscaping for entire APSEZL area and develops Green Zones.
- In entire APSEZ more than 457.99 ha. area is developed as greenbelt with samplings of more than 9.06 Lacs.

PART – I

Any other particulars for improving the quality of environment:

- Monitoring of environmental parameters such as Air, Noise, and wastewater quality being done regular basis through MoEF&CC & NABL recognized laboratory (M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi).
- Awareness program and training on waste management, water conservation, energy conservation for employees & their families, contractors, local community is being conducted on regular basis.
- APSEZ has Environment Cell for environmental management and environmental monitoring.
- APSEZ Budget for environmental management measures (including horticulture) for the FY 2022-23 was to the tune of IN lakh out **1448.06** of which INR **1366.281** lakh was spent. Environment protection expenditure spent during the year 2022-23 is enclosed as **Annexure – 3**.

Date: 11-09-2023

(Signature of a person carrying out an industry, operation or process)
Designation: **Head-Environment Cell**

ANNEXURE – 2

Waste Disposal Details, APSEZ, Mundra

F.Y. 2022-23

Sr. No.	Waste Description	Disposal Method	Unit	Quantity 2021-22	Quantity 2022-23
Non-Hazardous:					
1.	Dry Waste (Recyclable waste- Metal, Wood, paper, plastic etc.)	Recycle (send to reg. recycler)/ Reuse (Used by Org.)	MT	3458.243	3779.70
2.	RDF (Non-Recyclable)	Co-processing at cement plant	MT	376.01	544.17
3.	STP Sludge	Reprocess (Manure)	MT	17	11.8
4.	Organic Waste (included food waste)	Reprocess & Recovery Manure/biogas	MT	851.51	897.82
5.	E-Waste	Recycle (send to reg. recycler)	MT	50	89.86
Hazardous:					
1.	Used Oil	Recycle (send to reg. recycler)	MT	370.58	131.99

ANNEXURE – 3

Cost of Environmental Protection Measures of APSEZ, Mundra

F.Y. 2022-23

Sr. No.	Activity	Cost incurred (INR in Lacs)	Budgeted Cost (INR in Lacs)
		2022 – 23	**2022 – 23**
1.	Environmental Study / Audit and Consultancy	7.32	11.05
2.	Legal & Statutory Expenses	12.32	12
3.	Environmental Monitoring Services	15.32	33
4.	Hazardous / Non-Hazardous Waste Management & Disposal	104.035	127.72
5.	Environment Days Celebration and Advertisement / Business development	2.53	8.00
6.	Treatment and Disposal of Bio-Medical Waste	2.29	2.04
7.	Mangrove Plantation, Monitoring & Conservation	35.0	35.0
8.	Other Horticulture Expenses	956	979
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	141.33	164.46
10.	Expenditure of Environment Dept. (Apart from above head)	90.136	75.79
	Total	**1366.281**	**1448.06**

"Half Yearly Environmental Monitoring Reports "

For,

ANNEXURE - 1

M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD.

PLOT NO. 169/P, AT - NAVINAL ISLAND, TAL. - MUNDRA, DIST. - KUTCH - 370421.

Monitoring Period: April – 2022 to September - 2022

Submitted By

UniStar Environment & Research Labs Pvt. Ltd.

White House, Near GIDC Office, Char Rasta, Vapi, Gujarat, India – 396195

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MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.16	8.07	8.12	7.98	8.24	8.04	8.18	8.08	8.22	8.13	8.19	8.14	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30	30.2	30.1	30.3	30.2	30.1	30	30.1	30	30.2	30	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	124	116	128	114	128	114	132	122	140	124	154	132	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.4	BDL	2.6	BDL	2.5	BDL	2.6	BDL	2.8	BDL	2.6	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.07	5.87	6.12	5.92	6.02	5.82	6.17	5.96	6.17	5.96	6.05	5.85	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.24	35.68	35.32	35.81	35.42	35.94	35.64	36.02	35.56	35.98	35.48	35.94	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.33	2.15	2.49	2.32	2.32	1.72	1.94	1.72	2.37	2.24	3.45	3.02	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.235	0.17	0.259	0.215	0.379	0.312	0.344	0.293	0.328	0.293	0.302	0.276	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.37	2.28	2.28	2.16	2.59	2.16	2.37	2.32	2.5	2.37	3.19	2.84	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.52	5.47	5.029	4.695	5.289	4.19	4.654	4.333	5.198	4.903	6.942	6.136	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36428	36962	36128	36788	35922	36464	35864	36124	35810	35984	35846	36012	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	12.02	8.02	15.9	11.9	15.8	11.8	24.05	16.03	11.99	7.99	16.1	12.07	APHA 23rd Ed.,2017, 5220-B

Continue…

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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	2.4	3.25	2.98	2.88	2.88	3.21	3.21	3.15	2.36	3.25	1.98	3.25	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.47	0.74	0.84	0.67	0.9	0.87	0.89	0.97	1.23	0.84	0.58	0.84	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	123	75	105	89	96	98	106	58	98	69	71	69	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Navicula*	*Pinnularia*	*Navicula*	*Pinnularia*	*Biddulphia*	*Coscinodiscus*	*Pinnularia*	*Navicula*	*Pinnularia*	*Odentella*	*Ceratium*	*Nitzschia*	APHA (23rd Ed. 2017)10200 F
			Fragillaria	*Navicula*	*Fragillaria*	*Surirella*	*Fragillaria*	*Thalassionema*	*Surirella*	*Fragillaria*	*Surirella*	*Rhizosolenia*	*Diploneis*	*Pinnularia*	
			Thalassiothrix	*Odentella*	*Skeletonema*	*Odentella*	*Odentella*	*Rhizosolenia*	*Odentella*	*Thalassiothrix*	*Odentella*	*Coscinodiscus*	*Odentella*	*Odontella*	
			Grammatophora	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Dinophysis*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Dinophysis*	
			Surirella	*Melosira*	*Odentella*	*Melosira*	*Melosira*	*Skeletonema*	*Melosira*	*Surirella*	*Melosira*	*Thallassiosira*	*Melosira*	*Surirella*	

B	Zooplankton								
1	Abudance(Population)	noX103/ 100 m3	25	32	30	42	35	40	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods*	*Copepods*	*Crustacean Larvae*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	
			Oikoplura	***Egg(Fish and Shrimps)***	***Decapoda***	***Oikoplura***	***Oikoplura***	***Oikoplura***	
			Crustacean Larvae	***Crustacean Larvae***	***Copepods***	***Copepods nauplii***	***Copepods nauplii***	***Copepods nauplii***	
			Crustacean	***Crustacean***	***Crustacean***	***Crustacean***	***Crustacean***	***Crustacean***	
			Bivalve Larvae	***Bivalve Larvae***	***Bivalve Larvae***	***Bivalve Larvae***	***Bivalve Larvae***	***Bivalve Larvae***	
3	Total Biomass	ml/100 m³	14.69	15.3	18.4	17.41	15.63	14.32	

Continue…

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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	201		142		214		128		100		234		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	35		30		28		40		27		44		APHA 23rd Ed.2017,9222-B
3	Ecoli	/100ml	12		24		18		20		14		20		IS :15185:2016
4	Enterococcus	/100ml	8		12		6		14		8		14		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022	MAY-2022	JUNE-2022	JULY-2022	AUGUST-2022	SEPTEMBER-2022	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT		
1.	Organic Matter	%	0.76	0.62	0.68	0.56	0.48	0.52	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	512.6	546.2	536.2	546.2	502.4	518.1	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	2.86	3.02	3.18	3.32	3.38	3.44	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	88.2	102.1	111.4	118.1	125.4	120.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	539.8	556.3	542.6	586.3	602.5	614.5	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.21	3.28	3.49	4.06	4.12	4.18	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	33.16	36.24	35.68	36.12	33.24	40.36	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	30.25	32.45	32.58	34.12	32.46	36.25	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	78.64	82.14	84.86	92.46	96.54	104.2	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	4.18	3.94	3.85	3.42	3.21	3.12	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

Continue…

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022 SEDIMENT	MAY-2022 SEDIMENT	JUNE-2022 SEDIMENT	JULY-2022 SEDIMENT	AUGUST-2022 SEDIMENT	SEPTEMBER-2022 SEDIMENT	TEST METHOD
D	Benthic Organisms								
1	Macrobenthos	--	*Gastropods*	*Decapods Larvae*	*Gastropods*	*Turbellarians*	*Amphipods*	*Amphipods*	APHA (23rd Ed. 2017)10500 C
			Isopods	*Isopods*	*Isopods*	*Isopods*	*Decapod Larvae*	*Decapod Larvae*	
			Amphipods	*Amphipods*	*Amphipods*	*Gastropods*	*Isopods*	*Isopods*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Gastropods*	*Gastropods*	
2	MeioBenthos	--	*Polychates*	*Foraminiferan*	*Polychates*	*Polychates*	*Turbellarians*	*Turbellarians*	
			Herpectacoids	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	
3	Population	no/m^2	*308*	300	280	268	302	*356*	

GUJARAT VAPI

Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.14	8.05	8.25	8.11	8.19	8.05	8.21	8.12	8.19	8.05	8.21	8.09	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30.3	30.1	30.2	30	30.2	30.1	30.1	30	30.2	30.1	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	126	112	132	106	132	106	124	98	136	106	144	112	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL	2.7	BDL	2.8	BDL	3	BDL	2.9	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.17	5.97	6.22	5.92	6.12	5.92	6.06	5.86	6.06	5.86	5.95	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.22	35.86	35.41	35.91	35.55	36.05	3542	36.11	35.36	36.05	35.42	36.11	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.67	2.41	2.84	2.59	3.45	2.59	3.23	2.59	2.8	2.59	3.02	2.37	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.54	0.475	0.56	0.517	0.431	0.328	0.413	0.379	0.362	0.345	0.345	0.302	APHA 23rd Ed.,2017,4500NO_2 B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.67	2.54	2.32	2.28	2.84	2.62	3.66	2.93	2.8	2.5	3.79	3.36	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.38	5.34	5.72	5.387	6.721	5.538	7.303	5.899	5.962	5.435	7.155	6.032	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36426	36832	36342	36744	36124	36580	36210	36742	36150	36544	36110	36540	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	20.04	12.02	23.9	15.9	19.7	11.8	16.03	12.02	15.98	11.99	24.14	16.1	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	3.14	2.97	2.87	3.21	2.74	2.98	2.85	2.78	2.78	2.05	3	2.05	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.59	0.36	0.75	2.96	0.63	1.87	0.95	0.56	1	0.48	1.85	0.58	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	99	63	101	70	100	110	96	102	100	100	109	100	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Ceratium*	*Coscinodiscus*	*Pinnularia*	*Nitzschia*	*Cyclotella*	*Pleurosigma*	*Nitzschia*	*Ceratium*	*Melosira*	*Grammatophora*	*Thalassiothrix*	*Odentella*	APHA (23rd Ed. 2017)10200 F
			Diploneis	*Diplotella*	*Pleurosigma*	*Pinnularia*	*Pinnularia*	*Cyclotella*	*Pinnularia*	*Diploneis*	*Pinnularia*	*Rhizosolenia*	*Surirella*	*Rhizosolenia*	
			Odentella	*Odontella*	*Odentella*	*Odontella*	*Skeletonema*	*Biddulphia*	*Odontella*	*Odentella*	*Skeletonema*	*Nitzschia*	*Navicula*	*Coscinodiscus*	
			Grammatophora	*Dinophysis*	*Grammatophora*	*Dinophysis*	*Thallassiosira*	*Skeletonema*	*Dinophysis*	*Grammatophora*	*Rhizosolenia*	*Thallassiosira*	*Thallassiosira*	*Grammatophora*	
			Melosira	*Surirella*	*Melosira*	*Surirella*	*Thalassionema*	*Thallassiosira*	*Surirella*	*Melosira*	*Pleurosigma*	*Pleurosigma*	*Skeletonema*	*Thallassiosira*	

B	Zooplankton								
1	Abudance(Population)	noX103 / 100 m3	50	41	38	40	42	36	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*	*Copepods nauplii*	*Crustacean*	*Crustacean Larvae*	*Copepods nauplii*	*Crustacean Larvae*	
			Crustacean Larvae	*Crustacean Larvae*	*Oikoplura*	*Egg(Fish and Shrimps)*	*Oikoplura*	*Egg(Fish and Shrimps)*	
			Oikoplura	*Oikoplura*	*Crustacean Larvae*	*Copepods*	*Crustacean Larvae*	*Copepods*	
			Bivalve Larvae	*Bivalve Larvae*	*Oikoplura*	*Crustacean*	*Oikoplura*	*Crustacean*	
			Oikoplura	*Oikoplura*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	15.89	14.36	15.89	16.95	16.23	15.46	

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	152		168		150		136		184		184		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	41		36		47		52		40		40		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	20		29		12		27		20		20		IS :15185:2016
4	Enterococcus	/100ml	12		15		9		13		12		12		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022	MAY-2022	JUNE-2022	JULY-2022	AUGUST-2022	SEPTEMBER-2022	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT		
1.	Organic Matter	%	0.52	0.46	0.52	0.42	0.39	0.42	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	602.4	586.1	544.6	534.6	558.5	564.2	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	2.52	2.84	3.01	3.25	3.43	3.52	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	68.2	79.2	80.4	94.8	104.5	111.5	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	492.1	512.4	528.5	567.9	588.4	602.8	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	2.86	2.96	3.24	3.52	3.59	3.68	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	36.89	42.12	44.19	41.4	38.9	42.5	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	36.82	42.84	41.28	39.86	39.58	40.12	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	56.85	60.12	55.64	64.23	70.45	78.94	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.94	2.83	2.88	2.65	2.58	2.46	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Sipunculids*	*Sipunculids*	Sipunculids	*Foraminiferan*	*Amphipods*	*Gastropods*	APHA (23rd Ed. 2017)10500 C
			Decapods Larvae	*Decapods Larvae*	Decapods Larvae	Decapods Larvae	Isopods	Isopods	
			Amphipods	*Polychates*	Amphipods	*Amphipods*	*Sipunculids*	*Amphipods*	
			Isopods	*Isopods*	Isopods	*Polychates*	*Decapod Larvae*	*Sipunculids*	
2	MeioBenthos	--	*Turbellarians*	*Turbellarians*	Turbellarians	*Turbellarians*	*Herpectacoids*	*Polychates*	
			Herpectacoids	*Herpectacoids*	Herpectacoids	*Foraminiferan*	*Polychates*	*Herpectacoids*	
3	Population	no/m²	356	298	302	200	249	301	

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.17	8.04	8.26	8.09	8.23	8.14	8.25	8.16	8.24	8.14	8.14	7.98	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30	30.2	30.1	30.3	30.2	30.1	30	30.2	30.1	30.1	30	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	134	114	112	98	112	98	118	94	116	94	118	102	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.6	BDL	2.9	BDL	3.1	BDL	2.9	BDL	2.8	BDL	2.7	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.07	5.97	6.02	5.92	6.02	5.8	6.17	6.1	6.17	6.1	5.85	5.7	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.28	35.88	35.52	36.12	35.44	35.94	35.26	35.86	35.22	35.89	35.28	35.94	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.93	2.76	2.84	2.67	2.49	2.15	3.23	3.02	3.02	2.8	3.23	2.8	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.3	0.235	0.345	0.284	0.259	0.13	0.344	0.259	0.362	0.293	0.328	0.276	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.54	2.45	2.49	2.28	2.28	1.81	3.62	2.84	3.32	3.1	3.53	2.97	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.55	5.47	5.675	5.234	5.029	2.461	7.194	6.119	6.702	6.193	7.088	6.046	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36344	36854	35984	36768	36002	36648	36118	36748	35986	36422	36080	36640	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24.05	16.03	19.9	11.9	23.7	15.8	20.04	16.03	19.98	15.98	20.12	12.07	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3	2.56	3.1	2.79	3.1	2.87	3.1	3.14	3.25	3.06	2.36	2.89	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.2	0.97	0.93	1.23	85	0.99	78	1.03	1.42	1.45	0.96	1.25	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	84	102	98	120	100	130	95	124	105	109	102	118	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Pinnularia*	*Fragillaria*	*Fragillaria*	*Odentella*	*Odentella*	*Skeletonema*	*Odentella*	*Pinnularia*	*Cyclotella*	*Coscinodiscus*	*Cyclotella*	*Dinophysis*	APHA (23rd Ed. 2017)10200 F
			Thalassionema	*Rhizosolenia*	*Thalassionema*	*Rhizosolenia*	*Cyclotella*	*Diplotella*	*Rhizosolenia*	*Thalassionema*	*Pinnularia*	*Diploneis*	*Pinnularia*	*Pinnularia*	
			Navicula	*Pinnularia*	*Navicula*	*Coscinodiscus*	*Pinnularia*	*Odontella*	*Coscinodiscus*	*Navicula*	*Skeletonema*	*Rhizosolenia*	*Skeletonema*	*Thalassiothrix*	
			Thallassiosira	*Grammatophora*	*Thallassiosira*	*Grammatophora*	*Biddulphia*	*Dinophysis*	*Grammatophora*	*Thallassiosira*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	*Grammatophora*	
			Skeletonema	*Thallassiosira*	*Skeletonema*	*Thallassiosira*	*Thallassiosira*	*Surirella*	*Thallassiosira*	*Skeletonema*	*Thalassionema*	*Thalassionema*	*Thalassionema*	*Ceratium*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	32	45	51	39	28	37	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Crustacean*	*Egg(Fish and Shrimps)*	*Copepods nauplii*	
			Oikoplura	*Copepods*	*Copepods*	*Copepods nauplii*	*Copepods*	*Crustacean Larvae*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Oikoplura*	
			Crustacean	*Bivalve Larvae*	*Bivalve Larvae*	*Crustacean*	*Oikoplura*	*Bivalve Larvae*	
			Bivalve Larvae	*Crustacean*	*Crustacean*	*Bivalve Larvae*	*Crustacean*	*Oikoplura*	
3	Total Biomass	ml/100 m³	13.25	15.68	15.74	17.45	15.42	16.32	

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	198		200		190		200		245		245		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	39		28		40		36		42		42		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	22		11		27		21		20		20		IS :15185:2016
4	Enterococcus	/100ml	15		18		15		20		14		14		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022	MAY-2022	JUNE-2022	JULY-2022	AUGUST-2022	SEPTEMBER-2022	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.66	0.59	0.62	0.59	0.56	0.52	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	574.4	588.2	594.6	574.2	562.4	542.2	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	2.83	2.98	3.32	3.49	3.52	3.64	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	82.4	94.2	92.2	104.2	110.5	118.4	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	402.1	424.6	462.4	489.6	510.5	522.4	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	2.89	3.05	3.15	3.35	3.42	3.58	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	38.94	40.1	42.5	46.32	44.26	52.24	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	34.29	41.36	44.4	40.25	38.56	42.85	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	64.97	70.19	65.2	75.94	78.24	82.85	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	4.43	4.05	3.86	3.52	3.45	3.28	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	*Isopods*	*Gastropods*	*Isopods*	*Sipunculids*	*Polychates*	*Sipunculids*	APHA (23rd Ed. 2017)10500 C
			Polychates	*Polychates*	*Polychates*	*Polychates*	*Gastropods*	*Decapods Larvae*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Gastropods*	*Isopods*	*Amphipods*	
			Amphipods	*Amphipods*	*Amphipods*	*Isopods*	*Sipunculids*	*Isopods*	
2	MeioBenthos	--	*Polychates*	*Herpectacoids*	*Polychates*	*Herpectacoids*	*Herpectacoids*	*Turbellarians*	
			Foraminiferan	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	*Polychates*	*Herpectacoids*	
3	Population	no/m²	*300*	320	380	352	360	*355*	

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.04	7.92	8.18	8.01	8.24	8.08	8.19	8.04	8.21	8.08	8.24	8.12	IS 3025 (Part11)1983
2.	Temperature	°C	30.1	30	30.3	30.2	30.4	30.2	30.2	30.1	30.2	30.1	30.2	30.1	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	128	102	124	108	124	108	126	88	130	112	124	106	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.1	BDL	2.8	BDL	2.9	BDL	2.8	BDL	3.1	BDL	2.9	BDL	IS 3025(Part 4)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.07	5.86	5.92	5.71	6.02	5.82	6.06	5.86	6.17	5.96	6.15	6.05	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.29	35.94	35.36	35.82	35.74	36.24	35.62	35.98	35.45	36.02	35.43	35.94	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991,Amd.2
8.	Nitrate as NO_3	µmol/L	2.84	2.5	2.32	2.93	2.84	2.59	2.37	2.16	2.59	2.24	3.66	3.23	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.365	0.325	0.379	0.31	0.345	0.3	0.207	0.189	0.241	0.198	0.276	0.259	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.62	2.49	2.59	2.32	2.49	2.06	2.75	2.62	3.84	3.32	3.62	3.28	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.68	5.55	5.289	5.56	5.675	4.95	5.327	4.969	6.671	5.758	7.556	6.769	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36524	37042	36204	36944	36312	36864	36422	36894	36128	36750	35988	36520	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	20.04	16.03	23.9	19.9	19.7	11.8	24.05	12.02	23.98	15.98	20.12	16.1	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	2.24	3.06	2.68	3.06	2.44	2.8	2.44	2.74	2.36	2.78	2.69	3.21	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.48	0.48	0.8	0.48	0.79	0.65	0.87	0.68	0.84	0.62	1.32	0.52	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	129	86	109	86	114	70	98	100	101	120	95	123	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Melosira*	*Diploneis*	*Melosira*	*Gramma tophora*	*Diploneis*	*Cyclotella*	*Gramma tophora*	*Melosira*	*Gramma tophora*	*Rhizosolenia*	*Coscinodiscus*	*Ceratium*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Rhizosolenia*	*Fragillaria*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Pinnularia*	*Diploneis*	*Pinnularia*	
			Skeletonema	*Nitzschia*	*Skeletonema*	*Nitzschia*	*Nitzschia*	*Diniphysis*	*Nitzschia*	*Skeletonema*	*Nitzschia*	*Thalassiothrix*	*Rhizosolenia*	*Odontella*	
			Rhizosolenia	*Thalassiothrix*	*Nitzschia*	*Thallassiosira*	*Cyclotella*	*Thallassiosira*	*Thallassiosira*	*Rhizosolenia*	*Thallassiosira*	*Gramma tophora*	*Dinophysis*	*Thalassiothrix*	
			Pleurosigma	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Skeletonema*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Ceratium*	*Thalassionema*	*Thallassiosira*	

B	Zooplankton								
1	Abudance(Population)	noX103 / 100 m3	45	38	41	40	31	40	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Copepods nauplii*	*Copepods nauplii*	*Pinnularia*	
			Oikoplura	*Oikoplura*	*Oikoplura*	*Crustacean Larvae*	*Crustacean Larvae*	*Surirella*	
			Copepods nauplii	*Copepods nauplii*	*Copepods nauplii*	*Oikoplura*	*Oikoplura*	*Odentella*	
			Crustacean	*Crustacean*	*Crustacean*	*Bivalve Larvae*	*Bivalve Larvae*	*Grammatophora*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	*Oikoplura*	*Melosira*	
3	Total Biomass	ml/100 m³	17.24	16.35	13.98	14.74	16.48	16.54	

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	150		188		128		148		200		204		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	30		42		24		28		41		35		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	28		30		12		10		23		22		IS :15185:2016
4	Enterococcus	/100ml	10		21		8		6		17		21		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022	MAY-2022	JUNE-2022	JULY-2022	AUGUST-2022	SEPTEMBER-2022	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.52	0.49	0.56	2.46	1.84	1.51	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	622.1	638.2	612.4	586.4	582.5	544.1	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.12	3.31	3.16	3.39	3.44	3.48	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	58.64	71.2	68.6	76.9	80.4	91.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	404.1	419.8	435.6	486.2	502.2	513.4	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.12	3.26	3.52	3.75	3.84	4.02	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	42.16	44.39	44.82	42.62	40.26	44.36	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	28.94	36.84	38.24	39.84	36.58	35.26	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	52.12	58.57	55.64	64.85	68.52	76.94	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	4.16	3.94	3.85	3.42	3.25	2.89	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	*Amphipods*	*Amphipods*	*Amphipods*	*Amphipods*	*Amphipods*	*Isopods*	APHA (23rd Ed. 2017)10500 C
			Decapod Larvae	*Decapod Larvae*	Sipunculids	Sipunculids	Sipunculids	Polychates	
			Isopods	*Isopods*	*Isopods*	*Isopods*	*Isopods*	*Sipunculids*	
			Gastropods	*Gastropods*	*Gastropods*	*Gastropods*	*Gastropods*	*Amphipods*	
2	MeioBenthos	--	*Foraminiferan*	*Turbellarians*	*Decapods Larvae*	*Decapods Larvae*	*Decapods Larvae*	*Polychates*	
			Herpectacoids	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Foraminiferan*	
3	Population	no/m²	278	265	290	321	342	289	

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.12	8.02	8.31	8.12	8.24	8.11	8.21	8.04	8.25	8.09	8.22	8.12	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30.2	30.1	30.3	30.1	30.2	30.1	30.1	30	30.2	30.1	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	94	88	106	96	106	96	102	90	142	114	138	110	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	3	BDL	3.2	BDL	3.2	BDL	3	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.97	5.87	6.02	5.81	6.12	5.92	5.96	5.85	6.07	5.86	6.15	5.85	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.18	35.68	35.29	35.89	35.36	36.92	35.28	36.12	35.22	35.98	35.34	36.05	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd.2
8.	Nitrate as NO_3	µmol/L	2.76	2.67	3.45	2.76	2.32	1.72	3.23	2.8	3.36	3.02	3.88	3.45	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.39	0.365	0.431	0.345	0.379	0.276	0.379	0.344	0.632	0.31	0.302	0.224	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.37	2.24	2.84	2.49	2.59	2.24	3.96	2.93	3.84	3.62	3.19	2.84	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.77	5.6	6.721	5.595	5.289	4.24	7.569	6.074	7.832	6.95	7.372	6.514	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36710	36944	36528	37002	36244	36948	36008	36644	35866	36542	35920	36610	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	16.03	8.02	15.9	11.9	15.8	7.9	20.04	16.03	7.99	4	24.14	12.07	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.16	2.36	2.9	3.1	3.12	2.94	2.68	3.41	2.47	2.98	2.47	2.87	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.93	1.25	0.88	1.25	0.85	1.3	0.97	2.14	1.23	0.98	0.97	0.85	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	107	135	89	96	69	90	79	87	59	104	74	96	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Cyclotella*	*Pinnularia*	*Rhizosolenia*	*Thalassiothrix*	*Pinnularia*	*Ceratium*	*Thalassiothrix*	*Cyclotella*	*Rhizosolenia*	*Diploneis*	*Fragillaria*	*Surirella*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Surirella*	*Biddulphia*	*Surirella*	*Biddulphia*	*Melosira*	*Surirella*	*Pinnularia*	*Biddulphia*	*Rhizoselenia*	*Thalassionema*	*Thalassiothrix*	
			Skeletonema	*Navicula*	*Skeletonema*	*Navicula*	*Navicula*	*Nitzschia*	*Navicula*	*Skeletonema*	*Skeletonema*	*Nitzschia*	*Navicula*	*Navicula*	
			Thallassiosira	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Dinophysis*	*Thallassiosira*	*Thallassiosira*	*Thallassiosira*	*Thalassiothrix*	*Thallassiosira*	*Skeletonema*	
			Thalassionema	*Skeletonema*	*Thalassionema*	*Skeletonema*	*Skeletonema*	*Pleurosigma*	*Skeletonema*	*Thalassionema*	*Thalassionema*	*Pleurosigma*	*Skeletonema*	*Thallassiosira*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	29	32	32	51	47	51	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean Larvae*	*Crustacean Larvae*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Copepods*	*Nitzschia*	
			Decapoda	*Egg(Fish and Shrimps)*	*Copepods*	*Copepods*	*Oikoplura*	*Pinnularia*	
			Copepods	*Copepods*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Odontella*	
			Crustacean	*Crustacean*	*Oikoplura*	*Oikoplura*	*Crustacean*	*Dinophysis*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Surirella*	
3	Total Biomass	ml/100 m³	15.74	14.78	16.78	15.48	17.86	18.23	

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	142		170		200		209		176		158		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	50		44		39		42		39		23		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	29		31		29		30		25		20		IS :15185:2016
4	Enterococcus	/100ml	18		20		22		20		16		10		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022	MAY-2022	JUNE-2022	JULY-2022	AUGUST-2022	SEPTEMBER-2022	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.49	0.52	0.56	0.49	0.45	0.44	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	588.2	574.2	564.8	542.5	535.2	554.1	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	2.61	2.86	3.16	3.39	3.46	3.51	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	38.94	44.23	42.64	46.25	48.9	56.4	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	388.5	402.2	388.6	402.4	410.8	424.1	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	2.69	2.75	2.84	3.12	3.28	3.35	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	33.28	36.85	36.88	38.62	36.24	41.25	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	18.96	24.21	24.82	26.89	28.64	33.28	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	35.24	40.28	41.28	49.84	52.4	64.82	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	3.56	3.24	3.64	3.38	3.12	2.82	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	Decapod Larvae	*Decapod Larvae*	*Polychates*	*Polychates*	*Polychates*	Amphipods	APHA (23rd Ed. 2017)10500 C
			Gastropods	*Gastropods*	*Gastropods*	*Gastropods*	*Gastropods*	*Decapod Larvae*	
			Isopods	*Isopods*	*Isopods*	*Isopods*	*Isopods*	*Isopods*	
			Amphipods	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Gastropods*	
2	MeioBenthos	--	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Foraminiferan*	
			Polychates	*Polychates*	*Polychates*	*Polychates*	*Polychates*	*Herpectacoids*	
3	Population	no/m²	250	278	284	384	325	306	

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.21	8.08	8.26	8.11	8.26	8.02	8.24	8.11	8.15	8.02	8.16	7.97	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30.3	30.2	30.2	30.1	30.1	30	30.2	30.1	30.3	30.2	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	122	114	132	112	132	112	122	108	128	114	136	112	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.7	BDL	3.1	BDL	2.8	BDL	2.6	BDL	2.8	BDL	3	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.97	5.77	5.92	5.81	5.92	5.8	6.06	6	6.17	5.96	6.05	5.95	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.26	35.86	35.44	36.02	35.26	35.86	35.44	35.94	35.38	35.92	35.42	36.12	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.84	2.67	2.93	2.67	2.76	2.59	2.8	2.37	3.23	2.59	3.66	3.02	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.235	0.17	0.241	0.198	0.379	0.276	0.259	0.189	0.293	0.259	0.328	0.259	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.58	2.54	2.41	2.24	2.32	1.56	4.05	3.83	3.97	3.84	3.79	3.36	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.81	5.64	5.581	5.108	5.459	4.426	7.109	6.389	7.493	6.689	7.778	6.639	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36128	36620	36442	36714	36244	36824	36102	36558	35956	36444	36020	36580	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	16.03	8.02	19.9	11.9	15.8	11.8	20.04	12.02	15.98	7.99	20.12	16.1	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.14	2.48	2.14	2.65	2.59	2.65	3.25	2.87	3	3.14	3	3	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.74	0.96	0.74	1.1	0.78	1.85	0.96	2	0.78	2.03	0.9	1.75	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	110	140	110	128	83	115	90	109	98	114	108	106	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Gramma tophora*	*Coscinodiscus*	*Thallassiosira*	*Navicula*	*Coscinodiscus*	*Navicula*	*Navicula*	*Gramma tophora*	*Thallassiosira*	*Gramma tophora*	*Thallassiosira*	*Gramma tophora*	APHA (23rd Ed. 2017)10200 F
			Rhizosolenia	*Diploneis*	*Melosira*	*Skeletonema*	*Diploneis*	*Cyclotella*	*Skeletonema*	*Rhizosolenia*	*Melosira*	*Rhizosolenia*	*Melosira*	*Rhizosolenia*	
			Nitzschia	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Nitzschia*	*Nitzschia*	*Nitzschia*	*Nitzschia*	*Nitzschia*	
			Thalassionema	*Dinophysis*	*Rhizosolenia*	*Dinophysis*	*Dinophysis*	*Skeletonema*	*Dinophysis*	*Thalassionema*	*Rhizosolenia*	*Thalassionema*	*Rhizosolenia*	*Thallassiosira*	
			Pleurosigma	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Thalassionema*	*Thallassiosira*	*Thalassionema*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	*Pleurosigma*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	30	27	36	47	41	48	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean*	*Copepods nauplii*	*Oikoplura*	*Oikoplura*	*Copepods nauplii*	*Copepods nauplii*	
			Oikoplura	*Oikoplura*	*Copepods nauplii*	*Copepods nauplii*	*Crustacean Larvae*	*Crustacean Larvae*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Oikoplura*	*Oikoplura*	
			Oikoplura	*Oikoplura*	*Crustacean*	*Crustacean*	*Bivalve Larvae*	*Bivalve Larvae*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	*Oikoplura*	
3	Total Biomass	ml/100 m³	16.54	15.38	14.98	16.98	16.32	15.36	

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	178		198		196		180		202		200		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	39		32		47		36		32		30		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	20		21		25		21		24		21		IS :15185:2016
4	Enterococcus	/100ml	17		14		20		14		15		17		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.22	8.09	8.19	8.12	8.24	8.16	8.18	8.06	8.22	8.02	8.05	7.92	IS 3025 (Part11)1983
2.	Temperature	°C	30.3	30.2	30.2	30.1	30.3	30.1	30.2	30.1	30.2	30.1	30.3	30.2	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	118	104	134	106	134	106	144	126	156	130	134	112	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	2.8	BDL	2.9	BDL	2.5	BDL	2.6	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.97	5.87	6.12	5.92	6.02	5.92	6.06	5.96	6.07	5.96	5.95	5.75	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.31	35.82	35.46	35.94	35.28	35.88	35.14	35.72	35.18	35.74	35.28	35.94	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.67	2.41	2.59	2.32	2.84	2.59	3.66	3.44	3.45	3.02	3.45	2.8	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.475	0.365	0.56	0.431	0.474	0.31	0.413	0.379	0.379	0.328	0.345	0.276	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.62	2.58	2.49	2.24	2.41	1.89	3.96	3.62	3.84	3.62	3.28	3.1	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.68	5.52	5.64	4.991	5.724	4.79	8.033	7.439	7.669	6.968	7.075	6.176	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36284	36622	36846	37124	36564	37056	36124	36786	36020	36594	36110	36630	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	16.03	12.02	15.9	11.9	19.7	11.8	24.05	16.03	11.99	7.99	16.1	12.07	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.09	3.21	3.14	3	3.14	2.69	2.98	2.47	3.01	2.85	3.01	2.85	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.32	1.41	1.3	1.12	1.3	0.86	1.97	0.96	2.38	0.86	2.38	0.86	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	131	100	125	103	125	100	120	67	115	96	113	102	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Skeletonema*	*Rhizosolenia*	*Odentella*	*Dinophysis*	*Rhizosolenia*	*Surirella*	*Dinophysis*	*Skeletonema*	*Dinophysis*	*Skeletonema*	*Gramma tophora*	*Pinnularia*	APHA (23rd Ed. 2017)10200 F
			Gramma tophora	*Pinnularia*	*Gramma tophora*	*Pinnularia*	*Fragillaria*	*Rhizosolenia*	*Pinnularia*	*Gramma tophora*	*Pinnularia*	*Gramma tophora*	*Rhizosolenia*	*Thalassionema*	
			Nitzschia	*Thalassiothrix*	*Nitzschia*	*Thalassiothrix*	*Thalassiothrix*	*Nitzschia*	*Thalassiothrix*	*Nitzschia*	*Thalassiothrix*	*Nitzschia*	*Nitzschia*	*Navicula*	
			Thalassiothrix	*Gramma tophora*	*Thalassiothrix*	*Gramma tophora*	*Gramma tophora*	*Thalassionema*	*Gramma tophora*	*Thalassiothrix*	*Gramma tophora*	*Thalassiothrix*	*Thalassionema*	*Thallassiosira*	
			Pleurosigma	*Ceratium*	*Pleurosigma*	*Ceratium*	*Ceratium*	*Pleurosigma*	*Ceratium*	*Pleurosigma*	*Ceratium*	*Pleurosigma*	*Pleurosigma*	*Skeletonema*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	41	39	47	58	60	54	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Decapoda*	*Crustacean Larvae*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	
			Copepods	*Copepods*	*Copepods*	*Decapoda*	*Oikoplura*	*Oikoplura*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Copepods*	*Copepods nauplii*	*Copepods nauplii*	
			Oikoplura	*Oikoplura*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Crustacean*	*Oikoplura*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	17.21	16.21	15.36	14.52	15.23	14.68	

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	200		202		214		208		216		264		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	32		37		29		28		30		47		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	19		22		20		20		17		31		IS :15185:2016
4	Enterococcus	/100ml	11		10		12		12		10		24		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022	MAY-2022	JUNE-2022	JULY-2022	AUGUST-2022	SEPTEMBER-2022	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.42	0.48	0.52	0.49	0.52	0.54	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	594.2	601.2	609.8	611.2	594.5	560.5	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	2.58	2.74	2.88	3.16	3.24	3.38	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	42.41	48.9	44.6	56.58	59.54	66.8	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	431.2	444.1	452	487	497	510	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	2.61	2.73	2.84	3.25	3.35	3.42	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	32.62	36.94	34.85	36.92	35.24	37.16	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	22.21	26.24	26.38	29.85	30.25	32.19	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	46.82	52.22	55	65	70	78	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	4.74	4.29	4.11	3.86	3.42	3.25	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Amphipods*	*Gastropods*	*Gastropods*	*Sipunculids*	*Sipunculids*	*Sipunculids*	APHA (23rd Ed. 2017)10500 C
			Sipunculids	*Isopods*	*Isopods*	*Isopods*	*Isopods*	*Decapods Larvae*	
			Isopods	*Amphipods*	*Amphipods*	*Foraminiferan*	*Foraminiferan*	*Polychates*	
			Decapod Larvae	*Decapod Larvae*	*Decapod Larvae*	*Decapod Larvae*	*Decapod Larvae*	*Isopods*	
2	MeioBenthos	--	*Herpectacoids*	*Polychates*	*Polychates*	*Herpectacoids*	*Herpectacoids*	*Turbellarians*	
			Polychates	*Turbellarians*	*Turbellarians*	*Turbellarians*	*Turbellarians*	*Herpectacoids*	
3	Population	no/m²	326	330	330	385	340	325	

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.16	7.94	8.22	7.99	8.3	8.13	8.28	8.14	8.24	8.09	8.18	8.05	IS 3025 (Part11)1983
2.	Temperature	°C	30.3	30.2	30.4	30.3	30.3	30.2	30.1	30	30.1	30	30.2	30.1	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	119	111	122	114	122	114	134	118	144	124	122	104	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL	2.8	BDL	2.9	BDL	2.7	BDL	2.5	BDL	2.6	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.07	5.87	6.22	6.02	6.12	6	6.17	6.1	6.17	5.96	6.15	5.95	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.22	35.74	35.28	35.82	35.42	35.94	35.19	35.82	35.24	35.78	35.22	35.95	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.67	2.33	2.76	2.59	2.93	2.67	3.23	3.02	2.93	2.37	3.02	2.59	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.325	0.235	0.379	0.31	0.241	0.22	0.293	0.259	0.241	0.198	0.276	0.215	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.67	2.58	2.32	2.16	2.41	1.94	3.66	3.18	3.32	3.1	3.79	3.36	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.55	5.47	5.459	5.06	5.581	4.83	7.183	6.459	6.491	5.668	7.086	6.165	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36112	36624	36628	37250	36524	37146	36262	36860	36124	36762	36140	36640	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24.05	20.04	27.9	19.9	23.7	15.8	20.04	12.02	19.98	11.99	12.07	8.05	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.78	2.85	2.78	2.79	2.78	2.74	2.48	2.41	2.69	2.41	2.69	2.58	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.1	1.32	0.97	1.2	0.97	1.32	0.91	2.14	1.02	1.65	1.02	1.78	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	90	98	98	101	98	98	90	108	86	106	97	114	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Ceratium*	*Melosira*	*Thalassiothrix*	*Ceratium*	*Melosira*	*Cyclotella*	*Ceratium*	*Ceratium*	*Diploneis*	*Ceratium*	*Diploneis*	*Pinnularia*	APHA (23rd Ed. 2017)10200 F
			Melosira	*Cyclotella*	*Melosira*	*Pinnularia*	*Pinnularia*	*Fragillaria*	*Pinnularia*	*Melosira*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Surirella*	
			Odentella	*Odontella*	*Odentella*	*Odontella*	*Skeletonema*	*Navicula*	*Odontella*	*Odentella*	*Nitzschia*	*Odontella*	*Nitzschia*	*Odentella*	
			Dinophysis	*Skeletonema*	*Dinophysis*	*Thalassiothrix*	*Thallassiosira*	*Thallassiosira*	*Thalassiothrix*	*Dinophysis*	*Cyclotella*	*Thalassiothrix*	*Cyclotella*	*Grammatophora*	
			Pleurosigma	*Thallassiosira*	*Pleurosigma*	*Thallassiosira*	*Thalassionema*	*Skeletonema*	*Thallassiosira*	*Pleurosigma*	*Pleurosigma*	*Thallassiosira*	*Pleurosigma*	*Melosira*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	32	44	50	43	36	44	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Oikoplura*	*Oikoplura*	*Egg(Fish and Shrimps)*	*Decapoda*	*Crustacean Larvae*	*Grammatophora*	
			Copepods nauplii	*Copepods nauplii*	*Oikoplura*	*Copepods*	*Decapoda*	*Rhizosolenia*	
			Crustacean Larvae	*Crustacean Larvae*	*Copepods nauplii*	*Crustacean Larvae*	*Copepods*	*Nitzschia*	
			Crustacean	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Thalassionema*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	*Bivalve Larvae*	*Pleurosigma*	
3	Total Biomass	ml/100 m³	15.36	14.96	17.58	16.85	17.86	15.26	

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	214		200		190		190		184		202		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	40		30		35		35		33		36		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	25		20		20		26		29		30		IS :15185:2016
4	Enterococcus	/100ml	16		9		18		21		19		24		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL-2022		MAY-2022		JUNE-2022		JULY-2022		AUGUST-2022		SEPTEMBER-2022		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.19	8.06	8.28	8.11	8.26	8.09	8.25	8.12	8.23	8.05	8.24	8.08	IS 3025 (Part11)1983
2.	Temperature	°C	30.3	30.2	30.3	30.1	30.2	30.1	30.1	30	30.2	30.1	30.1	30	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	118	112	126	108	126	108	106	78	120	104	114	98	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.2	BDL	2.9	BDL	3.1	BDL	2.9	BDL	2.8	BDL)	2.7	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	5.97	5.77	6.12	6.02	6.12	5.92	6.27	6.17	6.17	6.07	6.15	6.05	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.27	35.86	35.33	35.74	35.28	35.83	35.21	35.78	35.19	35.68	35.06	35.76	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.5	2.24	2.84	2.76	2.59	2.15	3.44	2.59	3.36	2.8	3.23	2.37	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.3	0.17	0.474	0.431	0.56	0.379	0.344	0.293	0.328	0.276	0.345	0.302	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	2.54	2.49	2.41	2.28	2.49	2.24	3.83	2.75	3.62	3.32	3.62	3.28	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	5.68	5.55	5.724	5.471	5.64	4.77	7.614	5.633	7.308	6.396	7.195	5.952	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36638	36912	36942	37624	36842	37122	36520	37160	36442	36988	36520	36840	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	16.03	12.02	23.9	15.9	23.7	19.7	16.03	8.01	15.98	11.99	20.12	12.07	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.69	2.41	2.78	2.97	2.78	2.56	2.78	3.1	2.78	2.7	2.89	2.45	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.82	0.85	0.95	1.11	0.95	0.88	1.25	0.85	0.78	0.78	1.25	0.87	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	105	126	100	113	100	90	96	86	87	91	90	108	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Biddulphia*	*Grammatophora*	*Pleurosigma*	*Surirella*	*Grammatophora*	*Coscinodiscus*	*Surirella*	*Biddulphia*	*Pinnularia*	*Surirella*	*Thallassiosira*	*Nitzschia*	APHA (23rd Ed. 2017)10200 F
			Fragillaria	*Dinophysis*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	*Diploneis*	*Thalassiothrix*	*Fragillaria*	*Biddulphia*	*Thalassiothrix*	*Melosira*	*Pinnularia*	
			Odentella	*Navicula*	*Odentella*	*Navicula*	*Navicula*	*Nitzschia*	*Navicula*	*Odentella*	*Navicula*	*Navicula*	*Nitzschia*	*Odontella*	
			Grammatophora	*Fragillaria*	*Grammatophora*	*Skeletonema*	*Fragillaria*	*Dinophysis*	*Skeletonema*	*Grammatophora*	*Thallassiosira*	*Skeletonema*	*Rhizosolenia*	*Dinophysis*	
			Melosira	*Thallassiosira*	*Melosira*	*Thallassiosira*	*Biddulphia*	*Thalassionema*	*Thallassiosira*	*Melosira*	*Skeletonema*	*Thallassiosira*	*Pleurosigma*	*Surirella*	

B			Zooplankton												
1	Abudance(Population)	noX103 / 100 m3	35		51		48		50		45		50		APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Decapoda*		*Decapoda*		*Decapoda*		*Decapoda*		*Crustacean*		*Coscinodiscus*		
			Copepods		*Copepods*		*Oikoplura*		*Oikoplura*		*Oikoplura*		*Diploneis*		
			Crustacean Larvae		*Crustacean Larvae*		*Crustacean Larvae*		*Crustacean Larvae*		*Crustacean Larvae*		*Rhizosolenia*		
			Crustacean		*Crustacean*		*Bivalve Larvae*		*Bivalve Larvae*		*Oikoplura*		*Dinophysis*		
			Oikoplura		*Oikoplura*		*Oikoplura*		*Oikoplura*		*Bivalve Larvae*		*Thalassionema*		
3	Total Biomass	ml/100 m³	13.45		15.78		16.34		17.36		16.9		17.1		

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	110		142		230		222		212		196		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	24		31		40		41		46		52		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	16		23		28		31		26		32		IS :15185:2016
4	Enterococcus	/100ml	8		10		18		12		18		22		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	110		142		230		222		212		196		IS: 5887 (Part V):1976

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MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.12	8.02	8.14	8.06	8.17	8.02	8.14	7.98	8.16	8.02	8.28	7.94	IS 3025 (Part11)1983
2.	Temperature	°C	30.3	30.2	30	29.9	29.8	29.7	29.7	29.6	29.8	29.7	30	29.9	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	146	126	138	122	126	114	146	118	104	94	144	112	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	2.8	BDL	2.9	BDL	2.8	BDL	2.9	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.22	6.02	6.1	5.9	6.2	6	6.2	5.99	6.09	5.88	6.13	5.83	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.36	35.88	35.32	36.12	36.02	36.44	35.86	36.12	35.46	36.11	36.12	36.84	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.33	2.24	2.93	2.76	3.45	3.02	2.93	2.76	2.67	2.76	3.45	2.8	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.379	0.362	0.3	0.235	0.302	0.276	0.3	0.235	0.198	0.379	0.345	0.276	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.4	3.36	2.54	2.45	3.19	2.84	2.54	2.45	2.24	2.32	3.28	3.1	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	0.47	BDL	0.65	0.47	0.78	0.6	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.109	5.962	5.77	5.445	6.942	6.136	5.77	5.445	5.108	5.459	7.075	6.176	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35912	36114	35864	36108	36086	36474	35864	36410	35108	35686	36640	37400	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	36.07	28.06	16.62	12.47	32.13	24.1	32.16	24.12	24.19	24.12	28.2	12.08	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-22		Nov-22		Dec-22		Jan-23		Feb-23		Mar-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	2.4	2.36	2.51	3.25	3.21	2.56	3.15	2.51	2.8	3.14	2.45	3.24	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.02	1.23	0.98	2.1	1.3	1.65	1.11	1.6	1.23	2.11	0.96	1.36	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	90	78	140	87	152	120	162	118	128	129	142	142	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Odentella*	*Diploneis*	*Nitzschia*	*Navicula*	*Pinnularia*	*Grammat ophora*	*Pinnularia*	*Grammat ophora*	*Diploneis*	*Rhizosolen ia*	*Navicula*	*Nitzschia*	APHA (23rd Ed. 2017)10200 F
			Cyclotella	*Rhizosolen ia*	*Pinnularia*	*Cyclotella*	*Surirella*	*Rhizosolen ia*	*Surirella*	*Rhizosolen ia*	*Rhizosolen ia*	*Pinnularia*	*Cyclotella*	*Pinnularia*	
			Pinnularia	*Nitzschia*	*Odontella*	*Pinnularia*	*Odentella*	*Nitzschia*	*Odentella*	*Nitzschia*	*Nitzschia*	*Thalassiot hrix*	*Pinnularia*	*Odontella*	
			Biddulphia	*Thalassiot hrix*	*Dinophysis*	*Skeletone ma*	*Grammat ophora*	*Thallassio sira*	*Grammat ophora*	*Thallassio sira*	*Cyclotella*	*Grammat ophora*	*Skeletone ma*	*Dinophysis*	
			Thallassio sira	*Pleurosig ma*	*Surirella*	*Thallassio sira*	*Melosira*	*Pleurosig ma*	*Melosira*	*Pleurosig ma*	*Pleurosig ma*	*Ceratium*	*Thallassio sira*	*Surirella*	

B	Zooplankton								
1	Abudance(Population)	noX103/ 100 m3	52	69	87	92	69	53	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Copepods nauplii*	
			Crustacean Larvae	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Crustacean Larvae*	
			Oikoplura	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Oikoplura*	
			Bivalve Larvae	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Bivalve Larvae*	
			Oikoplura	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	
3	Total Biomass	ml/100 m³	15.36	14.35	15.74	15.74	16.32	16.33	

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RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Oct-22		Nov-22		Dec-22		Jan-23		Feb-23		Mar-23		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	210		140		152		150		168		148		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	32		58		44		42		40		41		APHA 23rd Ed.2017,9222-B
3	Ecoli	/100ml	14		32		23		22		20		35		IS :15185:2016
4	Enterococcus	/100ml	12		20		12		14		11		20		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.59	0.62	0.52	0.48	0.52	0.56	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	534.2	542.4	590.2	520.4	562.2	548.6	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.52	3.64	3.82	3.88	3.97	3.86	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	102.4	111.2	118.4	126.7	142.2	124.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	592.5	582.4	610.2	580.4	590.2	602.2	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.21	4.26	4.31	4.21	3.88	3.94	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	54.23	55.34	49.82	44.46	52.24	52.22	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	42.59	44.64	38.25	42.42	40.15	44.36	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	88.54	84.26	94.21	90.2	82.9	104.2	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.84	2.82	2.54	2.62	2.86	2.36	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022 SEDIMENT	NOVEMBER-2022 SEDIMENT	DECEMBER-2022 SEDIMENT	JANUARY-2023 SEDIMENT	FEBRUARY-2023 SEDIMENT	MARCH-2023 SEDIMENT	TEST METHOD
D	Benthic Organisms								
1	Macrobenthos	--	*Isopods*	*Isopods*	*Amphipods*	*Amphipods*	*Amphipods*	*Isopods*	APHA (23rd Ed. 2017)10500 C
			Polychates	*Polychates*	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Polychates*	
			Sipunculids	*Sipunculids*	*Isopods*	*Isopods*	*Isopods*	*Sipunculids*	
			Amphipods	*Amphipods*	*Gastropods*	*Gastropods*	*Gastropods*	*Amphipods*	
2	MeioBenthos	--	*Polychates*	*Polychates*	Decapods Larvae	Decapods Larvae	*Polychates*	*Polychates*	
			Foraminiferan	*Foraminiferan*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Foraminiferan*	
3	Population	no/m²	312	300	245	242	263	236	

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.18	8.11	8.16	8.04	8.21	8.09	8.18	8.11	8.22	8.14	8.06	7.72	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30	30.1	30	29.7	29.6	29.7	29.6	29.8	29.7	30	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	132	108	128	112	134	114	154	124	148	118	160	134	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3	BDL	3.1	BDL	3	BDL	3.1	BDL	3	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.12	5.92	6	5.8	5.9	5.8	6.1	5.89	6.19	5.99	5.93	5.73	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.34	35.92	36.14	36.58	35.98	36.51	35.46	36.24	35.52	36.14	36.18	36.9	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.54	2.5	3.45	2.76	3.23	2.59	3.45	2.76	2.93	2.67	2.16	2.59	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.431	0.414	0.431	0.345	0.413	0.379	0.431	0.345	0.241	0.198	0.189	0.241	APHA 23rd Ed.,2017,4500NO_2 B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.53	3.4	2.84	2.49	3.66	2.93	2.84	2.49	2.41	2.24	3.84	3.36	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.6	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.501	6.314	6.721	5.595	7.303	5.899	6.721	5.595	5.581	5.108	6.189	6.191	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35844	36452	35746	36312	35988	36370	35280	35860	35188	35722	35940	36500	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	32.06	24.05	24.94	20.78	28.11	20.08	36.18	28.14	24.19	12.1	32.22	16.11	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	2.95	2.05	3.12	3.62	2.63	2.87	3.01	3.01	3.21	2.45	2.96	2.78	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.9	0.87	0.87	0.65	0.96	1.47	0.86	1.5	1.65	1.29	1.36	2.01	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	100	102	105	98	125	114	132	116	147	98	123	112	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Diploneis*	*Pinnularia*	*Odentella*	*Surirella*	*Nitzschia*	*Coscinodiscus*	*Nitzschia*	*Coscinodiscus*	*Ceratium*	*Diploneis*	*Surirella*	*Odentella*	APHA (23rd Ed. 2017)10200 F
			Rhizosolenia	*Surirella*	*Rhizosolenia*	*Rhizosolenia*	*Pinnularia*	*Diploneis*	*Pinnularia*	*Diploneis*	*Coscinodiscus*	*Rhizosolenia*	*Rhizosolenia*	*Rhizosolenia*	
			Nitzschia	*Navicula*	*Coscinodiscus*	*Nitzschia*	*Odontella*	*Rhizosolenia*	*Odontella*	*Rhizosolenia*	*Odentella*	*Nitzschia*	*Nitzschia*	*Coscinodiscus*	
			Cyclotella	*Thallassiosira*	*Grammatophora*	*Thalassionema*	*Dinophysis*	*Dinophysis*	*Dinophysis*	*Dinophysis*	*Grammatophora*	*Thalassiothrix*	*Thalassionema*	*Grammatophora*	
			Pleurosigma	*Skeletonema*	*Thallassiosira*	*Pleurosigma*	*Surirella*	*Thalassionema*	*Surirella*	*Thalassionema*	*Melosira*	*Pleurosigma*	*Pleurosigma*	*Thallassiosira*	

B	Zooplankton								
1	Abudance(Population)	noX103 / 100 m3	47	58	69	72	88	90	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods*	*Decapoda*	*Decapoda*	*Decapoda*	*Decapoda*	*Copepods*	
			Oikoplura	*Copepods*	*Copepods*	*Copepods*	*Copepods*	*Oikoplura*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Crustacean	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	14.89	15.98	17.69	17.69	18.52	17.44	

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RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	200		200		220		218		236		230		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	44		44		68		65		37		44		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	22		22		41		42		29		31		IS :15185:2016
4	Enterococcus	/100ml	14		14		21		22		21		20		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.53	0.58	0.51	0.46	0.51	0.62	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	512.5	516.8	528.9	544.1	560.4	546.5	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.64	3.72	3.81	3.89	3.94	4.02	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	102.6	111.8	124.2	134.2	138.6	144.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	582.4	574.6	602.1	624.5	629.3	594.4	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.74	3.82	3.91	3.94	3.96	4.08	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	48.9	52.2	48.62	44.52	46.44	42.35	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	44.58	46.58	41.28	42.22	42.9	44.05	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	84.25	84.11	90.8	88.46	86.5	88.29	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.26	2.34	2.29	2.24	2.31	2.38	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Amphipods*	*Foraminiferan*	*Polychates*	*Polychates*	*Polychates*	*Foraminiferan*	APHA (23rd Ed. 2017)10500 C
			Decapod Larvae	Decapods Larvae	*Gastropods*	*Gastropods*	*Gastropods*	Decapods Larvae	
			Isopods	*Amphipods*	*Isopods*	*Isopods*	*Isopods*	*Amphipods*	
			Gastropods	*Polychates*	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Polychates*	
2	MeioBenthos	--	*Foraminiferan*	*Turbellarians*	*Herpectacoids*	*Herpectacoids*	*Foraminiferan*	*Turbellarians*	
			Herpectacoids	*Foraminiferan*	*Polychates*	*Polychates*	*Polychates*	*Foraminiferan*	
3	Population	no/m²	290	325	312	318	300	286	

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.22	8.06	8.19	8.11	8.14	7.98	8.19	8.06	8.16	8.02	7.96	7.68	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30	29.9	29.8	29.7	29.7	29.6	29.8	29.7	30	29.9	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	94	78	86	80	98	82	118	94	104	94	128	114	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.6	BDL	2.9	BDL	2.8	BDL	2.9	BDL	2.9	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.02	5.81	6	5.9	5.9	5.7	5.99	5.79	6.09	5.88	5.83	5.63	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.39	36.05	35.4	36.14	35.64	36.22	35.72	35.98	35.46	36.11	36.23	37.02	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.41	2.37	2.76	2.59	2.49	2.15	2.84	2.59	2.67	2.76	2.93	2.76	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.465	0.448	0.379	0.276	0.259	0.13	0.474	0.31	0.198	0.379	0.3	0.235	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.45	3.4	2.32	1.56	2.28	1.81	2.41	1.89	2.24	2.32	3.1	2.93	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.65	0.47	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.325	6.218	5.459	4.426	5.029	4.09	5.724	4.79	5.108	5.459	6.33	5.925	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36110	36714	35890	36670	36112	36642	35240	35940	35108	35686	35860	36480	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	28.06	20.04	24.94	16.62	32.13	24.1	32.16	24.12	24.19	24.12	28.2	16.11	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.49	3.11	3.1	3.25	2.87	3.21	3.11	3.2	2.95	2.58	3.11	3.65	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.2	2.1	1.41	1.87	1.45	1.84	1.34	1.9	1.56	1.36	2.31	2.03	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	102	120	112	109	135	152	140	160	138	143	178	148	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Ceratium*	*Coscinodiscus*	*Pinnularia*	*Coscinodiscus*	*Odentella*	*Rhizosolenia*	*Odentella*	*Rhizosolenia*	*Odentella*	*Surirella*	*Coscinodiscus*	*Pinnularia*	APHA (23rd Ed. 2017)10200 F
			Diploneis	*Thalassionema*	*Biddulphia*	*Thalassionema*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Pinnularia*	*Rhizosolenia*	*Rhizosolenia*	*Thalassionema*	*Biddulphia*	
			Odentella	*Rhizosolenia*	*Navicula*	*Rhizosolenia*	*Coscinodiscus*	*Thalassiothrix*	*Coscinodiscus*	*Thalassiothrix*	*Coscinodiscus*	*Nitzschia*	*Rhizosolenia*	*Navicula*	
			Grammatophora	*Dinophysis*	*Thallassiosira*	*Dinophysis*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Thalassionema*	*Dinophysis*	*Thallassiosira*	
			Melosira	*Skeletonema*	*Skeletonema*	*Skeletonema*	*Thallassiosira*	*Ceratium*	*Thallassiosira*	*Ceratium*	*Thallassiosira*	*Pleurosigma*	*Skeletonema*	*Skeletonema*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	46	50	48	51	59	60	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Oikoplura*	
			Oikoplura	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Copepods nauplii*	
			Copepods nauplii	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Crustacean Larvae*	
			Crustacean	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	17.54	16.74	15.89	15.89	14.23	15.63	

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SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	186		186		124		126		180		186		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	50		49		36		40		60		43		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	32		30		25		30		38		26		IS :15185:2016
4	Enterococcus	/100ml	20		25		15		18		23		17		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.64	0.62	0.54	0.58	0.52	0.58	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	562.4	542.2	569.8	542.2	562.2	574.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.72	3.78	3.82	3.91	3.97	3.78	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	124.6	132.2	124.6	134.2	142.2	154.6	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	542.2	564.2	576.2	586.2	590.2	602.8	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.66	3.74	3.79	3.84	3.88	4.11	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	48.25	51.32	48.64	49.24	52.24	55.35	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	38.69	40.25	38.42	39.25	40.15	38.24	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	74.28	72.24	79.81	80.4	82.9	80.38	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	3.12	2.98	2.84	2.81	2.86	2.75	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	Decapods Larvae	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Isopods*	*Amphipods*	APHA (23rd Ed. 2017)10500 C
			Isopods	*Polychates*	*Polychates*	*Polychates*	*Sipunculids*	*Decapod Larvae*	
			Amphipods	*Gastropods*	*Gastropods*	*Gastropods*	*Gastropods*	*Isopods*	
			Sipunculids	*Isopods*	*Isopods*	*Isopods*	*Isopods*	*Gastropods*	
2	MeioBenthos	--	*Foraminiferan*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Foraminiferan*	
			Herpectacoids	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	*Herpectacoids*	
3	Population	no/m^2	326	365	326	322	268	263	

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.21	8.06	8.18	8.09	8.17	8.05	8.14	8.02	8.19	8.05	8.24	8.01	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30	29.9	29.8	29.7	29.6	29.6	29.5	29.8	29.7	30	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	134	114	118	102	126	112	160	114	142	108	118	110	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.5	BDL	2.8	BDL	3.1	BDL	3.3	BDL	3.1	BDL	3.2	BDL	IS 3025(Part 4)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.32	6.22	6.1	6	6	5.8	6.3	6.2	6.3	5.88	6.13	6.03	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.48	36.11	35.94	36.28	36.11	36.37	35.74	36.12	35.81	36.17	36.24	36.68	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd.2
8.	Nitrate as NO_3	µmol/L	2.72	2.67	3.66	3.44	2.72	2.67	2.16	2.59	2.59	2.32	3.23	2.8	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.5	0.483	0.413	0.379	0.5	0.483	0.189	0.241	0.56	0.431	0.379	0.344	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.36	3.32	3.96	3.62	3.36	3.32	2.62	3.84	2.49	2.24	3.96	3.36	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	0.82	BDL	1.38	1.25	0.47	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.58	6.473	8.033	7.439	6.58	6.473	4.969	6.671	5.64	4.991	7.569	6.504	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36118	35624	35812	36214	35864	36354	35120	35862	35244	36124	36350	37110	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24.05	32.06	20.78	12.47	20.08	8.03	28.14	20.1	20.16	16.13	32.22	20.14	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A	Phytoplankton														
1.	Chlorophyll	mg/m³	2.69	2.78	3.65	2.78	3.2	3.11	2.98	2.87	3.01	2.96	2.58	2.48	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.32	0.69	1.25	0.89	0.99	1.56	0.87	1.45	1.23	1.84	1.47	1.86	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	111	110	125	128	127	149	124	152	146	169	123	176	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Pinnularia*	*Pleurosigma*	*Coscinodiscus*	*Ceratium*	*Coscinodiscus*	*Diploneis*	*Coscinodiscus*	*Diploneis*	*Coscinodiscus*	*Coscinodiscus*	*Ceratium*	*Coscinodiscus*	APHA (23rd Ed. 2017)10200 F
			Thalassionema	*Cyclotella*	*Diploneis*	*Diploneis*	*Diploneis*	*Rhizosolenia*	*Diploneis*	*Rhizosolenia*	*Diploneis*	*Thalassionema*	*Diploneis*	*Thalassionema*	
			Navicula	*Biddulphia*	*Rhizosolenia*	*Odentella*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Rhizosolenia*	*Odentella*	*Rhizosolenia*	
			Thallassiosira	*Skeletonema*	*Dinophysis*	*Grammatophora*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	*Dinophysis*	*Grammatophora*	*Dinophysis*	
			Skeletonema	*Thallassiosira*	*Thalassionema*	*Melosira*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Skeletonema*	*Melosira*	*Skeletonema*	

B	Zooplankton								
1	Abudance(Population)	noX103 / 100 m3	39	60	74	75	66	74	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Decapoda*	
			Egg(Fish and Shrimps)	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Copepods*	
			Copepods	*Copepods*	*Copepods*	*Copepods*	*Copepods*	*Crustacean Larvae*	
			Crustacean	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	
3	Total Biomass	ml/100 m³	15.63	15.96	15.64	15.64	16.52	15.89	

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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	194		194		222		220		250		262		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	30		30		40		38		42		52		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	22		22		31		33		22		36		IS :15185:2016
4	Enterococcus	/100ml	19		19		22		30		10		26		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.86	0.74	0.62	0.59	0.54	0.57	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	580.4	538.4	546.7	534	552.4	562.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.52	3.62	3.69	3.62	3.74	3.92	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	110.4	114.5	118.6	104	112	124.2	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	539.4	540.9	551.2	548.5	550.4	562.8	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	4.11	4.06	4.11	4.06	4.09	3.89	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	38.64	41.11	46.21	44.02	44.52	42.15	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	42.61	44.25	46.33	48.26	51.24	48.65	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	84.21	81.36	89.45	88.05	82.54	80.28	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.56	2.46	2.42	2.51	2.42	2.28	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D	Benthic Organisms								
1	Macrobenthos	--	*Polychates*	*Polychates*	*Foraminiferan*	*Foraminiferan*	*Foraminiferan*	Decapods Larvae	APHA (23rd Ed. 2017)10500 C
			Gastropods	*Gastropods*	*Gastropods*	*Gastropods*	*Gastropods*	*Isopods*	
			Isopods	*Isopods*	*Isopods*	*Isopods*	*Isopods*	*Amphipods*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Sipunculids*	
2	MeioBenthos	--	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	Decapods Larvae	*Foraminiferan*	
			Polychates	*Polychates*	*Polychates*	*Polychates*	*Polychates*	*Herpectacoids*	
3	Population	no/m^2	300	328	286	301	295	325	

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.19	8.09	8.21	8.11	8.19	8.1	8.15	8.02	8.21	7.98	8.24	7.88	IS 3025 (Part11)1983
2.	Temperature	°C	30.3	30.2	30	29.9	29.8	29.7	29.7	29.6	29.8	29.7	30	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	144	126	134	122	128	112	146	116	132	118	102	92	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL	2.7	BDL	2.9	BDL	3.4	BDL	2.8	BDL	2.6	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.32	6.12	6.2	6.1	6.1	6	6.3	6.1	6.3	6.19	6.13	5.93	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.49	35.98	35.64	36.24	35.82	36.34	35.44	35.89	35.64	36.08	36.11	36.72	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd.2
8.	Nitrate as NO_3	µmol/L	2.8	2.67	2.93	2.37	2.8	2.59	2.59	3.66	2.76	2.59	2.84	2.76	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.414	0.379	0.241	0.198	0.362	0.345	0.259	0.328	0.379	0.276	0.474	0.431	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.28	3.23	3.32	3.1	2.8	2.5	3.84	3.79	2.32	1.56	2.93	2.76	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.6	BDL	0.78	0.69	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.494	6.279	6.491	5.668	5.962	5.435	6.689	7.778	5.459	4.426	6.244	5.951	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35980	36588	35868	36452	36002	36444	35266	36020	35348	36244	35800	36520	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	20.04	8.02	20.78	8.31	16.06	12.05	24.12	12.06	20.16	16.13	24.17	20.14	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.14	2.87	2.69	2.87	3.11	2.87	2.87	2.65	2.58	3.23	3.11	2.68	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.85	0.85	1.11	0.36	2.22	1.33	1.89	1.32	1.59	2.56	1.36	2.56	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	101	96	130	86	175	123	167	119	143	178	132	146	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Pinnularia*	*Grammatophora*	*Pinnularia*	*Ceratium*	*Navicula*	*Nitzschia*	*Navicula*	*Nitzschia*	*Ceratium*	*Nitzschia*	*Ceratium*	*Pleurosigma*	APHA (23rd Ed. 2017)10200 F
			Biddulphia	*Rhizosolenia*	*Biddulphia*	*Pinnularia*	*Fragillaria*	*Grammatophora*	*Fragillaria*	*Grammatophora*	*Diploneis*	*Grammatophora*	*Diploneis*	*Cyclotella*	
			Navicula	*Nitzschia*	*Navicula*	*Odontella*	*Thalassiothrix*	*Diploneis*	*Thalassiothrix*	*Diploneis*	*Odentella*	*Diploneis*	*Odentella*	*Biddulphia*	
			Thallassiosira	*Thallassiosira*	*Thallassiosira*	*Thalassiothrix*	*Grammatophora*	*Thalassiothrix*	*Grammatophora*	*Thalassiothrix*	*Grammatophora*	*Thalassiothrix*	*Grammatophora*	*Skeletonema*	
			Skeletonema	*Pleurosigma*	*Skeletonema*	*Thallassiosira*	*Surirella*	*Pleurosigma*	*Surirella*	*Pleurosigma*	*Melosira*	*Pleurosigma*	*Melosira*	*Thallassiosira*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	63	48	50	54	48	55	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	
			Oikoplura	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Decapoda*	*Oikoplura*	
			Crustacean Larvae	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	
			Crustacean	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	17.54	16.35	14.88	14.88	15.68	16.23	

Continue…

RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	190		216		256		254		178		196		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	36		30		65		70		56		63		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	27		17		41		45		49		42		IS :15185:2016
4	Enterococcus	/100ml	15		10		19		21		29		22		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.56	0.52	0.48	0.41	0.46	0.54	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	562.8	544.2	536.6	505.4	510.2	521.4	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.68	3.71	3.78	3.81	3.89	3.96	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	68.4	69.5	74.8	78.4	80.2	84.4	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	448.6	456.6	470.4	501.2	520.2	522.7	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.54	3.63	3.75	3.81	3.88	4.06	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	44.67	45.58	42.64	44.25	45.28	41.39	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	34.59	35.12	38.42	40.14	42.16	46.36	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	84.56	85.24	89.42	80.28	82.24	80.33	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	2.54	2.62	2.56	2.64	2.53	2.46	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Amphipods*	*Amphipods*	*Amphipods*	*Amphipods*	*Amphipods*	*Polychates*	APHA (23rd Ed. 2017)10500 C
			Sipunculids	*Sipunculids*	*Polychates*	*Polychates*	*Sipunculids*	*Gastropods*	
			Isopods	*Isopods*	*Isopods*	*Isopods*	*Isopods*	*Isopods*	
			Gastropods	*Gastropods*	*Gastropods*	*Gastropods*	*Gastropods*	*Sipunculids*	
2	MeioBenthos	--	Decapods Larvae	Decapods Larvae	Decapods Larvae	Decapods Larvae	Decapods Larvae	*Herpectacoids*	
			Herpectacoids	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Polychates*	
3	Population	no/m²	328	360	360	362	301	365	

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.24	8.08	8.16	8.11	8.19	8.06	8.14	7.94	8.18	8.06	8.14	7.74	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	29.9	29.8	29.7	29.6	29.6	29.5	29.7	29.6	30	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	148	128	134	106	130	112	124	108	144	118	162	148	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	2.8	BDL	2.9	BDL	3.2	BDL	3.1	BDL	2.4	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.22	6.02	6	5.9	5.9	5.7	6.2	5.99	6.19	6.09	6.03	5.83	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.32	36.04	35.84	36.19	35.76	36.21	35.34	35.56	35.38	35.97	35.94	36.51	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39)1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.72	2.67	3.45	3.02	2.76	2.59	3.23	2.37	3.44	2.59	2.76	2.32	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.379	0.362	0.302	0.276	0.379	0.276	0.345	0.302	0.344	0.293	0.379	0.431	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.45	3.36	3.19	2.84	2.32	1.56	3.62	3.28	3.83	2.75	3.19	3.02	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	0.52	BDL	0.86	0.78	1.29	1.12	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.549	6.392	6.942	6.136	5.459	4.426	7.195	5.952	7.614	5.633	6.329	5.771	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36110	35614	35718	36214	35894	36338	36288	36582	36324	36842	37210	37840	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	16.03	12.02	37.4	29.09	24.1	20.08	20.1	16.08	32.26	20.16	36.25	24.17	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.87	2.89	2.87	3.69	3.25	3.25	3.24	2.8	3.11	3.68	2.78	2.58	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	0.78	1.95	0.74	2.48	1.56	1.75	1.45	1.8	2.13	2.21	1.58	2.36	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	90	125	121	142	147	168	140	155	176	93	125	100	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Coscinodiscus*	*Coscinodiscus*	*Coscinodiscus*	*Surirella*	*Ceratium*	*Grammatophora*	*Ceratium*	*Grammatophora*	*Thalassiothrix*	*Odentella*	*Grammatophora*	*Grammatophora*	APHA (23rd Ed. 2017)10200 F
			Diploneis	*Diploneis*	*Diploneis*	*Thalassiothrix*	*Diploneis*	*Melosira*	*Diploneis*	*Melosira*	*Surirella*	*Rhizosolenia*	*Rhizosolenia*	*Rhizosolenia*	
			Rhizosolenia	*Rhizosolenia*	*Rhizosolenia*	*Navicula*	*Odentella*	*Odentella*	*Odentella*	*Odentella*	*Navicula*	*Coscinodiscus*	*Nitzschia*	*Nitzschia*	
			Dinophysis	*Dinophysis*	*Dinophysis*	*Skeletonema*	*Grammatophora*	*Pinnularia*	*Grammatophora*	*Pinnularia*	*Thallassiosira*	*Grammatophora*	*Thallassiosira*	*Thallassiosira*	
			Thalassionema	*Thalassionema*	*Thalassionema*	*Thallassiosira*	*Melosira*	*Pleurosigma*	*Melosira*	*Pleurosigma*	*Skeletonema*	*Thallassiosira*	*Pleurosigma*	*Pleurosigma*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	50	38	44	52	57	59	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Egg(Fish and Shrimps)*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Copepods nauplii*	*Crustacean Larvae*	
			Oikoplura	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Egg(Fish and Shrimps)*	*Crustacean Larvae*	*Egg(Fish and Shrimps)*	
			Copepods nauplii	*Copepods*	*Copepods*	*Copepods*	*Oikoplura*	*Copepods*	
			Crustacean	*Crustacean*	*Crustacean*	*Crustacean*	*Bivalve Larvae*	*Crustacean*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	15.78	15.28	16.89	16.89	15.55	17.23	

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	250		184		242		240		290		244		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	36		33		36		40		55		36		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	29		29		29		31		41		25		IS :15185:2016
4	Enterococcus	/100ml	18		19		21		22		32		16		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.18	7.98	8.22	8.12	8.18	8.07	8.21	8.12	8.19	8.11	8.28	8.04	IS 3025 (Part11)1983
2.	Temperature	°C	30.2	30.1	30	29.9	29.6	29.5	29.5	29.4	29.8	29.7	30	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	118	104	124	112	130	116	152	114	146	124	128	120	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.1	BDL	3	BDL	2.8	BDL	3.1	BDL	2.9	BDL	2.8	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.12	5.92	5.8	5.7	5.9	5.7	6.1	5.89	6.09	5.99	5.93	5.73	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.64	36.12	35.61	36.24	36.82	36.19	36.12	36.32	35.86	36.17	36.18	36.74	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.54	2.5	2.49	2.32	2.8	2.37	2.33	2.24	3.45	2.8	2.84	2.59	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.431	0.414	0.259	0.215	0.259	0.189	0.379	0.362	0.345	0.276	0.56	0.517	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.1	3.02	2.28	2.16	4.05	3.83	3.4	3.36	3.28	3.1	3.36	3.1	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.65	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.071	5.934	5.029	4.695	7.109	6.389	6.109	5.962	7.075	6.176	6.76	6.207	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36218	36684	36188	36522	36124	36514	35620	36080	35760	36240	36300	37050	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24.05	20.04	33.25	24.94	24.1	16.06	28.14	24.12	28.22	24.19	32.22	28.2	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.36	2.36	3.25	2.14	2.96	2.77	3.11	2.78	2.65	2.87	2.45	3.14	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.86	0.75	0.95	0.89	1.11	1.28	0.98	1.32	1.12	1.66	1.69	2.13	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10^3/L	120	142	135	128	163	86	170	95	162	120	122	175	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Grammatophora*	*Rhizosolenia*	*Thalassiothrix*	*Rhizosolenia*	*Coscinodiscus*	*Skeletonema*	*Coscinodiscus*	*Skeletonema*	*Coscinodiscus*	*Dinophysis*	*Coscinodiscus*	*Coscinodiscus*	APHA (23rd Ed. 2017)10200 F
			Rhizosolenia	*Pinnularia*	*Surirella*	*Pinnularia*	*Diploneis*	*Grammatophora*	*Diploneis*	*Grammatophora*	*Diploneis*	*Pinnularia*	*Diploneis*	*Diploneis*	
			Nitzschia	*Thalassiothrix*	*Navicula*	*Thalassiothrix*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Nitzschia*	*Rhizosolenia*	*Thalassiothrix*	*Rhizosolenia*	*Rhizosolenia*	
			Thalassionema	*Grammatophora*	*Thallassiosira*	*Grammatophora*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	*Thalassiothrix*	*Dinophysis*	*Grammatophora*	*Dinophysis*	*Dinophysis*	
			Pleurosigma	*Ceratium*	*Skeletonema*	*Ceratium*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Pleurosigma*	*Thalassionema*	*Ceratium*	*Thalassionema*	*Thalassionema*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	45	56	61	70	52	50	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Crustacean*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods*	*Copepods*	
			Oikoplura	*Copepods*	*Copepods*	*Copepods*	*Oikoplura*	*Oikoplura*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Oikoplura	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Crustacean*	*Crustacean*	
			Bivalve Larvae	*Crustacean*	*Crustacean*	*Crustacean*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	17.21	16.98	15.48	15.6	16.24	17.42	

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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	270		128		284		284		164		256		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	40		24		41		42		35		41		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	33		12		33		32		28		31		IS :15185:2016
4	Enterococcus	/100ml	20		8		16		18		11		23		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.62	0.59	0.51	0.43	0.48	0.56	IS: 2720 (Part 22):1972 RA.2015, Amds.1
2.	Phosphorus as P	µg/g	541.2	525.2	532.4	506.4	514.2	523.6	IS: 10158 :1982, RA.2009 Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.49	3.55	3.64	3.71	3.46	3.62	IS3025(Part 55)2003
5.2	Total Chromium as Cr+3	µg/g	74.2	78.5	86.5	88.2	86.3	89.6	EPA 3050B/7190 (Extraction &Analytical Method): 1986
5.3	Manganese as Mn	µg/g	524.64	534.4	551.2	542.4	548.3	555.8	EPA 3050B/7460 (Extraction &Analytical Method): 1986
5.4	Iron as Fe	%	3.58	3.62	3.71	3.76	3.81	3.96	EPA 3050B/7380 (Extraction &Analytical Method): 1986
5.5	Nickel as Ni	µg/g	36.21	36.28	38.26	38.88	39.42	42.21	EPA 3050B/7520 (Extraction &Analytical Method): 1986
5.6	Copper as Cu	µg/g	28.64	29.22	34.21	35.06	36.28	37.21	EPA 3050B /7210 (Extraction &Analytical Method):1986
5.7	Zinc as Zn	µg/g	82.48	84.12	91.24	92.12	91.8	98.1	EPA 3050B/7950 (Extraction &Analytical Method): 1986
5.8	Lead as Pb	µg/g	3.11	2.86	2.81	2.74	2.46	2.52	EPA 3050B /7420 (Extraction &Analytical Method):1986
5.9	Mercury as Hg	µg/g	BDL	BDL	BDL	BDL	BDL	BDL	EPA 7471B (Extraction &Analytical Method) :2007

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022	NOVEMBER-2022	DECEMBER-2022	JANUARY-2023	FEBRUARY-2023	MARCH-2023	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	*Gastropods*	*Gastropods*	*Isopods*	*Isopods*	*Isopods*	*Sipunculids*	APHA (23rd Ed. 2017)10500 C
			Polychates	*Polychates*	*Polychates*	*Polychates*	*Polychates*	*Polychates*	
			Sipunculids	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Sipunculids*	*Gastropods*	
			Amphipods	*Amphipods*	*Amphipods*	*Amphipods*	*Amphipods*	*Isopods*	
2	MeioBenthos	--	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	*Herpectacoids*	
			Foraminiferan	*Foraminiferan*	Decapods Larvae	Decapods Larvae	Decapods Larvae	*Foraminiferan*	
3	Population	no/m²	270	240	312	320	347	289	

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.24	8.11	8.06	7.94	8.12	7.97	8.18	8.04	8.17	8.07	8.12	7.84	IS 3025 (Part11)1983
2.	Temperature	°C	30.3	30.2	29.9	29.8	29.7	29.6	29.6	29.5	29.8	29.7	29.9	28.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	134	116	128	106	134	118	124	108	111	102	118	94	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	3.1	BDL	2.8	BDL	3.3	BDL	2.8	BDL	3	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.12	6.02	6	5.9	5.9	5.8	6.1	5.99	5.99	5.88	5.93	5.83	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.41	36.15	35.44	36.24	35.52	36.22	35.02	35.84	35.24	35.89	35.82	36.27	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.5	2.41	2.84	2.59	3.66	3.02	2.76	2.59	2.72	2.67	2.93	2.67	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.448	0.431	0.345	0.3	0.328	0.259	0.379	0.276	0.5	0.483	0.241	0.198	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.36	3.28	2.49	2.06	3.79	3.36	2.32	1.56	3.36	3.32	2.84	2.67	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.47	BDL	BDL	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.308	6.121	5.675	4.95	7.778	6.639	5.459	4.426	6.58	6.473	6.011	5.538	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	35984	36594	35864	36486	35800	36470	35422	35940	35420	36260	36890	37400	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	24.05	16.03	29.09	20.78	20.08	12.05	28.14	20.1	24.19	20.16	28.2	24.17	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	3.21	2.6	3.21	3.21	3.26	3.14	3.33	3.17	3.02	3.64	3.25	2.88	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.02	1.1	2.23	1.47	1.85	2	1.78	1.99	2.01	2.13	1.96	1.86	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	86	135	90	96	152	135	149	132	140	155	152	146	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Nitzschia*	*Melosira*	*Navicula*	*Pinnularia*	*Fragillaria*	*Ceratium*	*Fragillaria*	*Ceratium*	*Thallassiosira*	*Rhizosolenia*	*Rhizosolenia*	*Diploneis*	APHA (23rd Ed. 2017)10200 F
			Pinnularia	*Cyclotella*	*Skeletonema*	*Surirella*	*Thalassionema*	*Pinnularia*	*Thalassionema*	*Pinnularia*	*Melosira*	*Pinnularia*	*Pinnularia*	*Rhizosolenia*	
			Odontella	*Odontella*	*Rhizosolenia*	*Odentella*	*Navicula*	*Odontella*	*Navicula*	*Odontella*	*Nitzschia*	*Thalassiothrix*	*Thalassiothrix*	*Nitzschia*	
			Dinophysis	*Skeletonema*	*Dinophysis*	*Grammatophora*	*Thallassiosira*	*Thalassiothrix*	*Thallassiosira*	*Thalassiothrix*	*Rhizosolenia*	*Grammatophora*	*Grammatophora*	*Thalassiothrix*	
			Surirella	*Thallassiosira*	*Thalassionema*	*Melosira*	*Skeletonema*	*Thallassiosira*	*Skeletonema*	*Thallassiosira*	*Pleurosigma*	*Ceratium*	*Ceratium*	*Pleurosigma*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	52	49	54	59	64	44	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Copepods nauplii*	*Decapoda*	
			Copepods	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Copepods*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	
			Bivalve Larvae	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Crustacean*	
			Crustacean	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Oikoplura*	
3	Total Biomass	ml/100 m³	14.58	15.63	14.63	15.03	16.47	14.23	

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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	248		200		200		211		186		202		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	35		39		39		41		50		47		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	30		29		29		32		26		30		IS :15185:2016
4	Enterococcus	/100ml	28		22		22		24		14		21		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.22	8.1	8.14	8.06	8.19	8.07	8.16	8.01	8.12	8.03	8.17	7.96	IS 3025 (Part11)1983
2.	Temperature	°C	30.3	30.1	29.9	29.8	29.7	29.6	29.6	29.5	29.8	29.7	29.9	29.8	IS 3025 (Part 9)1984
3.	Total Suspended Solids	mg/L	128	116	114	98	120	102	144	112	128	116	112	84	APHA 23rd Ed.,2017,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL	2.8	BDL	2.9	BDL	3.1	BDL	2.7	BDL	3.1	BDL	IS 3025(Part 44)1993Amd.01
5.	Dissolved Oxygen	mg/L	6.02	5.92	6.1	6	6	5.9	5.99	5.89	6.09	5.99	5.83	5.63	APHA 23rd Ed.,2017,4500-O, B
6.	Salinity	ppt	35.24	36.01	35.22	36.15	35.61	36.24	35.84	36.18	35.94	36.22	36.25	36.98	By Calculation
7.	Oil & Grease	mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part39) 1991, Amd. 2
8.	Nitrate as NO_3	µmol/L	2.67	2.54	2.67	2.33	2.84	2.59	2.76	2.59	2.84	2.59	3.66	3.44	APHA 23rd Ed., 2017,4500 NO3-B
9.	Nitrite as NO_2	µmol/L	0.414	0.362	0.325	0.235	0.474	0.31	0.379	0.276	0.474	0.31	0.413	0.379	APHA 23rd Ed.,2017,4500NO_2B
10.	Ammonical Nitrogen as NH_3	µmol/L	3.4	3.32	2.67	2.58	2.41	1.89	2.32	1.56	2.41	1.89	3.96	3.62	APHA 23rd Ed., 2017,4500- NH3 B
11.	Phosphates as PO_4	µmol/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.65	BDL	0.56	BDL	APHA 23rd Ed.,2017,4500-P, D
12.	Total Nitrogen	µmol/L	6.484	6.222	5.665	5.145	5.724	4.79	5.459	4.426	5.724	4.79	8.033	7.439	APHA 23rd Ed., 2017,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F
14.	Total Dissolved Solids	mg/L	36188	36806	36144	36582	36210	36690	35888	36310	35940	36480	36660	37340	APHA 23rd Ed.,2017, 2540- C
15.	COD	mg/L	20.04	12.02	24.94	33.25	20.08	12.05	24.12	16.08	20.16	16.13	24.17	20.14	APHA 23rd Ed.,2017, 5220-B

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m³	2.11	2.86	2.21	2.86	2.36	2.65	3.26	3.01	2.27	2.89	2.65	3.01	APHA (23rd Ed. 2017)10200 H
2.	Phaeophytin	mg/m³	1.43	0.97	1.87	1.25	0.85	1.49	0.89	1.88	1.11	2.1	1.63	2.44	APHA (23rd Ed. 2017)10200 H
3.	Cell Count	No. x 10³/L	95	97	102	98	140	127	134	130	134	106	145	152	APHA (23rd Ed. 2017)10200 F
4	Name of Group Number and name of group species of each group	--	*Odentella*	*Diploneis*	*Melosira*	*Nitzschia*	*Thallassiosira*	*Melosira*	*Thallassiosira*	*Melosira*	*Dinophysis*	*Pinnularia*	*Nitzschia*	*Nitzschia*	APHA (23rd Ed. 2017)10200 F
			Rhizosolenia	*Rhizosolenia*	*Pinnularia*	*Pinnularia*	*Melosira*	*Cyclotella*	*Melosira*	*Cyclotella*	*Pinnularia*	*Surirella*	*Pinnularia*	*Grammatophora*	
			Coscinodiscus	*Nitzschia*	*Skeletonema*	*Odontella*	*Nitzschia*	*Odontella*	*Nitzschia*	*Odontella*	*Thalassiothrix*	*Odentella*	*Diploneis*	*Diploneis*	
			Grammatophora	*Thalassiothrix*	*Thallassiosira*	*Dinophysis*	*Rhizosolenia*	*Skeletonema*	*Rhizosolenia*	*Skeletonema*	*Grammatophora*	*Grammatophora*	*Grammatophora*	*Thalassiothrix*	
			Thallassiosira	*Pleurosigma*	*Thalassionema*	*Surirella*	*Pleurosigma*	*Thallassiosira*	*Pleurosigma*	*Thallassiosira*	*Ceratium*	*Melosira*	*Ceratium*	*Pleurosigma*	

B			Zooplankton						
1	Abudance(Population)	noX103 / 100 m3	40	54	70	72	44	42	APHA (23rd Ed. 2017)10200 G
2	Name of Group Number and name of group species of each group		*Copepods nauplii*	*Crustacean*	*Crustacean*	*Crustacean*	*Crustacean*	*Egg(Fish and Shrimps)*	
			Oikoplura	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	
			Crustacean Larvae	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Crustacean Larvae*	*Copepods nauplii*	
			Oikoplura	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Oikoplura*	*Crustacean*	
			Bivalve Larvae	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	*Bivalve Larvae*	
3	Total Biomass	ml/100 m³	16.54	17.36	16.32	16.45	13.25	13.45	

Continue…

RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	OCTOBER-2022		NOVEMBER-2022		DECEMBER-2022		JANUARY-2023		FEBRUARY-2023		MARCH-2023		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM			
C			Microbiological												
1	Total Bacterial Count	CFU/ml	184		196		210		215		206		222		APHA 23rd Ed.2017,9215-C
2	Total Coliform	/100ml	49		47		48		51		42		35		APHA 23rd Ed.2017,9222-B
3	E.coli	/100ml	38		25		23		25		35		23		IS :15185:2016
4	Enterococcus	/100ml	27		20		20		18		22		14		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 23rd Ed.2017,9260-E
7	Vibrio	/100ml	110		142		230		222		212		196		IS: 5887 (Part V):1976

GUJARAT VAPI

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