

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL SOUTHERN ZONE BENCH
AT CHENNAI**

OA No 14 OF 2021

IN THE MATTER OF:

**TRIBUNAL ON ITS OWN MOTION SUO MOTU BASED ON NEWS ITEM IN E-MAGAZINE, BBC DT: 21.12.2020
WATER POLLUTION: WILL VIZAG BE ANOTHER ELURU**

..... Applicant

Vs

THE CHIEF SECRETARY TO THE GOVT OF ANDHRA PRADESH GUNTUR AND OTHERS.

.... Respondents

REPORT FILED BY THE MUNICIPAL 8th RESPONDENT

DATE- 27.02.2024



**M/s MADHURI DONTI REDDY
ADVOCATE**

STANDING COUNSEL FOR GOVERNMENT OF ANDHRA PRADESH

A.P. POLLUTION CONTROL BOARD

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**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL SOUTHERN ZONE BENCH
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It is certified that all the documents contained in the above annexure are true copies.
Date: 27.02.2024

Action taken by the Greater Visakhapatnam Municipal Corporation on E-magazine BBC:21st December 2020, on Subject of water pollution: "Will Vizag be another Eluru?"

The news published in E-Magazine, BBC, 21st December 2020 on "water pollution: will vizag be another Eluru". Due to industrial chemical and waste water entering into the Mehadrigedda Reservoir.

The Honourable National Green Tribunal Southern, Zone – Chennai is taken on its own motion "SOU – MOTU" based on the news item in E-Magazine, BBC, 21st December 2020 on "water pollution: will vizag be another Eluru" vide application OA No 14 off 2021.

In this matter the following reports were submitted by GVMC to Honourable National Green Tribunal as follows,

- 1) The above matter was heard on 26.04.2021 by Honourable Tribunal and the report filed by Greater Visakhapatnam Municipal Corporation dated 23.03.2021.
- 2) The matter was again heard on 07.06.2021 and issued certain directions to GVMC to file the fresh reports for further hearing on 28.07.2021. Then gvmc filed report on 23.07.2021. as per instructions given by NGT.
- 3) The matter was heard on 27.10.2021 by NGT and report filed by GVMC on 23.10.2021.
- 4) Further the matter was heard on 09.12.2021 and report filed by GVMC on 09.12.2021.

Background: -

Further the Greater Visakhapatnam Municipal Corporation is supplying safe drinking water to the city population of 23.00 lakhs @ 105.00 LCPD from the all-Surface resources of Thatipudi, Raiwada, Yeleru, Meghadrigedda, Mudasarlova and Gamberam reservoirs having with different capacities. The total quantity of water is being drawn about 80.45 MGD from all the sources. Out of which 64.05 MGD is catered for domestic purposes and 16.44 5MGD is catered for industrial and commercial purposes. GVMC is conducting daily water quality tests by collecting samples of 1656nos. For free residual chlorine tests and H₂S strips for ecoli test where pipeline crossing drainage during supply time (45min) in distribution system. The PH regional laboratory Visakhapatnam is collecting the samples regularly as a third party.

MGR (Mehadrigedda Reservoir): -

MGR is a surface source with storage capacity of 1.0 TMC and daily drawl is about @ 8.00 MGD million gallons per day for the domestic and industrial usage. The water is

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Superintending Engineer
WATER SUPPLY & SEWERAGE
Municipal Corporation

collected to the MGR reservoir by means of rain water runoff from the catchment areas of Sabbavaram, Kottavalasa and Pendurthi.

In order to prevent pollution in the reservoir, GVMC has made efforts to remove weed, notch gobi, floating materials and vegetation's periodically with the assistance of moving floated boats. The Water samples from the reservoir will be sent to the Regional Public Health Laboratory, Visakhapatnam for analysis of physical, chemical and bacteriological parameters periodically and GVMC implement the measures as suggested by them from time to time. As part of maintenance GVMC has recently taken up the removal of weed, Notch Gobi on annual maintenance, basis between March 2021 - 2024 with an estimate cost of Rs.32.00, and relevant latest photographs are here with enclosed. The recent test reports of Regional Public Health Laboratory, Visakhapatnam shown, that there is no pollution of water in the MGR dam.

In order to assess the quality of the Meghadrigedda reservoir water for domestic/drinking purposes, APPCB team has also collected water samples from the Meghadrigedda reservoir for every month for analysis of water samples to physical, chemical and bacteriological parameters.

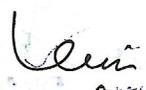
Water samples were collected on dt.08.07.2021 & 16.08.2021 from MGR dam by APPCB, Visakhapatnam and GVMC has also sent water samples on 29.11.2021 to SV Enviro Labs and Consultant (Recognized by Govt of India-MoEF & CC, New Delhi, accredited by: NABL & NABET) for conducting detailed analysis of Raw & clear water parameters, such as pH values, DO levels, BOD & COD values are tested and found well within the permissible limit.

Evaluation Report on water analysis carried out for the year 2023-24:

It is further submitted that, samples were taken by Regional Public Health Laboratory, from MGR dam for every month for analysis of detailed physical, chemical and bacteriological analysis and found that all necessary water parameter values well within the permissible limits of drinking water and the detailed reports are enclosed for kind perusal. Further, GVMC has also sent water samples on 13-02-2024 to SV Enviro Labs and Consultant (Recognized by Govt of India-MoEF & CC, New Delhi, accredited by: NABL & NABET) for conducting detailed analysis of Raw & clear water of MGR Dam. The reports


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Superintending Engineer
WATER SUPPLY & SEWERAGE
Greater Visakhapatnam

shown that, water quality is within permissible limit of drinking water and report enclosed for kind reference.

Thus, the GVMC has got conducted various tests for the year 2023-24 from two difference agencies to assess the quality of drinking water as directed by the Tribunal and both of them observed to be within the permissible limits of drinking water.

Discussion on the Water Quality: -

The analytical results of the water quality parameters, Physical, metals and biological tests of MGR dam based on report submitted by SV Enviro Labs and Consultant, Visakhapatnam are submitted below.

For Raw Water:-

- Total dissolved solids were found 334 mg/l which was within the limits of BIS drinking water standards of 500 mg/l.
- pH was observed 8.31 which was within the BIS drinking water standards of 6.5-8.5.
- The BOD values were found <3 mg/l which was within the limits of BIS drinking water standards of <5 mg/l.
- COD was found 5.60 mg/l that shows fairly good levels of oxygen in the water sufficient for aquatic life.

For Clear Water:-

- E coli forms and total coli forms are not detected in clear water.
- Total dissolved solids were found 180 mg/l which was within the limits of BIS drinking water standards of 500 mg/l.
- pH was observed 7.45 which was within the BIS drinking water standards of 6.5-8.5.
- The Turbidity values were found < 1 NTU. which was within the limits of BIS drinking water standards of 1 NTU.
- Nitrates as NO_3 was found <1.0mg/l which was within the limits of BIS drinking water standards of 45mg/l.
- Ammonia as total ammonia -N was found <0.01 mg/l which was within the limits of BIS drinking water standards of 0.50 mg/l.
- Cyanide as CN -N was found <0.02 mg/l which was within the limits of BIS drinking water standards of 0.05 mg/l.

Conclusion:

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EG-21 (ASM)

Resident Engineer
WATER SUPPLY & SEWERAGE

- Based on the water quality results, it is suggested that the Meghadrigedda reservoir water can be used for the drinking purpose after treatment, with filtration process like Sedimentation, Coagulation, for removal of turbidity and disinfection (either chlorine or ozone) and the detailed complete analysis reports are enclosed for kind perusal. Further it is submitted, as per Analysis reports that there are no pesticides detected in reservoir water and also no agriculture runoff water entered into the reservoir due to so many lakes (Viz., Rathicheruvu, Pinagadi, Pentacheruvu, Pedagadi and Reddy Cheruvu etc.,) located at upstream side of dam.

Present Status of Sewerage project in Pendurthi with STP at Narava:

- **Regarding waste water from the habitation of Pendurthi to Meghadrigedda reservoir water bodies:** The GVMC has constructed a main Sewage Water Treatment plant of 2.0 MLD (Million liters per day) capacity in Pendurthi area of Rathicheruvu in Div.71 to avoid pollution of catchment of Meghadrigedda Reservoir. The Sewage generated in Pendurthi residential area is drained in to the natural gedda situated in between Railway track and MGR North side bund only. But it is not entered in to the MGR storage reservoir. Further in order to treat the waste water of entire Pendurthi area the GVMC has taken up the project of UGD network with an estimate cost of Rs.362.00 Crores which is nearing completion stage. The physical progress of the work i.e, sewer pipeline network completed about 198km out of 226km and it is expected to be completed by the end of June 2024.
- At present the sewage network with UGD connections is under progress with House Service connections of 15,000 nos. The collected sullage from residential network of Pendurthi will be treated in 108 MLD STP, Crores which is also nearing completion and it will be commenced by the end of June 2024. Hence, the question of pollution of catchment may not arise in Meghadrigedda Reservoir in future.

It is further submitted that, the agreement concluded with HPCL & RINL for supplying of treated waste water from of 108.00 MLD STP at Narava with of 30.00 MLD to the HPCL and 45.00 MLD to the RINL for their industrial use.

Status of STP at Mudasarlova Reservoir: GVMC has constructed STP of capacity 13 MLD at Mudasarlova in the downstream of the Mudasarlova reservoir. GVMC has

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Superintending Engineer
WATER SUPPLY & SEWERAGE

provided UGD facility for the colonies located nearby and also pumping the Sullage from the Hanumanthavaka for treatment. Further, GVMC has also constructed a sump cum pump house on upstream side of the Mudasarlova reservoir, to collect sewage / sullage from the upstream colonies, and to pump to the existing 13 MLD STP downstream through a dedicated pipe line with a sump cum pump house. After treatment, about 7.0 MLD of recycled water is being sold to Golf club adjacent to the STP, and remaining treated water is let off through the surplus drain, which, finally enters into the Sea after travelling a distance of 5 Km. Further, to avoid waste material being dumped into the storage tank, a compound wall was also constructed around the Mudasarlova storage tank.

As such, it is ensured that no polluted water, from the inflows of Mudasarlova is entered in to the reservoir with the operation of new sump cum pump house constructed at upstream of the reservoir and also the surrounding waste materials are not entered into the reservoir due to constructed the compound wall to around the mudasarlova reservoir.



SUPERINTENDING ENGINEER

Water Supply

GVMC

Superintending Engineer

WATER SUPPLY & SEWERAGE

Greater Visakhapatnam Municipal Corporation

AE 19/2/2024 EE3
17/2/2023

Abhishek
Ref.

GOVERNMENT OF ANDHARAPRADESH
REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR: VISAKHAPATNAM
Water Analysis report

Samples From: Commissioner, Greater Visakha Municipal Corporation, VISKHAPATNAM.
Collected By: Sri. D.Appala Raju WI Collected on: 11.1.2024. Received on: 11.1.2024

S. No	Lab. Ref. No	Exact location of the sample	RC in PPM	colour	Odour	pH	EC in Micro Mhos/cm	TDS mg/L	Nitrite as N	Ammonical Nitrogen	MPPN count of coliform Bacteria/100 ml
1	84	Raw water collected from Godavari WTP intake point at Narava	Nil	Turbid	Odourless	8.1	320	211	traces	Nil	1100
2	85	Raw water collected from Raiwada WTP intake point at Narava	Traces	Turbid	"	8.0	490	323	Nil	Nil	460
3	86	Clear water from Godavari 2x2000 KL GLSR at Padmanabhapuram	2.0	Colourless	"	7.6	340	224	Nil	Nil	Nil
4	87	Clear water collected from Raiwada 1500 KL GLSR at Padmanabhapuram	1.0	"	"	7.9	220	105	Nil	Nil	Nil

Remarks: The given samples of raw water i.e., 84 and 85 are physico chemically turbid and lab. Ref. No: 84 contains traces of Nitrite nitrogen. After treatment lab. Ref. Nos: 86 and 87 are clear and Bacteriologically satisfactory for drinking purpose.

Senior Analyst (Water)
REGIONAL PUBLIC HEALTH LABORATORY
VISAKHAPATNAM

GOVERNMENT OF ANDHARAPRADESH
 REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR: VISAKHAPATNAM
 Water Analysis report
 Samples From: Commissioner, Greater Visakha Municipal Corporation, VISKAPATNAM.
 Collected By: Sri. D.Appala Raju WI Collected on: 11.1.2024. Received on: 11.1.2024

S. No	Lab. Ref. No	Exact location of the sample	RC in PPM	colour	Odour	pH	EC in Micro Mhos/cm	TDS mg/l	Nitrite as N	Ammonical Nitrogen	MPN count of coliform Bacteria/ 100ml
1	88	Raw water from MGR intake well of MGR Dam at Narava	Nil	Turbid	Odourless	7.9	540	356	Nil	Nil	1100
2	89	Raw water from Godavari intake well of MGR Dam at Narava	Nil	"	"	8.1	160	106	Nil	Nil	1100

Raw water: The given samples Lab. Ref. Nos: 88 and 89 are physico chemically turbid and all the other analysed parameters are within desirable limit. These waters adequate alum treatment and proper filtration are suggested. Both are Bacteriologically Unsatisfactory for drinking purpose.

M. S. S. S. S. S.
 SENIOR ANALYST (WATER),
 REGIONAL PUBLIC HEALTH LABORATORY,
 VISAKHAPATNAM

GOVERNMENT OF ANDHARAPRADESH
REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR: VISAKHAPATNAM
Water Analysis report

Samples From: Commissioner, Greater Visakha Municipal Corporation, VISKHAPATNAM.
Collected By: Sri. R.Appa Rao WI Collected on: 08.12.2023. Received on: 08.12.2023

S. No	Lab. Ref. No	Exact location of the sample	RC in PPM	colour	Odour	pH	EC in Micro Mhos/cm	TDS mg/L	Nitrite as N	Ammonical Nitrogen	MPN count of coliform Bacteria/100 ml
1	2739	Raw water collected from Godavari WTP intake point at Narava	Nil	Turbid	Odourless	7.7	294	194	Light traces	Nil	1100
2	2740	Raw water collected from Raiwada WTP intake point at Narava	Nil	Turbid	"	7.6	228	150	Light traces	Nil	1100
3	2741	Clear water from Godavari 2x2000 KL GLSR at Padmanabhapuram	1.5	Colourless	"	7.6	325	215	Nil	Nil	Nil
4	2742	Clear water collected from Raiwada 1500 KL GLSR at Padmanabhapuram	1.5	"	"	7.3	217	143	Nil	Nil	Nil

Remarks:- The given samples of Raw water ie., 2739 and 2740 are physico chemically turbid and contains light traces of Nitrite nitrogen. . After treatment 2741 and 2742 are clear and Bacteriologically satisfactory for drinking purpose.

M. Shankar/12/23
SENIOR ANALYST (LABORATORY)
REGIONAL PUBLIC HEALTH LABORATORY
VISAKHAPATNAM

GOVERNMENT OF ANDHARAPRADESH
REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR: VISAKHAPATNAM
Water Analysis report

Samples From: Commissioner, Greater Visakha Municipal Corporation, VISKHAPATNAM.

Collected By: D.Appala raju Work Inspector

Collected on: 08.12.2023 Received on: 08.12.2023

S. No	Lab. Ref. No	Exact location of the sample	RC in PPM	colour	Odour	pH	EC in Micro Mhos/cm	TDS mg /L	Nitrite as N	Ammonical Nitrogen	MPN count of coliform Bacteria/ 100ml
1	2743	Raw water from MGR intake well of MGR Dam at Narava	Light traces	Turbid & brownish particles present	Odourless	8.2	463	306	Nil	Nil	1100
2	2744	Raw water from Godavari intake well of MGR Dam at Narava	Light traces	colourless	"	8.2	451	298	Nil	Nil	1100

Raw water: The given samples Lab. Ref. Nos: 2743 physico chemically turbid and Brownish particles present. Lab. Ref.No; 2744 is physico chemically colourless and all analysed parameters are within desirable limit. These waters adequate alum treatment and prper filtration are suggested. Both are Bacteriologically Unsatisfactory drinking purpose.

M. Reddy
18/12/23
SENIOR ANALYST
REGIONAL PUBLIC HEALTH LABORATORY
VISAKHAPATNAM

GOVERNMENT OF ANDHARAPRADESH
REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR, VISAKHAPATNAM

Water Analysis report

Samples From: Commissioner, Greater Visakha Municipal Corporation, VISKHAPATNAM.
Collected By: D.Appala Raju WI Collected on: 7.11.2023. Received on: 7.11.2023

S. No	Lab. Ref. No	Exact location of the sample	RC in PPM	colour	Odour	pH	EC in Micro Mhos/cm	TDS mg/L	Nitrite as N	Ammonical Nitrogen	MPN count of coliform Bacteria/100 ml
1	2358	Raw water collected from MGR intake well of MGR Dam Narava	Nil	Brownish particles present	Odourless	7.6	530	350	Nil	Nil	1100
2	2359	Raw water collected from Godavari intake well of MGR Dam Narava	Nil	Brownish particles present	"	7.6	510	337	Nil	Nil	1100

Remarks:- The given samples of Raw water are physico chemically brownish particles present. This water requires proper alum treatment, filtration and chlorination.

M. S. S. S.
SENIOR ANALYST (WATER)
REGIONAL PUBLIC HEALTH LABORATORY -
VISAKHAPATNAM

GOVERNMENT OF ANDHARAPRADESH
REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR: VISAKHAPATNAM
Water Analysis report

Samples From: Commissioner, Greater Visakha Municipal Corporation, VISKHA PATNAM.
Collected By: R.Appa Rao, WI
Collected on: 7.11.2023. Received on: 7.11.2023

S. No	Lab. Ref. No	Exact location of the sample	RC in PPM	colour	Odour	pH	EC in Micro Mhos/cm	TDS mg /L	Nitrite as N	Ammonical Nitrogen	MPN count of coliform Bacteria/ 100ml
1	2360	Raw water collected from Godavari WTP intake point at Narava	Nil	Brownish particles present	Odourless	7.5	410	271	0.01	Nil	1609
2	2361	Raw water collected from Raivada WTP intake point at Narava	Nil	Brownish particles present	"	7.4	280	185	Nil	Nil	1609
3	2362	Clear water from Godavari 2x2000 KL GLSRs at Padmanabha puram	0.5	Colourless	"	7.2	390	257	Nil	Nil	Nil
4	2363	Clear water from Raivada 1500 KL GLSR at Padmanabha puram	0.5	Colourless	"	7.3	270	178	Nil	Nil	Nil

Raw water: The given samples Lab. Ref. Nos: 2360 and 2361 are physico chemically Brownish particles present. Lab. Ref. No: 2362 and 2363 are physico chemically colourless and all the analysed parameters are within desirable limit. Both are Bacteriologically satisfactory for drinking purpose.

M. R. Babu
10/11/23
SENIOR ANALYST (WATER),
REGIONAL PUBLIC HEALTH LABORATORY,
VISAKHAPATNAM



SV ENVIRO LABS & CONSULTANTS

(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

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Ref: SVELC/GVMC/24-02/01

Date: 16-02-2024

NAME AND ADDRESS : THE COMMISSIONER,
GREATER VISAKHAPATNAM
MUNICIPAL CORPORATION,
VISAKHAPATNAM.

SAMPLE PARTICULARS : WATER

SAMPLE CODE : SVELC/24/1082

MARKS ON SAMPLE : RAW WATER (MGR DAM)
(Sample Submitted by Party)

DATE OF COLLECTION : 13-02-2024

DATE OF RECEIPT : 13-02-2024

START DATE OF ANALYSIS : 13-02-2024

END DATE OF ANALYSIS : 16-02-2024

TEST REPORT

S.NO	PARAMETER	UNIT	RESULT
1.	Colour	Hazen	2.56
2.	Odour	-	Agreeable
3.	Taste	-	Agreeable
4.	Turbidity	NTU	12.6
5.	pH	-	8.31
6.	Total Dissolved Solids	mg/l	334
7.	Total Alkalinity as CaCO ₃	mg/l	180
8.	Total Hardness as CaCO ₃	mg/l	150
9.	Calcium as Ca	mg/l	28.4
10.	Magnesium as Mg	mg/l	19.2
11.	Chlorides as Cl	mg/l	76.9
12.	Fluorides as F	mg/l	0.46
13.	Nitrates as NO ₃	mg/l	<1.0
14.	Sulphates as SO ₄	mg/l	33.1
15.	Iron as Fe	mg/l	0.07
16.	Free Residual Chlorine	mg/l	<0.1
17.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	Nil
18.	Copper as Cu	mg/l	<0.01
19.	Manganese as Mn	mg/l	<0.01
20.	Zinc as Zn	mg/l	0.012
21.	Aluminum as Al	mg/l	0.082
22.	Boron as B	mg/l	0.133

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23.	Sulphide as H ₂ S	mg/l	<0.1
24.	Anionic Detergents (as MBAS)	mg/l	<0.01
25.	Barium as Ba	mg/l	0.09
26.	Chloramines (as Cl ₂)	mg/l	<1.0
27.	Ammonia as total ammonia-N	mg/l	<0.01
28.	Mineral Oil	mg/l	<0.01
29.	Selenium as Se	mg/l	<0.01
30.	Silver as Ag	mg/l	<0.01
31.	Cadmium as Cd	mg/l	<0.001
32.	Cyanide as CN	mg/l	<0.02
33.	Lead as Pb	mg/l	<0.01
34.	Mercury as Hg	mg/l	<0.001
35.	Molybdenum as Mo	mg/l	<0.01
36.	Nickel as Ni	mg/l	<0.01
37.	Total Arsenic as As	mg/l	<0.01
38.	Total Chromium as Cr	mg/l	<0.01
39.	Dissolved Oxygen	mg/l	5.6
40.	Biochemical oxygen demand @ 27°C for 3days	mg/l	<3.0
MICROBIOLOGY			
41.	<i>E. coliforms</i>	CFU/ 100mL	04
42.	<i>Total Coliforms</i>	CFU/ 100mL	76

Note: All the above parameters are tested as per APHA methods, 24th Edition, 2023.

CHECKED BY



SV ENVIRO LABS & CONSULTANTS

SV ENVIRO LABS & CONSULTANTS

(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

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Ref: SVELC/GVMC/24-02/02

Date: 16-02-2024

NAME AND ADDRESS : THE COMMISSIONER,
GREATER VISAKHAPATNAM
MUNICIPAL CORPORATION,
VISAKHAPATNAM.

SAMPLE PARTICULARS : WATER

SAMPLE CODE : SVELC/24/1083

MARKS ON SAMPLE : CLEAN WATER (FILTER WATER)
(Sample Submitted by Party)

DATE OF COLLECTION : 13-02-2024

DATE OF RECEIPT : 13-02-2024

START DATE OF ANALYSIS : 13-02-2024

END DATE OF ANALYSIS : 16-02-2024

TEST REPORT

S.NO	PARAMETER	UNIT	RESULT	IS 10500:2012 Drinking Water Specifications
1.	Colour	Hazen	<1.0	5.0
2.	Odour	-	Agreeable	Agreeable
3.	Taste	-	Agreeable	Agreeable
4.	Turbidity	NTU	<1.0	1.0
5.	pH	-	7.45	6.5 – 8.5
6.	Total Dissolved Solids	mg/l	180	500
7.	Total Alkalinity as CaCO ₃	mg/l	125	200
8.	Total Hardness as CaCO ₃	mg/l	107	200
9.	Calcium as Ca	mg/l	24.0	75
10.	Magnesium as Mg	mg/l	11.4	30
11.	Chlorides as Cl	mg/l	36.5	250
12.	Fluorides as F	mg/l	0.42	1.0
13.	Nitrates as NO ₃	mg/l	<1.0	45
14.	Sulphates as SO ₄	mg/l	16.5	200
15.	Iron as Fe	mg/l	0.06	0.3
16.	Free Residual Chlorine	mg/l	<0.1	0.2
17.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	Nil	0.001
18.	Copper as Cu	mg/l	<0.01	0.05
19.	Manganese as Mn	mg/l	<0.01	0.1
20.	Zinc as Zn	mg/l	<0.01	5.0
21.	Aluminum as Al	mg/l	<0.01	0.03



SV ENVIRO LABS & CONSULTANTS

(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

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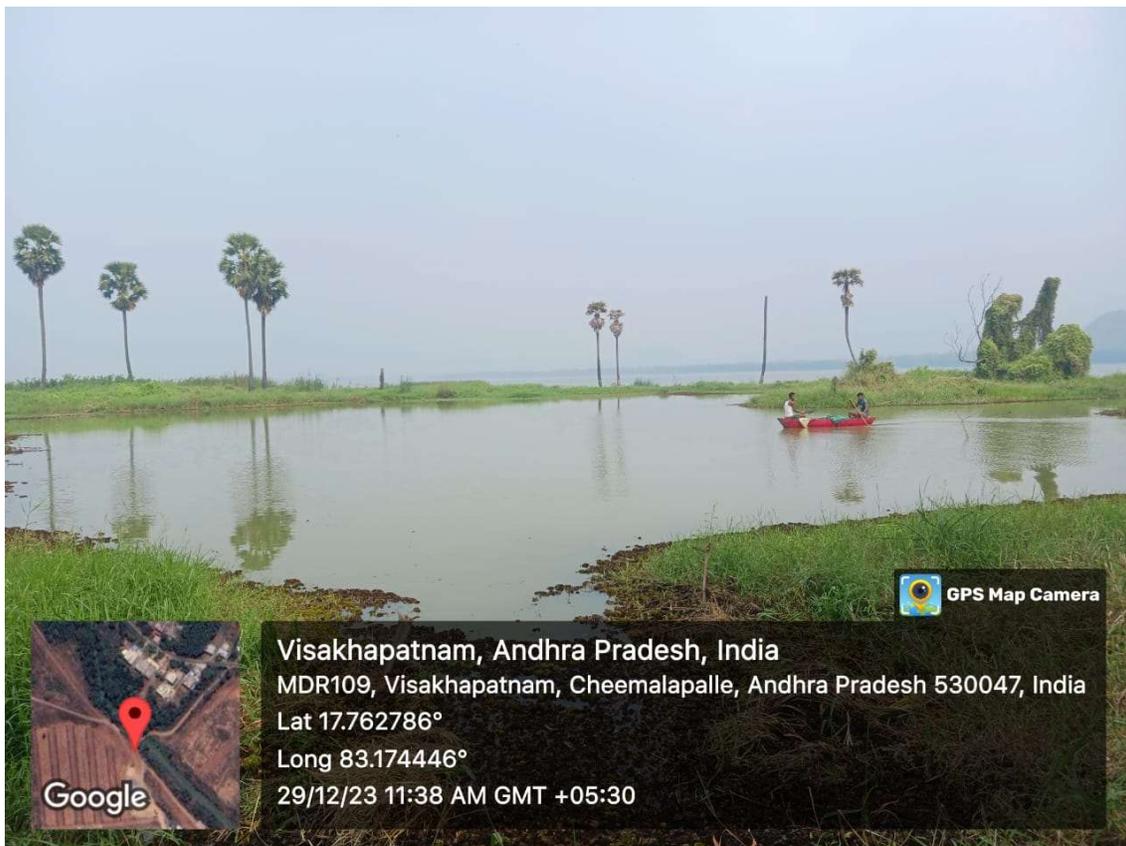
22.	Boron as B	mg/l	<0.01	0.5
23.	Sulphide as H ₂ S	mg/l	<0.1	0.05
24.	Anionic Detergents (as MBAS)	mg/l	<0.01	0.2
25.	Barium as Ba	mg/l	<0.01	0.7
26.	Chloramines (as Cl ₂)	mg/l	<1.0	4.0
27.	Ammonia as total ammonia-N	mg/l	<0.01	0.5
28.	Mineral Oil	mg/l	<0.01	0.5
29.	Selenium as Se	mg/l	<0.01	0.01
30.	Silver as Ag	mg/l	<0.01	0.1
31.	Cadmium as Cd	mg/l	<0.001	0.003
32.	Cyanide as CN	mg/l	<0.02	0.05
33.	Lead as Pb	mg/l	<0.01	0.01
34.	Mercury as Hg	mg/l	<0.001	0.001
35.	Molybdenum as Mo	mg/l	<0.01	0.07
36.	Nickel as Ni	mg/l	<0.01	0.02
37.	Total Arsenic as As	mg/l	<0.01	0.01
38.	Total Chromium as Cr	mg/l	<0.01	0.05
MICROBIOLOGY				
39.	<i>E. coliforms</i>	CFU/ 100mL	Not Detected	Shall not be detected in 100 ml
40.	<i>Total Coliforms</i>	CFU/ 100mL	Not Detected	Shall not be detected in 100 ml

Note: All the above parameters are tested as per APHA methods, 24th Edition, 2023.

CHECKED BY



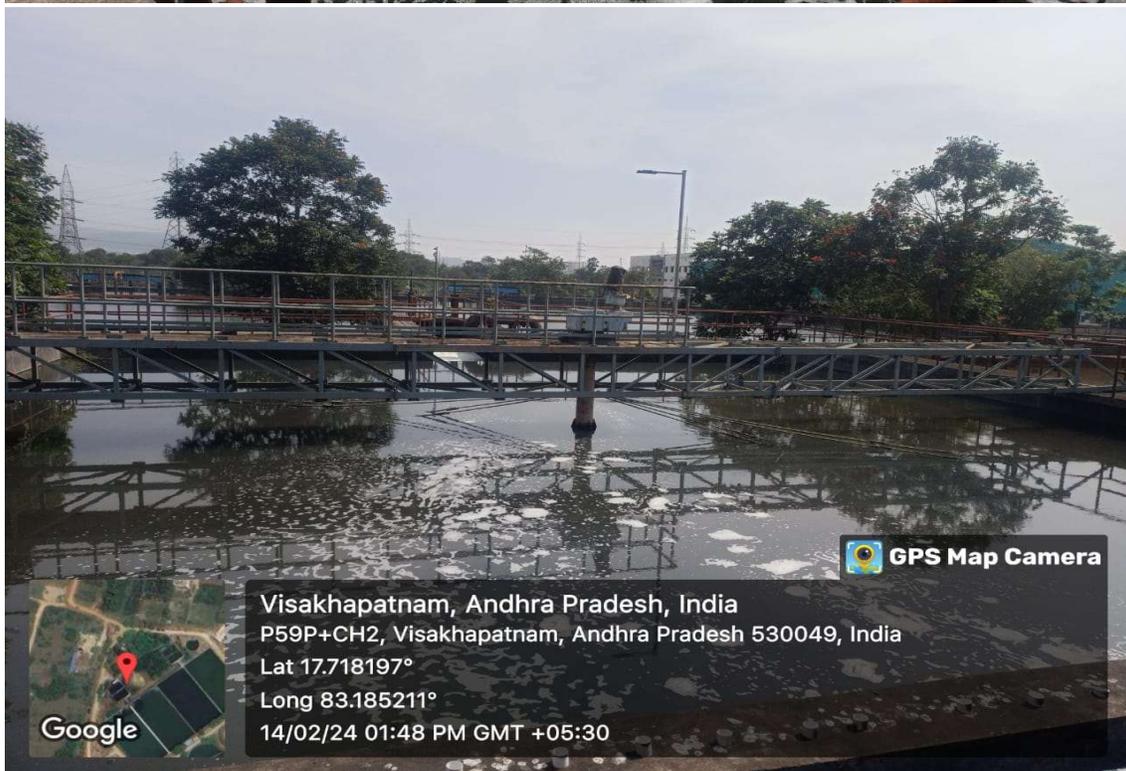
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MGR DAM CLEANING PHOTOS

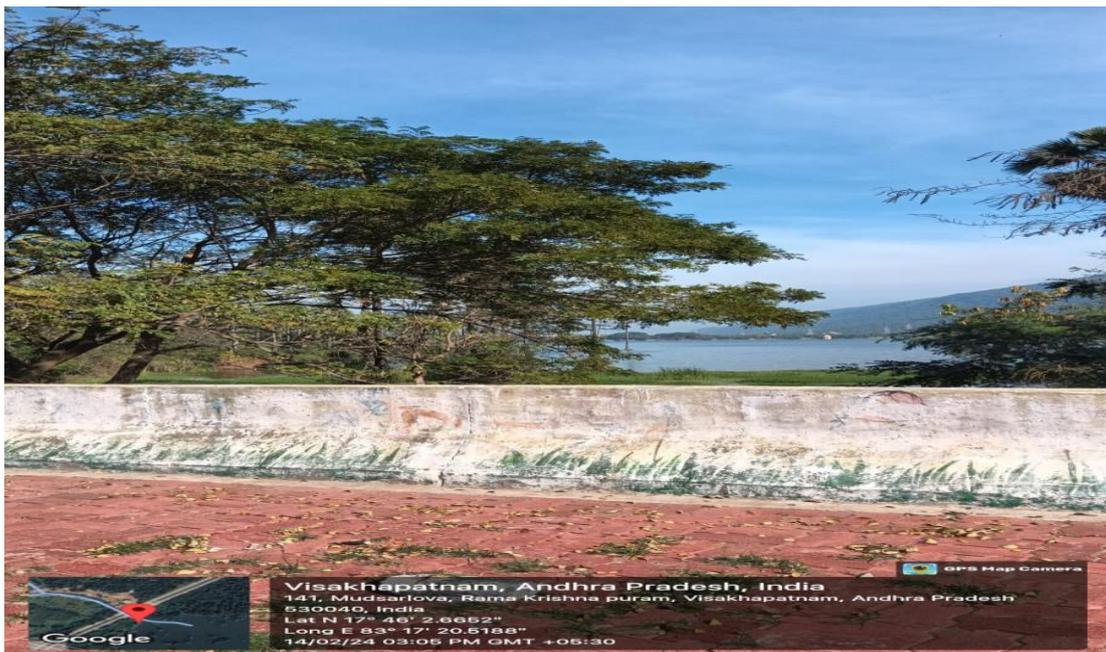
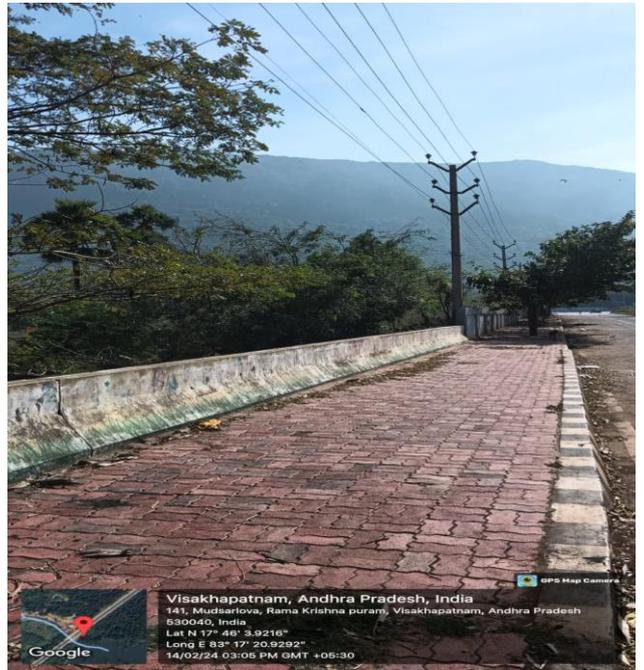
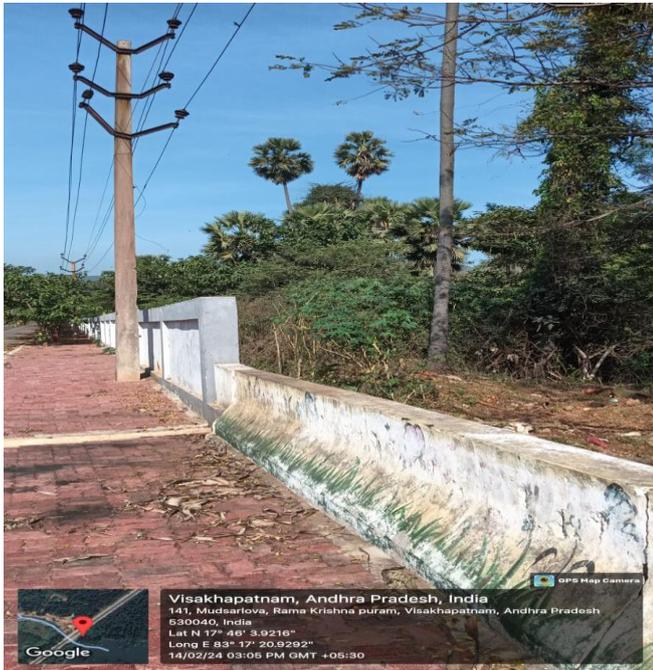


108 STP AT NARAVA



108 STP AT NARAVA

MUDASARLOVA RESERVIOR RIGTH ROUND PROTECTION
COMPOUND WALL FOR UNAUTHORISED WASTE MATERIALS OF
DUMPING.



UPSTERAM SEWERAGE WATER COLLECTED AT SUMP CUM PUMP HOUSE NEAR MUDASARLOVA RESERVIOR AND PUMPING TO 13 MLD STP FOR TREATMENT.

