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?"

Background: -

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 Thatipudu, Raiwada, Yeleru, Meghadrigedda, Mudasarlova and Gambeeram 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 H_2S 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 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 - July 2021 with an estimate cost of Rs.12.00 Lakhs 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 on 08.07.2021 & 16.08.2021 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 for analysis of water parameters, such as pH values, DO levels, BOD & COD values are tested and found to be well within the permissible and the detailed reports are enclosed for kind reference.

Further, water samples collected on dt.17.08.2021 from MGR Reservoir by Regional Public Health Laboratory, Visakhapatnam for detailed analysis and the all necessary water parameter values well within the permissible and the detailed reports are enclosed for kind reference. The Sample was also taken by Regional Public Health Laboratory, Visakhapatnam on 22/10/2021 for testing for which report is awaited.

Discussion on the Water Quality:

The analytical results of the water quality parameters, Physical and Biological tests based on the water samples collected by APPCB on 17-08-2021 and Regional Public Health Laboratory on dt.22-10-2021 submitted below.

- Total dissolved solids were found 312 mg/l which was within the limits of BIS drinking water standards of 500 mg/l.
- pH was observed 8.4 which was within the BIS drinking water standards of 6.5-8.5.
- The BOD values were found 2.2 mg/l which was within the limits of BIS drinking water standards of <5 mg/l.
- COD was found 12.8 mg/l that shows fairly good levels of oxygen in the water sufficient for aquatic life.

Conclusion:

- Based on the water quality results, it is suggested that the Meghadrigedda reservoir water can be used for the drinking purpose after filtration and disinfection (either chlorine or ozone).

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 litters per day) capacity in Pendurthi area of Rathicheruvu in Div.71 to avoid pollution of catchment of Mehadrigedda 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 now under construction. The physical progress of the work is now at 73% and it is expected to be completed by the end of August 2022.

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, which is under construction at Narava and it will be commenced by the end of August 2022. Hence, the question of pollution of catchment may not arise in Meghadrigedda Reservoir in future because of Pendurthi residential habitation and photographs of recent development are enclosed.

It is further submitted that, the agreement concluded with HPCL & RINL for supplying of treated water after completion of 108.00 MLD STP at Narava and quantities of 30.00 MLD to the HPCL and 45.00 MLD to the RINL.

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 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 recently 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, which is put to operation last month. 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.

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 recently at upstream of the reservoir.

23/10/21

Superintending Engineer
Water Supply
GVMC

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY, VISAKHAPATNAM
Behind RTA Office, Madhavadhara VUDA Colony
Visakhapatnam – 530 018
M. RAVI, M.Sc
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Lr. No.13333/APPCB/ZO-VSP/2021- **Date: /07/2021**

DEMAND NOTE FOR ANALYSIS CHARGES

Sub: APPCB – ZO –VSP– Water Sample – Payment of Analysis Charges – Reg.

Ref: G.O. Ms. No.40 EFS & T (Sec. I) Dept. 30/12/2019

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With reference to the above, Water/Wastewater samples were collected and submitted by you on **01.07.2021**. The Sample will be analyzed for the following parameters. The analysis reports will be communicated on receipt of analysis charges. The details are as follows

S.No.	Type of Sample	Parameters to be analyzed	Amount in Rs.	
			Analysis Charges	Total Amount in Rs.
Water/Waste Water				
1.	Water (5No.s)	pH,EC,TDS,COD,Cl^-,T.A,T.H, Ca,Mg,NO_3,NO_2-N,NH_3-N, P,SO_4,F,F.Coli & T.Coli,	5,000X5= 25,000.00	25,000.00

(Rupees Twenty Five Thousand only)

The payment is to be made by way of Demand Draft in favour of **'A.P. Pollution Control Board, Zonal Office, Visakhapatnam'** within a week time from the date of receipt of this letter.

M. Ravi 8/7/21

SENIOR ENVIRONMENTAL SCIENTIST

8/7/2021

To

The Executive Engineer-II,
M/s Greater Visakhapatnam Municipal Corporation,
(Water supply and Maintenance),
Visakhapatnam .

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY:: VISAKHAPATNAM
D.No.39-33-20/1/4,Madhavadhara VUDA Colony, Visakhapatnam - 530018.

M.RAVI, M.Sc.,
SENIOR ENVIRONMENTAL SCIENTIST

Ph : 0891-2719380/481
e-mail:zovsplab-ses2@ appcb.gov.in

ANALYSIS REPORT

Sample No. : **2021–07 – W– 001 to 005**

Sample location/Address : M/s Greater Visakhapatnam Municipal Corporation, (Water supply and Maintenance), Visakhapatnam.

Sample Source : W-001: Raw water from MGR DAM at Narava
W-002: Raw water from Raiwada WTP incoming at Narava
W-003: Raw water from Godavari WTP incoming at Narava
W-004: Clear water from Raiwada WTP outgoing at Narava
W-005: Clear water from Godavari WTP outgoing at Narava

Sample collected on : 01.07.2021

Sample received on : 01.07.2021

Sample collected by : Executive Engineer-III (WS&M), GVMC, Visakhapatnam

S. No.	Parameter	W-001	W-002	W-003	W-004	W-005	Drinking Water Specification: IS: 10500: 2012 Requirement	
							Acceptable Limit	Permissible Limit
1.	pH	7.16	7.26	7.12	7.04	7.09	6.5-8.5	No Relaxation
2.	Electrical Conductivity (as µS/cm)	410	195	269	214	277	--	--
3.	Total Dissolved Solids at 105^{0}C	328	140	192	156	198	500 mg/l	2000 mg/l
4.	Chemical Oxygen Demand	12.8	8.4	10.0	8.0	5.6	--	--
5.	Chloride (as Cl^-)	97.8	34.2	48.9	39.1	53.8	250 mg/l	1000 mg/l
6.	Total Alkalinity (as $CaCO_3$)	160	116	124	96	116	200 mg/l	600 mg/l
7.	Total Hardness (as $CaCO_3$)	132	80	112	80	100	200 mg/l	600 mg/l
8.	Calcium (as Ca^{+2})	24	16	24	19.2	24	75 mg/l	200 mg/l
9.	Magnesium (as Mg^{+2})	17.49	9.72	12.63	7.77	9.72	30 mg/l	100 mg/l
10.	Nitrate (as NO_3)	0.21	0.16	0.53	0.11	0.58	45 mg/l	No Relaxation
11.	Nitrite Nitrogen (as NO_2-N)	BDL	BDL	0.01	BDL	BDL	--	--
12.	Ammonical Nitrogen (as NH_3-N)	BDL	BDL	0.06	0.16	BDL	--	--
13.	Phosphate (as PO_4^{3-})	BDL	0.01	0.02	BDL	BDL	--	--
14.	Sulphate (as SO_4^{2-})	11.2	3.4	4.6	23.9	17.3	200 mg/l	400 mg/l
15.	Fluoride (as F^-)	0.52	0.34	0.40	0.31	0.39	1.0 mg/l	1.5 mg/l
16.	Fecal Coliform (MPN/100 ml)	93	93	9	NIL	NIL	--	--
17.	Total Coliform (MPN/100 ml)	240	460	23	NIL	NIL	--	--

Note: All values are expressed in mg/l except pH & Conductivity
BDL: Below Detectable Limit

SENIOR ENVIRONMENTAL SCIENTIST

8/7/2021

STAMPED RECEIPT

ANDHRA PRADESH POLLUTION CONTROL BOARD

Zonal Office : Visakhapatnam.

Beside RTA Office Main Road, Madhavadhara, VUDA Colony, Visakhapatnam - 530 018.

Sl. No. 580

Date : 9/7/2021

Received with thanks an amount of Rs. 25,000/- (Rupees twenty Five Thousand only.

From M/s. GVMC Visakhapatnam.

towards (Head of account) Analysis charges for water Code No.

DD No. 911026 dt. 9/7/21 Drawn on (Bank) SBI.

Cheques (D.D's received are subject to realisation)

A.P. Pollution Control Board, Zonal Office, Visakhapatnam

V. Vandana

JOINT CHIEF ENVIRONMENTAL ENGINEER

for ZONAL OFFICE : VISAKHAPATNAM

(With Office Seal)

GOVERNMENT OF ANDHARAPRADESH

REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR: VISAKHAPATNAM

Water Analysis report

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

Collected By: Self Collected on: **24.6.2021**. Received on: **25.6.2021**

S. No	Lab. Ref. No	Exact location of the sample	RC in PPM	colour	Colour in Hazen Units	Odour	pH	EC in Micro Mhos/ cm	TDS mg /L	Nitrite as N	Ammonical Nitrogen	MPN count of coliform Bacteria/100 ml
1	1490	Raw water from MGR Dam at Naráva	Nil	Whitish particles	25.0	Odourless	9.0	450	297	Nil	Nil	1609
2	1491	Raw water from Raiwada WTP incoming at Naráva	Nil	Brownish particles	35.0	,,	9.2	200	132	Nil	Nil	1100
3	1492	Raw water from Godavari WTP incoming at Narava	Nil	Brownish particles	25.0	,,	8.7	290	191	Nil	Nil	1609
4	1493	Clear water from Raivada WTP outgoing at Narava	Nil	colourless	-	,,	8.3	210	139	Nil	Nil	Nil
5	1494	Clear water from Godavari WTP outgoing at Narava	Nil	colourless	-	,,	8.1	290	191	Traces	Nil	Nil
6	1495	Clear water from Raivada 1000 KL GLSR at Padmanabhapuram	2.0	colourless	-	,,	8.0	210	139	Nil	Nil	Nil
7	1496	Clear water from Godavari (2x2000 KL GLSR) at Padmanabhapuram	2.0	colourless	-	,,	8.0	290	191	Nil	Nil	Nil

Remarks:- The given samples Lab. Ref No: 1490, 1491 and 1492 are Raw waters are whitish/Brownish particles present . The colour value is 25.0 , 35.0 and 25.0 respectively. The pH values are also above the acceptable limit. Bacteriologically Unsatisfactory for drinking purpose.

After treatment the clear water sample is colourless, pH value is acceptable limit and Bacteriologically satisfactory for drinking purpose.

SENIOR ANALYST (WATER)
REGIONAL PUBLIC HEALTH LABORATORY
VISAKHAPATNAM

Civil Assistant Surgeon
Regional P.H. Laboratory
VISAKHAPATNAM - 17

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY, D.No.39-33-20/1/4,
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M. RAVI, M.Sc
SENIOR ENVIRONMENTALSCIENTIST

Lr. No.13345/PCB-ZL/VSP/2021- **Date: /07/2021**

Sub: APPCB- Zonal Laboratory- Visakhapatnam- Analysis Report- Submitted- Reg.

***

Please find enclosed herewith the following analysis report of Water/Waste water samples collected and submitted by you for information.

Encl: Analysis Reports:

2021 – 07 – W – 001 to 005

M. Ravi 8/7/21

SENIOR ENVIRONMENTAL SCIENTIST

8/7/2021

To

The Executive Engineer-II,
M/s Greater Visakhapatnam Municipal Corporation,
(Water supply and Maintenance),
Visakhapatnam .

ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY:: VISAKHAPATNAM
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M.RAVI, M.Sc.,
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ANALYSIS REPORT

Sample No : 2021–08 – W– 217 & 218

Sample location/Address : M/s Greater Visakhapatnam Municipal Corporation, (Water supply and Maintenance), Visakhapatnam.

Sample Source : W-217: Raw water from MGR DAM at Narava

W-218: Raw water from Raiwada DAM at Devarapalli

Sample collected on : 16.08.2021

Sample received on : 17.08.2021

Sample collected by : Executive Engineer-II (WS&M), GVMC, Visakhapatnam

S.No.	Parameter	Unit	W-217	W-218
1.	Dissolved Oxygen	mg/l	4.8	4.2
2.	Turbidity	NTU	9.01	30.0
3.	Total Dissolved Solids at 105^0 C	mg/l	312	116
4.	Chemical Oxygen Demand	mg/l	12.8	15.2
5.	Biochemical Oxygen Demand	mg/l	2.2	2.6

Note: All values are expressed in mg/l except Turbidity

M.Ravi
SENIOR ENVIRONMENTAL SCIENTIST

6/9/2021

Scanned with CamScanner

GOVERNMENT OF ANDHARAPRADESH

REGIONAL PUBLIC HEALTH LABORATORY: PEDAWALTAIR: VISAKHAPATNAM

Water Analysis report

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

Collected By: Sri Appa Rao AE Collected on: 17.8.2021. Received on: 26.8.2021

S. N	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	1850	MGR Raw water at MGR Dam	Nil	25.0	Odourless	8.4	460	304	Light traces	Nil	1609
2	1851	MGR Raw water collected at Filtration plant Mindi Hills	Nil	25.0	"	8.4	460	304	Light traces	Nil	1609
3	1852	Filtered water collected at at 2.MGD (MGR) filtration plant Bed No 4 Mindi Hills	Light traces	15	"	8.3	460	304	Nil	Nil	14
4	1853	Filtered water collected at at 4.5 MGD filtration plant Bed No 1 Mindi Hills	Nil	Colourless	"	8.3	460	304	Nil	Nil	14
5	1854	Clear water at 6.0 Lakhs gallons GLSR sump at Mindi hills	1.0	15	"	8.4	480	317	Nil	Nil	Nil

Remarks:- The given samples are Lab. Ref. Nos: 1850 and 1851 , 1852,1854 has contain the colour, 1853 samples are colourless. After treatment Lab. Ref. No: 1854 sample is Bacteriologically satisfactory as the Nil MPN count of coliform bacteria and presence of Residual chlorine.

SENIOR ANALYST (WATER)
REGIONAL PUBLIC HEALTH LABORATORY
VISAKHAPATNAM


GPS Map Camera
Cheemalapalle, Andhra Pradesh, India
Q54J+HFP, Cheemalapalle, Andhra Pradesh 530027, India
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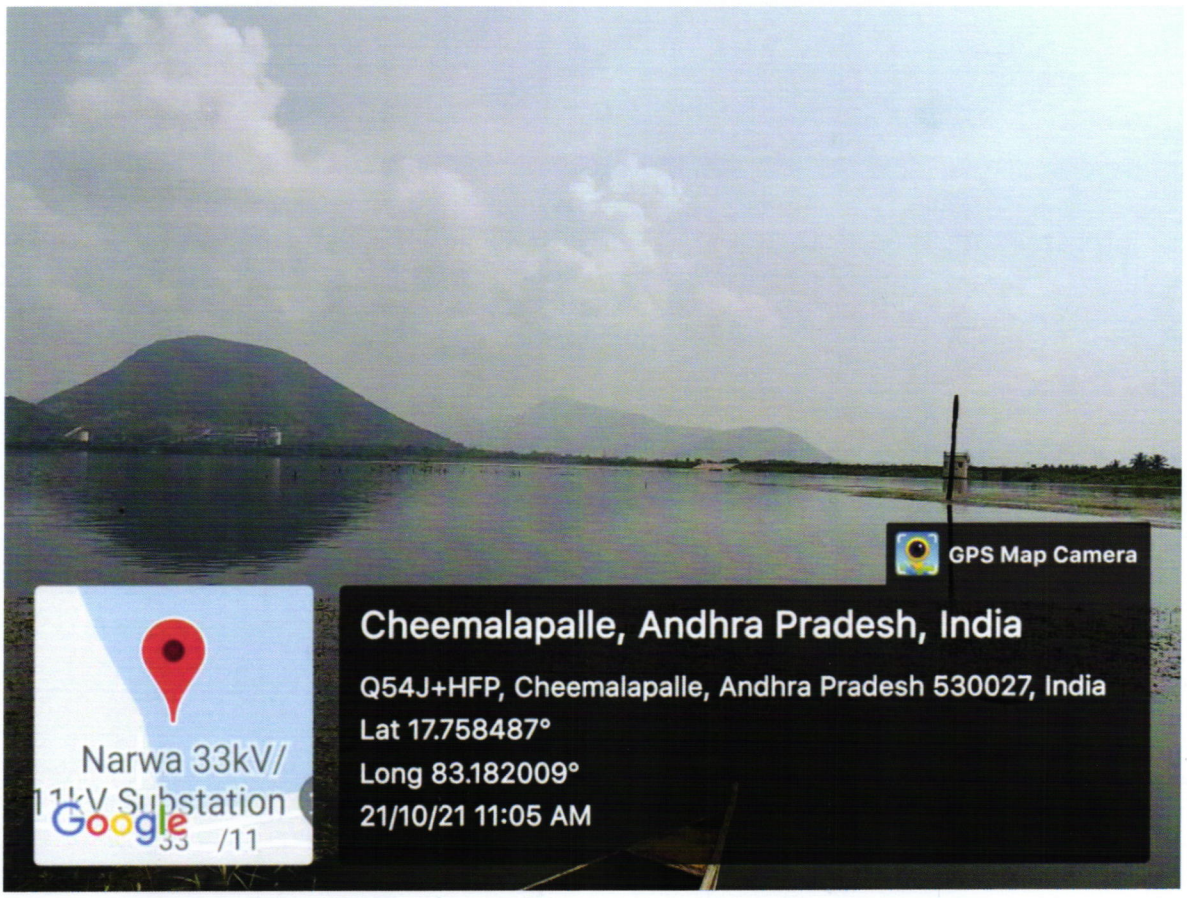
Narwa 33kV/
Google

MGR DAM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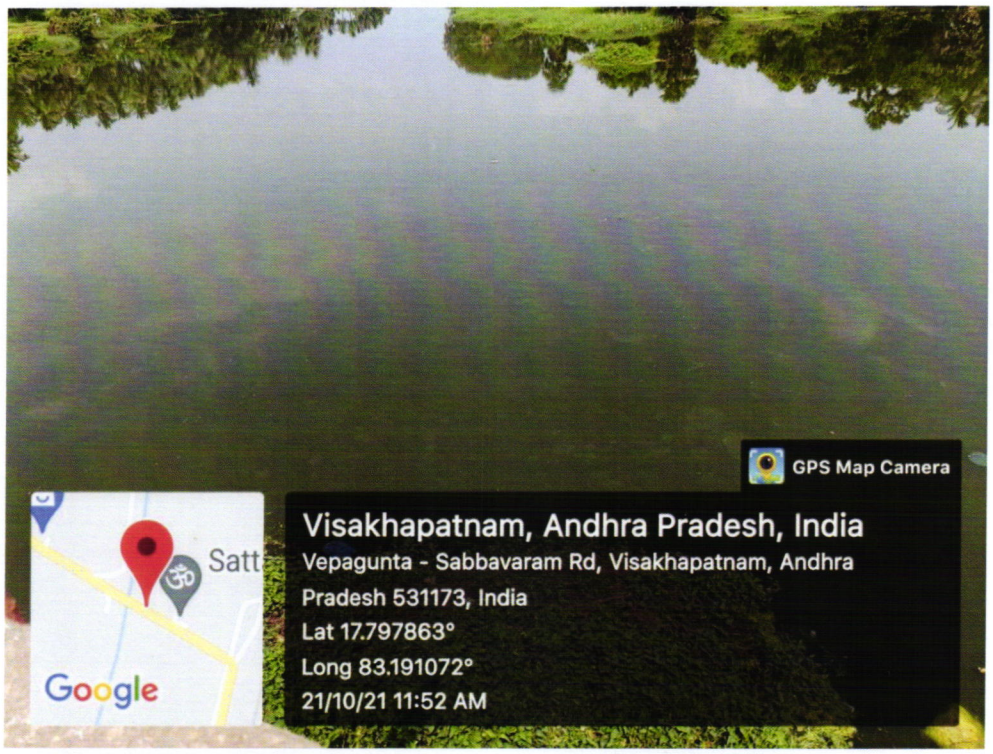
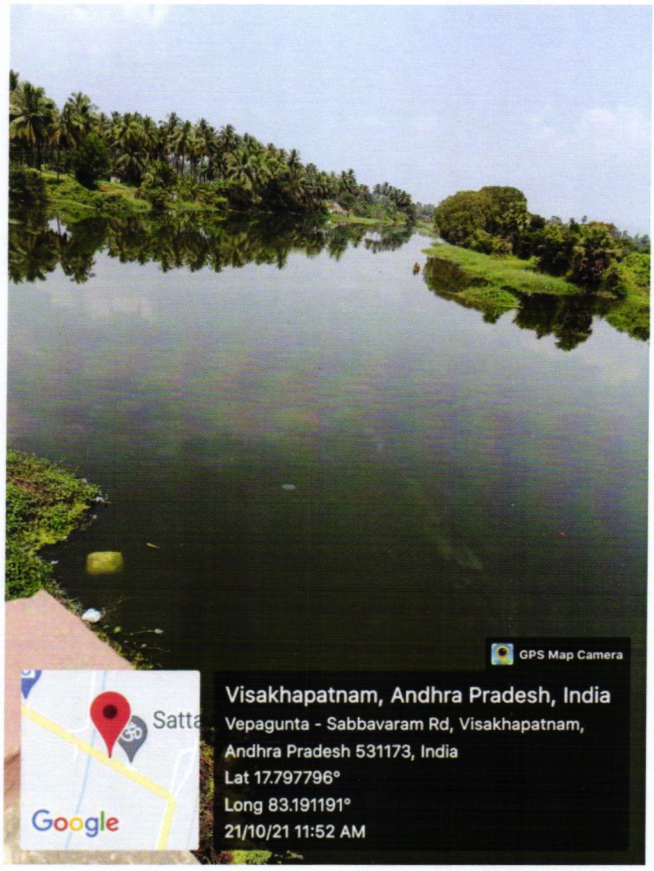
Google

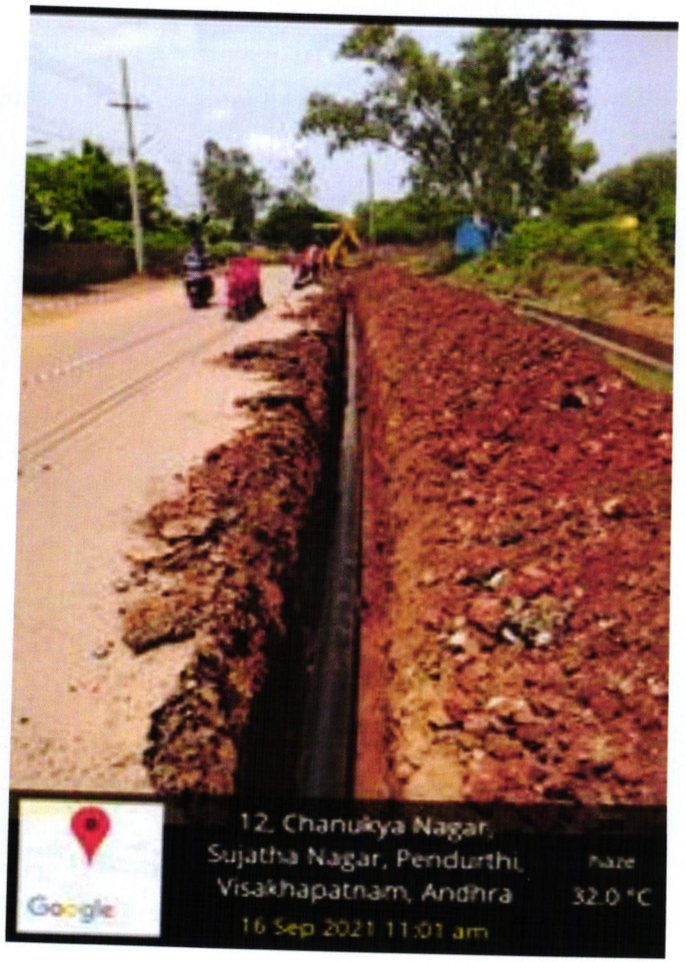




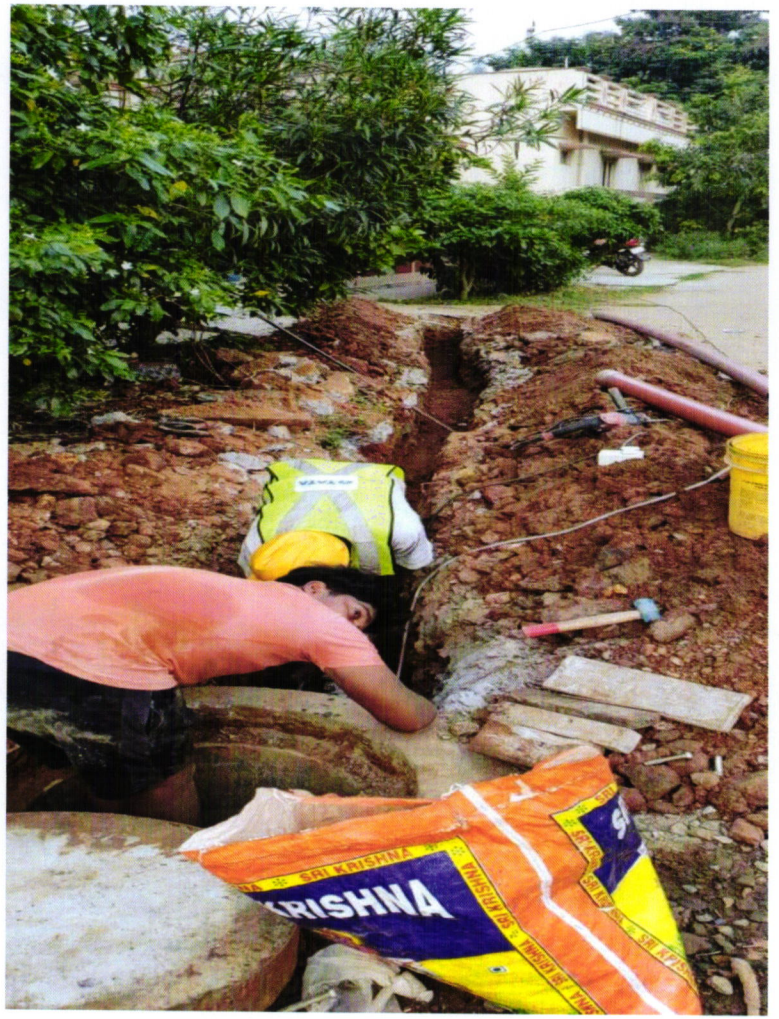
VEPAGUNTA (PINAGADI CULVERT POINT)

SEWAGE WATER INLET AT 108 MLD NARAVA (SATTIVANIPALEM)

SEWAGE WATER SUMP AT 108 MLD NARAVA (SATTIVANIPALEM)



LAYING OF UGD PIPE LINE AT SUJATHA NAGAR PENDURTHI



CONSTRUCTION OF UGD MAN HOLE

REFILLING AND RESTORATION OF UGD PIPE LINE TRENCHES AT SUJATHA NAGAR PENDURTHI

SEWAGE WATER PLANT CLARIFLUCULATOR AT 108 MLD NARAVA (SATTIVANIPALEM)

SEWAGE WATER SUMP AT 108 MLD NARAVA (SATTIVANIPALEM)

SEWAGE WATER SUMP AT 108 MLD NARAVA (SATTIVANIPALEM)

SEWAGE WATER INLET AT 108 MLD NARAVA (SATTIVANIPALEM)