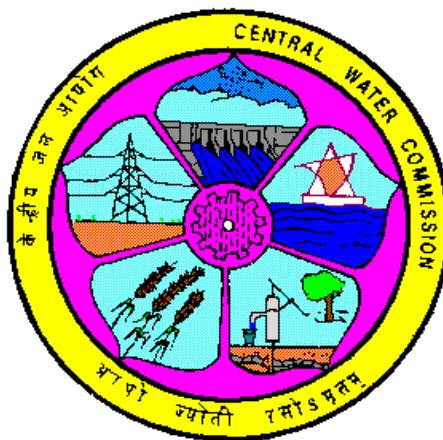


भारत सरकार/ GOVERNMENT OF INDIA
केन्द्रीय जल आयोग/ CENTRAL WATER COMMISSION



गोदावरी बेसिन/ GODAVARI BASIN
जल गुणवत्ता वर्ष पुस्तक (भाग-१११)
WATER QUALITY YEAR BOOK (Vol. III)
(जून 2017 - मई 2018)
(JUNE 2017– MAY 2018)

गोदावरी परिमंडल/ GODAVARI CIRCLE
हैदराबाद/ HYDERABAD
फरवरी 2019
February 2019

P R E F A C E

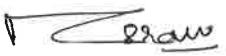
One of the main functions of the Central Water Commission (CWC) is monitoring of river water quality in all the important river basins of India. For River Godavari and its tributaries water quality monitoring is carried out as a part of hydrological observation programme. River Water Samples are collected from the hydrological stations maintained by the CWC and analysed in the laboratories set up at divisional headquarters. The water quality data thus generated is published every year in the form of Water Quality Year Book.

For Godavari basin the Water Quality is monitored at 31 hydrological observation stations (Upper Godavari Division-8, Lower Godavari Division-8, Wainganga Division-15). The water samples collected from the hydrological stations under Godavari Circle are being analysed at Level-III Water Quality Laboratory, Upper Godavari Division, Hyderabad and those collected from hydrological stations under Wainganga Division are being analysed at Level II Water Quality Laboratory at Nagpur.

The water samples received in the respective laboratories are analysed for physical, chemical, biological & bacteriological parameters and trace & toxic elements. In addition to above parameters, six chemical indices are derived mathematically based upon the observed data.

Three field divisions viz. Upper Godavari Division and Lower Godavari Division under Godavari Circle and Wainganga Division under Superintending Engineer (Co-ordination), Nagpur and the respective water quality laboratories are responsible for the collection and analysis of water samples in Godavari basin. The efforts put forth by the officers and staff of these field offices in bringing out this Water Quality Year Book is acknowledged.

Hyderabad
February 2019


(M. Raghuram)
Superintending Engineer
Godavari Circle

प्रस्तावना

भारत के सभी महत्वपूर्ण नदी घाटी में नदी जल गुणवत्ता की निगरानी केन्द्रीय जल आयोग के मुख्य कार्य में से एक महत्वपूर्ण कार्य है। गोदावरी और इसकी सहायक नदियों के लिए जल गुणवत्ता निगरानी जल विज्ञान अवलोकन कार्यक्रम के भाग के रूप में किया जाता है। मंडलीय मुख्यालय में स्थित प्रयोगशाला में सी.डब्ल्यू.सी. के द्वारा बनाए रखा जल विज्ञान केन्द्रो से एकत्रित नदी जल नमूनों का परीक्षण किया जाता है। इस प्रकार से उत्पन्न जल गुणवत्ता आंकड़ा प्रतिवर्ष जल गुणवत्ता वार्षिक पुस्तक के रूप में प्रकाशित किया जाता है।

गोदावरी नदी घाटी में जल गुणवत्ता की निगरानी 31 जल विज्ञान अवलोकन केन्द्रो उपरी गोदावरी मंडल-8, निचली गोदावरी मंडल-8 और वैनगंगा मंडल-15 पर किया जाता है। गोदावरी परिमंडल के अंतर्गत जल विज्ञान केन्द्रो से एकत्रित जल नमूनों का परीक्षण उपरी गोदावरी मंडल, हैदराबाद के जल गुणवत्ता प्रयोगशाला लेबल-iii में किया जाता है और वे सभी जो वैनगंगा मंडल के अंतर्गत एकत्रित किये जाते हैं जल गुणवत्ता प्रयोगशाला लेबल-ii नागपुर में परीक्षण किया जाता है।

संबंधित प्रयोगशाला में प्राप्त जल नमूनों का भौतिक, रासायनिक, जीव-विज्ञान संबंधी जैविक पैरामीटर तथा असर और विषेला तत्वों का परीक्षण किया जाता है। उपरोक्त के अतिरिक्त अवलोकित आंकड़ा पर आधारित गणितीय पद्धति से छ: रासायनिक संकेतक पैरामीटर व्युत्पन्न होता है।

केन्द्रीय जल आयोग के तीन क्षेत्रीय मंडल यथा - ऊपरी गोदावरी मंडल और निचली गोदावरी मंडल जो गोदावरी परिमंडल के नियंत्रणाधीन हैं एवं इसका मुख्यालय हैदराबाद में है तथा अधीक्षण अभियंता (समन्वय), नागपुर के नियंत्रणाधीन वैनगंगा मंडल, गोदावरी नदी घाटी में स्थित जल गुणवत्ता प्रयोगशाला, परीक्षण और जल विज्ञान केन्द्रो के रख-रखाव के लिए उत्तरदायी हैं। इस जल-वर्ष पुस्तक के प्रकाशन में इन क्षेत्रीय कार्यालयों के अधिकारियों और कर्मचारियों के अथक प्रयास के लिए आभार है।

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(एम रघुराम)

अधीक्षण अभियंता

गोदावरी परिमंडल

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1.0 INTRODUCTION

The Godavari is the largest river in South India extending over nearly 10% of Geographical area of the country. The total catchment area of the Godavari basin is 3,12,812 sq. km., draining parts of the states of Maharashtra, Karnataka, Madhya Pradesh, Chhattisgarh, Orissa ,Telangana and Andhra Pradesh. The river Godavari rises at an elevation of 1,067 m in the Western Ghats near Thriambak Hills in the Nasik district of Maharashtra. After flowing for about 1,465 km., generally in south-east direction, through Maharashtra, Telangana and Andhra Pradesh, it falls into the Bay of Bengal. The Pravara, the Manjira and the Maner are the major right bank tributaries while the Purna, the Pranahita, the Indravati and the Sabari are the major left bank tributaries on the Godavari River.

1.1 Water Quality Monitoring in Godavari Basin

For the analysis of river water samples in the Godavari Basin, two laboratories – Krishna & Godavari River Water Quality Laboratory, Level III at Hyderabad (attached to Upper Godavari Division) and Water Quality Laboratory, Level II at Nagpur (attached to Wainganga Division) are being maintained by the Central Water Commission.

The Central Water Commission is monitoring the quality of river water in the Godavari basin since 1978. This volume contains data on water quality monitored at 31 hydrological observation stations being operated by the Central water commission during the Water Year 2017-18. Out of these 31 water quality stations, 15 are monitored by the level- II laboratory situated under Wainganga Division, Nagpur and the remaining 16 are monitored by a Level- III laboratory under Upper Godavari Division, Hyderabad under Godavari Circle at Hyderabad. These stations have been marked in the layout map.

1.2 Classification of Water Quality Station

Based on the location of the water quality stations, they are classified as (i) Base line Stations, (ii) Flux Stations and (iii) Trend Stations.

- i. **Base line Stations:** These are the quality stations, where there is no influence of human activities on water quality. At these stations, water quality is monitored 4 times a year for perennial rivers and 3 to four 4

1.0 परिचय

गोदावरी दक्षिण भारत की सबसे बड़ी नदी है, जो देश के कुल भौगोलिक क्षेत्र के लगभग 10 प्रतिशत में बहती है। इसका कुल प्रवाह क्षेत्र 3,12,812 वर्ग किमी है और यह महाराष्ट्र, आंध्रप्रदेश, तेलंगाना, मध्यप्रदेश, छत्तीसगढ़, उड़ीसा और कर्नाटक राज्य से होकर बहती है। गोदावरी नदी का उद्गम महाराष्ट्र के नासिक जिले के त्रियम्बक पहाड़ी के नजदीक, पश्चिमी घाट में 1,067 मीटर की ऊँचाई से है। सामान्यतः दक्षिण पूर्व दिशा में 1,465 किमी बहने के बाद, बंगाल की खाड़ी में मिलती है। गोदावरी नदी के दायें किनारे की मुख्य सहायक नदियाँ प्रवरा, मंजीरा, और मनेर हैं जबकि बायें किनारे की मुख्य सहायक नदियाँ पूर्णा, प्राणहिता, इंद्रावती और सबरी हैं।

1.1 गोदावरी नदी घाटी में जल गुणवत्ता निगरानी

केन्द्रीय जल आयोग द्वारा गोदावरी नदी घाटी में नदी जल नमूनों के परीक्षण के लिए दो प्रयोगशालायें - ऊपरी गोदावरी मंडल, हैदराबाद से संलग्न कृष्णा और गोदावरी नदी जल गुणवत्ता प्रयोगशाला, लेवल-III। एवम् वैनगंगा मंडल, नागपुर से संलग्न जल गुणवत्ता प्रयोगशाला, लेवल-II कायम किया जा है।

केन्द्रीय जल आयोग वर्ष 1978 से गोदावरी नदी घाटी में जल गुणवत्ता की निगरानी कर रहा है। इस भाग में केन्द्रीय जल आयोग द्वारा संचालित 31 जल विज्ञान अवलोकन केन्द्रों का जल वर्ष 2017 -2018 में जाँच किये गये आंकड़े सम्मिलित हैं। गोदावरी नदी घाटी में स्थित इन 31 जल विज्ञान केन्द्रों में से 15 जल विज्ञान केन्द्रों की निगरानी वैनगंगा मंडल, नागपुर और 16 जल विज्ञान केन्द्रों की निगरानी ऊपरी गोदावरी मंडल, हैदराबाद तथा प्रबन्धन गोदावरी अधीक्षण अभियंता, हैदराबाद का हैं। ये सभी केंद्र खाका मानचित्र में चिन्हित हैं।

1.2 जल गुणवत्ता केन्द्र का वर्गीकरण

स्थिति के आधार पर जल गुणवत्ता केन्द्र का वर्गीकरण इस प्रकार है - (i) आधारभूत केन्द्र (Base line stations) (ii) निरंतर परिवर्तन केन्द्र (Flux Stations) और (iii) प्रचलन केन्द्र (Trend Stations)

(i) **आधारभूत केन्द्र (Base line stations):** ऐसे जल गुणवत्ता केन्द्र जहाँ मानवीय क्रियाकलापों का जल गुणवत्ता पर कोई प्रभाव नहीं पड़ता है। प्रतिवर्ष इन केन्द्रों पर चिरस्थायी नदियों के लिए चार बार तथा मौसमी नदियों के लिए तीन से चार बार जल गुणवत्ता की

times a year for seasonal rivers. Yelli is the only one base station in Godavari Basin.

- ii. **Flux Stations:** These stations are also known as impact stations. These stations meant for measuring the mass of particular pollutant on main river stream for measuring the extent of pollution due to human interference or geological feature at any point of time and are necessary for measuring impact of pollution control measures adopted. These stations shall be monitored 12 to 24 times in a year depending up on the pollution potential or importance of water use. There is no flux station in Godavari Basin.
- iii. **Trend Stations:** These stations are designated for water quality monitoring to show how a particular point on a water course varies over time, normally, due to influence of human activities. These stations are monitored twelve times in a year. All 30 stations under Godavari basin except Yelli are trend stations.

2.0 WATER QUALITY DATA

2.1 Back Ground Notes

- i. Water year commences from 1st June of the calendar year and extends to 31st May of the next calendar and covers one complete hydrologic cycle.
- ii. The month and year from which data are collected are indicated in the history sheet.

2.2 Observation/Sampling Techniques

A single grab sample at each station is collected on the designated dates from 30 cm below the water surface in the discharge measuring section from the flow portion of the stream.

Water samples are collected, in general, in two polythene/polypropylene bottles of one litre capacity – one for the analysis of physico-chemical parameters and the other one for analysis of biological parameters. Water sample meant for analysis of biological parameter and bacteriological analysis are collected in a 300 ml glass bottle and sterilized glass bottle of 250 mL capacity whose mouth is sealed with aluminum foil. The water sample meant for analysis of pesticides is collected in amber colored glass bottle of one litre capacity and for analysis of Trace & Toxic elements collected in one litre capacity of polythene/polypropylene bottle. The sample bottles are labeled and proper care is taken to ensure leak-proof.

निगरानी किया जाता हैं। गोदावरी परिमंडल के अंतर्गत केवल येल्ली एक मात्र आधारभूत केन्द्र (Base line stations) है।

(ii) **निरंतर परिवर्तन केन्द्र (Flux Stations):** इस प्रकार के जल गुणवत्ता केन्द्र को प्रभावित केंद्र भी कहा जाता है। इन केन्द्रों का अर्थ परिस्थिति के किसी स्थल पर मानवीय हस्तक्षेप या भौगोलिक विशेषता के कारण प्रदूषण के परिमाण मापने के लिए विशिष्ट प्रदूषक के द्रव्यमान का मापन नदी की मुख्य धारा में और प्रदूषण नियंत्रण माप स्वीकृति का आवश्यक प्रभाव मापने में होता है। प्रदूषण क्षमता या जल उपयोग के महत्व पर निर्भर प्रतिवर्ष इन केन्द्रों पर जल गुणवत्ता की जाँच 12 से 24 बार होगा। गोदावरी परिमंडल के अंतर्गत कोई भी निरंतर परिवर्तन केन्द्र (Flux Stations) नहीं है।

(iii) **प्रचलन केन्द्र (Trend Stations):** सामान्यतः मानवीय क्रियाकलापों के कारण जल प्रवाह में किसी विशेष स्थान पर समय के साथ जल गुणवत्ता में परिवर्तन कैसे होता है इसे प्रदर्शित करने के लिये इन केन्द्रों की निगरानी का प्रयोजन है। प्रतिवर्ष इन केन्द्रों पर जल गुणवत्ता की जाँच बारह बार किया जाता है। गोदावरी परिमंडल के अंतर्गत येल्ली को छोड़कर सभी प्रचलन केन्द्र (Trend Stations) हैं।

2.0 जल गुणवत्ता आंकड़ा

2.1 पृष्ठभूमि टिप्पणी

- (i) जल वर्ष कैलेण्डर वर्ष की घोषणा कैलेण्डर के 01 जून से लेकर अगले वर्ष के 31 मई तक विस्तारित और एक सम्पूर्ण जल विज्ञान चक्र सम्मिलित होता है।
- (ii) वर्ष तथा माह जिसके लिए आंकड़ा संग्रह किया केंद्र के वृतांत (History sheet) में सूचित हैं।

2.2 अवलोकन / नमूना संग्रह की तकनिकी

निस्सारण मापन खण्ड में नदी धारा के प्रवाह भाग से जल सतह से 30 से.मी. नीचे से प्रत्येक केंद्र से निर्दिष्ट तिथि को एक ग्रेब जल नमूना एकत्र किया जाता है।

समान्यतः जल नमूना एक लीटर के पौलिथिन / पौलिप्रोपिलिन बोतल में भौतिक - रासायनिक पैरामीटर के लिए एकत्र किया जाता है, जैविक पैरामीटर के लिए 300 मि.ली. के कांच बोतल में तथा बैकटेरिया परीक्षण के लिए 250 मी.ली. जीवाणु - रहित कांच बोतल में, जिसका मुँह एलुमिनियम पत्तर से बंद, जल नमूना एकत्र किया जाता है। कीटनाशक परीक्षण के लिए एक लीटर कांच बोतल में तथा असर और विषैला धातु परीक्षण के लिए एक लीटर

The samples are transported in ice-boxes to the respective laboratories with a minimum loss of time to ensure that they reach the laboratories within 24 hours of collection. The parameters like pH, electrical conductance, dissolved oxygen, carbonate & bicarbonate, Hardness (Ca, Total), coliforms (both Fecal and Total) and Ammonical Nitrogen are analyzed immediately after the receipt of water samples in the laboratory. Later the samples, after filtration through membrane filter papers, are preserved at 4°C for analysis of other parameters within the prescribed time periods.

2.3 Frequency of Sample collection

For baseline and trend stations samples are collected once in a month and samples are collected thrice per month for flux stations.

The frequency of sampling for various parameters at various stations are summarized in Table 2.1.

Table 2.1 Frequency of sampling in Godavari Basin during WY 2017-18

Parameters	Frequency	Stations
Physico-Chemical including Boron	Once in a month	All stations under Godavari Basin
Biological	Once in a month	All stations under Godavari Basin
Bacteriological	Once in a month	All stations under Godavari Basin
Organo-chloro Pesticides	Once in a year	All stations under Godavari Basin.
Trace & Toxic elements	Once in a year	All stations under Godavari Basin.

Copper and Zinc parameters of Trace & Toxic elements are analyzed on monthly basis of Upper and Lower Godavari Division water samples.

2.4 Analysis Techniques:

The Water samples, received from 31 water quality monitoring stations, are analyzed for different parameters by following the "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE WATER" – APHA, AWWA & WEF-23rd Edition.

पौलिथिन / पौलिप्रोपिलिन बोतल में जल नमूना एकत्र किया जाता है। नमूना बोतल लेबल युक्त होते हैं और रिसाव रहित सुनिश्चित करने के लिए उचित देख भाल किया जाता है।

यह सुनिश्चित करते हुए कि एकत्रित होने के 24 घंटे के अन्दर प्रयोगशाला में पहुंचता है; जल नमूना आइस बॉक्स में संबंधित प्रयोगशाला में बिना समय गवाएं लाया जाता है। प्रयोगशाला में जल नमूना प्राप्त करने के बाद तुरंत पैरामीटर जैसे की पी एच, विद्युत चालकता, घुल्य ऑक्सीजन, कार्बोनेट और बाइकार्बोनेट, जल की कठोरता (कुल कठोरता और कैल्सियम कठोरता), कोलीफौर्म (टोटल और फिकल दोनों) और अमोनिया नाइट्रोजन का परीक्षण किया जाता है। तत्पश्चात जल नमूनों को मेम्ब्रेन फ़िल्टर पत्र के द्वारा छानने के बाद निर्धारित समय अवधि में अन्य पैरामीटर के परीक्षण के लिए 4°C पर सरक्षित किया जाता है।

2.3 जल नमूना संग्रह की आवृत्ति

आधारभूत एवं प्रचलन केन्द्र के लिए प्रतिमाह एकबार और निरंतर परिवर्तन केन्द्र के लिए प्रतिमाह तीन बार जल नमूना एकत्र किया जाता है।

विभिन्न केन्द्रों पर भिन्न - भिन्न पैरामीटर के लिए नमूनों की आवृत्ति तालिका 2.1 में संक्षेपित किया गया है।

तालिका 2.1 जल वर्ष 2017-18 के दौरान गोदावरी नदी घाटी में जल नमूनों की आवृत्ति

पैरामीटर	आवृत्ति	केन्द्र
भौतिक-रासायनिक बोरान सहित	प्रतिमाह	गोदावरी नदी घाटी के सभी केंद्र
जीव- विज्ञान संबंधी	प्रतिमाह	गोदावरी नदी घाटी के सभी केंद्र
जैविक	प्रतिमाह	गोदावरी नदी घाटी के सभी केंद्र
कार्बनिक- क्लोरो कीटनाशक	वार्षिक	गोदावरी नदी घाटी के सभी केंद्र
असर और विषैला तत्व	वार्षिक	गोदावरी नदी घाटी के सभी केंद्र

असर और विषैला पैरामीटर में ताम्बा और जस्ता का परीक्षण उपरी तथा निचली गोदावरी मंडल के जल नमूनों का प्रतिमाह किया जाता है।

2.4 परीक्षण तकनीक

जल और अवशिष्ट जल के परीक्षण के लिए मानक विधि - ए. पी. एच. ए., ए. डबल्यू. ए. और डबल्यू. इ. एफ. भाग 22 के अनुसार अलग - अलग जल गुणवत्ता केन्द्रों से प्राप्त जल नमूनों का भिन्न - भिन्न पैरामीटर के लिए परीक्षण किया जाता है।

2.4.1 Wet Chemical analysis by Titrimetry:

Titrimetry is used to estimate the quantities of total hardness, calcium, carbonate, bicarbonate, chloride, dissolved oxygen, biochemical oxygen demand and chemical oxygen demand. In this procedure, analysis is carried out to find the volume of a solution of accurately known concentration, which reacts quantitatively with the known volume of sample from which the concentration of the required parameter in the sample is evaluated.

2.4.2. Instrumental methods:

The water quality parameters analyzed and instruments used are given here under:

S.No.	Method	Parameter analyzed	Instrument used
1	Potentiometric	pH	Digital pH meter
2	Conductometric	Electrical Conductance	Digital Conductivity meter
3	Nephelometric method	Sulfate & Turbidity	Nephelo-Turbidity Meter
4	Flame Emission Photometric method	Sodium & Potassium	Flame Photometer
5	Colorimetric method	Ammonical Nitrogen, Nitrite-Nitrogen, Phosphate-Phosphorous, Silicon, Boron	UV-VIS Spectrophotometer
6	Gravimetric method	Total dissolved solids	Hot Air oven for total dryness at 180°C
7	Chromatographic method	Aldrin, BHC, DDT, Dieldrin and Endosulphan	Gas Chromatograph
8	Atomic Absorption method	Arsenic, Cadmium, Chromium, Mercury, Iron, Nickel, Lead, Zinc and copper	Atomic Absorption Spectrometer
9	Oxidative Combustion Infrared Analysis method	Total Organic Carbon	Total Organic Carbon Analyzer
10	Ion selective electrode method	Nitrate-Nitrogen & Fluoride	Ion meter

2.5 Parameters analyzed in the Water Quality Laboratory:

The Krishna & Godavari River Water Quality Laboratory (Level III), at Upper Godavari Division, Hyderabad analyzes 46 parameters. The Water Quality Laboratory (Level-II) at Waingangā Division, Nagpur analyses 25 parameters.

The Krishna & Godavari River Water Quality Laboratory (Level III), Hyderabad is NABL accredited in accordance with the standard ISO/IEC 17025:2005 for twenty Physico –Chemical Parameters as scope.

2.4.1 अनुमापन के द्वारा भींगा परीक्षण

अनुमापन का उपयोग जल की कुल कठोरता की मात्रा, कैल्सियम, कार्बोनेट, बाईकार्बोनेट, क्लोराईड, घुल्य ऑक्सीजन, जैवरासायनिक ऑक्सीजन मांग और रासायनिक ऑक्सीजन मांग के आकलन के लिए किया जाता है। इस प्रक्रिया में सही तरीके से ज्ञात सान्द्र धोल का आयतन ज्ञात करने के लिए परीक्षण किया जाता है जो नमूनों के ज्ञात आयतन से मात्रात्मक अभिक्रिया करता है जिससे जल नमूनों में जरुरी पैरामीटर की सांद्रता का मूल्यांकन किया जाता है।

2.4.2 उपकरण विधि

उपकरण विधि, उपयुक्त पैरामीटर परीक्षण और उपयोगी उपकरण यहाँ नीचे दिया गया है -

क्रम संख्या	विधि	पैरामीटर परीक्षण	उपयोगी उपकरण
1	Potentiometric method	pH	Digital pH meter
2	Conductometric method	Electrical Conductance	Digital Conductivity meter
3	Nephelometric method	Sulfate & Potassium	Nephelo-Turbidity Meter
4	Flame Emission Photometric method	Sodium & Potassium	Flame Photometer
5	Colorimetric method	Ammonical Nitrogen, Nitrite-Nitrogen, Phosphate-Phosphorous, Silicon, Boron	UV-VIS Spectrophotometer
6	Gravimetric method	Total dissolved solids	Hot Air oven for total dryness at 180 °C
7	Chromatographic method	Arsenic, BHC, DDT, Dieldrin and Endosulphane	Gas Chromatograph
8	Atomic Absorption method	Arsenic, Cadmium, Chromium, Mercury, Iron Nickel, Lead, Zinc and copper	Atomic Absorption Spectrometer
9	Oxidative Combustion Infrared Analysis method	Total Organic Carbon	Total Organic Carbon Analyzer
10	Ion selective electrode method	Nitrate-Nitrogen & Fluoride	Ion meter

2.5 जल गुणवत्ता प्रयोगशाला में पैरामीटर परीक्षण

उपरी गोदावरी मंडल, हैदराबाद, कृष्णा और गोदावरी नदी जल गुणवत्ता प्रयोगशाला लेवल-iii में अवलोकित 46 पैरामीटर का परीक्षण करता है। वैनगंगा मंडल, नागपुर जल गुणवत्ता प्रयोगशाला में 25 लेवल-ii पैरामीटर का परीक्षण किया जाता है।

2.5.1 Parameters analyzed at Level -II Laboratory

i. Physico – chemical Parameters:

- i) pH ii) Electrical Conductance iii) Total Dissolved Solids iv) Turbidity v) Alkalinity- Total vi) Boron vii) Calcium viii) Chloride xi) Carbonate x) Fluoride xi) Iron xii) Bicarbonate xiii) Sodium xiv) Potassium xv) Magnesium xvi) Ammonical-Nitrogen xvii) Nitrate-Nitrogen xviii) Nitrite-Nitrogen xix) Ortho-Phosphorous- Phosphate xx) Silica xxi) Sulfate

ii. Biological Parameters:

- i) Dissolved Oxygen ii) Bio-chemical Oxygen Demand and iii) Chemical Oxygen demand

iii. Bacteriological Parameters:

- ii) Total Coli form count and ii) Fecal Coli form count

Total Dissolved solids was not analysed in level-II Water Quality laboratory at Nagpur for the year 2017-18.

2.5.2 Parameters analyzed at Level –III Laboratory

In addition to the above mentioned 26 parameters, the following 14 parameters were also analyzed at Level-III Laboratory - Hyderabad.

i. Organo-chloro Pesticides:

- i) Aldrin ii) BHC iii) Dieldrin iv) DDT and v) Endosulphan

ii. Trace & Toxic Elements:

- i) Arsenic ii) Cadmium iii) Chromium iv) Mercury v) Nickel vi) Lead vii) Zinc and viii) Copper

iii. Total Organic Carbon.

Total organic carbon, the Organo –chloro pesticides were not analyzed in Level-III Water Quality laboratory at Hyderabad for the year 2017-18.

मानक ISO/IEC 17025:2005 के अनुसार कृष्णा और गोदावरी नदी जल गुणवत्ता प्रयोगशाला लेवल-iii को एन ए बी एल से 20 भौतिक रासायनिक पैरामीटर के लिए मान्यता प्राप्त है ।

2.5.1 प्रयोगशाला लेवल-ii में पैरामीटर परीक्षण

(अ) भौतिक रासायनिक पैरामीटर

- (i) पी एच (ii) विद्युत् चालकता (iii) कुल घुल्य ठोस (iv) टर्बिडिटी (v) कुल क्षारीयता (vi) बोरोन (vii) कैल्सियम (viii) क्लोराइड (ix) कार्बोनेट (x) फ्लोराइड (xi) लोहा (xii) बाइकार्बोनेट (xiii) सोडियम (xiv) पोटैसियम (xv) मैग्नेसियम (xvi) अमोनिकल- नाइट्रोजन (xvii) नाइट्रेट-नाइट्रोजन (xviii) नाईट्राईट- नाइट्रोजन (xix) ओर्थो- फोस्फोरस- फोस्फेट (xx) सिलिका (xxi) सलफेट

(ब) जीव विज्ञान संबंधी पैरामीटर

- (i) घुल्य ऑक्सीजन (ii) जैव रासायनिक ऑक्सीजन मांग (iii) रासायनिक ऑक्सीजन मांग

(स) जीवाणु पैरामीटर

- (i) टोटल कोलीफौर्म और (ii) फीकल कोलीफौर्म (MPN/100 ml)

जल गुणवत्ता प्रयोगशाला लेवल-ii, नागपुर वर्ष 2017-18 में कुल घुल्य ठोस का परीक्षण नहीं किया है ।

2.5.2 प्रयोगशाला लेबल-ii में पैरामीटर परीक्षण

उपरोक्त 26 लेबल - ii पैरामेटर के अतिरिक्त निम्न 14 पैरामीटर का परीक्षण लेबल -iii प्रयोगशाला हैदराबाद में किया जाता है -

(अ) कार्बनिक- क्लोरो कीटनाशक

- (i) एल्ड्रिन (ii) बी.एच.सी. (iii) डाएलड्रीन (iv) डी.डी.टी. और (v) इन्डोसल्फान

(ब) असर और विषेला तत्व

- (i) आर्सेनिक (ii) कैडमियम (iii) क्रोमियम (iv) पारा / मरक्युरी (v) निकेल (vi) सीसा / लेड और (vii) जस्ता / जिंक

(स) कुल कार्बनिक कार्बन

2.5.3 Calculated Chemical Indices:

Six chemical indices are calculated based on the measured results of other parameters. The details are given below:

1) Phenolphthalein and Total Alkalinity:

Using the following conditions, the Phenolphthalein Alkalinity (PA) and Total Alkalinity (TA) are calculated from the values of carbonate and bicarbonate values.

Condition	OH ⁻ Alkalinity as CaCO ₃ mg/L	CO ₃ ²⁻ Alkalinity as CaCO ₃ mg/L	HCO ₃ ²⁻ Alkalinity as CaCO ₃ mg/L
PA = 0	0	0	TA
PA < 1/2 TA	0	2PA	TA - 2PA
PA = 1/2 TA	0	2PA	0
PA > 1/2 TA	2P-T	2(TA-PA)	0
PA = TA	T	0	0

$$i) \text{CO}_3^{2-} \text{ mg/L} = \text{CO}_3^{2-} \text{ Alkalinity as CaCO}_3 \text{ mg/L} \times 0.60$$

$$ii) \text{HCO}_3^{2-} \text{ mg/L} = \text{HCO}_3^{2-} \text{ Alkalinity as CaCO}_3 \text{ mg/L} \times 1.22$$

2) Calcium ion (Ca⁺⁺): Ca⁺⁺ mg/L = 0.4 x Ca-Hardness as CaCO₃ mg/L

3) Magnesium ion (Mg⁺⁺):

$$\text{Mg}^{++} \text{ mg/L} = 0.243 \times [\text{Total Hardness as CaCO}_3 \text{ mg/L} - \text{Ca-Hardness as CaCO}_3 \text{ mg/L}]$$

$$\text{Na}^+ \times 100$$

$$4) \text{Sodium Percentage } (\% \text{Na}) = (\% \text{Na}) = \frac{\text{Na}^+ \times 100}{[\text{K}^+ + \text{Na}^+ + \text{Ca}^{++} + \text{Mg}^{++}]}$$

(Ionic concentrations are in meq/L)

$$5) \text{Sodium Adsorption Ratio (SAR)} = \frac{\text{Na}^+}{\sqrt{(\text{Ca}^{++} + \text{Mg}^{++})/2}}$$

(Ionic concentrations are in meq/L)

$$6) \text{Residual Sodium Carbonate (RSC)} = \text{CO}_3^{2-} + \text{HCO}_3^- - (\text{Ca}^{++} + \text{Mg}^{++})$$

(Ionic concentrations are in meq/L)

कुल कार्बनिक और ऑर्गेनोक्लोरो कीटनाशक का परीक्षण वर्ष 2017-18 में जलगुणवत्ता प्रयोगशाला लेबल-iii हैदराबाद में परीक्षण नहीं किया गया ।

2.5.3 गणनात्मक पैरामीटर

अन्य पैरामीटर के मापन परिमाण के आधार पर छः पैरामीटर का गणना किया जाता है । विस्तार से नीचे दिया गया है

(1) फिनाप्थलीन और कुल क्षारीयता :

निम्न शर्तों का उपयोग करते हुए फिनाप्थलीन क्षारीयता (PA) और कुल क्षारीयता कार्बोनेट और बाइकार्बोनेट के मान से गणना किया जाता है ।

Condition	OH^- Alkalinity as CaCO_3 mg/L	CO_3^{2-} Alkalinity as CaCO_3 mg/L	HCO_3^{2-} Alkalinity as CaCO_3 mg/L
PA=0	0	0	TA
PA<1/2 TA	0	2PA	TA-2PA
PA=1/2 TA	0	2PA	0
PA>1/2TA	2P-T	2(TA-PA)	0
PA=TA	T	0	0

$$\text{i) } \text{CO}_3^{2-} \text{ mg/L} = \text{CO}_3^{2-} \text{ Alkalinity as } \text{CaCO}_3 \text{ mg/L} \times 0.60$$

$$\text{ii) } \text{HCO}_3^{2-} \text{ mg/L} = \text{HCO}_3^{2-} \text{ Alkalinity as } \text{CaCO}_3 \text{ mg/L} \times 1.22$$

$$2) \text{ Calcium ion (Ca}^{++}\text{)} : \text{ Ca}^{++} \text{ mg/L} = 0.4 \times \text{Ca-Hardness as } \text{CaCO}_3 \text{ mg/L}$$

$$3) \text{ Magnesium ion (Mg}^{++}\text{)} :$$

$$\text{Mg}^{++} \text{ mg/L} = 0.243 \times [\text{Total Hardness as } \text{CaCO}_3 \text{ mg/L} - \text{Ca-Hardness as } \text{CaCO}_3 \text{ mg/L}]$$

$$4) \text{ Sodium Percentage } (\% \text{Na}) = (\% \text{Na}) = \frac{\text{Na}^+ \times 100}{[\text{K}^+ + \text{Na}^+ + \text{Ca}^{++} + \text{Mg}^{++}]} \\ (\text{Ionic concentrations are in meq/L})$$

$$5) \text{ Sodium Adsorption Ratio (SAR)} = \frac{\text{Na}^+}{\sqrt{(\text{Ca}^{++} + \text{Mg}^{++})/2}} \\ (\text{Ionic concentrations are in meq/L})$$

2.6 Details of Samples:

Total number of samples collected and number of parameters analysed during the water year 2017-18 in the Godavari Basin are given below.

Divisional Laboratory	No of samples		No.of parameters analysed
	Collected	Analysed	
Waingangā (Level II)	158	158	3950
Upper Godavari & Lower Godavari (Level III)	140	140	4552
Samples received from other Divisions and sub-divisions for Trace & Toxic metal analysis	78	78	624
Total	376	376	9126

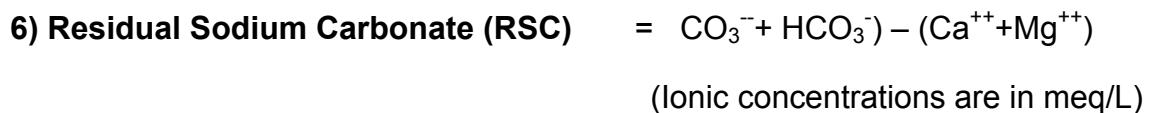
2.7 Method of presentation:

Station-wise water quality data comprises, history sheet, water quality data sheet, water quality summery for the current year and seasonal average since 1996-97. The serial order of the water quality stations is arranged along the river moving upstream from the sea or confluence with river/international boundary, towards its source, giving inter-se priority to stations on intermediate tributary in similar fashion.

The Water Quality parameter's variation along the river profile under Water Quality laboratories at Hyderabad and Nagpur are presented as Annexure I & II.

2.8 Tolerance limits of Water Quality parameters:

Tolerance limits of water quality parameters for different designated uses according to Bureau of Indian Standard code BIS: 2296 – 1982 are given in Table 2.2.



2.6 जल नमूनों का विवरण

गोदावरी नदी घाटी में जल वर्ष 2017-18 में कुल संग्रहित जल नमूना और पैरामीटर परीक्षण का विवरण नीचे दिया गया है।

मंडलीय प्रयोगशाला	कुल जल नमूना		परीक्षण पैरामीटर की संख्या
	संग्रहित	परीक्षित	
वैनगंगा (लेवल -ii)	158	158	3950
उपरी गोदावरी & निचली गोदावरी (लेवल -iii)	140	140	4552
	78	78	624
कुल	376	376	9126

2.7 प्रस्तुतिकरण की विधि :-

इस भाग में केन्द्रानुसार जल गुणवत्ता आंकड़ा, उपलब्ध वृत्तांत (History sheet), विस्तृत जल गुणवात्ता आंकड़ा व वर्तमान वर्ष के लिए जल गुणवत्ता सारांश और 1996-97 से मौसमी जल गुणवत्ता आंकड़ा औसत प्रस्तुत किया गया है। जलविज्ञान केन्द्रों को क्रमानुसार समुद्र से नदी की ओर उपरी प्रवाह या मुख्य नदी संगम के साथ अंतर्राष्ट्रीय सीमा से नदी के उदगम की ओर, मध्यवर्ती सहायक नदियों पर स्थित केन्द्रों को समान प्राथमिकता देते हुए व्यवस्थित किया जाता है। स्वदेशी सतह जल की आवश्यक विभिन्न उपयोगिता के लिए चयनित प्रदूषण पैरामीटर की सहनशील क्षमता भारतीय मानक ब्यूरो कोड BIS: 2296-1982 के द्वारा निर्धारित तालिका 2.3 में दिया गया है।

2.8 जल गुणवत्ता पैरामीटर की सहनशील क्षमता :-

स्वदेशी सतह जल की आवश्यक विभिन्न उपयोगिता के लिए चयनित प्रदूषण पैरामीटर की सहनशील क्षमता भारतीय मानक ब्यूरों (BIC: 2296-1982) के द्वारा निर्धारित किया गया है।

Table 2.2 Tolerance limit relating to selected pollution parameters for inland surface waters required for different uses as prescribed by the Bureau of Indian Standards (BIS: 2296-1982)

Sl. No	Constituents	Unit	Designated use class of inland surface water				
			A	B	C	D	E
1	pH		6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.0-8.5
2	EC at 25°C	µS/cm, Max	-	-	-	1000	2250
3	DO	mg/L, Min	6	5	4	4	-
4	BOD	mg/L, Max	2	3	3	-	-
5	Total coliform organisms	MPN/100 ml, Max	50*	500*	5000*	-	-
6	Colour,	Hazen units, Max	10	300	300	-	-
7	Odour		Un-objectionable	-	-	-	-
8	Taste		Tasteless	-	-	-	-
9	Total dissolved solids	mg/L, Max	500	-	1500	-	2100
10	Total Hardness	as CaCO ₃ , mg/L, Max	300	-	-	-	-
11	Calcium hardness	as CaCO ₃ , mg/L, Max	200	-	-	-	-
12	Magnesium	as CaCO ₃ , mg/L, Max	100	-	-	-	-
13	Iron	as Fe, mg/L, Max	0.3	-	50	-	-
14	Chloride	as Cl, mg/L, Max	250	-	600	-	600
15	Fluoride	as F, mg/L, Max	1.5	1.5	1.5	-	-
16	Sulphate	as SO ₄ , mg/L, Max	400	-	400	-	1000
17	Nitrate	as NO ₃ , mg/L, Max	20	-	50	-	-
18	Free Ammonia	as N, mg/L, Max	-	-	-	1.2	-
19	Arsenic	as As, mg/L, Max	0.05	0.2	0.2	-	-
20	Boron	as B, mg/L, Max	-	-	-	-	2
21	Cadmium	as Cd, mg/L, Max	0.01	-	0.01	-	-
22	Chromium	as Cr ⁶⁺ , mg/L, Max	0.05	0.05	0.05	-	-
23	Copper	as Cu, mg/L, Max	1.5	-	1.50	-	-
24	Cyanide	as CN, mg/L, Max	0.05	0.05	0.05	-	-
25	Lead	as Pb, mg/L, Max	0.1	-	0.10	-	-
26	Manganese	as Mn, mg/L, Max	0.5	-	-	-	-
27	Mercury	as Hg mg/L, Max	0.001	-	-	-	-
28	Zinc	as Zn, mg/L, Max	15	-	15	-	-
29	Pesticides		Absent	-	Absent	-	-
30	Free carbon dioxide	as CO ₂ , mg/L, Max	-	-	-	6	-
31	Phenolic compound	As C ₆ H ₅ OH, mg/L, Max	0.002	0.005	0.005	-	-
32	Sodium percent,	Max	-	-	-	-	60
33	SAR	Max	-	-	-	-	26

A Drinking water source without conventional treatment but after disinfections

B Outdoor bathing-organised

C Drinking water source with conventional treatment followed by disinfections

D Propagation of wildlife, fisheries

E Irrigation, industrial cooling and controlled waste disposal

* If the coliform count is more than the prescribed tolerance limit, the criteria for coliform shall be satisfied if not more than 20% of samples show more than the tolerance limit specified and not more than 5% of samples show more than 4 times the tolerance limit. Further, the fecal coliform should not be more than 40% of the total coliform.

तालिका 2.3 स्वदेशी सतह जल की आवश्यक विभिन्न उपयोगिता के लिए चयनित प्रदूषण पैरामीटर की सहनशील क्षमता भारतीय मानक ब्यूरो (BIS: 2296-1982) के द्वारा निर्धारित किया गया है।

क्रम सं रखा	घटक	इकाई	स्वदेशी सतह जल की निर्दिष्ट उपयोगी वर्ग				
			A	B	C	D	E
1	pH		6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.0-8.5
2	EC at 25°C	µS/cm, Max	-	-	-	1000	2250
3	DO	mg/L, Min	6	5	4	4	-
4	BOD	mg/L, Max	2	3	3	-	-
5	Total coliform organisms	MPN/100 ml, Max	50*	500*	5000*	-	-
6	Colour,	Hazen units, Max	10	300	300	-	-
7	Odour		Un-objectionable	-	-	-	-
8	Taste		Tasteless	-	-	-	-
9	Total dissolved solids	mg/L, Max	500	-	1500	-	2100
10	Total Hardness	as CaCO ₃ , mg/L, Max	300	-	-	-	-
11	Calcium hardness	as CaCO ₃ , mg/L, Max	200	-	-	-	-
12	Magnesium	as CaCO ₃ , mg/L, Max	100	-	-	-	-
13	Iron	as Fe, mg/L, Max	0.3	-	50	-	-
14	Chloride	as Cl, mg/L, Max	250	-	600	-	600
15	Fluoride	as F, mg/L, Max	1.5	1.5	1.5	-	-
16	Sulphate	as SO ₄ , mg/L, Max	400	-	400	-	1000
17	Nitrate	as NO ₃ , mg/L, Max	20	-	50	-	-
18	Free Ammonia	as N, mg/L, Max	-	-	-	1.2	-
19	Arsenic	as As, mg/L, Max	0.05	0.2	0.2	-	-
20	Boron	as B, mg/L, Max	-	-	-	-	2
21	Cadmium	as Cd, mg/L, Max	0.01	-	0.01	-	-
22	Chromium	as Cr ⁶⁺ , mg/L, Max	0.05	0.05	0.05	-	-
23	Copper	as Cu, mg/L, Max	1.5	-	1.50	-	-
24	Cyanide	as CN, mg/L, Max	0.05	0.05	0.05	-	-
25	Lead	as Pb, mg/L, Max	0.1	-	0.10	-	-
26	Manganese	as Mn, mg/L, Max	0.5	-	-	-	-
27	Mercury	as Hg mg/L, Max	0.001	-	-	-	-
28	Zinc	as Zn, mg/L, Max	15	-	15	-	-
29	Pesticides		Absent	-	Absent	-	-
30	Free carbon dioxide	as CO ₂ , mg/L, Max	-	-	-	6	-
31	Phenolic compound	as C ₆ H ₅ OH, mg/L, Max	0.002	0.005	0.005	-	-
32	Sodium percent,	Max	-	-	-	-	60
33	SAR	Max	-	-	-	-	26

(अ) पेयजल स्त्रोत बिना पारंपरिक उपचार के लेकिन कीटाणुनाश के बाद

(ब) बाहरी स्नान का आयोजन

(स) पेयजल स्त्रोत पारंपरिक उपचार के बाद कीटाणुनाश के साथ

(ड) मछली पालन, वन-जीवन का प्रसार

(द) सिंचाई, औद्योगिक शीतक और नियंत्रित मल निवारण

यदि कोलीफौर्म संख्या निर्धारित सहनशील क्षमता से अधिक है, यदि 20% से अधिक नमुनों में प्रदर्शित सहनशीलता के लिये निर्धारित क्षमता से अधिक नहीं है और 5% से अधिक नमुनों में प्रदर्शित सहनशील क्षमता के चार गुणा से अधिक नहीं है तो कोलीफौर्म के लिये मानदंड की संपुस्टी होगी। इसके अतिरिक्त फ़िकल कोलीफौर्म टोटल कोलीफौर्म के 40% से अधिक नहीं होगी।

GODAVARI BASIN

(WATER QUALITY OBSERVATION SITES)



GODAVARI CIRCLE, CWC, HYDERABAD

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Polavaram	Code	: AG000C3
State	: Andhra Pradesh	District	West Godavari
Basin	: Godavari	Independent River	: Godavari
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Godavari
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Lower Godavari 2, Rajahmundry
Drainage Area	: 307800 Sq. Km.	Bank	: Right
Latitude	: 17°14'45"	Longitude	: 81°39'35"
	Opening Date	Closing Date	
Gauge	: 01.01.1966		
Discharge	: 01.01.1966		
Sediment	: 25.10.1966		
Water Quality	: 25.10.1966		

Water Quality Datasheet for the period : 2017-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

River Water Analysis

Sub-Division : Lower Godavari 2, Rajahmundry

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A
PHYSICAL												
1	Q (cumec)	149.9	2079	2205	9462	2301	914.0	257.9	186.7	265.2	211.1	149.7
2	Colour_Cod (-)	Clear	Brown		Brown	Light Brown	Clear		Clear		Clear	Clear
3	EC_FLD ($\mu\text{mho}/\text{cm}$)		163		134	184						
4	EC_GEN ($\mu\text{mho}/\text{cm}$)	124	166	161	130	155	183	152	205	130	96	130
5	Odour_Code (-)	odour free	odour free		odour free	odour free			odour free		odour free	odour free
6	pH_FLD (pH units)			8.1		8.3	8.5					
7	pH_GEN (pH units)	8.6	7.6	7.8	7.4	7.8	7.7	8.1	8.2	8.2	8.2	8.1
8	TDS (mg/L)	65	142	108	95	126	109	134	131	79	78	86
9	Temp (deg C)	34.0	30.0		31.0	32.0	30.0	25.0	24.0	28.0	30.0	29.0
10	Turb (NTU)	8.0	360.0	131.0	431.0	73.0	18.0	3.0	2.0	5.0	4.0	5.0
CHEMICAL												
1	Alk-Phen (mgCaCO ₃ /L)	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	51	71	104	60	96	104	161	89	95	70	53
3	B (mg/L)					0.10	0.02	0.01	0.03	0.04	0.06	0.32
4	Ca (mg/L)	19	15	24	17	14	31	32	22	18	19	11
5	Cl (mg/L)	6.9	17.3	12.4	17.2	15.7	22.4	11.1	13.7	11.7	10.1	12.1
6	CO ₃ (mg/L)	19.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.97	0.18	0.20	0.09	0.15	0.13	0.21	0.17	0.08	0.45	0.06
8	Fe (mg/L)	0.0	7.9	8.1	11.7	1.5	0.6	0.0	0.0	0.1	0.1	0.5
9	HCO ₃ (mg/L)	23	86	127	73	117	127	197	108	116	86	65
10	K (mg/L)	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
11	Mg (mg/L)	13.0	11.5	15.0	11.8	12.7	8.7	19.9	8.6	15.2	7.7	3.8
12	Na (mg/L)	5.1	14.2	10.3	8.6	9.7	12.0	9.3	16.2	10.2	7.9	10.4
13	NH ₃ -N (mg N/L)	0.01	0.06	0.05	0.07	0.17	2.41	0.03	1.34	0.10	0.10	0.19
14	NO ₂ +NO ₃ (mg N/L)	2.23	3.71	2.26	2.79	7.67	6.45	9.31	9.52	4.99	3.74	4.70
15	NO ₂ -N (mgN/L)	0.00	0.03	0.01	0.01	0.06	0.03	0.00	0.01	0.02	0.01	0.02
16	NO ₃ -N (mgN/L)	2.23	3.68	2.25	2.78	7.61	6.42	9.31	9.51	4.97	3.73	4.68
17	o-PO ₄ -P (mg P/L)	0.030	0.020	0.210	0.370	0.500	0.410	0.350	0.340	0.740	1.050	0.620
18	SiO ₂ (mg/L)	7.3	7.5	14.9			9.9	17.3	13.8	11.9	11.1	6.3
19	SO ₄ (mg/L)	34.1	2.4	6.7	12.8	15.2	3.0	11.4	15.3	6.9	9.2	0.7

Water Quality Datasheet for the period : 2017-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL											
1	BOD3-27 (mg/L)	0.7	1.0	0.1	1.2	0.5	0.6	0.5	0.7	1.0	0.7	0.5
2	COD (mg/L)	6.7	4.6	23.5	11.8	23.0	18.0	2.6	5.7	23.1	6.6	20.1
3	DO (mg/L)	6.4	6.8	6.7	6.4	6.0	7.2	7.5	7.5	6.8	6.6	6.3
4	DO_SAT% (%)	91	90		86	83	95	91	89	87	87	82
5	FCol-MPN (MPN/100mL)	80	3000	2400	5000	2400	5000	40	20	20	40	
6	Tcol-MPN (MPN/100mL)	260	5000	2400	5000	3000	5000	70	20	40	40	
	TRACE & TOXIC											
1	As (µg/L)											0.3
2	Cd (µg/L)											0.1
3	Cr (µg/L)											0.0
4	Cu (µg/L)		5.0	11.0	11.0	9.0	4.0	1.0	1.0	1.0	2.0	1.0
5	Hg (µg/L)											0.0
6	Ni (µg/L)											1.7
7	Pb (µg/L)											9.0
8	Zn (µg/L)	0.3	23.2	110.9	64.0	76.0	9.0	152.3	28.3	17.5	68.0	44.7
	CHEMICAL INDICES											
1	HAR_Ca (mgCaCO ₃ /L)	47	37	59	42	34	77	79	56	44	48	28
2	HAR_Total (mgCaCO ₃ /L)	101	85	122	91	87	113	162	92	107	80	44
3	Na% (%)	10	27	16	17	20	19	11	28	17	18	34
4	RSC (-)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2
5	SAR (-)	0.2	0.7	0.4	0.4	0.5	0.5	0.3	0.7	0.4	0.4	0.7
	PESTICIDES											

Water Quality Summary for the period : 2017-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	369	18518	43.56	1419
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	3	184	134	160
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	11	205	96	148
4	pH_FLD (pH units)	3	8.5	8.1	8.3
5	pH_GEN (pH units)	11	8.6	7.4	8
6	TDS (mg/L)	11	142	65	105
7	Temp (deg C)	10	34.0	24.0	29.3
8	Turb (NTU)	11	431.0	2.0	94.5
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	11	15.9	0.0	1.4
2	ALK-TOT (mgCaCO ₃ /L)	11	161	51	87
3	B (mg/L)	7	0.32	0.01	0.08
4	Ca (mg/L)	11	32	11	20
5	Cl (mg/L)	11	22.4	6.9	13.7
6	CO ₃ (mg/L)	11	19.2	0.0	1.7
7	F (mg/L)	11	0.97	0.06	0.24
8	Fe (mg/L)	11	11.7	0.0	2.8
9	HCO ₃ (mg/L)	11	197	23	102
10	K (mg/L)	11	0.3	0.2	0.2
11	Mg (mg/L)	11	19.9	3.8	11.6
12	Na (mg/L)	11	16.2	5.1	10.3
13	NH ₃ -N (mg N/L)	11	2.41	0.01	0.41
14	NO ₂ +NO ₃ (mg N/L)	11	9.52	2.23	5.22
15	NO ₂ -N (mgN/L)	11	0.06	0.00	0.02
16	NO ₃ -N (mgN/L)	11	9.51	2.23	5.2
17	o-PO ₄ -P (mg P/L)	11	1.050	0.020	0.422
18	SiO ₂ (mg/L)	9	17.3	6.3	11.1
19	SO ₄ (mg/L)	11	34.1	0.7	10.7
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	11	1.2	0.1	0.7
2	COD (mg/L)	11	23.5	2.6	13.2
3	DO (mg/L)	11	7.5	6.0	6.7
4	DO_SAT% (%)	10	95	82	88
5	FCol-MPN (MPN/100mL)	10	5000	20	1800
6	Tcol-MPN (MPN/100mL)	10	5000	20	2083
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	0.3	0.3	0.3
2	Cd ($\mu\text{g}/\text{L}$)	1	0.1	0.1	0.1
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	10	11.0	1.0	4.6
5	Hg ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
6	Ni ($\mu\text{g}/\text{L}$)	1	1.7	1.7	1.7
7	Pb ($\mu\text{g}/\text{L}$)	1	9.0	9.0	9
8	Zn ($\mu\text{g}/\text{L}$)	11	152.3	0.3	54
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	11	79	28	50
2	HAR_Total (mgCaCO ₃ /L)	11	162	44	98
3	Na% (%)	11	34	10	20
4	RSC (-)	11	0.2	0.0	0
5	SAR (-)	11	0.7	0.2	0.5
PESTICIDES					

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

S.No	Parameters	Flood															
		Jun - Oct															
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
PHYSICAL																	
1	Q (cumec)	5753	2122	6818	4584	4090	3769	2687	8445	3623	4813	6418	3501	3163	5320	3239	
2	EC_FLD ($\mu\text{mho}/\text{cm}$)															160	
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	186	148	186	172	215	184	161	191	195	186	242	163	177	176	147	
4	pH_FLD (pH units)															7.9	8.3
5	pH_GEN (pH units)	8.0	8.0	8.0	8.1	8.1	7.9	7.9	7.8	8.0	8.1	7.9	7.9	7.4	8.2	7.8	
6	TDS (mg/L)						125	102	138	126	152	152	132	170	127	107	
7	Temp (deg C)	28.8	28.6	30.5	29.4	30.2	30.8	30.3	30.7	29.9	29.0	28.7	30.2	29.7	30.4	31.8	
8	Turb (NTU)						54.2	8.9	40.9	5.3	25.4	5.3	103.2	159.0	247.4	200.6	
CHEMICAL																	
1	Alk-Phen (mgCaCO ₃ /L)	0.8	0.0	0.8	2.7	3.0	0.0	0.8	0.8	1.6	0.0	0.0	0.0	0.0	0.8	3.2	
2	ALK-TOT (mgCaCO ₃ /L)	76	66	78	71	72	65	60	77	76	70	87	65	77	89	76	
3	B (mg/L)	0.04	0.10	0.07	0.10	0.14	0.08	0.16	0.06	0.10	0.17	0.05	0.22	0.07		0.10	
4	Ca (mg/L)	24	17	18	18	15	15	14	18	17	15	20	14	15	17	17	
5	Cl (mg/L)	13.6	15.2	11.1	13.0	23.1	15.1	11.0	13.8	15.4	10.2	10.1	12.6	7.1	6.4	13.9	
6	CO ₃ (mg/L)	1.0	0.0	1.0	3.2	3.7	0.0	1.0	1.0	1.9	0.0	0.0	0.0	0.0	1.0	3.8	
7	F (mg/L)	0.37	0.26	0.28	0.17	0.24	0.25	0.25	0.19	0.36	0.16	0.28	0.18	0.19	0.03	0.32	
8	Fe (mg/L)	0.0	0.0	0.2	0.1	0.1	0.2	0.3	0.3	0.2	0.5	0.2	0.1	0.1	0.1	5.8	
9	HCO ₃ (mg/L)	91	80	93	80	81	80	71	92	89	85	107	80	94	107	85	
10	K (mg/L)	1.8	1.8	1.8	2.1	2.1	2.1	1.8	2.4	2.2	2.3	2.1	2.4	2.3	2.2	0.2	
11	Mg (mg/L)	3.9	5.4	5.1	4.2	7.6	8.2	6.8	7.2	7.0	9.6	10.7	7.4	8.0	9.5	12.8	
12	Na (mg/L)	9.8	8.9	10.0	10.6	17.0	9.5	7.5	10.6	15.8	11.7	12.8	15.2	14.6	10.9	9.5	
13	NH ₃ -N (mg N/L)	0.02	0.04	0.02	0.05	0.26	0.06	0.13	0.07	0.24	0.03	0.06	0.04	0.01	0.01	0.07	
14	NO ₂ +NO ₃ (mg N/L)	0.41	1.31	0.55	0.68	1.89	0.74	0.48	0.66	0.61	0.45	0.57	0.41	0.50	0.82	3.73	
15	NO ₂ -N (mgN/L)			0.05	0.02	0.01	0.01	0.06	0.03	0.03	0.01	0.00	0.00	0.01	0.00	0.02	
16	NO ₃ -N (mgN/L)	0.41	1.30	0.52	0.67	1.87	0.68	0.45	0.63	0.60	0.45	0.57	0.40	0.49	0.46	3.71	
17	o-PO ₄ -P (mg P/L)	0.019	0.042	0.028			0.018	0.009	0.012	0.018	0.162	0.125	0.209	0.150	0.049	0.226	
18	P-Tot (mgP/L)					0.032	0.009										
19	SiO ₂ (mg/L)	15.0	18.0	18.0	13.5	12.2	13.2	12.8	14.6	20.8	11.6	15.8	14.9	12.8	15.6	9.9	
20	SO ₄ (mg/L)	7.8	4.4	1.0	1.0	7.0	6.6	5.7	6.9	9.2	13.2	12.2	12.2	14.2	9.8	14.2	

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

River Water

S.No	Parameters	Flood														
		Jun - Oct														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.5	0.5	0.7	0.9	0.5	0.9	0.7	0.9	1.2	0.7	0.7	0.8	1.4	0.8	0.7
2	COD (mg/L)	7.9	43.7	10.7	7.5	20.7	4.8	3.6	7.0	7.2	12.1	8.6	5.9	10.9	4.8	13.9
3	DO (mg/L)	5.9	6.4	6.3	6.0	5.9	5.7	5.6	6.0	6.0	5.9	6.0	6.1		6.3	6.5
4	DO_SAT% (%)	76	83	84	79	78	76	74	81	79	77	77	81		84	87
5	FCol-MPN (MPN/100mL)	1215	163	833	6266	8754	6924	7184	7168	8446	3946	4426	6952	6040	8480	2576
6	Tcol-MPN (MPN/100mL)	2315	1887	1185	7940	10684	7224	8080	8436	11460	7100	10860	8406	11446	8700	3132
7	TOC (mg/L)			5.4			1.2	2.0	1.5	3.1	1.6	1.5	0.4	1.5	2.2	
TRACE & TOXIC																
1	As (µg/L)											7.5	5.1			
2	Cd (µg/L)		1.2	0.0			0.0					0.5	0.1			
3	Cr (µg/L)		14.4	7.4			27.0					10.1	4.5			
4	Cu (µg/L)		6.8	1.5								42.8	19.1			9.0
5	Hg (µg/L)						0.3						0.7			
6	Mn (mg/L)			0.01												
7	Ni (µg/L)						10.7					1.7	12.7			
8	Pb (µg/L)		16.9	6.7			16.6					0.0	3.6			
9	Se (µg/L)															
10	Zn (µg/L)			18.6			550.3					1.0	9.0			54.9
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	61	43	45	46	38	38	35	44	42	38	50	35	38	43	44
2	HAR_Total (mgCaCO ₃ /L)	77	65	67	63	69	72	63	74	71	78	94	66	72	83	97
3	Na% (%)	20	22	25	25	33	22	20	23	30	26	22	32	30	22	18
4	RSC (-)	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.2	0.2	0.0
5	SAR (-)	0.5	0.5	0.5	0.6	1.0	0.5	0.4	0.5	0.8	0.6	0.6	0.8	0.7	0.5	0.4
PESTICIDES																
1	Aldrin (µg/L)						0.1									
2	BHC (µg/L)	0.1	0.0				0.1									
3	DDT (µg/L)	0.1	0.0				0.1									
4	Dieldrin (µg/L)	0.1	0.0				0.0									
5	Endos (µg/L)	0.1	0.1				0.1									

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

S.No	Parameters	Winter														
		Nov - Feb														
		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL																
1	Q (cumec)	906.7	484.2	1236	819.9	666.4	339.2	215.7	966.3	352.8	621.3	1693	530.5	318.8	550.9	452.9
2	EC_FLD ($\mu\text{mho}/\text{cm}$)															319
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	196	138	259	259	238	214	261	256	291	257	261	188	438	304	180
4	pH_FLD (pH units)														8.2	8.5
5	pH_GEN (pH units)	8.3	8.2	8.4	8.5	8.1	8.3	8.3	8.4	8.4	8.2	8.0	7.9	8.4	8.4	8.0
6	TDS (mg/L)						145	153	193	176	176	166	145	104	135	125
7	Temp (deg C)	25.8	25.8	25.8	26.4	26.1	28.0	25.5	25.4	26.3	26.3	25.8	24.9	28.8	27.0	26.3
8	Turb (NTU)						6.9	1.1	4.5	0.5	1.5	18.8	3.1	5.0	2.0	7.7
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	0.5	3.5	8.2	7.1	1.9	4.0	4.9	8.2	6.2	1.1	0.0	0.0	1.4	1.9	0.0
2	ALK-TOT (mgCaCO ₃ /L)	98	70	104	103	90	82	117	103	117	112	103	84	86	112	118
3	B (mg/L)	0.07	0.07	0.09	0.07	0.16	0.03	0.17	0.16	0.12	0.08	0.03	0.15	0.00		0.02
4	Ca (mg/L)	32	19	23	25	17	18	24	23	23	21	22	18	17	23	28
5	Cl (mg/L)	7.8	14.2	13.8	20.3	15.3	15.9	15.0	19.1	14.9	11.3	10.4	8.1	6.9	7.5	15.7
6	CO ₃ (mg/L)	0.6	4.2	9.9	8.5	2.3	4.9	5.9	9.8	7.5	1.3	0.0	0.0	1.6	2.3	0.0
7	F (mg/L)	0.28	0.16	0.36	0.13	0.28	0.21	0.32	0.23	0.40	0.35	0.25	0.20	0.10	0.30	0.17
8	Fe (mg/L)	0.0	0.0	0.1	0.1	0.3	0.3	0.2	0.3	0.2	0.0	0.1	0.1	0.0	0.1	0.2
9	HCO ₃ (mg/L)	118	76	107	108	106	91	130	105	128	135	126	102	101	132	144
10	K (mg/L)	1.6	1.7	2.2	1.7	1.2	2.0	2.2	2.3	2.2	1.8	2.3	2.1	1.9	2.9	0.2
11	Mg (mg/L)	1.5	2.3	8.4	9.2	9.7	9.3	13.8	10.4	12.2	11.6	11.8	9.1	8.3	11.2	12.4
12	Na (mg/L)	11.8	11.3	13.5	13.2	10.9	10.8	11.3	14.0	17.9	18.2	21.1	15.2	13.7	16.8	12.5
13	NH ₃ -N (mg N/L)	0.12	0.11	0.06	0.16	0.11	0.12	0.04	0.14	0.16	0.04	0.00	0.06	0.01	0.38	1.26
14	NO ₂ +NO ₃ (mg N/L)	0.28	0.27	0.37	0.66	0.85	0.20	0.16	0.34	0.19	0.66	0.36	0.23	0.54	0.30	8.43
15	NO ₂ -N (mgN/L)		0.01	0.00	0.00	0.04	0.04	0.01	0.02	0.01	0.00	0.00	0.03	0.00	0.01	0.01
16	NO ₃ -N (mgN/L)	0.28	0.26	0.36	0.66	0.80	0.16	0.16	0.32	0.18	0.66	0.36	0.20	0.54	0.29	8.41
17	o-PO ₄ -P (mg P/L)	0.011	0.011	0.013			0.006	0.021	0.019	0.032	0.019	0.053	0.082	0.065	0.053	0.367
18	P-Tot (mgP/L)				0.010	0.099										
19	SiO ₂ (mg/L)	22.3	14.5	20.3	17.2	15.6	15.8	13.8	34.3	12.7	19.8	15.9	15.9	13.2	13.1	13.6
20	SO ₄ (mg/L)	2.3	0.0	0.3	5.3	7.0	7.7	9.6	10.6	12.9	11.2	15.4	11.8	9.8	8.2	9.9

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

River Water

S.No	Parameters	River Water														
		Winter Nov - Feb														
		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.4	1.1	0.7	0.2	0.5	0.5	0.7	0.6	0.6	1.1	1.2	0.8	1.0	1.1	0.6
2	COD (mg/L)	15.4	23.7	26.7	8.1	29.0	2.1	6.3	2.6	7.6	7.8	6.5	6.6	3.9	3.3	8.8
3	DO (mg/L)	7.0	6.3	7.5	6.3	6.7	6.7	7.0	7.0	7.0	7.3	7.0	7.4	7.4	7.1	7.4
4	DO_SAT% (%)	86	76	92	78	83	85	86	84	86	90	86	90	93	90	92
5	FCol-MPN (MPN/100mL)	40	85	1840	11433	660	1215	6918	16000	4358	4078	4110	1040	1208	2408	1687
6	Tcol-MPN (MPN/100mL)	65	155	4027	16000	935	1223	12085	16000	4983	4408	4290	7100	9950	4225	1697
7	TOC (mg/L)			6.2			0.4	1.7	1.9	1.4	1.3	1.0	1.2	5.8	2.7	
TRACE & TOXIC																
1	As (µg/L)								0.0		0.4					
2	Cd (µg/L)	2.3	0.0		1.0		1.1	0.2	17.5	0.0			0.0			
3	Cr (µg/L)	2.0	0.0		15.0		0.0	0.0	4.1	0.6			2.1			
4	Cu (µg/L)	4.0	0.0							15.7			1.5		1.0	2.0
5	Hg (µg/L)				0.0											
6	Mn (mg/L)		0.01													
7	Ni (µg/L)				1.0		0.0	1.3	78.9	2.6			0.1			
8	Pb (µg/L)	23.0	67.5		1.0		0.0	0.0	72.2	0.5			1.4			
9	Se (µg/L)															
10	Zn (µg/L)		0.0		198.0		50.3	7.5	19.1	16.0			4.0		0.1	63.2
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	79	47	56	63	44	46	59	56	58	53	54	45	42	57	70
2	HAR_Total (mgCaCO ₃ /L)	85	56	91	101	84	84	117	100	109	101	103	82	77	104	122
3	Na% (%)	23	29	24	22	21	22	17	23	26	28	30	28	27	25	19
4	RSC (-)	0.3	0.3	0.3	0.2	0.2	0.0	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.0
5	SAR (-)	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.6	0.7	0.8	0.9	0.7	0.7	0.7	0.5
PESTICIDES																
1	Aldrin (µg/L)				0.0		0.0	0.0	0.0	0.0						
2	BHC (µg/L)	0.1	0.0		0.1		0.0	0.1	0.7	0.0						
3	DDT (µg/L)	0.1	0.0		0.1		0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)	0.0	0.0		0.0		0.0	0.0	0.0	0.0						
5	Endos (µg/L)	0.1	0.1		0.1		0.0	0.1	0.0	0.0						

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	314.6	305.8	481.6	309.4	266.7	148.2	130.3	335.7	219.8	341.1	402.4	222.3	170.1	268.7	208.6
2	EC_FLD ($\mu\text{mho}/\text{cm}$)															165
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	147	134	230	266	236	152	161	166	185	219	262	182	229	166	119
4	pH_FLD (pH units)														8.5	8.5
5	pH_GEN (pH units)	8.3	8.1	8.3	8.3	7.9	7.8	8.2	8.3	8.2	8.2	8.3	7.7	8.4	8.0	8.2
6	TDS (mg/L)						103	103	129	129	185	188	122	94	109	81
7	Temp (deg C)	28.5	28.5	29.5	28.3	29.0	29.0	29.7	29.3	29.7	28.3	28.7	26.7	31.3	31.3	29.0
8	Turb (NTU)						0.4	0.6	0.9	0.3	0.7	3.7	3.3	6.3	5.7	4.7
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	4.5	0.0	6.8	1.3	0.0	0.0	3.2	2.6	1.4	0.0	1.4	0.0	2.7	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	56	64	82	110	84	58	70	63	68	72	90	68	56	75	73
3	B (mg/L)	0.02	0.06	0.08	0.04	0.11	0.15	0.02	0.11	0.02	0.21	0.12	0.01			0.14
4	Ca (mg/L)	14	16	16	18	14	13	13	13	12	15	20	13	11	23	16
5	Cl (mg/L)	8.3	11.9	17.3	21.3	18.0	10.3	12.2	15.5	9.8	10.4	12.1	7.7	4.6	11.3	11.3
6	CO ₃ (mg/L)	5.4	0.0	8.1	1.6	0.0	0.0	3.9	3.2	1.7	0.0	1.7	0.0	3.2	0.0	0.0
7	F (mg/L)	0.24	0.22	0.30	0.15	0.21	0.24	0.23	0.17	0.55	0.37	0.14	0.19	0.07	0.20	0.20
8	Fe (mg/L)	0.0	0.1	0.2	0.1	0.4	0.2	0.2	0.7	0.2	0.2	0.2	0.0	0.0	0.0	0.2
9	HCO ₃ (mg/L)	57	78	84	131	103	71	77	70	79	87	107	83	62	92	89
10	K (mg/L)	1.3	1.9	2.0	1.5	2.2	1.9	2.0	2.1	2.0	2.3	2.2	2.1	4.8	2.1	0.2
11	Mg (mg/L)	3.3	3.0	7.3	15.2	9.7	5.8	9.1	8.2	6.8	8.0	10.7	7.2	5.0	7.2	8.9
12	Na (mg/L)	6.7	8.5	13.0	14.4	14.0	7.8	8.9	10.3	10.9	16.2	21.6	14.4	9.6	10.8	9.5
13	NH ₃ -N (mg N/L)	0.34	0.06	0.05	0.25	0.32	0.25	0.22	0.25	0.03	0.02	0.02	0.02	0.04	0.42	0.13
14	NO ₂ +NO ₃ (mg N/L)	0.01	0.27	0.34	0.82	0.50	0.17	0.12	0.33	0.24	0.63	0.65	0.20	0.64	0.71	4.48
15	NO ₂ -N (mgN/L)		0.01	0.00	0.04	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.02	0.02	0.03	0.02
16	NO ₃ -N (mgN/L)	0.01	0.26	0.34	0.78	0.48	0.14	0.11	0.32	0.23	0.63	0.65	0.18	0.62	0.69	4.46
17	o-PO ₄ -P (mg P/L)	0.005	0.008	0.025			0.016	0.007	0.048	0.004	0.063	0.001	0.148	0.108	0.093	0.803
18	P-Tot (mgP/L)				0.122	0.228										
19	SiO ₂ (mg/L)	14.0	8.5	15.0	16.3	11.3	18.1	13.1	27.6	12.4	11.6	14.2	14.1	14.6	12.4	9.8
20	SO ₄ (mg/L)	5.0	0.0	6.0	6.3	9.7	6.4	6.5	8.6	6.2	4.3	18.6	12.4	6.4	10.7	5.6

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Polavaram (AG000C3)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 2, Rajahmundry

River Water

S.No	Parameters	River Water														
		Summer							Mar - May							
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.6	1.6	1.1	1.2	0.8	0.5	1.1	0.6	0.2	0.8	2.0	1.1	0.5	0.6	0.7
2	COD (mg/L)	14.1	8.9	20.1	9.6	10.7	4.5	3.5	3.2	2.3	3.5	5.3	4.9	1.3	5.6	16.6
3	DO (mg/L)	6.8	6.5	5.9	6.2	5.6	6.1	6.5	6.2	6.2	5.6	6.8	6.1	6.5	6.7	6.6
4	DO_SAT% (%)	88	84	77	79	72	79	85	81	81	72	88	75	87	90	85
5	FCol-MPN (MPN/100mL)	0	30	9500	5403	6567	1780	10787	8380	317	827	5335	8	3843	5527	30
6	Tcol-MPN (MPN/100mL)	40	30	12333	5417	6700	3123	10800	10723	557	3077	5335	367	11133	5527	40
7	TOC (mg/L)		5.4			1.3	1.1	1.7	1.2	1.1	1.0	0.8	1.5			
TRACE & TOXIC																
1	As (µg/L)							0.2		0.6	4.1	0.0	0.2	0.3	0.4	0.3
2	Cd (µg/L)	2.3	0.0	0.0	2.0	0.0	1.1	0.0	0.0	0.1	0.9	0.0	1.0	0.0	0.0	0.1
3	Cr (µg/L)	2.0	0.0	6.0	2.0	10.7	0.0	0.0	0.0	0.9	0.7	0.2	0.0	0.0	0.0	0.0
4	Cu (µg/L)	2.3	0.0							1.0	4.8	2.1			1.2	1.3
5	Hg (µg/L)				0.1	0.8				0.0	0.9	0.0	0.1	0.0	0.4	0.0
6	Mn (mg/L)		0.00													
7	Ni (µg/L)			1.0	1.0	3.7	0.0	0.7	0.0	1.6	4.8	5.0	2.5	0.0	2.7	1.7
8	Pb (µg/L)	24.8	25.0	19.0	4.0	5.4	1.0	0.0	12.6	1.8	2.7	0.3	3.0	0.0	0.0	9.0
9	Se (µg/L)															
10	Zn (µg/L)		3.5	104.0	35.0	45.2	12.2	6.6	32.1	3.3	26.1	4.5	7.0	0.1	9.8	43.4
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	35	39	39	44	34	33	34	33	30	36	51	33	28	58	40
2	HAR_Total (mgCaCO ₃ /L)	49	51	69	107	75	58	72	67	58	70	95	63	49	88	77
3	Na% (%)	22	26	28	23	29	22	21	25	28	33	34	32	28	21	23
4	RSC (-)	0.1	0.3	0.3	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.1	0.1	0.1	0.0	0.1
5	SAR (-)	0.4	0.5	0.7	0.6	0.7	0.5	0.5	0.6	0.6	0.8	1.0	0.8	0.6	0.5	0.5
PESTICIDES																
1	Aldrin (µg/L)				0.0	0.0	0.0	0.0	0.0	0.0						
2	BHC (µg/L)	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0						
3	DDT (µg/L)	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
5	Endos (µg/L)	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Konta	Code	: AGC00CS
State	: Chhattisgarh	District	Dantewara
Basin	: Godavari	Independent River	: Godavari
Tributary	: Sabari	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Sabari
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Lower Godavari 1, Bhadrachalam
Drainage Area	: 19550 Sq. Km.	Bank	: Left
Latitude	: 17°48'00"	Longitude	: 81°23'00"
	Opening Date	Closing Date	
Gauge	: 05.02.1964		
Discharge	: 28.10.1965		
Sediment	: 01.01.1968		
Water Quality	: 05.05.1968		

Water Quality Datasheet for the period : 2017-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

River Water Analysis

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		186.2	777.6	763.6	1276	778.3	287.3	144.5	250.0	122.0	203.5	152.8	101.5
2 Colour_Cod (-)	Clear	Brown	Brown	Brown	Brown	Light Brown	Clear						
3 EC_FLD ($\mu\text{mho}/\text{cm}$)		92	90	182	117	158	197	185	195	195	236	158	67
4 EC_GEN ($\mu\text{mho}/\text{cm}$)		86	60	96	76	100	137	148	130	135	155	157	116
5 Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free					
6 pH_FLD (pH units)		6.1	5.3	6.0	6.2	6.0	5.8	5.8	5.8	5.9	6.0	5.9	7.0
7 pH_GEN (pH units)		7.9	7.6	7.4	7.3	7.8	7.6	7.8	7.8	8.0	8.1	8.2	8.1
8 TDS (mg/L)		47	44	64	63	78	88	91	104	98	100	90	100
9 Temp (deg C)		32.0	27.5	30.5	30.8	29.5	28.5	26.0	25.8	23.0	28.5	30.0	30.0
10 Turb (NTU)		22.0	264.0	331.0	282.0	120.0	35.0	3.0	3.0	5.0	3.0	7.0	4.0
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 ALK-TOT (mgCaCO ₃ /L)		43	27	55	56	76	80	85	95	84	99	66	55
3 B (mg/L)						0.09	0.02	0.01	0.14	0.02	0.09	0.05	0.36
4 Ca (mg/L)		16	10	16	17	27	32	30	40	24	27	17	15
5 Cl (mg/L)		4.2	15.5	11.8	14.3	11.7	14.3	15.7	9.5	3.9	9.8	11.1	18.7
6 CO ₃ (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 F (mg/L)		0.08	0.05	0.13	0.09	0.10	0.07	0.11	0.13	0.09	0.05	0.36	0.30
8 Fe (mg/L)		0.0	3.8	13.0	9.3	1.6	1.2	0.4	0.0	0.2	0.1	0.1	0.5
9 HCO ₃ (mg/L)		53	33	67	68	93	98	103	116	102	121	81	67
10 K (mg/L)		0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.4	0.3
11 Mg (mg/L)		8.4	9.7	10.6	12.7	6.3	4.8	8.5	6.6	3.8	3.8	2.1	2.8
12 Na (mg/L)		3.4	4.2	7.0	7.9	7.4	8.0	7.1	5.9	6.2	7.3	15.1	14.9
13 NH ₃ -N (mg N/L)		0.01	0.04	0.04	0.06	0.04	3.36	0.01	0.01	0.14	0.13	0.01	0.19
14 NO ₂ +NO ₃ (mg N/L)		2.06	2.54	1.56	4.03	2.60	6.46	4.90	4.88	6.68	3.75	5.12	4.49
15 NO ₂ -N (mgN/L)		0.00	0.01	0.00	0.01	0.02	0.02	0.02	0.00	0.02	0.02	0.01	0.02
16 NO ₃ -N (mgN/L)		2.06	2.53	1.55	4.02	2.58	6.44	4.88	4.88	6.66	3.73	5.11	4.47
17 o-PO ₄ -P (mg P/L)		0.010	0.120	0.320	0.450	0.450	0.720	0.420	0.370	0.300	0.550	1.210	0.490
18 SiO ₂ (mg/L)		9.8	6.6	12.5	14.4	13.5	7.8	17.5	13.7	13.0	12.5	14.3	9.1
19 SO ₄ (mg/L)		20.2	16.2	26.7	16.7	5.2	3.6	1.2	10.0	2.7	3.6	8.4	1.2

Water Quality Datasheet for the period : 2017-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.3	2.2	2.0	0.7	7.0	0.5	1.5	1.9	0.7	1.0	1.9	1.8
2	COD (mg/L)	7.6	20.6	30.7	2.9	16.4	18.0	8.3	3.5	1.8	8.7	6.9	4.4
3	DO (mg/L)	5.9	7.1	4.9	6.9	7.0	6.8	7.9	8.1	7.4	7.0	6.9	7.4
4	DO_SAT% (%)	81	89	65	91	91	87	97	98	86	90	91	98
5	FCol-MPN (MPN/100mL)	130	3000	300	5000	16000	5000	16000	2200	40	20	16000	
6	Tcol-MPN (MPN/100mL)	1700	3000	300	5000	16000	5000	16000	9000	70	40	16000	
TRACE & TOXIC													
1	As (µg/L)												0.3
2	Cd (µg/L)												0.7
3	Cr (µg/L)												0.0
4	Cu (µg/L)		10.0	14.0	9.0	8.0	4.0	2.0	2.0	1.0	1.0	4.0	1.0
5	Hg (µg/L)												0.4
6	Ni (µg/L)												2.7
7	Pb (µg/L)												12.0
8	Zn (µg/L)	15.8	23.2	129.3	75.0	20.0	22.0	83.0	190.1	31.0	37.1	49.2	36.9
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	39	26	41	42	68	81	75	99	60	68	43	36
2	HAR_Total (mgCaCO ₃ /L)	74	66	85	94	94	101	110	126	76	83	52	48
3	Na% (%)	9	12	15	15	15	15	12	9	15	16	39	40
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.1
5	SAR (-)	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.9	0.9
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Summary

S.No	Parameters	Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	5661	93.14	489.3
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	12	236	67	156
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	157	60	116
4	pH_FLD (pH units)	12	7.0	5.3	6
5	pH_GEN (pH units)	12	8.2	7.3	7.8
6	TDS (mg/L)	12	104	44	81
7	Temp (deg C)	12	32.0	23.0	28.5
8	Turb (NTU)	12	331.0	3.0	89.9
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	12	99	27	68
3	B (mg/L)	8	0.36	0.01	0.1
4	Ca (mg/L)	12	40	10	23
5	Cl (mg/L)	12	18.7	3.9	11.7
6	CO ₃ (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.36	0.05	0.13
8	Fe (mg/L)	12	13.0	0.0	2.5
9	HCO ₃ (mg/L)	12	121	33	83
10	K (mg/L)	12	0.4	0.1	0.2
11	Mg (mg/L)	12	12.7	2.1	6.7
12	Na (mg/L)	12	15.1	3.4	7.9
13	NH ₃ -N (mg N/L)	12	3.36	0.01	0.34
14	NO ₂ +NO ₃ (mg N/L)	12	6.68	1.56	4.09
15	NO ₂ -N (mgN/L)	12	0.02	0.00	0.01
16	NO ₃ -N (mgN/L)	12	6.66	1.55	4.08
17	o-PO ₄ -P (mg P/L)	12	1.210	0.010	0.451
18	SiO ₂ (mg/L)	12	17.5	6.6	12.1
19	SO ₄ (mg/L)	12	26.7	1.2	9.6
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	7.0	0.5	1.9
2	COD (mg/L)	12	30.7	1.8	10.8
3	DO (mg/L)	12	8.1	4.9	6.9
4	DO_SAT% (%)	12	98	65	89
5	FCol-MPN (MPN/100mL)	11	16000	20	5790
6	Tcol-MPN (MPN/100mL)	11	16000	40	6555
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	0.3	0.3	0.3
2	Cd ($\mu\text{g}/\text{L}$)	1	0.7	0.7	0.7
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	11	14.0	1.0	5.1
5	Hg ($\mu\text{g}/\text{L}$)	1	0.4	0.4	0.4
6	Ni ($\mu\text{g}/\text{L}$)	1	2.7	2.7	2.7
7	Pb ($\mu\text{g}/\text{L}$)	1	12.0	12.0	12
8	Zn ($\mu\text{g}/\text{L}$)	12	190.1	15.8	59.4
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	99	26	56
2	HAR_Total (mgCaCO ₃ /L)	12	126	48	84
3	Na% (%)	12	40	9	18
4	RSC (-)	12	0.3	0.0	0.1
5	SAR (-)	12	0.9	0.2	0.4
PESTICIDES					

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	514.2	503.5	841.0	1203	762.8	478.7	859.6	654.4	953.6	908.4	1529	807.2	529.5	756.3
2	EC_FLD ($\mu\text{mho}/\text{cm}$)													215	128
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	91	107	87	165	137	107	88	94	103	102	89	106	101	83
4	pH_FLD (pH units)													5.3	5.9
5	pH_GEN (pH units)	8.0	8.0	7.8	7.9	7.8	7.9	7.7	7.8	7.9	7.9	7.7	7.5	8.2	7.6
6	TDS (mg/L)					90	72	68	70	89	72	69	100	69	59
7	Temp (deg C)	29.6	30.6	29.5	30.7	28.9	34.0	29.7	29.6	28.8	27.8	28.9	29.6	29.6	30.1
8	Turb (NTU)					389.9	32.3	65.0	11.0	28.8	15.6	123.0	118.6	149.8	203.8
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
2	ALK-TOT (mgCaCO ₃ /L)	44	37	39	48	51	43	44	39	45	44	40	52	61	51
3	B (mg/L)	0.21	0.04	0.05	0.15	0.09	0.11	0.06	0.10	0.17	0.05	0.19	0.05		0.09
4	Ca (mg/L)	12	11	9	7	11	9	10	10	10	11	9	10	12	17
5	Cl (mg/L)	18.9	8.0	8.0	20.4	9.9	6.5	6.5	6.7	4.1	4.1	3.2	2.3	2.3	11.5
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
7	F (mg/L)	0.24	0.23	0.11	0.35	0.17	0.17	0.19	0.11	0.05	0.21	0.09	0.07	0.02	0.09
8	Fe (mg/L)	0.1	0.2	0.2	0.2	0.2	0.1	0.5	0.2	0.3	0.2	0.1	0.2	0.2	5.5
9	HCO ₃ (mg/L)	54	45	47	59	62	50	54	48	55	54	49	64	72	63
10	K (mg/L)	1.4	1.5	1.3	1.4	1.5	1.3	1.6	1.3	1.9	1.6	1.7	1.7	1.6	0.2
11	Mg (mg/L)	3.9	3.0	3.9	5.9	5.9	5.5	4.4	3.7	6.0	5.9	4.8	4.7	6.3	9.5
12	Na (mg/L)	16.8	5.6	5.1	17.2	6.9	3.6	4.3	3.8	8.0	7.8	7.3	8.1	5.2	6.0
13	NH ₃ -N (mg N/L)	0.04	0.10	0.05	0.22	0.06	0.30	0.09	0.27	0.02	0.07	0.04	0.01	0.03	0.04
14	NO ₂ +NO ₃ (mg N/L)	0.59	1.15	0.69	1.18	0.33	0.33	0.25	0.21	0.41	0.50	0.38	0.24	0.29	2.56
15	NO ₂ -N (mgN/L)	0.01	0.01	0.01	0.03	0.07	0.03	0.02	0.01	0.00	0.00	0.01	0.00	0.10	0.01
16	NO ₃ -N (mgN/L)	0.58	1.14	0.68	1.16	0.26	0.31	0.24	0.20	0.41	0.50	0.37	0.24	0.19	2.55
17	o-PO ₄ -P (mg P/L)	0.030	0.014			0.019	0.015	0.004	0.025	0.151	0.032	0.217	0.213	0.033	0.270
18	P-Tot (mgP/L)			0.042	0.021										
19	SiO ₂ (mg/L)	12.6	15.6	10.6	16.9	14.4	11.8	12.9	13.9	9.4	11.3	13.3	15.9	18.7	11.4
20	SO ₄ (mg/L)	6.5	2.6	1.6	2.8	2.8	0.9	1.0	1.1	11.9	12.0	9.3	11.1	8.7	17.0

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.7	1.1	0.3	0.5	0.5	0.5	0.8	0.9	0.5	0.6	0.8	0.6	0.6	2.6
2	COD (mg/L)	6.4	22.3	17.3	28.9	2.7	2.4	5.1	6.7	17.0	10.4	9.3	4.1	3.0	15.6
3	DO (mg/L)	6.2	6.5	6.4	5.3	6.0	6.0	5.7	6.0	6.2	6.4	6.3		6.7	6.4
4	DO_SAT% (%)	81	86	84	72	78	75	75	79	80	81	82		87	83
5	FCol-MPN (MPN/100mL)	65	584	10060	7240	6586	7540	10634	8658	2040	798	7026	2840	2101	4886
6	Tcol-MPN (MPN/100mL)	110	598	12900	7760	6634	8260	11440	8825	7600	8640	7960	11660	7860	5200
7	TOC (mg/L)	6.1			0.7	2.3	1.4	2.0	1.2	1.3	0.3	1.0	1.5		
TRACE & TOXIC															
1	As (µg/L)									13.3	1.2				
2	Cd (µg/L)				0.0					0.4	0.1				
3	Cr (µg/L)				30.5					3.4	0.9				
4	Cu (µg/L)									2.4	1.4				10.3
5	Hg (µg/L)				0.0						0.2				
6	Ni (µg/L)				8.5					1.3	10.9				
7	Pb (µg/L)				9.2					0.5	1.4				
8	Zn (µg/L)				71.3					29.4	0.0				52.7
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	30	27	23	17	28	23	24	24	25	28	24	25	30	43
2	HAR_Total (mgCaCO ₃ /L)	46	39	39	42	52	46	42	40	50	53	43	45	57	83
3	Na% (%)	43	23	22	37	21	14	18	17	28	22	26	27	17	13
4	RSC (-)	0.1	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.2	0.2	0.0
5	SAR (-)	1.1	0.4	0.4	1.2	0.4	0.2	0.3	0.3	0.6	0.5	0.5	0.5	0.3	0.3
PESTICIDES															
1	Aldrin (µg/L)				0.0										
2	BHC (µg/L)				0.1										
3	DDT (µg/L)				0.1										
4	Dieldrin (µg/L)				0.0										
5	Endos (µg/L)				0.1										

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	235.6	264.0	214.7	301.5	193.0	76.34	315.5	121.9	185.4	467.4	306.0	212.3	240.0	200.9
2	EC_FLD ($\mu\text{mho}/\text{cm}$)												630	114	193
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	88	103	291	151	136	181	119	166	150	144	128	383	152	137
4	pH_FLD (pH units)												5.8	6.6	5.8
5	pH_GEN (pH units)	8.0	7.9	8.4	7.7	8.2	8.1	8.2	8.0	7.9	7.9	7.8	8.2	8.0	7.8
6	TDS (mg/L)					98	113	98	125	124	117	90	84	90	95
7	Temp (deg C)	25.4	25.6	25.9	25.8	27.3	21.3	24.4	26.1	26.1	24.4	22.5	26.0	24.5	25.8
8	Turb (NTU)					3.6	2.6	6.1	0.0	2.3	24.8	5.0	7.0	4.6	11.5
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.5	0.0	4.4	0.0	0.5	1.0	0.0	0.0	1.1	0.0	0.0	2.4	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	45	40	111	52	62	90	56	82	73	63	61	82	75	86
3	B (mg/L)	0.06	0.19	0.08	0.24	0.00	0.19	0.12	0.15	0.07	0.10	0.16	0.04		0.05
4	Ca (mg/L)	9	11	32	11	15	21	11	18	14	15	16	16	15	31
5	Cl (mg/L)	11.7	7.0	20.0	14.1	7.9	9.2	7.4	5.5	3.0	3.7	3.2	3.8	2.1	10.9
6	CO ₃ (mg/L)	0.6	0.0	5.3	0.0	0.6	1.2	0.0	0.0	1.3	0.0	0.0	2.8	0.0	0.0
7	F (mg/L)	0.13	0.18	0.15	0.19	0.15	0.18	0.08	0.37	0.35	0.14	0.10	0.04	0.21	0.10
8	Fe (mg/L)	0.1	0.2	0.2	0.5	0.3	0.2	0.3	0.2	0.0	0.0	0.1	0.0	0.1	0.5
9	HCO ₃ (mg/L)	54	49	124	63	75	107	69	100	87	76	75	94	92	105
10	K (mg/L)	1.5	1.4	1.3	1.0	1.2	1.5	1.4	1.3	1.4	1.6	1.7	1.4	2.1	0.2
11	Mg (mg/L)	2.1	3.2	8.6	7.1	5.4	9.0	6.8	7.9	8.5	8.1	6.6	8.0	7.4	5.9
12	Na (mg/L)	18.3	3.8	17.7	6.9	5.0	6.1	4.7	7.5	9.0	9.1	7.5	7.7	7.5	6.8
13	NH ₃ -N (mg N/L)	0.03	0.06	0.05	0.10	0.09	0.05	0.12	0.16	0.02	0.00	0.05	0.00	0.18	0.88
14	NO ₂ +NO ₃ (mg N/L)	0.45	0.49	1.82	1.05	0.09	0.07	0.26	0.13	0.75	0.21	0.15	0.30	0.15	5.73
15	NO ₂ -N (mgN/L)	0.01	0.00	0.00	0.04	0.03	0.01	0.02	0.01	0.00	0.00	0.02	0.00	0.02	0.01
16	NO ₃ -N (mgN/L)	0.44	0.48	1.82	1.01	0.06	0.07	0.25	0.12	0.75	0.21	0.13	0.30	0.13	5.72
17	o-PO ₄ -P (mg P/L)	0.010	0.003			0.004	0.014	0.019	0.346	0.090	0.046	0.046	0.051	0.040	0.453
18	P-Tot (mgP/L)			0.015	0.168										
19	SiO ₂ (mg/L)	13.0	17.5	17.1	13.2	14.6	13.9	27.5	12.8	15.6	14.3	14.2	13.4	11.9	13.0
20	SO ₄ (mg/L)	0.5	0.3	10.5	2.5	0.3	0.4	1.2	3.5	5.9	11.5	6.9	4.9	6.8	4.4

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water

S.No	Parameters	River Water													
		Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
	BIOLOGICAL/BACTERIOLOGICAL														
1	BOD3-27 (mg/L)	0.5	0.7	0.4	0.3	0.5	0.7	0.3	0.6	0.8	0.6	0.7	0.6	1.6	1.1
2	COD (mg/L)	13.7	9.5	21.7	21.9	2.1	4.0	2.8	4.0	8.9	5.9	4.5	4.0	5.4	7.9
3	DO (mg/L)	6.6	7.4	6.3	6.9	6.8	7.4	7.1	6.9	7.4	7.3	7.6	6.6	7.3	7.6
4	DO_SAT% (%)	79	90	76	84	85	83	85	85	92	87	88	80	87	92
5	FCol-MPN (MPN/100mL)	40	8115	6200	3300	2775	10500	8838	1725	425	408	295	600	743	5810
6	Tcol-MPN (MPN/100mL)	70	8150	10833	3625	3925	16000	11750	5700	1208	1475	1065	4950	1793	7518
7	TOC (mg/L)	6.6			0.2	1.3	1.5	0.8	0.8	0.8	0.8	4.0	2.0		
	TRACE & TOXIC														
1	As (µg/L)						0.1		0.1						
2	Cd (µg/L)			1.0		1.1	0.0	0.0	0.0			0.1			
3	Cr (µg/L)			9.0		0.0	0.0	5.0	0.6			0.4			
4	Cu (µg/L)								18.2			1.7		1.0	2.3
5	Hg (µg/L)			0.0											
6	Ni (µg/L)			1.0		0.0	0.0	0.5	3.5			0.6			
7	Pb (µg/L)			1.0		0.0	0.0	0.0	10.0			2.0			
8	Zn (µg/L)		178.0		94.1	0.0	17.5	20.6			16.0		0.1	81.5	
	CHEMICAL INDICES														
1	HAR_Ca (mgCaCO ₃ /L)	21	26	79	27	38	52	27	44	35	39	40	41	38	79
2	HAR_Total (mgCaCO ₃ /L)	30	39	114	57	60	89	56	77	70	72	67	74	69	103
3	Na% (%)	56	16	16	21	15	13	16	17	22	21	19	18	19	13
4	RSC (-)	0.3	0.0	0.2	0.0	0.1	0.0	0.1	0.2	0.1	0.0	0.0	0.2	0.2	0.0
5	SAR (-)	1.6	0.3	0.6	0.4	0.3	0.3	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.3
	PESTICIDES														
1	Aldrin (µg/L)			0.1		0.0	0.0	0.0	0.0						
2	BHC (µg/L)			0.9		0.1	0.1	0.1	0.0						
3	DDT (µg/L)			0.2		0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)			0.6		0.0	0.0	0.0	0.0						
5	Endos (µg/L)			0.1		0.2	0.0	0.6	0.0						

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Summer															
		Mar - May															
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
PHYSICAL																	
1	Q (cumec)	235.8	140.9	177.6	219.5	218.7	158.0	102.8	241.0	97.14	240.7	172.7	205.7	210.5	203.1	152.6	
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														515	112	154
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	88	178	113	110	143	134	128	106	153	125	125	136	188	138	143	
4	pH_FLD (pH units)														5.7	6.4	6.3
5	pH_GEN (pH units)	8.1	8.0	8.0	8.0	7.7	7.8	8.0	8.1	8.0	8.2	7.8	7.8	8.3	7.8	8.1	
6	TDS (mg/L)						93	97	95	110	95	93	111	98	67	97	
7	Temp (deg C)	28.9	27.0	29.7	29.2	30.0	31.5	30.2	28.3	28.3	28.7	27.0	28.3	30.0	30.5	29.5	
8	Turb (NTU)						8.4	0.8	3.6	0.0	3.7	2.4	9.7	19.0	19.3	4.7	
CHEMICAL																	
1	Alk-Phen (mgCaCO ₃ /L)	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	
2	ALK-TOT (mgCaCO ₃ /L)	39	72	44	49	55	53	67	45	72	54	58	72	61	67	73	
3	B (mg/L)	0.02	0.06	0.01	0.00	0.12	0.13	0.01	0.17	0.02	0.19	0.17	0.01			0.17	
4	Ca (mg/L)	11	16	13	11	10	13	13	11	14	12	14	13	13	21	20	
5	Cl (mg/L)	4.7	22.4	8.7	11.0	11.0	9.4	8.9	8.0	6.8	4.3	2.9	3.1	2.6	9.4	13.2	
6	CO ₃ (mg/L)	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	
7	F (mg/L)	0.13	0.35	0.17	0.12	0.13	0.20	0.18	0.08	0.35	0.49	0.07	0.15	0.01	0.08	0.23	
8	Fe (mg/L)	0.1	0.1	0.1	0.3	0.4	0.2	0.3	0.5	0.1	0.2	0.4	0.1	0.1	0.0	0.2	
9	HCO ₃ (mg/L)	47	73	54	59	68	65	82	55	88	65	70	88	68	81	89	
10	K (mg/L)	0.9	1.5	1.3	1.9	1.9	1.6	1.5	1.5	1.8	1.4	1.6	1.8	1.1	1.5	0.3	
11	Mg (mg/L)	2.1	5.6	2.7	7.3	7.5	5.3	6.9	4.8	6.3	5.7	6.3	6.7	6.3	6.2	2.9	
12	Na (mg/L)	2.7	24.5	3.3	3.2	5.3	5.5	5.3	4.6	6.1	7.5	7.3	7.3	5.4	4.3	12.4	
13	NH ₃ -N (mg N/L)	0.15	0.15	0.08	0.05	0.43	0.20	0.22	0.19	0.03	0.01	0.02	0.01	0.01	0.49	0.11	
14	NO ₂ +NO ₃ (mg N/L)	0.01	0.26	0.78	0.87	0.39	0.25	0.07	0.26	0.12	0.82	0.25	0.13	0.62	0.38	4.46	
15	NO ₂ -N (mgN/L)			0.00	0.00	0.02	0.01	0.02	0.01	0.01	0.00	0.00	0.02	0.04	0.00	0.02	
16	NO ₃ -N (mgN/L)	0.01	0.26	0.77	0.85	0.38	0.23	0.06	0.26	0.11	0.82	0.25	0.11	0.58	0.38	4.44	
17	o-PO ₄ -P (mg P/L)	0.004	0.010	0.008			0.000	0.007	0.023	0.013	0.061	0.001	0.107	0.076	0.080	0.750	
18	P-Tot (mgP/L)				0.151	0.194											
19	SiO ₂ (mg/L)	15.3	9.5	12.0	13.7	9.3	14.4	13.1	23.8	10.1	12.8	10.8	13.6	13.8	11.4	12.0	
20	SO ₄ (mg/L)	1.7	1.5	0.0	1.0	1.0	0.5	0.2	1.0	2.4	4.4	10.8	3.9	5.5	2.5	4.4	

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Konta (AGC00C5)

Local River : Sabari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water

S.No	Parameters	River Water														
		<div style="display: flex; justify-content: space-between;"> <div style="flex-grow: 1;">Summer</div> <div style="flex-grow: 1;">Mar - May</div> </div>														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.5	0.7	0.5	0.6	0.6	0.5	0.7	0.5	0.6	0.4	0.7	0.8	1.1	0.8	1.6
2	COD (mg/L)	55.7	0.0	27.3	13.8	7.7	4.0	6.7	2.0	2.5	4.9	5.3	3.7	2.0	6.2	6.7
3	DO (mg/L)	6.4	6.8	6.4	6.0	6.1	6.0	6.4	6.4	6.6	6.1	6.5	6.0	6.0	6.8	7.1
4	DO_SAT% (%)	82	85	84	78	80	82	85	82	84	78	81	76	80	90	93
5	FCol-MPN (MPN/100mL)	750		5000	5607	1843	3857	6323	6233	1643	933	887	2	5913	63	8010
6	Tcol-MPN (MPN/100mL)	2100		6333	5673	3843	6207	6573	7233	4723	3267	3153	5513	6467	523	8020
7	TOC (mg/L)		5.2			1.0	1.8	3.2	1.1	1.2	2.0	0.6	1.5			
TRACE & TOXIC																
1	As (µg/L)							0.0		0.2	6.1	3.6	0.1	0.0	0.5	0.3
2	Cd (µg/L)			0.0	3.0	0.0	1.4	0.0	0.0	0.1	0.8	0.0	1.0	0.0	0.0	0.7
3	Cr (µg/L)			6.0	2.0	8.8	0.0	0.0	2.0	1.7	0.4	1.1	0.0	0.0	0.0	0.0
4	Cu (µg/L)									2.7	0.2	2.2			1.4	2.0
5	Hg (µg/L)				0.0	0.3				0.0	0.5	0.2	0.1	0.0	0.2	0.4
6	Ni (µg/L)			1.0	1.0	4.5	0.0	0.0	0.0	2.6	3.9	5.3	3.1	0.0	3.3	2.7
7	Pb (µg/L)			48.0	1.0	6.4	4.0	0.0	4.3	3.8	0.7	1.2	5.0	0.0	0.0	12.0
8	Zn (µg/L)			83.0	12.0	57.7	8.1	0.0	30.3	3.6	24.9	4.0	6.0	4.5	13.4	41.1
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	27	40	32	27	24	33	32	28	35	30	35	32	33	52	49
2	HAR_Total (mgCaCO ₃ /L)	35	63	44	58	56	55	61	48	62	54	61	60	60	78	61
3	Na% (%)	14	48	14	11	17	17	16	17	17	22	20	21	16	11	32
4	RSC (-)	0.1	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.2	0.1	0.0	0.3	0.1	0.0	0.2
5	SAR (-)	0.2	1.4	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.2	0.7
PESTICIDES																
1	Aldrin (µg/L)			0.0	0.0	0.0	0.0	0.0	0.0	0.0						
2	BHC (µg/L)			0.0	0.1	0.0	0.0	0.0	0.4	0.0						
3	DDT (µg/L)			0.0	0.1	0.0	0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)			0.0	0.1	0.0	0.0	0.0	0.0	0.0						
5	Endos (µg/L)			0.0	0.1	0.0	0.0	0.0	0.0	0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Sangam	Code	: Sangam
State	: Andhra Pradesh	District	Khammam
Basin	: Godavari	Independent River	: Godavari
Tributary	: Kinnerasani	Sub Tributary	: Murredu
Sub-Sub Tributary	:	Local River	: Murredu
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Lower Godavari 1, Bhadrachalam
Drainage Area	: 1565 Sq. Km.	Bank	: Left
Latitude	: 17°35'50"	Longitude	: 80°49'40"
	Opening Date	Closing Date	
Gauge	: 11.06.1996		
Discharge	: 24.08.1996		
Sediment	:		
Water Quality	: 01.08.2013		

Water Quality Datasheet for the period : 2017-2018

Station Name : Sangam (Sangam)

Local River : Murredu

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1	Q (cumec)	0.000	6.051	4.357	26.10	13.52	5.030	2.565	0.402	0.000	0.000	0.000	0.000
2	Colour_Cod (-)	Clear	Clear	Clear	Other	Other	Clear						
3	EC_FLD ($\mu\text{mho}/\text{cm}$)	706	702	1415	702	1233	99	860	1415	1615	701	701	
4	EC_GEN ($\mu\text{mho}/\text{cm}$)	456	448	551	303	380	441	471	310	713	593	1568	1207
5	Odour_Code (-)	odour free											
6	pH_FLD (pH units)	6.4	6.2	6.1	6.2	6.0	6.0	6.2	6.0	6.0	6.3	6.2	
7	pH_GEN (pH units)	7.9	7.9	8.1	7.8	7.5	7.6	7.8	8.0	8.0	7.3	7.1	7.0
8	TDS (mg/L)	257	297	317	251	261	287	337	201	392	532	912	796
9	Temp (deg C)	28.0	28.0	29.0	27.0	29.0	27.0	27.0	27.0	20.0	28.0	25.0	28.0
10	Turb (NTU)	27.0	158.0	58.0	179.0	18.0	22.0	2.0	88.0	32.0	4.0	3.0	1.0
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	133	134	170	120	176	156	242	174	231	368	401	175
3	B (mg/L)					0.11	0.17	0.01	0.01	0.16	0.10	0.02	0.04
4	Ca (mg/L)	44	50	35	27	47	52	87	51	72	118	139	118
5	Cl (mg/L)	28.4	37.6	39.8	32.4	35.2	38.8	98.4	34.4	68.5	101.5	131.1	131.2
6	CO ₃ (mg/L)	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	1.16	0.95	1.15	0.41	1.18	0.85	1.24	1.28	0.99	0.98	0.47	0.34
8	Fe (mg/L)	0.0	1.1	1.7	5.9	0.4	0.2	0.2	0.0	0.2	0.0	0.1	0.1
9	HCO ₃ (mg/L)	162	138	208	146	215	190	295	212	282	449	489	214
10	K (mg/L)	0.7	0.6	0.6	0.5	0.5	0.6	0.6	0.7	0.6	3.0	3.7	2.2
11	Mg (mg/L)	18.6	15.9	29.1	21.7	20.8	13.5	54.8	27.5	17.2	21.9	16.1	26.2
12	Na (mg/L)	29.3	33.6	40.3	21.3	34.2	36.0	30.7	36.7	38.2	68.3	148.5	64.7
13	NH ₃ -N (mg N/L)	1.11	0.03	0.04	0.10	0.28	1.31	0.01	0.01	1.12	0.05	0.23	0.18
14	NO ₂ +NO ₃ (mg N/L)	4.02	7.60	4.02	2.36	4.46	6.37	3.60	4.28	10.43	4.87	4.28	3.23
15	NO ₂ -N (mgN/L)	0.00	0.03	0.04	0.01	0.03	0.02	0.03	0.01	0.02	0.01	0.01	0.02
16	NO ₃ -N (mgN/L)	4.02	7.57	3.98	2.35	4.43	6.35	3.57	4.27	10.41	4.86	4.27	3.21
17	o-PO ₄ -P (mg P/L)	0.060	0.150	0.200	1.170	0.360	0.450	0.510	0.360	0.360	0.420	0.950	0.680
18	SiO ₂ (mg/L)	8.5	6.9	20.2	11.7	15.1	4.2	27.5	18.2	13.4	21.2	13.3	13.2
19	SO ₄ (mg/L)	41.4	42.1	72.1	17.7	30.6	84.1	46.0	52.0	39.3	72.6	80.4	103.0

Water Quality Datasheet for the period : 2017-2018

Station Name : Sangam (Sangam)

Local River : Murredu

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	0.6	2.4	0.1	1.0	0.9	0.6	1.0	0.1	0.3	0.6	0.4	2.8
2	COD (mg/L)	1.3	13.0	34.5	2.1	8.2	14.8	7.4	2.6	5.7	39.7	6.3	8.4
3	DO (mg/L)	5.0	6.6	6.7	6.7	4.7	6.9	7.9	7.7	7.1	5.2	6.3	5.8
4	DO_SAT% (%)	64	84	87	84	61	87	99	97	78	66	76	74
5	FCol-MPN (MPN/100mL)	80	3000	3000	16000	1300	16000	330	300	230	20	20	
6	Tcol-MPN (MPN/100mL)	230	3000	3000	16000	2400	16000	5000	700	300	40	20	
TRACE & TOXIC													
1	As (µg/L)												1.0
2	Cd (µg/L)												1.8
3	Cr (µg/L)												0.0
4	Cu (µg/L)		5.0	5.0	4.0	8.0	1.0	4.0	3.0	3.0	7.0	4.0	1.0
5	Hg (µg/L)												0.3
6	Ni (µg/L)												7.5
7	Pb (µg/L)												24.0
8	Zn (µg/L)	2.0	69.7	0.1	74.0	10.0	24.0	76.0	84.8	58.2	47.6	19.5	48.4
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	109	125	88	68	117	129	217	127	179	294	348	295
2	HAR_Total (mgCaCO ₃ /L)	186	191	210	158	203	185	445	241	251	385	415	404
3	Na% (%)	25	28	30	23	27	30	13	25	25	28	44	26
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.9	1.1	1.2	0.7	1.0	1.2	0.6	1.0	1.1	1.5	3.2	1.4
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : Sangam (Sangam)

Local River : Murredu

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	66.14	0.000	6.522
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	11	1615	99	923
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	1568	303	620
4	pH_FLD (pH units)	11	6.4	6.0	6.1
5	pH_GEN (pH units)	12	8.1	7.0	7.7
6	TDS (mg/L)	12	912	201	403
7	Temp (deg C)	12	29.0	20.0	26.9
8	Turb (NTU)	12	179.0	1.0	49.3
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	10.8	0.0	0.9
2	ALK-TOT (mgCaCO ₃ /L)	12	401	120	207
3	B (mg/L)	8	0.17	0.01	0.08
4	Ca (mg/L)	12	139	27	70
5	Cl (mg/L)	12	131.2	28.4	64.8
6	CO ₃ (mg/L)	12	13.0	0.0	1.1
7	F (mg/L)	12	1.28	0.34	0.92
8	Fe (mg/L)	12	5.9	0.0	0.8
9	HCO ₃ (mg/L)	12	489	138	250
10	K (mg/L)	12	3.7	0.5	1.2
11	Mg (mg/L)	12	54.8	13.5	23.6
12	Na (mg/L)	12	148.5	21.3	48.5
13	NH ₃ -N (mg N/L)	12	1.31	0.01	0.37
14	NO ₂ +NO ₃ (mg N/L)	12	10.43	2.36	4.96
15	NO ₂ -N (mgN/L)	12	0.04	0.00	0.02
16	NO ₃ -N (mgN/L)	12	10.41	2.35	4.94
17	o-PO ₄ -P (mg P/L)	12	1.170	0.060	0.472
18	SiO ₂ (mg/L)	12	27.5	4.2	14.4
19	SO ₄ (mg/L)	12	103.0	17.7	56.8
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	2.8	0.1	0.9
2	COD (mg/L)	12	39.7	1.3	12
3	DO (mg/L)	12	7.9	4.7	6.4
4	DO_SAT% (%)	12	99	61	80
5	FCol-MPN (MPN/100mL)	11	16000	20	3662
6	Tcol-MPN (MPN/100mL)	11	16000	20	4245
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	1.0	1.0	1
2	Cd ($\mu\text{g}/\text{L}$)	1	1.8	1.8	1.8
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	11	8.0	1.0	4.1
5	Hg ($\mu\text{g}/\text{L}$)	1	0.3	0.3	0.3
6	Ni ($\mu\text{g}/\text{L}$)	1	7.5	7.5	7.5
7	Pb ($\mu\text{g}/\text{L}$)	1	24.0	24.0	24
8	Zn ($\mu\text{g}/\text{L}$)	12	84.8	0.1	42.9
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	348	68	175
2	HAR_Total (mgCaCO ₃ /L)	12	445	158	273
3	Na% (%)	12	44	13	27
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	3.2	0.6	1.2
PESTICIDES					

Water Quality Seasonal Average for the period: 2013-2018

Station Name : Sangam (Sangam)

Local River : Murredu

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Flood					Winter					Summer				
		Jun - Oct					Nov - Feb					Mar - May				
		2013	2014	2015	2016	2017	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	27.55	21.24	13.47	30.61	10.01	6.551	2.364	1.510	2.384	1.999	0.000	0.425	0.000	0.000	0.000
2	EC_FLD ($\mu\text{mho}/\text{cm}$)				695	952			743	1170	997			667	754	701
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	382	522	421	325	428	460	419	704	679	484	487	535	603	385	1123
4	pH_FLD (pH units)				5.8	6.2			6.3	6.6	6.0			6.4	6.3	6.3
5	pH_GEN (pH units)	8.0	8.1	7.7	8.1	7.8	8.0	8.0	8.3	8.2	7.9	8.0	8.1	8.2	8.2	7.1
6	TDS (mg/L)	209	330	306	240	277	296	300	267	342	304	290	379	296	242	747
7	Temp (deg C)	26.0	27.2	28.8	27.6	28.2	25.8	25.5	26.8	28.0	25.3	25.7	28.7	27.0	28.0	27.0
8	Turb (NTU)	14.2	22.8	149.6	90.6	88.0	38.0	10.0	25.8	20.3	36.0	24.3	13.7	85.3	77.3	2.7
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.8	0.0	1.7	2.2	0.0	0.0	1.7	0.5	0.0	0.0	1.2	2.7	1.9	0.0
2	ALK-TOT (mgCaCO ₃ /L)	126	156	148	137	147	152	170	154	198	201	146	147	151	125	315
3	B (mg/L)	0.35	0.28	0.18		0.11	0.10	0.19	0.00		0.09	0.20	0.33			0.05
4	Ca (mg/L)	29	35	33	32	41	35	41	34	42	65	34	34	35	51	125
5	Cl (mg/L)	23.9	31.8	33.7	22.2	34.7	22.1	37.0	29.2	38.6	60.0	23.0	37.8	29.5	32.1	121.3
6	CO ₃ (mg/L)	0.0	1.0	0.0	2.0	2.6	0.0	0.0	2.0	0.6	0.0	0.0	1.4	3.2	2.3	0.0
7	F (mg/L)	0.68	1.02	0.91	0.55	0.97	0.95	1.16	0.78	0.67	1.09	0.85	0.66	0.65	1.14	0.59
8	Fe (mg/L)	0.1	0.1	0.0	0.1	1.8	0.1	0.1	0.0	0.1	0.2	0.6	0.0	0.0	0.0	0.1
9	HCO ₃ (mg/L)	153	188	181	163	174	186	208	183	241	245	178	177	178	148	384
10	K (mg/L)	3.8	5.1	5.2	4.7	0.6	3.6	5.3	5.4	8.8	0.6	4.8	6.2	6.2	5.9	2.9
11	Mg (mg/L)	16.0	20.0	18.7	15.4	21.2	20.8	21.4	19.3	21.0	28.3	19.4	19.2	19.3	14.3	21.4
12	Na (mg/L)	30.2	39.9	38.1	25.7	31.7	36.6	41.8	33.4	60.9	35.4	34.7	40.4	34.8	35.3	93.8
13	NH ₃ -N (mg N/L)	0.07	0.05	0.02	0.01	0.31	0.00	0.05	0.00	0.12	0.61	0.03	0.01	0.01	0.22	0.15
14	NO ₂ +NO ₃ (mg N/L)	0.73	0.88	0.68	0.97	4.49	0.65	0.32	0.45	0.34	6.17	1.46	0.36	0.60	0.76	4.13
15	NO ₂ -N (mgN/L)	0.00	0.02	0.01	0.26	0.02	0.00	0.03	0.00	0.09	0.02	0.00	0.02	0.01	0.01	0.01
16	NO ₃ -N (mgN/L)	0.73	0.86	0.67	0.71	4.47	0.65	0.30	0.45	0.25	6.15	1.46	0.34	0.58	0.76	4.11
17	o-PO ₄ -P (mg P/L)	0.065	0.244	0.176	0.102	0.388	0.168	0.136	0.074	0.066	0.420	0.044	0.090	0.119	0.123	0.683
18	SiO ₂ (mg/L)	14.3	16.0	16.5	12.6	12.5	16.8	18.1	14.9	16.8	15.8	16.9	18.4	18.5	18.2	15.9
19	SO ₄ (mg/L)	27.1	43.4	44.1	17.8	40.8	42.5	44.9	48.7	51.8	55.4	49.1	60.5	54.8	90.8	85.3

Water Quality Seasonal Average for the period: 2013-2018

Station Name : Sangam (Sangam)

Local River : Murredu

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water

S.No	Parameters	Flood					Winter					Summer				
		Jun - Oct					Nov - Feb					Mar - May				
		2013	2014	2015	2016	2017	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.6	0.8	0.5	0.8	1.0	1.1	1.1	0.6	1.5	0.5	0.4	0.6	0.7	1.5	1.3
2	COD (mg/L)	7.3	15.5	5.4	9.6	11.8	5.3	5.4	6.2	6.4	7.6	4.8	7.6	2.9	8.5	18.2
3	DO (mg/L)	5.8	6.3		6.2	5.9	6.6	7.4	6.7	7.1	7.4	6.3	6.2	5.8	7.4	5.8
4	DO_SAT% (%)	71	80		79	76	81	90	84	91	90	77	80	73	95	72
5	FCol-MPN (MPN/100mL)	3877	6934	6022	8808	4676	348	1108	2875	5310	4215	1613	2	2767	494	20
6	Tcol-MPN (MPN/100mL)	10767	7506	13140	14600	4926	733	2450	9750	6075	5500	10710	1890	16000	507	30
7	TOC (mg/L)	2.9	11.1	5.6			4.9	19.4	2.9			8.4	12.0			
TRACE & TOXIC																
1	As (µg/L)											4.7	7.2	0.0	5.5	1.0
2	Cd (µg/L)							0.4				0.0	3.0	0.0	0.4	1.8
3	Cr (µg/L)							0.9				0.2	0.0	0.0	0.0	0.0
4	Cu (µg/L)					5.5		1.6		1.0	2.8	4.0			2.7	4.0
5	Hg (µg/L)											0.2	0.1	0.0	0.5	0.3
6	Ni (µg/L)						0.5					9.1	10.6	0.0	5.2	7.5
7	Pb (µg/L)						2.6					0.0	19.0	0.0	1.0	24.0
8	Zn (µg/L)					31.2		5.0		0.1	60.8	6.2	19.0	2.1	4.8	38.5
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	71	87	83	79	101	88	103	85	106	163	85	85	87	127	312
2	HAR_Total (mgCaCO ₃ /L)	138	171	161	144	190	174	193	166	193	281	166	165	167	186	401
3	Na% (%)	31	33	33	27	26	31	31	30	40	23	30	34	30	28	32
4	RSC (-)	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0
5	SAR (-)	1.1	1.3	1.3	0.9	1.0	1.2	1.3	1.1	2.0	1.0	1.2	1.4	1.2	1.1	2.0
PESTICIDES																

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Bhadrachalam	Code	: AG000E7
State	: Andhra Pradesh	District	Khammam
Basin	: Godavari	Independent River	: Godavari
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Godavari
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Lower Godavari 1, Bhadrachalam
Drainage Area	: 280505 Sq. Km.	Bank	: Left
Latitude	: 17°39'57"	Longitude	: 80°53'02"
	Opening Date	Closing Date	
Gauge	: 15.06.2007		
Discharge	: 11.07.2007		
Sediment	:		
Water Quality	: 03.10.2006		

Water Quality Datasheet for the period : 2017-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

River Water Analysis

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		6.975	905.8	1823	7990	1913	699.5	244.3	95.32	62.75	39.12	7.664	2.887
2 Colour_Cod (-)	Clear	Light Brown	Brown	Light Brown	Light Brown	Clear							
3 EC_FLD ($\mu\text{mho}/\text{cm}$)		1168	328	665	421	211	439	600	679	720	648	410	894
4 EC_GEN ($\mu\text{mho}/\text{cm}$)		355	181	161	104	156	211	256	218	314	214	374	358
5 Odour_Code (-)	odour free	odour free		odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6 pH_FLD (pH units)		6.1	5.5	5.8	5.9	5.8	6.4	6.3	6.6	6.8			
7 pH_GEN (pH units)		7.8	7.9	8.0	7.6	8.0	7.8	8.0	8.2	8.3	8.4	8.2	8.1
8 TDS (mg/L)		204	151	125	68	135	125	151	175	207	178	224	131
9 Temp (deg C)			26.0	31.0	29.0	29.0	29.0	28.0	20.5	24.0	25.0	26.0	30.0
10 Turb (NTU)		10.0	205.0	94.0	525.0	88.0	27.0	2.0	6.0	7.0	6.0	13.0	3.0
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	16.4	0.0	0.0
2 ALK-TOT (mgCaCO ₃ /L)		132	73	80	144	92	108	81	248	136	153	140	99
3 B (mg/L)						0.15	0.12	0.02	0.04	0.23	0.09	0.06	0.14
4 Ca (mg/L)		26	25	25	33	32	32	39	52	30	37	26	24
5 Cl (mg/L)		31.8	24.3	11.5	11.4	17.6	16.3	43.3	20.5	19.6	19.5	26.6	33.1
6 CO ₃ (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.8	19.8	0.0	0.0
7 F (mg/L)		0.35	0.16	0.18	0.07	0.20	0.15	0.23	0.24	0.28	1.03	0.13	0.33
8 Fe (mg/L)		0.0	3.9	9.4	30.8	1.2	1.0	0.4	0.1	0.2	0.1	0.0	0.1
9 HCO ₃ (mg/L)		162	89	98	176	112	132	98	302	124	146	171	120
10 K (mg/L)		0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.5
11 Mg (mg/L)		20.5	12.4	13.2	25.4	13.6	18.4	9.4	27.5	14.3	21.0	12.7	14.3
12 Na (mg/L)		28.6	11.4	9.5	8.4	12.3	13.8	16.1	17.9	24.6	22.9	38.3	39.6
13 NH ₃ -N (mg N/L)		0.05	0.02	0.06	0.11	0.01	2.84	0.01	0.01	1.17	0.06	0.07	0.17
14 NO ₂ +NO ₃ (mg N/L)		4.18	5.41	2.29	3.62	3.14	7.74	5.17	3.77	10.35	3.00	5.83	4.27
15 NO ₂ -N (mgN/L)		0.00	0.01	0.01	0.01	0.02	0.01	0.02	0.00	0.00	0.02	0.05	0.02
16 NO ₃ -N (mgN/L)		4.18	5.40	2.28	3.61	3.12	7.73	5.15	3.77	10.35	2.98	5.78	4.25
17 o-PO ₄ -P (mg P/L)		0.040	0.120	0.290	0.460	0.490	0.620	0.480	0.310	0.330	0.530	1.070	0.500
18 SiO ₂ (mg/L)		14.4	6.9	15.2	12.2		7.8	16.9	16.2	13.0	17.4	13.5	9.5
19 SO ₄ (mg/L)		21.2	9.7	20.0	17.7	17.2	25.0	10.7	12.6	22.7	16.7	28.1	29.0

Water Quality Datasheet for the period : 2017-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.2	1.1	0.8	0.3	0.6	1.0	3.4	0.5	1.5	1.6	3.0	0.4
2	COD (mg/L)	4.6	10.1	29.0	17.2	27.9	14.8	4.8	4.4	4.8	27.5	6.1	19.7
3	DO (mg/L)	5.5	6.2	7.3	6.6	6.7	7.5	9.9	8.3	7.7	7.0	6.1	6.3
4	DO_SAT% (%)		76	98	86	87	98	126	91	91	85	75	83
5	FCol-MPN (MPN/100mL)	500	3000	80	5000	20	5000	1700	220	20	800	16000	
6	Tcol-MPN (MPN/100mL)	500	3000	80	5000	20	5000	3000	110	40	1100	16000	
TRACE & TOXIC													
1	As (µg/L)												0.5
2	Cd (µg/L)												0.9
3	Cr (µg/L)												0.0
4	Cu (µg/L)		4.0	11.0	26.0	11.0	9.0	3.0	1.0	1.0	3.0	3.3	1.0
5	Hg (µg/L)												0.3
6	Ni (µg/L)												3.6
7	Pb (µg/L)												16.0
8	Zn (µg/L)	0.1	37.8	100.4	90.0	20.0	23.0	79.0	104.9	42.3	46.3	86.8	26.1
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	66	63	63	83	79	81	99	130	76	91	64	59
2	HAR_Total (mgCaCO ₃ /L)	151	114	118	189	136	157	138	245	135	179	117	119
3	Na% (%)	29	18	15	9	17	16	20	14	28	22	42	42
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0
5	SAR (-)	1.0	0.5	0.4	0.3	0.5	0.5	0.6	0.5	0.9	0.7	1.5	1.6
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Summary

S.No	Parameters	Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	15807	2.666	1081
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	12	1168	211	599
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	374	104	242
4	pH_FLD (pH units)	9	6.8	5.5	6.1
5	pH_GEN (pH units)	12	8.4	7.6	8
6	TDS (mg/L)	12	224	68	156
7	Temp (deg C)	11	31.0	20.5	27
8	Turb (NTU)	12	525.0	2.0	82.2
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	17.3	0.0	2.8
2	ALK-TOT (mgCaCO ₃ /L)	12	248	73	124
3	B (mg/L)	8	0.23	0.02	0.1
4	Ca (mg/L)	12	52	24	32
5	Cl (mg/L)	12	43.3	11.4	23
6	CO ₃ (mg/L)	12	20.8	0.0	3.4
7	F (mg/L)	12	1.03	0.07	0.28
8	Fe (mg/L)	12	30.8	0.0	3.9
9	HCO ₃ (mg/L)	12	302	89	144
10	K (mg/L)	12	0.5	0.2	0.3
11	Mg (mg/L)	12	27.5	9.4	16.9
12	Na (mg/L)	12	39.6	8.4	20.3
13	NH ₃ -N (mg N/L)	12	2.84	0.01	0.38
14	NO ₂ +NO ₃ (mg N/L)	12	10.35	2.29	4.9
15	NO ₂ -N (mgN/L)	12	0.05	0.00	0.01
16	NO ₃ -N (mgN/L)	12	10.35	2.28	4.88
17	o-PO ₄ -P (mg P/L)	12	1.070	0.040	0.437
18	SiO ₂ (mg/L)	11	17.4	6.9	13
19	SO ₄ (mg/L)	12	29.0	9.7	19.2
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	3.4	0.3	1.3
2	COD (mg/L)	12	29.0	4.4	14.2
3	DO (mg/L)	12	9.9	5.5	7.1
4	DO_SAT% (%)	11	126	75	91
5	FCol-MPN (MPN/100mL)	11	16000	20	2940
6	Tcol-MPN (MPN/100mL)	11	16000	20	3077
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	0.5	0.5	0.5
2	Cd ($\mu\text{g}/\text{L}$)	1	0.9	0.9	0.9
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	11	26.0	1.0	6.7
5	Hg ($\mu\text{g}/\text{L}$)	1	0.3	0.3	0.3
6	Ni ($\mu\text{g}/\text{L}$)	1	3.6	3.6	3.6
7	Pb ($\mu\text{g}/\text{L}$)	1	16.0	16.0	16
8	Zn ($\mu\text{g}/\text{L}$)	12	104.9	0.1	54.7
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	130	59	79
2	HAR_Total (mgCaCO ₃ /L)	12	245	114	150
3	Na% (%)	12	42	9	23
4	RSC (-)	12	0.5	0.0	0.1
5	SAR (-)	12	1.6	0.3	0.7
PESTICIDES					

Water Quality Seasonal Average for the period: 2006-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Flood											
		Jun - Oct											
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL													
1	Q (cumec)		5945	2847	2220	8385	3641	4483	7440	2994	2383	5162	2528
2	EC_FLD ($\mu\text{mho}/\text{cm}$)											581	559
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	200	334	301	289	231	324	260	232	753	210	218	191
4	pH_FLD (pH units)											6.0	5.8
5	pH_GEN (pH units)	7.9	8.3	8.3	8.3	7.9	8.3	8.0	8.0	7.8	7.7	8.3	7.8
6	TDS (mg/L)			194	176	157	284	188	159	455	168	150	137
7	Temp (deg C)	27.5	28.6	29.0	29.3	30.3	30.0	28.6	28.6	30.2	26.9	28.1	28.8
8	Turb (NTU)			20.9	13.6	32.0	4.0	22.8	14.4	85.2	132.6	146.6	184.4
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	4.6	5.4	6.5	4.7	5.0	0.0	0.9	0.0	0.0	0.6	0.0
2	ALK-TOT (mgCaCO ₃ /L)	75	117	99	92	90	109	93	96	198	86	115	104
3	B (mg/L)	0.07	0.09	0.18	0.12	0.11	0.13	0.19	0.09	0.18	0.05		0.15
4	Ca (mg/L)	16	21	21	21	18	21	19	23	38	17	23	28
5	Cl (mg/L)	7.0	25.7	26.6	23.6	19.2	29.2	17.9	17.3	33.0	9.7	12.1	19.3
6	CO ₃ (mg/L)	0.0	5.6	6.5	7.8	5.7	6.0	0.0	1.0	0.0	0.0	0.7	0.0
7	F (mg/L)	0.11	0.45	0.39	0.42	0.28	0.33	0.16	0.52	0.42	0.22	0.16	0.19
8	Fe (mg/L)	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.1	0.1	0.0	0.0	9.1
9	HCO ₃ (mg/L)	92	132	107	96	98	121	114	115	241	105	139	127
10	K (mg/L)	4.5	2.7	2.5	2.9	2.7	3.0	2.7	3.0	3.0	2.6	2.6	0.3
11	Mg (mg/L)	5.4	12.1	12.1	11.4	9.7	12.6	11.5	13.0	23.7	9.2	12.5	17.0
12	Na (mg/L)	18.0	25.3	19.7	18.2	15.8	22.6	18.3	24.1	81.0	16.4	16.2	14.0
13	NH ₃ -N (mg N/L)	0.05	0.25	0.07	0.18	0.07	0.30	0.01	0.07	0.02	0.01	0.01	0.05
14	NO ₂ +NO ₃ (mg N/L)	1.95	1.33	0.63	0.47	0.47	0.45	0.54	0.77	0.98	0.55	0.85	3.73
15	NO ₂ -N (mgN/L)	0.00	0.03	0.10	0.03	0.02	0.01	0.00	0.00	0.01	0.01	0.33	0.01
16	NO ₃ -N (mgN/L)	1.95	1.29	0.53	0.44	0.45	0.44	0.54	0.77	0.97	0.54	0.51	3.72
17	o-PO ₄ -P (mg P/L)			0.009	0.015	0.007	0.079	0.157	0.043	0.202	0.146	0.073	0.280
18	P-Tot (mgP/L)	0.060	0.020										
19	SiO ₂ (mg/L)	15.9	17.6	16.8	17.2	14.3	24.2	13.7	15.9	18.7	15.4	18.3	12.2
20	SO ₄ (mg/L)	10.0	12.2	12.2	13.9	10.1	17.2	15.4	22.7	24.9	19.8	6.9	17.2

Water Quality Seasonal Average for the period: 2006-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Flood											
		Jun - Oct											
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.7	0.5	0.5	0.8	0.9	1.0	0.7	0.6	0.9	1.0	0.9	0.8
2	COD (mg/L)	13.8	28.9	3.8	5.1	4.7	7.1	9.4	6.8	8.7	10.1	8.9	17.8
3	DO (mg/L)	7.1	5.8	5.8	5.5	5.4	5.8	6.2	6.4	6.1		6.0	6.5
4	DO_SAT% (%)	89	75	75	72	72	76	80	83	81		77	87
5	FCol-MPN (MPN/100mL)	300	12900	7264	10140	9700	12058	7400	4306	7156	7284	9216	1720
6	Tcol-MPN (MPN/100mL)	600	13060	7748	10460	9726	12075	8480	9906	8046	13500	12400	1720
7	TOC (mg/L)		0.9	3.0	1.7	3.0	2.1	1.7	0.4	18.2	2.0		
TRACE & TOXIC													
1	As (µg/L)							7.3	0.7				
2	Cd (µg/L)		0.0					0.0	0.1				
3	Cr (µg/L)		21.8					2.1	2.1				
4	Cu (µg/L)							0.7	2.5				13.0
5	Hg (µg/L)		0.0						0.4				
6	Ni (µg/L)		8.5					4.7	13.6				
7	Pb (µg/L)		13.0					0.0	0.4				
8	Zn (µg/L)		118.7					13.7	2.0				49.7
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	40	53	53	51	44	52	46	57	94	43	58	71
2	HAR_Total (mgCaCO ₃ /L)	63	103	104	99	85	104	94	111	193	82	110	142
3	Na% (%)	37	33	26	24	24	29	27	29	34	29	21	17
4	RSC (-)	0.3	0.3	0.1	0.0	0.1	0.1	0.3	0.0	0.2	0.1	0.2	0.0
5	SAR (-)	1.0	1.1	0.8	0.7	0.7	0.9	0.8	1.0	1.8	0.8	0.6	0.5
PESTICIDES													
1	Aldrin (µg/L)												
2	BHC (µg/L)												
3	DDT (µg/L)												
4	Dieldrin (µg/L)												
5	Endos (µg/L)												

Water Quality Seasonal Average for the period: 2006-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Winter											
		Nov - Feb											
		2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL													
1	Q (cumec)		409.6	208.8	195.5	677.4	233.5	345.5	1165	276.2	180.4	370.4	275.5
2	EC_FLD ($\mu\text{mho}/\text{cm}$)										520	664	610
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	403	355	358	309	334	351	339	328	253	548	269	250
4	pH_FLD (pH units)										6.6	6.3	6.5
5	pH_GEN (pH units)	8.5	8.3	8.4	8.4	8.4	8.4	8.2	8.1	8.1	8.4	8.5	8.1
6	TDS (mg/L)			232	186	226	222	222	207	201	170	168	165
7	Temp (deg C)	26.3	23.1	27.3	25.6	26.4	26.8	25.3	27.5	26.3	26.1	26.6	25.4
8	Turb (NTU)			0.9	1.6	4.3	0.0	1.3	19.8	1.8	7.8	1.8	10.5
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	11.0	5.4	8.5	8.8	10.2	4.0	1.1	0.0	0.0	2.9	3.0	4.3
2	ALK-TOT (mgCaCO ₃ /L)	161	137	133	129	136	152	135	136	120	132	118	143
3	B (mg/L)	0.08	0.20	0.02	0.15	0.15	0.19	0.15	0.01	0.16	0.00		0.10
4	Ca (mg/L)	33	26	27	29	19	27	27	28	29	25	27	39
5	Cl (mg/L)	25.5	27.5	26.3	21.5	27.1	18.8	16.3	14.9	12.6	10.7	13.0	24.9
6	CO ₃ (mg/L)	13.3	6.5	10.2	10.7	12.3	4.8	1.3	0.0	0.0	3.5	3.7	5.2
7	F (mg/L)	0.18	0.45	0.45	0.38	0.34	0.61	0.57	0.28	0.28	0.20	0.35	0.22
8	Fe (mg/L)	0.1	0.2	0.3	0.2	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.4
9	HCO ₃ (mg/L)	169	155	141	136	141	175	162	166	146	154	137	164
10	K (mg/L)	2.2	2.0	2.9	2.6	2.6	2.6	2.0	2.9	2.4	2.3	3.2	0.2
11	Mg (mg/L)	13.7	14.3	17.1	14.8	21.2	15.5	14.8	15.9	13.1	13.2	13.3	17.4
12	Na (mg/L)	30.8	24.4	20.4	16.7	21.1	24.5	25.6	26.3	22.6	20.9	22.6	18.1
13	NH ₃ -N (mg N/L)	0.05	0.16	0.13	0.06	0.15	0.18	0.04	0.00	0.19	0.01	0.00	1.01
14	NO ₂ +NO ₃ (mg N/L)	0.49	0.56	0.12	0.13	0.26	0.17	0.76	0.47	0.08	0.27	0.22	6.76
15	NO ₂ -N (mgN/L)	0.03	0.05	0.03	0.01	0.02	0.02	0.00	0.00	0.02	0.00	0.01	0.01
16	NO ₃ -N (mgN/L)	0.47	0.51	0.09	0.12	0.25	0.15	0.76	0.47	0.06	0.26	0.21	6.75
17	o-PO ₄ -P (mg P/L)			0.005	0.040	0.013	0.038	0.067	0.208	0.112	0.061	0.065	0.435
18	P-Tot (mgP/L)	0.006	0.117										
19	SiO ₂ (mg/L)	19.7	16.3	17.6	13.9	34.3	13.0	18.5	17.2	17.5	14.7	14.2	13.5
20	SO ₄ (mg/L)	12.0	14.3	14.5	13.7	15.0	13.6	19.3	25.5	23.3	17.6	20.2	17.8

Water Quality Seasonal Average for the period: 2006-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	River Water											
		Winter											
		2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	0.6	0.6	0.8	0.7	1.1	0.7	0.4	1.0	0.8	0.7	1.6	1.6
2	COD (mg/L)	11.1	16.8	2.9	4.9	3.9	5.7	17.7	5.9	5.0	3.9	6.1	7.2
3	DO (mg/L)	6.5	6.4	6.1	6.8	7.1	6.8	6.9	7.1	7.7	7.1	7.2	8.3
4	DO_SAT% (%)	78	74	77	82	88	84	83	90	95	87	90	102
5	FCol-MPN (MPN/100mL)	8867	9350	12750	13250	16000	8628	4295	703	8065	717	1775	1735
6	Tcol-MPN (MPN/100mL)	6400	9850	13250	14250	16000	9325	8658	1265	8133	7667	3725	2038
7	TOC (mg/L)	25.7	0.6	1.8	2.2	1.4	1.5	1.1	2.4	10.2	1.7		
TRACE & TOXIC													
1	As (µg/L)						0.0						
2	Cd (µg/L)	1.0		1.3	0.0	0.0	0.0				0.4		
3	Cr (µg/L)	3.5		0.0	0.0	0.4	1.2				21.5		
4	Cu (µg/L)						10.5				2.0		1.0
5	Hg (µg/L)	0.0											
6	Ni (µg/L)	1.0		2.9	0.4	0.6	2.0				0.5		
7	Pb (µg/L)	1.0		16.0	2.0	12.8	0.6				16.7		
8	Zn (µg/L)	45.0		100.2	0.0	22.1	19.8				27.0	0.1	62.3
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	83	65	66	72	48	69	67	71	72	63	68	96
2	HAR_Total (mgCaCO ₃ /L)	140	124	137	133	136	133	129	137	126	118	123	169
3	Na% (%)	32	29	24	21	25	28	30	29	27	27	27	20
4	RSC (-)	0.4	0.3	0.0	0.0	0.1	0.4	0.2	0.1	0.1	0.3	0.1	0.0
5	SAR (-)	1.1	0.9	0.8	0.6	0.8	0.9	1.0	1.0	0.9	0.8	0.9	0.6
PESTICIDES													
1	Aldrin (µg/L)	0.0		0.0	0.0	0.0	0.0						
2	BHC (µg/L)	0.1		0.0	0.1	0.0	0.0						
3	DDT (µg/L)	0.1		0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)	0.0		0.0	0.0	0.0	0.0						
5	Endos (µg/L)	0.1		0.1	0.1	0.0	0.0						

Water Quality Seasonal Average for the period: 2006-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Summer											
		Mar - May											
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)		138.6	30.02	22.85	95.23	35.22	79.40	107.6	65.03	7.691	64.81	16.56
2	EC_FLD ($\mu\text{mho}/\text{cm}$)										924	554	650
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	506	466	404	393	397	381	436	416	357	494	306	315
4	pH_FLD (pH units)										7.0	6.8	
5	pH_GEN (pH units)	8.6	8.4	8.3	8.5	8.4	8.4	8.4	8.2	8.2	8.6	8.4	8.3
6	TDS (mg/L)			300	231	278	227	263	269	242	246	212	178
7	Temp (deg C)	27.7	26.2	30.0	30.0	29.3	29.3	29.7	29.3	29.3	28.0	28.3	27.0
8	Turb (NTU)			0.4	0.4	1.4	0.0	0.8	4.7	5.0	15.3	7.0	7.3
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	5.2	6.0	10.0	13.0	10.7	4.2	2.8	0.0	1.2	4.9	3.2	5.5
2	ALK-TOT (mgCaCO ₃ /L)	168	168	135	143	152	151	162	158	146	138	129	131
3	B (mg/L)	0.03	3.09	0.18	0.03	0.13	0.03	0.26	0.14	0.11			0.09
4	Ca (mg/L)	30	20	27	25	23	27	32	30	31	27	33	29
5	Cl (mg/L)	36.3	31.7	39.5	39.9	37.5	30.6	25.7	22.4	18.6	24.2	25.6	26.4
6	CO ₃ (mg/L)	6.3	7.3	12.1	15.6	12.9	5.1	3.4	0.0	1.4	5.9	3.8	6.6
7	F (mg/L)	0.18	0.39	0.73	0.44	0.44	1.19	0.95	0.33	0.39	0.29	0.40	0.50
8	Fe (mg/L)	0.1	0.3	0.2	0.2	0.5	0.2	0.1	0.3	0.1	0.0	0.0	0.1
9	HCO ₃ (mg/L)	192	190	140	142	160	174	190	193	175	157	150	146
10	K (mg/L)	2.5	3.8	3.9	3.7	3.6	3.4	3.4	3.0	3.0	3.2	3.0	0.3
11	Mg (mg/L)	21.4	21.2	19.5	17.8	21.7	15.1	18.2	17.2	17.5	16.0	18.9	16.0
12	Na (mg/L)	42.6	40.0	26.7	35.4	33.8	32.6	36.4	33.7	28.1	34.1	26.1	33.6
13	NH ₃ -N (mg N/L)	0.06	0.31	0.20	0.25	0.22	0.04	0.02	0.02	0.02	0.01	0.97	0.10
14	NO ₂ +NO ₃ (mg N/L)	0.54	0.36	0.21	0.08	0.14	0.13	0.94	0.86	0.12	0.46	0.72	4.37
15	NO ₂ -N (mg N/L)	0.01	0.03	0.02	0.01	0.01	0.02	0.00	0.00	0.02	0.03	0.00	0.03
16	NO ₃ -N (mg N/L)	0.53	0.32	0.19	0.06	0.13	0.10	0.94	0.86	0.10	0.43	0.72	4.34
17	o-PO ₄ -P (mg P/L)			0.000	0.013	0.015	0.019	0.070	0.001	0.100	0.077	0.133	0.700
18	P-Tot (mgP/L)	0.074	0.309										
19	SiO ₂ (mg/L)	17.5	15.3	18.6	11.6	34.3	14.3	15.6	18.4	16.8	21.3	18.6	13.4
20	SO ₄ (mg/L)	23.7	19.7	22.7	24.5	26.0	25.2	22.9	28.5	25.9	23.8	42.9	24.6

Water Quality Seasonal Average for the period: 2006-2018

Station Name : Bhadrachalam (AG000E7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	River Water											
		Summer											
		Mar - May											
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.7	0.7	0.5	0.9	0.9	0.7	0.7	1.3	0.7	1.5	1.1	1.7
2	COD (mg/L)	20.0	6.3	2.3	10.5	5.8	7.0	3.6	5.7	4.1	2.3	7.0	17.8
3	DO (mg/L)	6.1	5.7	6.1	6.0	6.2	6.2	6.6	6.3	5.8	6.4	7.1	6.5
4	DO_SAT% (%)	78	70	75	79	80	81	86	82	75	81	91	81
5	FCol-MPN (MPN/100mL)	510	1667	2167	10933	7433	1667	990	180	14	7233	673	8400
6	Tcol-MPN (MPN/100mL)	610	2133	2933	11100	9133	4133	7100	390	1070	11600	5933	8550
7	TOC (mg/L)		2.0	1.5	2.7	1.8	1.8	2.1	9.3	8.0			
	TRACE & TOXIC												
1	As (µg/L)				0.5		0.5	3.7	4.2	0.6	0.0	0.5	0.5
2	Cd (µg/L)	3.0	0.7	1.5	0.0	0.0	0.1	1.1	0.0	1.0	0.0	0.0	0.9
3	Cr (µg/L)	18.0	6.2	0.0	0.0	0.6	0.8	0.3	0.4	0.0	0.0	0.0	0.0
4	Cu (µg/L)						5.0	0.6	3.0			2.4	2.4
5	Hg (µg/L)	4.5	0.2				1.8	0.5	0.4	0.2	0.0	0.3	0.3
6	Ni (µg/L)	1.0	6.7	0.0	0.3	1.3	2.4	9.6	4.5	4.9	0.0	3.1	3.6
7	Pb (µg/L)	54.0	19.1	15.0	0.0	14.8	8.9	4.1	0.0	12.0	0.0	0.0	16.0
8	Zn (µg/L)	25.0	16.1	5.9	73.3	15.2	18.9	12.7	10.5	25.0	2.0	4.3	53.1
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO ₃ /L)	76	49	68	62	58	68	80	74	77	68	83	72
2	HAR_Total (mgCaCO ₃ /L)	165	138	150	136	148	131	155	146	150	134	162	138
3	Na% (%)	35	38	27	35	33	35	33	33	29	35	26	35
4	RSC (-)	0.1	0.6	0.1	0.2	0.1	0.4	0.2	0.3	0.2	0.1	0.0	0.2
5	SAR (-)	1.4	1.5	1.0	1.3	1.2	1.2	1.3	1.2	1.0	1.3	0.9	1.3
	PESTICIDES												
1	Aldrin (µg/L)	0.0	0.0	0.0	0.0	0.0	0.0						
2	BHC (µg/L)	0.1	0.0	0.0	0.1	0.2	0.0						
3	DDT (µg/L)	0.1	0.0	0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)	0.0	0.0	0.0	0.0	0.0	0.0						
5	Endos (µg/L)	0.1	0.1	0.0	0.0	0.0	0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Perur	Code	: AG000G7
State	: Andhra Pradesh	District	Khammam
Basin	: Godavari	Independent River	: Godavari
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Godavari
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Lower Godavari 1, Bhadrachalam
Drainage Area	: 268200 Sq. Km.	Bank	: Left
Latitude	: 18°33'00"	Longitude	: 80°22'00"
	Opening Date	Closing Date	
Gauge	: 11.03.1964		
Discharge	: 17.09.1965		
Sediment	: 24.02.1968		
Water Quality	: 24.10.1968		

Water Quality Datasheet for the period : 2017-2018

Station Name : Perur (AG000G7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1	Q (cumec)	13.31	901.5	1408	7350	1594	475.9	130.7	68.63	28.98	5.023	0.000	2.099
2	Colour_Cod (-)		Brown	Brown			Clear						
3	EC_FLD ($\mu\text{mho}/\text{cm}$)	792	336	706	707	406	626	942	720	731	669	1003	715
4	EC_GEN ($\mu\text{mho}/\text{cm}$)	355	135	161	86	146	222	264	216	310	220	282	343
5	Odour_Code (-)		odour free	odour free			odour free						
6	pH_FLD (pH units)	7.0	5.6	4.4	6.5	8.9	6.5	7.4	7.2	6.7	7.5	7.4	3.9
7	pH_GEN (pH units)	7.9	7.0	7.7	7.6	7.8	7.7	8.0	8.2	8.0	8.3	8.5	8.1
8	TDS (mg/L)	197	105	122	58	120	125	164	171	179	167	193	106
9	Temp (deg C)	29.0	30.5	32.3	28.0	30.5	30.0	24.0	22.0	18.0	25.0	25.0	29.5
10	Turb (NTU)	6.0	409.0	134.0	352.0	67.0	31.0	11.0	8.0	8.0	3.0	8.0	2.0
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	12.4	0.0
2	ALK-TOT (mgCaCO ₃ /L)	156	70	92	68	92	108	121	145	122	132	141	145
3	B (mg/L)					0.09	0.04	0.12	0.01	0.03	0.05	0.02	0.31
4	Ca (mg/L)	31	18	24	17	24	23	35	36	30	29	26	24
5	Cl (mg/L)	22.1	12.8	11.1	19.1	15.7	16.3	19.7	17.4	21.5	19.5	21.3	30.7
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	14.9	0.0
7	F (mg/L)	0.36	0.14	0.16	0.09	0.15	0.16	0.22	0.37	0.27	0.29	0.35	0.65
8	Fe (mg/L)	0.0	7.8	7.4	5.8	0.2	1.1	0.3	0.1	0.2	0.0	0.1	0.3
9	HCO ₃ (mg/L)	190	85	112	83	112	132	148	176	149	141	141	177
10	K (mg/L)	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.4
11	Mg (mg/L)	21.4	11.5	15.0	11.8	18.1	21.3	7.6	17.1	9.6	22.9	12.3	12.7
12	Na (mg/L)	26.4	8.8	8.4	7.0	9.7	13.7	15.5	19.1	20.5	23.0	28.0	30.0
13	NH ₃ -N (mg N/L)	0.01	0.04	0.04	0.09	0.10	4.08	0.06	0.02	1.02	0.05	0.21	0.12
14	NO ₂ +NO ₃ (mg N/L)	3.75	3.79	1.98	3.27	7.67	7.10	6.55	7.34	8.10	4.76	7.35	3.79
15	NO ₂ -N (mgN/L)	0.00	0.04	0.01	0.01	0.06	0.01	0.02	0.00	0.01	0.02	0.01	0.02
16	NO ₃ -N (mgN/L)	3.75	3.75	1.97	3.25	7.61	7.09	6.53	7.34	8.09	4.74	7.34	3.77
17	o-PO ₄ -P (mg P/L)	0.020	0.070	0.230	0.430	0.330	0.550	0.420	0.350	0.340	0.470	1.030	0.440
18	SiO ₂ (mg/L)	6.1	5.8	14.8	13.3	13.5	18.8	17.7	17.4	14.1	15.5	16.1	7.8
19	SO ₄ (mg/L)	15.9	5.5	10.7	16.7	22.4	15.8	12.3	13.0	14.1	26.2	21.5	1.2

Water Quality Datasheet for the period : 2017-2018

Station Name : Perur (AG000G7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	0.5	1.0	0.1	0.4	0.7	0.8	0.7	0.5	0.6	0.9	0.5	1.7
2	COD (mg/L)	4.2	10.9	29.8	18.1	24.6	24.6	3.9	3.1	4.8	24.5	6.2	13.3
3	DO (mg/L)	6.4	6.8	6.9	6.8	7.6	7.2	7.4	7.7	7.4	6.8	6.2	6.5
4	DO_SAT% (%)	83	90	95	87	100	95	88	88	78	82	75	85
5	FCol-MPN (MPN/100mL)	2	3000	20	2800	20	2800	20	20	20	20	20	270
6	Tcol-MPN (MPN/100mL)	500	3000	20	2800	20	2800	20	20	20	20	20	270
TRACE & TOXIC													
1	As (µg/L)												0.7
2	Cd (µg/L)												0.7
3	Cr (µg/L)												0.0
4	Cu (µg/L)		4.0	9.0	5.0	7.0	3.0	4.0	2.0	3.0	2.0	2.4	1.0
5	Hg (µg/L)												0.0
6	Ni (µg/L)												2.0
7	Pb (µg/L)												16.0
8	Zn (µg/L)	28.8	22.6	94.2	64.0	20.0	22.0	67.0	141.4	46.8	21.5	31.5	36.5
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	78	44	59	42	60	57	87	91	76	71	65	61
2	HAR_Total (mgCaCO ₃ /L)	167	92	122	91	136	145	118	162	116	167	117	114
3	Na% (%)	26	17	13	14	13	17	22	20	28	23	34	36
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.5	0.6
5	SAR (-)	0.9	0.4	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.8	1.1	1.2
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : Perur (AG000G7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	19085	0.000	911.7
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	12	1003	336	696
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	355	86	228
4	pH_FLD (pH units)	12	8.9	3.9	6.6
5	pH_GEN (pH units)	12	8.5	7.0	7.9
6	TDS (mg/L)	12	197	58	142
7	Temp (deg C)	12	32.3	18.0	27
8	Turb (NTU)	12	409.0	2.0	86.6
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	12.4	0.0	1.7
2	ALK-TOT (mgCaCO ₃ /L)	12	156	68	116
3	B (mg/L)	8	0.31	0.01	0.08
4	Ca (mg/L)	12	36	17	26
5	Cl (mg/L)	12	30.7	11.1	18.9
6	CO ₃ (mg/L)	12	14.9	0.0	2.1
7	F (mg/L)	12	0.65	0.09	0.27
8	Fe (mg/L)	12	7.8	0.0	2
9	HCO ₃ (mg/L)	12	190	83	137
10	K (mg/L)	12	0.4	0.1	0.2
11	Mg (mg/L)	12	22.9	7.6	15.1
12	Na (mg/L)	12	30.0	7.0	17.5
13	NH ₃ -N (mg N/L)	12	4.08	0.01	0.49
14	NO ₂ +NO ₃ (mg N/L)	12	8.10	1.98	5.45
15	NO ₂ -N (mgN/L)	12	0.06	0.00	0.02
16	NO ₃ -N (mgN/L)	12	8.09	1.97	5.44
17	o-PO ₄ -P (mg P/L)	12	1.030	0.020	0.39
18	SiO ₂ (mg/L)	12	18.8	5.8	13.4
19	SO ₄ (mg/L)	12	26.2	1.2	14.6
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	1.7	0.1	0.7
2	COD (mg/L)	12	29.8	3.1	14
3	DO (mg/L)	12	7.7	6.2	7
4	DO_SAT% (%)	12	100	75	87
5	FCol-MPN (MPN/100mL)	11	3000	2	817
6	Tcol-MPN (MPN/100mL)	11	3000	20	863
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	0.7	0.7	0.7
2	Cd ($\mu\text{g}/\text{L}$)	1	0.7	0.7	0.7
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	11	9.0	1.0	3.9
5	Hg ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
6	Ni ($\mu\text{g}/\text{L}$)	1	2.0	2.0	2
7	Pb ($\mu\text{g}/\text{L}$)	1	16.0	16.0	16
8	Zn ($\mu\text{g}/\text{L}$)	12	141.4	20.0	49.7
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	91	42	66
2	HAR_Total (mgCaCO ₃ /L)	12	167	91	129
3	Na% (%)	12	36	13	22
4	RSC (-)	12	0.6	0.0	0.1
5	SAR (-)	12	1.2	0.3	0.7
PESTICIDES					

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Perur (AG000G7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Flood															
		Jun - Oct															
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
PHYSICAL																	
1	Q (cumec)	3369	1894	3955	7563	5924	2914	1847	7256	4446	5004	3694	2913	2237	5176	2253	
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														579	589	
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	229	224	244	214	247	283	289	210	260	237	255	289	219	226	176	
4	pH_FLD (pH units)														6.2	6.5	
5	pH_GEN (pH units)	8.2	8.1	8.3	8.1	8.3	8.2	8.1	8.0	8.3	8.1	7.8	8.0	7.3	8.2	7.6	
6	TDS (mg/L)						191	182	146	192	181	180	217	166	161	120	
7	Temp (deg C)	28.9	28.2	28.6	28.3	28.3	27.8	27.0	27.7	29.3	28.4	30.1	29.9	28.1	29.3	30.1	
8	Turb (NTU)						35.1	7.6	58.6	4.7	21.8	8.2	49.6	67.0	137.8	193.6	
CHEMICAL																	
1	Alk-Phen (mgCaCO ₃ /L)	2.8	1.2	6.2	1.3	2.4	1.6	6.1	3.2	3.5	0.0	0.0	0.0	0.0	0.6	0.0	
2	ALK-TOT (mgCaCO ₃ /L)	97	95	93	92	71	87	98	77	100	86	96	100	88	97	95	
3	B (mg/L)	0.01	0.05	0.09	0.09	0.11	0.11	0.13	0.07	0.10	0.21	0.08	0.22	0.08		0.09	
4	Ca (mg/L)	27	28	24	21	16	22	18	17	18	21	22	21	19	17	23	
5	Cl (mg/L)	25.2	14.9	13.6	17.8	25.5	34.5	26.7	16.1	18.7	12.2	9.9	11.5	7.2	8.1	16.2	
6	CO ₃ (mg/L)	3.4	1.4	7.4	1.6	2.8	1.9	7.3	3.8	4.2	0.0	0.0	0.0	0.0	0.7	0.0	
7	F (mg/L)	0.53	0.30	0.18	3.44	0.24	0.41	0.34	0.33	0.29	0.22	0.35	0.37	0.22	0.11	0.18	
8	Fe (mg/L)	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	4.2	
9	HCO ₃ (mg/L)	112	113	99	109	81	102	105	87	114	105	117	122	108	117	116	
10	K (mg/L)	2.0	2.5	2.7	2.5	2.3	2.9	2.7	2.4	2.7	2.6	2.1	2.4	2.7	2.3	0.2	
11	Mg (mg/L)	5.2	6.6	5.7	6.5	8.2	8.8	12.3	8.7	12.2	9.9	11.8	10.0	9.6	9.2	15.6	
12	Na (mg/L)	18.4	11.5	15.2	14.5	19.1	23.0	20.1	14.1	16.7	17.3	15.8	25.9	17.3	15.6	12.0	
13	NH ₃ -N (mg N/L)	0.01	0.04	0.12	0.05	0.31	0.06	0.17	0.09	0.22	0.02	0.05	0.06	0.00	0.00	0.06	
14	NO ₂ +NO ₃ (mg N/L)	0.56	0.65	0.59	0.61	1.92	0.96	0.35	0.48	0.49	0.83	0.58	0.27	0.66	0.67	4.09	
15	NO ₂ -N (mgN/L)			0.01	0.05	0.02	0.05	0.10	0.02	0.02	0.01	0.00	0.00	0.01	0.01	0.32	0.02
16	NO ₃ -N (mgN/L)	0.56	0.65	0.54	0.60	1.87	0.86	0.32	0.45	0.48	0.83	0.58	0.26	0.65	0.35	4.07	
17	o-PO ₄ -P (mg P/L)	0.023	0.035	0.019			0.017	0.011	0.017	0.023	0.166	0.065	0.125	0.134	0.091	0.216	
18	P-Tot (mgP/L)					0.036	0.010										
19	SiO ₂ (mg/L)	19.0	16.8	21.0	10.0	15.6	18.0	16.8	14.4	23.4	13.8	15.3	14.7	13.7	15.4	10.7	
20	SO ₄ (mg/L)	11.4	5.4	7.0	5.0	12.6	12.0	14.1	8.9	12.8	19.6	19.3	31.6	13.5	7.3	14.2	

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Perur (AG000G7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water

S.No	Parameters	Flood														
		Jun - Oct														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.6	0.6	0.8	0.4	0.6	0.9	0.5	1.4	1.0	0.8	1.0	0.7	1.1	0.8	0.5
2	COD (mg/L)	23.7	51.9	28.9	4.2	23.6	3.4	2.8	8.4	4.8	9.9	7.6	9.9	4.3	4.8	17.5
3	DO (mg/L)	6.1	6.1	5.7	5.9	5.6	5.8	5.5	5.8	6.1	6.2	6.2	6.1		6.4	6.9
4	DO_SAT% (%)	78	78	74	76	71	73	69	74	80	79	81	80		83	91
5	FCol-MPN (MPN/100mL)			648	7480	9714	9662	2762	7420	13250	870	468	3727	2706	3961	1168
6	Tcol-MPN (MPN/100mL)			648	10800	9742	9674	4396	8230	14250	3938	5000	5488	11434	11500	1268
7	TOC (mg/L)		6.3			0.9	2.2	1.5	1.7	1.8	1.5	0.4	6.2	2.3		
TRACE & TOXIC																
1	As (µg/L)											10.1				
2	Cd (µg/L)					0.0						0.2				
3	Cr (µg/L)					15.7						2.0				
4	Cu (µg/L)											0.2				6.3
5	Hg (µg/L)					0.0										
6	Ni (µg/L)					7.6						1.6				
7	Pb (µg/L)					11.7						1.0				
8	Zn (µg/L)					335.9						94.2				45.9
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	67	70	61	52	40	55	45	43	44	52	55	53	46	42	57
2	HAR_Total (mgCaCO ₃ /L)	89	97	84	79	74	91	97	79	95	93	104	95	86	80	121
3	Na% (%)	28	16	27	23	31	32	25	25	25	25	23	33	29	26	17
4	RSC (-)	0.2	0.1	0.2	0.3	0.2	0.0	0.1	0.0	0.2	0.2	0.1	0.2	0.1	0.4	0.0
5	SAR (-)	0.8	0.5	0.7	0.6	0.9	1.0	0.8	0.7	0.7	0.8	0.7	1.1	0.8	0.7	0.5
PESTICIDES																
1	Aldrin (µg/L)					0.0										
2	BHC (µg/L)					0.1										
3	DDT (µg/L)					0.1										
4	Die�drin (µg/L)					0.1										
5	Endos (µg/L)					0.1										

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Perur (AG000G7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Winter															
		Nov - Feb															
		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	
PHYSICAL																	
1	Q (cumec)	560.8	201.1	625.7	429.4	326.1	207.4	153.0	678.9	215.3	309.2	947.3	272.3	144.0	289.0	176.1	
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														976	692	755
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	277	243	379	398	312	369	298	340	342	345	358	259	607	299	253	
4	pH_FLD (pH units)														6.7	6.4	7.0
5	pH_GEN (pH units)	8.6	8.4	8.5	8.5	7.9	8.3	8.4	8.4	8.4	7.9	7.8	7.9	8.3	8.3	8.0	
6	TDS (mg/L)						241	180	230	243	210	230	194	172	183	160	
7	Temp (deg C)	25.5	24.8	24.9	26.0	26.1	25.9	24.3	26.0	26.5	24.9	26.3	23.5	26.5	25.9	23.5	
8	Turb (NTU)						1.6	1.6	2.2	0.0	1.8	11.0	2.8	5.5	3.6	14.5	
CHEMICAL																	
1	Alk-Phen (mgCaCO ₃ /L)	3.6	8.1	7.7	7.0	3.0	7.4	8.8	11.7	4.1	1.1	0.0	0.0	0.5	3.0	0.0	
2	ALK-TOT (mgCaCO ₃ /L)	115	115	152	158	123	139	134	135	153	147	127	122	129	131	124	
3	B (mg/L)	0.08	0.10	0.10	0.07	0.16	0.03	0.17	0.16	0.12	0.11	0.04	0.15	0.00		0.05	
4	Ca (mg/L)	39	29	38	26	24	29	32	26	28	26	26	27	25	29	31	
5	Cl (mg/L)	12.8	21.0	19.8	23.5	23.7	31.5	17.5	24.9	18.1	14.9	14.8	14.6	12.9	11.7	18.7	
6	CO ₃ (mg/L)	4.3	9.7	9.2	8.4	3.6	8.9	10.7	14.2	4.9	1.3	0.0	0.0	0.6	3.6	0.0	
7	F (mg/L)	0.41	0.30	0.42	0.18	0.35	0.47	0.41	0.31	0.58	0.43	0.31	0.29	0.23	0.37	0.25	
8	Fe (mg/L)	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.0	0.1	0.1	0.0	0.0	0.4	
9	HCO ₃ (mg/L)	132	121	167	176	143	152	142	136	177	177	155	149	156	152	151	
10	K (mg/L)	1.8	2.3	2.6	1.8	2.4	2.6	2.3	2.6	2.5	1.9	2.5	2.2	2.3	3.0	0.2	
11	Mg (mg/L)	3.3	5.2	7.2	18.1	11.1	16.5	14.0	15.2	15.0	16.7	16.9	12.7	12.3	13.9	13.9	
12	Na (mg/L)	19.8	19.0	23.5	26.5	21.4	22.0	13.4	21.1	25.4	23.4	23.4	21.7	23.1	25.7	17.2	
13	NH ₃ -N (mg N/L)	0.17	0.04	0.08	0.05	0.23	0.07	0.07	0.15	0.16	0.01	0.00	0.08	0.01	0.27	1.29	
14	NO ₂ +NO ₃ (mg N/L)	0.52	0.27	0.25	0.25	1.59	0.10	0.08	0.25	0.10	0.79	0.42	0.18	0.40	0.53	7.27	
15	NO ₂ -N (mgN/L)		0.01	0.01	0.00	0.05	0.03	0.01	0.02	0.02	0.00	0.00	0.02	0.00	0.04	0.01	
16	NO ₃ -N (mgN/L)	0.52	0.26	0.25	0.25	1.54	0.06	0.07	0.23	0.08	0.79	0.42	0.15	0.40	0.48	7.26	
17	o-PO ₄ -P (mg P/L)	0.022	0.017	0.017			0.007	0.016	0.022	0.009	0.096	0.023	0.061	0.061	0.066	0.415	
18	P-Tot (mgP/L)				0.017	0.108											
19	SiO ₂ (mg/L)	14.0	11.8	19.5	19.0	15.9	17.5	15.1	36.5	12.7	20.2	20.3	17.4	15.8	14.6	17.0	
20	SO ₄ (mg/L)	10.3	2.3	8.8	14.3	13.3	16.6	11.5	15.2	17.0	14.4	20.5	19.9	22.4	14.3	13.8	

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Perur (AG000G7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	River Water														
		Winter Nov - Feb														
		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.5	0.6	0.6	0.5	0.6	0.3	0.7	1.2	0.5	0.8	1.3	0.7	1.4	1.1	0.7
2	COD (mg/L)	24.6	25.9	21.5	15.7	20.3	1.4	6.3	3.1	8.7	11.5	10.4	5.3	4.1	5.2	9.1
3	DO (mg/L)	6.8	6.5	7.3	7.1	6.5	6.5	6.8	6.8	6.4	7.2	7.3	7.8	6.3	7.2	7.4
4	DO_SAT% (%)	84	78	88	87	80	80	81	84	79	87	90	92	76	88	87
5	FCol-MPN (MPN/100mL)			5363	3000	1275	4165	13250	16000	5383	79	634	976	4311	4606	715
6	Tcol-MPN (MPN/100mL)			5707	7733	2050	4233	16000	16000	8808	525	813	2551	8770	6025	715
7	TOC (mg/L)		10.6			0.8	1.9	1.5	1.3	1.2	1.3	5.0	9.3	3.3		
TRACE & TOXIC																
1	As (µg/L)							0.1		0.1						
2	Cd (µg/L)				1.0		0.8	0.4	0.0	0.0			0.0			
3	Cr (µg/L)				5.0		0.0	0.0	0.0	0.7			1.5			
4	Cu (µg/L)									9.1			1.4		1.0	3.0
5	Hg (µg/L)				0.0											
6	Ni (µg/L)				1.0		2.4	2.3	0.0	0.7			0.0			
7	Pb (µg/L)				50.0		15.0	0.0	0.0	0.6			2.1			
8	Zn (µg/L)				71.0		8.8	20.8	3.8	16.6			6.0		0.1	69.3
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	97	73	96	65	60	73	79	65	69	64	66	66	63	72	77
2	HAR_Total (mgCaCO ₃ /L)	111	94	125	140	106	141	137	129	132	134	136	119	114	129	135
3	Na% (%)	28	30	28	29	28	25	17	26	29	28	26	28	30	29	22
4	RSC (-)	0.1	0.4	0.5	0.5	0.4	0.0	0.1	0.2	0.5	0.4	0.1	0.1	0.3	0.1	0.1
5	SAR (-)	0.8	0.9	0.9	1.0	0.9	0.8	0.5	0.8	1.0	0.9	0.9	0.9	0.9	1.0	0.7
PESTICIDES																
1	Aldrin (µg/L)					0.0		0.0	0.0	0.0	0.0					
2	BHC (µg/L)					0.1		0.0	0.2	0.1	0.0					
3	DDT (µg/L)					0.1		0.0	0.0	0.0	0.0					
4	Dieldrin (µg/L)					0.0		0.0	0.0	0.0	0.0					
5	Endos (µg/L)					0.1		0.0	0.0	0.0	0.0					

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Perur (AG000G7)

Local River : Godavari

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

S.No	Parameters	Summer															
		Mar - May															
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
PHYSICAL																	
1	Q (cumec)	56.09	49.36	80.80	62.17	79.31	28.60	26.50	104.8	21.54	71.24	103.9	57.31	22.67	62.03	2.374	
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														947	895	796
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	397	327	456	445	466	498	379	396	462	443	429	379	493	346	282	
4	pH_FLD (pH units)														6.6	7.0	6.2
5	pH_GEN (pH units)	8.5	8.2	8.5	8.6	8.4	8.3	8.3	8.4	8.4	8.3	8.2	7.7	8.3	8.2	8.3	
6	TDS (mg/L)						291	233	293	311	338	254	229	223	211	155	
7	Temp (deg C)	28.0	26.2	25.5	26.8	26.0	27.0	25.8	28.0	27.8	28.7	28.0	25.7	28.5	28.2	26.5	
8	Turb (NTU)						0.4	0.9	0.9	0.0	0.8	4.0	5.0	6.0	10.3	4.3	
CHEMICAL																	
1	Alk-Phen (mgCaCO ₃ /L)	11.7	3.5	6.8	6.5	7.4	7.1	10.4	10.0	2.8	1.4	0.0	0.0	3.2	2.5	6.9	
2	ALK-TOT (mgCaCO ₃ /L)	151	137	170	170	166	158	145	152	170	165	167	140	361	156	139	
3	B (mg/L)	0.04	0.13	0.13	0.02	0.12	0.24	0.05	0.14	0.03	0.24	0.13	0.03			0.13	
4	Ca (mg/L)	36	37	31	25	20	30	26	24	26	30	30	27	27	38	26	
5	Cl (mg/L)	21.7	23.3	28.8	35.3	33.0	42.9	30.6	36.5	28.1	22.0	20.8	16.7	19.2	24.0	23.8	
6	CO ₃ (mg/L)	14.0	4.2	8.1	7.9	8.9	8.6	12.5	12.0	3.4	1.7	0.0	0.0	3.8	3.0	8.3	
7	F (mg/L)	0.53	0.46	0.49	0.28	0.43	0.64	0.44	0.48	0.71	0.60	0.47	0.41	0.10	0.40	0.43	
8	Fe (mg/L)	0.0	0.2	0.2	0.1	0.3	0.3	0.3	0.5	0.2	0.2	0.1	0.0	0.0	0.0	0.2	
9	HCO ₃ (mg/L)	156	158	191	191	184	175	152	161	200	198	204	171	433	184	153	
10	K (mg/L)	2.6	3.5	3.2	2.5	3.0	3.9	3.7	3.5	3.5	3.0	3.0	2.9	3.1	3.0	0.3	
11	Mg (mg/L)	7.3	4.5	14.7	24.1	20.8	20.5	14.5	19.4	14.1	17.5	17.2	15.5	13.7	16.8	16.0	
12	Na (mg/L)	22.9	25.7	30.0	38.7	36.1	32.7	29.0	34.8	33.2	31.7	34.4	30.8	31.6	27.0	27.0	
13	NH ₃ -N (mg N/L)	0.35	0.16	0.04	0.05	0.24	0.14	0.21	0.17	0.05	0.01	0.02	0.02	0.19	0.31	0.13	
14	NO ₂ +NO ₃ (mg N/L)	0.01	0.12	0.34	0.48	0.23	0.20	0.12	0.10	0.12	0.63	0.56	0.14	0.62	1.15	5.30	
15	NO ₂ -N (mgN/L)		0.01	0.00	0.02	0.04	0.02	0.01	0.01	0.01	0.00	0.00	0.02	0.03	0.04	0.02	
16	NO ₃ -N (mgN/L)	0.01	0.10	0.34	0.46	0.19	0.18	0.10	0.10	0.11	0.63	0.56	0.12	0.59	1.11	5.28	
17	o-PO ₄ -P (mg P/L)	0.000	0.017	0.020			0.000	0.008	0.028	0.074	0.062	0.007	0.123	0.086	0.163	0.647	
18	P-Tot (mgP/L)				0.109	0.309											
19	SiO ₂ (mg/L)	10.7	7.0	19.3	16.9	16.0	15.3	12.4	38.4	15.1	14.2	17.5	18.3	22.5	17.9	13.1	
20	SO ₄ (mg/L)	15.7	8.3	18.7	18.0	19.0	20.5	20.8	25.8	23.7	15.5	28.7	21.9	26.2	33.8	16.3	

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Perur (AG000G7)

Local River : Godavari

Division : Lower Godavari Div., Hyderabad

Sub-Division : Lower Godavari 1, Bhadrachalam

River Water

S.No	Parameters	River Water														
		Summer							Mar - May							
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.5	0.5	0.4	0.5	0.7	0.5	1.0	0.7	0.6	0.7	0.9	0.9	0.9	0.8	1.0
2	COD (mg/L)	12.6	17.5	40.8	16.0	13.0	2.9	3.2	3.8	5.6	4.0	4.8	9.3	4.8	6.4	14.6
3	DO (mg/L)	6.1	6.0	5.8	5.9	5.9	6.0	5.9	6.1	6.3	5.8	6.2	6.2	5.9	6.2	6.5
4	DO_SAT% (%)	78	74	71	73	79	75	73	78	80	75	78	76	76	79	81
5	FCol-MPN (MPN/100mL)			225	533	2400	2473	8390	907	827	5411	177	28	2367	168	145
6	Tcol-MPN (MPN/100mL)			1400	913	2400	3807	10740	1107	1730	5667	373	5403	8900	193	145
7	TOC (mg/L)		3.9			1.7	1.8	3.7	2.0	1.5	2.0	3.2	7.5			
TRACE & TOXIC																
1	As (µg/L)							0.9		1.2	7.8	2.4	0.5	0.6	0.6	0.7
2	Cd (µg/L)				0.0	3.0	0.7	1.6	0.1	0.0	0.0	1.3	0.0	1.0	0.0	0.7
3	Cr (µg/L)				6.0	16.0	7.4	0.0	0.0	0.0	0.8	11.6	0.1	0.0	6.0	0.0
4	Cu (µg/L)									3.9	0.6	1.7			1.4	1.8
5	Hg (µg/L)					0.3	1.1			0.0	0.7	0.2	0.1	0.0	0.7	0.0
6	Ni (µg/L)				5.0	8.0	5.2	1.0	0.4	1.5	1.3	16.7	5.2	5.8	0.0	3.7
7	Pb (µg/L)				28.0	14.0	17.5	20.0	0.0	12.5	4.4	0.5	2.1	6.0	0.0	16.0
8	Zn (µg/L)				75.0	41.0	24.8	21.9	170.9	37.1	13.4	76.2	5.5	3.0	6.3	29.8
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	90	92	77	63	49	75	66	60	64	76	75	68	67	95	66
2	HAR_Total (mgCaCO ₃ /L)	120	110	137	164	136	161	127	141	123	148	147	133	124	165	132
3	Na% (%)	28	33	31	34	36	30	32	34	36	31	33	33	35	26	31
4	RSC (-)	0.6	0.5	0.7	0.3	0.6	0.1	0.4	0.3	1.0	0.4	0.4	0.2	4.8	0.1	0.4
5	SAR (-)	0.9	1.1	1.1	1.3	1.4	1.1	1.1	1.3	1.3	1.1	1.2	1.2	1.2	0.9	1.0
PESTICIDES																
1	Aldrin (µg/L)				0.0		0.0	0.0	0.0	0.0						
2	BHC (µg/L)				0.0		0.2	0.0	0.1	0.5	0.0					
3	DDT (µg/L)				0.0		0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)				0.0		0.0	0.0	0.0	0.0						
5	Endos (µg/L)				0.0		0.0	0.0	0.0	0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Pathagudem	Code	: AGG00B5
State	: Chhattisgarh	District	Dantewara
Basin	: Godavari	Independent River	: Godavari
Tributary	: Indravathi	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Indravathi
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Indravati SD, Jagdalpur
Drainage Area	: 40000 Sq. Km.	Bank	: Left
Latitude	: 18°49'00"	Longitude	: 80°21'00"
	Opening Date	Closing Date	
Gauge	: 01.07.1964		
Discharge	: 20.07.1964		
Sediment	: 21.07.1965		
Water Quality	: 01.01.1972		

Water Quality Datasheet for the period : 2017-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	06.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1	Q (cumec)	5.160	611.6	466.9	2438	884.8	272.8	69.78	31.32	13.47	5.975	2.601	9.186
2	Colour_Cod (-)	Clear				Light Brown	Clear		Clear		Clear	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	203	125	78	64	67	123	151	156	154	153	232	185
4	Odour_Code (-)	odour free				odour free	odour free		odour free		odour free	odour free	odour free
5	pH_GEN (pH units)	8.0	7.9	7.4	7.7	7.6	7.6	7.7	8.0	8.1	8.0	8.4	8.0
6	TDS (mg/L)	146	67	63	54	65	82	87	99	112	85	139	106
7	Temp (deg C)	31.0	31.0	29.0	28.0	26.0	24.0		17.5	25.0	22.0	28.0	29.0
8	Turb (NTU)	7.0	424.0	223.0	826.0	188.0	34.0	3.0	2.0	2.0	4.0	3.0	1.0
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	0.0
2	ALK-TOT (mgCaCO ₃ /L)	102	65	80	64	80	112	97	165	102	103	99	103
3	B (mg/L)					0.10	0.05	0.01	0.05	0.01	0.10	0.03	0.20
4	Ca (mg/L)	20	21	21	23	29	37	33	36	22	24	21	23
5	Cl (mg/L)	7.6	15.1	13.4	13.4	11.7	16.3	19.7	10.7	3.9	9.8	10.9	25.3
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	0.0
7	F (mg/L)	0.09	0.13	0.21	0.10	0.12	0.06	0.11	0.12	0.09	0.48	0.69	0.09
8	Fe (mg/L)	0.0	7.9	9.8	15.4	2.6	1.1	0.2	0.0	0.1	0.0	0.0	0.1
9	HCO ₃ (mg/L)	124	79	98	78	98	137	118	202	125	126	101	125
10	K (mg/L)	0.1	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.5
11	Mg (mg/L)	17.7	13.2	10.6	10.9	11.8	4.8	10.4	17.1	9.6	9.5	8.7	6.5
12	Na (mg/L)	3.2	7.9	9.2	6.5	7.4	7.5	7.9	8.3	8.0	6.9	6.8	28.9
13	NH ₃ -N (mg N/L)	0.05	0.02	0.04	0.08	0.02	3.61	0.01	0.03	1.00	0.05	0.04	0.16
14	NO ₂ +NO ₃ (mg N/L)	2.02	3.71	2.82	3.27	2.34	3.84	8.72	4.27	7.37	5.55	4.93	3.34
15	NO ₂ -N (mgN/L)	0.00	0.03	0.01	0.01	0.01	0.02	0.02	0.00	0.01	0.02	0.01	0.02
16	NO ₃ -N (mgN/L)	2.02	3.68	2.80	3.25	2.33	3.82	8.70	4.27	7.36	5.53	4.92	3.32
17	o-PO ₄ -P (mg P/L)	0.260	0.520	0.090	0.420	0.660	0.350	0.390	0.390	0.260	0.400	1.120	0.470
18	SiO ₂ (mg/L)	9.3	4.7	15.9	15.7	13.6	8.5	16.0	16.5	14.2	6.1	5.4	6.2
19	SO ₄ (mg/L)	0.4	38.8	1.3	20.7	4.8	2.4	1.0	13.6	3.3	2.4	8.0	0.9

Water Quality Datasheet for the period : 2017-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	06.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.1	1.6	0.6	0.2	0.9	0.3	0.7	0.8	0.8	0.2	0.4	0.5
2	COD (mg/L)	6.7	7.1	28.2	6.7	21.3	31.2	3.5	1.8	3.5	10.9	6.6	4.4
3	DO (mg/L)	6.2	6.5	6.7	6.9	7.6	7.0	7.6	8.1	7.7	6.5	6.6	6.8
4	DO_SAT% (%)	83	87	87	88	94	83		84	93	74	84	88
5	FCol-MPN (MPN/100mL)	500	5000	500	5000	5000	5000	130	20	20	20	270	
6	Tcol-MPN (MPN/100mL)	2400	5000	500	5000	5000	5000	130	20	20	20	340	
TRACE & TOXIC													
1	As (µg/L)											0.2	
2	Cd (µg/L)											0.3	
3	Cr (µg/L)											0.0	
4	Cu (µg/L)		6.0	10.0	14.0	11.0	4.0	1.0	1.0	1.0	1.0	2.6	1.0
5	Hg (µg/L)											0.0	
6	Ni (µg/L)											1.2	
7	Pb (µg/L)											8.0	
8	Zn (µg/L)	0.1	24.7	93.6	56.0	29.0	25.0	70.0	159.5	40.3	15.7	104.5	87.9
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	51	52	52	57	72	93	83	91	56	60	52	58
2	HAR_Total (mgCaCO ₃ /L)	124	107	96	102	121	113	126	162	96	99	88	85
3	Na% (%)	5	14	17	12	12	13	12	10	15	13	14	43
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.4
5	SAR (-)	0.1	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	1.4
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	15734	1.630	447.2
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	232	64	141
3	pH_GEN (pH units)	12	8.4	7.4	7.9
4	TDS (mg/L)	12	146	54	92
5	Temp (deg C)	11	31.0	17.5	26.4
6	Turb (NTU)	12	826.0	1.0	143.1
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	8.2	0.0	0.7
2	ALK-TOT (mgCaCO ₃ /L)	12	165	64	98
3	B (mg/L)	8	0.20	0.01	0.07
4	Ca (mg/L)	12	37	20	26
5	Cl (mg/L)	12	25.3	3.9	13.1
6	CO ₃ (mg/L)	12	9.9	0.0	0.8
7	F (mg/L)	12	0.69	0.06	0.19
8	Fe (mg/L)	12	15.4	0.0	3.1
9	HCO ₃ (mg/L)	12	202	78	117
10	K (mg/L)	12	0.5	0.1	0.2
11	Mg (mg/L)	12	17.7	4.8	10.9
12	Na (mg/L)	12	28.9	3.2	9
13	NH ₃ -N (mg N/L)	12	3.61	0.01	0.43
14	NO ₂ +NO ₃ (mg N/L)	12	8.72	2.02	4.35
15	NO ₂ -N (mgN/L)	12	0.03	0.00	0.01
16	NO ₃ -N (mgN/L)	12	8.70	2.02	4.33
17	o-PO ₄ -P (mg P/L)	12	1.120	0.090	0.444
18	SiO ₂ (mg/L)	12	16.5	4.7	11
19	SO ₄ (mg/L)	12	38.8	0.4	8.1
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	1.6	0.2	0.7
2	COD (mg/L)	12	31.2	1.8	11
3	DO (mg/L)	12	8.1	6.2	7
4	DO_SAT% (%)	11	94	74	86
5	FCol-MPN (MPN/100mL)	11	5000	20	1951
6	Tcol-MPN (MPN/100mL)	11	5000	20	2130
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	0.2	0.2	0.2
2	Cd ($\mu\text{g}/\text{L}$)	1	0.3	0.3	0.3
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	11	14.0	1.0	4.8
5	Hg ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
6	Ni ($\mu\text{g}/\text{L}$)	1	1.2	1.2	1.2
7	Pb ($\mu\text{g}/\text{L}$)	1	8.0	8.0	8
8	Zn ($\mu\text{g}/\text{L}$)	12	159.5	0.1	58.9
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	93	51	64
2	HAR_Total (mgCaCO ₃ /L)	12	162	85	110
3	Na% (%)	12	43	5	15
4	RSC (-)	12	0.4	0.0	0.1
5	SAR (-)	12	1.4	0.1	0.4
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	1176	627.6	3530	2258	1017	1608	1483	2300	1876	723.3	1570	1354	605.7	881.2
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														261
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	105	162	127	128	113	146	112	132	127	134	129	108	115	107
4	pH_FLD (pH units)														9.9
5	pH_GEN (pH units)	7.9	8.1	7.6	8.0	8.2	8.0	8.0	8.3	7.9	7.8	7.7	7.5	8.0	7.7
6	TDS (mg/L)					79	96	83	97	104	81	103	107	86	79
7	Temp (deg C)	29.3	29.0	30.0	29.2	28.0	28.7	29.0	27.3	28.3	29.0	25.6	26.8	28.0	29.0
8	Turb (NTU)					25.4	14.1	12.4	0.2	21.5	17.0	86.2	146.3	101.0	333.6
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	2.8	0.0	3.6	0.0	2.6	5.1	4.0	0.0	0.0	0.0	0.0	0.2	0.0
2	ALK-TOT (mgCaCO ₃ /L)	50	116	58	50	49	65	53	60	54	70	63	53	69	78
3	B (mg/L)	0.12	0.06	0.11	0.13	0.10	0.14	0.16	0.10	0.17	0.03	0.17	0.01		0.10
4	Ca (mg/L)	14	20	15	9	10	15	11	12	10	15	13	11	14	23
5	Cl (mg/L)	16.3	8.4	9.0	7.9	7.0	5.5	7.9	7.2	3.0	5.3	3.6	2.1	3.4	12.2
6	CO ₃ (mg/L)	0.0	3.4	0.0	4.3	0.0	3.1	6.2	4.8	0.0	0.0	0.0	0.0	0.2	0.0
7	F (mg/L)	0.28	0.22	0.15	0.35	0.11	0.20	0.15	0.10	0.12	0.30	0.11	0.09	0.04	0.13
8	Fe (mg/L)	0.1	0.1	0.1	0.1	0.3	0.1	0.3	0.2	0.4	0.1	0.1	0.1	0.1	7.1
9	HCO ₃ (mg/L)	61	67	71	52	60	73	53	64	65	86	77	65	84	95
10	K (mg/L)	1.3	1.9	2.0	1.7	1.4	1.7	1.6	1.6	2.3	1.8	2.1	1.9	1.8	0.2
11	Mg (mg/L)	3.8	1.9	4.8	5.5	5.2	5.9	6.1	7.9	7.2	7.7	7.0	5.4	7.5	12.8
12	Na (mg/L)	7.9	7.8	5.0	6.7	5.3	3.9	5.4	4.1	7.9	10.6	9.5	8.1	7.2	6.8
13	NH ₃ -N (mg N/L)	0.03	0.09	0.05	0.23	0.05	0.10	0.09	0.33	0.01	0.09	0.06	0.01	0.01	0.04
14	NO ₂ +NO ₃ (mg N/L)	0.59	1.53	0.29	0.63	0.27	0.22	0.15	0.13	0.22	0.39	0.30	0.25	0.39	2.83
15	NO ₂ -N (mgN/L)	0.01	0.04	0.00	0.00	0.16	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.08	0.01
16	NO ₃ -N (mgN/L)	0.58	1.49	0.29	0.63	0.11	0.21	0.13	0.13	0.22	0.39	0.29	0.24	0.30	2.82
17	o-PO ₄ -P (mg P/L)	0.058	0.024			0.006	0.023	0.009	0.013	0.160	0.175	0.215	0.101	0.045	0.390
18	P-Tot (mgP/L)			0.027	0.207										
19	SiO ₂ (mg/L)	15.3	20.2	11.4	8.8	13.4	16.1	16.7	21.2	14.0	18.3	19.5	17.3	17.5	11.8
20	SO ₄ (mg/L)	2.4	1.2	1.0	1.0	0.0	0.6	1.0	1.0	11.8	6.6	11.8	9.6	7.4	13.2

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.9	0.5	0.5	0.7	0.6	0.4	0.6	0.8	0.9	0.6	1.1	0.4	0.9	0.9
2	COD (mg/L)	12.7	28.8	30.8	17.0	5.1	1.6	2.5	7.9	16.8	7.0	10.1	17.2	13.6	14.0
3	DO (mg/L)	6.3	5.9	5.6	6.1	5.8	5.6	6.0	5.9	6.8	5.9	6.3	6.4	6.8	
4	DO_SAT% (%)	82	77	74	80	75	73	72	75	88	77	77	81	88	
5	FCol-MPN (MPN/100mL)	290	613	5867	4026	8010	6233	6140	7433	495	248	4214	1318	3715	3200
6	Tcol-MPN (MPN/100mL)	570	613	6133	4686	8010	6600	8340	11467	1013	4308	7082	4833	7440	3580
7	TOC (mg/L)	5.3			0.9	1.8	2.8	2.8	1.7	1.3	0.3	1.3	1.8		
TRACE & TOXIC															
1	As (µg/L)	0.0								11.5					
2	Cd (µg/L)	0.0			0.0					0.8					
3	Cr (µg/L)	5.8			23.7					2.1					
4	Cu (µg/L)	0.6								0.6					10.3
5	Hg (µg/L)				0.0										
6	Mn (mg/L)	0.01													
7	Ni (µg/L)				7.5					7.9					
8	Pb (µg/L)	5.5			10.8					5.3					
9	Se (µg/L)														
10	Zn (µg/L)	51.8			922.8					78.0					40.7
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	35	51	38	24	25	37	26	30	26	36	33	28	35	56
2	HAR_Total (mgCaCO ₃ /L)	51	59	58	47	47	62	52	63	56	68	62	51	67	110
3	Na% (%)	25	24	14	24	19	11	18	14	23	25	25	25	19	12
4	RSC (-)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
5	SAR (-)	0.5	0.5	0.3	0.4	0.3	0.2	0.3	0.2	0.5	0.6	0.5	0.5	0.4	0.3
PESTICIDES															
1	Aldrin (µg/L)				0.0										
2	BHC (µg/L)				0.1										
3	DDT (µg/L)				0.1										
4	Dieldrin (µg/L)				0.0										
5	Endos (µg/L)				0.1										

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Winter														
		Nov - Feb														
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	
PHYSICAL																
1	Q (cumec)	106.4	142.8	85.68	112.4	50.73	30.61	180.5	46.93	80.61	342.4	141.1	50.65	69.61	96.84	
2	EC_FLD ($\mu\text{mho}/\text{cm}$)													193		
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	136	165	184	163	152	145	142	319	219	132	134	334	135	146	
4	pH_FLD (pH units)													7.1		
5	pH_GEN (pH units)	7.9	8.2	8.3	8.0	8.2	8.3	8.2	8.1	8.0	8.0	7.8	7.7	8.1	7.8	
6	TDS (mg/L)					107	99	103	233	131	96	89	83	91	95	
7	Temp (deg C)	24.3	25.3	24.0	26.0	25.3	22.7	24.5	23.0	24.8	24.5	23.3	24.0	26.5	22.2	
8	Turb (NTU)					1.9	1.1	6.3	0.0	1.0	10.0	2.8	1.1	2.3	10.3	
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	2.0	5.0	1.6	2.0	1.5	2.6	1.4	2.7	0.0	0.0	0.0	2.6	0.0	0.0	
2	ALK-TOT (mgCaCO ₃ /L)	64	135	94	70	71	74	68	185	108	69	67	79	85	119	
3	B (mg/L)	0.08	0.11	0.02	0.21	0.00	0.12	0.15	0.13	0.07	0.07	0.16	0.00		0.03	
4	Ca (mg/L)	17	15	27	16	18	15	15	31	19	14	16	14	17	32	
5	Cl (mg/L)	14.4	6.8	10.5	10.4	9.3	7.8	6.6	6.5	10.8	3.2	2.9	2.0	3.3	12.6	
6	CO ₃ (mg/L)	2.4	6.0	1.9	2.4	1.8	3.2	1.6	3.3	0.0	0.0	0.0	3.2	0.0	0.0	
7	F (mg/L)	0.18	0.21	0.09	0.18	0.15	0.26	0.09	0.85	0.34	0.07	0.12	0.06	0.22	0.09	
8	Fe (mg/L)	0.0	0.1	0.0	0.2	0.4	0.2	0.3	0.2	0.0	0.3	0.1	0.0	0.2	0.3	
9	HCO ₃ (mg/L)	74	76	111	81	83	83	80	219	132	84	82	90	104	145	
10	K (mg/L)	1.7	1.2	1.1	1.2	1.0	1.2	1.6	1.6	0.9	1.7	1.5	1.4	2.1	0.2	
11	Mg (mg/L)	2.7	6.5	5.1	6.2	6.1	8.5	8.0	15.8	10.7	7.6	7.8	6.8	8.4	10.5	
12	Na (mg/L)	13.3	6.0	5.5	5.9	5.9	4.5	3.3	16.7	14.8	10.3	9.1	8.7	8.8	7.9	
13	NH ₃ -N (mg N/L)	0.04	0.07	0.05	0.14	0.07	0.11	0.12	0.17	0.01	0.04	0.06	0.01	0.43	1.16	
14	NO ₂ +NO ₃ (mg N/L)	0.55	0.24	0.19	0.40	0.12	0.10	0.16	0.26	0.46	0.12	0.06	0.32	0.28	6.05	
15	NO ₂ -N (mgN/L)	0.01	0.00	0.00	0.02	0.04	0.00	0.02	0.03	0.00	0.00	0.02	0.02	0.04	0.01	
16	NO ₃ -N (mgN/L)	0.53	0.24	0.19	0.39	0.09	0.10	0.14	0.23	0.46	0.12	0.04	0.29	0.24	6.04	
17	o-PO ₄ -P (mg P/L)	0.013	0.015			0.004	0.017	0.017	0.000	0.072	0.046	0.088	0.055	0.049	0.347	
18	P-Tot (mgP/L)				0.003	0.241										
19	SiO ₂ (mg/L)	12.0	18.8	14.9	14.7	16.8	13.9	28.8	12.5	16.7	16.0	16.9	15.8	13.5	13.8	
20	SO ₄ (mg/L)	0.0	1.0	1.0	1.0	0.0	1.7	1.0	4.2	3.2	7.8	7.4	3.7	6.8	5.1	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	Winter														
		Nov - Feb														
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.7	0.6	0.6	0.4	0.2	0.3	0.5	0.5	0.7	0.5	0.6	0.5	1.0	0.7	
2	COD (mg/L)	32.3	13.0	14.8	21.8	1.6	2.1	2.0	6.4	9.5	5.1	2.5	2.0	3.8	10.0	
3	DO (mg/L)	6.5	7.5	6.9	6.8	6.4	7.1	6.7	6.7	7.6	7.1	7.8	6.8	7.5	7.6	
4	DO_SAT% (%)	78	91	81	84	78	82	79	78	91	85	91	79	93	87	
5	FCol-MPN (MPN/100mL)	30	587	315	3425	1360	11233	8667	1310	69	765	193	720	403	1293	
6	Tcol-MPN (MPN/100mL)	430	1040	465	5575	2388	11600	11333	1900	168	1700	303	11125	1750	1293	
7	TOC (mg/L)	6.2			0.1	1.5	1.4	1.1	0.9	1.1	0.5	0.9	1.8			
TRACE & TOXIC																
1	As (µg/L)						0.2		0.2							
2	Cd (µg/L)	0.0				0.6	0.0	0.0	0.0			0.0				
3	Cr (µg/L)	0.0				0.0	0.0	0.2	1.3			3.4				
4	Cu (µg/L)	0.0							27.4			2.0		1.0	1.8	
5	Hg (µg/L)															
6	Mn (mg/L)	0.34														
7	Ni (µg/L)					1.2	0.2	0.0	0.0			2.0				
8	Pb (µg/L)	52.7				4.0	0.0	8.9	0.7			1.3				
9	Se (µg/L)															
10	Zn (µg/L)	0.0				56.1	0.0	15.3	8.4			13.0		0.1	73.7	
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	42	38	68	39	44	39	37	76	48	35	40	36	43	81	
2	HAR_Total (mgCaCO ₃ /L)	54	65	89	65	70	74	70	142	92	66	72	64	78	124	
3	Na% (%)	33	16	12	16	15	12	9	18	29	25	21	22	19	13	
4	RSC (-)	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.9	0.5	0.1	0.0	0.3	0.2	0.1	
5	SAR (-)	0.8	0.3	0.3	0.3	0.3	0.2	0.2	0.5	0.7	0.6	0.5	0.5	0.4	0.3	
PESTICIDES																
1	Aldrin (µg/L)						0.0	0.0	0.0							
2	BHC (µg/L)						0.0	0.1	0.0	0.0						
3	DDT (µg/L)						0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)						0.0	0.1	0.0	0.0						
5	Endos (µg/L)						0.1	0.1	0.4	0.0						

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	14.16	9.773	10.08	11.52	12.63	2.491	2.167	13.59	2.300	10.85	15.94	13.68	4.735	5.263	5.921
2	EC_FLD ($\mu\text{mho}/\text{cm}$)													293	668	
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	180	157	201	193	205	181	168	146	176	260	165	156	236	170	190
4	pH_FLD (pH units)														6.8	
5	pH_GEN (pH units)	8.3	8.2	8.3	8.4	8.1	8.3	8.6	8.5	8.1	8.2	8.0	7.5	8.6	7.9	8.1
6	TDS (mg/L)						123	116	125	135	202	108	108	122	97	110
7	Temp (deg C)	28.3	29.0	29.0	25.0		27.0	27.5	26.3	25.0	24.7	23.0	22.3	28.3	26.0	26.3
8	Turb (NTU)						0.1	0.6	1.0	0.0	0.6	2.0	2.7	1.4	7.7	2.7
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	2.0	4.2	4.5	0.7	0.0	9.3	8.8	6.0	0.0	1.4	0.0	0.0	4.3	1.3	2.7
2	ALK-TOT (mgCaCO ₃ /L)	96	84	169	95	83	85	89	71	84	122	74	62	81	98	102
3	B (mg/L)	0.04	0.09	0.09	0.02	0.19	0.11	0.01	0.12	0.02	0.20	0.09	0.01			0.11
4	Ca (mg/L)	29	16	18	22	16	20	16	16	15	20	17	15	17	26	23
5	Cl (mg/L)	12.3	9.2	8.7	14.7	11.3	8.2	10.2	7.4	4.5	5.6	2.7	3.2	2.5	7.7	15.3
6	CO ₃ (mg/L)	2.4	5.0	5.4	0.8	0.0	11.2	10.6	7.2	0.0	1.7	0.0	0.0	5.2	1.5	3.3
7	F (mg/L)	0.24	0.32	0.20	0.14	0.12	0.36	0.15	0.15	0.37	0.33	0.04	0.18	0.05	0.06	0.42
8	Fe (mg/L)	0.0	0.1	0.1	0.1	0.3	0.2	0.2	0.6	0.2	0.2	0.4	0.4	0.0	0.0	0.0
9	HCO ₃ (mg/L)	112	93	98	114	101	81	87	72	103	146	90	76	88	117	117
10	K (mg/L)	1.5	1.9	1.3	0.8	1.7	1.4	1.8	1.5	2.1	2.0	1.7	1.8	1.3	1.6	0.3
11	Mg (mg/L)	4.8	5.2	8.1	9.7	8.3	7.9	8.9	6.3	8.1	10.9	8.6	8.0	8.3	8.7	8.2
12	Na (mg/L)	8.5	10.0	5.7	7.4	10.3	6.3	7.9	5.3	9.2	16.2	10.0	11.7	9.2	8.7	14.2
13	NH ₃ -N (mg N/L)	0.14	0.08	0.06	0.05	0.20	0.22	0.22	0.22	0.04	0.04	0.07	0.01	0.05	0.29	0.08
14	NO ₂ +NO ₃ (mg N/L)	0.32	0.12	0.35	0.31	0.19	0.24	0.03	0.15	0.11	0.74	0.06	0.20	0.44	1.13	4.60
15	NO ₂ -N (mgN/L)		0.01	0.00	0.04	0.01	0.02	0.01	0.01	0.02	0.00	0.00	0.02	0.02	0.00	0.01
16	NO ₃ -N (mgN/L)	0.36	0.11	0.35	0.27	0.19	0.22	0.02	0.14	0.09	0.74	0.06	0.18	0.43	1.13	4.59
17	o-PO ₄ -P (mg P/L)	0.004	0.012	0.013			0.012	0.082	0.012	0.006	0.058	0.001	0.163	0.101	0.247	0.663
18	P-Tot (mgP/L)				0.128	0.284										
19	SiO ₂ (mg/L)	16.0	9.0	15.3	17.3	12.0	17.1	14.8	28.0	12.8	17.4	15.1	16.1	20.5	16.1	5.9
20	SO ₄ (mg/L)	4.7	0.0	1.0	1.0	1.0	0.4	0.0	1.0	2.6	1.9	9.8	17.1	2.8	7.4	3.8

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Pathagudem (AGG00B5)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	River Water														
		<div style="display: flex; justify-content: space-between;"> Summer Mar - May </div>														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.7	0.5	0.3	0.9	0.7	0.7	0.9	0.6	0.7	0.6	0.9	0.5	0.9	0.9	0.4
2	COD (mg/L)	19.0	16.1	52.7	17.7	8.3	5.6	3.9	2.0	3.6	3.3	4.9	2.7	3.3	5.5	7.3
3	DO (mg/L)	5.9	6.4	6.3	5.5	6.2	6.3	6.8	6.4	5.8	6.1	6.4	6.2	5.5	6.6	6.6
4	DO_SAT% (%)	76	83	82	67		79	85	79	69	72	75	71	69	81	82
5	FCol-MPN (MPN/100mL)	40	30	8400	813	510	457	8020	5420	287	268	45	15	5823	180	145
6	Tcol-MPN (MPN/100mL)	70	30	8700	813	777	557	8020	5483	407	468	91	5910	6900	3173	180
7	TOC (mg/L)		5.4			1.0	2.2	1.9	1.0	1.4	1.5	1.7	1.9			
TRACE & TOXIC																
1	As (µg/L)	0.0								0.5	6.1	1.2	0.1	0.0	0.3	0.2
2	Cd (µg/L)	2.0	0.0	0.0	3.0	0.0	1.7		0.0	0.1	0.8	0.0	1.0	0.0	0.0	0.3
3	Cr (µg/L)	6.0	0.0	3.0	2.0	0.0	0.0		0.0	0.4	0.5	0.4	0.0	0.0	0.0	0.0
4	Cu (µg/L)	1.6	0.0							6.0	0.3	3.5			1.3	1.5
5	Hg (µg/L)				0.0	1.0				0.0	0.5	0.2	0.0	0.0	0.3	0.0
6	Mn (mg/L)	0.01	0.00													
7	Ni (µg/L)			1.0	1.0	4.3	0.0		0.0	0.4	1.9	7.5	2.6	0.0	2.8	1.2
8	Pb (µg/L)	15.4	0.0	60.0	1.0	11.5	11.0		7.7	1.9	4.7	0.5	9.0	0.0	0.0	8.0
9	Se (µg/L)															
10	Zn (µg/L)	0.0	3.0	162.0	16.0	65.9	15.1		6.7	6.3	2.6	4.0	2.0	3.7	8.7	69.4
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	71	39	46	55	39	50	41	41	37	51	41	39	42	65	56
2	HAR_Total (mgCaCO ₃ /L)	91	61	80	95	74	83	78	67	71	97	77	72	76	101	91
3	Na% (%)	17	26	13	14	23	14	18	14	21	26	21	25	20	16	23
4	RSC (-)	0.1	0.5	0.2	0.1	0.2	0.1	0.2	0.1	0.3	0.5	0.1	0.0	0.1	0.1	0.2
5	SAR (-)	0.4	0.6	0.3	0.3	0.5	0.3	0.4	0.3	0.5	0.7	0.5	0.6	0.5	0.4	0.7
PESTICIDES																
1	Aldrin (µg/L)				0.0	0.0	0.0		0.0	0.0						
2	BHC (µg/L)				0.1	0.1	0.0	0.0		0.3	0.0					
3	DDT (µg/L)					0.1	0.0	0.0		0.0	0.0					
4	Dieldrin (µg/L)				0.0	0.0	0.0	0.0		0.0	0.0					
5	Endos (µg/L)				0.1	0.1	0.0	0.0		0.0	0.0					

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Jagdalpur	Code	: AGG00R9
State	: Chhattisgarh	District	Bastar
Basin	: Godavari	Independent River	: Godavari
Tributary	: Indravathi	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Indravathi
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Indravati SD, Jagdalpur
Drainage Area	: 7380 Sq. Km.	Bank	: Left
Latitude	: 19°06'30"	Longitude	: 82°01'30"
	Opening Date	Closing Date	
Gauge	: 04.08.1964		
Discharge	: 21.09.1965		
Sediment	: 21.09.1965		
Water Quality	: 01.12.1979		

Water Quality Datasheet for the period : 2017-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Analysis

S.No	Parameters	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017
		A	A	A	A	A
PHYSICAL						
1	Q (cumec)	39.68	129.2	191.0	84.34	27.63
2	Colour_Cod (-)	Brown	Brown	Light Brown		Light Brown
3	EC_FLD ($\mu\text{mho}/\text{cm}$)	62				87
4	EC_GEN ($\mu\text{mho}/\text{cm}$)	93	110	78	131	172
5	Odour_Code (-)	odour free				odour free
6	pH_FLD (pH units)	7.2				
7	pH_GEN (pH units)	8.3	7.5	7.4	7.4	7.5
8	TDS (mg/L)	93	96	71	91	108
9	Temp (deg C)	23.0	27.5	26.0	27.0	20.0
10	Turb (NTU)	262.0	398.0	180.0	123.0	35.0
CHEMICAL						
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	42	84	60	84	84
3	B (mg/L)				0.11	0.05
4	Ca (mg/L)	16	18	18	23	29
5	Cl (mg/L)	10.3	10.1	15.3	13.7	16.3
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.08	0.13	0.06	0.15	0.09
8	Fe (mg/L)	9.5	16.8	5.3	1.7	1.4
9	HCO ₃ (mg/L)	51	103	73	103	103
10	K (mg/L)	0.2	0.2	0.2	0.2	0.2
11	Mg (mg/L)	9.7	12.4	15.4	13.6	3.9
12	Na (mg/L)	4.7	7.0	6.6	6.8	8.0
13	NH ₃ -N (mg N/L)	0.02	0.04	0.05	0.02	2.98
14	NO ₂ +NO ₃ (mg N/L)	2.63	2.59	2.11	8.73	3.82
15	NO ₂ -N (mgN/L)	0.03	0.01	0.01	0.01	0.02
16	NO ₃ -N (mgN/L)	2.60	2.58	2.10	8.72	3.80
17	o-PO ₄ -P (mg P/L)	0.440	0.340	0.390	0.530	0.380
18	SiO ₂ (mg/L)	8.9	12.6	10.3	16.3	4.1
19	SO ₄ (mg/L)	16.4	1.3	13.8	15.0	1.2

Water Quality Datasheet for the period : 2017-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Analysis

S.No	Parameters	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017
		A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL					
1	BOD3-27 (mg/L)	2.0	1.2	0.5	0.5	1.0
2	COD (mg/L)	5.5	22.7	2.1	24.6	23.0
3	DO (mg/L)	6.8	6.3	6.4	6.4	7.7
4	DO_SAT% (%)	79	79	79	80	85
5	FCol-MPN (MPN/100mL)	3000	16000	5000	1300	5000
6	Tcol-MPN (MPN/100mL)	3000	16000	5000	1300	5000
	TRACE & TOXIC					
1	Cu (μ g/L)	10.0	18.0	3.0	9.0	2.0
2	Zn (μ g/L)	68.9	129.7	58.0	27.0	24.0
	CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	41	44	45	57	73
2	HAR_Total (mgCaCO ₃ /L)	81	96	109	113	89
3	Na% (%)	11	14	12	12	16
4	RSC (-)	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.2	0.3	0.3	0.3	0.4
	PESTICIDES					

Water Quality Summary for the period : 2017-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	2301	0.000	70.86
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	2	87	62	74
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	5	172	78	117
4	pH_FLD (pH units)	1	7.2	7.2	7.2
5	pH_GEN (pH units)	5	8.3	7.4	7.6
6	TDS (mg/L)	5	108	71	92
7	Temp (deg C)	5	27.5	20.0	24.7
8	Turb (NTU)	5	398.0	35.0	199.6
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	5	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	5	84	42	71
3	B (mg/L)	2	0.11	0.05	0.08
4	Ca (mg/L)	5	29	16	21
5	Cl (mg/L)	5	16.3	10.1	13.1
6	CO ₃ (mg/L)	5	0.0	0.0	0
7	F (mg/L)	5	0.15	0.06	0.1
8	Fe (mg/L)	5	16.8	1.4	6.9
9	HCO ₃ (mg/L)	5	103	51	86
10	K (mg/L)	5	0.2	0.2	0.2
11	Mg (mg/L)	5	15.4	3.9	11
12	Na (mg/L)	5	8.0	4.7	6.6
13	NH ₃ -N (mg N/L)	5	2.98	0.02	0.62
14	NO ₂ +NO ₃ (mg N/L)	5	8.73	2.11	3.97
15	NO ₂ -N (mgN/L)	5	0.03	0.01	0.01
16	NO ₃ -N (mgN/L)	5	8.72	2.10	3.96
17	o-PO ₄ -P (mg P/L)	5	0.530	0.340	0.416
18	SiO ₂ (mg/L)	5	16.3	4.1	10.4
19	SO ₄ (mg/L)	5	16.4	1.2	9.5
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	5	2.0	0.5	1
2	COD (mg/L)	5	24.6	2.1	15.6
3	DO (mg/L)	5	7.7	6.3	6.7
4	DO_SAT% (%)	5	85	79	80
5	FCol-MPN (MPN/100mL)	5	16000	1300	6060
6	Tcol-MPN (MPN/100mL)	5	16000	1300	6060
TRACE & TOXIC					
1	Cu ($\mu\text{g}/\text{L}$)	5	18.0	2.0	8.4
2	Zn ($\mu\text{g}/\text{L}$)	5	129.7	24.0	61.5
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	5	73	41	52
2	HAR_Total (mgCaCO ₃ /L)	5	113	81	98
3	Na% (%)	5	16	11	13
4	RSC (-)	5	0.0	0.0	0
5	SAR (-)	5	0.4	0.2	0.3
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	74.71	39.79	389.2	167.7	234.5	67.75	111.5	194.3	122.4	264.4	168.4	193.8	279.4	111.0
2	EC_FLD ($\mu\text{mho}/\text{cm}$)													211	62
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	152	181	159	157	149	147	146	195	335	113	97	109	100	103
4	pH_FLD (pH units)													6.9	7.2
5	pH_GEN (pH units)	7.8	7.8	7.7	8.0	8.0	7.6	7.8	8.2	7.7	7.6	7.6	7.2	7.6	7.7
6	TDS (mg/L)					95	92	112	116	272	71	73	110	75	88
7	Temp (deg C)	25.5	25.5	26.3	25.7	26.0	24.8	25.5	26.0	25.3	25.8	25.5	24.7	29.0	25.9
8	Turb (NTU)					34.9	77.6	52.7	0.3	28.0	42.6	257.5	304.0	334.8	240.8
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	2.8	0.0	1.2	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	65	74	73	60	63	57	66	89	57	53	46	62	52	67
3	B (mg/L)	0.10	0.06	0.07	0.09	0.01	0.17	0.07	0.14	0.16	0.04	0.16	0.00		0.11
4	Ca (mg/L)	19	21	19	14	13	13	16	20	14	14	11	14	12	19
5	Cl (mg/L)	9.3	8.4	8.0	12.2	8.0	8.4	9.5	7.6	5.1	4.3	10.4	2.7	2.9	12.4
6	CO ₃ (mg/L)	0.0	3.4	0.0	1.4	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.25	0.30	0.16	0.29	0.27	0.27	0.13	0.21	0.12	0.11	0.07	0.10	0.00	0.11
8	Fe (mg/L)	0.0	0.1	0.5	0.2	0.4	0.2	0.3	0.2	0.4	0.2	0.3	0.1	0.2	8.3
9	HCO ₃ (mg/L)	79	83	89	71	77	69	81	101	70	65	57	75	64	82
10	K (mg/L)	1.6	1.7	2.0	1.7	1.1	1.6	1.9	1.6	2.1	1.9	2.4	2.0	1.9	0.2
11	Mg (mg/L)	4.6	3.3	5.2	6.0	7.7	8.1	6.4	9.7	8.3	6.4	6.0	5.9	6.3	12.8
12	Na (mg/L)	4.5	9.0	5.0	10.0	5.5	4.8	5.2	5.0	9.0	9.0	9.3	7.4	6.7	6.3
13	NH ₃ -N (mg N/L)	0.04	0.06	0.05	0.22	0.09	0.15	0.08	0.23	0.02	0.07	0.04	0.01	0.21	0.03
14	NO ₂ +NO ₃ (mg N/L)	0.63	0.59	0.77	1.37	0.75	0.66	0.44	0.29	0.41	0.69	1.08	0.49	0.72	4.01
15	NO ₂ -N (mgN/L)	0.02	0.05	0.02	0.02	0.15	0.04	0.03	0.03	0.00	0.00	0.01	0.01	0.17	0.01
16	NO ₃ -N (mgN/L)	0.62	0.54	0.75	1.35	0.59	0.61	0.41	0.26	0.41	0.69	1.07	0.48	0.55	4.00
17	o-PO ₄ -P (mg P/L)	0.036	0.025			0.004	0.018	0.019	0.016	0.210	0.108	0.207	0.160	0.172	0.425
18	P-Tot (mgP/L)			0.040	0.022										
19	SiO ₂ (mg/L)	14.0	17.6	12.4	9.2	8.8	11.0	13.3	18.0	10.4	14.1	16.4	13.5	16.3	12.0
20	SO ₄ (mg/L)	1.3	5.2	3.5	1.0	1.0	3.5	2.2	1.1	15.1	14.5	16.3	9.9	16.5	11.6

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.0	0.7	0.6	0.6	0.7	0.5	0.8	0.9	1.0	0.9	1.2	1.2	1.0	1.1
2	COD (mg/L)	31.3	24.9	27.3	24.4	5.9	2.9	5.3	3.9	14.0	11.9	18.6	4.2	8.0	13.7
3	DO (mg/L)	6.4	6.4	5.8	6.0	5.5	5.7	5.5	6.1	6.1	6.2	6.4		6.4	6.5
4	DO_SAT% (%)	78	77	72	74	68	68	67	75	74	76	78		82	79
5	FCol-MPN (MPN/100mL)	1500	1010	6575	7740	8650	7526	7660	11467	5250	6800	5000	3767	7101	6325
6	Tcol-MPN (MPN/100mL)	4600	1600	8800	8360	8850	11200	8580	11667	9350	12550	6450	11400	14250	6325
7	TOC (mg/L)	5.7			0.7	1.6	1.4	1.9	1.0	1.1	0.4	1.4	1.7		
TRACE & TOXIC															
1	As ($\mu\text{g}/\text{L}$)	0.0									13.4	2.1			
2	Cd ($\mu\text{g}/\text{L}$)	0.0			0.0						0.0	0.1			
3	Cr ($\mu\text{g}/\text{L}$)	7.0			35.1						9.0	3.2			
4	Cu ($\mu\text{g}/\text{L}$)	1.2									1.5	4.3			10.0
5	Hg ($\mu\text{g}/\text{L}$)				0.0							0.3			
6	Mn (mg/L)	0.02													
7	Ni ($\mu\text{g}/\text{L}$)				9.1						2.5	11.4			
8	Pb ($\mu\text{g}/\text{L}$)	7.0			12.5						5.2	0.4			
9	Se ($\mu\text{g}/\text{L}$)														
10	Zn ($\mu\text{g}/\text{L}$)	18.8			769.0						19.1	1.0			70.9
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	46	52	48	35	33	33	41	49	34	35	28	36	31	47
2	HAR_Total (mgCaCO ₃ /L)	65	66	69	60	64	67	67	90	68	61	53	61	57	100
3	Na% (%)	13	24	14	28	15	14	15	13	20	23	27	20	22	12
4	RSC (-)	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0
5	SAR (-)	0.3	0.5	0.3	0.7	0.3	0.3	0.3	0.2	0.5	0.5	0.6	0.4	0.4	0.3
PESTICIDES															
1	Aldrin ($\mu\text{g}/\text{L}$)				0.0										
2	BHC ($\mu\text{g}/\text{L}$)				0.1										
3	DDT ($\mu\text{g}/\text{L}$)				0.1										
4	Dieldrin ($\mu\text{g}/\text{L}$)				0.0										
5	Endos ($\mu\text{g}/\text{L}$)				0.1										

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
	PHYSICAL														
1	Q (cumec)	8.307	22.20	12.12	8.852	5.807	5.849	16.74	4.888	3.263	23.01	10.65		27.27	27.63
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														87
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	237	275	283	299	298	276	269	283	290	199	199		183	172
4	pH_FLD (pH units)														
5	pH_GEN (pH units)	8.3	7.9	8.3	8.0	8.3	8.4	8.3	8.2	7.9	7.9	7.6		8.2	7.4
6	TDS (mg/L)					191	162	157	182	184	120	170		109	108
7	Temp (deg C)	19.0	19.8	23.2	19.9	20.9	20.5	20.4	21.7	20.3	20.8	19.8		23.0	20.0
8	Turb (NTU)					1.7	1.2	13.5	0.0	2.5	5.5	3.6		0.1	35.0
	CHEMICAL														
1	Alk-Phen (mgCaCO ₃ /L)	8.7	3.9	4.9	1.0	2.0	10.3	7.2	0.0	0.0	0.0	0.0		0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	141	121	131	133	147	147	120	155	158	123	140		95	84
3	B (mg/L)	0.06	0.19	0.04	0.24	0.07	0.14	0.15	0.09	0.11	0.04	0.15			0.05
4	Ca (mg/L)	34	36	34	31	38	35	24	31	33	27	28		22	29
5	Cl (mg/L)	15.1	9.5	19.0	12.6	10.2	8.0	9.9	4.3	6.9	8.5	5.7		3.6	16.3
6	CO ₃ (mg/L)	10.5	4.7	5.9	1.2	2.3	12.4	8.6	0.0	0.0	0.0	0.0		0.0	0.0
7	F (mg/L)	0.15	0.23	0.11	0.12	0.24	0.27	0.15	0.41	0.28	0.15	0.14		0.00	0.09
8	Fe (mg/L)	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.1		0.2	1.4
9	HCO ₃ (mg/L)	150	138	148	160	175	154	129	190	193	150	171		115	103
10	K (mg/L)	2.0	1.8	1.4	1.3	1.7	1.6	1.8	1.7	1.2	1.7	2.1		1.5	0.2
11	Mg (mg/L)	7.5	9.2	12.0	13.8	13.4	13.3	13.3	15.3	18.5	15.0	12.4		11.9	3.9
12	Na (mg/L)	10.4	5.0	5.8	6.1	6.1	5.1	6.0	8.0	9.7	10.4	8.4		8.4	8.0
13	NH ₃ -N (mg N/L)	0.04	0.08	0.05	0.16	0.26	0.06	0.11	0.15	0.02	0.00	0.01		0.00	2.98
14	NO ₂ +NO ₃ (mg N/L)	0.32	0.38	0.28	0.70	0.15	0.15	0.25	0.21	1.01	0.21	0.29		0.25	3.82
15	NO ₂ -N (mgN/L)	0.02	0.01	0.00	0.04	0.03	0.01	0.02	0.03	0.00	0.00	0.00		0.00	0.02
16	NO ₃ -N (mgN/L)	0.30	0.37	0.28	0.66	0.12	0.14	0.23	0.19	1.01	0.21	0.29		0.24	3.80
17	o-PO ₄ -P (mg P/L)	0.010	0.009			0.004	0.032	0.020	0.071	0.076	0.078	0.069		0.031	0.380
18	P-Tot (mgP/L)			0.003	0.154										
19	SiO ₂ (mg/L)	17.0	19.3	14.6	16.4	17.3	15.9	27.5	13.8	17.7	12.2	14.6		14.0	4.1
20	SO ₄ (mg/L)	0.0	0.0	1.0	1.0	0.3	0.0	1.3	3.1	3.3	4.6	2.4		1.8	1.2

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.9	0.7	1.4	0.4	0.4	1.1	0.9	0.6	1.6	0.8	0.9		0.8	1.0
2	COD (mg/L)	49.7	21.7	14.3	14.4	3.2	9.0	3.3	3.7	9.9	3.5	3.1		0.9	23.0
3	DO (mg/L)	7.3	7.8	7.2	6.9	6.2	7.6	7.0	7.1	7.6	7.1	8.3		7.0	7.7
4	DO_SAT% (%)	78	85	80	76	69	84	77	80	84	78	90		82	85
5	FCol-MPN (MPN/100mL)	160	7177	3700	2110	1095	12500	16000	5810	716	4178	155		5000	5000
6	Tcol-MPN (MPN/100mL)	2335	13667	4000	2768	1230	16000	16000	6210	2793	4290	4650		5000	5000
7	TOC (mg/L)	3.9			0.8	1.4	1.0	0.9	0.8	0.6	1.2	2.5			
TRACE & TOXIC															
1	As (µg/L)						0.1		0.0						
2	Cd (µg/L)	0.0		1.0		1.0	0.0	0.0	0.0			0.0			
3	Cr (µg/L)	0.0		19.0		0.0	0.0	0.0	0.2			2.5			
4	Cu (µg/L)	0.0							6.9			1.5			2.0
5	Hg (µg/L)			0.0											
6	Mn (mg/L)	0.01													
7	Ni (µg/L)			1.0		0.7	0.7	0.0	1.1			0.1			
8	Pb (µg/L)	52.3		1.0		7.0	0.0	10.5	0.6			19.4			
9	Se (µg/L)														
10	Zn (µg/L)	0.0		200.0		14.8	1.2	20.0	24.0			4.0			24.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	86	89	86	77	94	86	59	78	82	67	70		55	73
2	HAR_Total (mgCaCO ₃ /L)	117	127	136	134	150	142	114	142	159	130	122		104	89
3	Na% (%)	16	8	9	9	8	7	10	11	12	16	13		15	16
4	RSC (-)	0.5	0.1	0.1	0.0	0.0	0.1	0.1	0.3	0.0	0.0	0.4		0.0	0.0
5	SAR (-)	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3		0.4	0.4
PESTICIDES															
1	Aldrin (µg/L)			0.0		0.0	0.0	0.0	0.0						
2	BHC (µg/L)			0.1		0.0	0.2	0.0	0.0						
3	DDT (µg/L)			0.1		0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)			0.0		0.0	0.1	0.0	0.0						
5	Endos (µg/L)			0.1		0.0	0.0	0.0	0.2						

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	3.068	3.502	2.774	2.791	4.447	1.792	3.140	6.608	0.744	0.000	0.000				
2	EC_FLD ($\mu\text{mho}/\text{cm}$)															
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	228	269	333	293	288	284	258	216	299	320	324				
4	pH_FLD (pH units)															
5	pH_GEN (pH units)	8.3	8.1	8.1	8.4	8.0	8.3	8.1	8.1	8.1	8.1	8.1				
6	TDS (mg/L)						181	159	162	220	212	204				
7	Temp (deg C)	25.8	24.3	27.0	23.7	21.8	24.5	25.0	23.3	24.3	25.0	19.0				
8	Turb (NTU)						0.3	0.6	1.0	0.0	0.9	0.1				
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	5.8	0.0	0.0	2.6	0.0	7.5	2.9	0.0	0.0	0.0	0.0				
2	ALK-TOT (mgCaCO ₃ /L)	113	143	163	144	136	140	133	108	139	172	157				
3	B (mg/L)	0.09	0.09	0.07	0.08	0.15	0.16	0.05	0.12	0.03	0.20	0.25				
4	Ca (mg/L)	27	43	30	34	25	33	30	25	26	35	35				
5	Cl (mg/L)	8.7	12.4	9.3	14.3	12.7	8.9	7.5	11.3	6.7	5.5	5.4				
6	CO ₃ (mg/L)	7.0	0.0	0.0	3.2	0.0	9.0	3.5	0.0	0.0	0.0	0.0				
7	F (mg/L)	0.23	0.37	0.22	0.16	0.19	0.20	0.19	0.14	0.34	0.41	0.17				
8	Fe (mg/L)	0.1	0.1	0.0	0.3	0.3	0.2	0.2	0.6	0.2	0.2	0.1				
9	HCO ₃ (mg/L)	124	174	199	169	166	153	155	132	169	210	192				
10	K (mg/L)	1.4	2.1	1.9	1.3	1.7	2.0	1.8	2.0	2.5	2.0	1.8				
11	Mg (mg/L)	9.5	5.5	15.4	16.5	14.3	15.0	13.6	10.3	14.4	19.9	20.4				
12	Na (mg/L)	5.0	6.3	5.3	5.6	7.1	5.2	5.6	7.9	6.3	14.1	12.5				
13	NH ₃ -N (mg N/L)	0.22	0.12	0.05	0.05	0.29	0.14	0.21	0.18	0.05	0.01	0.00				
14	NO ₂ +NO ₃ (mg N/L)	0.23	0.09	0.29	0.23	0.27	0.17	0.03	0.20	0.19	0.70	0.10				
15	NO ₂ -N (mgN/L)		0.01	0.05	0.01	0.01	0.02	0.01	0.01	0.03	0.00	0.00				
16	NO ₃ -N (mgN/L)	0.23	0.08	0.25	0.21	0.26	0.15	0.02	0.19	0.16	0.70	0.10				
17	o-PO ₄ -P (mg P/L)	0.005	0.334	0.007			0.022	0.071	0.020	0.020	0.049	0.001				
18	P-Tot (mgP/L)				0.147	0.273										
19	SiO ₂ (mg/L)	13.0	9.0	14.3	14.2	10.7	15.9	13.3	29.7	11.2	14.5	15.5				
20	SO ₄ (mg/L)	0.8	1.3	0.0	1.0	1.3	0.7	0.1	1.2	2.4	1.0	5.3				

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Jagdalpur (AGG00R9)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	1.0	0.3	1.1	1.4	0.5	0.9	0.9	0.8	1.6	0.5	0.7				
2	COD (mg/L)	20.5	22.0	40.0	30.7	5.7	3.2	3.4	2.6	7.5	3.2	4.0				
3	DO (mg/L)	6.2	6.2	5.0	6.3	5.5	6.3	5.7	5.9	5.8	6.4	7.3				
4	DO_SAT% (%)	76	74	63	73	70	75	69	69	69	77	79				
5	FCol-MPN (MPN/100mL)	11000	24000	5700	8410	3267	3843	16000	7800	920	230	800				
6	Tcol-MPN (MPN/100mL)	24000	24000	9200	10767	4133	6177	16000	9333	1933	1700	2200				
7	TOC (mg/L)		3.2			0.9	1.0	1.3	1.1	1.1	0.8	0.8				
TRACE & TOXIC																
1	As (µg/L)	0.0								0.7	10.0					
2	Cd (µg/L)	1.8	0.0	0.0	3.0	0.0	1.4		0.0	0.1	0.0					
3	Cr (µg/L)	4.3	0.0	2.0	8.0	0.0	0.0		0.0	0.5	0.2					
4	Cu (µg/L)	3.1	0.0							5.8	0.1					
5	Hg (µg/L)				0.1	3.0				0.0	0.0					
6	Mn (mg/L)	0.00	0.00													
7	Ni (µg/L)			27.0	1.0	5.6	73.0		0.0	2.3	20.8					
8	Pb (µg/L)	17.0	20.0	66.0	14.0	14.2	9.0		12.9	3.3	3.2					
9	Se (µg/L)															
10	Zn (µg/L)	27.0	49.0	32.0	14.0	16.3	55.5		3.5	11.0	1.1					
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	67	107	75	86	62	82	75	63	64	88	88				
2	HAR_Total (mgCaCO ₃ /L)	106	130	138	155	121	144	132	106	124	171	173				
3	Na% (%)	9	9	8	7	11	7	8	13	10	15	14				
4	RSC (-)	0.2	0.3	0.5	0.1	0.3	0.0	0.1	0.1	0.3	0.0	0.0				
5	SAR (-)	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.5	0.4				
PESTICIDES																
1	Aldrin (µg/L)			0.0	0.0	0.0	0.0		0.0	0.0						
2	BHC (µg/L)			0.0	0.1	0.0	0.0		0.0	0.0						
3	DDT (µg/L)			0.0	0.1	0.0	0.0		0.0	0.0						
4	Dieldrin (µg/L)			0.0	0.1	0.0	0.0		0.1	0.0						
5	Endos (µg/L)			0.0	0.1	0.0	0.0		0.1	0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Nowrangpur	Code	: AGG00U7
State	: Orissa	District	Nowrangpur
Basin	: Godavari	Independent River	: Godavari
Tributary	: Indravathi	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Indravathi
Division	: Lower Godavari Div., Hyderabad	Sub-Division	: Indravati SD, Jagdalpur
Drainage Area	: 3545 Sq. Km.	Bank	:
Latitude	: 19°12'00"	Longitude	: 82°31'00"
	Opening Date	Closing Date	
Gauge	: 24.06.1965		
Discharge	: 20.06.1971		
Sediment	: 21.06.1971	31.05.2006	
Water Quality	: 01.01.1972		

Water Quality Datasheet for the period : 2017-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	06.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		1.700	30.01	86.78	36.91	32.65	11.68	9.171	5.907	3.670	2.307	2.339	2.659
2 Colour_Cod (-)	Clear	Brown	Brown	Brown	Light Brown	Light Brown	Clear						
3 EC_FLD ($\mu\text{mho}/\text{cm}$)	258	98		79	92		120	94	103	108	97		
4 EC_GEN ($\mu\text{mho}/\text{cm}$)	250	83	77	73	57	108	121	104	114	151	149	110	
5 Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free				
6 pH_GEN (pH units)	8.0	7.3	7.0	7.2	7.2	7.2	7.7	7.7	8.2	7.2	8.0	7.5	
7 TDS (mg/L)	129	73	71	60	46	76	85	86	88	108	129	13	
8 Temp (deg C)	27.0	21.0	26.0	28.0	27.0	20.0	21.0	18.0	18.0	24.0	17.0	22.0	
9 Turb (NTU)	13.0	510.0	550.0	162.0	78.0	78.0	5.0	22.0	17.0	8.0	22.0	7.0	
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 ALK-TOT (mgCaCO ₃ /L)	100	44	32	48	64	76	77	149	64	116	83	56	
3 B (mg/L)					0.07	0.05	0.00	0.01	0.01	0.07	0.04	0.42	
4 Ca (mg/L)	12	16	15	15	30	21	24	32	16	29	19	13	
5 Cl (mg/L)	4.8	10.7	11.3	13.4	13.7	20.4	17.7	8.0	13.7	7.8	9.7	8.6	
6 CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7 F (mg/L)	0.12	0.14	0.16	0.08	0.12	0.07	0.12	0.14	0.10	0.21	0.16	0.15	
8 Fe (mg/L)	0.0	13.6	27.5	5.2	1.6	2.1	1.5	0.4	0.6	0.1	0.2	0.8	
9 HCO ₃ (mg/L)	122	53	39	59	78	93	94	181	78	141	101	68	
10 K (mg/L)	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
11 Mg (mg/L)	11.2	6.2	6.2	9.1	4.5	11.6	10.4	19.9	5.7	13.3	8.7	2.8	
12 Na (mg/L)	6.8	6.7	7.3	6.1	6.6	6.7	6.0	6.2	5.9	9.5	12.9	8.8	
13 NH ₃ -N (mg N/L)	0.18	0.03	0.04	0.05	0.06	0.01	0.01	0.05	1.14	0.03	0.01	0.17	
14 NO ₂ +NO ₃ (mg N/L)	2.76	3.68	2.00	4.30	10.02	4.89	7.28	7.40	8.12	5.17	4.29	3.50	
15 NO ₂ -N (mgN/L)	0.00	0.09	0.01	0.01	0.01	0.03	0.03	0.01	0.01	0.02	0.02	0.02	
16 NO ₃ -N (mgN/L)	2.76	3.59	2.00	4.29	10.01	4.86	7.25	7.39	8.11	5.15	4.27	3.48	
17 o-PO ₄ -P (mg P/L)	0.010	0.260	0.180	0.430	0.350	0.260	0.330	0.360	0.240	0.400	1.010	0.420	
18 SiO ₂ (mg/L)	8.8	7.5	8.2	15.2	17.4	6.0	18.2	14.9	14.8	5.0	11.8	4.7	
19 SO ₄ (mg/L)	0.2	10.1	22.0	11.8	9.8	3.6	12.0	12.4	1.7	12.1	8.4	0.9	

Water Quality Datasheet for the period : 2017-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Analysis

S.No	Parameters	01.06.2017	01.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	06.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.1	1.8	1.2	0.2	0.6	0.5	2.2	0.4	0.1	0.5	0.4	1.4
2	COD (mg/L)	7.6	5.9	18.1	2.5	24.6	59.0	2.2	3.1	6.1	1.3	6.0	4.4
3	DO (mg/L)	6.4	7.1	5.7	6.5	5.9	7.0	8.1	7.7	7.0	6.3	6.0	5.8
4	DO_SAT% (%)	80	80	70	83	74	77	91	81	74	75	62	66
5	FCol-MPN (MPN/100mL)	2	16000	3000	16000	16000	16000	16000	1300	170	20	20	
6	Tcol-MPN (MPN/100mL)	170	16000	3000	16000	16000	16000	16000	1300	500	20	20	
TRACE & TOXIC													
1	As (µg/L)												0.3
2	Cd (µg/L)												0.2
3	Cr (µg/L)												0.0
4	Cu (µg/L)			29.0	3.0	7.0	2.0	4.0	3.0	1.0	1.0	2.8	3.0
5	Hg (µg/L)												0.0
6	Ni (µg/L)												2.2
7	Pb (µg/L)												11.0
8	Zn (µg/L)	0.1	15.5	114.8	48.0	32.0	22.0	71.0	75.0	38.3	39.1	46.2	19.4
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	31	41	37	38	76	53	59	79	40	72	48	32
2	HAR_Total (mgCaCO ₃ /L)	78	66	63	76	94	101	102	162	64	127	84	44
3	Na% (%)	16	18	20	15	13	13	11	8	17	14	25	30
4	RSC (-)	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
5	SAR (-)	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.6	0.6
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	955.5	1.400	26.12
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	9	258	79	117
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	250	57	116
4	pH_GEN (pH units)	12	8.2	7.0	7.5
5	TDS (mg/L)	12	129	13	80
6	Temp (deg C)	12	28.0	17.0	22.4
7	Turb (NTU)	12	550.0	5.0	122.7
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	12	149	32	76
3	B (mg/L)	8	0.42	0.00	0.08
4	Ca (mg/L)	12	32	12	20
5	Cl (mg/L)	12	20.4	4.8	11.7
6	CO ₃ (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.21	0.07	0.13
8	Fe (mg/L)	12	27.5	0.0	4.5
9	HCO ₃ (mg/L)	12	181	39	92
10	K (mg/L)	12	0.3	0.2	0.2
11	Mg (mg/L)	12	19.9	2.8	9.1
12	Na (mg/L)	12	12.9	5.9	7.4
13	NH ₃ -N (mg N/L)	12	1.14	0.01	0.15
14	NO ₂ +NO ₃ (mg N/L)	12	10.02	2.00	5.28
15	NO ₂ -N (mgN/L)	12	0.09	0.00	0.02
16	NO ₃ -N (mgN/L)	12	10.01	2.00	5.26
17	o-PO ₄ -P (mg P/L)	12	1.010	0.010	0.354
18	SiO ₂ (mg/L)	12	18.2	4.7	11
19	SO ₄ (mg/L)	12	22.0	0.2	8.8
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	2.2	0.1	0.9
2	COD (mg/L)	12	59.0	1.3	11.7
3	DO (mg/L)	12	8.1	5.7	6.6
4	DO_SAT% (%)	12	91	62	76
5	FCol-MPN (MPN/100mL)	11	16000	2	7683
6	Tcol-MPN (MPN/100mL)	11	16000	20	7728
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	0.3	0.3	0.3
2	Cd ($\mu\text{g}/\text{L}$)	1	0.2	0.2	0.2
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	10	29.0	1.0	5.6
5	Hg ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
6	Ni ($\mu\text{g}/\text{L}$)	1	2.2	2.2	2.2
7	Pb ($\mu\text{g}/\text{L}$)	1	11.0	11.0	11
8	Zn ($\mu\text{g}/\text{L}$)	12	114.8	0.1	43.5
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	79	31	50
2	HAR_Total (mgCaCO ₃ /L)	12	162	44	88
3	Na% (%)	12	30	8	17
4	RSC (-)	12	0.5	0.0	0.1
5	SAR (-)	12	0.6	0.2	0.4
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	34.23	17.49								184.6	59.43	42.21	77.29	37.61
2	EC_FLD ($\mu\text{mho}/\text{cm}$)												140	94	132
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	131	117								111	97	114	105	108
4	pH_FLD (pH units)													6.7	
5	pH_GEN (pH units)	7.5	7.9								7.7	7.7	7.5	7.9	7.3
6	TDS (mg/L)										93	68	112	83	76
7	Temp (deg C)	27.0	27.6								27.0	25.2	28.5	27.8	25.8
8	Turb (NTU)										38.0	184.4	246.4	175.2	262.6
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0								0.0	0.0	0.0	0.6	0.0
2	ALK-TOT (mgCaCO ₃ /L)	57	47								39	47	47	63	58
3	B (mg/L)	0.12	0.03								0.04	0.21	0.11		0.06
4	Ca (mg/L)	15	14								11	10	9	12	18
5	Cl (mg/L)	16.2	8.7								3.5	7.6	2.1	3.2	10.8
6	CO ₃ (mg/L)	0.0	0.0								0.0	0.0	0.0	0.7	0.0
7	F (mg/L)	0.25	0.26								0.16	0.11	0.09	0.00	0.12
8	Fe (mg/L)	0.1	0.1								0.2	0.1	0.2	0.2	9.6
9	HCO ₃ (mg/L)	69	58								47	57	57	76	70
10	K (mg/L)	1.7	1.8								1.7	2.1	2.1	2.3	0.2
11	Mg (mg/L)	2.6	2.4								6.0	5.1	4.0	6.6	7.4
12	Na (mg/L)	13.2	5.8								7.2	8.9	9.8	9.8	6.7
13	NH ₃ -N (mg N/L)	0.04	0.05								0.08	0.08	0.01	0.06	0.07
14	NO ₂ +NO ₃ (mg N/L)	0.68	0.61								1.41	0.88	0.41	1.01	4.55
15	NO ₂ -N (mgN/L)	0.01	0.01								0.00	0.02	0.01	0.10	0.02
16	NO ₃ -N (mgN/L)	0.67	0.60								1.41	0.86	0.40	0.91	4.53
17	o-PO ₄ -P (mg P/L)	0.072	0.022								0.080	0.258	0.222	0.088	0.246
18	SiO ₂ (mg/L)	12.5	19.2								19.1	18.6	14.7	21.6	11.4
19	SO ₄ (mg/L)	2.8	0.8								17.1	14.0	8.5	12.6	10.8

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.6	0.5								1.2	0.8	1.0	1.0	1.0
2	COD (mg/L)	18.8	29.9								13.0	8.1	5.3	7.9	11.7
3	DO (mg/L)	5.9	6.2								6.0	5.8		6.4	6.3
4	DO_SAT% (%)	74	79								75	69		82	77
5	FCol-MPN (MPN/100mL)		471								6167	9672	2426	6401	10200
6	Tcol-MPN (MPN/100mL)		511								11400	10140	5644	10074	10234
7	TOC (mg/L)	5.8									0.2	0.9	1.4		
TRACE & TOXIC															
1	As (µg/L)										1.3				
2	Cd (µg/L)										0.2				
3	Cr (µg/L)										5.5				
4	Cu (µg/L)										2.3				13.0
5	Hg (µg/L)										0.1				
6	Ni (µg/L)										15.3				
7	Pb (µg/L)										7.1				
8	Zn (µg/L)										3.0				42.1
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	37	34								29	26	22	31	44
2	HAR_Total (mgCaCO ₃ /L)	48	44								54	47	39	58	75
3	Na% (%)	38	22								21	28	35	23	16
4	RSC (-)	0.3	0.1								0.0	0.2	0.2	0.1	0.1
5	SAR (-)	0.9	0.4								0.4	0.6	0.7	0.5	0.3
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	Dieldrin (µg/L)														
4	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	4.662	12.67								17.32	8.065	5.621	5.324	7.606
2	EC_FLD ($\mu\text{mho}/\text{cm}$)												126	92	106
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	124	158								166	118	305	115	112
4	pH_FLD (pH units)												6.3		
5	pH_GEN (pH units)	7.7	7.8								7.8	7.7	7.7	7.9	7.7
6	TDS (mg/L)										114	85	85	69	84
7	Temp (deg C)	21.0	19.5								23.5	22.3	21.0	20.5	19.3
8	Turb (NTU)										8.5	7.8	10.5	5.5	30.5
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0								0.0	0.0	1.2	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	70	64								71	55	63	89	91
3	B (mg/L)	0.08	0.10								0.02	0.16	0.00		0.02
4	Ca (mg/L)	15	16								16	13	12	16	23
5	Cl (mg/L)	12.5	9.0								3.0	5.6	4.4	3.0	15.0
6	CO ₃ (mg/L)	0.0	0.0								0.0	0.0	1.4	0.0	0.0
7	F (mg/L)	0.14	0.23								0.09	0.12	0.02	0.22	0.11
8	Fe (mg/L)	0.0	0.1								0.3	0.1	0.0	0.1	1.2
9	HCO ₃ (mg/L)	85	78								87	67	75	109	111
10	K (mg/L)	1.9	2.0								1.8	1.8	1.4	2.5	0.2
11	Mg (mg/L)	2.7	4.7								8.5	5.5	5.4	7.3	11.9
12	Na (mg/L)	17.3	6.8								9.8	9.3	9.2	7.3	6.2
13	NH ₃ -N (mg N/L)	0.04	0.03								0.00	0.04	0.03	0.01	0.30
14	NO ₂ +NO ₃ (mg N/L)	0.68	0.26								0.33	0.18	0.53	0.50	6.92
15	NO ₂ -N (mgN/L)	0.01	0.00								0.00	0.03	0.00	0.02	0.02
16	NO ₃ -N (mgN/L)	0.67	0.26								0.33	0.15	0.53	0.48	6.90
17	o-PO ₄ -P (mg P/L)	0.014	0.012								0.061	0.059	0.074	0.060	0.298
18	SiO ₂ (mg/L)	18.0	20.5								16.4	18.8	15.4	12.4	13.5
19	SO ₄ (mg/L)	0.0	0.0								6.7	5.9	5.0	2.5	7.4

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.5	0.9								0.5	0.6	0.6	0.9	0.8
2	COD (mg/L)	29.8	36.7								3.1	3.0	3.7	3.4	17.6
3	DO (mg/L)	6.4	7.8								7.4	7.6	8.2	7.0	7.5
4	DO_SAT% (%)	72	85								87	87	92	77	81
5	FCol-MPN (MPN/100mL)		327								978	710	1125	213	8368
6	Tcol-MPN (MPN/100mL)		1300								2090	5418	7925	750	8450
7	TOC (mg/L)	5.5									0.5	3.9	1.7		
TRACE & TOXIC															
1	As (µg/L)														
2	Cd (µg/L)											0.4			
3	Cr (µg/L)											1.8			
4	Cu (µg/L)											1.6		1.0	2.5
5	Hg (µg/L)														
6	Ni (µg/L)											0.2			
7	Pb (µg/L)											2.8			
8	Zn (µg/L)											4.0		0.1	51.6
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	38	39								40	32	30	40	58
2	HAR_Total (mgCaCO ₃ /L)	50	58								75	55	52	70	107
3	Na% (%)	42	20								21	26	26	18	12
4	RSC (-)	0.4	0.2								0.0	0.1	0.2	0.4	0.0
5	SAR (-)	1.1	0.4								0.5	0.5	0.6	0.4	0.3
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	Dieldrin (µg/L)														
4	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

River Water

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1 Q (cumec)	3.685	2.679	2.157									3.445	2.220	2.424	2.493	2.435
2 EC_FLD ($\mu\text{mho}/\text{cm}$)														141		102
3 EC_GEN ($\mu\text{mho}/\text{cm}$)	120	175	175									118	113	170	110	137
4 pH_FLD (pH units)														6.7		
5 pH_GEN (pH units)	7.7	8.1	7.7									7.8	7.0	7.7	7.7	7.6
6 TDS (mg/L)												76	75	78	66	83
7 Temp (deg C)	26.3	25.7	25.0									24.3	27.3	28.3	26.0	21.0
8 Turb (NTU)												3.0	22.0	13.3	17.7	12.3
CHEMICAL																
1 Alk-Phen (mgCaCO ₃ /L)	0.0	4.2	0.0									0.0	0.0	0.0	0.0	0.0
2 ALK-TOT (mgCaCO ₃ /L)	64	97	73									52	57	49	65	85
3 B (mg/L)	0.02	0.09	0.08									0.10	0.00			0.17
4 Ca (mg/L)	16	29	21									11	10	10	18	20
5 Cl (mg/L)	5.8	9.8	9.7									2.6	1.9	2.2	2.6	8.7
6 CO ₃ (mg/L)	0.0	5.0	0.0									0.0	0.0	0.0	0.0	0.0
7 F (mg/L)	0.23	0.30	0.41									0.07	0.09	0.03	0.09	0.17
8 Fe (mg/L)	0.0	0.1	0.1									0.3	0.4	0.0	0.0	0.4
9 HCO ₃ (mg/L)	78	109	89									64	69	60	79	103
10 K (mg/L)	1.9	2.1	2.0									1.7	2.0	1.4	1.7	0.2
11 Mg (mg/L)	3.1	2.1	5.0									6.0	5.2	5.0	6.6	8.3
12 Na (mg/L)	6.4	9.3	4.7									7.3	8.4	4.9	4.6	10.4
13 NH ₃ -N (mg N/L)	0.18	0.10	0.06									0.02	0.02	0.02	0.18	0.07
14 NO ₂ +NO ₃ (mg N/L)	0.22	0.14	0.30									0.76	0.15	0.66	0.22	4.32
15 NO ₂ -N (mgN/L)		0.01	0.00									0.00	0.04	0.04	0.00	0.02
16 NO ₃ -N (mgN/L)	0.22	0.13	0.30									0.76	0.11	0.62	0.22	4.30
17 o-PO ₄ -P (mg P/L)	0.006	0.013	0.030									0.001	0.110	0.311	0.157	0.610
18 SiO ₂ (mg/L)	20.3	10.7	16.7									15.0	18.4	17.0	13.5	7.2
19 SO ₄ (mg/L)	4.3	0.3	0.0									4.0	7.2	4.0	2.2	7.2

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Nowrangpur (AGG00U7)

Local River : Indravathi

Division : Lower Godavari Div., Hyderabad

Sub-Division : Indravati SD, Jagdalpur

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.8	0.4	0.6								1.1	0.7	0.9	1.1	0.8
2	COD (mg/L)	31.3	5.9	32.7								5.3	2.1	2.3	5.9	3.9
3	DO (mg/L)	6.1	5.3	5.9								7.1	5.8	8.0	6.7	6.0
4	DO_SAT% (%)	75	65	71								85	73	103	82	68
5	FCol-MPN (MPN/100mL)			1665								5335	14	3653	980	20
6	Tcol-MPN (MPN/100mL)			12500								5353	270	11600	5513	20
7	TOC (mg/L)		6.8									0.5	1.1			
TRACE & TOXIC																
1	As (µg/L)											1.1	0.2		0.3	0.3
2	Cd (µg/L)			0.0								0.0	0.0		0.0	0.2
3	Cr (µg/L)			7.0								1.0	0.0		0.0	0.0
4	Cu (µg/L)											3.0			1.2	2.3
5	Hg (µg/L)											0.5	0.0		0.8	0.0
6	Ni (µg/L)			1.0								6.3	2.4		3.5	2.2
7	Pb (µg/L)			48.0								0.2	7.8		0.0	11.0
8	Zn (µg/L)			135.0								23.6	7.8		12.9	34.9
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	39	72	53								28	26	25	45	51
2	HAR_Total (mgCaCO ₃ /L)	52	81	74								53	47	46	72	85
3	Na% (%)	21	22	12								23	26	18	12	23
4	RSC (-)	0.2	0.3	0.1								0.1	0.2	0.1	0.0	0.1
5	SAR (-)	0.4	0.5	0.2								0.5	0.5	0.3	0.2	0.5
PESTICIDES																
1	Aldrin (µg/L)			0.0												
2	BHC (µg/L)			0.0												
3	Dieldrin (µg/L)			0.0												
4	Endos (µg/L)			0.0												

HISTORY SHEET

		Water Year	: 2017-2018
Site	: TEKRA	Code	: AGH00C4
State	: Maharashtra	District	Gadchiroli
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Pranhita
Division	: Wainganga Div., Nagpur	Sub-Division	: L Wainganga SD, Chandrapur
Drainage Area	: 108780 Sq. Km.	Bank	: Left
Latitude	: 18°58'42"	Longitude	: 79°56'49"
	Opening Date	Closing Date	
Gauge	: 01.06.1964		
Discharge	: 15.07.1964		
Sediment	: 01.07.1965		
Water Quality	: 15.06.1966		

Water Quality Datasheet for the period : 2017-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

River Water Analysis

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		53.20	282.4	792.1	1683	727.1	278.9	80.32	83.38	73.29	45.70	26.93	11.98
2 Colour_Cod (-)	Clear	Light Brown	Dark Green	Light Brown	Clear								
3 EC_GEN ($\mu\text{mho}/\text{cm}$)		555	464	331	387	424	478	480	433	402	582	486	440
4 Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5 pH_GEN (pH units)		8.6	8.3	8.0	8.0	8.4	8.4	8.5	8.1	8.3	8.4	8.6	8.6
6 Temp (deg C)		25.0	22.0	24.0	26.0	23.5	23.6	21.0	16.0	23.6	22.0	21.0	22.0
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)		14.9	3.0	0.0	0.0	14.9	5.8	6.0	0.0	11.6	11.6	6.0	6.0
2 ALK-TOT (mgCaCO ₃ /L)		218	238	131	146	175	156	217	193	202	202	213	231
3 B (mg/L)		0.55	0.19	0.71	0.01	0.20	0.42	0.19	0.24	0.08	0.72	0.71	1.27
4 Ca (mg/L)		25	38	26	27	30	54	34	36	45	33	32	42
5 Cl (mg/L)		27.8	23.9	17.9	21.9	16.5	22.7	28.8	37.1	32.9	28.6	39.8	27.0
6 CO ₃ (mg/L)		18.0	3.6	0.0	0.0	18.0	7.0	7.2	0.0	14.0	14.0	7.2	7.2
7 F (mg/L)		0.60	0.56	0.50	0.22	1.18	0.10	0.08	0.46	0.50	0.44	0.48	0.57
8 Fe (mg/L)		0.1	0.2	0.7	0.1	0.3	0.2	0.2	0.1	0.1	0.0	0.1	0.1
9 HCO ₃ (mg/L)		229	283	160	178	177	176	251	235	218	218	245	267
10 K (mg/L)		3.6	2.9	2.7	3.0	2.5	2.7	3.5	2.9	2.6	2.9	3.5	2.9
11 Mg (mg/L)		22.6	9.1	5.9	10.2	14.9	8.8	31.5	17.5	13.4	17.5	28.0	39.1
12 Na (mg/L)		43.7	54.5	25.4	22.0	19.7	2.4	48.7	43.0	37.4	38.2	47.1	34.9
13 NH ₃ -N (mg N/L)		0.91	0.22	0.57	0.39	0.12	0.10	0.09	0.26	0.31	0.18	0.18	0.00
14 NO ₂ +NO ₃ (mg N/L)		0.85	1.20	3.99	2.30	1.72	1.74	2.21	1.13	1.55	1.39	1.45	6.29
15 NO ₂ -N (mgN/L)		0.01	0.02	0.05	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
16 NO ₃ -N (mgN/L)		0.84	1.18	3.94	2.29	1.70	1.72	2.20	1.12	1.54	1.38	1.44	6.28
17 PO ₄ -P (mg P/L)		1.109	0.437	1.649	0.139	0.083	0.116	0.045	0.157	0.210	0.165	0.368	0.230
18 SiO ₂ (mg/L)		29.6	19.6	6.8	15.9	20.2	21.0	21.4	13.1	15.1	13.4	10.9	13.4
19 SO ₄ (mg/L)		22.8	21.4	5.0	12.1	16.0	22.3	4.6	11.0	16.2	16.8	31.9	25.7

Water Quality Datasheet for the period : 2017-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	2.4	2.4	1.3	1.3	1.4	1.3	1.2	1.3	1.0	1.3	1.4	2.6
2	COD (mg/L)	75.2	63.2	21.4	29.4	20.5	71.8	26.5	23.1	74.7	22.5	43.9	25.6
3	DO (mg/L)	7.4	6.5	6.2	6.1	7.0	7.4	8.9	8.5	6.9	6.4	7.6	7.5
4	DO_SAT% (%)	90	74	74	75	82	86	100	86	81	73	85	86
5	FCol-MPN (MPN/100mL)	80	40	70	330	20	230	230	230	20	20	20	70
6	Tcol-MPN (MPN/100mL)	170	259	90	390	80	300	230	230	20	20	20	110
TRACE & TOXIC													
1	As (µg/L)			2.0				3.8					1.7
2	Cd (µg/L)			1.0				0.2					0.1
3	Cr (µg/L)			12.0				2.9					3.5
4	Cu (µg/L)			2.0				6.8					5.4
5	Ni (µg/L)							2.9					7.4
6	Pb (µg/L)			2.0				2.8					3.8
7	Zn (µg/L)			5.0				0.7					2.3
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	62	95	66	68	74	136	84	91	113	82	79	106
2	HAR_Total (mgCaCO ₃ /L)	156	133	91	111	136	172	215	164	169	154	196	268
3	Na% (%)	37	47	37	30	24	3	33	36	32	35	34	22
4	RSC (-)	1.2	2.1	0.8	0.7	0.8	0.0	0.1	0.6	0.7	1.0	0.4	0.0
5	SAR (-)	1.5	2.1	1.2	0.9	0.7	0.1	1.5	1.5	1.3	1.3	1.5	0.9
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	6517	9.230	419.3
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	582	331	455
3	pH_GEN (pH units)	12	8.6	8.0	8.4
4	Temp (deg C)	12	26.0	16.0	22.5
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	14.9	0.0	6.7
2	ALK-TOT (mgCaCO ₃ /L)	12	238	131	193
3	B (mg/L)	12	1.27	0.01	0.44
4	Ca (mg/L)	12	54	25	35
5	Cl (mg/L)	12	39.8	16.5	27.1
6	CO ₃ (mg/L)	12	18.0	0.0	8
7	F (mg/L)	12	1.18	0.08	0.47
8	Fe (mg/L)	12	0.7	0.0	0.2
9	HCO ₃ (mg/L)	12	283	160	220
10	K (mg/L)	12	3.6	2.5	3
11	Mg (mg/L)	12	39.1	5.9	18.2
12	Na (mg/L)	12	54.5	2.4	34.7
13	NH ₃ -N (mg N/L)	12	0.91	0.00	0.28
14	NO ₂ +NO ₃ (mg N/L)	12	6.29	0.85	2.15
15	NO ₂ -N (mgN/L)	12	0.05	0.01	0.02
16	NO ₃ -N (mgN/L)	12	6.28	0.84	2.14
17	o-PO ₄ -P (mg P/L)	12	1.649	0.045	0.392
18	SiO ₂ (mg/L)	12	29.6	6.8	16.7
19	SO ₄ (mg/L)	12	31.9	4.6	17.1
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	2.6	1.0	1.6
2	COD (mg/L)	12	75.2	20.5	41.5
3	DO (mg/L)	12	8.9	6.1	7.2
4	DO_SAT% (%)	12	100	73	83
5	FCol-MPN (MPN/100mL)	12	330	20	113
6	Tcol-MPN (MPN/100mL)	12	390	20	160
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	3.8	1.7	2.5
2	Cd ($\mu\text{g}/\text{L}$)	3	1.0	0.1	0.4
3	Cr ($\mu\text{g}/\text{L}$)	3	12.0	2.9	6.1
4	Cu ($\mu\text{g}/\text{L}$)	3	6.8	2.0	4.7
5	Ni ($\mu\text{g}/\text{L}$)	2	7.4	2.9	5.1
6	Pb ($\mu\text{g}/\text{L}$)	3	3.8	2.0	2.8
7	Zn ($\mu\text{g}/\text{L}$)	3	5.0	0.7	2.7
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	136	62	88
2	HAR_Total (mgCaCO ₃ /L)	12	268	91	164
3	Na% (%)	12	47	3	31
4	RSC (-)	12	2.1	0.0	0.7
5	SAR (-)	12	2.1	0.1	1.2
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

River Water

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	1100	1794	2954	4596	1385	683.2	3227	2551	1764	2512	1215	942.1		707.6
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	265	223	245	268	315	385	325	329	327	328	375	294	318	432
3	pH_GEN (pH units)	8.1	8.5	8.3	8.4	8.4	8.4	8.5	8.4	8.6	8.0	7.9	8.3	7.9	8.3
4	Temp (deg C)	30.1	27.0	24.5	23.1	19.3	24.0	25.8	29.5	28.2	27.0	28.1	25.4	22.8	24.1
5	Turb (NTU)			54.8	218.5	72.2	38.5	14.6	29.8	8.0	13.3	21.2			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	5.2	5.8	3.6	3.8	3.0	3.6	6.9	4.0	4.7	2.9	0.0	6.7	4.2	6.6
2	ALK-TOT (mgCaCO ₃ /L)	118	98	97	112	125	137	117	146	197	146	168	106	127	181
3	B (mg/L)	0.19	0.23	0.43	0.60	0.80	0.33	0.47	0.58	0.15	0.20	0.16	0.28	1.13	0.33
4	Ca (mg/L)	25	27	23	28	29	25	26	30	36	32	33	29	28	29
5	Cl (mg/L)	16.2	8.0	12.9	14.5	15.9	24.4	19.7	21.9	25.0	19.2	18.0	16.7	16.7	21.6
6	CO ₃ (mg/L)	6.2	7.0	4.3	4.6	3.6	4.4	8.3	4.8	5.7	3.5	0.0	8.1	5.0	7.9
7	F (mg/L)	0.46	0.53	0.21	0.25	0.25	0.29	0.30	0.41	0.71	0.44	0.47	0.47	0.18	0.61
8	Fe (mg/L)	0.1	0.1	0.2	0.3	0.0	0.2	0.0	0.4	0.2	0.4	0.1	0.1	0.1	0.3
9	HCO ₃ (mg/L)	131	105	109	127	145	158	126	168	229	171	205	113	144	205
10	K (mg/L)	3.0	1.5	2.0	1.8	1.9	2.7	2.4	2.9	3.1	3.9	2.9	2.3	2.6	2.9
11	Mg (mg/L)	9.5	7.2	8.5	9.2	10.8	16.9	11.6	16.6	21.0	14.9	15.8	9.9	10.1	12.5
12	Na (mg/L)	19.9	11.4	14.1	12.6	19.6	30.7	17.6	35.2	21.1	22.7	30.9	17.3	25.1	33.1
13	NH ₃ -N (mg N/L)	0.23	0.14	0.20	0.58	0.32	0.31	0.32	0.13	0.00	0.04	0.24	0.09	0.23	0.44
14	NO ₂ +NO ₃ (mg N/L)	1.33	0.94	0.94	1.27	0.60	0.22	0.46	0.90	1.33	1.67	1.72	7.40	1.88	2.01
15	NO ₂ -N (mgN/L)	0.07	0.03	0.04	0.07	0.11	0.05	0.01	0.04	0.07	0.01	0.00	0.04	0.01	0.02
16	NO ₃ -N (mgN/L)	1.25	0.91	0.90	1.21	0.49	0.17	0.45	0.85	1.26	1.66	1.71	7.35	1.86	1.99
17	o-PO ₄ -P (mg P/L)	0.091	0.008	0.039	0.062	0.087	0.039	0.050	0.010	0.074	0.062	0.157	0.083	0.160	0.683
18	SiO ₂ (mg/L)	25.4	61.4	34.7	31.7	28.0	95.3	27.8	55.7	33.9	16.4	17.4	17.7	17.6	18.4
19	SO ₄ (mg/L)	14.2	15.6	8.4	11.1	18.9	20.4	12.2	19.1	10.8	20.0	7.8	28.5	13.0	15.5

Water Quality Seasonal Average for the period: 2004-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.2	1.0	1.0	1.6	1.1	1.2	2.5	2.8	1.5	10.3	10.4	1.5	8.4	1.8
2	COD (mg/L)				39.4	37.6	38.3	50.3	41.4	39.2	55.1	31.8	86.9	31.9	41.9
3	DO (mg/L)	6.3	6.6	6.8	6.8	6.4	6.7	7.2	7.1	6.4	5.7	6.0	6.3	6.3	6.6
4	DO_SAT% (%)	83	82	81	79	69	80	88	93	82	72	77	76	73	79
5	FCol-MPN (MPN/100mL)	680	351	460	1200	130	220	150	190	5560	160	190	62	638	108
6	Tcol-MPN (MPN/100mL)	1540	2113	980	5700	390	490	230	4230	26880	5360	436	564	5332	198
TRACE & TOXIC															
1	As (µg/L)									13.1	2.2		0.8		2.0
2	Cd (µg/L)									1.2	0.7		0.2		1.0
3	Cr (µg/L)									4.6	6.1		5.0		12.0
4	Cu (µg/L)									9.2	7.5		2.3		2.0
5	Hg (µg/L)										0.2				
6	Ni (µg/L)									8.9	10.4		3.6		
7	Pb (µg/L)		47.0							2.5	0.2		0.7		2.0
8	Zn (µg/L)									2.7	1.6		3.6		5.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	62	68	58	71	73	62	64	76	90	80	82	72	69	73
2	HAR_Total (mgCaCO ₃ /L)	102	98	94	109	118	132	112	145	177	142	148	114	111	125
3	Na% (%)	27	20	22	17	23	27	22	31	18	23	30	25	31	35
4	RSC (-)	0.4	0.1	0.1	0.1	0.3	0.2	0.2	0.1	0.5	0.2	0.4	0.1	0.3	1.1
5	SAR (-)	0.9	0.5	0.6	0.5	0.8	1.1	0.7	1.3	0.7	0.8	1.1	0.7	1.0	1.3
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

River Water

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	95.49	311.1	371.8	179.8	82.53	88.29	307.7	145.1	161.7	493.6	142.6	89.92		129.0
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	350	376	362	386	400	371	433	444	487	508	403	404	407	448
3	pH_GEN (pH units)	8.6	8.6	8.6	8.7	8.5	8.5	8.6	8.4	8.6	8.3	8.3	8.4	8.5	8.3
4	Temp (deg C)	24.0	22.1	22.8	19.8	18.9	23.6	24.5	27.4	27.0	25.6	24.3	20.3	20.0	21.1
5	Turb (NTU)			24.1	1.7	0.8	1.1	1.6	21.9	0.9	1.5	0.6			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	7.9	6.7	7.7	4.2	4.1	3.6	5.9	5.0	6.4	5.5	1.3	7.6	9.2	5.9
2	ALK-TOT (mgCaCO ₃ /L)	145	168	147	163	166	131	167	167	240	259	181	177	197	192
3	B (mg/L)	0.27	0.25	0.49	0.61	0.62	0.53	0.84	0.24	0.29	0.13	0.54	0.32	0.49	0.23
4	Ca (mg/L)	25	34	30	34	34	32	32	33	39	57	37	33	41	42
5	Cl (mg/L)	21.4	18.5	18.8	18.8	20.1	21.7	22.7	22.2	24.5	20.7	19.0	21.9	18.9	30.4
6	CO ₃ (mg/L)	9.5	8.1	9.2	5.1	5.0	4.7	7.0	6.0	7.7	6.6	1.5	9.2	11.1	7.0
7	F (mg/L)	0.78	0.54	0.61	0.30	0.59	0.38	0.34	0.34	0.49	0.31	0.34	0.29	0.18	0.28
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.3	0.0	0.1	0.1	0.2
9	HCO ₃ (mg/L)	157	188	161	188	192	155	189	191	277	303	218	197	217	220
10	K (mg/L)	2.7	3.0	2.2	2.3	1.8	1.8	2.1	2.1	4.1	2.8	2.2	2.4	2.3	2.9
11	Mg (mg/L)	16.5	14.6	12.7	16.1	15.8	15.7	17.7	23.4	22.4	37.3	17.6	14.8	19.1	17.8
12	Na (mg/L)	26.0	29.1	24.1	31.3	27.5	19.4	26.3	29.2	44.0	32.4	27.9	30.6	32.2	32.9
13	NH ₃ -N (mg N/L)	0.12	0.04	0.50	0.13	0.45	0.32	0.12	0.14	0.05	0.12	0.01	0.07	0.50	0.19
14	NO ₂ +NO ₃ (mg N/L)	1.07	0.82	0.60	0.67	0.16	0.28	0.31	0.45	0.88	2.58	3.62	4.06	1.84	1.66
15	NO ₂ -N (mgN/L)	0.11	0.02	0.07	0.03	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.01
16	NO ₃ -N (mgN/L)	0.96	0.81	0.53	0.63	0.15	0.26	0.30	0.43	0.87	2.57	3.61	4.03	1.83	1.65
17	o-PO ₄ -P (mg P/L)	0.148	0.021	0.034	0.041	0.034	0.044	0.045	0.000	0.050	0.521	0.171	0.074	0.775	0.132
18	SiO ₂ (mg/L)	22.7	51.8	31.0	31.3	31.6	75.9	35.4	65.1	37.9	13.0	12.0	18.5	23.7	17.7
19	SO ₄ (mg/L)	18.5	16.1	13.3	287.9	10.0	14.6	20.3	22.0	23.1	15.5	13.6	19.4	23.1	13.5

Water Quality Seasonal Average for the period: 2004-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	River Water													
		Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.9	1.6	1.2	1.5	1.1	1.3	1.8	0.9	1.7	1.4	1.9	1.8	1.9	1.2
2	COD (mg/L)				38.8	53.1	42.9	48.6	63.3	31.5	27.0	26.3	35.3	120.0	49.0
3	DO (mg/L)	7.3	8.4	7.7	7.8	7.6	7.8	8.3	7.2	7.5	7.0	7.1	7.1	8.7	7.9
4	DO_SAT% (%)	86	95	88	86	81	91	98	90	94	85	85	78	95	88
5	FCol-MPN (MPN/100mL)	175	100	138	525	100	100	100	100	100	100	36	20	83	178
6	Tcol-MPN (MPN/100mL)	275	138	275	100	100	100	100	138	350	238	123	40	158	195
TRACE & TOXIC															
1	As (µg/L)								0.4				0.5	1.9	3.8
2	Cd (µg/L)								0.2			0.3	0.2	0.0	0.2
3	Cr (µg/L)								72.5			0.6	0.3	0.5	2.9
4	Cu (µg/L)								127.2			6.0	0.7	1.0	6.8
5	Hg (µg/L)														
6	Ni (µg/L)								71.5			1.2	0.2	2.7	2.8
7	Pb (µg/L)								0.9			0.8	0.3	5.2	2.8
8	Zn (µg/L)								36.2			6.0	5.5	0.2	0.7
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	63	84	75	85	86	81	81	83	98	143	92	83	104	106
2	HAR_Total (mgCaCO ₃ /L)	132	145	128	152	152	146	155	181	191	298	166	144	183	180
3	Na% (%)	30	30	29	31	28	22	26	26	33	20	27	31	28	26
4	RSC (-)	0.3	0.5	0.4	0.3	0.3	0.0	0.3	0.0	1.0	0.0	0.4	0.7	0.3	0.3
5	SAR (-)	1.0	1.1	0.9	1.1	1.0	0.7	0.9	0.9	1.4	0.8	0.9	1.1	1.0	1.1
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

River Water

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1 Q (cumec)	47.31	18.38	61.02	52.42	61.09	5.533	23.98	49.95	18.15	45.40	86.80	35.30	22.29		28.21	
2 EC_GEN ($\mu\text{mho}/\text{cm}$)	432	416	404	412	443	570	426	473	481	505	456	462	455	379	503	
3 pH_GEN (pH units)	8.4	8.6	8.7	8.5	8.6	8.7	8.4	8.5	8.5	8.7	8.3	8.4	8.4	8.7	8.5	
4 Temp (deg C)	27.5	24.7	22.0	23.9	20.1	23.6	19.4	29.1	28.2	26.7	26.6	26.0	24.0	23.3	21.7	
5 Turb (NTU)				0.9	1.8	0.9	0.4	1.1	0.5	0.6	1.7	0.5				
CHEMICAL																
1 Alk-Phen (mgCaCO ₃ /L)	13.4	7.3	6.2	6.9	4.6	3.8	6.6	6.0	6.1	8.5	3.5	7.9	9.0	17.4	7.9	
2 ALK-TOT (mgCaCO ₃ /L)	182	159	141	155	155	212	193	165	229	223	183	180	185	177	215	
3 B (mg/L)	0.62	0.14	0.18	0.46	1.18	0.20	0.67	0.20	0.17	0.15	0.28	0.14	0.20	0.79	0.90	
4 Ca (mg/L)	30	29	30	28	30	33	28	36	35	36	49	33	48	29	36	
5 Cl (mg/L)	34.0	36.9	32.7	27.5	31.5	43.1	35.7	33.8	34.6	36.0	26.7	25.3	26.4	29.2	31.8	
6 CO ₃ (mg/L)	16.1	8.8	7.5	8.3	5.6	4.6	7.9	7.3	7.3	10.2	4.3	9.5	10.8	21.0	9.5	
7 F (mg/L)	0.42	0.93	0.34	0.25	0.46	0.56	0.60	0.36	0.42	0.79	0.82	0.40	0.22	0.73	0.50	
8 Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.2	0.1	
9 HCO ₃ (mg/L)	190	176	157	172	178	250	219	187	265	251	214	200	204	173	243	
10 K (mg/L)	3.6	3.9	2.5	3.3	2.9	3.4	2.7	2.8	4.5	4.8	3.2	2.3	3.4	2.5	3.1	
11 Mg (mg/L)	19.0	18.6	13.6	15.5	14.9	22.8	22.0	29.2	32.6	27.7	13.8	16.2	17.3	13.7	28.2	
12 Na (mg/L)	38.3	38.9	34.0	32.5	43.9	56.9	41.7	47.7	41.7	47.2	40.4	40.1	42.1	38.9	40.1	
13 NH ₃ -N (mg N/L)	0.17	0.28	0.14	0.46	0.21	0.23	0.15	0.46	0.20	0.02	0.91	0.11	0.11	0.97	0.12	
14 NO ₂ +NO ₃ (mg N/L)	0.33	0.97	0.29	0.68	0.17	0.14	0.16	1.14	0.64	0.25	3.31	5.22	4.16	1.27	3.04	
15 NO ₂ -N (mgN/L)	0.01	0.17	0.01	0.03	0.03	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.24	0.01	0.01	
16 NO ₃ -N (mgN/L)	0.32	0.80	0.28	0.65	0.14	0.14	0.16	1.11	0.63	0.25	3.30	5.22	3.93	1.25	3.03	
17 o-PO ₄ -P (mg P/L)	0.016	0.123	0.028	0.069	0.227	0.021	0.052	0.026	0.003	0.035	0.635	0.176	0.101	0.477	0.254	
18 SiO ₂ (mg/L)	28.0	19.0	75.0	33.1	27.7	91.3	33.3	62.8	14.6	18.5	19.0	35.1	24.5	20.7	12.6	
19 SO ₄ (mg/L)	18.7	31.7	25.0	16.5	29.1	31.5	16.3	22.3	25.6	13.1	12.3	26.4	30.9	28.0	24.8	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : TEKRA (AGH00C4)

Local River : Pranhita

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Summer															
		Mar - May															
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
BIOLOGICAL/BACTERIOLOGICAL																	
1	BOD3-27 (mg/L)	0.8	0.8	1.0	1.3	1.4	1.4	1.9	1.4	2.3	1.4	1.6	2.6	2.1	1.8	1.8	
2	COD (mg/L)					65.1	44.4	27.9	25.8	57.6	76.5	53.0	29.7	44.5	106.3	30.7	
3	DO (mg/L)	6.2	6.6	7.1	7.3	7.1	6.8	6.8	7.1	6.9	6.2	6.4	5.9	7.2	7.3	7.2	
4	DO_SAT% (%)	79	79	81	86	78	80	81	92	88	77	79	73	85	86	81	
5	FCol-MPN (MPN/100mL)	100	100	100	100	100	100	100	100	200	100	167	43	57	157	37	
6	Tcol-MPN (MPN/100mL)	183	150	100	150	183	100	100	100	483	183	650	130	143	250	50	
TRACE & TOXIC																	
1	As (µg/L)										0.7	2.5	4.4	0.8	3.3	0.0	1.6
2	Cd (µg/L)					8.0					0.8	1.7	0.0	1.0	0.3	0.0	0.1
3	Cr (µg/L)					17.0					0.0	1.2	0.7	5.9	1.5	3.0	3.5
4	Cu (µg/L)										0.8	4.9		2.2	7.6	5.4	
5	Hg (µg/L)					1.9					0.1	0.1	0.1	0.0			
6	Ni (µg/L)					1.0					0.0	10.5	5.1	3.1	9.6	19.0	7.4
7	Pb (µg/L)					127.0					23.8	0.7	0.8	14.0	1.4	1.0	3.8
8	Zn (µg/L)					31.0					19.3	19.0	12.6	28.0	3.6	7.0	2.3
CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO ₃ /L)	74	72	75	70	75	83	71	89	89	89	121	84	121	71	89	
2	HAR_Total (mgCaCO ₃ /L)	153	150	132	134	137	178	163	211	225	205	179	151	193	128	206	
3	Na% (%)	35	35	36	34	40	41	35	27	28	33	33	36	32	40	30	
4	RSC (-)	0.6	0.2	0.2	0.4	0.4	0.7	0.6	0.0	0.6	0.4	0.1	0.6	0.1	1.0	0.4	
5	SAR (-)	1.3	1.4	1.3	1.2	1.7	1.9	1.4	1.2	1.2	1.4	1.3	1.5	1.3	1.6	1.2	
PESTICIDES																	
1	Aldrin (µg/L)					0.0					0.0						
2	BHC (µg/L)					0.1					0.1						
3	DDT (µg/L)					0.1					0.0						
4	Dieldrin (µg/L)					0.0					0.0						
5	Endos (µg/L)					0.1					0.1						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: BHATPALLI	Code	: AGH10L0
State	: Andhra Pradesh	District	: Adilabad
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wardha
Sub-Sub Tributary	: -	Local River	: Peddavagu
Division	: Wainganga Div., Nagpur	Sub-Division	: Wardha SD, Chandrapur
Drainage Area	: 3100 Sq. Km.	Bank	: Left
Latitude	: 19°19'50"	Longitude	: 79°30'14"
	Opening Date	Closing Date	
Gauge	: 12.08.1986		
Discharge	: 01.10.1986		
Sediment	: 07.10.1988		
Water Quality	: 04.01.1988		

Water Quality Datasheet for the period : 2017-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018	
		A	A	A	A	A	A	A	A	A	A	A	A	
PHYSICAL														
1	Q (cumec)	2.042	3.920	4.517	13.34	6.227	5.637	3.201	3.683	3.670	2.542	2.210	0.853	
2	Colour_Cod (-)	Clear	Light Brown	Clear										
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	797	756	709	798	771	715	607	497	468	699	630	531	
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	8.1	7.6	8.2	8.2	8.5	8.5	8.2	8.1	8.0	8.0	8.3	8.4	
6	Temp (deg C)	26.0	26.0	26.0	23.0	23.0	23.0	21.0	17.0	19.0	28.0	29.0	30.0	
7	Turb (NTU)	2.3	0.4	1.7	5.7	1.6	0.3	0.4	1.3	0.8	0.1	0.1	0.1	
CHEMICAL														
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	26.9	10.0	0.0	0.0	0.0	0.0	4.0	4.0	
2	ALK-TOT (mgCaCO ₃ /L)	283	240	284	327	284	269	263	211	263	257	291	331	
3	B (mg/L)	0.49	0.43	0.58	0.09	0.00	0.39	0.41	0.31	0.09	0.72	0.61	1.49	
4	Ca (mg/L)	29	37	26	35	37	36	37	39	23	36	40	64	
5	Cl (mg/L)	19.9	25.8	15.9	27.8	20.6	22.7	26.8	18.5	18.5	11.1	28.6	22.3	
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	32.4	12.0	0.0	0.0	0.0	0.0	4.8	4.8	
7	F (mg/L)	1.38	1.36	2.31	1.26	2.52	0.02	0.86	0.70	0.77	0.71	0.78	0.90	
8	Fe (mg/L)	0.0	0.0	0.4	0.1	0.4	0.2	0.4	0.1	0.1	0.0	0.1	0.1	
9	HCO ₃ (mg/L)	345	293	347	399	281	304	321	258	321	314	345	394	
10	K (mg/L)	2.8	2.7	2.3	3.2	2.6	2.4	3.0	2.5	1.9	2.2	2.5	2.5	
11	Mg (mg/L)	16.6	20.3	25.1	27.8	29.8	30.3	28.0	25.1	35.6	28.0	35.0	46.1	
12	Na (mg/L)	61.0	54.5	49.1	54.0	45.3	48.7	65.0	46.8	42.0	46.8	49.7	37.4	
13	NH ₃ -N (mg N/L)	0.95	0.12	0.44	0.32	0.08	0.21	0.16	0.27	0.33	0.27	0.19	0.00	
14	NO ₂ +NO ₃ (mg N/L)	0.85	1.81	2.58	1.72	11.06	2.30	2.28	1.77	1.85	1.53	1.47	6.67	
15	NO ₂ -N (mgN/L)	0.01	0.12	0.00	0.01	0.03	0.02	0.02	0.03	0.02	0.01	0.02	0.01	
16	NO ₃ -N (mgN/L)	0.84	1.69	2.58	1.71	11.03	2.28	2.26	1.74	1.83	1.52	1.45	6.66	
17	o-PO ₄ -P (mg P/L)	1.975	0.571	1.426	0.196	0.126	0.108	0.114	0.155	0.157	0.169	0.415	0.265	
18	SiO ₂ (mg/L)	42.1	36.1	15.5	30.0	18.4	35.4	15.7	13.3	26.8	28.8	10.9	24.6	
19	SO ₄ (mg/L)	24.0	18.9	22.6	18.1	27.1	29.4	8.6	10.2	9.7	8.5	14.0	15.8	

Water Quality Datasheet for the period : 2017-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.8	1.1	1.2	1.5	2.1	3.0	2.3	1.2	2.6	1.0	1.7	2.1
2	COD (mg/L)	132.6	20.8	25.5	16.6	3.4	33.4	10.5	19.2	70.8	34.8	50.2	14.8
3	DO (mg/L)	5.3	5.9	7.2	7.8	8.9	8.8	7.5	6.8	9.5	8.2	6.2	8.8
4	DO_SAT% (%)	65	73	89	91	104	103	84	70	102	105	81	116
5	FCol-MPN (MPN/100mL)	220	110	70	20	170	230	1300	1300	170	20	170	220
6	Tcol-MPN (MPN/100mL)	800	3000	140	360	500	2400	1300	2400	1400	170	220	500
TRACE & TOXIC													
1	As (µg/L)			2.0				3.5					1.4
2	Cd (µg/L)			0.0				0.1					0.1
3	Cr (µg/L)			10.0				11.9					0.2
4	Cu (µg/L)			2.0				5.9					4.6
5	Ni (µg/L)							12.4					7.0
6	Pb (µg/L)			1.0				7.9					5.3
7	Zn (µg/L)			5.0				5.0					2.2
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	74	93	66	88	92	91	94	98	58	91	101	161
2	HAR_Total (mgCaCO ₃ /L)	143	177	171	204	216	218	210	203	206	208	247	353
3	Na% (%)	48	40	38	36	31	33	40	33	31	33	30	19
4	RSC (-)	2.8	1.3	2.3	2.5	1.4	1.1	1.1	0.2	1.2	1.0	0.9	0.0
5	SAR (-)	2.2	1.8	1.6	1.7	1.3	1.4	2.0	1.4	1.3	1.4	1.4	0.9
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	166.7	0.648	6.277
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	798	468	665
3	pH_GEN (pH units)	12	8.5	7.6	8.2
4	Temp (deg C)	12	30.0	17.0	24.3
5	Turb (NTU)	12	5.7	0.1	1.2
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	26.9	0.0	3.7
2	ALK-TOT (mgCaCO ₃ /L)	12	331	211	275
3	B (mg/L)	12	1.49	0.00	0.47
4	Ca (mg/L)	12	64	23	37
5	Cl (mg/L)	12	28.6	11.1	21.5
6	CO ₃ (mg/L)	12	32.4	0.0	4.5
7	F (mg/L)	12	2.52	0.02	1.13
8	Fe (mg/L)	12	0.4	0.0	0.2
9	HCO ₃ (mg/L)	12	399	258	327
10	K (mg/L)	12	3.2	1.9	2.5
11	Mg (mg/L)	12	46.1	16.6	29
12	Na (mg/L)	12	65.0	37.4	50
13	NH ₃ -N (mg N/L)	12	0.95	0.00	0.28
14	NO ₂ +NO ₃ (mg N/L)	12	11.06	0.85	2.99
15	NO ₂ -N (mgN/L)	12	0.12	0.00	0.02
16	NO ₃ -N (mgN/L)	12	11.03	0.84	2.97
17	o-PO ₄ -P (mg P/L)	12	1.975	0.108	0.473
18	SiO ₂ (mg/L)	12	42.1	10.9	24.8
19	SO ₄ (mg/L)	12	29.4	8.5	17.2
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	3.0	1.0	1.8
2	COD (mg/L)	12	132.6	3.4	36.1
3	DO (mg/L)	12	9.5	5.3	7.6
4	DO_SAT% (%)	12	116	65	90
5	FCol-MPN (MPN/100mL)	12	1300	20	333
6	Tcol-MPN (MPN/100mL)	12	3000	140	1099
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	3.5	1.4	2.3
2	Cd ($\mu\text{g}/\text{L}$)	3	0.1	0.0	0.1
3	Cr ($\mu\text{g}/\text{L}$)	3	11.9	0.2	7.4
4	Cu ($\mu\text{g}/\text{L}$)	3	5.9	2.0	4.2
5	Ni ($\mu\text{g}/\text{L}$)	2	12.4	7.0	9.7
6	Pb ($\mu\text{g}/\text{L}$)	3	7.9	1.0	4.7
7	Zn ($\mu\text{g}/\text{L}$)	3	5.0	2.2	4.1
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	161	58	92
2	HAR_Total (mgCaCO ₃ /L)	12	353	143	213
3	Na% (%)	12	48	19	34
4	RSC (-)	12	2.8	0.0	1.3
5	SAR (-)	12	2.2	0.9	1.5
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	19.31	34.16	35.39	36.41	15.13	44.77	67.75	48.97	122.1	136.8	11.87	15.36		6.009
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	406	416	410	416	465	451	393	418	432	433	517	464	419	766
3	pH_GEN (pH units)	8.5	8.5	8.4	8.5	8.4	8.3	8.4	8.4	8.7	8.4	7.9	8.3	8.3	8.1
4	TDS (mg/L)														
5	Temp (deg C)	27.7	27.2	27.9	29.3	27.0	28.0	28.3	27.0	27.8	26.6	28.2	26.4	26.2	24.8
6	Turb (NTU)			15.2	187.2	67.8	31.8	20.6	10.8	3.0	2.8	3.0			2.3
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	8.3	6.1	6.0	4.9	2.9	2.7	5.4	4.0	3.6	5.8	1.2	3.6	7.2	5.4
2	ALK-TOT (mgCaCO ₃ /L)	204	190	175	180	221	206	186	193	250	182	238	223	169	284
3	B (mg/L)	0.24	0.25	0.45	0.55	0.91	0.29	0.36	0.28	0.26	0.13	0.18	0.32	0.58	0.32
4	Ca (mg/L)	32	33	30	35	35	32	37	36	43	44	34	30	33	33
5	Cl (mg/L)	12.6	10.8	9.1	15.9	12.6	14.5	10.8	12.8	13.3	47.9	16.1	16.7	11.1	22.0
6	CO ₃ (mg/L)	10.1	7.3	7.3	5.9	3.5	3.2	6.5	4.8	4.4	7.0	1.5	4.4	8.6	6.5
7	F (mg/L)	0.56	0.73	0.53	0.55	0.58	0.65	0.53	0.55	0.61	0.63	0.86	0.30	0.33	1.77
8	Fe (mg/L)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.2	0.1	0.1	0.1	0.2
9	HCO ₃ (mg/L)	228	217	199	207	262	244	214	226	297	208	288	263	188	333
10	K (mg/L)	2.7	1.3	1.9	1.6	2.0	2.3	1.7	2.2	2.7	3.0	2.6	2.1	2.4	2.7
11	Mg (mg/L)	19.7	18.1	17.7	20.1	21.2	17.4	16.5	21.4	26.7	24.6	29.0	23.3	16.2	23.9
12	Na (mg/L)	34.2	33.1	26.7	22.8	39.7	41.5	14.7	42.5	29.8	30.6	48.8	36.6	31.1	52.8
13	NH ₃ -N (mg N/L)	0.22	0.09	0.16	0.54	0.34	0.25	0.28	0.17	0.02	0.10	0.34	0.06	0.28	0.38
14	NO ₂ +NO ₃ (mg N/L)	3.18	1.40	1.81	2.21	0.93	0.22	1.31	1.16	2.01	1.38	2.90	10.56	2.11	3.60
15	NO ₂ -N (mgN/L)	0.06	0.02	0.05	0.05	0.17	0.08	0.01	0.04	0.12	0.01	0.06	0.02	0.02	0.03
16	NO ₃ -N (mgN/L)	3.12	1.37	1.77	2.16	0.76	0.14	1.30	1.12	1.89	1.38	2.83	10.54	2.09	3.57
17	o-PO ₄ -P (mg P/L)	0.096	0.039	0.023	0.045	0.072	0.028	0.248	0.015	0.100	0.048	0.119	0.082	0.117	0.859
18	SiO ₂ (mg/L)	48.8	38.7	52.6	45.2	48.4	118.5	35.6	82.4	50.9	27.7	34.7	33.2	30.0	28.4
19	SO ₄ (mg/L)	11.9	26.9	8.4	12.6	14.7	14.5	8.8	16.5	15.0	18.4	14.7	20.6	12.9	22.1

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.3	1.5	1.5	1.2	1.6	2.6	22.7	2.3	1.9	1.5	1.9	5.6	9.9	1.5
2	COD (mg/L)				50.7	51.9	50.0	96.0	31.3	45.5	36.3	23.0	106.2	41.1	39.8
3	DO (mg/L)	7.1	7.3	7.1	6.9	6.7	6.8	5.9	7.3	6.4	6.5	6.7	6.4	5.4	7.0
4	DO_SAT% (%)	90	92	91	91	84	85	77	92	81	81	87	80	66	84
5	FCol-MPN (MPN/100mL)	1143	785	2690	880	660	380	250	200	1530	4100	758	340	212	118
6	Tcol-MPN (MPN/100mL)	5133	2100	25180	2350	2630	1940	4475	1770	12230	49290	4386	2514	1686	960
TRACE & TOXIC															
1	As (µg/L)									6.3	5.0			4.2	2.0
2	Cd (µg/L)									0.8	0.4			0.2	0.0
3	Cr (µg/L)									0.8	4.7			7.7	10.0
4	Cu (µg/L)									25.6	5.7			11.7	2.0
5	Hg (µg/L)										0.4				
6	Ni (µg/L)									0.6	10.3			2.8	
7	Pb (µg/L)	62.0								1.6	0.6			0.6	1.0
8	Zn (µg/L)		24.0							2.5	9.0			2.8	5.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	80	81	74	88	87	81	91	89	107	111	85	75	83	83
2	HAR_Total (mgCaCO ₃ /L)	162	157	148	171	175	154	160	178	218	213	206	172	150	182
3	Na% (%)	30	30	27	21	31	35	17	33	22	23	33	31	30	39
4	RSC (-)	0.9	0.7	0.6	0.2	0.9	1.1	0.5	0.4	0.7	0.0	0.7	1.1	0.4	2.1
5	SAR (-)	1.2	1.1	0.9	0.8	1.3	1.5	0.5	1.4	0.9	0.9	1.5	1.2	1.1	1.7
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieleadrin (µg/L)		0.0												
5	Endos (µg/L)			0.1											

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	5.358	23.03	9.084	5.041	4.593	1.879	13.92	4.453	7.694	14.37	8.175	5.385		4.048
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	501	489	503	514	569	627	539	510	539	653	529	516	501	572
3	pH_GEN (pH units)	8.6	8.5	8.4	8.6	8.4	8.4	8.4	8.6	8.4	8.3	8.3	8.3	8.5	8.2
4	TDS (mg/L)														
5	Temp (deg C)	20.4	21.0	22.5	24.0	20.8	21.3	22.8	22.3	23.5	23.5	23.3	20.8	20.0	20.0
6	Turb (NTU)			2.1	4.3	0.5	1.7	0.9	5.8	1.4	1.7	0.4			0.7
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	9.2	8.6	6.8	4.7	3.3	6.4	5.9	6.8	4.5	5.9	3.7	5.5	13.8	2.5
2	ALK-TOT (mgCaCO ₃ /L)	268	253	225	228	265	267	249	238	282	309	269	242	266	252
3	B (mg/L)	0.25	0.26	0.39	0.47	0.68	0.53	0.90	0.20	0.21	0.18	0.54	0.22	0.68	0.30
4	Ca (mg/L)	30	35	34	30	33	42	39	30	41	67	38	35	42	34
5	Cl (mg/L)	11.5	10.6	13.0	15.8	12.8	16.7	13.1	15.3	14.4	14.8	13.5	19.9	15.9	21.6
6	CO ₃ (mg/L)	11.0	10.3	8.2	5.7	4.0	7.7	7.1	8.2	5.5	7.1	4.5	6.6	16.6	3.0
7	F (mg/L)	0.83	1.23	0.97	0.53	0.79	0.63	0.46	0.75	0.80	0.61	0.55	0.70	0.47	0.59
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5	0.3	0.0	0.1	0.1	0.2
9	HCO ₃ (mg/L)	304	287	258	266	315	310	289	274	332	362	319	282	290	301
10	K (mg/L)	2.2	2.5	2.0	2.1	1.5	2.0	1.7	1.8	2.9	2.1	2.1	2.4	2.4	2.4
11	Mg (mg/L)	30.2	25.5	21.7	25.6	24.4	27.5	24.5	34.2	28.4	33.2	28.6	21.0	22.4	29.7
12	Na (mg/L)	47.2	40.7	38.2	45.0	42.7	48.2	37.8	49.8	45.5	44.2	44.0	43.2	37.6	50.6
13	NH ₃ -N (mg N/L)	0.13	0.04	0.44	0.07	0.43	0.48	0.08	0.17	0.05	0.06	0.06	0.12	0.48	0.24
14	NO ₂ +NO ₃ (mg N/L)	1.78	0.86	2.02	2.36	0.26	0.52	1.34	1.28	3.55	2.49	6.86	8.88	2.30	2.05
15	NO ₂ -N (mgN/L)	0.10	0.02	0.09	0.09	0.04	0.05	0.02	0.01	0.03	0.01	0.01	0.01	0.02	0.02
16	NO ₃ -N (mgN/L)	1.69	0.84	1.93	2.28	0.21	0.47	1.32	1.28	3.52	2.48	6.85	8.87	2.28	2.03
17	o-PO ₄ -P (mg P/L)	0.146	0.034	0.041	0.057	0.044	0.406	0.037	0.002	0.061	0.233	0.188	0.086	1.423	0.134
18	SiO ₂ (mg/L)	45.6	90.8	53.6	53.2	56.7	92.6	57.8	130.3	72.0	25.4	18.6	37.6	30.4	22.8
19	SO ₄ (mg/L)	21.5	11.0	12.2	12.1	12.5	16.0	16.5	19.4	16.9	11.9	20.6	17.7	14.4	14.5

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.8	1.2	1.6	1.5	2.2	2.0	1.8	2.0	2.2	2.1	2.3	6.5	2.2	2.3
2	COD (mg/L)				72.8	66.6	67.7	55.5	71.6	27.2	43.3	27.0	39.8	114.0	33.5
3	DO (mg/L)	8.7	8.3	8.0	8.2	8.3	7.8	7.9	9.4	7.7	8.4	7.8	7.4	8.1	8.2
4	DO_SAT% (%)	96	93	92	98	93	88	91	108	91	99	92	83	89	90
5	FCol-MPN (MPN/100mL)	296	275	788	313	125	750	138	588	250	588	113	328	1118	750
6	Tcol-MPN (MPN/100mL)	592	675	2225	340	263	3238	400	3063	6925	11263	530	1825	9325	1875
TRACE & TOXIC															
1	As (µg/L)								0.2				1.3	2.7	3.5
2	Cd (µg/L)								0.0			0.2	0.2	0.2	0.1
3	Cr (µg/L)								6.3			4.6	1.6	1.2	11.9
4	Cu (µg/L)								197.0			9.9	0.4	0.9	5.9
5	Hg (µg/L)														
6	Ni (µg/L)								40.3			0.0	0.3	0.7	12.4
7	Pb (µg/L)								0.6			0.7	0.6	13.1	7.9
8	Zn (µg/L)								22.7			3.0	3.0	1.7	5.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	76	89	84	75	84	105	98	75	104	168	94	89	106	85
2	HAR_Total (mgCaCO ₃ /L)	202	195	175	182	185	220	200	217	222	306	213	176	199	209
3	Na% (%)	33	31	32	35	33	32	29	33	31	25	31	34	29	34
4	RSC (-)	1.3	1.2	1.0	0.9	1.6	1.0	1.0	0.5	1.2	0.5	1.1	1.3	1.4	0.9
5	SAR (-)	1.4	1.3	1.3	1.5	1.4	1.5	1.2	1.5	1.3	1.1	1.3	1.4	1.2	1.5
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	2.351	1.269	1.173	1.625	8.366	1.936	0.158	3.893	2.115	3.878	7.173	5.364	3.770		1.868
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	540	491	580	538	471	579	634	565	542	515	556	585	532	509	620
3	pH_GEN (pH units)	8.5	8.5	8.3	8.5	8.5	8.5	8.3	8.3	8.5	8.6	8.2	8.3	8.3	8.4	8.2
4	TDS (mg/L)															
5	Temp (deg C)	27.2	27.1	26.0	26.0	25.3	27.0	26.0	25.7	25.7	24.7	25.7	25.3	26.3	24.0	29.0
6	Turb (NTU)					0.8	9.3	0.9	1.8	0.9	0.7	0.5	0.6	0.8		0.1
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	14.8	7.3	5.5	7.0	3.8	4.3	3.3	3.7	6.6	6.0	4.9	1.7	4.0	8.0	2.7
2	ALK-TOT (mgCaCO ₃ /L)	274	256	240	221	214	236	278	227	287	273	251	229	209	254	293
3	B (mg/L)	0.48	0.20	0.14	0.65	1.14	0.25	0.50	0.16	0.18	0.15	0.38	0.23	0.13	0.79	0.94
4	Ca (mg/L)	29	29	32	28	31	28	37	34	31	35	51	33	41	34	47
5	Cl (mg/L)	14.4	13.7	15.6	12.5	11.4	37.4	31.5	21.8	15.9	17.0	16.2	17.1	15.5	23.2	20.7
6	CO ₃ (mg/L)	17.8	8.8	6.6	8.4	4.6	5.2	4.0	4.4	8.0	7.3	6.0	2.0	4.8	9.6	3.2
7	F (mg/L)	0.79	0.85	0.41	0.54	0.53	0.65	0.71	0.61	0.66	1.09	0.99	0.36	0.67	1.50	0.80
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	0.1	0.1	0.0	0.4	0.1
9	HCO ₃ (mg/L)	298	294	280	253	252	277	331	268	334	318	294	276	245	290	351
10	K (mg/L)	3.0	2.5	1.8	2.2	4.2	2.5	1.7	1.7	2.3	3.2	2.4	2.2	2.4	2.3	2.4
11	Mg (mg/L)	26.3	25.9	21.1	21.2	16.7	26.3	30.7	30.5	42.3	32.8	23.6	27.8	18.0	21.0	36.3
12	Na (mg/L)	54.3	50.1	52.8	48.7	48.8	57.1	53.4	61.3	54.8	53.2	48.5	51.6	49.0	64.5	44.6
13	NH ₃ -N (mg N/L)	0.24	0.17	0.13	0.48	0.22	0.08	0.26	0.33	0.23	0.03	0.46	0.09	0.10	0.91	0.15
14	NO ₂ +NO ₃ (mg N/L)	0.73	1.32	1.02	1.87	0.36	0.14	0.26	1.65	0.45	0.78	7.08	7.65	6.63	2.03	3.22
15	NO ₂ -N (mgN/L)	0.01	0.09	0.04	0.10	0.03	0.00	0.02	0.05	0.02	0.01	0.08	0.01	0.18	0.22	0.01
16	NO ₃ -N (mgN/L)	0.71	1.23	0.98	1.77	0.33	0.14	0.23	1.60	0.43	0.77	7.00	7.64	6.45	1.81	3.21
17	o-PO ₄ -P (mg P/L)	0.019	0.208	0.069	0.076	0.248	0.038	0.210	0.039	0.015	0.046	0.565	0.235	0.050	1.004	0.283
18	SiO ₂ (mg/L)	49.7	48.2		54.0	42.8	120.2	26.2	87.8	30.1	27.9	29.2	51.1	40.2	29.9	21.4
19	SO ₄ (mg/L)	18.0	18.9	427.5	13.8	21.9	16.8	16.0	15.7	24.6	11.7	12.7	24.1	13.8	31.2	12.8

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BHATPALLI (AGH10L0)

Local River : Peddavagu

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water

S.No	Parameters	Summer															
		Mar - May															
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
BIOLOGICAL/BACTERIOLOGICAL																	
1	BOD3-27 (mg/L)	0.9	1.6	1.2	1.4	1.8	1.6	1.4	2.0	2.6	16.9	3.9	2.7	1.8	2.1	1.6	
2	COD (mg/L)					94.4	70.3	55.7	36.0	49.5	83.3	48.7	32.7	39.9	107.9	33.3	
3	DO (mg/L)	7.7	7.8	7.1	7.4	6.9	7.6	8.1	7.3	8.2	4.9	6.8	7.0	6.4	7.4	7.7	
4	DO_SAT% (%)	96	98	87	92	84	93	100	89	101	57	83	85	79	88	101	
5	FCol-MPN (MPN/100mL)	294	406	283	250	300	200	433	300	400	150	317	173	113	1810	137	
6	Tcol-MPN (MPN/100mL)	1194	878	500	567	967	250	600	400	2683	3567	11083	363	210	4233	297	
TRACE & TOXIC																	
1	As (µg/L)										0.9	2.1	3.0	1.2	1.6	2.0	1.4
2	Cd (µg/L)					8.0					0.5	1.4	0.0	1.0	0.3	0.0	0.1
3	Cr (µg/L)					48.0					0.0	1.6	2.4	5.7	1.4	2.0	0.2
4	Cu (µg/L)										0.1	2.9		2.8	2.0	4.6	
5	Hg (µg/L)					1.2					0.0	0.1	0.1	0.0			
6	Ni (µg/L)					1.0					0.0	6.0	7.0	2.5	1.3	11.0	7.0
7	Pb (µg/L)					70.0					22.0	0.9	0.5	13.0	1.7	0.0	5.3
8	Zn (µg/L)					49.0					18.9	11.1	23.4	0.0	4.1	6.0	2.2
CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO ₃ /L)	71	72	80	69	78	71	92	84	78	87	127	81	102	86	118	
2	HAR_Total (mgCaCO ₃ /L)	181	179	168	157	148	180	220	211	254	224	226	197	177	173	269	
3	Na% (%)	39	37	41	40	40	41	34	40	32	34	32	36	37	43	27	
4	RSC (-)	1.9	1.6	1.5	1.3	1.3	1.2	1.2	0.5	0.8	1.0	0.5	0.8	0.7	1.6	0.6	
5	SAR (-)	1.8	1.6	1.8	1.7	1.8	1.9	1.6	1.9	1.5	1.6	1.4	1.6	1.6	2.1	1.2	
PESTICIDES																	
1	Aldrin (µg/L)					0.0					0.0						
2	BHC (µg/L)					0.1					0.0						
3	DDT (µg/L)					0.1					0.0						
4	Dieldrin (µg/L)					0.1					0.0						
5	Endos (µg/L)					0.1					0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: BAMNI	Code	: AGH30E2
State	: Maharashtra	District	: Chandrapur
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wardha
Sub-Sub Tributary	:	Local River	: Wardha
Division	: Wainganga Div., Nagpur	Sub-Division	: Wardha Sub-division,Chandrapur
Drainage Area	: 46020 Sq. Km.	Bank	: Left
Latitude	: 19°48'53"	Longitude	: 79°22'46"
	Opening Date	Closing Date	
Gauge	: 12.01.1964		
Discharge	: 16.10.1965		
Sediment	: 13.12.1965		
Water Quality	: 03.06.1966		

Water Quality Datasheet for the period : 2017-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

River Water Analysis

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018
		A	A	A	A	A	A	A	A	A	A	A
PHYSICAL												
1	Q (cumec)	9.472	82.08	39.49	111.9	45.84	23.12	3.272	29.97	2.029	0.676	0.604
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	780	513	731	652	775	784	965	570	926	1501	1048
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	other-dis-agreeable	odour free	odour free
5	pH_GEN (pH units)	7.8	7.5	8.3	8.0	8.4	8.3	7.7	8.0	7.8	7.4	7.8
6	Temp (deg C)	29.0	29.0	30.0	29.0	28.0	27.0	23.0	22.0	22.0	25.0	29.0
CHEMICAL												
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	6.0	0.0	41.8	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	238	288	213	79	221	189	271	197	217	251	335
3	B (mg/L)	0.56	0.63	0.22	0.49	1.04	0.32	0.52	0.33	0.28	0.51	0.08
4	Ca (mg/L)	53	61	41	40	48	48	104	49	85	70	70
5	Cl (mg/L)	131.2	91.5	35.8	79.5	45.3	63.8	230.6	59.7	131.8	222.6	159.0
6	CO ₃ (mg/L)	0.0	0.0	7.2	0.0	50.4	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.71	0.68	1.22	0.24	1.40	0.61	0.20	0.40	0.43	0.39	0.37
8	Fe (mg/L)	0.2	0.1	0.4	0.2	0.5	0.1	0.3	0.1	0.1	0.1	0.1
9	HCO ₃ (mg/L)	290	351	245	97	167	230	331	240	265	306	409
10	K (mg/L)	7.2	12.6	5.5	5.4	5.0	4.9	21.3	4.3	7.8	15.5	16.5
11	Mg (mg/L)	16.6	12.3	17.7	5.9	21.5	22.7	36.2	21.6	24.5	61.2	31.5
12	Na (mg/L)	83.6	80.5	37.9	34.1	37.0	52.8	158.5	50.0	97.1	121.3	156.3
13	NH ₃ -N (mg N/L)	0.93	0.73	0.52	0.78	0.32	0.18	0.14	0.24	0.29	0.35	0.13
14	NO ₂ +NO ₃ (mg N/L)	2.03	2.10	0.41	3.20	2.03	1.90	4.24	1.83	2.03	4.68	2.91
15	NO ₂ -N (mgN/L)	0.01	0.07	0.01	0.01	0.12	0.04	0.02	0.02	0.01	0.01	0.32
16	NO ₃ -N (mgN/L)	2.02	2.02	0.40	3.19	1.91	1.86	4.22	1.81	2.02	4.67	2.59
17	o-PO ₄ -P (mg P/L)	4.527	0.706	1.105	0.975	0.142	0.130	0.094	0.130	0.041	0.179	0.285
18	SiO ₂ (mg/L)	27.6	23.5	9.3	28.9	28.6	32.1	20.3	10.4	14.4	13.7	11.3
19	SO ₄ (mg/L)	40.8	42.4	51.7	37.3	59.7	68.3	26.4	10.8	34.8	42.5	55.1

Water Quality Datasheet for the period : 2017-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018
		A	A	A	A	A	A	A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL											
1	BOD3-27 (mg/L)	50.0	2.4	2.5	1.9	2.3	1.6	15.0	2.0	2.4	15.0	5.5
2	COD (mg/L)	296.3	96.1	28.3	24.0	6.0	70.2	47.0	34.6	70.3	47.4	32.8
3	DO (mg/L)	2.3	6.2	5.9	5.4	6.5	5.5	3.5	7.2	7.3	3.2	6.6
4	DO_SAT% (%)	30	81	78	70	83	69	41	82	83	39	86
5	FCol-MPN (MPN/100mL)	20	60	40	70	170	2400	300	340	110	40	330
6	Tcol-MPN (MPN/100mL)	20	5000	220	270	800	5000	300	1300	220	80	2200
	TRACE & TOXIC											
1	As (µg/L)			1.0				9.0				2.4
2	Cd (µg/L)			1.0				0.2				0.2
3	Cr (µg/L)			11.0				19.3				0.0
4	Cu (µg/L)			4.0				6.4				2.3
5	Ni (µg/L)							21.6				5.3
6	Pb (µg/L)			2.0				5.2				64.8
7	Zn (µg/L)			5.0				6.3				1.9
	CHEMICAL INDICES											
1	HAR_Ca (mgCaCO ₃ /L)	133	152	101	99	120	120	259	122	214	175	175
2	HAR_Total (mgCaCO ₃ /L)	202	203	175	124	210	215	410	212	316	430	306
3	Na% (%)	46	44	31	36	27	34	44	33	39	37	51
4	RSC (-)	0.7	1.7	0.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.6
5	SAR (-)	2.6	2.5	1.2	1.3	1.1	1.6	3.4	1.5	2.4	2.6	3.9
	PESTICIDES											

Water Quality Summary for the period : 2017-2018

Station Name : BAMNI (AGH30E2)

Division : Wainganga Div., Nagpur

Local River : Wardha

Sub-Division : Wardha Sub-division,Chandrapur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	335	1053	0.401	44.87
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	11	1501	513	840
3	pH_GEN (pH units)	11	8.4	7.4	7.9
4	Temp (deg C)	11	30.0	22.0	26.6
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	11	41.8	0.0	4.3
2	ALK-TOT (mgCaCO ₃ /L)	11	335	79	227
3	B (mg/L)	11	1.04	0.08	0.45
4	Ca (mg/L)	11	104	40	61
5	Cl (mg/L)	11	230.6	35.8	113.7
6	CO ₃ (mg/L)	11	50.4	0.0	5.2
7	F (mg/L)	11	1.40	0.20	0.6
8	Fe (mg/L)	11	0.5	0.1	0.2
9	HCO ₃ (mg/L)	11	409	97	266
10	K (mg/L)	11	21.3	4.3	9.6
11	Mg (mg/L)	11	61.2	5.9	24.7
12	Na (mg/L)	11	158.5	34.1	82.6
13	NH ₃ -N (mg N/L)	11	0.93	0.13	0.42
14	NO ₂ +NO ₃ (mg N/L)	11	4.68	0.41	2.49
15	NO ₂ -N (mgN/L)	11	0.32	0.01	0.06
16	NO ₃ -N (mgN/L)	11	4.67	0.40	2.43
17	o-PO ₄ -P (mg P/L)	11	4.527	0.041	0.756
18	SiO ₂ (mg/L)	11	32.1	9.3	20
19	SO ₄ (mg/L)	11	68.3	10.8	42.7
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	11	50.0	1.6	9.1
2	COD (mg/L)	11	296.3	6.0	68.5
3	DO (mg/L)	11	7.3	2.3	5.4
4	DO_SAT% (%)	11	86	30	67
5	FCol-MPN (MPN/100mL)	11	2400	20	353
6	Tcol-MPN (MPN/100mL)	11	5000	20	1401
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	9.0	1.0	4.1
2	Cd ($\mu\text{g}/\text{L}$)	3	1.0	0.2	0.5
3	Cr ($\mu\text{g}/\text{L}$)	3	19.3	0.0	10.1
4	Cu ($\mu\text{g}/\text{L}$)	3	6.4	2.3	4.3
5	Ni ($\mu\text{g}/\text{L}$)	2	21.6	5.3	13.5
6	Pb ($\mu\text{g}/\text{L}$)	3	64.8	2.0	24
7	Zn ($\mu\text{g}/\text{L}$)	3	6.3	1.9	4.4
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	11	259	99	152
2	HAR_Total (mgCaCO ₃ /L)	11	430	124	255
3	Na% (%)	11	51	27	39
4	RSC (-)	11	1.7	0.0	0.4
5	SAR (-)	11	3.9	1.1	2.2
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	60.24	335.2	539.5	1220	106.5	54.99	1243	1272	545.0	1046	767.2	98.64		57.76
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	573	855	378	449	649	687	338	405	910	627	538	518	422	690
3	pH_GEN (pH units)	8.2	8.2	8.3	8.2	8.1	8.1	8.2	8.2	8.5	8.3	7.6	8.1	8.0	8.0
4	Temp (deg C)	29.1	30.2	30.1	30.4	31.0	30.6	30.3	29.2	28.0	27.7	29.2	28.2	28.4	29.0
5	Turb (NTU)			34.0	77.5	105.6	32.7	24.4	16.6	1.6	6.0	12.1			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	1.2	4.6	2.9	3.4	2.6	1.3	4.7	2.5	5.4	3.6	0.8	2.1	4.1	9.6
2	ALK-TOT (mgCaCO ₃ /L)	155	140	132	145	203	157	149	149	255	243	243	165	149	208
3	B (mg/L)	0.26	0.25	0.35	0.63	1.07	0.31	0.46	0.32	0.17	0.18	0.22	0.26	0.39	0.59
4	Ca (mg/L)	43	77	30	37	53	53	33	38	89	62	41	44	51	48
5	Cl (mg/L)	74.4	161.4	24.4	17.9	52.4	118.0	15.0	32.4	115.5	62.8	41.2	52.5	82.3	76.7
6	CO ₃ (mg/L)	1.5	5.5	3.5	4.1	3.2	1.6	5.6	3.1	6.6	4.4	1.0	2.5	5.0	11.5
7	F (mg/L)	0.56	1.05	0.33	0.47	0.52	0.57	0.35	0.36	0.53	0.67	0.79	0.19	0.22	0.85
8	Fe (mg/L)	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.7	0.1	0.4	0.1	0.0	0.0	0.3
9	HCO ₃ (mg/L)	186	159	154	169	242	188	170	175	297	288	294	197	172	230
10	K (mg/L)	6.0	7.1	2.8	2.2	3.6	4.8	2.1	13.6	9.8	9.4	4.4	4.3	3.2	7.1
11	Mg (mg/L)	19.4	19.4	13.0	14.3	16.7	23.1	12.3	18.1	28.7	25.8	25.6	16.6	16.4	14.8
12	Na (mg/L)	47.8	56.3	21.9	17.8	54.6	65.2	11.4	29.4	24.4	62.6	54.6	37.9	32.2	54.6
13	NH ₃ -N (mg N/L)	0.24	0.16	0.16	0.48	0.64	0.20	0.22	0.19	0.00	1.86	0.29	0.08	0.37	0.66
14	NO ₂ +NO ₃ (mg N/L)	6.72	1.64	1.59	2.69	1.37	0.35	0.92	0.89	3.68	3.56	3.80	10.89	2.90	1.96
15	NO ₂ -N (mgN/L)	0.32	0.24	0.02	0.11	0.28	0.16	0.00	0.39	0.28	0.02	0.02	0.06	0.01	0.05
16	NO ₃ -N (mgN/L)	6.40	1.40	1.57	2.58	1.09	0.20	0.92	0.50	3.40	3.54	3.78	10.84	2.89	1.91
17	o-PO ₄ -P (mg P/L)	0.399	0.417	0.056	0.041	0.304	0.037	0.103	0.007	0.317	0.344	0.150	0.108	0.166	1.491
18	SiO ₂ (mg/L)	38.9	47.1	39.5	38.7	37.6	79.0	26.8	66.1	49.3	21.1	20.8	25.5	24.3	23.6
19	SO ₄ (mg/L)	40.9	66.6	18.7	17.4	42.3	36.4	13.6	23.4	22.5	28.8	23.7	25.4	37.6	46.4

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	5.9	8.2	2.7	12.8	31.3	1.9	2.2	2.8	31.7	18.2	57.4	11.5	5.9	11.8
2	COD (mg/L)				30.5	73.0	71.5	69.2	46.4	85.1	56.1	125.4	110.8	47.0	90.1
3	DO (mg/L)	6.0	6.3	7.0	5.6	3.8	5.7	6.8	6.8	5.0	4.3	5.4	5.2	5.6	5.3
4	DO_SAT% (%)	78	83	93	74	51	76	90	88	64	54	70	67	73	68
5	FCol-MPN (MPN/100mL)	633	388	490	1580	910	1140	163	190	2150	770	2418	92	6164	72
6	Tcol-MPN (MPN/100mL)	1580	1760	1450	3990	5320	4230	813	850	12050	49860	4380	1112	8376	1262
TRACE & TOXIC															
1	As ($\mu\text{g}/\text{L}$)										6.8	4.2		0.0	1.0
2	Cd ($\mu\text{g}/\text{L}$)										1.0	1.3		0.2	1.0
3	Cr ($\mu\text{g}/\text{L}$)										6.7	6.5		20.0	11.0
4	Cu ($\mu\text{g}/\text{L}$)										20.4	7.3		10.9	4.0
5	Hg ($\mu\text{g}/\text{L}$)											0.1			
6	Ni ($\mu\text{g}/\text{L}$)										4.7	16.2		2.9	
7	Pb ($\mu\text{g}/\text{L}$)		67.0								4.3	1.1		2.0	2.0
8	Zn ($\mu\text{g}/\text{L}$)		64.0								4.2	5.5		2.9	5.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	107	193	76	92	134	134	82	95	221	155	102	110	127	121
2	HAR_Total (mgCaCO ₃ /L)	188	274	130	151	203	230	134	170	341	263	209	179	195	183
3	Na% (%)	32	26	23	18	28	37	16	23	16	27	32	30	24	37
4	RSC (-)	0.1	0.1	0.1	0.1	0.5	0.1	0.4	0.0	0.5	0.0	0.8	0.4	0.1	0.7
5	SAR (-)	1.4	1.2	0.8	0.6	1.4	1.8	0.5	0.9	0.6	1.6	1.6	1.2	1.0	1.7
PESTICIDES															
1	Aldrin ($\mu\text{g}/\text{L}$)														
2	BHC ($\mu\text{g}/\text{L}$)														
3	DDT ($\mu\text{g}/\text{L}$)														
4	Dieldrin ($\mu\text{g}/\text{L}$)			0.0											
5	Endos ($\mu\text{g}/\text{L}$)			0.1											

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	70.27	44.59	52.24	43.10	15.60	5.558	87.18	27.95	43.79	115.4	32.06	23.64		14.60
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	666	569	539	545	760	1137	554	534	643	692	586	591	549	811
3	pH_GEN (pH units)	8.2	8.4	8.3	8.5	8.2	7.8	8.3	8.5	8.3	8.2	8.1	8.1	8.5	8.0
4	Temp (deg C)	23.5	23.3	25.3	24.3	25.6	22.9	24.3	23.5	23.8	23.5	23.8	23.5	25.3	23.5
5	Turb (NTU)			2.6	3.4	0.8	1.4	3.2	13.3	2.5	4.1	0.6			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	1.9	9.5	7.3	5.2	0.0	0.0	2.2	5.9	4.1	1.8	1.7	1.9	11.8	0.0
2	ALK-TOT (mgCaCO ₃ /L)	160	226	190	209	183	250	203	206	254	264	214	216	205	218
3	B (mg/L)	0.19	0.26	0.43	0.45	0.61	0.64	0.97	0.23	0.34	0.23	0.32	0.24	0.26	0.36
4	Ca (mg/L)	51	50	38	43	58	92	38	49	52	73	45	45	47	72
5	Cl (mg/L)	90.5	38.9	38.3	35.5	79.2	201.8	41.7	50.9	49.5	29.6	32.6	42.7	29.8	121.5
6	CO ₃ (mg/L)	2.3	11.5	8.8	6.3	0.0	0.0	2.7	7.1	4.9	2.2	2.0	2.3	14.3	0.0
7	F (mg/L)	0.97	0.81	0.65	0.45	0.83	0.51	0.37	0.48	0.62	0.33	0.33	0.31	0.25	0.41
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.8	0.5	0.4	0.0	0.1	0.1	0.1
9	HCO ₃ (mg/L)	191	252	214	242	224	305	242	237	300	318	256	258	221	266
10	K (mg/L)	7.5	4.9	3.6	4.0	4.1	9.5	2.8	4.0	5.3	6.6	3.4	3.8	3.6	9.5
11	Mg (mg/L)	21.7	24.3	20.4	26.2	25.2	36.8	25.3	27.9	34.0	30.7	26.3	23.0	29.1	26.2
12	Na (mg/L)	54.5	43.3	37.5	45.9	45.8	90.4	35.8	46.7	49.1	43.4	45.6	50.0	30.4	89.6
13	NH ₃ -N (mg N/L)	0.20	0.04	0.37	0.13	0.53	0.63	0.15	0.15	0.13	1.35	0.04	0.28	0.53	0.21
14	NO ₂ +NO ₃ (mg N/L)	7.18	1.22	2.49	3.69	0.42	0.91	1.13	1.13	1.50	4.08	6.46	9.71	2.90	2.50
15	NO ₂ -N (mgN/L)	0.73	0.02	0.18	0.09	0.11	0.09	0.02	0.17	0.03	0.01	0.02	0.02	0.09	0.02
16	NO ₃ -N (mgN/L)	6.44	1.19	2.31	3.61	0.30	0.82	1.10	0.96	1.47	4.07	6.44	9.69	2.81	2.48
17	o-PO ₄ -P (mg P/L)	0.486	0.047	0.049	0.098	0.152	0.326	0.052	0.011	0.096	0.518	0.241	0.142	1.166	0.099
18	SiO ₂ (mg/L)	34.4	84.6	48.3	43.7	52.0	90.8	48.8	107.8	63.8	20.6	14.5	23.0	23.7	19.3
19	SO ₄ (mg/L)	47.1	29.3	29.2	29.8	40.7	47.8	31.1	38.2	34.8	34.8	41.4	52.1	37.1	35.1

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

S.No	Parameters	Winter														
		Nov-Feb														
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	2.5	1.9	1.4	8.7	1.7	36.3	2.5	3.6	3.3	2.7	2.5	5.4	2.2	5.3	
2	COD (mg/L)				41.6	80.3	90.3	45.7	67.4	43.9	45.8	32.0	32.6	98.1	55.5	
3	DO (mg/L)	5.8	7.0	7.2	5.8	5.4	2.0	7.7	6.7	7.3	6.6	7.1	5.6	6.5	5.9	
4	DO_SAT% (%)	69	82	87	70	67	23	92	79	86	77	83	66	80	69	
5	FCol-MPN (MPN/100mL)	1355	175	375	238	175	1888	100	1213	288	713	108	138	775	788	
6	Tcol-MPN (MPN/100mL)	3677	400	825	250	513	5300	638	3125	9263	10188	400	955	1650	1705	
TRACE & TOXIC																
1	As (µg/L)									0.9				1.2	1.5	9.0
2	Cd (µg/L)									0.2			0.6	0.5	0.0	0.2
3	Cr (µg/L)									5.8			2.0	0.4	1.0	19.3
4	Cu (µg/L)									135.4			6.0	0.9	1.7	6.4
5	Hg (µg/L)															
6	Ni (µg/L)									18.0			0.3	0.9	0.1	21.6
7	Pb (µg/L)									0.4			1.2	3.0	0.7	5.2
8	Zn (µg/L)									18.9			5.0	4.6	4.2	6.3
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	128	124	96	106	146	229	95	122	131	182	113	112	116	179	
2	HAR_Total (mgCaCO ₃ /L)	218	226	181	215	251	383	201	238	272	310	223	208	237	288	
3	Na% (%)	34	29	31	31	28	34	27	30	28	24	31	34	21	38	
4	RSC (-)	0.0	0.3	0.3	0.1	0.0	0.0	0.1	0.2	0.2	0.1	0.0	0.3	0.1	0.0	
5	SAR (-)	1.6	1.3	1.2	1.4	1.3	2.0	1.1	1.3	1.3	1.1	1.3	1.5	0.9	2.2	
PESTICIDES																
1	Aldrin (µg/L)															
2	BHC (µg/L)															
3	DDT (µg/L)															
4	Dieldrin (µg/L)															
5	Endos (µg/L)															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	6.814	3.764	15.78	14.47	27.08	3.293	11.01	28.80	9.549	15.60	24.07	9.160	5.761		0.640
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	934	1562	590	600	694	1658	1386	614	620	981	645	885	1053	1119	1275
3	pH_GEN (pH units)	8.0	8.1	8.3	8.4	8.3	7.7	7.7	8.0	8.1	8.3	8.0	8.1	7.8	8.1	7.6
4	Temp (deg C)	28.8	29.1	29.0	28.3	28.8	29.0	29.0	27.0	26.7	27.3	25.3	27.3	28.0	29.0	27.0
5	Turb (NTU)				1.1	6.6	0.7	0.9	2.2	1.0	1.4	1.3	0.9			
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	2.1	0.6	3.2	3.7	3.0	0.0	0.0	0.0	3.6	4.8	2.1	1.1	0.0	1.7	0.0
2	ALK-TOT (mgCaCO ₃ /L)	204	239	141	178	218	270	222	204	218	294	194	228	267	269	293
3	B (mg/L)	0.61	0.19	0.25	0.73	1.02	0.28	0.82	0.43	0.10	0.15	0.16	0.19	0.19	0.54	0.29
4	Ca (mg/L)	65	115	49	44	45	107	86	47	39	63	56	51	78	78	70
5	Cl (mg/L)	152.1	342.3	85.2	62.5	54.2	412.7	231.2	59.7	67.2	147.2	53.4	71.7	161.4	126.6	190.8
6	CO ₃ (mg/L)	2.5	0.7	3.8	4.4	3.6	0.0	0.0	0.0	4.4	5.8	2.6	1.4	0.0	2.0	0.0
7	F (mg/L)	0.78	1.12	0.57	0.34	0.58	0.95	0.62	0.36	0.84	0.65	0.80	0.43	0.12	0.84	0.38
8	Fe (mg/L)	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.4	0.1	0.2	0.1	0.1	0.2	0.1
9	HCO ₃ (mg/L)	243	290	164	208	259	329	270	248	258	347	232	276	325	325	358
10	K (mg/L)	12.4	21.2	5.6	4.8	9.1	12.5	10.3	4.1	5.3	12.9	4.3	8.1	15.5	8.6	16.0
11	Mg (mg/L)	26.2	38.4	16.8	17.2	18.5	61.4	55.8	26.3	43.4	37.0	17.6	26.3	26.9	34.3	46.4
12	Na (mg/L)	104.2	171.9	61.3	46.7	70.0	171.3	68.3	67.5	58.3	135.5	57.7	105.4	114.7	128.7	138.8
13	NH ₃ -N (mg N/L)	0.24	0.49	0.13	0.44	0.42	0.15	0.36	0.28	0.29	0.02	0.96	0.09	0.18	0.88	0.24
14	NO ₂ +NO ₃ (mg N/L)	1.97	8.10	2.05	1.51	0.36	0.96	0.34	1.61	0.99	0.53	5.98	6.80	8.28	4.28	3.80
15	NO ₂ -N (mgN/L)	0.13	0.27	0.04	0.15	0.03	0.02	0.01	0.10	0.26	0.02	0.36	0.01	0.32	0.10	0.17
16	NO ₃ -N (mgN/L)	1.84	7.82	2.01	1.35	0.33	0.93	0.33	1.50	0.73	0.51	5.62	6.79	7.96	4.18	3.63
17	o-PO ₄ -P (mg P/L)	0.326	2.233	0.121	0.117	0.138	0.486	0.186	0.074	0.032	0.124	0.884	0.202	0.240	0.624	0.232
18	SiO ₂ (mg/L)	40.6	42.4	92.5	46.7	45.2	111.8	33.7	75.8	23.5	23.8	24.0	34.6	32.7	18.2	12.5
19	SO ₄ (mg/L)	97.6	109.7	42.2	33.4	44.0	49.6	47.7	25.3	50.9	18.7	15.4	72.4	39.7	74.8	48.8

Water Quality Seasonal Average for the period: 2004-2018

Station Name : BAMNI (AGH30E2)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha Sub-division,Chandrapur

S.No	Parameters	Summer															
		Mar - May															
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
BIOLOGICAL/BACTERIOLOGICAL																	
1	BOD3-27 (mg/L)	14.2	23.7	11.0	9.4	7.3	52.9	40.9	4.2	16.8	12.7	3.9	3.5	19.7	6.4	10.3	
2	COD (mg/L)					78.9	150.8	134.3	89.5	125.1	93.1	43.3	36.0	57.1	163.7	40.1	
3	DO (mg/L)	4.8	3.5	4.2	5.9	4.8	2.8	3.2	6.5	4.2	4.2	6.9	6.6	4.2	5.1	4.9	
4	DO_SAT% (%)	62	45	56	75	60	34	40	81	52	52	85	83	54	67	62	
5	FCol-MPN (MPN/100mL)	444	2450	450	100	100	100	283	883	3467	533	643	80	107	180	185	
6	Tcol-MPN (MPN/100mL)	1028	27600	1283	150	267	300	550	2250	57833	9850	25350	1147	277	407	1140	
TRACE & TOXIC																	
1	As (µg/L)										1.2	2.6	0.9	1.3	3.2	2.0	2.4
2	Cd (µg/L)				8.0						0.0	1.8	0.0	1.0	0.6	0.0	0.2
3	Cr (µg/L)				102.0						0.0	1.6	0.6	6.3	1.7	4.0	0.0
4	Cu (µg/L)											1.7	13.2		6.2	7.8	2.3
5	Hg (µg/L)				2.8						0.1	0.2	0.1	0.0			
6	Ni (µg/L)				1.0						3.7	9.7	5.2	6.0	8.1	12.0	5.3
7	Pb (µg/L)				54.0						21.8	1.2	0.1	15.0	2.5	1.0	64.8
8	Zn (µg/L)				69.0						6.9	12.7	17.2	0.0	9.7	9.0	1.9
CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO ₃ /L)	162	288	122	111	111	268	215	119	98	158	139	128	196	195	175	
2	HAR_Total (mgCaCO ₃ /L)	271	448	191	182	188	524	448	228	279	312	213	237	308	338	368	
3	Na% (%)	43	43	40	35	42	41	28	45	30	41	36	45	42	40	44	
4	RSC (-)	0.0	0.2	0.0	0.0	0.8	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.3	0.0	0.3	
5	SAR (-)	2.7	3.4	1.9	1.5	2.2	3.2	1.6	2.2	1.5	3.2	1.7	2.9	3.1	2.8	3.2	
PESTICIDES																	
1	Aldrin (µg/L)					0.0					0.0						
2	BHC (µg/L)					0.1					0.0						
3	DDT (µg/L)					0.1					0.0						
4	Dieldrin (µg/L)					0.0					0.0						
5	Endos (µg/L)					0.1					0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: P.G.BRIDGE	Code	: AGH32D5
	: Maharashtra	District	Yeotmal
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wardha
Sub-Sub Tributary	: Penganga	Local River	: Penganga
Division	: Wainganga Div., Nagpur	Sub-Division	: Penganga Sd, Yeotmal
Drainage Area	: 18441 Sq. Km.	Bank	: Left
Latitude	: 19°49'03"	Longitude	: 78°34'40"
	Opening Date	Closing Date	
Gauge	: 25.12.1964		
Discharge	: 21.07.1965		
Sediment	: 19.10.1965		
Water Quality	: 31.05.1966		

Water Quality Datasheet for the period : 2017-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018
		A	A	A	A	A	A	A	A	A
PHYSICAL										
1	Q (cumec)	0.216	36.89	7.155	55.76	3.670	2.449			
2	Colour_Cod (-)	Clear	Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	493	385	605	536	594	495	575	440	542
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	8.6	8.1	8.2	8.0	8.2	8.2	8.3	8.3	8.4
6	Temp (deg C)	26.5	26.0	26.0	26.5	26.0	26.0	25.0	24.5	25.0
CHEMICAL										
1	Alk-Phen (mgCaCO ₃ /L)	24.9	0.0	0.0	0.0	0.0	0.0	4.0	4.0	19.9
2	ALK-TOT (mgCaCO ₃ /L)	255	174	220	216	235	165	263	197	311
3	B (mg/L)	0.24	0.00	0.91	0.09	0.55	0.52	0.43	0.29	0.13
4	Ca (mg/L)	25	30	40	35	43	45	44	53	31
5	Cl (mg/L)	59.6	15.9	23.9	17.9	22.7	26.8	37.1	35.0	47.4
6	CO ₃ (mg/L)	30.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	24.0
7	F (mg/L)	0.62	0.54	0.87	0.11	1.05	0.05	0.09	0.43	0.46
8	Fe (mg/L)	0.1	0.2	0.3	0.3	0.4	0.1	0.3	0.1	0.1
9	HCO ₃ (mg/L)	250	212	268	264	286	201	311	230	331
10	K (mg/L)	3.8	3.1	3.1	4.3	3.2	3.1	2.8	3.1	2.4
11	Mg (mg/L)	48.0	12.8	18.2	13.9	18.2	15.2	28.6	12.2	32.7
12	Na (mg/L)	46.2	20.7	27.3	27.9	22.1	25.2	22.9	41.1	55.3
13	NH ₃ -N (mg N/L)	0.91	0.60	0.44	0.49	0.13	0.19	0.08	0.31	0.29
14	NO ₂ +NO ₃ (mg N/L)	1.71	1.81	2.71	2.50	2.26	2.37	2.30	2.14	2.10
15	NO ₂ -N (mgN/L)	0.01	0.06	0.02	0.01	0.09	0.05	0.02	0.03	0.01
16	NO ₃ -N (mgN/L)	1.70	1.76	2.69	2.49	2.17	2.32	2.28	2.11	2.09
17	o-PO ₄ -P (mg P/L)	1.079	0.479	0.738	0.939	0.204	0.165	0.035	0.258	0.220
18	SiO ₂ (mg/L)	46.9	21.6	10.3	28.3	23.3	32.4	14.5	22.9	17.8
19	SO ₄ (mg/L)	24.2	0.4	25.7	4.1	10.7	18.1	19.2	23.2	13.1

Water Quality Datasheet for the period : 2017-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018
		A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL										
1	BOD3-27 (mg/L)	4.5	2.3	1.9	1.3	2.4	2.6	2.4	2.9	1.9
2	COD (mg/L)	66.7	84.0	16.4	22.6	7.0	28.6	20.5	53.9	21.5
3	DO (mg/L)	6.6	7.0	6.9	6.1	7.2	8.5	7.6	8.8	8.1
4	DO_SAT% (%)	81	86	85	75	89	105	92	105	98
5	FCol-MPN (MPN/100mL)	70	230	70	20	170	230	2400	40	40
6	Tcol-MPN (MPN/100mL)	220	500	140	170	700	2400	2400	130	40
TRACE & TOXIC										
1	As (µg/L)			1.0				4.2		
2	Cd (µg/L)			0.0				0.1		
3	Cr (µg/L)			10.0				2.5		
4	Cu (µg/L)			3.0				15.7		
5	Ni (µg/L)							1.4		
6	Pb (µg/L)			1.0				1.4		
7	Zn (µg/L)			0.0				2.6		
CHEMICAL INDICES										
1	HAR_Ca (mgCaCO ₃ /L)	62	75	99	88	108	113	110	132	77
2	HAR_Total (mgCaCO ₃ /L)	262	128	175	146	184	176	229	183	213
3	Na% (%)	28	26	25	29	20	23	18	32	36
4	RSC (-)	0.0	0.9	0.9	1.4	1.0	0.0	0.7	0.3	2.0
5	SAR (-)	1.2	0.8	0.9	1.0	0.7	0.8	0.7	1.3	1.7
	PESTICIDES									

Water Quality Summary for the period : 2017-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	166	267.3	0.045	32.64
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	9	605	385	518
3	pH_GEN (pH units)	9	8.6	8.0	8.3
4	Temp (deg C)	9	26.5	24.5	25.7
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	9	24.9	0.0	5.9
2	ALK-TOT (mgCaCO ₃ /L)	9	311	165	226
3	B (mg/L)	9	0.91	0.00	0.35
4	Ca (mg/L)	9	53	25	38
5	Cl (mg/L)	9	59.6	15.9	31.8
6	CO ₃ (mg/L)	9	30.0	0.0	7.1
7	F (mg/L)	9	1.05	0.05	0.47
8	Fe (mg/L)	9	0.4	0.1	0.2
9	HCO ₃ (mg/L)	9	331	201	261
10	K (mg/L)	9	4.3	2.4	3.2
11	Mg (mg/L)	9	48.0	12.2	22.2
12	Na (mg/L)	9	55.3	20.7	32.1
13	NH ₃ -N (mg N/L)	9	0.91	0.08	0.38
14	NO ₂ +NO ₃ (mg N/L)	9	2.71	1.71	2.21
15	NO ₂ -N (mgN/L)	9	0.09	0.01	0.03
16	NO ₃ -N (mgN/L)	9	2.69	1.70	2.18
17	o-PO ₄ -P (mg P/L)	9	1.079	0.035	0.457
18	SiO ₂ (mg/L)	9	46.9	10.3	24.2
19	SO ₄ (mg/L)	9	25.7	0.4	15.4
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	9	4.5	1.3	2.5
2	COD (mg/L)	9	84.0	7.0	35.7
3	DO (mg/L)	9	8.8	6.1	7.4
4	DO_SAT% (%)	9	105	75	91
5	FCol-MPN (MPN/100mL)	9	2400	20	363
6	Tcol-MPN (MPN/100mL)	9	2400	40	744
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	2	4.2	1.0	2.6
2	Cd ($\mu\text{g}/\text{L}$)	2	0.1	0.0	0
3	Cr ($\mu\text{g}/\text{L}$)	2	10.0	2.5	6.2
4	Cu ($\mu\text{g}/\text{L}$)	2	15.7	3.0	9.3
5	Ni ($\mu\text{g}/\text{L}$)	1	1.4	1.4	1.4
6	Pb ($\mu\text{g}/\text{L}$)	2	1.4	1.0	1.2
7	Zn ($\mu\text{g}/\text{L}$)	2	2.6	0.0	1.3
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	9	132	62	96
2	HAR_Total (mgCaCO ₃ /L)	9	262	128	189
3	Na% (%)	9	36	18	26
4	RSC (-)	9	2.0	0.0	0.8
5	SAR (-)	9	1.7	0.7	1
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	18.24	414.8	143.3	120.3	28.62	77.19	542.3	210.1	222.0	1768	285.4	25.17		20.74
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	309	298	327	326	382	253	304	379	423	383	409	391	348	523
3	pH_GEN (pH units)	8.6	8.3	7.4	8.5	8.5	8.3	8.3	8.5	8.7	8.4	8.0	8.4	8.3	8.2
4	Temp (deg C)	30.9	29.4	29.7	26.9	27.6	27.4	25.5	26.8	27.1	26.7	27.9	27.0	25.9	26.2
5	Turb (NTU)			21.5	97.5	55.3	55.0	33.5	18.6	1.7	6.9	4.0			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	6.2	4.3	4.3	5.0	4.5	2.1	3.8	5.1	4.4	4.7	0.8	4.1	5.2	5.0
2	ALK-TOT (mgCaCO ₃ /L)	150	130	130	140	156	106	122	149	253	197	170	163	155	220
3	B (mg/L)	0.19	0.23	0.36	0.67	0.63	0.32	0.47	0.28	0.23	0.19	0.19	0.31	0.95	0.36
4	Ca (mg/L)	26	33	30	33	32	24	31	34	43	38	34	33	36	35
5	Cl (mg/L)	11.9	9.9	11.4	11.9	16.3	8.7	11.9	21.0	22.7	19.2	22.9	20.3	11.4	28.0
6	CO ₃ (mg/L)	7.5	5.2	5.2	6.0	5.5	2.5	4.6	6.1	5.2	5.7	1.0	5.0	6.3	6.0
7	F (mg/L)	0.32	0.50	0.22	0.45	0.22	0.28	0.26	0.32	0.67	0.52	0.70	0.09	0.18	0.64
8	Fe (mg/L)	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.6	1.4	0.4	0.2	0.0	0.1	0.3
9	HCO ₃ (mg/L)	167	149	148	159	179	124	140	170	298	228	206	189	176	256
10	K (mg/L)	3.4	1.8	1.8	1.8	2.2	2.0	1.8	2.7	3.5	3.7	2.9	2.6	2.5	3.5
11	Mg (mg/L)	13.0	10.9	13.5	13.7	16.1	10.3	11.9	19.7	29.4	24.7	21.2	18.5	21.2	22.2
12	Na (mg/L)	22.2	15.2	14.2	13.0	20.7	10.8	6.7	32.8	23.6	24.4	32.0	24.6	21.2	28.8
13	NH ₃ -N (mg N/L)	0.22	0.08	0.19	0.58	0.33	0.21	0.24	0.18	0.00	0.08	0.21	0.06	0.08	0.51
14	NO ₂ +NO ₃ (mg N/L)	1.32	1.97	1.69	1.77	0.32	0.19	1.39	1.59	2.61	4.85	2.42	10.21	2.76	2.20
15	NO ₂ -N (mgN/L)	0.11	0.08	0.07	0.12	0.10	0.06	0.00	0.02	0.08	0.01	0.00	0.02	0.01	0.04
16	NO ₃ -N (mgN/L)	1.21	1.89	1.63	1.65	0.21	0.13	1.38	1.57	2.53	4.83	2.42	10.19	2.75	2.16
17	o-PO ₄ -P (mg P/L)	0.095	0.008	0.025	0.037	0.044	0.049	0.054	0.009	0.078	0.052	0.154	0.072	0.098	0.688
18	SiO ₂ (mg/L)	37.3	60.5	43.5	37.6	40.8	75.8	26.5	80.2	47.9	21.0	23.4	29.6	25.0	26.1
19	SO ₄ (mg/L)	6.4	13.9	6.9	8.8	15.3	8.6	6.9	16.5	14.6	13.5	10.7	29.2	6.8	13.0

Water Quality Seasonal Average for the period: 2004-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	3.1	3.1	2.3	1.9	2.0	2.1	1.5	2.6	1.7	1.4	2.9	12.1	3.2	2.5
2	COD (mg/L)				39.5	47.4	82.2	72.1	41.5	48.2	35.8	34.0	103.2	37.5	39.3
3	DO (mg/L)	7.2	6.8	7.3	6.9	6.6	6.8	6.7	7.2	6.7	6.9	6.9	7.3	6.5	6.8
4	DO_SAT% (%)	96	89	95	86	83	85	82	90	84	85	88	91	79	83
5	FCol-MPN (MPN/100mL)	2950	1178	240	780	100	350	325	130	610	15440	326	54	150	112
6	Tcol-MPN (MPN/100mL)	30338	4838	390	1750	213	913	7163	780	6730	49020	832	272	2618	346
TRACE & TOXIC															
1	As (µg/L)										13.4	3.1		16.9	1.0
2	Cd (µg/L)										1.6	0.4		0.1	0.0
3	Cr (µg/L)										0.3	0.8		6.9	10.0
4	Cu (µg/L)										38.7	5.5		21.0	3.0
5	Hg (µg/L)											0.1			
6	Ni (µg/L)										1.5	8.7		2.5	
7	Pb (µg/L)		43.0								1.3	1.4		0.2	1.0
8	Zn (µg/L)		2.0								3.8	3.3		2.5	0.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	66	84	74	83	80	60	76	84	108	95	85	83	89	87
2	HAR_Total (mgCaCO ₃ /L)	120	129	130	140	147	103	126	166	230	197	173	160	177	179
3	Na% (%)	28	19	18	16	22	21	11	30	17	20	28	24	20	25
4	RSC (-)	0.6	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.6	0.3	0.1	0.4	0.0	0.9
5	SAR (-)	0.9	0.6	0.5	0.5	0.7	0.5	0.3	1.1	0.7	0.8	1.0	0.8	0.7	0.9
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)				0.0										
5	Endos (µg/L)				0.1										

Water Quality Seasonal Average for the period: 2004-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	1.655	16.04	13.82	5.157	1.428	0.164	29.20	6.921	11.21	39.62	1.996	0.150		2.449
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	336	455	448	435	477	487	459	474	480	572	490	468	453	513
3	pH_GEN (pH units)	8.6	8.5	8.5	8.7	8.4	8.6	8.6	8.7	8.5	8.3	8.3	8.6	8.4	8.3
4	Temp (deg C)	27.3	24.4	25.8	22.9	23.0	19.5	25.0	26.0	26.3	26.1	22.0	26.2	22.4	25.1
5	Turb (NTU)			3.4	1.1	0.8	0.7	3.1	3.3	1.8	3.0	3.4			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	7.6	10.0	10.0	4.2	5.7	7.2	7.2	6.8	5.0	8.4	4.5	6.0	15.6	7.0
2	ALK-TOT (mgCaCO ₃ /L)	175	198	185	186	190	190	189	191	253	246	239	164	225	234
3	B (mg/L)	0.31	0.25	0.46	0.63	0.80	0.76	0.86	0.21	0.37	0.22	0.41	0.12	0.58	0.34
4	Ca (mg/L)	25	40	32	32	39	42	32	36	43	64	35	24	47	43
5	Cl (mg/L)	7.6	16.9	18.5	17.6	16.3	17.0	23.3	24.3	25.6	37.8	23.8	57.0	23.9	36.5
6	CO ₃ (mg/L)	9.2	12.0	12.0	5.1	6.9	8.7	8.7	8.2	6.0	10.1	5.4	7.3	18.8	8.4
7	F (mg/L)	0.58	0.74	0.69	0.43	0.62	0.09	0.36	0.35	0.40	0.30	0.35	0.36	0.20	0.26
8	Fe (mg/L)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.4	0.3	0.1	0.1	0.1	0.2
9	HCO ₃ (mg/L)	195	217	202	216	218	214	212	216	296	280	281	185	236	268
10	K (mg/L)	3.0	2.8	2.1	2.2	1.6	1.6	1.8	2.0	3.4	2.4	2.3	3.3	2.4	2.8
11	Mg (mg/L)	19.0	18.4	21.3	23.7	17.4	20.3	24.3	28.8	32.3	30.8	28.0	25.1	31.4	22.2
12	Na (mg/L)	24.6	30.0	26.4	29.5	25.6	20.2	25.8	32.0	31.9	33.5	36.4	38.9	32.0	36.1
13	NH ₃ -N (mg N/L)	0.13	0.05	0.52	0.06	0.51	0.48	0.22	0.15	0.06	0.09	0.10	0.14	0.54	0.22
14	NO ₂ +NO ₃ (mg N/L)	2.19	1.42	2.77	4.43	0.19	0.18	1.42	1.63	1.83	5.57	6.44	12.17	3.49	2.23
15	NO ₂ -N (mgN/L)	0.10	0.05	0.04	0.05	0.01	0.04	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.03
16	NO ₃ -N (mgN/L)	2.09	1.37	2.73	4.38	0.18	0.14	1.40	1.62	1.81	5.57	6.43	12.15	3.48	2.20
17	o-PO ₄ -P (mg P/L)	0.090	0.026	0.031	0.052	0.041	0.052	0.045	0.003	0.055	0.597	0.226	0.123	1.186	0.169
18	SiO ₂ (mg/L)	33.0	84.9	51.3	46.7	35.0	70.5	55.2	121.6	76.0	23.1	15.6	33.4	32.4	21.9
19	SO ₄ (mg/L)	8.3	13.6	11.4	11.0	12.7	11.5	14.2	17.4	14.8	13.0	21.5	22.0	20.3	18.4

Water Quality Seasonal Average for the period: 2004-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	2.1	1.5	1.2	2.5	1.9	2.1	1.8	1.7	1.1	2.1	2.8	2.0	2.8	2.5
2	COD (mg/L)				53.7	38.8	10.1	46.7	51.7	28.5	122.5	31.8	39.8	82.6	31.1
3	DO (mg/L)	7.7	8.6	8.1	6.8	7.5	8.9	8.8	8.6	7.6	7.8	8.3	8.1	8.9	8.3
4	DO_SAT% (%)	97	102	98	79	87	96	106	106	93	96	95	99	102	100
5	FCol-MPN (MPN/100mL)	1383	100	238	100	100	100	100	238	363	238	73	153	140	678
6	Tcol-MPN (MPN/100mL)	9133	138	763	100	100	400	100	500	863	2388	133	667	553	1243
TRACE & TOXIC															
1	As (µg/L)								0.2				0.6	1.1	4.2
2	Cd (µg/L)								0.2			1.2	0.3	0.3	0.1
3	Cr (µg/L)								3.3			1.1	1.5	0.6	2.5
4	Cu (µg/L)								101.9			3.5	0.6	1.3	15.6
5	Hg (µg/L)														
6	Ni (µg/L)								35.0			0.0	0.3	1.2	1.4
7	Pb (µg/L)								0.4			0.8	0.8	0.5	1.4
8	Zn (µg/L)								31.8			4.0	3.4	1.2	2.6
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	63	99	79	79	97	105	79	89	107	159	86	61	118	108
2	HAR_Total (mgCaCO ₃ /L)	142	176	168	178	169	190	180	209	241	287	203	166	249	200
3	Na% (%)	26	27	25	26	25	19	24	25	22	21	28	33	22	27
4	RSC (-)	0.7	0.5	0.4	0.3	0.4	0.0	0.3	0.0	0.4	0.0	0.8	0.2	0.3	0.7
5	SAR (-)	0.9	1.0	0.9	1.0	0.9	0.6	0.8	1.0	0.9	0.9	1.1	1.3	0.9	1.1
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	0.459	0.016	3.161	3.676	2.781			1.587	0.871	3.158	9.421	0.000	0.276		
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	458		373	391	414			412	433	491	444	491	387	460	
3	pH_GEN (pH units)	8.4		8.7	8.6	8.6			8.4	8.5	8.7	8.3	8.4	8.6	8.8	
4	Temp (deg C)	27.0		29.0	26.5	23.5			22.7	27.8	27.0	26.7	26.2	25.0	25.0	
5	Turb (NTU)				1.4	6.5			2.9	1.0	0.9	2.2	5.7			
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	13.8		5.6	5.6	2.9			3.7	6.7	7.3	9.9	5.6	6.0	14.1	
2	ALK-TOT (mgCaCO ₃ /L)	226		146	171	181			194	209	245	201	203	201	205	
3	B (mg/L)	0.30		0.18	0.61	0.98			0.23	0.16	0.24	0.15	0.25	0.09	0.27	
4	Ca (mg/L)	26		28	25	27			33	28	35	37	34	56	38	
5	Cl (mg/L)	20.5		16.3	14.7	19.9			22.2	26.5	31.1	22.8	25.9	28.8	43.1	
6	CO ₃ (mg/L)	16.7		6.7	6.8	3.5			4.4	8.0	8.7	11.9	6.8	7.2	17.0	
7	F (mg/L)	0.42		0.43	0.42	0.44			0.27	0.56	0.48	0.58	0.38	0.21	0.79	
8	Fe (mg/L)	0.0		0.0	0.0	0.0			0.0	0.2	0.0	0.2	0.1	0.0	0.3	
9	HCO ₃ (mg/L)	242		165	195	213			227	238	281	222	234	231	216	
10	K (mg/L)	2.2		2.0	2.5	3.1			1.9	2.9	4.1	3.2	2.6	2.9	2.9	
11	Mg (mg/L)	24.8		15.5	17.8	19.6			23.7	36.5	34.4	22.3	19.9	11.2	28.7	
12	Na (mg/L)	39.0		29.1	26.8	37.0			32.1	37.4	41.0	35.8	34.7	29.3	40.4	
13	NH ₃ -N (mg N/L)	0.29		0.12	0.45	0.26			0.56	0.38	0.02	0.45	0.11	0.20	1.20	
14	NO ₂ +NO ₃ (mg N/L)	0.55		0.49	1.24	0.23			1.26	0.31	0.31	5.68	7.10	7.01	1.62	
15	NO ₂ -N (mgN/L)	0.05		0.03	0.03	0.04			0.04	0.01	0.01	0.00	0.01	0.09	0.02	
16	NO ₃ -N (mgN/L)	0.50		0.47	1.21	0.19			1.22	0.29	0.30	5.68	7.10	6.93	1.60	
17	o-PO ₄ -P (mg P/L)	0.020		0.031	0.062	0.041			0.060	0.008	0.037	0.594	0.243	0.178	0.584	
18	SiO ₂ (mg/L)	45.5		87.8	45.6	34.2			77.6	26.2	25.9	31.2	52.7	56.5	37.3	
19	SO ₄ (mg/L)	13.0		11.5	7.2	15.2			11.3	23.4	13.5	10.3	20.1	14.9	38.6	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : P.G.BRIDGE (AGH32D5)

Local River : Penganga

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	1.6		1.6	1.7	2.1			2.5	2.8	1.5	3.8	2.9	3.5	2.3	
2	COD (mg/L)					64.5			38.5	49.8	40.7	39.7	28.3	81.2	118.2	
3	DO (mg/L)	5.8		7.4	7.9	7.1			7.9	7.6	6.5	7.5	7.3	5.9	7.4	
4	DO_SAT% (%)	71		95	98	83			91	96	81	93	90	71	90	
5	FCol-MPN (MPN/100mL)	1550		200	100	100			100	200	150	273	103	90	2643	
6	Tcol-MPN (MPN/100mL)	4475		450	300	133			100	517	567	3100	593	1100	6577	
TRACE & TOXIC																
1	As (µg/L)									0.7	2.3	3.2	0.0		1.0	
2	Cd (µg/L)					8.0				0.0	1.6	0.1	1.0		0.0	
3	Cr (µg/L)					34.0				0.0	1.7	0.6	0.0		4.0	
4	Cu (µg/L)										2.7	5.3			3.0	
5	Hg (µg/L)					1.1				0.2	0.1	0.1	0.1			
6	Ni (µg/L)					1.0				0.0	14.9	5.0	2.8		7.0	
7	Pb (µg/L)					72.0				16.7	3.7	0.1	6.0		1.0	
8	Zn (µg/L)					66.0				16.5	1.9	13.6	5.0		10.0	
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	65		70	62	68			83	70	87	94	85	139	95	
2	HAR_Total (mgCaCO ₃ /L)	169		134	137	149			182	222	230	187	168	186	215	
3	Na% (%)	33		32	30	33			32	26	28	29	30	25	29	
4	RSC (-)	1.2		0.3	0.7	0.7			0.5	0.2	0.6	0.4	0.7	0.3	0.1	
5	SAR (-)	1.3		1.1	1.0	1.3			1.2	1.1	1.2	1.2	1.2	0.9	1.2	
PESTICIDES																
1	Aldrin (µg/L)					0.0				0.0						
2	BHC (µg/L)					0.1				0.0						
3	DDT (µg/L)					0.1				0.0						
4	Dieldrin (µg/L)					0.1				0.0						
5	Endos (µg/L)					0.1				0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: NANDGAON	Code	: AGH3AF4
State	: Maharashtra	District	: Wardha
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wardha
Sub-Sub Tributary	: Wunna	Local River	: Wunna
Division	: Wainganga Div., Nagpur	Sub-Division	: Penganga Sd, Yeotmal
Drainage Area	: 4580 Sq. Km.	Bank	: Left
Latitude	: 20°32'00"	Longitude	: 78°49'33"
	Opening Date	Closing Date	
Gauge	: 28.10.1985		
Discharge	: 21.07.1986		
Sediment	: 13.07.1988		
Water Quality	: 01.01.1988		

Water Quality Datasheet for the period : 2017-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Analysis

S.No	Parameters	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018
		A	A	A	A	A	A	A	A	A	A
PHYSICAL											
1	Q (cumec)	26.17	8.856	12.01	12.11	4.117	8.995	8.888	5.561	8.825	
2	Colour_Cod (-)	Brown	Light Brown	Brown	Clear	Light Brown	Brown	Clear	Brown	Light Brown	Light Brown
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	360	820	731	709	699	497	476	471	676	603
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	fishy
5	pH_GEN (pH units)	7.9	8.4	8.1	8.4	8.4	8.2	8.1	7.9	7.6	8.5
6	Temp (deg C)	24.0	26.0	26.0	23.0	22.5	16.5	15.0	15.5	22.0	21.0
CHEMICAL											
1	Alk-Phen (mgCaCO ₃ /L)	0.0	6.0	0.0	3.3	5.8	0.0	0.0	0.0	0.0	4.0
2	ALK-TOT (mgCaCO ₃ /L)	144	259	258	242	219	197	203	213	195	213
3	B (mg/L)	0.23	0.96	0.70	0.14	0.63	0.27	0.10	0.07	0.79	0.80
4	Ca (mg/L)	26	44	41	46	44	51	60	46	43	43
5	Cl (mg/L)	15.9	45.7	43.7	32.9	45.3	45.3	41.2	47.4	33.4	73.1
6	CO ₃ (mg/L)	0.0	7.2	0.0	4.0	7.0	0.0	0.0	0.0	0.0	4.8
7	F (mg/L)	0.46	1.24	0.34	0.95	0.02	0.02	0.38	0.45	0.48	0.45
8	Fe (mg/L)	0.4	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.0
9	HCO ₃ (mg/L)	176	301	315	287	252	240	247	260	238	250
10	K (mg/L)	2.9	3.6	3.6	3.0	3.0	3.0	3.0	2.4	3.1	4.3
11	Mg (mg/L)	12.3	26.7	23.0	21.5	29.2	25.1	15.2	23.9	19.8	23.9
12	Na (mg/L)	24.9	35.9	36.3	27.1	35.9	35.8	37.2	37.9	36.9	53.1
13	NH ₃ -N (mg N/L)	0.34	0.36	0.50	0.14	0.16	0.10	0.30	0.31	0.29	0.25
14	NO ₂ +NO ₃ (mg N/L)	1.66	2.47	2.14	0.36	1.85	2.14	1.55	1.54	1.62	1.78
15	NO ₂ -N (mgN/L)	0.03	0.02	0.01	0.03	0.08	0.02	0.03	0.01	0.01	0.13
16	NO ₃ -N (mgN/L)	1.63	2.45	2.13	0.33	1.77	2.12	1.52	1.53	1.61	1.65
17	o-PO ₄ -P (mg P/L)	0.332	0.609	0.731	0.104	0.147	0.081	0.147	0.193	0.175	0.436
18	SiO ₂ (mg/L)	16.8	6.4	31.3	23.1	37.3	5.9	13.6	19.1	16.2	14.1
19	SO ₄ (mg/L)	1.3	36.3	3.1	29.6	35.6	34.0	19.2	18.4	14.3	18.8

Water Quality Datasheet for the period : 2017-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Analysis

S.No	Parameters	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018
		A	A	A	A	A	A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL										
1	BOD3-27 (mg/L)	1.1	2.3	1.8	1.3	1.8	1.7	1.1	1.4	15.0	25.0
2	COD (mg/L)	15.5	22.4	24.4	4.7	51.3	35.2	26.9	53.6	35.1	51.4
3	DO (mg/L)	6.0	6.5	6.7	6.4	7.8	6.8	6.6	6.5	4.7	2.0
4	DO_SAT% (%)	71	80	83	75	89	69	65	65	54	22
5	FCol-MPN (MPN/100mL)	130	20	90	170	330	230	700	800	270	80
6	Tcol-MPN (MPN/100mL)	220	90	140	330	3500	3500	1400	3000	3000	170
	TRACE & TOXIC										
1	As (µg/L)		0.0								1.5
2	Cd (µg/L)			1.0							0.1
3	Cr (µg/L)			10.0							3.8
4	Cu (µg/L)			2.0							7.3
5	Ni (µg/L)										5.6
6	Pb (µg/L)			2.0							1.2
7	Zn (µg/L)			1.0							0.2
	CHEMICAL INDICES										
1	HAR_Ca (mgCaCO ₃ /L)	66	110	104	115	110	127	149	115	108	108
2	HAR_Total (mgCaCO ₃ /L)	117	222	199	205	232	232	212	215	191	208
3	Na% (%)	31	26	28	22	25	25	27	28	29	35
4	RSC (-)	0.5	0.8	1.2	0.8	0.0	0.0	0.0	0.0	0.1	0.1
5	SAR (-)	1.0	1.1	1.1	0.8	1.0	1.0	1.1	1.1	1.2	1.6
	PESTICIDES										

Water Quality Summary for the period : 2017-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	281	505.5	0.101	17.25
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	10	820	360	604
3	pH_GEN (pH units)	10	8.5	7.6	8.1
4	Temp (deg C)	10	26.0	15.0	21.2
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	10	6.0	0.0	1.9
2	ALK-TOT (mgCaCO ₃ /L)	10	259	144	214
3	B (mg/L)	10	0.96	0.07	0.47
4	Ca (mg/L)	10	60	26	45
5	Cl (mg/L)	10	73.1	15.9	42.4
6	CO ₃ (mg/L)	10	7.2	0.0	2.3
7	F (mg/L)	10	1.24	0.02	0.48
8	Fe (mg/L)	10	0.4	0.0	0.2
9	HCO ₃ (mg/L)	10	315	176	257
10	K (mg/L)	10	4.3	2.4	3.2
11	Mg (mg/L)	10	29.2	12.3	22.1
12	Na (mg/L)	10	53.1	24.9	36.1
13	NH ₃ -N (mg N/L)	10	0.50	0.10	0.28
14	NO ₂ +NO ₃ (mg N/L)	10	2.47	0.36	1.71
15	NO ₂ -N (mgN/L)	10	0.13	0.01	0.04
16	NO ₃ -N (mgN/L)	10	2.45	0.33	1.67
17	o-PO ₄ -P (mg P/L)	10	0.731	0.081	0.296
18	SiO ₂ (mg/L)	10	37.3	5.9	18.4
19	SO ₄ (mg/L)	10	36.3	1.3	21.1
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	10	25.0	1.1	5.2
2	COD (mg/L)	10	53.6	4.7	32
3	DO (mg/L)	10	7.8	2.0	6
4	DO_SAT% (%)	10	89	22	67
5	FCol-MPN (MPN/100mL)	10	800	20	282
6	Tcol-MPN (MPN/100mL)	10	3500	90	1535
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	2	1.5	0.0	0.7
2	Cd ($\mu\text{g}/\text{L}$)	2	1.0	0.1	0.5
3	Cr ($\mu\text{g}/\text{L}$)	2	10.0	3.8	6.9
4	Cu ($\mu\text{g}/\text{L}$)	2	7.3	2.0	4.6
5	Ni ($\mu\text{g}/\text{L}$)	1	5.6	5.6	5.6
6	Pb ($\mu\text{g}/\text{L}$)	2	2.0	1.2	1.6
7	Zn ($\mu\text{g}/\text{L}$)	2	1.0	0.2	0.6
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	10	149	66	111
2	HAR_Total (mgCaCO ₃ /L)	10	232	117	203
3	Na% (%)	10	35	22	28
4	RSC (-)	10	1.2	0.0	0.4
5	SAR (-)	10	1.6	0.8	1.1
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	4.989	23.17	91.24	48.81	8.783	137.1	63.37	295.5	108.3	286.8	19.53	45.83		14.78
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	377	466	380	362	459	454	418	502	523	395	542	495	422	655
3	pH_GEN (pH units)	8.4	8.4	8.4	8.6	8.3	8.0	8.2	8.3	8.7	8.3	7.9	8.2	8.1	8.2
4	Temp (deg C)	27.0	20.4	22.7	24.3	26.6	26.2	26.0	22.3	25.4	24.5	28.1	26.8	25.0	24.8
5	Turb (NTU)			9.8	8.9	25.7	13.5	3.5	10.6	1.7	1.9	12.2			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	6.8	6.1	5.3	4.9	4.1	0.0	3.1	3.6	5.4	4.5	0.8	3.2	2.2	2.3
2	ALK-TOT (mgCaCO ₃ /L)	169	185	133	139	185	161	161	184	252	167	202	199	157	226
3	B (mg/L)	0.18	0.26	0.45	0.62	0.45	0.27	0.39	0.27	0.17	0.23	0.45	0.37	0.78	0.51
4	Ca (mg/L)	25	37	31	34	40	35	38	38	42	33	42	50	43	40
5	Cl (mg/L)	25.7	35.2	21.3	18.2	30.2	37.4	20.1	33.0	43.5	18.5	41.3	35.8	22.9	34.6
6	CO ₃ (mg/L)	8.2	7.3	6.4	5.9	5.0	0.0	3.8	4.4	6.6	5.5	1.0	3.9	2.7	2.8
7	F (mg/L)	0.35	0.94	0.25	0.36	0.35	0.55	0.30	0.37	0.73	0.39	0.58	0.61	0.16	0.75
8	Fe (mg/L)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.3	0.1	0.1	0.1	0.2
9	HCO ₃ (mg/L)	190	211	149	157	216	196	189	215	294	193	244	235	186	270
10	K (mg/L)	4.1	2.8	2.4	1.7	3.0	3.6	2.2	2.9	5.2	3.7	3.4	3.4	2.7	3.3
11	Mg (mg/L)	19.4	17.8	13.3	15.2	17.6	17.7	15.6	24.6	23.0	19.4	25.8	19.8	12.9	20.9
12	Na (mg/L)	33.2	34.3	22.2	15.0	29.4	29.5	15.9	46.1	44.8	25.4	44.4	30.5	25.7	31.0
13	NH ₃ -N (mg N/L)	0.20	0.10	0.19	0.56	0.39	0.23	0.26	0.13	0.12	0.06	0.29	0.07	0.23	0.33
14	NO ₂ +NO ₃ (mg N/L)	2.41	1.25	1.27	2.10	0.26	0.43	1.12	0.97	2.37	2.48	1.98	13.05	2.51	1.66
15	NO ₂ -N (mgN/L)	0.58	0.04	0.04	0.05	0.04	0.30	0.02	0.16	0.58	0.01	0.00	0.01	0.02	0.02
16	NO ₃ -N (mgN/L)	1.83	1.21	1.23	2.05	0.22	0.14	1.10	0.81	1.79	2.47	1.98	13.05	2.49	1.63
17	o-PO ₄ -P (mg P/L)	0.115	0.014	0.029	0.043	0.129	0.076	0.026	0.007	0.094	0.059	0.155	0.085	0.187	0.444
18	SiO ₂ (mg/L)	31.7	58.6	43.9	39.8	42.5	65.5	32.1	72.0	42.7	21.4	23.9	34.0	25.1	19.4
19	SO ₄ (mg/L)	15.5	20.7	14.8	13.0	24.7	19.5	11.5	24.3	22.4	22.3	12.6	32.2	15.2	17.6

Water Quality Seasonal Average for the period: 2004-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	2.7	4.5	1.3	13.3	3.1	2.0	1.5	8.8	24.4	1.4	2.2	8.6	18.4	1.6
2	COD (mg/L)				96.9	25.6	45.9	56.8	38.7	108.4	55.7	48.2	125.9	48.0	16.7
3	DO (mg/L)	5.8	5.4	7.4	5.5	5.6	6.0	5.9	5.6	4.6	6.7	6.3	5.3	4.7	6.4
4	DO_SAT% (%)	73	60	86	65	70	74	72	64	55	81	80	67	57	77
5	FCol-MPN (MPN/100mL)	1130	1048	930	640	1575	633	300	400	880	12375	582	433	463	103
6	Tcol-MPN (MPN/100mL)	2920	5350	2460	1340	12488	10233	3638	3938	20450	64975	2762	5373	4318	195
TRACE & TOXIC															
1	As (µg/L)										9.3	5.1		207.7	0.0
2	Cd (µg/L)										1.1	0.7		0.2	1.0
3	Cr (µg/L)										1.2	1.1		6.3	10.0
4	Cu (µg/L)										31.4	8.4		8.5	2.0
5	Hg (µg/L)											0.1			
6	Ni (µg/L)										2.0	11.3		2.4	
7	Pb (µg/L)		49.0								2.2	0.5		0.3	2.0
8	Zn (µg/L)										2.9	15.9		2.4	1.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	62	92	76	86	101	87	96	96	106	83	104	126	107	99
2	HAR_Total (mgCaCO ₃ /L)	143	166	132	149	174	161	160	199	202	164	212	209	160	186
3	Na% (%)	32	28	25	18	25	26	18	30	29	24	30	24	26	27
4	RSC (-)	0.5	0.4	0.1	0.1	0.3	0.0	0.1	0.1	1.1	0.2	0.2	0.1	0.1	0.8
5	SAR (-)	1.2	1.1	0.8	0.5	1.0	1.0	0.6	1.4	1.4	0.9	1.3	0.9	0.9	1.0
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)			0.1											

Water Quality Seasonal Average for the period: 2004-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	17.02	9.644	8.214	8.663	3.560	5.032	9.038	9.630	9.655	11.04	11.65	7.071		6.890
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	399	447	433	438	526	516	524	505	470	578	470	430	500	536
3	pH_GEN (pH units)	8.4	8.6	8.5	8.5	8.2	8.2	8.3	8.5	8.5	8.3	8.2	8.2	8.5	8.1
4	Temp (deg C)	17.5	17.8	20.6	18.4	23.0	20.3	21.6	16.8	17.0	24.0	22.4	19.5	21.4	17.4
5	Turb (NTU)			1.1	1.1	0.8	0.9	1.2	10.6	1.1	1.2	0.9			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	5.9	9.5	8.1	4.2	1.6	2.1	4.5	5.9	6.3	5.6	0.8	1.3	9.3	1.5
2	ALK-TOT (mgCaCO ₃ /L)	171	178	169	177	184	171	213	199	241	249	195	195	216	208
3	B (mg/L)	0.25	0.23	0.52	0.82	0.61	1.00	0.94	0.19	0.25	0.21	0.52	0.17	0.95	0.27
4	Ca (mg/L)	29	35	32	38	37	41	39	42	46	69	41	40	43	50
5	Cl (mg/L)	26.8	22.0	22.2	18.5	41.9	40.5	29.5	27.0	27.2	22.6	17.5	24.9	34.8	44.8
6	CO ₃ (mg/L)	7.0	11.5	9.8	5.1	2.0	2.5	5.5	7.1	7.6	6.7	1.0	1.6	11.3	1.8
7	F (mg/L)	0.63	0.54	0.62	0.19	0.63	0.38	0.35	0.38	0.40	0.26	0.30	0.26	0.20	0.22
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.3	0.0	0.1	0.1	0.1
9	HCO ₃ (mg/L)	195	194	187	206	221	203	249	228	278	290	236	234	241	250
10	K (mg/L)	3.1	2.6	1.5	2.1	2.0	2.4	1.7	1.9	3.3	2.2	1.8	2.4	2.5	2.9
11	Mg (mg/L)	20.1	18.5	19.5	17.2	19.0	20.0	24.2	27.6	26.4	27.4	19.9	17.5	21.4	23.3
12	Na (mg/L)	35.9	29.5	27.7	29.8	39.0	33.4	33.2	33.8	32.8	32.8	25.0	29.2	40.3	36.7
13	NH ₃ -N (mg N/L)	0.15	0.05	0.47	0.11	0.78	0.47	0.12	0.16	0.07	0.15	0.07	0.07	0.46	0.22
14	NO ₂ +NO ₃ (mg N/L)	2.04	0.78	0.68	3.54	0.20	0.28	0.75	1.05	1.52	2.34	5.60	5.30	1.98	1.77
15	NO ₂ -N (mgN/L)	0.11	0.04	0.05	0.07	0.03	0.09	0.02	0.17	0.02	0.01	0.01	0.02	0.03	0.03
16	NO ₃ -N (mgN/L)	1.93	0.74	0.63	3.47	0.17	0.19	0.72	0.88	1.50	2.33	5.60	5.29	1.95	1.73
17	o-PO ₄ -P (mg P/L)	0.105	0.044	0.059	0.067	0.036	0.067	0.040	0.007	0.051	0.306	0.158	0.096	1.149	0.142
18	SiO ₂ (mg/L)	29.4	71.7	42.3	44.2	50.1	60.8	46.4	93.3	60.0	20.0	16.0	25.9	27.5	19.0
19	SO ₄ (mg/L)	19.9	16.2	14.0	13.0	17.0	18.0	18.2	22.2	18.0	13.4	19.0	19.5	13.6	26.8

Water Quality Seasonal Average for the period: 2004-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.3	1.7	1.1	2.7	1.5	14.9	1.5	1.5	1.5	1.5	3.4	1.4	2.2	1.5
2	COD (mg/L)				21.9	34.8	83.8	43.5	74.9	33.7	42.0	31.3	35.5	92.7	41.7
3	DO (mg/L)	7.0	7.9	7.0	7.1	7.0	5.3	8.3	6.5	6.7	6.7	7.3	6.6	6.9	6.9
4	DO_SAT% (%)	74	83	77	75	82	59	93	67	70	79	83	71	78	72
5	FCol-MPN (MPN/100mL)	2450	913	250	421	175	1363	400	1938	2800	313	40	260	8038	515
6	Tcol-MPN (MPN/100mL)	7325	2725	613	2136	325	5613	13125	7438	8713	16275	223	1758	8075	2850
TRACE & TOXIC															
1	As (µg/L)								0.0				0.7	1.9	
2	Cd (µg/L)								0.0			0.9	0.4	0.5	
3	Cr (µg/L)								5.1			2.6	0.3	0.7	
4	Cu (µg/L)								84.6			4.1	0.9	2.3	
5	Hg (µg/L)														
6	Ni (µg/L)								58.0			0.1	1.0	0.3	
7	Pb (µg/L)								0.4			0.8	1.1	0.4	
8	Zn (µg/L)								29.9			3.0	5.1	0.3	
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	73	88	79	96	93	102	98	105	115	173	102	100	107	125
2	HAR_Total (mgCaCO ₃ /L)	156	165	160	168	173	185	199	220	225	288	185	173	196	223
3	Na% (%)	30	27	27	27	31	28	26	24	24	21	23	27	31	26
4	RSC (-)	0.4	0.3	0.2	0.2	0.3	0.1	0.4	0.1	0.5	0.0	0.3	0.5	0.5	0.0
5	SAR (-)	1.2	1.0	1.0	1.0	1.3	1.1	1.0	1.0	1.0	0.9	0.8	1.0	1.3	1.1
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	4.471	2.206	5.865	5.684	3.860	0.287	8.943	7.888	3.789	1.235	5.556	2.275	1.552		8.825
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	416	489	408	403	436	562	456	426	451	488	512	555	476	443	640
3	pH_GEN (pH units)	8.3	8.4	8.4	8.5	8.4	8.3	8.3	8.0	8.3	8.3	8.1	8.1	8.3	8.4	8.0
4	Temp (deg C)	20.5	20.5	21.8	25.0	26.7	26.0	22.0	19.0	27.0	23.0	27.0	29.3	22.8	21.5	21.5
5	Turb (NTU)				0.8	1.3	0.9	0.9	1.2	0.8	0.5	1.2	1.0			
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	6.2	6.8	2.9	6.2	3.6	2.2	3.7	1.2	6.1	3.6	0.0	2.8	3.0	5.0	2.0
2	ALK-TOT (mgCaCO ₃ /L)	231	196	144	136	164	172	165	168	220	261	195	154	195	188	204
3	B (mg/L)	0.60	0.25	0.29	0.75	1.04	0.37	0.75	0.13	0.14	0.35	0.17	0.16	0.25	0.42	0.80
4	Ca (mg/L)	25	27	30	31	34	27	35	36	36	47	46	31	56	37	43
5	Cl (mg/L)	28.7	51.0	29.1	20.4	27.9	72.9	33.4	24.9	38.1	31.2	31.1	42.9	41.1	39.8	53.3
6	CO ₃ (mg/L)	7.5	8.2	3.5	7.5	4.3	2.6	4.5	1.5	7.3	4.4	0.0	3.4	3.6	6.0	2.4
7	F (mg/L)	0.32	0.67	0.34	0.35	0.39	0.44	0.61	0.24	0.38	0.11	0.36	0.36	0.12	0.61	0.46
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.1	0.1	0.4	0.0
9	HCO ₃ (mg/L)	205	223	169	150	191	205	192	202	254	310	238	181	231	217	244
10	K (mg/L)	2.9	3.8	2.0	3.0	3.4	4.0	2.0	1.7	3.1	3.5	2.9	2.8	3.4	2.4	3.7
11	Mg (mg/L)	21.3	18.4	12.3	14.1	14.7	23.7	19.4	23.6	31.7	31.7	22.0	12.5	18.4	22.4	21.9
12	Na (mg/L)	35.7	63.2	35.2	29.1	36.4	57.6	24.8	25.5	43.7	33.1	35.0	48.5	53.0	33.5	45.0
13	NH ₃ -N (mg N/L)	0.36	0.12	0.10	0.45	0.25	0.14	0.35	0.81	0.24	0.02	0.39	0.11	0.18	0.13	0.27
14	NO ₂ +NO ₃ (mg N/L)	0.38	1.17	0.28	0.86	0.17	0.23	0.14	1.36	0.46	0.97	6.40	6.81	5.24	1.48	1.70
15	NO ₂ -N (mgN/L)	0.01	0.05	0.00	0.02	0.03	0.00	0.00	0.04	0.02	0.00	0.02	0.00	0.17	0.01	0.07
16	NO ₃ -N (mgN/L)	0.38	1.13	0.28	0.84	0.14	0.23	0.14	1.32	0.45	0.97	6.38	6.81	5.07	1.47	1.63
17	o-PO ₄ -P (mg P/L)	0.010	0.074	0.026	0.059	0.055	0.045	0.010	0.078	0.006	0.048	0.887	0.256	0.152	0.116	0.305
18	SiO ₂ (mg/L)	35.7	33.1	81.0	36.8	38.1	81.2	27.7	65.0	31.9	14.9	31.1	40.5	19.3	30.3	15.2
19	SO ₄ (mg/L)	11.7	10.9	17.3	12.6	21.3	17.0	12.0	12.5	29.9	19.2	14.8	15.2	24.6	29.0	16.5

Water Quality Seasonal Average for the period: 2004-2018

Station Name : NANDGAON (AGH3AF4)

Local River : Wunna

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	1.2	2.8	1.6	9.2	2.9	9.2	2.4	4.8	3.9	20.0	1.7	2.9	10.7	1.4	20.0
2	COD (mg/L)					37.2	40.2	22.7	39.2	40.9	52.4	51.5	25.7	55.3	83.3	43.3
3	DO (mg/L)	5.3	5.4	6.8	4.7	6.5	3.9	7.2	6.2	6.8	4.0	5.9	6.0	5.0	6.8	3.3
4	DO_SAT% (%)	59	60	78	56	81	48	82	67	86	47	74	78	58	76	38
5	FCol-MPN (MPN/100mL)	650	400	100	200	100	100	700	583	300	200	600	137	50	2200	175
6	Tcol-MPN (MPN/100mL)	1900	1567	175	500	250	317	1350	2217	9217	850	7500	650	175	3500	1585
TRACE & TOXIC																
1	As (µg/L)										1.4	5.3	0.5	0.0	3.9	1.5
2	Cd (µg/L)				6.0						0.0	0.4	0.0	1.0	0.1	0.1
3	Cr (µg/L)				46.0						0.0	1.1	0.0	0.0	1.0	3.8
4	Cu (µg/L)										2.8			3.4		7.3
5	Hg (µg/L)				1.1						0.2	0.1	0.1	0.0		
6	Ni (µg/L)				1.0						0.0	26.1	0.0	3.5	1.1	5.6
7	Pb (µg/L)				15.0						18.2	2.8	0.0	13.0	1.0	1.2
8	Zn (µg/L)				53.0						7.8	5.0	27.7	0.0	4.2	0.2
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	63	67	76	77	85	69	89	90	89	117	116	78	141	92	108
2	HAR_Total (mgCaCO ₃ /L)	152	143	127	136	146	167	170	189	221	249	207	131	218	185	199
3	Na% (%)	33	47	36	31	34	41	24	23	29	22	27	43	34	28	32
4	RSC (-)	0.6	1.1	0.4	0.3	0.4	0.1	0.0	0.0	0.3	0.3	0.1	0.5	0.0	0.1	0.1
5	SAR (-)	1.3	2.3	1.4	1.1	1.3	1.9	0.8	0.8	1.3	0.9	1.1	1.8	1.6	1.1	1.4
PESTICIDES																
1	Aldrin (µg/L)					0.0					0.0					
2	BHC (µg/L)					0.1					0.0					
3	DDT (µg/L)					0.1					0.0					
4	Dieldrin (µg/L)					0.0					0.0					
5	Endos (µg/L)					0.1					0.0					

HISTORY SHEET

		Water Year	: 2017-2018
Site	: HIVRA	Code	: AGH30Q1
State	: Maharashtra	District	: Wardha
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wardha
Sub-Sub Tributary	: -	Local River	: Wardha
Division	: Wainganga Div., Nagpur	Sub-Division	: Penganga Sd, Yeotmal
Drainage Area	: 10240 Sq. Km.	Bank	: Left
Latitude	: 20°32'52"	Longitude	: 78°19'30"
	Opening Date	Closing Date	
Gauge	: 20.11.1986		
Discharge	: 11.08.1987		
Sediment	: 26.06.1990		
Water Quality	: 16.12.1987		

Water Quality Datasheet for the period : 2017-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		0.526	3.233	6.230	2.196	2.802	4.787	2.734	4.925	1.710	3.607	0.922	
2 Colour_Cod (-)	Clear												
3 EC_GEN ($\mu\text{mho}/\text{cm}$)	431	361	527	795	669	499	462	442	379	573	436	442	
4 Odour_Code (-)	odour free												
5 pH_GEN (pH units)	8.1	7.9	8.3	7.9	8.2	8.4	8.3	8.2	7.7	7.7	8.5	8.3	
6 Temp (deg C)	30.0	28.0	29.0	29.0	29.0	29.0	26.0	26.0	24.0	25.0	25.0	27.0	
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	14.9	0.0	0.0	8.3	1.7	0.0	0.0	0.0	4.0	4.0	
2 ALK-TOT (mgCaCO ₃ /L)	215	156	157	239	219	189	206	205	185	193	229	210	
3 B (mg/L)	0.57	0.00	0.65	0.68	0.09	0.56		0.24	0.19	0.66	0.72	1.49	
4 Ca (mg/L)	24	24	25	23	23	26	25	28	40	31	26	27	
5 Cl (mg/L)	33.8	11.9	15.9	97.4	32.9	45.3	35.0	28.8	26.8	17.9	25.4	27.0	
6 CO ₃ (mg/L)	0.0	0.0	18.0	0.0	0.0	10.0	2.0	0.0	0.0	0.0	4.8	4.8	
7 F (mg/L)	0.39	0.52	0.78	0.02	0.94	0.24	0.12	0.39	0.42	0.45	0.44	0.51	
8 Fe (mg/L)	0.1	0.2	0.3	0.1	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
9 HCO ₃ (mg/L)	262	190	155	291	267	211	247	250	225	235	270	246	
10 K (mg/L)	3.5	2.8	2.7	4.4	4.3	3.0	3.4	3.6	2.6	3.5	3.7	3.5	
11 Mg (mg/L)	17.6	11.2	14.4	20.9	16.0	19.2	19.8	23.9	18.1	22.7	23.9	22.2	
12 Na (mg/L)	48.5	25.6	17.7	77.9	52.1	37.2	65.6	47.8	36.6	36.5	44.1	38.3	
13 NH ₃ -N (mg N/L)	0.89	0.47	0.54	0.20	0.06	0.09	0.08	0.22	0.26	0.24	0.43	0.11	
14 NO ₂ +NO ₃ (mg N/L)	2.09	1.51	2.27	1.61	1.59	1.96	1.90	1.66	1.56	1.40	1.06	12.54	
15 NO ₂ -N (mgN/L)	0.01	0.03	0.02	0.10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
16 NO ₃ -N (mgN/L)	2.09	1.48	2.25	1.51	1.58	1.95	1.89	1.65	1.55	1.39	1.05	12.53	
17 o-PO ₄ -P (mg P/L)	4.609	0.387	0.714	0.668	0.090	0.104	0.059	0.173	0.177	0.161	0.423	0.334	
18 SiO ₂ (mg/L)	32.0	16.8	8.7	26.0	19.6	26.6	15.7	12.8	15.6	17.7	16.4	20.8	
19 SO ₄ (mg/L)	11.6	0.5	9.6	2.7	18.5	1.0	22.0	10.2	9.8	0.5	0.9	0.6	

Water Quality Datasheet for the period : 2017-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	10.0	35.0	1.2	35.0	10.0	1.3	1.2	1.2	1.1	1.7	10.0	15.0
2	COD (mg/L)	55.4	88.7	43.7	84.7	16.8	39.8	29.2	46.2	54.7	29.6	43.3	37.5
3	DO (mg/L)	1.6	4.7	6.0	1.7	3.2	5.8	7.0	8.3	5.6	6.6	2.6	2.6
4	DO_SAT% (%)	21	60	78	22	42	75	86	102	67	80	31	33
5	FCol-MPN (MPN/100mL)	270	230	40	20	140	230	80	80	130	130	800	1300
6	Tcol-MPN (MPN/100mL)	9000	230	170	130	340	230	230	300	230	300	1400	3000
TRACE & TOXIC													
1	As (µg/L)			0.0				4.8					0.8
2	Cd (µg/L)			0.0				0.0					0.1
3	Cr (µg/L)			11.0				55.9					2.0
4	Cu (µg/L)			5.0				6.4					4.6
5	Ni (µg/L)							14.6					4.8
6	Pb (µg/L)			1.0				1.4					4.3
7	Zn (µg/L)			0.0				17.4					1.1
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	60	60	62	57	58	65	62	70	101	77	65	67
2	HAR_Total (mgCaCO ₃ /L)	133	106	122	144	124	145	145	169	176	172	164	159
3	Na% (%)	44	34	24	53	47	35	49	38	31	31	36	34
4	RSC (-)	1.7	1.0	0.7	1.9	1.9	0.9	1.2	0.7	0.2	0.5	1.3	1.0
5	SAR (-)	1.8	1.1	0.7	2.8	2.0	1.3	2.4	1.6	1.2	1.2	1.5	1.3
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	341	74.18	0.090	5.201
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	795	361	501
3	pH_GEN (pH units)	12	8.5	7.7	8.1
4	Temp (deg C)	12	30.0	24.0	27.3
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	14.9	0.0	2.7
2	ALK-TOT (mgCaCO ₃ /L)	12	239	156	200
3	B (mg/L)	11	1.49	0.00	0.53
4	Ca (mg/L)	12	40	23	27
5	Cl (mg/L)	12	97.4	11.9	33.2
6	CO ₃ (mg/L)	12	18.0	0.0	3.3
7	F (mg/L)	12	0.94	0.02	0.43
8	Fe (mg/L)	12	0.6	0.1	0.2
9	HCO ₃ (mg/L)	12	291	155	238
10	K (mg/L)	12	4.4	2.6	3.4
11	Mg (mg/L)	12	23.9	11.2	19.2
12	Na (mg/L)	12	77.9	17.7	44
13	NH ₃ -N (mg N/L)	12	0.89	0.06	0.3
14	NO ₂ +NO ₃ (mg N/L)	12	12.54	1.06	2.6
15	NO ₂ -N (mgN/L)	12	0.10	0.01	0.02
16	NO ₃ -N (mgN/L)	12	12.53	1.05	2.58
17	o-PO ₄ -P (mg P/L)	12	4.609	0.059	0.658
18	SiO ₂ (mg/L)	12	32.0	8.7	19.1
19	SO ₄ (mg/L)	12	22.0	0.5	7.3
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	35.0	1.1	10.2
2	COD (mg/L)	12	88.7	16.8	47.5
3	DO (mg/L)	12	8.3	1.6	4.6
4	DO_SAT% (%)	12	102	21	58
5	FCol-MPN (MPN/100mL)	12	1300	20	288
6	Tcol-MPN (MPN/100mL)	12	9000	130	1297
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	4.8	0.0	1.8
2	Cd ($\mu\text{g}/\text{L}$)	3	0.1	0.0	0
3	Cr ($\mu\text{g}/\text{L}$)	3	55.9	2.0	23
4	Cu ($\mu\text{g}/\text{L}$)	3	6.4	4.6	5.3
5	Ni ($\mu\text{g}/\text{L}$)	2	14.6	4.8	9.7
6	Pb ($\mu\text{g}/\text{L}$)	3	4.3	1.0	2.2
7	Zn ($\mu\text{g}/\text{L}$)	3	17.4	0.0	6.2
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	101	57	67
2	HAR_Total (mgCaCO ₃ /L)	12	176	106	147
3	Na% (%)	12	53	24	38
4	RSC (-)	12	1.9	0.2	1.1
5	SAR (-)	12	2.8	0.7	1.6
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	5.642	318.3	91.34	187.9	65.60	9.944	41.44	120.4	121.1	363.9	324.5	12.27		2.997
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	329	385	358	304	435	352	384	394	353	402	512	427	404	557
3	pH_GEN (pH units)	8.4	8.3	8.2	8.5	8.5	8.2	8.3	8.4	8.5	8.5	8.0	8.4	8.3	8.1
4	Temp (deg C)	27.6	27.5	27.8	27.1	27.3	28.0	28.7	28.0	27.9	28.7	28.8	29.6	28.2	29.0
5	Turb (NTU)			27.3	67.3	35.2	16.8	6.8	9.1	3.1	2.3	5.9			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	4.2	6.0	2.3	4.7	3.6	0.9	3.6	4.8	5.4	5.8	1.2	5.2	9.6	3.0
2	ALK-TOT (mgCaCO ₃ /L)	167	162	144	133	188	132	161	169	205	213	228	183	147	197
3	B (mg/L)	0.20	0.28	0.37	0.60	0.80	0.35	0.63	0.27	0.14	0.17	0.45	0.18	0.70	0.40
4	Ca (mg/L)	26	28	31	36	25	25	32	34	33	33	29	30	28	24
5	Cl (mg/L)	15.8	16.2	14.7	11.4	19.6	23.4	15.4	15.6	17.0	16.5	23.4	22.7	15.9	38.4
6	CO ₃ (mg/L)	5.1	7.3	2.8	5.7	4.3	1.0	4.3	5.8	6.6	7.0	1.5	6.2	11.5	3.6
7	F (mg/L)	0.30	0.92	0.35	0.28	0.38	0.45	0.21	0.25	0.64	0.51	0.58	0.13	0.13	0.53
8	Fe (mg/L)	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.4	0.2	0.3	0.1	0.0	0.1	0.3
9	HCO ₃ (mg/L)	193	183	170	150	220	158	187	194	237	245	275	211	156	233
10	K (mg/L)	4.4	2.8	2.8	1.7	2.4	3.3	2.1	2.6	2.7	4.1	3.7	2.4	2.5	3.6
11	Mg (mg/L)	16.1	15.9	11.4	11.6	16.8	12.3	15.0	19.0	18.6	24.3	23.1	19.3	16.6	16.0
12	Na (mg/L)	30.7	37.0	21.3	10.8	43.5	36.6	16.4	33.7	29.6	40.8	62.1	35.1	26.7	44.4
13	NH ₃ -N (mg N/L)	0.19	0.08	0.22	0.49	0.28	0.22	0.36	0.14	0.26	0.05	0.32	0.06	0.23	0.43
14	NO ₂ +NO ₃ (mg N/L)	1.98	1.01	1.87	1.60	0.14	0.22	0.75	0.94	1.52	2.62	2.23	8.39	2.17	1.81
15	NO ₂ -N (mgN/L)	0.17	0.03	0.12	0.10	0.02	0.01	0.01	0.02	0.08	0.01	0.00	0.01	0.02	0.03
16	NO ₃ -N (mgN/L)	1.81	0.98	1.75	1.51	0.11	0.21	0.74	0.92	1.44	2.61	2.22	8.38	2.16	1.78
17	o-PO ₄ -P (mg P/L)	0.119	0.017	0.028	0.065	0.056	0.031	0.028	0.008	0.071	0.035	0.172	0.098	0.121	1.294
18	SiO ₂ (mg/L)	28.6	51.5	31.0	37.1	32.1	41.5	30.1	61.8	38.3	15.8	20.8	34.7	23.4	20.6
19	SO ₄ (mg/L)	9.5	31.1	10.3	284.4	20.3	14.6	11.0	24.2	24.1	21.3	11.0	31.8	10.3	8.6

Water Quality Seasonal Average for the period: 2004-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	3.5	1.7	1.6	1.3	15.6	5.8	2.6	2.1	1.8	1.8	6.9	1.9	1.9	18.2
2	COD (mg/L)				31.2	118.6	107.2	67.9	52.1	73.5	46.0	30.8	90.6	35.1	57.9
3	DO (mg/L)	5.7	6.1	6.1	6.7	6.2	4.3	7.0	6.8	6.6	6.3	6.3	6.3	6.4	3.4
4	DO_SAT% (%)	72	76	76	84	78	55	90	87	84	81	81	82	82	45
5	FCol-MPN (MPN/100mL)	2650	1063	3438	425	160	850	100	350	890	3770	324	76	124	140
6	Tcol-MPN (MPN/100mL)	8663	249	11563	1175	440	3675	700	850	27640	39510	842	3546	3938	1974
TRACE & TOXIC															
1	As (µg/L)										8.1	4.7		0.6	0.0
2	Cd (µg/L)										1.1	0.3		0.2	0.0
3	Cr (µg/L)										0.4	2.3		9.1	11.0
4	Cu (µg/L)										40.8	10.9		7.4	5.0
5	Hg (µg/L)											0.6			
6	Ni (µg/L)										2.9	7.7		1.7	
7	Pb (µg/L)		54.0								2.8	0.8		0.4	1.0
8	Zn (µg/L)		19.0								3.6	2.8		1.7	0.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	66	70	78	90	63	62	80	84	81	81	73	74	70	59
2	HAR_Total (mgCaCO ₃ /L)	133	136	125	138	132	113	142	163	159	183	169	154	139	126
3	Na% (%)	31	32	27	14	38	40	20	28	27	31	39	33	29	40
4	RSC (-)	0.7	0.7	0.4	0.0	1.1	0.4	0.4	0.2	1.0	0.8	1.2	0.7	0.2	1.4
5	SAR (-)	1.1	1.4	0.9	0.4	1.6	1.5	0.6	1.1	1.0	1.3	2.0	1.2	1.0	1.7
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)			0.1											
5	Endos (µg/L)			0.1											

Water Quality Seasonal Average for the period: 2004-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	3.472	10.26	13.30	13.22			0.000	0.279	2.600	14.25	1.640	3.825		3.539
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	424	446	484	468	494		481	444	464	566	448	458	474	446
3	pH_GEN (pH units)	8.8	8.5	8.6	8.6	8.8		8.3	8.4	8.5	8.0	8.3	8.5	8.4	8.1
4	Temp (deg C)	22.3	23.3	23.3	23.3	26.3		29.0	23.0	24.5	25.5	26.0	24.5	24.5	26.3
5	Turb (NTU)			1.7	1.2	1.1		4.7	1.3	2.5	2.0	0.8			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	7.1	5.2	9.5	4.7	5.0		3.5	5.4	6.3	6.0	3.6	8.4	11.6	2.5
2	ALK-TOT (mgCaCO ₃ /L)	219	208	196	219	209		192	229	257	231	236	220	238	196
3	B (mg/L)	0.25	0.24	0.28	0.70	0.61		1.73	0.08	0.31	0.11	0.44	0.27	0.52	0.33
4	Ca (mg/L)	21	30	33	35	23		31	35	42	55	34	28	35	30
5	Cl (mg/L)	13.1	19.2	23.4	19.0	18.8		17.8	17.8	22.9	18.3	20.4	22.4	23.9	34.0
6	CO ₃ (mg/L)	8.5	6.3	11.4	5.7	6.0		4.2	6.6	7.6	7.2	4.3	10.1	13.9	3.0
7	F (mg/L)	0.57	0.41	0.30	0.24	0.61		0.25	0.47	0.40	0.26	0.29	0.28	0.17	0.29
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0		0.0	0.1	0.4	0.3	0.0	0.1	0.0	0.1
9	HCO ₃ (mg/L)	250	241	216	256	243		226	266	298	267	279	248	262	233
10	K (mg/L)	3.0	3.3	2.4	2.4	2.0		1.6	1.0	3.6	2.6	2.3	2.8	2.6	3.1
11	Mg (mg/L)	24.0	23.0	19.3	23.6	21.8		21.0	35.0	22.8	23.2	23.2	20.7	24.0	20.3
12	Na (mg/L)	45.4	35.4	37.0	39.6	45.0		25.2	32.6	43.5	38.7	44.4	47.5	47.1	46.8
13	NH ₃ -N (mg N/L)	0.15	0.05	0.52	0.14	0.92		0.06	0.20	0.07	0.21	0.04	0.10	0.30	0.16
14	NO ₂ +NO ₃ (mg N/L)	0.75	0.75	1.75	2.70	0.24		0.19	0.54	2.22	3.58	5.20	5.46	1.83	1.77
15	NO ₂ -N (mgN/L)	0.03	0.01	0.03	0.03	0.01		0.03	0.03	0.02	0.00	0.02	0.02	0.03	0.01
16	NO ₃ -N (mgN/L)	0.72	0.74	1.72	2.66	0.22		0.17	0.51	2.19	3.58	5.18	5.44	1.81	1.76
17	o-PO ₄ -P (mg P/L)	0.092	0.018	0.026	0.054	0.078		0.052	0.000	0.039	0.382	0.198	0.096	0.824	0.128
18	SiO ₂ (mg/L)	32.9	71.4	44.6	48.8	33.9		39.3	159.0	66.7	20.1	18.0	28.4	22.2	17.7
19	SO ₄ (mg/L)	9.8	14.4	13.0	12.4	11.3		16.0	17.8	15.4	15.3	18.3	15.9	14.6	10.7

Water Quality Seasonal Average for the period: 2004-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.7	0.9	1.1	1.0	2.1		2.7	0.8	2.2	1.4	2.2	1.3	1.9	1.2
2	COD (mg/L)				74.7	45.9		39.6	86.2	32.9	32.8	32.8	37.2	98.1	42.5
3	DO (mg/L)	6.9	7.5	7.9	7.3	6.7		8.4	6.8	7.5	7.4	7.9	7.2	7.5	6.7
4	DO_SAT% (%)	78	88	92	85	82		109	79	90	90	98	86	90	83
5	FCol-MPN (MPN/100mL)	238	100	100	115	100		100	100	200	175	48	85	138	130
6	Tcol-MPN (MPN/100mL)	475	100	238	428	100		400	100	750	613	108	245	765	248
TRACE & TOXIC															
1	As (µg/L)								0.6				1.1	1.9	4.8
2	Cd (µg/L)								0.3			0.5	0.4	0.3	0.0
3	Cr (µg/L)								6.1			3.7	2.5	0.6	55.9
4	Cu (µg/L)								171.8			6.3	1.1	2.7	6.4
5	Hg (µg/L)														
6	Ni (µg/L)								54.0			0.2	0.3	0.2	14.6
7	Pb (µg/L)								0.4			1.1	1.6	0.1	1.4
8	Zn (µg/L)								8.8			5.0	4.4	1.6	17.4
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	53	74	83	87	58		78	88	105	138	86	69	86	74
2	HAR_Total (mgCaCO ₃ /L)	153	170	163	185	149		166	234	200	235	183	155	187	159
3	Na% (%)	38	31	33	32	40		25	23	32	27	33	39	35	38
4	RSC (-)	1.3	0.8	0.7	0.7	1.2		0.6	0.0	1.2	0.4	1.1	1.3	1.1	0.8
5	SAR (-)	1.6	1.2	1.3	1.3	1.6		0.9	0.9	1.3	1.1	1.4	1.7	1.5	1.6
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	3.552	1.367	3.132	6.111	10.91			0.000	0.000	5.082	2.302	10.72	3.276		2.265
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	476	404	421	414	482				469	460	583	552	474	492	484
3	pH_GEN (pH units)	8.4	8.6	8.5	8.4	8.6				8.3	8.7	8.2	8.3	8.4	8.4	8.2
4	Temp (deg C)	24.2	24.4	26.5	23.3	25.3				27.3	26.7	26.7	26.0	25.5	26.3	25.7
5	Turb (NTU)				1.4	3.9				0.7	0.5	1.1	1.6			
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	13.9	9.3	8.7	6.5	3.7				4.8	6.7	0.0	4.0	7.5	19.1	2.7
2	ALK-TOT (mgCaCO ₃ /L)	234	217	172	171	211				184	237	214	245	230	230	211
3	B (mg/L)	0.57	0.17	0.26	0.75	0.92				0.16	0.18	0.17	0.39	0.14	0.60	0.96
4	Ca (mg/L)	18	25	25	24	26				33	34	45	27	54	28	28
5	Cl (mg/L)	14.7	13.8	18.2	11.0	19.9				22.0	22.0	36.3	22.9	23.6	34.5	23.5
6	CO ₃ (mg/L)	16.7	11.3	10.5	7.8	4.5				5.8	8.0	0.0	4.8	9.0	23.0	3.2
7	F (mg/L)	0.31	0.47	0.36	0.34	0.32				0.44	0.24	0.54	0.44	0.15	0.67	0.47
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0				0.2	0.0	0.3	0.1	0.0	0.2	0.1
9	HCO ₃ (mg/L)	252	242	189	193	248				213	272	261	290	262	234	250
10	K (mg/L)	3.1	3.3	2.6	2.3	1.4				2.6	3.9	3.2	2.4	3.0	2.6	3.6
11	Mg (mg/L)	27.0	18.2	15.7	19.0	20.5				32.1	22.1	20.9	25.7	21.1	23.7	22.9
12	Na (mg/L)	46.3	44.1	43.5	30.1	51.9				42.6	46.5	64.8	52.4	57.5	55.0	39.6
13	NH ₃ -N (mg N/L)	0.25	0.07	0.12	0.26	0.21				0.15	0.01	0.87	0.10	0.17	0.87	0.26
14	NO ₂ +NO ₃ (mg N/L)	0.43	1.04	0.38	1.16	0.18				0.42	0.43	5.34	6.78	5.34	1.55	5.00
15	NO ₂ -N (mgN/L)	0.01	0.07	0.00	0.03	0.04				0.02	0.02	0.01	0.01	0.14	0.01	0.01
16	NO ₃ -N (mgN/L)	0.42	0.96	0.37	1.12	0.14				0.41	0.41	5.33	6.78	5.20	1.54	4.99
17	o-PO ₄ -P (mg P/L)	0.010	0.086	0.065	0.041	0.034				0.003	0.034	0.762	0.249	0.062	0.539	0.306
18	SiO ₂ (mg/L)	31.7	29.3	80.1	37.5	39.2				33.8	22.1	28.7	45.7	25.1	26.0	18.3
19	SO ₄ (mg/L)	10.3	10.1	14.7	9.6	19.5				25.0	11.6	16.0	22.9	7.1	18.7	0.7

Water Quality Seasonal Average for the period: 2004-2018

Station Name : HIVRA (AGH30Q1)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Penganga Sd, Yeotmal

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.7	3.1	1.3	1.1	2.2				2.3	2.9	3.0	3.0	8.9	5.0	8.9
2	COD (mg/L)					61.2				104.2	46.7	47.3	30.3	58.2	125.1	36.8
3	DO (mg/L)	4.5	5.3	6.9	6.8	7.4				6.9	8.0	6.8	7.3	5.2	6.3	3.9
4	DO_SAT% (%)	54	63	85	80	90				87	100	84	90	63	77	48
5	FCol-MPN (MPN/100mL)	917	600	150	100	400				450	183	517	103	55	523	743
6	Tcol-MPN (MPN/100mL)	1900	1800	233	100	1467				5067	1400	1033	947	150	1000	1567
TRACE & TOXIC																
1	As (µg/L)									1.3	3.0	4.0	0.0	1.9	1.0	0.8
2	Cd (µg/L)					7.0				0.0	1.6	0.0	1.0	0.4	0.0	0.1
3	Cr (µg/L)					66.0				0.0	1.6	0.7	0.0	4.7	3.0	2.0
4	Cu (µg/L)									4.0	2.8			1.2	8.0	4.6
5	Hg (µg/L)					1.1				0.1	0.0	0.1	0.1			
6	Ni (µg/L)					1.0				0.8	5.9	3.6	3.7	0.7	9.0	4.8
7	Pb (µg/L)					37.0				17.5	1.4	4.1	14.0	0.9	0.0	4.3
8	Zn (µg/L)					33.0				18.2	11.5	5.6	19.0	3.5	7.0	1.1
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	46	64	63	60	65				83	86	114	68	134	69	70
2	HAR_Total (mgCaCO ₃ /L)	158	140	128	139	151				216	177	201	176	222	168	165
3	Na% (%)	38	40	42	32	41				29	35	40	38	35	42	34
4	RSC (-)	1.5	1.6	0.9	0.7	1.2				0.0	1.2	0.7	1.4	0.4	1.3	0.9
5	SAR (-)	1.6	1.6	1.7	1.1	1.9				1.3	1.5	2.0	1.7	1.7	1.9	1.3
PESTICIDES																
1	Aldrin (µg/L)					0.0				0.0						
2	BHC (µg/L)					0.1				0.0						
3	DDT (µg/L)					0.1				0.0						
4	Dieldrin (µg/L)					0.1				0.0						
5	Endos (µg/L)					0.1				0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: ASHTI	Code	: AGH40A4
State	: Maharashtra	District	Gadchiroli
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wainganga
Sub-Sub Tributary	: -	Local River	: Wainganga
Division	: Wainganga Div., Nagpur	Sub-Division	: L Wainganga SD, Chandrapur
Drainage Area	: 50990 Sq. Km.	Bank	: Left
Latitude	: 19°41'12"	Longitude	: 79°47'13"
	Opening Date	Closing Date	
Gauge	: 01.08.1965		
Discharge	: 14.07.1965		
Sediment	: 14.03.1966		
Water Quality	: 01.06.1966		

Water Quality Datasheet for the period : 2017-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

River Water Analysis

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1	Q (cumec)	1.350	34.21	405.3	1179	384.2	198.4	9.799	4.801	3.812	2.763	0.886	0.068
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Clear							
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	256	259	364	328	406	409	300	274	249	397	291	289
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	9.2	7.7	8.4	7.9	8.0	8.3	8.5	8.8	8.4	8.3	8.9	8.8
6	Temp (deg C)	31.0	27.5	31.0	31.0	31.5	29.0	24.5	22.0	23.5	26.0	28.5	30.5
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	7.5	0.0	6.0	0.0	0.0	0.0	6.0	10.0	6.0	8.0	8.0	8.0
2	ALK-TOT (mgCaCO ₃ /L)	135	196	143	96	153	171	147	134	149	141	157	159
3	B (mg/L)	0.51	0.11	0.11	0.56	0.94	0.48	0.17	0.13	0.05	0.71	0.88	0.92
4	Ca (mg/L)	20	43	28	23	35	33	28	27	29	27	20	27
5	Cl (mg/L)	27.8	11.9	15.9	31.8	14.4	18.5	22.7	37.1	20.6	17.5	27.0	23.9
6	CO ₃ (mg/L)	9.0	0.0	7.2	0.0	0.0	0.0	7.2	12.0	7.2	9.6	9.6	9.6
7	F (mg/L)	0.33	0.35	0.50	0.02	0.60	0.01	0.00	0.37	0.40	0.44	0.46	0.53
8	Fe (mg/L)	0.1	0.3	0.6	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1
9	HCO ₃ (mg/L)	146	239	159	117	187	208	164	139	167	152	172	175
10	K (mg/L)	3.5	2.3	2.6	2.6	2.1	2.4	2.0	2.0	1.9	2.6	3.3	3.1
11	Mg (mg/L)	9.9	27.3	7.0	8.0	6.6	13.4	13.4	10.5	12.2	16.9	14.6	11.7
12	Na (mg/L)	31.6	18.6	20.1	19.3	17.9	22.8	28.7	28.8	23.2	28.0	31.4	32.4
13	NH ₃ -N (mg N/L)	0.26	0.26	0.37	0.45	0.09	0.11	0.07	0.21	0.25	0.30	0.27	0.00
14	NO ₂ +NO ₃ (mg N/L)	1.44	1.90	2.23	2.49	1.66	1.73	1.48	1.16	1.70	1.19	1.39	8.75
15	NO ₂ -N (mgN/L)	0.01	0.04	0.03	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01
16	NO ₃ -N (mgN/L)	1.43	1.86	2.20	2.48	1.61	1.72	1.47	1.15	1.69	1.18	1.38	8.74
17	o-PO ₄ -P (mg P/L)	2.103	0.594	0.882	0.960	0.090	0.100	0.063	0.177	0.087	0.173	0.391	0.252
18	SiO ₂ (mg/L)	26.0	12.9	6.3	15.1	16.5	17.9	10.4	5.4	6.7	9.7	12.3	12.6
19	SO ₄ (mg/L)	12.2	1.5	4.4	13.5	0.6	3.4	18.2	21.6	9.2	0.3	1.9	2.9

Water Quality Datasheet for the period : 2017-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.1	1.8	1.1	1.8	1.1	1.4	2.2	1.2	2.8	2.1	1.2	1.8
2	COD (mg/L)	60.4	50.6	21.9	27.1	8.9	92.0	15.5	7.7	56.1	27.3	39.2	65.9
3	DO (mg/L)	6.4	5.8	6.8	6.3	6.5	7.4	8.9	8.6	8.4	6.5	6.7	7.4
4	DO_SAT% (%)	86	73	92	85	88	96	106	98	98	80	86	98
5	FCol-MPN (MPN/100mL)	20	3000	70	20	340	2400	230	40	20	40	110	130
6	Tcol-MPN (MPN/100mL)	20	3000	140	170	9000	2400	230	300	20	140	140	170
TRACE & TOXIC													
1	As (µg/L)			1.0				3.0					1.6
2	Cd (µg/L)			0.0				0.0					0.1
3	Cr (µg/L)			10.0				1.1					0.9
4	Cu (µg/L)			3.0				3.9					2.1
5	Ni (µg/L)							0.7					2.0
6	Pb (µg/L)			1.0				0.8					3.6
7	Zn (µg/L)			5.0				4.1					1.1
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	51	108	71	57	88	83	70	67	72	67	50	67
2	HAR_Total (mgCaCO ₃ /L)	92	222	99	91	115	139	125	111	123	138	111	116
3	Na% (%)	42	15	30	31	25	26	33	36	29	30	37	37
4	RSC (-)	0.9	0.0	0.9	0.1	0.8	0.6	0.4	0.5	0.5	0.1	0.9	0.9
5	SAR (-)	1.4	0.5	0.9	0.9	0.7	0.8	1.1	1.2	0.9	1.0	1.3	1.3
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : ASHTI (AGH40A4)

Division : Wainganga Div., Nagpur

Local River : Wainganga

Sub-Division : L Wainganga SD, Chandrapur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	6543	0.005	330.4
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	409	249	319
3	pH_GEN (pH units)	12	9.2	7.7	8.4
4	Temp (deg C)	12	31.5	22.0	28
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	10.0	0.0	4.9
2	ALK-TOT (mgCaCO ₃ /L)	12	196	96	148
3	B (mg/L)	12	0.94	0.05	0.46
4	Ca (mg/L)	12	43	20	28
5	Cl (mg/L)	12	37.1	11.9	22.4
6	CO ₃ (mg/L)	12	12.0	0.0	6
7	F (mg/L)	12	0.60	0.00	0.33
8	Fe (mg/L)	12	0.6	0.1	0.2
9	HCO ₃ (mg/L)	12	239	117	169
10	K (mg/L)	12	3.5	1.9	2.5
11	Mg (mg/L)	12	27.3	6.6	12.6
12	Na (mg/L)	12	32.4	17.9	25.2
13	NH ₃ -N (mg N/L)	12	0.45	0.00	0.22
14	NO ₂ +NO ₃ (mg N/L)	12	8.75	1.16	2.26
15	NO ₂ -N (mgN/L)	12	0.05	0.01	0.02
16	NO ₃ -N (mgN/L)	12	8.74	1.15	2.24
17	o-PO ₄ -P (mg P/L)	12	2.103	0.063	0.489
18	SiO ₂ (mg/L)	12	26.0	5.4	12.7
19	SO ₄ (mg/L)	12	21.6	0.3	7.5
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	2.8	1.1	1.6
2	COD (mg/L)	12	92.0	7.7	39.4
3	DO (mg/L)	12	8.9	5.8	7.1
4	DO_SAT% (%)	12	106	73	90
5	FCol-MPN (MPN/100mL)	12	3000	20	535
6	Tcol-MPN (MPN/100mL)	12	9000	20	1311
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	3.0	1.0	1.9
2	Cd ($\mu\text{g}/\text{L}$)	3	0.1	0.0	0
3	Cr ($\mu\text{g}/\text{L}$)	3	10.0	0.9	4
4	Cu ($\mu\text{g}/\text{L}$)	3	3.9	2.1	3
5	Ni ($\mu\text{g}/\text{L}$)	2	2.0	0.7	1.4
6	Pb ($\mu\text{g}/\text{L}$)	3	3.6	0.8	1.8
7	Zn ($\mu\text{g}/\text{L}$)	3	5.0	1.1	3.4
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	108	50	71
2	HAR_Total (mgCaCO ₃ /L)	12	222	91	124
3	Na% (%)	12	42	15	31
4	RSC (-)	12	0.9	0.0	0.6
5	SAR (-)	12	1.4	0.5	1
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1 Q (cumec)		599.0	778.8	1684	2782	2525	471.9	1302	1431	1338	2214	946.6	850.8		400.8
2 EC_GEN ($\mu\text{mho}/\text{cm}$)		208	185	164	195	208	290	261	278	257	303	411	231	237	323
3 pH_GEN (pH units)		8.5	8.4	8.3	8.4	8.2	8.5	8.3	8.5	8.5	8.6	7.9	8.1	8.3	8.2
4 Temp (deg C)		28.3	27.9	27.5	29.8	28.6	28.3	29.6	28.2	28.3	29.4	29.4	30.0	30.0	30.4
5 Turb (NTU)				100.5	161.4	95.8	12.5	18.0	22.6	10.9	10.8	24.0			
CHEMICAL															
1 Alk-Phen (mgCaCO ₃ /L)		2.8	4.3	3.1	3.0	1.6	8.0	3.1	5.1	4.7	3.3	0.0	3.1	3.7	2.7
2 ALK-TOT (mgCaCO ₃ /L)		97	80	69	82	79	106	98	119	163	114	115	102	91	144
3 B (mg/L)		0.23	0.20	0.38	0.56	0.83	0.33	0.46	0.26	0.13	0.14	0.28	0.17	0.22	0.45
4 Ca (mg/L)		21	25	17	25	21	21	22	24	27	29	24	29	22	30
5 Cl (mg/L)		9.2	6.9	6.7	10.2	9.5	22.9	17.0	12.8	16.3	24.6	13.2	13.9	11.9	20.4
6 CO ₃ (mg/L)		3.4	5.2	3.8	3.7	2.0	9.6	3.8	6.1	5.7	3.9	0.0	3.7	4.5	3.2
7 F (mg/L)		0.30	0.98	0.13	0.23	0.22	0.43	0.30	0.31	0.50	0.31	0.59	0.10	0.17	0.36
8 Fe (mg/L)		0.1	0.2	0.3	0.2	0.0	0.1	0.0	0.6	0.1	0.5	0.2	0.1	0.2	0.3
9 HCO ₃ (mg/L)		112	87	76	92	93	110	111	132	188	131	141	117	102	170
10 K (mg/L)		2.5	1.8	1.7	1.7	1.6	3.9	2.1	2.3	2.3	3.3	2.4	2.2	2.5	2.6
11 Mg (mg/L)		8.7	4.9	4.4	4.7	3.8	10.5	8.8	14.1	14.3	9.4	14.3	9.1	7.7	11.8
12 Na (mg/L)		12.5	7.3	8.4	8.1	17.9	26.6	13.8	23.8	20.4	16.1	21.8	15.1	20.8	21.5
13 NH ₃ -N (mg N/L)		0.18	0.06	0.19	0.56	0.27	0.24	0.32	0.10	0.19	0.07	0.39	0.11	0.23	0.28
14 NO ₂ +NO ₃ (mg N/L)		1.38	0.86	0.62	0.88	0.36	0.21	0.25	0.92	1.56	2.04	1.81	7.84	1.64	1.95
15 NO ₂ -N (mgN/L)		0.12	0.02	0.06	0.07	0.11	0.03	0.01	0.15	0.55	0.01	0.01	0.02	0.01	0.03
16 NO ₃ -N (mgN/L)		1.25	0.84	0.56	0.81	0.25	0.18	0.24	0.77	1.00	2.03	1.81	7.82	1.63	1.92
17 o-PO ₄ -P (mg P/L)		0.078	0.021	0.031	0.041	0.034	0.033	0.035	0.010	0.085	0.050	0.208	0.105	0.106	0.926
18 SiO ₂ (mg/L)		26.4	61.7	34.3	30.2	24.7	64.7	23.6	44.5	30.1	10.7	10.6	15.6	15.4	15.4
19 SO ₄ (mg/L)		8.9	11.2	4.6	8.4	10.8	8.9	7.6	9.9	11.7	13.8	9.6	19.3	8.3	6.4
BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	BOD3-27 (mg/L)	1.3	1.4	1.1	1.0	1.5	1.0	1.9	2.1	2.3	1.9	1.7	2.1	1.9	1.4
2	COD (mg/L)				35.9	54.8	69.5	50.9	36.1	64.7	37.1	26.2	66.6	29.1	33.8
3	DO (mg/L)	6.2	7.1	6.9	6.6	6.2	6.6	6.9	7.0	6.4	6.2	6.3	6.4	6.8	6.4
4	DO_SAT% (%)	80	90	87	85	80	85	91	89	81	80	83	84	91	85
5	FCol-MPN (MPN/100mL)	980	275	240	360	380	190	120	220	540	7210	400	192	148	690
6	Tcol-MPN (MPN/100mL)	2720	648	330	750	890	520	670	580	7500	39660	944	1644	1886	2466
	TRACE & TOXIC														
1	As (µg/L)										3.4	4.7		0.6	1.0
2	Cd (µg/L)										0.2	1.0		0.1	0.0
3	Cr (µg/L)										6.1	5.6		3.0	10.0
4	Cu (µg/L)										36.5	2.8		7.3	3.0
5	Hg (µg/L)											0.2			
6	Ni (µg/L)										1.4	13.9		2.5	
7	Pb (µg/L)		44.0								1.0	0.5		0.8	1.0
8	Zn (µg/L)		8.0								2.6	1.3		2.5	5.0
	CHEMICAL INDICES														
1	HAR_Ca (mgCaCO ₃ /L)	53	63	42	63	54	52	56	59	68	72	61	72	55	75
2	HAR_Total (mgCaCO ₃ /L)	90	83	60	82	69	96	93	118	128	112	121	110	87	124
3	Na% (%)	21	15	20	15	27	31	22	28	23	23	28	23	33	29
4	RSC (-)	0.2	0.0	0.2	0.1	0.3	0.3	0.1	0.2	0.7	0.3	0.1	0.1	0.1	0.5
5	SAR (-)	0.6	0.3	0.4	0.4	0.9	1.2	0.6	0.9	0.8	0.7	0.9	0.6	1.0	0.9
	PESTICIDES														
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)			0.0											
			0.1												

Water Quality Seasonal Average for the period: 2004-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1 Q (cumec)		49.53	125.9	96.01	106.8	43.97	83.08	115.4	57.37	94.35	213.1	125.7	77.89		54.20
2 EC_GEN ($\mu\text{mho}/\text{cm}$)		284	300	303	314	353	303	337	393	312	397	350	280	285	308
3 pH_GEN (pH units)		8.6	8.6	8.6	8.7	8.6	8.5	8.5	8.7	8.6	8.3	8.3	8.6	8.4	8.5
4 Temp (deg C)		23.1	25.2	25.4	26.3	25.6	22.8	24.9	24.8	24.4	24.6	24.9	25.5	25.3	24.8
5 Turb (NTU)				0.7	0.4	0.7	0.8	1.0	13.5	0.6	2.4	0.9			
CHEMICAL															
1 Alk-Phen (mgCaCO ₃ /L)		5.7	6.2	5.9	5.2	5.7	5.7	6.8	6.3	6.4	3.1	1.7	7.7	8.7	5.5
2 ALK-TOT (mgCaCO ₃ /L)		129	144	126	130	143	121	154	158	204	156	152	148	149	150
3 B (mg/L)		0.24	0.22	0.40	0.78	0.66	0.60	0.83	0.17	0.28	0.27	0.51	0.23	0.58	0.21
4 Ca (mg/L)		23	29	30	29	33	29	30	33	41	48	34	29	36	29
5 Cl (mg/L)		12.6	12.6	11.7	14.9	18.3	11.5	16.3	13.0	15.6	16.8	12.1	15.4	13.4	24.7
6 CO ₃ (mg/L)		6.9	7.5	7.1	6.3	6.9	6.9	8.2	7.6	7.7	3.8	2.0	9.3	10.5	6.6
7 F (mg/L)		0.51	0.49	0.24	0.21	0.52	0.35	0.26	0.38	0.36	0.43	0.26	0.22	0.72	0.19
8 Fe (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.4	0.0	0.0	0.1	0.1
9 HCO ₃ (mg/L)		143	161	140	146	160	134	171	178	233	183	181	162	161	170
10 K (mg/L)		2.1	2.6	1.7	1.9	1.7	1.8	2.1	1.5	3.0	2.3	1.8	2.0	1.7	2.1
11 Mg (mg/L)		15.7	12.5	9.2	11.3	11.5	10.9	14.3	17.8	17.9	15.0	13.5	12.6	10.3	12.4
12 Na (mg/L)		19.4	18.8	17.8	21.3	22.9	14.5	19.6	20.5	24.4	23.7	21.3	22.2	22.3	25.9
13 NH ₃ -N (mg N/L)		0.13	0.05	0.50	0.08	0.55	0.36	0.08	0.20	0.08	0.07	0.15	0.25	0.55	0.16
14 NO ₂ +NO ₃ (mg N/L)		0.93	0.15	0.33	0.45	0.15	0.26	0.14	0.30	0.43	4.28	3.99	4.76	1.13	1.52
15 NO ₂ -N (mgN/L)		0.09	0.01	0.02	0.10	0.01	0.05	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01
16 NO ₃ -N (mgN/L)		0.84	0.14	0.32	0.35	0.14	0.21	0.13	0.30	0.43	4.27	3.98	4.75	1.12	1.51
17 o-PO ₄ -P (mg P/L)		0.092	0.016	0.028	0.039	0.031	0.041	0.040	0.002	0.041	0.239	0.156	0.076	0.690	0.107
18 SiO ₂ (mg/L)		27.2	44.9	24.8	21.7	35.3	36.5	21.7	46.1	33.4	9.3	9.0	11.6	13.8	10.1
19 SO ₄ (mg/L)		20.2	8.6	8.3	7.7	10.6	10.1	11.4	13.7	10.4	50.5	10.4	9.8	20.8	13.1
BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
1	BOD3-27 (mg/L)	1.4	1.6	0.7	1.7	1.6	1.2	1.4	1.2	1.1	1.6	2.5	1.3	1.6	1.9
2	COD (mg/L)				35.0	33.5	39.5	43.8	49.6	99.7	41.0	29.3	33.7	89.5	42.8
3	DO (mg/L)	8.0	8.3	7.3	7.3	7.4	7.9	8.2	8.1	7.5	6.9	7.4	7.4	7.7	8.3
4	DO_SAT% (%)	93	102	89	88	86	92	99	96	89	83	88	90	93	100
5	FCol-MPN (MPN/100mL)	400	100	100	78	100	100	100	100	1313	125	30	45	95	673
6	Tcol-MPN (MPN/100mL)	600	100	100	78	163	100	138	163	12238	463	120	160	218	738
TRACE & TOXIC															
1	As (µg/L)									0.6			1.1	2.6	3.0
2	Cd (µg/L)									0.0			0.7	0.1	0.1
3	Cr (µg/L)									9.3			2.4	4.3	0.6
4	Cu (µg/L)									111.5			7.4	0.6	0.7
5	Hg (µg/L)														
6	Ni (µg/L)									16.8			0.9	0.3	0.8
7	Pb (µg/L)									0.6			4.5	0.2	0.1
8	Zn (µg/L)									18.8			4.0	5.4	4.1
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	57	73	75	73	81	73	76	83	104	120	85	73	89	73
2	HAR_Total (mgCaCO ₃ /L)	122	125	113	120	129	119	135	157	178	182	141	125	132	125
3	Na% (%)	25	24	25	28	28	21	23	22	23	23	24	28	27	31
4	RSC (-)	0.2	0.4	0.3	0.2	0.3	0.1	0.4	0.1	0.5	0.1	0.2	0.5	0.4	0.5
5	SAR (-)	0.8	0.7	0.7	0.8	0.9	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.8	1.0
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1 Q (cumec)		19.39	8.324	28.67	25.52	25.52	1.055	14.19	12.27	6.797	21.87	34.90	14.13	4.542		1.239
2 EC_GEN ($\mu\text{mho}/\text{cm}$)		330	293	293	305	305	334	338	347	315	336	318	323	296	296	326
3 pH_GEN (pH units)		8.6	8.9	8.5	8.7	8.6	8.8	8.7	8.6	8.6	8.7	8.0	8.4	8.9	8.5	8.7
4 Temp (deg C)		31.7	27.3	28.7	26.5	27.7	27.3	28.7	27.3	27.5	28.5	28.8	28.7	28.0	27.7	28.3
5 Turb (NTU)					0.5	0.8	0.7	0.4	0.5	0.7	0.3	0.6	0.4			
CHEMICAL																
1 Alk-Phen (mgCaCO ₃ /L)		10.5	11.2	5.6	6.3	4.6	4.9	4.3	6.7	5.5	7.3	0.0	3.4	14.9	5.8	8.0
2 ALK-TOT (mgCaCO ₃ /L)		181	133	117	128	125	139	121	144	176	170	142	136	148	143	152
3 B (mg/L)		0.62	0.23	0.18	0.73	0.89	0.14	0.70	0.16	0.16	0.10	0.20	0.34	0.10	0.36	0.84
4 Ca (mg/L)		24	21	30	29	23	20	23	29	27	26	31	25	36	25	25
5 Cl (mg/L)		20.0	21.0	15.4	16.1	17.3	28.2	27.2	22.0	20.8	22.3	17.1	15.6	21.0	25.2	22.8
6 CO ₃ (mg/L)		12.7	13.5	6.7	7.6	5.6	5.9	5.2	8.0	6.6	8.7	0.0	4.1	18.0	7.0	9.6
7 F (mg/L)		0.34	0.64	0.31	0.25	0.37	0.41	0.45	0.26	0.34	0.28	0.60	0.35	0.18	0.60	0.47
8 Fe (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.1	0.2	0.1	0.1
9 HCO ₃ (mg/L)		148	135	130	141	141	158	137	160	202	190	173	157	144	160	166
10 K (mg/L)		3.3	3.3	2.1	3.0	1.6	3.0	3.1	2.8	2.9	4.1	2.5	2.2	3.5	2.3	3.0
11 Mg (mg/L)		93.6	12.8	8.3	7.9	10.7	17.5	13.5	23.4	25.0	18.5	15.0	12.1	13.2	16.5	14.4
12 Na (mg/L)		26.7	31.0	19.5	22.7	24.5	33.3	24.4	32.1	26.8	30.0	29.7	22.7	28.1	28.2	30.6
13 NH ₃ -N (mg N/L)		0.17	0.11	0.13	0.40	0.20	0.16	0.21	0.27	0.18	0.02	0.64	0.06	0.13	1.14	0.19
14 NO ₂ +NO ₃ (mg N/L)		0.28	0.77	0.25	0.63	0.16	0.14	0.09	0.90	0.35	0.06	3.25	4.89	4.18	1.17	3.78
15 NO ₂ -N (mgN/L)		0.01	0.13	0.02	0.02	0.02	0.00	0.00	0.02	0.01	0.03	0.00	0.00	0.31	0.02	0.01
16 NO ₃ -N (mgN/L)		0.27	0.64	0.23	0.61	0.14	0.14	0.09	0.87	0.34	0.03	3.24	4.89	3.88	1.16	3.77
17 PO ₄ -P (mg P/L)		0.017	0.099	0.055	0.048	0.031	0.024	0.052	0.062	0.007	0.031	0.708	0.183	0.100	0.434	0.272
18 SiO ₂ (mg/L)		27.0	19.5	62.1	29.5	37.6	30.2	47.4	39.3	57.4	11.4	15.5	23.0	13.1	16.5	11.5
19 SO ₄ (mg/L)		10.3	11.2	13.4	10.2	12.6	8.3	12.5	11.9	22.9	8.9	10.8	17.8	9.3	20.6	1.7
BIOLOGICAL/BACTERIOLOGICAL																

Water Quality Seasonal Average for the period: 2004-2018

Station Name : ASHTI (AGH40A4)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	BOD3-27 (mg/L)	1.6	1.6	0.9	0.7	0.9	1.4	1.2	1.5	1.7	14.0	2.1	2.8	2.7	1.5	1.7
2	COD (mg/L)					38.1	53.0	32.2	47.3	39.6	56.3	42.0	29.0	57.2	101.9	44.1
3	DO (mg/L)	6.7	7.0	7.1	7.2	6.6	7.0	6.8	7.5	6.9	6.2	6.7	6.3	7.9	6.5	6.9
4	DO_SAT% (%)	91	89	91	89	84	87	87	95	88	79	86	81	102	82	88
5	FCol-MPN (MPN/100mL)	250	150	100	200	100	100	100	100	100	100	273	107	57	107	93
6	Tcol-MPN (MPN/100mL)	350	250	150	283	100	100	150	100	233	500	1643	220	127	157	150
TRACE & TOXIC																
1	As (µg/L)									0.7	2.8	3.4	1.3	2.0	1.0	1.6
2	Cd (µg/L)				7.0					0.0	1.2	0.0	1.0	0.2	0.0	0.1
3	Cr (µg/L)				30.0					0.0	0.1	0.5	0.0	0.4	4.0	0.9
4	Cu (µg/L)										1.0	5.2		4.2	3.0	2.1
5	Hg (µg/L)				0.7					0.1	0.0	0.1	0.1			
6	Ni (µg/L)				2.0					0.0	27.7	4.1	1.0	0.8	8.0	2.0
7	Pb (µg/L)				48.0					13.0	2.6	0.2	11.0	0.7	1.0	3.6
8	Zn (µg/L)				27.0					25.7	13.3	13.8	6.0	20.1	5.0	1.1
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	59	52	74	72	58	51	58	71	67	65	78	63	91	62	62
2	HAR_Total (mgCaCO ₃ /L)	449	105	108	105	103	124	114	169	171	141	141	113	146	131	122
3	Na% (%)	22	38	28	31	34	36	31	31	25	31	31	30	30	32	35
4	RSC (-)	0.3	0.6	0.2	0.5	0.5	0.3	0.2	0.0	0.4	0.6	0.1	0.5	0.2	0.3	0.6
5	SAR (-)	0.8	1.3	0.8	1.0	1.1	1.3	1.0	1.1	0.9	1.1	1.1	0.9	1.1	1.1	1.2
PESTICIDES																
1	Aldrin (µg/L)					0.0				0.0						
2	BHC (µg/L)					0.1				0.0						
3	DDT (µg/L)					0.1				0.0						
4	Dieldrin (µg/L)					0.0				0.0						
5	Endos (µg/L)					0.1				0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: PAUNI	Code	: AGH4018
State	: Maharashtra	District	Bhandara
Basin	: Godavari	Independent River	: Wainganga
Tributary	: Wainganga	Sub Tributary	: Wainganga
Sub-Sub Tributary	:	Local River	: Wainganga
Division	: Wainganga Div., Nagpur	Sub-Division	: L Wainganga SD, Chandrapur
Drainage Area	: 35520 Sq. Km.	Bank	: Left
Latitude	: 20°47'46"	Longitude	: 79°38'32"
	Opening Date	Closing Date	
Gauge	: 12.01.1964		
Discharge	: 21.09.1964	30.11.2005	
Sediment	: 12.01.1966	30.11.2005	
Water Quality	: 12.01.1966		

Water Quality Datasheet for the period : 2017-2018

Station Name : PAUNI (AGH4018)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	c
PHYSICAL													
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Clear	Light Brown	Light Brown	Clear							
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	373	389	1552	301	449	411	304	338	337	489	390	368
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	7.9	8.8	8.2	7.8	7.9	7.9	8.7	7.7	7.5	7.5	8.4	7.9
6	Temp (deg C)	29.0	28.0	28.0	31.0	30.0	26.0	21.0	19.0	20.0	24.0	26.0	29.0
7	Turb (NTU)	0.7	1.0	20.6	25.6	1.3	0.5	0.4	0.8	0.3	0.1	0.1	0.1
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	35.9	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	4.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	185	157	141	104	175	159	134	145	159	185	187	175
3	B (mg/L)	0.74	0.07	0.13	0.25	0.69	0.83	0.23	0.28	0.16	0.64	0.92	1.47
4	Ca (mg/L)	39	18	28	21	36	38	27	45	55	36	42	30
5	Cl (mg/L)	27.8	31.8	17.9	37.8	16.5	16.5	20.6	20.6	22.7	15.9	28.6	28.6
6	CO ₃ (mg/L)	0.0	43.2	0.0	0.0	0.0	0.0	9.6	0.0	0.0	0.0	4.8	0.0
7	F (mg/L)	0.14	0.55	0.48	0.00	0.56	0.01	0.21	0.36	0.42	0.45	0.41	0.47
8	Fe (mg/L)	0.2	0.2	0.6	0.5	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1
9	HCO ₃ (mg/L)	226	104	172	127	213	194	145	176	194	226	218	213
10	K (mg/L)	3.7	3.0	3.0	2.8	3.3	2.3	2.5	3.0	3.0	3.0	2.9	2.6
11	Mg (mg/L)	12.7	14.8	7.5	10.2	10.5	7.0	11.7	9.9	9.9	23.9	14.6	19.2
12	Na (mg/L)	32.7	32.5	20.6	18.7	20.1	19.6	26.4	23.1	24.4	28.3	29.7	27.0
13	NH ₃ -N (mg N/L)	0.93	0.35	0.52	0.29	0.08	0.16	0.14	0.23	0.32	0.25	0.20	0.00
14	NO ₂ +NO ₃ (mg N/L)	1.26	1.89	2.21	1.47	2.07	1.96	1.79	1.41	2.14	1.37	1.35	7.87
15	NO ₂ -N (mgN/L)	0.02	0.03	0.04	0.02	0.12	0.02	0.01	0.01	0.01	0.02	0.01	0.01
16	NO ₃ -N (mgN/L)	1.24	1.86	2.17	1.45	1.95	1.94	1.78	1.40	2.13	1.35	1.34	7.86
17	o-PO ₄ -P (mg P/L)	3.970	0.563	0.746	0.897	0.161	0.126	0.073	0.130	0.071	0.169	0.368	0.208
18	SiO ₂ (mg/L)	15.5	23.8	5.5	15.0	15.6	16.4	5.3	9.1	10.9	8.3	6.6	17.6
19	SO ₄ (mg/L)	14.8	0.4	3.2	5.4	11.1	11.1	18.0	13.6	11.8	0.1	1.5	9.2

Water Quality Datasheet for the period : 2017-2018

Station Name : PAUNI (AGH4018)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	C
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	25.0	1.8	2.0	1.8	4.5	1.5	2.5	1.7	1.2	1.3	4.9	35.0
2	COD (mg/L)	49.3	15.7	25.1	25.8	28.6	96.3	3.6	30.8	87.8	21.6	31.3	41.1
3	DO (mg/L)	5.2	6.2	7.4	7.5	6.2	6.4	8.3	7.6	7.1	8.2	8.7	3.6
4	DO_SAT% (%)	68	79	95	101	82	79	93	82	78	97	107	47
5	FCol-MPN (MPN/100mL)	140	1300	90	20	330	2400	1300	1100	260	90	220	3000
6	Tcol-MPN (MPN/100mL)	2200	1700	340	170	16000	2400	1300	3000	330	1700	260	5000
TRACE & TOXIC													
1	As (µg/L)			1.0				5.1					0.9
2	Cd (µg/L)			0.0				0.1					0.1
3	Cr (µg/L)			11.0				1.2					0.2
4	Cu (µg/L)			4.0				4.5					4.7
5	Ni (µg/L)							0.1					1.3
6	Pb (µg/L)			1.0				1.2					1.5
7	Zn (µg/L)			5.0				0.3					0.9
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	97	44	71	53	90	96	67	113	137	91	106	74
2	HAR_Total (mgCaCO ₃ /L)	150	106	102	95	134	125	116	154	178	191	166	155
3	Na% (%)	32	39	30	29	24	25	33	24	23	24	28	27
4	RSC (-)	0.7	1.0	0.8	0.2	0.8	0.7	0.4	0.0	0.0	0.0	0.4	0.4
5	SAR (-)	1.2	1.4	0.9	0.8	0.8	0.8	1.1	0.8	0.8	0.9	1.0	0.9
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : PAUNI (AGH40I8)

Division : Wainganga Div., Nagpur

Local River : Wainganga

Sub-Division : L Wainganga SD, Chandrapur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)				
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	1552	301	475
3	pH_GEN (pH units)	12	8.8	7.5	8
4	Temp (deg C)	12	31.0	19.0	25.9
5	Turb (NTU)	12	25.6	0.1	4.3
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	35.9	0.0	4
2	ALK-TOT (mgCaCO ₃ /L)	12	187	104	159
3	B (mg/L)	12	1.47	0.07	0.53
4	Ca (mg/L)	12	55	18	35
5	Cl (mg/L)	12	37.8	15.9	23.8
6	CO ₃ (mg/L)	12	43.2	0.0	4.8
7	F (mg/L)	12	0.56	0.00	0.34
8	Fe (mg/L)	12	0.6	0.1	0.2
9	HCO ₃ (mg/L)	12	226	104	184
10	K (mg/L)	12	3.7	2.3	2.9
11	Mg (mg/L)	12	23.9	7.0	12.7
12	Na (mg/L)	12	32.7	18.7	25.2
13	NH ₃ -N (mg N/L)	12	0.93	0.00	0.29
14	NO ₂ +NO ₃ (mg N/L)	12	7.87	1.26	2.23
15	NO ₂ -N (mgN/L)	12	0.12	0.01	0.03
16	NO ₃ -N (mgN/L)	12	7.86	1.24	2.21
17	o-PO ₄ -P (mg P/L)	12	3.970	0.071	0.624
18	SiO ₂ (mg/L)	12	23.8	5.3	12.5
19	SO ₄ (mg/L)	12	18.0	0.1	8.4
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	35.0	1.2	6.9
2	COD (mg/L)	12	96.3	3.6	38.1
3	DO (mg/L)	12	8.7	3.6	6.9
4	DO_SAT% (%)	12	107	47	84
5	FCol-MPN (MPN/100mL)	12	3000	20	854
6	Tcol-MPN (MPN/100mL)	12	16000	170	2867
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	5.1	0.9	2.3
2	Cd ($\mu\text{g}/\text{L}$)	3	0.1	0.0	0.1
3	Cr ($\mu\text{g}/\text{L}$)	3	11.0	0.2	4.1
4	Cu ($\mu\text{g}/\text{L}$)	3	4.7	4.0	4.4
5	Ni ($\mu\text{g}/\text{L}$)	2	1.3	0.1	0.7
6	Pb ($\mu\text{g}/\text{L}$)	3	1.5	1.0	1.2
7	Zn ($\mu\text{g}/\text{L}$)	3	5.0	0.3	2.1
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	137	44	86
2	HAR_Total (mgCaCO ₃ /L)	12	191	95	139
3	Na% (%)	12	39	23	28
4	RSC (-)	12	1.0	0.0	0.5
5	SAR (-)	12	1.4	0.8	0.9
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : PAUNI (AGH40I8)

Local River : Wainganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	Flood Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	224.3	1111												
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	274	325	307	271	318	380	334	345	313	274	327	289	292	613
3	pH_GEN (pH units)	8.2	8.4	8.2	8.3	8.2	8.2	8.0	7.9	8.1	8.1	7.6	7.9	8.0	8.1
4	TDS (mg/L)														
5	Temp (deg C)	28.9	28.2	28.8	30.1	29.0	29.0	30.0	28.6	29.0	28.8	29.2	28.4	28.8	29.2
6	Turb (NTU)			54.0	65.0	60.4	5.9	13.1	7.9	8.4	6.5	7.8			9.8
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	2.2	6.1	2.8	1.9	2.3	1.6	1.4	0.0	2.9	0.0	0.0	2.6	0.0	7.2
2	ALK-TOT (mgCaCO ₃ /L)	122	130	113	107	116	140	119	127	163	143	132	112	118	152
3	B (mg/L)	0.18	0.28	0.33	0.45	0.81	0.33	0.54	0.21	0.13	0.10	0.23	0.16	0.99	0.38
4	Ca (mg/L)	31	33	31	32	29	31	29	28	35	36	32	30	28	28
5	Cl (mg/L)	16.2	24.4	17.7	29.3	16.8	29.4	22.7	14.8	17.3	12.1	17.4	17.1	14.4	26.4
6	CO ₃ (mg/L)	2.7	7.3	3.4	2.3	2.8	2.0	1.7	0.0	3.5	0.0	0.0	3.1	0.0	8.6
7	F (mg/L)	0.32	0.98	0.24	0.29	0.21	0.60	0.32	0.28	0.48	0.34	0.56	0.07	0.22	0.35
8	Fe (mg/L)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.5	0.2	0.5	0.1	0.1	0.1	0.4
9	HCO ₃ (mg/L)	144	144	131	126	136	166	141	155	191	175	162	131	144	168
10	K (mg/L)	3.2	3.8	2.7	2.3	2.2	4.6	2.9	2.8	2.6	3.6	3.1	2.8	2.7	3.2
11	Mg (mg/L)	10.1	159.3	8.2	7.1	8.4	14.6	10.8	15.2	15.3	15.1	11.7	9.1	8.6	11.1
12	Na (mg/L)	15.7	27.3	17.7	12.4	22.9	26.7	16.5	24.6	19.5	18.6	26.5	17.4	21.0	24.9
13	NH ₃ -N (mg N/L)	0.31	0.15	0.19	0.51	0.29	0.30	0.39	0.13	0.16	0.09	0.31	0.11	0.26	0.43
14	NO ₂ +NO ₃ (mg N/L)	3.63	0.85	1.19	1.48	0.70	0.29	0.45	0.68	1.66	2.64	1.74	8.10	1.70	1.78
15	NO ₂ -N (mgN/L)	0.64	0.07	0.10	0.08	0.14	0.04	0.01	0.01	0.40	0.03	0.00	0.01	0.00	0.04
16	NO ₃ -N (mgN/L)	2.99	0.78	1.09	1.40	0.55	0.25	0.44	0.67	1.26	2.61	1.74	8.08	1.70	1.74
17	o-PO ₄ -P (mg P/L)	0.251	0.130	0.116	0.039	0.165	0.159	0.126	0.024	0.064	0.059	0.136	0.160	0.101	1.267
18	SiO ₂ (mg/L)	29.5	62.2	39.1	30.0	26.0	93.2	26.3	51.6	31.3	14.9	11.7	16.4	14.8	15.1
19	SO ₄ (mg/L)	12.3	15.3	13.6	10.0	17.0	12.8	7.9	14.4	15.8	23.1	10.4	17.9	5.3	7.0

Water Quality Seasonal Average for the period: 2004-2018

Station Name : PAUNI (AGH4018)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	River Water													
		Flood Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.7	3.9	2.9	2.7	2.9	3.6	9.9	2.3	9.2	4.8	1.8	2.7	3.6	7.0
2	COD (mg/L)				53.9	56.8	69.2	71.6	35.5	59.7	49.4	26.0	78.6	33.4	28.9
3	DO (mg/L)	6.6	7.1	6.9	7.1	6.6	6.4	6.8	7.0	5.8	6.7	6.2	6.9	7.4	6.5
4	DO_SAT% (%)	86	90	90	93	86	84	90	90	75	86	81	88	96	85
5	FCol-MPN (MPN/100mL)	4350	1169	590	770	530	1720	290	350	1760	1290	776	110	338	376
6	Tcol-MPN (MPN/100mL)	27600	6600	1960	1980	2980	3620	6080	1820	48618	55400	2760	1200	8975	4082
TRACE & TOXIC															
1	As (µg/L)										5.3	3.5		3.0	1.0
2	Cd (µg/L)										1.6	0.3		0.2	0.0
3	Cr (µg/L)										0.9	0.6		5.7	11.0
4	Cu (µg/L)										15.0	4.1		15.0	4.0
5	Hg (µg/L)											0.2			
6	Ni (µg/L)										2.1	7.3		2.5	
7	Pb (µg/L)		49.0								1.5	1.3		1.0	1.0
8	Zn (µg/L)		1.0								5.8	16.5		2.5	5.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	78	84	77	81	73	77	73	70	87	90	81	74	69	71
2	HAR_Total (mgCaCO ₃ /L)	120	747	111	111	108	137	118	134	150	152	130	112	105	117
3	Na% (%)	21	21	23	15	25	25	20	28	20	20	30	25	29	31
4	RSC (-)	0.1	0.2	0.2	0.0	0.4	0.1	0.1	0.1	0.4	0.1	0.2	0.2	0.3	0.7
5	SAR (-)	0.6	0.9	0.7	0.5	0.9	1.0	0.6	0.9	0.7	0.7	1.0	0.7	0.9	1.0
PESTICIDES															
1	Aldrin (µg/L)		0.0												
2	BHC (µg/L)		0.7												
3	DDT (µg/L)		0.1												
4	Dieldrin (µg/L)		0.0												
5	Endos (µg/L)		0.1												

Water Quality Seasonal Average for the period: 2004-2018

Station Name : PAUNI (AGH40I8)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Winter Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1 Q (cumec)	113.2														
2 EC_GEN ($\mu\text{mho}/\text{cm}$)	310	352	337	356	370	373	406	408	357	440	288	313	298	348	
3 pH_GEN (pH units)	8.5	8.4	8.3	8.4	8.4	8.0	8.0	8.1	8.1	7.7	8.1	8.1	8.3	7.9	
4 TDS (mg/L)															
5 Temp (deg C)	23.4	25.3	24.0	23.3	23.3	21.3	25.0	23.0	22.5	23.8	23.3	23.5	23.5	21.5	
6 Turb (NTU)			1.0	1.0	1.0	1.2	1.5	4.6	0.7	1.6	0.5			0.5	
CHEMICAL															
1 Alk-Phen (mgCaCO ₃ /L)	5.3	6.2	5.0	3.3	3.2	0.0	0.0	0.0	0.0	1.8	3.0	1.3	6.7	2.0	
2 ALK-TOT (mgCaCO ₃ /L)	144	162	147	160	165	144	162	153	213	180	151	157	146	149	
3 B (mg/L)	0.23	0.19	0.41	0.83	0.72	0.63	0.89	0.18	0.33	0.34	0.24	0.22	0.39	0.37	
4 Ca (mg/L)	30	44	41	41	38	42	36	39	43	55	35	33	39	41	
5 Cl (mg/L)	13.8	12.2	13.0	15.6	17.0	15.6	19.9	15.3	17.6	14.8	11.4	15.4	14.4	20.1	
6 CO ₃ (mg/L)	6.4	7.4	6.0	4.0	3.9	0.0	0.0	0.0	0.0	2.2	3.6	1.6	8.1	2.4	
7 F (mg/L)	0.61	0.46	0.30	0.26	0.56	0.33	0.38	0.33	0.42	0.24	0.26	0.26	0.17	0.25	
8 Fe (mg/L)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.4	0.0	0.1	0.1	0.1	
9 HCO ₃ (mg/L)	162	182	167	187	193	176	197	187	260	215	177	188	162	177	
10 K (mg/L)	2.7	2.2	2.0	2.2	1.7	2.4	3.3	2.0	3.6	2.8	1.9	2.6	2.1	2.7	
11 Mg (mg/L)	15.3	9.9	6.2	11.9	12.8	10.1	14.8	17.8	26.0	16.7	11.5	13.2	11.6	9.6	
12 Na (mg/L)	18.9	19.9	17.5	20.3	20.2	14.6	22.1	22.8	25.2	26.2	18.9	21.2	22.1	23.4	
13 NH ₃ -N (mg N/L)	0.18	0.04	0.52	0.11	0.89	0.48	0.19	0.16	0.09	0.13	0.03	0.29	0.32	0.21	
14 NO ₂ +NO ₃ (mg N/L)	2.99	0.45	0.60	1.10	0.13	0.41	0.20	0.80	0.90	3.77	3.73	4.00	1.58	1.83	
15 NO ₂ -N (mgN/L)	0.46	0.03	0.08	0.08	0.03	0.06	0.01	0.32	0.01	0.01	0.00	0.01	0.04	0.01	
16 NO ₃ -N (mgN/L)	2.53	0.42	0.53	1.02	0.09	0.35	0.19	0.48	0.89	3.77	3.73	3.98	1.54	1.81	
17 o-PO ₄ -P (mg P/L)	0.117	0.057	0.062	0.090	0.096	0.065	0.072	0.003	0.036	0.330	0.197	0.071	0.716	0.100	
18 SiO ₂ (mg/L)	22.6	52.2	30.2	26.4	49.2	64.7	23.0	48.8	33.6	8.2	13.4	13.2	13.7	10.4	
19 SO ₄ (mg/L)	20.2	12.2	9.1	10.0	9.0	12.2	14.6	15.7	12.8	23.5	11.5	13.9	22.6	13.6	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : PAUNI (AGH4018)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	River Water													
		Winter Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	2.5	2.4	1.5	4.6	2.6	2.1	2.6	2.8	2.6	2.4	2.0	2.1	2.6	1.7
2	COD (mg/L)				58.6	70.4	60.0	64.5	73.0	30.3	52.8	28.5	37.8	64.8	54.6
3	DO (mg/L)	7.8	8.4	7.7	6.9	7.5	7.0	7.8	7.6	7.2	7.3	8.0	6.8	8.2	7.4
4	DO_SAT% (%)	91	102	91	81	88	79	93	89	83	86	93	80	97	83
5	FCol-MPN (MPN/100mL)	1900	138	1213	875	300	663	175	450	2375	138	65	455	4128	1265
6	Tcol-MPN (MPN/100mL)	7425	163	3550	3538	713	2838	400	2163	6788	5700	430	8875	4695	1758
TRACE & TOXIC															
1	As (µg/L)									0.8			0.7	1.8	5.1
2	Cd (µg/L)									0.0			0.0	0.1	0.1
3	Cr (µg/L)									3.4			2.1	0.1	0.7
4	Cu (µg/L)									114.8			3.2	0.7	1.6
5	Hg (µg/L)														
6	Ni (µg/L)									75.3			0.1	0.4	6.1
7	Pb (µg/L)									0.3			0.9	0.2	0.0
8	Zn (µg/L)									28.3			3.0	5.7	4.6
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	75	110	102	102	94	105	91	97	107	138	87	82	97	103
2	HAR_Total (mgCaCO ₃ /L)	139	151	128	151	147	147	152	171	215	208	134	137	145	143
3	Na% (%)	22	22	23	22	23	17	23	22	20	22	23	25	25	26
4	RSC (-)	0.2	0.2	0.4	0.2	0.4	0.1	0.3	0.0	0.1	0.0	0.4	0.4	0.1	0.3
5	SAR (-)	0.7	0.7	0.7	0.7	0.7	0.5	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.9
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : PAUNI (AGH40I8)

Local River : Wainganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	Summer Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	32.78	8.796													
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	417	429	419	388	443	360	392	418	362	403	387	392	358	335	416
3	pH_GEN (pH units)	8.2	8.5	8.3	8.5	8.2	8.1	7.8	8.1	7.8	8.2	7.8	7.8	8.0	7.9	7.9
4	TDS (mg/L)															
5	Temp (deg C)	23.8	28.0	29.0	28.3	28.0	27.7	27.3	28.3	26.0	27.3	26.3	27.0	28.3	29.0	26.3
6	Turb (NTU)				0.9	1.8	0.4	3.0	1.5	0.9	0.4	0.7	0.9			0.1
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	2.1	6.7	2.6	3.9	1.7	1.7	0.0	1.8	0.0	1.8	0.0	0.0	0.0	0.0	1.3
2	ALK-TOT (mgCaCO ₃ /L)	243	194	153	154	184	146	142	174	183	194	190	155	176	159	182
3	B (mg/L)	0.51	0.13	0.18	0.62	1.05	0.36	0.64	0.19	0.18	0.12	0.21	0.30	0.14	0.51	1.01
4	Ca (mg/L)	37	37	32	33	38	27	31	40	31	35	40	34	48	34	36
5	Cl (mg/L)	24.0	36.4	28.3	21.1	31.0	33.4	26.5	24.9	23.0	26.7	25.5	20.5	21.0	28.5	24.4
6	CO ₃ (mg/L)	2.5	8.1	3.1	5.4	2.0	2.0	0.0	2.2	0.0	2.2	0.0	0.0	0.0	0.0	1.6
7	F (mg/L)	0.35	0.80	0.50	0.23	0.53	0.53	0.48	0.34	0.40	0.30	0.60	0.30	0.10	0.51	0.44
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.1	0.2	0.1
9	HCO ₃ (mg/L)	220	220	180	171	220	174	173	208	223	232	232	189	214	194	219
10	K (mg/L)	4.2	4.7	3.6	3.6	2.5	3.8	14.6	2.8	3.0	5.2	3.3	3.1	3.3	2.7	2.9
11	Mg (mg/L)	17.7	15.8	14.3	11.9	19.3	14.2	11.1	21.7	26.4	20.4	19.5	12.5	19.8	20.9	19.2
12	Na (mg/L)	29.3	39.8	31.8	26.5	33.9	31.0	25.8	30.8	27.1	32.1	33.6	24.4	26.2	27.8	28.3
13	NH ₃ -N (mg N/L)	0.23	0.11	0.40	0.42	0.19	0.42	0.21	0.97	0.18	0.01	0.86	0.16	0.08	0.85	0.15
14	NO ₂ +NO ₃ (mg N/L)	2.06	3.04	1.16	2.01	0.63	0.14	0.39	0.91	0.54	0.13	3.52	5.10	4.86	1.34	3.53
15	NO ₂ -N (mgN/L)	0.59	0.47	0.17	0.18	0.30	0.00	0.06	0.06	0.03	0.09	0.00	0.00	0.20	0.06	0.01
16	NO ₃ -N (mgN/L)	1.46	2.57	0.98	1.82	0.33	0.14	0.33	0.85	0.51	0.04	3.52	5.10	4.66	1.28	3.52
17	o-PO ₄ -P (mg P/L)	0.140	0.320	0.138	0.220	0.183	0.069	0.127	0.181	0.021	0.058	0.669	0.187	0.124	0.176	0.248
18	SiO ₂ (mg/L)	35.7	32.6	86.1	37.2	29.1	67.2	41.0	53.9	22.6	13.4	15.2	24.6	13.5	16.1	10.8
19	SO ₄ (mg/L)	15.0	11.5	14.4	12.0	17.4	8.2	13.0	15.0	24.6	15.0	13.9	18.3	17.5	16.6	3.6

Water Quality Seasonal Average for the period: 2004-2018

Station Name : PAUNI (AGH4018)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Summer Mar - May															
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
BIOLOGICAL/BACTERIOLOGICAL																	
1	BOD3-27 (mg/L)	3.7	3.4	3.6	1.6	2.1	3.0	4.5	3.9	3.3	3.2	2.4	3.3	7.3	18.1	13.7	
2	COD (mg/L)					95.8	83.3	48.2	38.5	62.2	49.5	72.7	44.3	48.8	179.4	31.3	
3	DO (mg/L)	6.4	6.8	6.5	6.5	6.7	6.1	5.8	6.2	6.4	6.2	6.5	7.1	6.4	6.0	6.8	
4	DO_SAT% (%)	76	87	85	83	86	78	74	80	79	78	80	90	82	77	84	
5	FCol-MPN (MPN/100mL)	3267	3450	667	150	283	567	750	317	600	917	683	307	5417	263	1103	
6	Tcol-MPN (MPN/100mL)	46633	18033	2533	283	667	9867	3083	650	8033	26867	18067	397	5887	3387	2320	
TRACE & TOXIC																	
1	As (µg/L)										1.0	3.1	2.8	6.6	2.6	1.0	0.9
2	Cd (µg/L)					8.0					0.3	1.0	0.1	1.0	0.3	0.0	0.1
3	Cr (µg/L)					13.0					5.2	1.5	1.3	0.0	1.9	2.0	0.2
4	Cu (µg/L)										0.8	3.6			2.3	10.0	4.7
5	Hg (µg/L)					2.3					0.3	0.1	0.2	0.9			
6	Ni (µg/L)					1.0					1.3	4.4	3.3	3.7	1.2	20.0	1.3
7	Pb (µg/L)					75.0					16.9	1.6	1.2	14.0	0.7	1.0	1.5
8	Zn (µg/L)					39.0					27.1	1.9	20.4	15.0	6.7	9.0	0.9
CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO ₃ /L)	93	92	80	83	94	67	78	99	77	86	100	84	121	86	90	
2	HAR_Total (mgCaCO ₃ /L)	167	158	139	133	175	126	124	190	187	171	181	136	204	173	171	
3	Na% (%)	27	33	33	29	28	34	28	25	24	29	29	27	22	26	26	
4	RSC (-)	0.4	0.7	0.3	0.3	0.2	0.4	0.4	0.0	0.2	0.6	0.4	0.4	0.2	0.1	0.3	
5	SAR (-)	1.0	1.4	1.2	1.0	1.1	1.2	1.0	1.0	0.9	1.1	1.1	0.9	0.8	0.9	0.9	
PESTICIDES																	
1	Aldrin (µg/L)					0.0					0.0						
2	BHC (µg/L)					0.1					0.0						
3	DDT (µg/L)					0.1					0.0						
4	Dieldrin (µg/L)					0.0					0.0						
5	Endos (µg/L)					0.1					0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: SATRAPUR	Code	: AGH4BF6
State	: Maharashtra	District	Nagpur
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wainganga
Sub-Sub Tributary	: Khanan	Local River	: Khanan
Division	: Wainganga Div., Nagpur	Sub-Division	: Upper Wainganga SD, Nagpur
Drainage Area	: 11100 Sq. Km.	Bank	: Left
Latitude	: 21°13'00"	Longitude	: 79°13'59"
	Opening Date	Closing Date	
Gauge	: 07.09.1984		
Discharge	: 30.05.1986		
Sediment	: 01.08.1988		
Water Quality	: 09.12.1987		

Water Quality Datasheet for the period : 2017-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

River Water Analysis

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		0.875	25.13	15.57	24.06	23.06	12.04	6.133	1.337	1.006	0.728	0.575	0.698
2 Colour_Cod (-)	Clear	Dark Brown	Clear										
3 EC_GEN ($\mu\text{mho}/\text{cm}$)	623	440	639	658	695	593	520	633	688	1040	780	668	
4 Odour_Code (-)	odour free												
5 pH_GEN (pH units)	7.8	7.8	8.2	8.1	8.1	8.0	8.1	7.8	7.1	7.1	7.8	7.7	
6 Temp (deg C)	26.0	24.5	24.0	25.0	25.5	26.0	23.0	19.0	19.0	21.0	21.5	28.0	
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 ALK-TOT (mgCaCO ₃ /L)	208	156	211	190	232	229	199	209	239	241	235	243	
3 B (mg/L)	0.67	0.00	0.74	0.48	0.58	0.23	0.32	0.41	0.10	0.90	0.86	2.59	
4 Ca (mg/L)	47	33	43	45	18	55	41	55	60	70	62	53	
5 Cl (mg/L)	79.5	21.9	31.8	37.8	30.9	43.2	49.4	94.7	88.5	44.5	79.5	73.1	
6 CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 F (mg/L)	0.46	0.47	0.96	0.02	0.69	0.02	0.46	0.66	0.67	0.69	0.67	0.68	
8 Fe (mg/L)	0.1	0.3	0.2	0.2	0.3	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1
9 HCO ₃ (mg/L)	253	191	257	231	283	279	243	255	292	294	287	296	
10 K (mg/L)	3.6	3.4	3.0	3.3	2.7	3.0	2.6	3.7	3.6	4.1	4.3	3.0	
11 Mg (mg/L)	21.5	7.0	13.9	15.0	37.5	19.2	21.0	24.5	25.7	29.2	34.4	32.7	
12 Na (mg/L)	60.9	23.1	32.5	30.6	25.6	33.8	48.6	69.2	62.6	6.4	68.6	61.6	
13 NH ₃ -N (mg N/L)	0.77	0.60	0.30	0.29	0.04	0.15	0.11	0.21	0.37	0.29	0.36	0.00	
14 NO ₂ +NO ₃ (mg N/L)	0.92	1.54	2.12	2.37	0.47	1.68	1.77	1.41	2.00	1.32	1.30	7.30	
15 NO ₂ -N (mgN/L)	0.01	0.04	0.01	0.01	0.06	0.08	0.01	0.02	0.01	0.05	0.02	0.01	
16 NO ₃ -N (mgN/L)	0.91	1.50	2.11	2.36	0.41	1.60	1.76	1.39	1.99	1.27	1.28	7.29	
17 o-PO ₄ -P (mg P/L)	0.710	0.610	0.836	0.872	0.108	0.090	0.037	0.130	0.053	0.142	0.291	0.165	
18 SiO ₂ (mg/L)	27.3	17.6	7.7	38.1	31.5	54.1	12.4	15.0	18.3	14.0	21.3	15.4	
19 SO ₄ (mg/L)	21.4	6.8	26.7	43.8	35.4	33.6	45.2	39.6	39.1	32.9	161.1	39.9	

Water Quality Datasheet for the period : 2017-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	35.0	30.0	3.4	2.2	3.0	15.0	3.2	3.3	40.0	20.0	10.0	20.0
2	COD (mg/L)	59.9	44.6	18.3	14.3	49.6	74.9	17.7	96.2	62.2	47.1	19.8	27.1
3	DO (mg/L)	3.0	2.3	5.7	7.2	6.9	4.3	10.7	7.4	3.9	4.3	3.1	3.8
4	DO_SAT% (%)	37	27	68	87	84	53	125	80	42	48	35	49
5	FCol-MPN (MPN/100mL)	90	1300	90	140	3500	9000	330	230	70	3500	20	1700
6	Tcol-MPN (MPN/100mL)	220	2400	170	140	16000	16000	340	3000	90	16000	80	5000
TRACE & TOXIC													
1	As (µg/L)			1.0				2.8					1.6
2	Cd (µg/L)			1.0				0.2					0.1
3	Cr (µg/L)			9.0				2.3					0.7
4	Cu (µg/L)			2.0				5.1					3.1
5	Ni (µg/L)							0.1					0.9
6	Pb (µg/L)			0.0				1.4					4.2
7	Zn (µg/L)			0.0				0.7					2.3
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	117	82	108	112	44	137	103	137	149	175	156	132
2	HAR_Total (mgCaCO ₃ /L)	207	111	166	175	200	217	191	239	256	297	299	268
3	Na% (%)	39	31	30	27	22	25	35	38	34	4	33	33
4	RSC (-)	0.0	0.9	0.9	0.3	0.7	0.3	0.2	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.8	1.0	1.1	1.0	0.8	1.0	1.5	2.0	1.7	0.2	1.7	1.6
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	928.9	0.548	26.81
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	1040	440	665
3	pH_GEN (pH units)	12	8.2	7.1	7.8
4	Temp (deg C)	12	28.0	19.0	23.5
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	12	243	156	216
3	B (mg/L)	12	2.59	0.00	0.66
4	Ca (mg/L)	12	70	18	48
5	Cl (mg/L)	12	94.7	21.9	56.2
6	CO ₃ (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.96	0.02	0.54
8	Fe (mg/L)	12	0.3	0.1	0.2
9	HCO ₃ (mg/L)	12	296	191	263
10	K (mg/L)	12	4.3	2.6	3.3
11	Mg (mg/L)	12	37.5	7.0	23.5
12	Na (mg/L)	12	69.2	6.4	43.6
13	NH ₃ -N (mg N/L)	12	0.77	0.00	0.29
14	NO ₂ +NO ₃ (mg N/L)	12	7.30	0.47	2.02
15	NO ₂ -N (mgN/L)	12	0.08	0.01	0.03
16	NO ₃ -N (mgN/L)	12	7.29	0.41	1.99
17	o-PO ₄ -P (mg P/L)	12	0.872	0.037	0.337
18	SiO ₂ (mg/L)	12	54.1	7.7	22.7
19	SO ₄ (mg/L)	12	161.1	6.8	43.8
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	40.0	2.2	15.4
2	COD (mg/L)	12	96.2	14.3	44.3
3	DO (mg/L)	12	10.7	2.3	5.2
4	DO_SAT% (%)	12	125	27	61
5	FCol-MPN (MPN/100mL)	12	9000	20	1664
6	Tcol-MPN (MPN/100mL)	12	16000	80	4953
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	2.8	1.0	1.8
2	Cd ($\mu\text{g}/\text{L}$)	3	1.0	0.1	0.4
3	Cr ($\mu\text{g}/\text{L}$)	3	9.0	0.7	4
4	Cu ($\mu\text{g}/\text{L}$)	3	5.1	2.0	3.4
5	Ni ($\mu\text{g}/\text{L}$)	2	0.9	0.1	0.5
6	Pb ($\mu\text{g}/\text{L}$)	3	4.2	0.0	1.9
7	Zn ($\mu\text{g}/\text{L}$)	3	2.3	0.0	1
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	175	44	121
2	HAR_Total (mgCaCO ₃ /L)	12	299	111	219
3	Na% (%)	12	39	4	29
4	RSC (-)	12	0.9	0.0	0.3
5	SAR (-)	12	2.0	0.2	1.3
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	31.97	154.6	676.8	118.4	32.36	36.41	89.99	122.1	139.1	1043	60.13	25.58		17.74
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	364	350	338	307	384	423	416	391	438	361	480	444	397	611
3	pH_GEN (pH units)	8.3	8.2	8.2	8.2	8.1	8.2	8.2	8.1	8.6	8.0	7.6	8.1	8.1	8.0
4	Temp (deg C)	28.0	27.8	27.9	27.7	23.6	25.0	22.6	13.2	16.8	24.4	26.6	22.4	24.6	25.0
5	Turb (NTU)			18.1	71.4	25.7	11.4	4.4	8.7	3.4	6.2	13.0			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	3.6	2.3	1.1	1.9	1.0	1.6	2.5	1.5	5.8	2.9	0.0	1.0	3.6	0.0
2	ALK-TOT (mgCaCO ₃ /L)	157	145	117	127	146	143	148	158	222	168	193	166	122	199
3	B (mg/L)	0.25	0.22	0.51	0.57	0.65	0.37	0.45	0.30	0.23	0.15	0.21	0.24	0.20	0.49
4	Ca (mg/L)	38	41	34	36	35	36	35	43	47	42	47	40	40	37
5	Cl (mg/L)	22.0	18.0	18.7	13.9	21.7	29.4	24.4	17.9	22.3	20.6	25.8	28.6	26.6	40.4
6	CO ₃ (mg/L)	4.4	2.8	1.3	2.3	1.2	2.0	3.1	1.7	7.0	3.5	0.0	1.2	4.3	0.0
7	F (mg/L)	0.46	0.71	0.28	0.26	0.41	0.56	0.52	0.37	0.63	0.53	0.61	0.24	0.67	0.52
8	Fe (mg/L)	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.5	0.1	0.6	0.1	0.1	0.1	0.2
9	HCO ₃ (mg/L)	183	171	140	151	176	170	175	189	257	198	235	200	140	243
10	K (mg/L)	3.2	2.3	1.6	1.6	1.9	2.6	2.1	2.1	2.3	3.3	3.6	2.9	2.8	3.2
11	Mg (mg/L)	13.7	11.2	10.4	12.0	13.2	16.7	16.2	15.8	21.9	16.6	17.6	17.6	10.4	19.0
12	Na (mg/L)	25.5	21.3	17.5	12.8	30.2	26.5	20.7	30.2	27.7	24.0	46.0	32.3	25.5	34.6
13	NH ₃ -N (mg N/L)	0.19	0.13	0.24	0.43	0.31	0.23	0.25	0.13	0.15	0.06	0.28	0.16	0.29	0.40
14	NO ₂ +NO ₃ (mg N/L)	1.35	0.85	0.73	1.66	0.40	0.59	0.37	1.36	1.94	3.06	2.31	8.97	2.19	1.49
15	NO ₂ -N (mgN/L)	0.04	0.03	0.03	0.06	0.05	0.42	0.00	0.10	0.15	0.00	0.01	0.01	0.01	0.03
16	NO ₃ -N (mgN/L)	1.30	0.81	0.70	1.60	0.34	0.17	0.36	1.26	1.79	3.06	2.31	8.96	2.17	1.46
17	o-PO ₄ -P (mg P/L)	0.068	0.023	0.027	0.041	0.043	0.064	0.037	0.017	0.085	0.059	0.107	0.127	0.178	0.627
18	SiO ₂ (mg/L)	36.9	56.0	44.6	31.9	34.3	105.3	36.5	66.7	47.6	20.3	20.5	30.4	22.6	24.4
19	SO ₄ (mg/L)	19.5	230.0	17.7	14.7	27.5	30.3	19.0	17.5	36.5	25.4	18.7	40.4	19.5	26.8

Water Quality Seasonal Average for the period: 2004-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.5	1.7	3.0	2.9	1.8	3.8	2.8	4.4	2.9	1.6	1.5	3.2	7.3	14.7
2	COD (mg/L)				32.7	36.4	105.1	56.8	37.9	45.7	42.4	37.2	80.1	42.9	37.3
3	DO (mg/L)	7.4	7.1	7.1	7.2	7.2	6.6	7.7	7.7	7.1	6.5	6.8	7.1	6.6	5.0
4	DO_SAT% (%)	94	90	90	91	85	80	88	73	74	78	84	81	79	61
5	FCol-MPN (MPN/100mL)	2087	2671	1450	1240	690	1650	1950	9530	1870	6770	320	164	3536	1024
6	Tcol-MPN (MPN/100mL)	5800	10880	7070	7460	2650	7770	9470	25660	72900	73990	1546	4940	10640	3786
TRACE & TOXIC															
1	As (µg/L)										3.5	5.8		0.6	1.0
2	Cd (µg/L)										1.3	0.2		0.2	1.0
3	Cr (µg/L)										0.6	1.5		0.6	9.0
4	Cu (µg/L)										29.6	1.8		7.3	2.0
5	Hg (µg/L)											0.0			
6	Ni (µg/L)										1.4	8.9		3.3	
7	Pb (µg/L)		46.0								3.5	2.3		0.5	0.0
8	Zn (µg/L)		21.0								2.8	0.0		3.3	0.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	95	102	86	91	87	89	87	107	118	104	117	99	101	93
2	HAR_Total (mgCaCO ₃ /L)	152	149	129	141	142	159	154	173	209	174	190	172	144	172
3	Na% (%)	26	20	19	14	30	26	21	27	21	21	32	27	23	30
4	RSC (-)	0.2	0.1	0.0	0.0	0.3	0.0	0.1	0.0	0.4	0.0	0.4	0.1	0.0	0.6
5	SAR (-)	0.9	0.7	0.6	0.4	1.2	0.9	0.7	1.0	0.8	0.8	1.5	1.1	0.9	1.1
PESTICIDES															
1	Aldrin (µg/L)			0.0											
2	BHC (µg/L)			0.1											
3	DDT (µg/L)			0.1											
4	Dieldrin (µg/L)			0.0											
5	Endos (µg/L)			0.1											

Water Quality Seasonal Average for the period: 2004-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	4.040	21.02	9.315	13.36	4.212	12.56	18.74	13.91	13.47	23.02	6.795	7.894		5.130
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	615	418	444	459	626	518	529	501	471	623	548	536	538	609
3	pH_GEN (pH units)	8.3	8.4	8.4	8.6	8.1	8.3	8.3	8.4	8.5	8.1	8.0	8.3	8.5	7.8
4	Temp (deg C)	20.5	22.4	25.0	22.5	22.3	16.5	15.6	11.9	17.9	21.8	18.6	21.5	19.4	21.8
5	Turb (NTU)			1.1	0.4	0.7	1.5	1.5	3.8	0.6	1.9	0.5			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	4.3	5.7	5.0	2.9	1.6	3.9	6.3	3.6	5.4	1.8	0.0	3.2	8.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	203	192	168	179	188	175	199	164	222	242	218	196	223	219
3	B (mg/L)	0.22	0.15	0.45	0.80	0.53	0.46	0.93	0.23	0.30	0.34	0.43	0.22	0.78	0.26
4	Ca (mg/L)	46	36	41	43	52	45	40	41	52	71	52	38	46	53
5	Cl (mg/L)	59.6	24.7	26.8	27.9	54.3	26.6	29.6	30.0	32.3	26.2	36.8	45.7	38.3	69.0
6	CO ₃ (mg/L)	5.2	6.9	6.0	3.5	2.0	4.7	7.6	4.4	6.6	2.2	0.0	3.9	9.6	0.0
7	F (mg/L)	0.71	0.57	0.68	0.36	0.73	0.50	0.49	0.56	0.62	0.38	0.43	0.70	0.29	0.45
8	Fe (mg/L)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.7	0.3	0.6	0.0	0.1	0.1	0.1
9	HCO ₃ (mg/L)	237	220	193	211	226	204	227	191	257	290	266	231	253	267
10	K (mg/L)	3.3	1.9	2.0	2.0	2.1	1.9	2.0	2.0	3.7	2.5	2.2	2.9	2.5	3.2
11	Mg (mg/L)	23.6	21.0	12.8	18.1	22.3	18.3	20.1	25.5	21.2	25.1	21.8	21.4	23.4	22.6
12	Na (mg/L)	57.5	26.6	29.4	33.9	36.6	28.8	32.1	38.4	42.0	39.8	44.1	50.2	47.1	53.5
13	NH ₃ -N (mg N/L)	0.11	0.04	0.47	0.09	0.62	0.58	0.25	0.13	0.10	0.09	0.05	0.36	0.32	0.21
14	NO ₂ +NO ₃ (mg N/L)	1.13	0.56	0.60	1.23	0.26	0.52	0.40	0.71	2.07	4.52	4.92	5.67	1.53	1.71
15	NO ₂ -N (mgN/L)	0.05	0.04	0.08	0.04	0.03	0.05	0.02	0.07	0.01	0.01	0.01	0.01	0.01	0.03
16	NO ₃ -N (mgN/L)	1.09	0.53	0.53	1.19	0.23	0.48	0.38	0.64	2.06	4.51	4.92	5.66	1.52	1.69
17	o-PO ₄ -P (mg P/L)	0.069	0.041	0.031	0.047	0.044	0.034	0.085	0.007	0.049	0.325	0.204	0.101	1.078	0.077
18	SiO ₂ (mg/L)	35.2	76.7	35.8	40.3	53.4	95.6	40.3	99.9	63.0	19.4	13.1	27.5	24.5	25.0
19	SO ₄ (mg/L)	48.2	21.0	20.5	19.0	37.9	25.6	28.0	37.9	29.8	20.8	27.0	28.5	34.3	39.4

Water Quality Seasonal Average for the period: 2004-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	2.0	1.8	2.0	1.7	1.5	1.7	1.5	2.3	13.9	1.8	2.7	2.8	2.4	15.4
2	COD (mg/L)				19.7	40.2	34.2	50.6	50.5	59.2	48.3	29.3	36.4	88.3	62.8
3	DO (mg/L)	8.2	9.3	8.9	8.1	7.7	8.5	8.3	8.7	8.5	8.5	8.9	8.9	8.7	6.6
4	DO_SAT% (%)	91	107	107	94	88	87	82	80	90	97	95	100	94	75
5	FCol-MPN (MPN/100mL)	1158	488	413	313	250	288	313	913	2625	2838	110	135	443	2408
6	Tcol-MPN (MPN/100mL)	4121	1138	888	900	575	963	450	5238	5563	5550	223	645	2468	4858
TRACE & TOXIC															
1	As (µg/L)								1.8				0.8	1.1	2.8
2	Cd (µg/L)								0.3			0.0	0.2	0.1	0.2
3	Cr (µg/L)								13.7			3.0	1.0	0.6	2.3
4	Cu (µg/L)								6.5			3.5	3.8	1.1	5.1
5	Hg (µg/L)														
6	Ni (µg/L)								18.3			0.1	0.5	1.5	0.1
7	Pb (µg/L)								0.6			1.5	1.0	0.0	1.4
8	Zn (µg/L)								11.0			3.0	6.1	9.7	0.7
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	115	91	103	108	129	113	100	101	129	178	129	96	116	131
2	HAR_Total (mgCaCO ₃ /L)	213	178	156	183	222	189	184	208	218	283	220	185	213	226
3	Na% (%)	37	24	29	29	26	24	27	29	29	24	30	36	32	33
4	RSC (-)	0.1	0.3	0.3	0.0	0.0	0.0	0.3	0.0	0.6	0.1	0.2	0.3	0.3	0.1
5	SAR (-)	1.7	0.9	1.0	1.1	1.1	0.9	1.0	1.2	1.3	1.1	1.3	1.6	1.4	1.5
PESTICIDES															
1	Aldrin (µg/L)														
2	BHC (µg/L)														
3	DDT (µg/L)														
4	Dieldrin (µg/L)														
5	Endos (µg/L)														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	6.782	0.495	3.502	3.638	4.998	2.686	4.482	4.889	4.418	3.816	6.668	3.154	1.845		0.667
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	487	659	504	486	562	636	659	734	634	674	623	705	686	634	829
3	pH_GEN (pH units)	8.1	8.2	8.3	8.2	8.3	8.1	8.1	7.9	8.3	8.4	7.7	8.0	8.2	8.0	7.5
4	Temp (deg C)	25.8	28.2	27.3	26.3	22.5	24.3	22.0	13.5	15.3	24.0	25.0	21.3	24.3	22.7	23.5
5	Turb (NTU)				0.5	1.0	0.4	0.7	0.6	0.9	0.3	0.9	0.6			
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	1.6	1.9	3.2	1.9	2.3	0.0	0.0	0.0	4.2	4.8	0.0	0.0	4.0	3.3	0.0
2	ALK-TOT (mgCaCO ₃ /L)	189	213	144	169	173	197	186	212	194	284	223	198	233	216	240
3	B (mg/L)	0.52	0.20	0.20	0.73	1.06	0.29	0.58	0.22	0.23	0.16	0.20	0.36	0.09	0.79	1.45
4	Ca (mg/L)	35	46	36	33	44	40	44	45	47	58	51	52	69	44	62
5	Cl (mg/L)	39.0	55.5	39.8	38.8	47.7	91.4	63.9	54.4	51.3	71.2	49.8	70.2	73.2	84.2	65.7
6	CO ₃ (mg/L)	1.9	2.3	3.8	2.3	2.8	0.0	0.0	0.0	5.1	5.8	0.0	0.0	4.8	4.0	0.0
7	F (mg/L)	0.65	0.92	0.70	0.44	0.55	0.70	0.75	0.65	0.68	0.53	0.88	0.21	0.49	0.97	0.68
8	Fe (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.4	0.1	0.0	0.2	0.1
9	HCO ₃ (mg/L)	227	255	168	202	205	240	227	259	227	335	272	241	274	255	292
10	K (mg/L)	2.9	3.5	2.0	2.3	2.1	3.1	2.5	2.8	3.0	4.4	3.2	3.3	3.9	2.9	3.8
11	Mg (mg/L)	19.6	27.7	330.6	16.6	14.9	31.5	25.0	32.3	37.2	37.9	31.8	18.6	32.8	28.0	32.1
12	Na (mg/L)	41.4	57.0	42.6	39.7	47.9	57.4	45.7	75.2	50.7	66.8	50.1	63.7	62.1	59.8	45.5
13	NH ₃ -N (mg N/L)	0.51	0.16	0.16	0.51	0.30	0.13	0.16	0.52	0.42	0.02	0.72	0.20	0.11	1.31	0.22
14	NO ₂ +NO ₃ (mg N/L)	0.49	1.77	1.01	0.81	0.33	0.14	0.53	2.49	0.63	0.57	4.85	11.19	3.47	1.35	3.31
15	NO ₂ -N (mgN/L)	0.01	0.11	0.03	0.06	0.05	0.00	0.02	0.94	0.01	0.16	0.02	0.02	0.20	0.05	0.03
16	NO ₃ -N (mgN/L)	0.48	1.66	0.98	0.75	0.28	0.14	0.51	1.55	0.62	0.41	4.84	11.17	3.27	1.30	3.28
17	o-PO ₄ -P (mg P/L)	0.014	0.093	0.031	0.055	0.038	0.041	0.124	0.090	0.021	0.033	0.442	0.197	0.084	0.206	0.199
18	SiO ₂ (mg/L)	36.2	45.6	86.6	36.5	38.4	80.1	71.3	73.0	25.4	25.7	25.8	46.4	28.1	21.5	16.9
19	SO ₄ (mg/L)	25.6	55.4	32.0	24.5	32.5	30.2	39.5	35.1	48.5	20.7	19.2	45.3	20.7	39.4	78.0

Water Quality Seasonal Average for the period: 2004-2018

Station Name : SATRAPUR (AGH4BF6)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Summer															
		Mar - May															
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
BIOLOGICAL/BACTERIOLOGICAL																	
1	BOD3-27 (mg/L)	2.3	1.9	1.8	1.8	3.2	1.9	1.7	4.4	3.4	4.5	2.3	2.6	6.5	10.2	16.7	
2	COD (mg/L)					84.7	39.9	35.4	37.7	70.9	37.4	53.0	30.0	47.8	279.9	31.3	
3	DO (mg/L)	7.7	7.0	7.6	7.4	7.5	7.4	6.5	8.3	7.8	8.2	7.5	8.1	7.6	5.6	3.7	
4	DO_SAT% (%)	95	90	96	91	86	87	74	79	78	98	90	91	90	64	44	
5	FCol-MPN (MPN/100mL)	1028	2094	717	350	433	200	567	5067	5733	2983	173	107	113	480	1740	
6	Tcol-MPN (MPN/100mL)	5344	15828	1583	933	1117	817	6467	32533	42983	55950	2893	353	1863	1133	7027	
TRACE & TOXIC																	
1	As (µg/L)										1.1	3.3	4.3	4.0	3.6	0.0	1.6
2	Cd (µg/L)					8.0					0.2	2.2	0.0	2.0	0.3	0.0	0.1
3	Cr (µg/L)					22.0					7.1	4.3	4.2	0.0	1.6	3.0	0.7
4	Cu (µg/L)											2.1	2.0		2.7	9.0	3.1
5	Hg (µg/L)					0.7					0.3	0.2	0.3	0.1			
6	Ni (µg/L)					1.0					3.2	7.3	0.5	4.3	0.7	8.0	0.9
7	Pb (µg/L)					22.0					29.0	16.3	0.4	19.0	2.0	1.0	4.2
8	Zn (µg/L)					35.0					29.1	21.7	6.8	7.0	3.1	1.2	2.3
CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO ₃ /L)	88	115	90	83	110	99	109	114	116	146	127	130	173	110	154	
2	HAR_Total (mgCaCO ₃ /L)	170	231	1467	152	172	230	213	248	271	304	259	207	309	227	288	
3	Na% (%)	34	34	22	36	37	35	31	48	29	33	29	40	30	36	24	
4	RSC (-)	0.4	0.1	0.0	0.4	0.2	0.1	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.2	0.0	
5	SAR (-)	1.4	1.7	1.0	1.4	1.6	1.7	1.4	2.5	1.3	1.7	1.4	1.9	1.5	1.7	1.2	
PESTICIDES																	
1	Aldrin (µg/L)					0.0					0.0						
2	BHC (µg/L)					0.1					0.0						
3	DDT (µg/L)					0.1					0.0						
4	Dieldrin (µg/L)					0.0					0.0						
5	Endos (µg/L)					0.1					0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: RAJEGAON	Code	: AGH4MC3
State	: Madhya Pradesh	District	Balaghat
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wainganga
Sub-Sub Tributary	: Bagh	Local River	: Bagh
Division	: Wainganga Div., Nagpur	Sub-Division	: Upper Wainganga SD, Nagpur
Drainage Area	: 5380 Sq. Km.	Bank	: Right
Latitude	: 21°37'32"	Longitude	: 80°15'14"
	Opening Date	Closing Date	
Gauge	: 06.12.1985		
Discharge	: 26.07.1986		
Sediment	: 01.09.2014		
Water Quality	: 01.02.2012		

Water Quality Datasheet for the period : 2017-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

River Water Analysis

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018
		A	A	A	A	A	A	A	A
	PHYSICAL								
1	Q (cumec)	1.166	77.58	46.56	48.46	56.83	12.54	4.479	2.850
2	Colour_Cod (-)	Clear	Brown	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	203	145	268	233	247	324	277	272
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	8.0	7.5	7.8	7.6	7.8	7.9	7.7	7.6
6	Temp (deg C)	30.0	25.0	28.0	27.0	26.0	23.0	18.0	17.0
	CHEMICAL								
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	110	49	105	95	78	125	133	116
3	B (mg/L)	0.76	0.09	0.03	0.53	0.09	0.67	0.22	0.28
4	Ca (mg/L)	29	10	22	16	24	35	36	33
5	Cl (mg/L)	9.9	4.0	6.0	13.9	28.8	18.5	14.4	14.4
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.09	0.02	0.09	0.02	0.00	0.00	0.00	0.16
8	Fe (mg/L)	0.1	0.8	0.7	0.5	0.7	0.1	0.2	0.1
9	HCO ₃ (mg/L)	134	60	128	115	96	152	162	142
10	K (mg/L)	1.8	5.3	2.4	2.0	2.1	2.1	2.2	2.4
11	Mg (mg/L)	2.8	4.8	8.0	7.5	5.5	4.7	9.9	12.8
12	Na (mg/L)	16.6	17.5	14.7	13.8	14.2	14.7	17.1	18.0
13	NH ₃ -N (mg N/L)	0.91	0.24	0.29	0.29	0.15	0.16	0.08	0.22
14	NO ₂ +NO ₃ (mg N/L)	1.05	2.35	2.69	2.37	2.49	1.53	1.44	1.23
15	NO ₂ -N (mgN/L)	0.01	0.08	0.04	0.02	0.02	0.01	0.01	0.01
16	NO ₃ -N (mgN/L)	1.04	2.27	2.65	2.35	2.47	1.52	1.43	1.22
17	o-PO ₄ -P (mg P/L)	0.808	0.896	1.126	0.947	0.151	0.071	0.128	0.134
18	SiO ₂ (mg/L)	17.2	19.0	6.7	19.5	17.9	20.4	10.3	10.9
19	SO ₄ (mg/L)	12.2	41.3	15.1	0.9	12.6	17.4	28.4	11.0

Water Quality Datasheet for the period : 2017-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018
		A	A	A	A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL								
1	BOD3-27 (mg/L)	1.1	2.8	1.7	1.2	1.9	1.6	3.0	1.2
2	COD (mg/L)	90.4	37.2	45.9	31.1	17.7	76.6	29.7	50.0
3	DO (mg/L)	6.6	6.1	5.9	6.0	6.1	6.8	6.7	8.3
4	DO_SAT% (%)	87	74	75	75	75	79	71	86
5	FCol-MPN (MPN/100mL)	40	300	110	20	800	500	340	20
6	Tcol-MPN (MPN/100mL)	300	500	140	330	1100	500	2400	500
	TRACE & TOXIC								
1	As (µg/L)			1.0				3.8	
2	Cd (µg/L)			0.0				0.0	
3	Cr (µg/L)			11.0				4.4	
4	Cu (µg/L)			4.0				5.0	
5	Ni (µg/L)							2.8	
6	Pb (µg/L)			0.0				0.7	
7	Zn (µg/L)			0.0				6.8	
	CHEMICAL INDICES								
1	HAR_Ca (mgCaCO ₃ /L)	74	24	55	40	60	86	91	82
2	HAR_Total (mgCaCO ₃ /L)	85	44	89	71	83	106	132	135
3	Na% (%)	29	43	26	29	27	23	22	22
4	RSC (-)	0.5	0.1	0.3	0.5	0.0	0.4	0.0	0.0
5	SAR (-)	0.8	1.1	0.7	0.7	0.7	0.6	0.6	0.7
	PESTICIDES								

Water Quality Summary for the period : 2017-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	279	446.4	0.017	40.54
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	8	324	145	246
3	pH_GEN (pH units)	8	8.0	7.5	7.7
4	Temp (deg C)	8	30.0	17.0	24.3
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	8	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	8	133	49	101
3	B (mg/L)	8	0.76	0.03	0.33
4	Ca (mg/L)	8	36	10	26
5	Cl (mg/L)	8	28.8	4.0	13.7
6	CO ₃ (mg/L)	8	0.0	0.0	0
7	F (mg/L)	8	0.16	0.00	0.05
8	Fe (mg/L)	8	0.8	0.1	0.4
9	HCO ₃ (mg/L)	8	162	60	124
10	K (mg/L)	8	5.3	1.8	2.5
11	Mg (mg/L)	8	12.8	2.8	7
12	Na (mg/L)	8	18.0	13.8	15.8
13	NH ₃ -N (mg N/L)	8	0.91	0.08	0.29
14	NO ₂ +NO ₃ (mg N/L)	8	2.69	1.05	1.89
15	NO ₂ -N (mgN/L)	8	0.08	0.01	0.02
16	NO ₃ -N (mgN/L)	8	2.65	1.04	1.87
17	o-PO ₄ -P (mg P/L)	8	1.126	0.071	0.533
18	SiO ₂ (mg/L)	8	20.4	6.7	15.3
19	SO ₄ (mg/L)	8	41.3	0.9	17.4
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	8	3.0	1.1	1.8
2	COD (mg/L)	8	90.4	17.7	47.3
3	DO (mg/L)	8	8.3	5.9	6.6
4	DO_SAT% (%)	8	87	71	78
5	FCol-MPN (MPN/100mL)	8	800	20	266
6	Tcol-MPN (MPN/100mL)	8	2400	140	721
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	2	3.8	1.0	2.4
2	Cd ($\mu\text{g}/\text{L}$)	2	0.0	0.0	0
3	Cr ($\mu\text{g}/\text{L}$)	2	11.0	4.4	7.7
4	Cu ($\mu\text{g}/\text{L}$)	2	5.0	4.0	4.5
5	Ni ($\mu\text{g}/\text{L}$)	1	2.8	2.8	2.8
6	Pb ($\mu\text{g}/\text{L}$)	2	0.7	0.0	0.3
7	Zn ($\mu\text{g}/\text{L}$)	2	6.8	0.0	3.4
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	8	91	24	64
2	HAR_Total (mgCaCO ₃ /L)	8	135	44	93
3	Na% (%)	8	43	22	28
4	RSC (-)	8	0.5	0.0	0.2
5	SAR (-)	8	1.1	0.6	0.7
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	41.36	468.5						88.54	168.7	595.9	67.77	90.48		46.12
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	150	122							134	103	203	141	132	219
3	pH_GEN (pH units)	7.7	7.8							8.4	7.6	7.2	7.6	7.8	7.7
4	Temp (deg C)	28.7	27.7							25.3	26.9	29.5	25.8	26.0	27.2
5	Turb (NTU)									24.0	19.7	14.4			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0							3.6	0.0	0.0	0.0	3.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	79	42							80	61	101	82	65	87
3	B (mg/L)	0.17	0.21							0.23	0.12	0.21	0.24	0.87	0.30
4	Ca (mg/L)	18	11							20	17	27	19	17	20
5	Cl (mg/L)	5.0	7.1							5.0	9.2	7.6	8.9	15.4	12.5
6	CO ₃ (mg/L)	0.0	0.0							4.4	0.0	0.0	0.0	3.6	0.0
7	F (mg/L)	0.30	0.94							0.71	0.46	0.44	0.02	0.15	0.04
8	Fe (mg/L)	0.2	0.9							0.3	1.4	0.1	0.2	0.2	0.5
9	HCO ₃ (mg/L)	97	51							89	74	123	100	71	107
10	K (mg/L)	2.3	1.8							1.5	2.9	2.4	1.8	2.5	2.7
11	Mg (mg/L)	6.0	7.1							6.4	8.8	8.1	13.9	4.5	5.7
12	Na (mg/L)	8.5	3.5							5.1	5.6	14.9	9.5	11.6	15.4
13	NH ₃ -N (mg N/L)	0.20	0.11							0.00	0.07	0.29	0.16	0.17	0.37
14	NO ₂ +NO ₃ (mg N/L)	2.29	0.95							2.27	1.75	1.57	8.15	2.31	2.19
15	NO ₂ -N (mgN/L)	0.17	0.11							0.29	0.01	0.01	0.02	0.02	0.03
16	NO ₃ -N (mgN/L)	2.12	0.84							1.97	1.74	1.56	8.13	2.29	2.15
17	o-PO ₄ -P (mg P/L)	0.110	0.024							0.063	0.039	0.126	0.089	0.155	0.786
18	SiO ₂ (mg/L)	28.4	68.5							23.4	19.3	13.8	22.4	12.7	16.1

Water Quality Seasonal Average for the period: 2004-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
19	SO4 (mg/L)	6.2	8.2							7.4	16.3	13.3	11.0	10.6	16.4
	BIOLOGICAL/BACTERIOLOGICAL														
1	BOD3-27 (mg/L)	1.2	1.4							1.1	1.4	1.6	1.7	1.5	1.7
2	COD (mg/L)									65.5	71.1	23.6	104.7	39.7	44.5
3	DO (mg/L)	6.7	5.9							6.5	6.3	6.1	6.5	6.3	6.1
4	DO_SAT% (%)	86	75							78	78	80	79	78	77
5	FCol-MPN (MPN/100mL)	1250	283							150	725	274	165	125	254
6	Tcol-MPN (MPN/100mL)	11010	797							9667	63175	800	805	1258	474
	TRACE & TOXIC														
1	As (μ g/L)									3.4	2.2		1.3	1.0	
2	Cd (μ g/L)									1.5	0.2		0.3	0.0	
3	Cr (μ g/L)									0.5	2.0		3.6	11.0	
4	Cu (μ g/L)									25.1	7.3		7.4	4.0	
5	Hg (μ g/L)										0.0				
6	Ni (μ g/L)									0.9	12.8		3.4		
7	Pb (μ g/L)									0.6	0.0		0.7	0.0	
8	Zn (μ g/L)									5.8	2.0		3.4	0.0	
	CHEMICAL INDICES														
1	HAR_Ca (mgCaCO ₃ /L)	45	27							50	43	67	47	42	51
2	HAR_Total (mgCaCO ₃ /L)	70	57							77	79	101	105	60	74
3	Na% (%)	18	11							11	13	25	18	28	31
4	RSC (-)	0.2	0.0							0.1	0.1	0.2	0.0	0.2	0.3
5	SAR (-)	0.4	0.2							0.2	0.3	0.7	0.4	0.7	0.8
	PESTICIDES														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	39.85						8.720	12.02	14.53	13.18	7.192		6.623	
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	175						470	229	257	237	234	232	291	
3	pH_GEN (pH units)	7.8						8.2	8.1	7.6	7.9	7.9	8.2	7.7	
4	Temp (deg C)	20.1						17.0	21.4	21.4	21.5	20.8	20.4	19.3	
5	Turb (NTU)							1.7	0.6	1.9	0.8				
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0						0.0	0.0	0.0	0.0	1.3	8.0	0.0	
2	ALK-TOT (mgCaCO ₃ /L)	92						109	119	118	112	114	122	125	
3	B (mg/L)	0.17						0.17	0.28	0.17	0.36	0.34	0.37	0.39	
4	Ca (mg/L)	19						51	33	43	26	29	32	35	
5	Cl (mg/L)	4.6						54.0	8.0	5.9	8.5	7.9	8.9	15.8	
6	CO ₃ (mg/L)	0.0						0.0	0.0	0.0	0.0	1.6	9.6	0.0	
7	F (mg/L)	0.39						0.66	0.19	0.18	0.16	0.05	0.20	0.05	
8	Fe (mg/L)	0.1						0.2	0.3	0.3	0.0	0.1	0.1	0.1	
9	HCO ₃ (mg/L)	112						133	145	144	136	136	129	152	
10	K (mg/L)	1.8						1.4	2.6	1.8	1.5	2.1	1.8	2.2	
11	Mg (mg/L)	12.7						20.8	9.4	9.4	15.1	9.6	10.1	9.1	
12	Na (mg/L)	6.5						32.9	13.4	14.0	13.8	14.6	15.4	16.6	
13	NH ₃ -N (mg N/L)	0.11						0.16	0.08	0.10	0.15	0.35	0.56	0.15	
14	NO ₂ +NO ₃ (mg N/L)	1.67						0.22	0.21	1.83	3.86	4.15	1.30	1.40	
15	NO ₂ -N (mgN/L)	0.10						0.01	0.01	0.00	0.00	0.02	0.01	0.01	
16	NO ₃ -N (mgN/L)	1.57						0.21	0.20	1.82	3.85	4.13	1.29	1.39	
17	o-PO ₄ -P (mg P/L)	0.419						0.023	0.038	0.431	0.171	0.085	0.801	0.111	
18	SiO ₂ (mg/L)	34.2						139.2	30.4	11.5	9.0	18.7	18.6	13.9	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	River Water													
		Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
19	SO4 (mg/L)	10.8							25.9	14.1	15.9	16.3	18.6	14.7	18.9
	BIOLOGICAL/BACTERIOLOGICAL														
1	BOD3-27 (mg/L)	1.8							2.0	1.6	1.4	2.7	1.2	1.3	1.9
2	COD (mg/L)								77.1	29.6	36.0	27.3	36.6	69.5	52.1
3	DO (mg/L)	7.9							8.1	7.8	7.3	7.4	7.4	7.8	7.3
4	DO_SAT% (%)	87							84	88	82	84	82	87	79
5	FCol-MPN (MPN/100mL)	2300							100	300	138	100	145	90	287
6	Tcol-MPN (MPN/100mL)	7125							250	11975	663	340	630	368	1133
	TRACE & TOXIC														
1	As ($\mu\text{g}/\text{L}$)								0.3				0.6	1.1	3.8
2	Cd ($\mu\text{g}/\text{L}$)								0.3			0.3	0.1	0.2	0.0
3	Cr ($\mu\text{g}/\text{L}$)								2.9			2.5	0.2	0.7	4.4
4	Cu ($\mu\text{g}/\text{L}$)								137.6			4.0	0.6	2.0	5.0
5	Hg ($\mu\text{g}/\text{L}$)														
6	Ni ($\mu\text{g}/\text{L}$)								45.8			5.2	0.6	1.0	2.8
7	Pb ($\mu\text{g}/\text{L}$)								0.0			0.8	0.1	17.3	0.7
8	Zn ($\mu\text{g}/\text{L}$)								38.6			4.0	5.8	1.6	6.8
	CHEMICAL INDICES														
1	HAR_Ca (mgCaCO ₃ /L)	47							128	82	108	65	72	81	86
2	HAR_Total (mgCaCO ₃ /L)	100							215	121	147	128	112	123	124
3	Na% (%)	12							25	20	18	19	22	21	22
4	RSC (-)	0.0							0.0	0.1	0.0	0.0	0.1	0.2	0.1
5	SAR (-)	0.3							1.0	0.5	0.5	0.5	0.6	0.6	0.6
	PESTICIDES														

Water Quality Seasonal Average for the period: 2004-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1 Q (cumec)	4.751	0.302							0.276	0.747	8.319	7.355	1.224			
2 EC_GEN ($\mu\text{mho}/\text{cm}$)	277	257							284	276	224	272	228	260		
3 pH_GEN (pH units)	7.8	8.0							8.1	7.9	7.5	7.8	7.6	8.0		
4 Temp (deg C)	26.7	25.0							24.0	24.5	27.3	23.5	24.0	24.0		
5 Turb (NTU)									2.0	0.4	3.9	26.9				
CHEMICAL																
1 Alk-Phen (mgCaCO ₃ /L)	0.0	0.0							0.0	0.0	0.0	0.0	0.0	0.0		
2 ALK-TOT (mgCaCO ₃ /L)	178	131							122	146	103	103	120	105		
3 B (mg/L)	0.57	0.09							0.14	0.23	0.31	0.45	0.05	0.08		
4 Ca (mg/L)	28	27							36	41	28	36	51	26		
5 Cl (mg/L)	8.7	6.4							12.1	9.2	8.4	9.5	8.2	40.7		
6 CO ₃ (mg/L)	0.0	0.0							0.0	0.0	0.0	0.0	0.0	0.0		
7 F (mg/L)	0.25	0.54							0.17	0.00	0.49	0.12	0.01	0.13		
8 Fe (mg/L)	0.0	0.0							0.2	0.0	0.3	0.3	0.0	0.1		
9 HCO ₃ (mg/L)	162	159							149	178	126	126	146	129		
10 K (mg/L)	2.9	2.0							1.0	3.0	2.7	2.2	2.6	1.9		
11 Mg (mg/L)	13.4	12.3							17.5	15.9	8.6	13.4	16.6	16.8		
12 Na (mg/L)	14.0	13.9							13.3	14.9	18.3	11.5	14.5	19.5		
13 NH ₃ -N (mg N/L)	0.42	0.14							0.14	0.02	0.78	0.10	0.09	1.16		
14 NO ₂ +NO ₃ (mg N/L)	0.27	1.33							0.35	0.00	3.56	5.04	14.33	1.77		
15 NO ₂ -N (mgN/L)	0.05	0.20							0.01	0.00	0.01	0.01	0.05	0.01		
16 NO ₃ -N (mgN/L)	0.23	1.13							0.34	0.00	3.55	5.03	14.28	1.76		
17 o-PO ₄ -P (mg P/L)	0.010	0.107							0.040	0.043	0.697	0.219	0.085	0.402		
18 SiO ₂ (mg/L)	31.0	34.1							29.4	15.3	13.7	40.2	22.4	30.2		

Water Quality Seasonal Average for the period: 2004-2018

Station Name : RAJEGAON (AGH4MC3)

Local River : Bagh

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
19	SO4 (mg/L)	5.7	4.5							9.6	25.8	10.9	13.3	27.4	15.8	
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	1.0	2.6							1.4	1.7	2.2	1.8	15.0	1.9	
2	COD (mg/L)									9.3	57.3	31.7	33.0	88.8	240.3	
3	DO (mg/L)	5.8	5.7							6.9	7.2	6.5	6.2	4.8	6.7	
4	DO_SAT% (%)	72	69							82	86	81	73	57	79	
5	FCol-MPN (MPN/100mL)	583	933							100	100	223	410	110	200	
6	Tcol-MPN (MPN/100mL)	1183	21933							400	200	3227	660	800	700	
TRACE & TOXIC																
1	As (µg/L)										6.1	3.9	1.3		1.0	
2	Cd (µg/L)										0.0	0.2	1.0		0.0	
3	Cr (µg/L)										0.7	1.7	0.0		2.0	
4	Cu (µg/L)										0.3	10.1			1.2	
5	Hg (µg/L)										0.0	0.4	0.1			
6	Ni (µg/L)										10.7	1.7	0.0		1.6	
7	Pb (µg/L)										16.8	0.3	1.0		0.0	
8	Zn (µg/L)										2.8	12.0	17.0		7.0	
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	70	67							90	101	70	91	128	65	
2	HAR_Total (mgCaCO3/L)	126	119							163	167	106	147	197	134	
3	Na% (%)	19	20							15	16	26	15	14	24	
4	RSC (-)	0.2	0.3							0.0	0.0	0.1	0.0	0.0	0.0	
5	SAR (-)	0.5	0.6							0.5	0.5	0.8	0.4	0.5	0.7	
PESTICIDES																

HISTORY SHEET

		Water Year	: 2017-2018
Site	: KUMHARI	Code	: AGH40R6
State	: Madhya Pradesh	District	Balaghat
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wainganga
Sub-Sub Tributary	: -	Local River	: Wainganga
Division	: Wainganga Div., Nagpur	Sub-Division	: Upper Wainganga SD, Nagpur
Drainage Area	: 8070 Sq. Km.	Bank	: Left
Latitude	: 21°53'03"	Longitude	: 80°10'36"
	Opening Date	Closing Date	
Gauge	: 01.12.1986		
Discharge	: 01.12.1986		
Sediment	: 01.09.2014		
Water Quality	: 01.02.2012		

Water Quality Datasheet for the period : 2017-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

River Water Analysis

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		0.944	325.9	38.95	52.30	13.89	8.080	11.24	6.220	1.465	5.678	0.413	0.253
2 Colour_Cod (-)	Clear	Brown	Light Brown	Light Brown	Clear								
3 EC_GEN ($\mu\text{mho}/\text{cm}$)		352	178	249	252	336	455	408	370	375	503	457	447
4 Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5 pH_GEN (pH units)		8.1	7.5	7.9	7.5	7.9	8.0	8.1	8.0	7.8	7.7	8.1	8.1
6 Temp (deg C)		26.0	23.0	24.0	24.0	23.0	21.0	17.0	14.0	14.0	17.0	21.0	24.0
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 ALK-TOT (mgCaCO ₃ /L)		193	89	81	64	142	173	173	171	219	183	291	269
3 B (mg/L)		1.04	0.10	0.10	0.46	0.00	0.70	0.25	0.21	0.09	0.78	0.82	1.00
4 Ca (mg/L)		37	13	18	18	32	40	43	49	57	60	70	56
5 Cl (mg/L)		11.9	11.9	43.7	47.7	8.2	12.4	41.2	12.4	28.8	42.9	22.3	15.9
6 CO ₃ (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 F (mg/L)		0.30	0.21	0.13	0.01	0.00	0.00	0.00	0.31	0.36	0.40	0.41	0.39
8 Fe (mg/L)		0.1	0.7	1.1	0.3	0.3	0.1	0.4	0.1	0.1	0.1	0.1	0.1
9 HCO ₃ (mg/L)		235	109	99	78	173	211	211	208	267	223	355	328
10 K (mg/L)		1.8	2.7	2.1	1.7	1.2	1.5	1.5	2.0	1.5	2.0	1.9	1.9
11 Mg (mg/L)		17.1	7.5	10.2	8.0	5.5	11.1	12.8	16.3	21.6	8.8	18.7	16.9
12 Na (mg/L)		27.0	15.1	18.2	16.3	15.0	19.5	20.8	21.3	23.2	21.7	28.8	25.8
13 NH ₃ -N (mg N/L)		1.01	0.16	0.33	0.35	0.10	0.14	0.10	0.22	0.37	0.21	0.18	0.00
14 NO ₂ +NO ₃ (mg N/L)		0.98	3.14	2.98	1.62	1.36	1.35	1.65	2.61	2.28	2.43	0.86	4.78
15 NO ₂ -N (mgN/L)		0.01	0.05	0.05	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
16 NO ₃ -N (mgN/L)		0.97	3.09	2.93	1.61	1.35	1.34	1.64	2.59	2.27	2.42	0.85	4.77
17 PO ₄ -P (mg P/L)		1.651	0.837	1.542	0.656	0.147	0.075	0.067	0.110	0.057	0.122	0.403	0.130
18 SiO ₂ (mg/L)		40.2	15.3	12.9	25.5	32.1	32.0	13.8	11.0	18.4	17.1	22.7	18.2
19 SO ₄ (mg/L)		18.6	4.6	1.7	2.3	0.7	0.4	15.6	28.6	4.3	0.1	0.5	3.8

Water Quality Datasheet for the period : 2017-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.2	5.4	1.2	1.3	1.3	1.5	1.3	1.5	1.5	2.6	1.6	1.9
2	COD (mg/L)	52.8	24.0	8.3	8.3	10.3	31.8	11.3	53.9	22.1	15.5	32.7	47.9
3	DO (mg/L)	7.0	11.0	6.2	6.1	7.0	7.5	7.4	8.0	6.4	7.2	7.2	8.1
4	DO_SAT% (%)	86	128	74	72	82	84	77	78	62	74	81	96
5	FCol-MPN (MPN/100mL)	80	1400	130	40	500	300	40	130	20	80	20	140
6	Tcol-MPN (MPN/100mL)	110	5000	2800	330	1800	9000	130	170	20	130	20	800
TRACE & TOXIC													
1	As (µg/L)			1.0				2.3					1.5
2	Cd (µg/L)			0.1				0.1					0.1
3	Cr (µg/L)			11.0				1.5					1.5
4	Cu (µg/L)			3.0				18.7					5.1
5	Ni (µg/L)							0.3					6.5
6	Pb (µg/L)			0.0				1.3					6.7
7	Zn (µg/L)			4.0				20.5					3.0
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	92	33	44	44	81	101	108	122	142	151	175	139
2	HAR_Total (mgCaCO ₃ /L)	163	64	86	77	104	147	161	190	231	188	253	210
3	Na% (%)	26	33	31	31	24	22	22	19	18	20	20	21
4	RSC (-)	0.6	0.5	0.0	0.0	0.8	0.5	0.2	0.0	0.0	0.0	0.8	1.2
5	SAR (-)	0.9	0.8	0.9	0.8	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	675.2	0.154	32.30
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	503	178	365
3	pH_GEN (pH units)	12	8.1	7.5	7.9
4	Temp (deg C)	12	26.0	14.0	20.7
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	12	291	64	171
3	B (mg/L)	12	1.04	0.00	0.46
4	Ca (mg/L)	12	70	13	41
5	Cl (mg/L)	12	47.7	8.2	24.9
6	CO ₃ (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.41	0.00	0.21
8	Fe (mg/L)	12	1.1	0.1	0.3
9	HCO ₃ (mg/L)	12	355	78	208
10	K (mg/L)	12	2.7	1.2	1.8
11	Mg (mg/L)	12	21.6	5.5	12.9
12	Na (mg/L)	12	28.8	15.0	21.1
13	NH ₃ -N (mg N/L)	12	1.01	0.00	0.26
14	NO ₂ +NO ₃ (mg N/L)	12	4.78	0.86	2.17
15	NO ₂ -N (mgN/L)	12	0.05	0.01	0.02
16	NO ₃ -N (mgN/L)	12	4.77	0.85	2.15
17	o-PO ₄ -P (mg P/L)	12	1.651	0.057	0.483
18	SiO ₂ (mg/L)	12	40.2	11.0	21.6
19	SO ₄ (mg/L)	12	28.6	0.1	6.8
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	5.4	1.2	1.9
2	COD (mg/L)	12	53.9	8.3	26.6
3	DO (mg/L)	12	11.0	6.1	7.4
4	DO_SAT% (%)	12	128	62	83
5	FCol-MPN (MPN/100mL)	12	1400	20	240
6	Tcol-MPN (MPN/100mL)	12	9000	20	1693
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	2.3	1.0	1.6
2	Cd ($\mu\text{g}/\text{L}$)	3	0.1	0.1	0.1
3	Cr ($\mu\text{g}/\text{L}$)	3	11.0	1.5	4.7
4	Cu ($\mu\text{g}/\text{L}$)	3	18.7	3.0	8.9
5	Ni ($\mu\text{g}/\text{L}$)	2	6.5	0.3	3.4
6	Pb ($\mu\text{g}/\text{L}$)	3	6.7	0.0	2.7
7	Zn ($\mu\text{g}/\text{L}$)	3	20.5	3.0	9.2
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	175	33	103
2	HAR_Total (mgCaCO ₃ /L)	12	253	64	156
3	Na% (%)	12	33	18	24
4	RSC (-)	12	1.2	0.0	0.4
5	SAR (-)	12	0.9	0.6	0.8
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	30.42	697.6						113.1	179.8	186.0	93.26	51.14		86.40
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	226	210						225	206	304	286	242	273	
3	pH_GEN (pH units)	8.1	8.0						8.5	8.1	7.2	7.9	8.2	7.8	
4	Temp (deg C)	27.7	28.4						25.4	20.8	27.4	26.6	28.0	24.0	
5	Turb (NTU)								8.6	8.5	12.3				
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	1.2	0.0						5.4	3.6	0.0	1.0	7.2	0.0	
2	ALK-TOT (mgCaCO ₃ /L)	119	100						133	109	142	133	116	114	
3	B (mg/L)	0.23	0.21						0.15	0.11	0.20	0.17	0.72	0.34	
4	Ca (mg/L)	30	29						32	27	36	29	26	24	
5	Cl (mg/L)	5.2	6.1						7.2	8.9	8.2	16.7	19.5	24.7	
6	CO ₃ (mg/L)	1.5	0.0						6.6	4.3	0.0	1.2	8.6	0.0	
7	F (mg/L)	0.31	0.24						0.40	0.33	0.37	0.12	0.18	0.13	
8	Fe (mg/L)	0.1	0.3						0.1	0.5	0.1	0.1	0.2	0.5	
9	HCO ₃ (mg/L)	142	122						149	124	173	159	124	139	
10	K (mg/L)	2.1	1.4						1.6	2.3	1.9	2.1	2.0	1.9	
11	Mg (mg/L)	8.5	8.3						14.2	12.4	13.2	13.4	9.5	9.7	
12	Na (mg/L)	11.3	9.5						14.3	11.9	19.1	19.5	16.0	18.3	
13	NH ₃ -N (mg N/L)	0.25	0.11						0.05	0.11	0.42	0.16	0.36	0.39	
14	NO ₂ +NO ₃ (mg N/L)	1.62	0.47						1.35	1.54	1.39	6.01	1.90	2.02	
15	NO ₂ -N (mgN/L)	0.08	0.07						0.06	0.01	0.01	0.01	0.01	0.03	
16	NO ₃ -N (mgN/L)	1.54	0.39						1.29	1.54	1.38	6.00	1.89	1.99	
17	o-PO ₄ -P (mg P/L)	0.113	0.031						0.085	0.046	0.101	0.140	0.111	0.967	
18	SiO ₂ (mg/L)	38.3	65.4						46.0	24.3	24.7	31.8	23.5	25.2	
19	SO ₄ (mg/L)	8.6	17.3						15.9	11.9	10.0	13.3	5.2	5.6	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Flood													
		Jun-Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.1	2.0							1.2	3.0	1.6	1.7	8.6	2.1
2	COD (mg/L)									43.9	69.6	26.2	92.0	39.1	20.7
3	DO (mg/L)	6.8	6.4							7.0	5.6	6.7	6.7	6.0	7.5
4	DO_SAT% (%)	86	82							85	64	85	83	77	88
5	FCol-MPN (MPN/100mL)	1420	210							250	260	274	154	254	430
6	Tcol-MPN (MPN/100mL)	5100	652							3030	15880	1520	804	1900	2008
TRACE & TOXIC															
1	As (µg/L)									4.3	3.1			0.5	1.0
2	Cd (µg/L)									1.2	0.2			0.3	0.1
3	Cr (µg/L)									0.2	1.0			1.8	11.0
4	Cu (µg/L)									21.0	4.8			10.0	3.0
5	Hg (µg/L)										0.0				
6	Ni (µg/L)									2.8	9.5			3.1	
7	Pb (µg/L)									1.1	0.9			1.1	0.0
8	Zn (µg/L)									2.9	3.0			3.1	4.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	74	72							80	68	89	72	66	59
2	HAR_Total (mgCaCO ₃ /L)	110	107							139	120	144	128	105	99
3	Na% (%)	17	14							16	17	22	25	24	29
4	RSC (-)	0.2	0.1							0.2	0.0	0.1	0.3	0.3	0.4
5	SAR (-)	0.5	0.4							0.5	0.5	0.7	0.8	0.7	0.8
PESTICIDES															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	22.87						31.25	10.22	28.36	19.62	11.75		6.751	
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	304						726	334	364	316	295	308	402	
3	pH_GEN (pH units)	8.3						7.0	8.0	8.1	7.8	8.0	8.3	8.0	
4	Temp (deg C)	21.6						16.0	14.0	18.3	16.8	20.0	19.3	16.5	
5	Turb (NTU)							22.1	0.3	1.4	0.8				
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	4.9						0.0	0.0	1.1	0.0	2.6	10.5	0.0	
2	ALK-TOT (mgCaCO ₃ /L)	167						271	214	180	149	158	169	184	
3	B (mg/L)	0.24						0.24	0.25	0.20	0.30	0.19	0.59	0.31	
4	Ca (mg/L)	40						63	52	56	44	39	38	47	
5	Cl (mg/L)	7.1						56.1	11.9	7.6	7.4	10.4	27.4	23.7	
6	CO ₃ (mg/L)	5.9						0.0	0.0	1.3	0.0	3.1	12.6	0.0	
7	F (mg/L)	0.45						0.67	0.28	0.35	0.23	0.12	0.14	0.17	
8	Fe (mg/L)	0.0						0.1	0.5	0.5	0.0	0.1	0.1	0.2	
9	HCO ₃ (mg/L)	192						331	261	217	182	187	180	224	
10	K (mg/L)	1.4						3.8	2.0	1.4	1.3	1.6	1.3	1.6	
11	Mg (mg/L)	16.5						30.1	21.4	15.2	11.1	12.3	16.6	15.4	
12	Na (mg/L)	13.9						51.3	18.8	16.0	15.8	17.2	17.0	21.2	
13	NH ₃ -N (mg N/L)	0.16						1.20	0.16	0.08	0.12	0.39	0.50	0.21	
14	NO ₂ +NO ₃ (mg N/L)	1.49						0.20	0.67	2.35	5.55	6.86	3.56	1.97	
15	NO ₂ -N (mgN/L)	0.04						0.01	0.01	0.00	0.00	0.01	0.01	0.01	
16	NO ₃ -N (mgN/L)	1.45						0.20	0.66	2.34	5.54	6.85	3.55	1.96	
17	o-PO ₄ -P (mg P/L)	0.099						0.352	0.061	0.438	0.136	0.121	0.994	0.077	
18	SiO ₂ (mg/L)	36.1						307.2	56.6	16.1	15.4	25.6	24.1	18.8	
19	SO ₄ (mg/L)	11.0						61.9	7.7	5.8	12.1	10.7	3.7	12.2	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Winter													
		Nov-Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.5							1.2	2.8	1.5	2.2	1.8	1.8	1.4
2	COD (mg/L)								69.7	22.0	54.8	34.0	29.1	62.6	29.8
3	DO (mg/L)	9.8							7.6	9.4	7.5	8.3	7.5	8.4	7.3
4	DO_SAT% (%)	112							77	91	79	86	82	90	75
5	FCol-MPN (MPN/100mL)	400							120000	438	1063	328	135	95	123
6	Tcol-MPN (MPN/100mL)	600							120000	3925	2201	758	393	500	2330
TRACE & TOXIC															
1	As (µg/L)												0.6	1.3	2.3
2	Cd (µg/L)								0.2			0.0	0.1	0.1	0.1
3	Cr (µg/L)								4.4			2.7	0.6	0.8	1.5
4	Cu (µg/L)								78.9			3.4	0.5	0.5	18.7
5	Hg (µg/L)														
6	Ni (µg/L)								44.5			0.2	1.1	1.6	0.3
7	Pb (µg/L)								0.3			0.9	0.1	0.1	1.3
8	Zn (µg/L)								57.3			5.0	7.5	2.9	20.5
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	100							158	129	139	110	96	96	118
2	HAR_Total (mgCaCO ₃ /L)	169							283	218	203	156	148	165	183
3	Na% (%)	15							28	16	15	18	20	19	20
4	RSC (-)	0.1							0.0	0.1	0.0	0.2	0.3	0.2	0.2
5	SAR (-)	0.5							1.3	0.6	0.5	0.6	0.6	0.6	0.7
PESTICIDES															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	3.283	2.754							5.078	3.997	8.232	9.997	1.557		2.115
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	344	373							331	382	351	309	361	341	469
3	pH_GEN (pH units)	8.0	8.1							8.4	8.5	7.7	7.6	8.1	8.2	8.0
4	Temp (deg C)	22.7	24.3							22.0	22.3	20.7	22.3	25.7	22.0	20.7
5	Turb (NTU)									8.5	0.2	0.8	23.6			
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0							4.2	6.7	0.0	0.0	0.0	10.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	230	198							150	208	172	149	187	170	248
3	B (mg/L)	0.61	0.11							0.19	0.17	0.11	0.19	0.12	0.79	0.87
4	Ca (mg/L)	37	38							38	45	43	37	54	38	62
5	Cl (mg/L)	8.0	10.9							10.9	8.3	9.4	17.1	29.4	50.4	27.0
6	CO ₃ (mg/L)	0.0	0.0							5.1	8.0	0.0	0.0	0.0	12.0	0.0
7	F (mg/L)	0.32	0.46							0.34	0.22	0.47	0.17	0.05	0.36	0.40
8	Fe (mg/L)	0.0	0.0							0.2	0.0	0.3	0.0	0.0	0.3	0.1
9	HCO ₃ (mg/L)	213	241							173	238	210	181	228	183	302
10	K (mg/L)	2.2	1.3							1.2	2.1	1.7	1.5	1.8	1.5	1.9
11	Mg (mg/L)	12.9	20.0							18.1	22.4	14.4	11.4	23.5	20.8	14.8
12	Na (mg/L)	19.3	18.5							17.5	19.5	23.7	16.8	21.2	21.3	25.4
13	NH ₃ -N (mg N/L)	0.22	0.10							0.62	0.02	0.65	0.13	0.31	1.58	0.13
14	NO ₂ +NO ₃ (mg N/L)	0.24	2.78							0.14	0.33	4.09	5.01	5.93	1.81	2.69
15	NO ₂ -N (mgN/L)	0.01	0.05							0.01	0.01	0.00	0.00	0.15	0.03	0.01
16	NO ₃ -N (mgN/L)	0.23	2.73							0.12	0.33	4.09	5.01	5.78	1.78	2.68
17	o-PO ₄ -P (mg P/L)	0.013	0.181							0.023	0.045	0.734	0.199	0.100	0.881	0.218
18	SiO ₂ (mg/L)	43.7	49.8							36.7	24.5	23.4	34.6	29.9	32.5	19.3
19	SO ₄ (mg/L)	5.7	6.4							78.4	8.8	5.9	13.1	14.8	9.5	1.5

Water Quality Seasonal Average for the period: 2004-2018

Station Name : KUMHARI (AGH40R6)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	1.6	1.6							8.9	15.9	1.8	2.1	1.4	1.9	2.0
2	COD (mg/L)									47.1	56.7	37.3	27.7	47.0	102.4	32.0
3	DO (mg/L)	7.1	7.1							5.4	6.0	7.6	6.2	7.4	7.2	7.5
4	DO_SAT% (%)	82	84							63	67	84	72	91	82	84
5	FCol-MPN (MPN/100mL)	100	450							150	233	143	447	130	347	80
6	Tcol-MPN (MPN/100mL)	433	1667							467	533	750	813	233	523	317
TRACE & TOXIC																
1	As (µg/L)									0.6	2.5	4.3	0.9	1.7	0.0	1.5
2	Cd (µg/L)									0.0	1.3	0.1	1.0	0.1	0.0	0.1
3	Cr (µg/L)									0.0	1.2	6.4	0.0	0.7	3.0	1.5
4	Cu (µg/L)									1.8	14.9			1.4	3.0	5.1
5	Hg (µg/L)									0.3	0.1	0.3	0.2			
6	Ni (µg/L)									1.6	6.6	5.0	2.7	0.3	9.0	6.5
7	Pb (µg/L)									16.7	7.0	0.3	12.0	0.5	1.0	6.7
8	Zn (µg/L)									9.1	16.1	13.4	0.0	2.8	22.0	3.0
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	93	95							95	112	108	92	134	95	155
2	HAR_Total (mgCaCO ₃ /L)	147	178							170	205	168	140	233	182	217
3	Na% (%)	22	18							18	17	23	20	17	20	20
4	RSC (-)	0.6	0.4							0.3	0.1	0.2	0.4	0.0	0.0	0.7
5	SAR (-)	0.7	0.6							0.6	0.6	0.8	0.6	0.6	0.7	0.8
PESTICIDES																

HISTORY SHEET

		Water Year	: 2017-2018
Site	: SAKMUR	Code	: AGH30B6
State	: Maharashtra	District	: Chandrapur
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wardha
Sub-Sub Tributary	: -	Local River	: Wardha
Division	: Wainganga Div., Nagpur	Sub-Division	: Wardha SD, Chandrapur
Drainage Area	: 47500 Sq. Km.	Bank	: Left
Latitude	: 19°33'41"	Longitude	: 79°36'48"
	Opening Date	Closing Date	
Gauge	: 23.06.1964		
Discharge	: 01.02.1968		
Sediment	: 01.06.2014		
Water Quality	: 01.06.2014		

Water Quality Datasheet for the period : 2017-2018

Station Name : SAKMUR (AGH30B6)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018
		A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL											
1	Q (cumec)	3.985	336.8	167.5	293.7	123.9	85.51	1.890	36.53	7.082	2.814	0.873
2	Colour_Cod (-)	Clear	Clear	Light Brown	Clear							
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	350	389	589	603	683	684	555	598	558	954	765
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	8.6	7.9	8.2	7.9	8.1	8.3	8.6	8.1	8.1	7.4	8.2
6	Temp (deg C)	27.0	25.0	26.0	25.0	25.0	25.0	23.0	24.0	24.0	25.0	24.0
	CHEMICAL											
1	Alk-Phen (mgCaCO ₃ /L)	12.5	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	208	147	195	201	199	205	177	169	179	187	165
3	B (mg/L)	0.59	0.00	0.11	0.93	0.15	0.57	0.21	0.14	0.07	0.72	0.76
4	Ca (mg/L)	39	26	37	38	46	40	42	48	33	38	43
5	Cl (mg/L)	87.5	19.9	27.8	25.8	37.1	47.4	82.4	76.2	76.2	74.7	101.8
6	CO ₃ (mg/L)	15.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0
7	F (mg/L)	0.62	0.64	1.00	0.89	0.09	0.20	0.00	0.43	0.46	0.43	0.44
8	Fe (mg/L)	0.1	0.2	0.4	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.1
9	HCO ₃ (mg/L)	223	179	238	245	243	250	206	206	218	228	201
10	K (mg/L)	6.4	3.0	4.1	4.0	4.1	3.7	4.9	4.9	2.7	6.1	7.2
11	Mg (mg/L)	30.9	11.8	15.0	16.6	19.3	25.1	20.4	27.4	28.0	34.4	25.7
12	Na (mg/L)	81.3	24.2	31.7	30.1	30.5	38.6	71.6	60.4	56.2	75.7	84.2
13	NH ₃ -N (mg N/L)	0.87	0.62	0.60	0.28	0.19	0.16	0.09	0.32	0.28	0.26	0.27
14	NO ₂ +NO ₃ (mg N/L)	2.04	2.24	2.55	2.27	2.66	1.97	2.04	1.69	2.08	2.14	1.98
15	NO ₂ -N (mgN/L)	0.01	0.03	0.05	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01
16	NO ₃ -N (mgN/L)	2.03	2.21	2.50	2.26	2.64	1.95	2.03	1.68	2.07	2.13	1.97
17	o-PO ₄ P (mg P/L)	4.195	0.572	1.621	0.168	0.613	0.110	0.153	0.146	0.175	0.181	0.336
18	SiO ₂ (mg/L)	28.1	25.4	4.6	24.0	14.8	29.6	21.7	7.9	9.6	8.9	12.5
19	SO ₄ (mg/L)	37.2	18.0	33.4	27.5	45.2	47.0	30.2	40.4	35.7	43.7	171.3

Water Quality Datasheet for the period : 2017-2018

Station Name : SAKMUR (AGH30B6)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018
		A	A	A	A	A	A	A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL											
1	BOD3-27 (mg/L)	2.0	45.0	50.0	4.8	3.2	80.0	2.0	1.3	65.0	10.0	25.0
2	COD (mg/L)	43.3	79.3	62.8	32.3	3.8	85.5	30.9	46.2	86.4	38.8	45.0
3	DO (mg/L)	6.0	4.3	5.0	6.1	6.3	5.3	9.0	8.0	4.9	1.5	3.5
4	DO_SAT% (%)	75	52	62	74	76	64	105	95	58	18	42
5	FCol-MPN (MPN/100mL)	20	20	20	40	40	40	330	500	220	70	270
6	Tcol-MPN (MPN/100mL)	20	140	40	40	70	130	1100	1100	800	500	270
	TRACE & TOXIC											
1	As (µg/L)			2.0				3.6				2.9
2	Cd (µg/L)			0.0				0.1				0.1
3	Cr (µg/L)			10.0				3.7				0.9
4	Cu (µg/L)			3.0				5.4				2.9
5	Ni (µg/L)							5.1				21.2
6	Pb (µg/L)			1.0				2.1				4.1
7	Zn (µg/L)			2.0				27.0				2.6
	CHEMICAL INDICES											
1	HAR_Ca (mgCaCO ₃ /L)	97	66	93	95	115	101	106	120	82	96	108
2	HAR_Total (mgCaCO ₃ /L)	225	115	155	164	196	205	191	234	198	239	215
3	Na% (%)	43	31	30	28	25	29	44	35	38	40	45
4	RSC (-)	0.0	0.7	0.8	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	2.4	1.0	1.1	1.0	1.0	1.2	2.3	1.7	1.7	2.1	2.5
	PESTICIDES											

Water Quality Summary for the period : 2017-2018

Station Name : SAKMUR (AGH30B6)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	331	745.0	0.001	98.90
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	11	954	350	612
3	pH_GEN (pH units)	11	8.6	7.4	8.1
4	Temp (deg C)	11	27.0	23.0	24.8
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	11	12.5	0.0	1.5
2	ALK-TOT (mgCaCO ₃ /L)	11	208	147	185
3	B (mg/L)	11	0.93	0.00	0.39
4	Ca (mg/L)	11	48	26	39
5	Cl (mg/L)	11	101.8	19.9	59.7
6	CO ₃ (mg/L)	11	15.0	0.0	1.8
7	F (mg/L)	11	1.00	0.00	0.47
8	Fe (mg/L)	11	0.4	0.1	0.2
9	HCO ₃ (mg/L)	11	250	179	222
10	K (mg/L)	11	7.2	2.7	4.6
11	Mg (mg/L)	11	34.4	11.8	23.1
12	Na (mg/L)	11	84.2	24.2	53.1
13	NH ₃ -N (mg N/L)	11	0.87	0.09	0.36
14	NO ₂ +NO ₃ (mg N/L)	11	2.66	1.69	2.15
15	NO ₂ -N (mgN/L)	11	0.05	0.01	0.02
16	NO ₃ -N (mgN/L)	11	2.64	1.68	2.13
17	o-PO ₄ -P (mg P/L)	11	4.195	0.110	0.752
18	SiO ₂ (mg/L)	11	29.6	4.6	17
19	SO ₄ (mg/L)	11	171.3	18.0	48.2
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	11	80.0	1.3	26.2
2	COD (mg/L)	11	86.4	3.8	50.4
3	DO (mg/L)	11	9.0	1.5	5.4
4	DO_SAT% (%)	11	105	18	66
5	FCol-MPN (MPN/100mL)	11	500	20	143
6	Tcol-MPN (MPN/100mL)	11	1100	20	383
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	3.6	2.0	2.8
2	Cd ($\mu\text{g}/\text{L}$)	3	0.1	0.0	0.1
3	Cr ($\mu\text{g}/\text{L}$)	3	10.0	0.9	4.9
4	Cu ($\mu\text{g}/\text{L}$)	3	5.4	2.9	3.8
5	Ni ($\mu\text{g}/\text{L}$)	2	21.2	5.1	13.1
6	Pb ($\mu\text{g}/\text{L}$)	3	4.1	1.0	2.4
7	Zn ($\mu\text{g}/\text{L}$)	3	27.0	2.0	10.5
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	11	120	66	98
2	HAR_Total (mgCaCO ₃ /L)	11	239	115	194
3	Na% (%)	11	45	25	35
4	RSC (-)	11	0.8	0.0	0.2
5	SAR (-)	11	2.5	1.0	1.6
PESTICIDES					

Water Quality Seasonal Average for the period: 2014-2018

Station Name : SAKMUR (AGH30B6)

Local River : Wardha

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)	761.5	141.3		185.2	34.79	30.83		32.75	11.98	8.813		1.843
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	566	486	365	523	500	537	523	599	680	548	575	860
3	pH_GEN (pH units)	7.8	8.2	8.2	8.1	8.2	8.3	8.4	8.3	8.2	8.3	8.2	7.8
4	Temp (deg C)	28.4	25.7	25.8	25.6	25.8	26.9	25.0	24.0	25.7	26.0	25.7	24.5
5	Turb (NTU)	7.8				0.8				1.2			
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	1.2	3.1	3.0	2.5	2.9	3.2	9.0	1.0	2.3	6.0	8.3	0.0
2	ALK-TOT (mgCaCO ₃ /L)	209	158	155	190	214	196	207	182	164	211	168	176
3	B (mg/L)	0.22	0.25	0.73	0.36	0.40	0.36	0.36	0.25	0.48	0.11	0.39	0.74
4	Ca (mg/L)	41	38	37	37	43	40	45	41	33	70	30	41
5	Cl (mg/L)	38.8	31.4	20.4	39.6	35.6	35.3	31.3	70.5	46.8	49.3	70.9	88.2
6	CO ₃ (mg/L)	1.5	3.7	3.6	3.0	3.5	3.9	10.8	1.2	2.7	7.2	10.0	0.0
7	F (mg/L)	0.87	0.29	0.22	0.65	0.30	0.33	0.28	0.27	0.50	0.20	0.95	0.43
8	Fe (mg/L)	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.1	0.0	0.2	0.1
9	HCO ₃ (mg/L)	252	185	182	226	254	231	231	220	195	243	184	214
10	K (mg/L)	4.9	3.5	2.7	4.3	2.8	4.0	2.4	4.0	5.2	4.7	3.9	6.6
11	Mg (mg/L)	24.3	16.1	14.7	18.7	23.8	24.3	23.4	25.2	23.7	24.1	27.5	30.0
12	Na (mg/L)	54.0	33.0	21.3	39.6	40.8	43.5	36.9	56.7	56.7	59.6	41.7	80.0
13	NH ₃ -N (mg N/L)	0.31	0.08	0.19	0.51	0.06	0.18	0.46	0.21	0.10	0.24	0.73	0.27
14	NO ₂ +NO ₃ (mg N/L)	1.79	9.91	1.91	2.35	5.16	6.74	2.73	1.94	6.07	4.99	1.06	2.06
15	NO ₂ -N (mgN/L)	0.00	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.14	0.01	0.01
16	NO ₃ -N (mgN/L)	1.79	9.89	1.90	2.33	5.16	6.72	2.72	1.93	6.07	4.85	1.04	2.05
17	o-PO ₄ -P (mg P/L)	0.171	0.115	0.095	1.434	0.157	0.100	0.916	0.146	0.134	0.098	0.458	0.258
18	SiO ₂ (mg/L)	17.0	19.3	20.5	19.4	11.1	21.1	22.2	17.2	32.4	20.4	22.5	10.7

Water Quality Seasonal Average for the period: 2014-2018

Station Name : SAKMUR (AGH30B6)

Local River : Wardha

Division : Wainganga Div., Nagpur

Sub-Division : Wardha SD, Chandrapur

River Water

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
19	SO4 (mg/L)	15.0	24.8	13.5	32.3	34.2	43.4	45.3	38.3	45.8	37.3	36.6	107.5
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	4.8	13.1	7.2	21.0	2.0	1.5	2.3	37.1	2.7	28.5	16.5	17.5
2	COD (mg/L)	33.6	101.7	34.4	44.3	30.5	38.0	104.4	62.3	27.3	43.5	106.6	41.9
3	DO (mg/L)	5.9	5.7	6.0	5.5	7.3	6.3	7.3	6.8	6.3	5.4	5.0	2.5
4	DO_SAT% (%)	76	70	73	68	89	79	88	81	77	67	61	30
5	FCol-MPN (MPN/100mL)	516	42	960	28	80	53	70	273	70	70	357	170
6	Tcol-MPN (MPN/100mL)	1438	270	4318	62	215	270	858	783	117	295	713	385
TRACE & TOXIC													
1	As (µg/L)				1.8	2.0		0.9	1.8	3.6	0.9	2.5	1.0
2	Cd (µg/L)				0.1	0.0	0.3	0.5	0.2	0.1	1.0	0.2	0.0
3	Cr (µg/L)				39.1	10.0	3.9	0.3	0.8	3.7	6.0	1.3	5.0
4	Cu (µg/L)				1.3	3.0	7.2	1.7	0.8	5.3		2.4	4.0
5	Hg (µg/L)										0.0		
6	Ni (µg/L)				2.8		0.2	0.4	1.4	5.1	5.7	1.9	12.0
7	Pb (µg/L)				0.5	1.0	1.0	2.4	2.8	2.1	15.0	1.8	0.0
8	Zn (µg/L)				1.2	2.0	4.0	6.0	2.9	27.0	22.0	4.5	6.0
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO3/L)	102	96	93	93	108	100	113	102	83	175	74	102
2	HAR_Total (mgCaCO3/L)	203	163	154	171	207	202	211	207	182	276	189	227
3	Na% (%)	33	29	22	31	30	32	28	37	40	32	31	43
4	RSC (-)	0.3	0.1	0.1	0.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.6	1.1	0.7	1.3	1.2	1.3	1.1	1.7	1.8	1.6	1.3	2.3
PESTICIDES													

HISTORY SHEET

		Water Year	: 2017-2018
Site	: WAIRAGARH	Code	: AGH46D4
State	: Maharashtra	District	Gadchiroli
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wainganga
Sub-Sub Tributary	: Khobragarhi	Local River	: Khobragarhi
Division	: Wainganga Div., Nagpur	Sub-Division	: L Wainganga SD, Chandrapur
Drainage Area	: 2600 Sq. Km.	Bank	: Right
Latitude	: 20°25'19"	Longitude	: 80°05'30"
	Opening Date	Closing Date	
Gauge	: 18.07.1992		
Discharge	: 07.08.1992		
Sediment	:		
Water Quality	: 01.10.2014		

Water Quality Datasheet for the period : 2017-2018

Station Name : WAIRAGARH (AGH46D4)

Local River : Khobragarhi

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water Analysis

S.No	Parameters	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018
		A	A	A	A	A	A	A
PHYSICAL								
1	Q (cumec)		17.63	11.88	25.76	5.074	0.488	0.273
2	Colour_Cod (-)	Light Brown	Clear	Light Brown	Clear	Clear	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	90	199	171	144	191	170	121
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	7.6	7.8	7.6	7.8	8.1	7.5	7.4
6	Temp (deg C)	28.0	26.0	29.0	29.0	26.0	19.0	19.0
CHEMICAL								
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	67	90	66	109	82	77	52
3	B (mg/L)	0.00	0.19	0.57	0.16	0.17	0.21	0.17
4	Ca (mg/L)	21	14	17	19	24	18	15
5	Cl (mg/L)	9.9	6.0	17.7	6.2	14.4	10.3	12.4
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.26	0.22	0.42	0.00	0.00	0.00	0.14
8	Fe (mg/L)	0.6	0.4	0.2	0.6	0.2	0.2	0.1
9	HCO ₃ (mg/L)	82	110	81	133	100	94	64
10	K (mg/L)	5.8	2.5	2.0	1.9	1.8	2.0	1.9
11	Mg (mg/L)	13.5	4.3	1.6	14.4	2.9	7.0	1.2
12	Na (mg/L)	17.6	16.0	14.4	10.4	13.5	17.3	13.5
13	NH ₃ -N (mg N/L)	0.25	0.82	0.26	0.19	0.12	0.09	0.28
14	NO ₂ +NO ₃ (mg N/L)	2.92	2.67	1.64	8.03	1.29	1.43	1.15
15	NO ₂ -N (mgN/L)	0.05	0.10	0.01	0.03	0.01	0.01	0.01
16	NO ₃ -N (mgN/L)	2.87	2.57	1.63	8.00	1.28	1.42	1.14
17	o-PO ₄ -P (mg P/L)	1.071	1.183	0.143	0.112	0.098	0.069	0.147
18	SiO ₂ (mg/L)	18.5	13.6	18.2	17.4	24.3	10.3	11.4
19	SO ₄ (mg/L)	37.9	2.0	2.2	10.9	1.8	3.2	13.8

Water Quality Datasheet for the period : 2017-2018

Station Name : WAIRAGARH (AGH46D4)

Local River : Khobragarhi

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water Analysis

S.No	Parameters	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018
		A	A	A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL							
1	BOD3-27 (mg/L)	2.4	1.9	1.2	1.3	1.2	1.6	1.2
2	COD (mg/L)	62.5	2.3	32.5	10.7	50.6	26.5	57.7
3	DO (mg/L)	6.5	6.3	6.9	6.7	6.6	7.6	7.5
4	DO_SAT% (%)	83	78	90	87	81	82	81
5	FCol-MPN (MPN/100mL)	800	40	70	110	40	20	40
6	Tcol-MPN (MPN/100mL)	16000	80	90	800	40	80	130
	TRACE & TOXIC							
1	As (µg/L)		2.0				4.2	
2	Cd (µg/L)		0.0				0.0	
3	Cr (µg/L)		10.0				3.6	
4	Cu (µg/L)		2.0				4.0	
5	Ni (µg/L)						4.5	
6	Pb (µg/L)		1.0				2.1	
7	Zn (µg/L)		1.0				1.5	
	CHEMICAL INDICES							
1	HAR_Ca (mgCaCO ₃ /L)	53	35	42	48	60	46	38
2	HAR_Total (mgCaCO ₃ /L)	109	53	49	108	72	75	43
3	Na% (%)	25	38	38	17	28	33	39
4	RSC (-)	0.0	0.7	0.4	0.0	0.2	0.0	0.2
5	SAR (-)	0.7	1.0	0.9	0.4	0.7	0.9	0.9
	PESTICIDES							

Water Quality Summary for the period : 2017-2018

Station Name : WAIRAGARH (AGH46D4)

Division : Wainganga Div., Nagpur

Local River : Khobragarhi

Sub-Division : L Wainganga SD, Chandrapur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	185	656.0	0.143	26.25
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	7	199	90	155
3	pH_GEN (pH units)	7	8.1	7.4	7.7
4	Temp (deg C)	7	29.0	19.0	25.1
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	7	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	7	109	52	78
3	B (mg/L)	7	0.57	0.00	0.21
4	Ca (mg/L)	7	24	14	18
5	Cl (mg/L)	7	17.7	6.0	11
6	CO ₃ (mg/L)	7	0.0	0.0	0
7	F (mg/L)	7	0.42	0.00	0.15
8	Fe (mg/L)	7	0.6	0.1	0.3
9	HCO ₃ (mg/L)	7	133	64	95
10	K (mg/L)	7	5.8	1.8	2.5
11	Mg (mg/L)	7	14.4	1.2	6.4
12	Na (mg/L)	7	17.6	10.4	14.6
13	NH ₃ -N (mg N/L)	7	0.82	0.09	0.29
14	NO ₂ +NO ₃ (mg N/L)	7	8.03	1.15	2.73
15	NO ₂ -N (mgN/L)	7	0.10	0.01	0.03
16	NO ₃ -N (mgN/L)	7	8.00	1.14	2.7
17	o-PO ₄ -P (mg P/L)	7	1.183	0.069	0.403
18	SiO ₂ (mg/L)	7	24.3	10.3	16.2
19	SO ₄ (mg/L)	7	37.9	1.8	10.3
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	7	2.4	1.2	1.5
2	COD (mg/L)	7	62.5	2.3	34.7
3	DO (mg/L)	7	7.6	6.3	6.9
4	DO_SAT% (%)	7	90	78	83
5	FCol-MPN (MPN/100mL)	7	800	20	160
6	Tcol-MPN (MPN/100mL)	7	16000	40	2460
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	2	4.2	2.0	3.1
2	Cd ($\mu\text{g}/\text{L}$)	2	0.0	0.0	0
3	Cr ($\mu\text{g}/\text{L}$)	2	10.0	3.6	6.8
4	Cu ($\mu\text{g}/\text{L}$)	2	4.0	2.0	3
5	Ni ($\mu\text{g}/\text{L}$)	1	4.5	4.5	4.5
6	Pb ($\mu\text{g}/\text{L}$)	2	2.1	1.0	1.5
7	Zn ($\mu\text{g}/\text{L}$)	2	1.5	1.0	1.3
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	7	60	35	46
2	HAR_Total (mgCaCO ₃ /L)	7	109	43	73
3	Na% (%)	7	39	17	31
4	RSC (-)	7	0.7	0.0	0.2
5	SAR (-)	7	1.0	0.4	0.8
PESTICIDES					

Water Quality Seasonal Average for the period: 2014-2018

Station Name : WAIRAGARH (AGH46D4)

Local River : Khobragarhi

River Water

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)	110.1	18.46		18.42	1.933	1.079		1.945				
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	80	127	100	151	124	144	128	161				
3	pH_GEN (pH units)	7.3	7.8	7.6	7.7	7.7	8.2	8.0	7.7				
4	Temp (deg C)	26.8	27.5	28.6	28.0	19.0	26.5	22.3	21.3				
5	Turb (NTU)	86.5				1.7							
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0				
2	ALK-TOT (mgCaCO ₃ /L)	55	66	47	83	71	74	93	70				
3	B (mg/L)	0.20	0.21	0.43	0.23	0.25	0.43	0.37	0.18				
4	Ca (mg/L)	17	19	17	18	21	22	16	19				
5	Cl (mg/L)	8.4	10.4	9.2	9.9	6.3	9.9	8.6	12.4				
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0				
7	F (mg/L)	0.39	0.06	0.08	0.23	0.13	0.07	0.08	0.05				
8	Fe (mg/L)	0.9	0.2	0.5	0.4	0.0	0.1	0.1	0.1				
9	HCO ₃ (mg/L)	67	81	57	101	86	90	108	86				
10	K (mg/L)	1.6	1.8	2.3	3.0	1.3	2.0	1.5	1.9				
11	Mg (mg/L)	2.4	9.0	2.1	8.5	4.3	3.7	8.3	3.7				
12	Na (mg/L)	10.6	9.5	11.3	14.6	11.2	11.9	14.0	14.7				
13	NH ₃ -N (mg N/L)	0.14	0.07	0.04	0.38	0.32	0.07	0.26	0.17				
14	NO ₂ +NO ₃ (mg N/L)	4.25	5.91	2.68	3.81	4.14	3.41	1.24	1.29				
15	NO ₂ -N (mgN/L)	0.02	0.02	0.02	0.05	0.01	0.01	0.01	0.01				
16	NO ₃ -N (mgN/L)	4.23	5.89	2.66	3.77	4.14	3.40	1.23	1.28				
17	o-PO ₄ -P (mg P/L)	0.159	0.225	0.146	0.627	0.152	0.095	0.456	0.105				
18	SiO ₂ (mg/L)	19.4	21.1	10.8	16.9	5.2	17.5	25.3	15.3				
19	SO ₄ (mg/L)	11.1	11.2	6.8	13.2	6.7	9.4	1.2	6.3				

Water Quality Seasonal Average for the period: 2014-2018

Station Name : WAIRAGARH (AGH46D4)

Local River : Khobragarhi

Division : Wainganga Div., Nagpur

Sub-Division : L Wainganga SD, Chandrapur

River Water

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	2.3	1.3	7.7	1.7	2.1	2.7	1.4	1.3				
2	COD (mg/L)	34.0	115.4	26.4	27.0	38.5	51.2	123.6	44.9				
3	DO (mg/L)	6.4	6.4	5.3	6.6	7.3	7.3	8.2	7.2				
4	DO_SAT% (%)	80	81	69	84	79	91	94	81				
5	FCol-MPN (MPN/100mL)	125	108	553	255	85	95	167	33				
6	Tcol-MPN (MPN/100mL)	510	4315	5273	4243	215	720	677	83				
TRACE & TOXIC													
1	As (µg/L)			0.3	2.0			3.2	4.2				
2	Cd (µg/L)			0.1	0.0	0.0		0.1	0.0				
3	Cr (µg/L)			25.9	10.0	0.5		1.7	3.6				
4	Cu (µg/L)			0.9	2.0	13.7		1.2	4.0				
5	Ni (µg/L)			2.4		0.5		1.6	4.5				
6	Pb (µg/L)			0.8	1.0	0.4		1.5	2.1				
7	Zn (µg/L)			0.2	1.0	5.0		91.3	1.5				
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	42	49	42	45	53	56	40	48				
2	HAR_Total (mgCaCO ₃ /L)	52	86	51	80	71	72	74	63				
3	Na% (%)	30	20	33	30	26	26	29	33				
4	RSC (-)	0.2	0.0	0.0	0.3	0.1	0.1	0.4	0.1				
5	SAR (-)	0.6	0.5	0.7	0.8	0.6	0.6	0.7	0.8				
PESTICIDES													

HISTORY SHEET

		Water Year	: 2017-2018
Site	: RAMAKONA	Code	: AGH4BQ3
State	: Madhya Pradesh	District	: Chhindwara
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wainganga
Sub-Sub Tributary	: Khanan	Local River	: Khanan
Division	: Wainganga Div., Nagpur	Sub-Division	: Upper Wainganga SD, Nagpur
Drainage Area	: 2500 Sq. Km.	Bank	: Left
Latitude	: 21°43'12"	Longitude	: 78°49'27"
	Opening Date	Closing Date	
Gauge	: 13.02.1986		
Discharge	: 21.11.1986		
Sediment	: 12.11.2014		
Water Quality	: 01.06.2014		

Water Quality Datasheet for the period : 2017-2018

Station Name : RAMAKONA (AGH4BQ3)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Analysis

S.No	Parameters	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017
		A	A	A	A	A	A
	PHYSICAL						
1	Q (cumec)	9.098	5.117	5.531	9.445	3.169	0.361
2	Colour_Cod (-)	Light Brown	Brown	Brown	Clear	Light Brown	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	372	467	473	570	517	501
4	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	7.8	8.2	8.0	8.2	8.2	8.2
6	Temp (deg C)	22.0	22.0	21.0	23.0	19.0	12.0
	CHEMICAL						
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	156	165	165	205	187	215
3	B (mg/L)	0.02	0.14	0.43	0.46	0.51	0.32
4	Ca (mg/L)	42	39	37	45	48	58
5	Cl (mg/L)	9.9	13.9	15.9	14.4	18.5	24.7
6	CO ₃ (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.81	1.14	0.71	1.90	0.01	0.20
8	Fe (mg/L)	0.7	0.9	0.1	0.7	0.1	0.2
9	HCO ₃ (mg/L)	190	201	201	250	228	262
10	K (mg/L)	3.2	2.4	2.6	2.6	2.3	2.7
11	Mg (mg/L)	5.4	9.6	10.2	14.4	17.5	21.6
12	Na (mg/L)	25.0	25.5	22.9	21.0	26.0	37.8
13	NH ₃ -N (mg N/L)	0.21	0.74	0.35	0.11	0.15	0.11
14	NO ₂ +NO ₃ (mg N/L)	3.12	3.46	2.17	0.44	2.47	1.93
15	NO ₂ -N (mgN/L)	0.03	0.03	0.01	0.10	0.04	0.03
16	NO ₃ -N (mgN/L)	3.09	3.43	2.16	0.34	2.43	1.90
17	o-PO ₄ -P (mg P/L)	0.911	1.867	0.164	0.147	0.157	0.051
18	SiO ₂ (mg/L)	24.1	7.8	31.0	27.9	35.6	29.1
19	SO ₄ (mg/L)	19.1	30.8	31.4	38.3	43.4	12.2

Water Quality Datasheet for the period : 2017-2018

Station Name : RAMAKONA (AGH4BQ3)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Analysis

S.No	Parameters	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017
		A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL							
1	BOD3-27 (mg/L)	1.9	2.2	2.3	1.0	1.2	1.5
2	COD (mg/L)	35.9	22.3	26.9	12.9	34.3	15.1
3	DO (mg/L)	6.4	6.2	7.8	7.1	7.8	8.2
4	DO_SAT% (%)	73	71	87	83	84	76
5	FCol-MPN (MPN/100mL)	20	80	20	340	300	1100
6	Tcol-MPN (MPN/100mL)	340	110	20	16000	5000	1400
TRACE & TOXIC							
1	As (µg/L)		1.0				2.8
2	Cd (µg/L)		0.0				0.0
3	Cr (µg/L)		11.0				1.8
4	Cu (µg/L)		49.0				5.4
5	Ni (µg/L)						3.8
6	Pb (µg/L)		1.0				1.4
7	Zn (µg/L)		2.0				1.0
CHEMICAL INDICES							
1	HAR_Ca (mgCaCO ₃ /L)	106	97	93	113	120	144
2	HAR_Total (mgCaCO ₃ /L)	128	137	135	173	193	234
3	Na% (%)	29	28	27	21	23	26
4	RSC (-)	0.6	0.6	0.6	0.7	0.0	0.0
5	SAR (-)	1.0	0.9	0.9	0.7	0.8	1.1
PESTICIDES							

Water Quality Summary for the period : 2017-2018

Station Name : RAMAKONA (AGH4BQ3)

Division : Wainganga Div., Nagpur

Local River : Khanan

Sub-Division : Upper Wainganga SD, Nagpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	178	230.8	0.145	14.46
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	6	570	372	483
3	pH_GEN (pH units)	6	8.2	7.8	8.1
4	Temp (deg C)	6	23.0	12.0	19.8
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	6	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	6	215	156	182
3	B (mg/L)	6	0.51	0.02	0.31
4	Ca (mg/L)	6	58	37	45
5	Cl (mg/L)	6	24.7	9.9	16.2
6	CO ₃ (mg/L)	6	0.0	0.0	0
7	F (mg/L)	6	1.90	0.01	0.79
8	Fe (mg/L)	6	0.9	0.1	0.4
9	HCO ₃ (mg/L)	6	262	190	222
10	K (mg/L)	6	3.2	2.3	2.6
11	Mg (mg/L)	6	21.6	5.4	13.1
12	Na (mg/L)	6	37.8	21.0	26.4
13	NH ₃ -N (mg N/L)	6	0.74	0.11	0.28
14	NO ₂ +NO ₃ (mg N/L)	6	3.46	0.44	2.27
15	NO ₂ -N (mgN/L)	6	0.10	0.01	0.04
16	NO ₃ -N (mgN/L)	6	3.43	0.34	2.22
17	o-PO ₄ -P (mg P/L)	6	1.867	0.051	0.55
18	SiO ₂ (mg/L)	6	35.6	7.8	25.9
19	SO ₄ (mg/L)	6	43.4	12.2	29.2
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	6	2.3	1.0	1.7
2	COD (mg/L)	6	35.9	12.9	24.6
3	DO (mg/L)	6	8.2	6.2	7.3
4	DO_SAT% (%)	6	87	71	79
5	FCol-MPN (MPN/100mL)	6	1100	20	310
6	Tcol-MPN (MPN/100mL)	6	16000	20	3812
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	2	2.8	1.0	1.9
2	Cd ($\mu\text{g}/\text{L}$)	2	0.0	0.0	0
3	Cr ($\mu\text{g}/\text{L}$)	2	11.0	1.8	6.4
4	Cu ($\mu\text{g}/\text{L}$)	2	49.0	5.4	27.2
5	Ni ($\mu\text{g}/\text{L}$)	1	3.8	3.8	3.8
6	Pb ($\mu\text{g}/\text{L}$)	2	1.4	1.0	1.2
7	Zn ($\mu\text{g}/\text{L}$)	2	2.0	1.0	1.5
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	6	144	93	112
2	HAR_Total (mgCaCO ₃ /L)	6	234	128	167
3	Na% (%)	6	29	21	26
4	RSC (-)	6	0.7	0.0	0.4
5	SAR (-)	6	1.1	0.7	0.9
PESTICIDES					

Water Quality Seasonal Average for the period: 2014-2018

Station Name : RAMAKONA (AGH4BQ3)

Local River : Khanan

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)	38.46	23.04		7.298	1.615	1.732		1.765	1.002	0.066		
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	442	352	298	471	484	534	516	509	467	564		
3	pH_GEN (pH units)	7.8	8.1	8.2	8.0	8.0	8.1	8.4	8.2	8.0	8.1		
4	Temp (deg C)	23.6	23.8	24.0	22.0	16.0	17.3	15.8	15.5	19.3	20.5		
5	Turb (NTU)	22.6				0.5				0.5			
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.8	0.0	4.5	0.0	1.0	1.3	6.2	0.0	0.0	0.0		
2	ALK-TOT (mgCaCO ₃ /L)	193	161	135	173	228	189	227	201	206	221		
3	B (mg/L)	0.29	0.14	0.90	0.26	0.43	0.33	0.58	0.41	0.24	0.13		
4	Ca (mg/L)	48	43	33	41	56	49	52	53	47	53		
5	Cl (mg/L)	14.9	15.9	9.0	13.5	14.2	16.9	16.4	21.6	12.2	16.5		
6	CO ₃ (mg/L)	1.0	0.0	5.4	0.0	1.2	1.6	7.5	0.0	0.0	0.0		
7	F (mg/L)	0.73	0.21	0.23	1.14	0.44	0.64	0.41	0.11	0.34	0.44		
8	Fe (mg/L)	0.1	0.1	0.1	0.6	0.0	0.0	0.0	0.1	0.1	0.1		
9	HCO ₃ (mg/L)	233	196	154	211	276	228	261	245	252	269		
10	K (mg/L)	2.1	2.0	2.6	2.7	1.7	2.0	2.1	2.5	2.0	2.1		
11	Mg (mg/L)	15.7	15.7	12.3	9.9	16.4	22.9	22.9	19.5	16.4	16.8		
12	Na (mg/L)	27.9	18.0	17.7	23.6	26.5	29.9	33.3	31.9	25.8	41.8		
13	NH ₃ -N (mg N/L)	0.35	0.08	0.24	0.35	0.05	0.15	0.40	0.13	0.05	0.17		
14	NO ₂ +NO ₃ (mg N/L)	5.03	9.07	2.25	2.30	8.55	10.37	2.05	2.20	8.15	5.95		
15	NO ₂ -N (mgN/L)	0.01	0.01	0.01	0.04	0.01	0.05	0.02	0.03	0.00	0.15		
16	NO ₃ -N (mgN/L)	5.02	9.07	2.24	2.25	8.54	10.32	2.03	2.17	8.15	5.80		
17	o-PO ₄ -P (mg P/L)	0.163	0.070	0.128	0.772	0.153	0.092	1.897	0.104	0.165	0.104		
18	SiO ₂ (mg/L)	19.5	28.3	22.9	22.7	21.0	33.9	33.2	32.3	41.1	29.6		
19	SO ₄ (mg/L)	10.4	25.1	13.2	29.9	16.4	54.0	29.4	27.8	23.1	21.2		

Water Quality Seasonal Average for the period: 2014-2018

Station Name : RAMAKONA (AGH4BQ3)

Local River : Khanan

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	3.0	3.8	9.4	1.8	8.4	2.5	1.9	1.4	2.2	4.5		
2	COD (mg/L)	26.2	122.9	40.6	24.5	34.0	34.5	86.8	24.7	35.0	55.9		
3	DO (mg/L)	7.8	6.2	4.6	6.9	6.7	8.1	6.8	8.0	7.7	8.3		
4	DO_SAT% (%)	92	74	54	79	68	85	68	80	83	92		
5	FCol-MPN (MPN/100mL)	110	78	4378	115	63	68	93	700	63	45		
6	Tcol-MPN (MPN/100mL)	634	4265	10275	4118	175	308	318	3200	153	105		
TRACE & TOXIC													
1	As (µg/L)				2.2	1.0		1.3	1.5	2.8	0.8	1.4	
2	Cd (µg/L)				0.2	0.0	0.0	0.2	0.0	0.0	1.0	0.2	
3	Cr (µg/L)				3.3	11.0	2.5	0.6	0.6	1.8	5.4	1.3	
4	Cu (µg/L)				8.2	49.0	16.4	0.6	1.9	5.4		2.3	
5	Hg (µg/L)										0.0		
6	Ni (µg/L)				2.1		0.1	0.3	1.6	3.8	3.6	0.9	
7	Pb (µg/L)				0.2	1.0	0.8	1.8	7.0	1.4	14.0	1.3	
8	Zn (µg/L)				2.1	2.0	5.0	7.4		1.0	1.0	3.6	
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	119	108	83	102	141	122	130	132	118	133		
2	HAR_Total (mgCaCO ₃ /L)	184	173	134	143	209	217	226	213	186	204		
3	Na% (%)	25	18	22	26	22	22	24	24	23	33		
4	RSC (-)	0.3	0.0	0.1	0.6	0.4	0.0	0.3	0.0	0.4	0.5		
5	SAR (-)	0.9	0.6	0.7	0.9	0.8	0.9	1.0	0.9	0.8	1.3		
PESTICIDES													

HISTORY SHEET

		Water Year	: 2017-2018
Site	: KEOLARI	Code	: AGH40V3
State	: Madhya Pradesh	District	Seoni
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pranhita	Sub Tributary	: Wainganga
Sub-Sub Tributary	: -	Local River	: Wainganga
Division	: Wainganga Div., Nagpur	Sub-Division	: Upper Wainganga SD, Nagpur
Drainage Area	: 2970 Sq. Km.	Bank	: Right
Latitude	: 22°22'50"	Longitude	: 79°54'00"
	Opening Date	Closing Date	
Gauge	: 27.11.1986		
Discharge	: 29.06.1987		
Sediment	:		
Water Quality	: 01.06.2014		

Water Quality Datasheet for the period : 2017-2018

Station Name : KEOLARI (AGH40V3)

Local River : Wainganga

River Water Analysis

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
PHYSICAL													
1 Q (cumec)		33.17	28.71	11.21	6.510	6.241	5.845	9.488	2.996	6.766	1.200	1.072	
2 Colour_Cod (-)	Clear	Brown	Light Brown	Brown	Clear								
3 EC_GEN ($\mu\text{mho}/\text{cm}$)	426	319	561	453	580	437	370	355	343	506	360	367	
4 Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	
5 pH_GEN (pH units)	8.2	8.0	8.2	8.1	8.3	8.6	8.1	8.3	8.2	7.9	8.5	8.0	
6 Temp (deg C)	27.0	25.0	26.0	26.0	24.0	22.0	18.0	17.0	15.0	21.0	23.0	27.0	
CHEMICAL													
1 Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	0.0	0.0	12.0	5.8	0.0	6.0	0.0	0.0	4.0	0.0	
2 ALK-TOT (mgCaCO ₃ /L)	191	150	234	190	222	166	169	167	191	201	191	211	
3 B (mg/L)	0.36	0.28	0.80	0.81	0.90	0.56	0.22	0.24	0.11	0.59	0.81	1.51	
4 Ca (mg/L)	33	40	47	39	49	36	51	52	49	44	33	49	
5 Cl (mg/L)	17.9	13.9	13.9	11.9	14.4	20.6	24.7	18.5	18.5	14.3	23.9	22.3	
6 CO ₃ (mg/L)	0.0	0.0	0.0	0.0	14.4	7.0	0.0	7.2	0.0	0.0	4.8	0.0	
7 F (mg/L)	0.35	0.40	0.69	0.41	0.00	0.02	0.00	0.32	0.36	0.33	0.39	0.40	
8 Fe (mg/L)	0.1	0.4	0.3	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.1	
9 HCO ₃ (mg/L)	233	183	285	232	242	189	206	189	233	245	223	257	
10 K (mg/L)	2.7	2.3	1.6	1.6	1.9	2.0	1.7	1.7	1.5	1.9	1.7	2.7	
11 Mg (mg/L)	20.4	1.6	15.5	10.7	18.8	18.1	15.7	12.2	17.5	17.5	21.6	14.0	
12 Na (mg/L)	28.5	18.0	21.2	18.0	21.0	18.5	21.2	18.9	16.8	20.3	23.8	25.8	
13 NH ₃ -N (mg N/L)	0.79	0.53	0.82	0.34	0.49	0.20	0.11	0.35	0.34	0.22	0.26	0.14	
14 NO ₂ +NO ₃ (mg N/L)	1.36	2.05	2.82	1.89	0.58	2.18	1.95	1.65	1.94	2.14	1.58	7.70	
15 NO ₂ -N (mgN/L)	0.01	0.04	0.06	0.01	0.06	0.03	0.01	0.03	0.02	0.01	0.02	0.01	
16 NO ₃ -N (mgN/L)	1.35	2.00	2.76	1.88	0.52	2.15	1.94	1.62	1.92	2.13	1.56	7.70	
17 o-PO ₄ -P (mg P/L)	1.456	0.653	1.468	0.192	0.177	0.102	0.039	0.142	0.087	0.144	0.377	0.285	
18 SiO ₂ (mg/L)	37.2	21.7	11.5	30.8	33.3	35.1	30.8	12.9	16.9	21.5	19.8	20.6	
19 SO ₄ (mg/L)	9.2	1.2	7.4	2.2	1.0	3.6	4.6	26.2	3.5	5.0	2.6	1.9	

Water Quality Datasheet for the period : 2017-2018

Station Name : KEOLARI (AGH40V3)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water Analysis

S.No	Parameters	01.06.2017	03.07.2017	01.08.2017	04.09.2017	03.10.2017	01.11.2017	04.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	4.7	6.3	4.9	40.0	1.5	2.8	1.5	30.0	1.8	6.4	6.7	3.9
2	COD (mg/L)	92.3	46.4	7.8	58.3	33.1	30.0	6.8	61.6	88.7	41.0	51.2	34.6
3	DO (mg/L)	7.9	6.8	8.6	4.3	6.4	9.3	7.0	0.0	9.7	8.6	13.4	7.0
4	DO_SAT% (%)	99	82	106	53	76	106	74	0	96	96	156	88
5	FCol-MPN (MPN/100mL)	220	170	20	20	40	230	170	130	20	20	340	110
6	Tcol-MPN (MPN/100mL)	270	3500	40	20	90	2400	5000	500	130	20	340	110
TRACE & TOXIC													
1	As (µg/L)			1.0				3.3					1.3
2	Cd (µg/L)			0.0				0.1					0.1
3	Cr (µg/L)			10.0				16.0					1.4
4	Cu (µg/L)			3.0				6.8					3.0
5	Ni (µg/L)							10.1					7.7
6	Pb (µg/L)			1.0				9.0					1.6
7	Zn (µg/L)			0.0				1.1					4.0
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	83	99	117	97	122	91	127	130	122	110	82	122
2	HAR_Total (mgCaCO ₃ /L)	168	106	181	142	200	166	193	181	195	183	171	181
3	Na% (%)	27	27	20	22	18	19	19	18	16	19	23	23
4	RSC (-)	0.5	0.9	1.1	1.0	0.5	0.0	0.0	0.0	0.0	0.4	0.4	0.6
5	SAR (-)	1.0	0.8	0.7	0.7	0.6	0.6	0.7	0.6	0.5	0.7	0.8	0.8
PESTICIDES													

Water Quality Summary for the period : 2017-2018

Station Name : KEOLARI (AGH40V3)

Division : Wainganga Div., Nagpur

Local River : Wainganga

Sub-Division : Upper Wainganga SD, Nagpur

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	337	126.9	0.597	8.534
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	12	580	319	423
3	pH_GEN (pH units)	12	8.6	7.9	8.2
4	Temp (deg C)	12	27.0	15.0	22.6
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	12	12.0	0.0	2.3
2	ALK-TOT (mgCaCO ₃ /L)	12	234	150	190
3	B (mg/L)	12	1.51	0.11	0.6
4	Ca (mg/L)	12	52	33	43
5	Cl (mg/L)	12	24.7	11.9	17.9
6	CO ₃ (mg/L)	12	14.4	0.0	2.8
7	F (mg/L)	12	0.69	0.00	0.31
8	Fe (mg/L)	12	0.4	0.0	0.1
9	HCO ₃ (mg/L)	12	285	183	226
10	K (mg/L)	12	2.7	1.5	1.9
11	Mg (mg/L)	12	21.6	1.6	15.3
12	Na (mg/L)	12	28.5	16.8	21
13	NH ₃ -N (mg N/L)	12	0.82	0.11	0.38
14	NO ₂ +NO ₃ (mg N/L)	12	7.70	0.58	2.32
15	NO ₂ -N (mgN/L)	12	0.06	0.01	0.03
16	NO ₃ -N (mgN/L)	12	7.70	0.52	2.29
17	$\text{o-PO}_4\text{-P}$ (mg P/L)	12	1.468	0.039	0.427
18	SiO ₂ (mg/L)	12	37.2	11.5	24.3
19	SO ₄ (mg/L)	12	26.2	1.0	5.7
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	12	40.0	1.5	9.2
2	COD (mg/L)	12	92.3	6.8	46
3	DO (mg/L)	12	13.4	0.0	7.4
4	DO_SAT% (%)	12	156	0	86
5	FCol-MPN (MPN/100mL)	12	340	20	124
6	Tcol-MPN (MPN/100mL)	12	5000	20	1035
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	3	3.3	1.0	1.9
2	Cd ($\mu\text{g}/\text{L}$)	3	0.1	0.0	0
3	Cr ($\mu\text{g}/\text{L}$)	3	16.0	1.4	9.1
4	Cu ($\mu\text{g}/\text{L}$)	3	6.8	3.0	4.3
5	Ni ($\mu\text{g}/\text{L}$)	2	10.1	7.7	8.9
6	Pb ($\mu\text{g}/\text{L}$)	3	9.0	1.0	3.9
7	Zn ($\mu\text{g}/\text{L}$)	3	4.0	0.0	1.7
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	12	130	82	109
2	HAR_Total (mgCaCO ₃ /L)	12	200	106	172
3	Na% (%)	12	27	16	21
4	RSC (-)	12	1.1	0.0	0.4
5	SAR (-)	12	1.0	0.5	0.7
PESTICIDES					

Water Quality Seasonal Average for the period: 2014-2018

Station Name : KEOLARI (AGH40V3)

Local River : Wainganga

River Water

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)	25.98	38.60	120.4	19.90	0.000	5.527		6.142	0.000	2.712		3.012
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	323	254	287	468	384	324	347	376	372	330	322	411
3	pH_GEN (pH units)	7.8	8.0	8.3	8.2	8.0	8.2	8.4	8.3	8.1	8.2	8.4	8.1
4	Temp (deg C)	26.6	27.0	26.0	25.6	20.8	21.5	18.3	18.0	23.7	25.7	25.7	23.7
5	Turb (NTU)	5.4				0.5				0.7			
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	5.4	2.4	1.7	1.3	7.3	2.9	0.0	0.0	8.3	1.3
2	ALK-TOT (mgCaCO ₃ /L)	163	117	129	197	172	157	180	173	177	170	175	201
3	B (mg/L)	0.26	0.20	0.21	0.63	0.53	0.19	0.50	0.28	0.40	0.11	0.73	0.97
4	Ca (mg/L)	37	36	28	41	47	43	45	47	39	51	33	42
5	Cl (mg/L)	10.7	13.4	14.7	14.4	8.4	15.4	10.9	20.6	14.6	12.2	17.2	20.1
6	CO ₃ (mg/L)	0.0	0.0	6.5	2.9	2.0	1.6	8.8	3.5	0.0	0.0	10.0	1.6
7	F (mg/L)	0.69	0.08	0.28	0.37	0.21	0.15	0.15	0.17	0.47	0.03	0.52	0.37
8	Fe (mg/L)	0.1	0.1	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.0	0.2	0.1
9	HCO ₃ (mg/L)	199	143	144	235	206	188	201	204	217	208	193	242
10	K (mg/L)	1.7	1.4	1.8	2.0	1.1	2.2	1.2	1.7	1.1	1.7	1.4	2.1
11	Mg (mg/L)	18.8	15.5	11.7	13.4	12.4	15.2	18.2	15.9	17.5	16.3	21.1	17.7
12	Na (mg/L)	16.2	10.8	22.7	21.4	13.9	22.2	16.3	18.8	16.7	18.4	25.8	23.3
13	NH ₃ -N (mg N/L)	0.33	0.08	0.28	0.59	0.05	0.14	0.55	0.25	0.05	0.12	0.99	0.21
14	NO ₂ +NO ₃ (mg N/L)	1.95	9.16	2.09	1.74	7.81	8.41	2.07	1.93	7.46	4.99	1.73	3.81
15	NO ₂ -N (mgN/L)	0.00	0.01	0.03	0.04	0.00	0.04	0.01	0.02	0.02	0.17	0.04	0.01
16	NO ₃ -N (mgN/L)	1.95	9.15	2.06	1.70	7.80	8.36	2.05	1.91	7.45	4.82	1.70	3.80
17	o-PO ₄ -P (mg P/L)	0.134	0.086	0.099	0.789	0.166	0.065	1.663	0.093	0.257	0.098	0.636	0.269
18	SiO ₂ (mg/L)	20.7	23.9	27.1	26.9	12.8	22.8	28.2	24.0	42.7	40.0	27.7	20.6
19	SO ₄ (mg/L)	7.4	21.1	4.7	4.2	8.6	11.9	20.4	9.5	15.6	11.6	9.6	3.2

Water Quality Seasonal Average for the period: 2014-2018

Station Name : KEOLARI (AGH40V3)

Local River : Wainganga

Division : Wainganga Div., Nagpur

Sub-Division : Upper Wainganga SD, Nagpur

River Water

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	18.6	2.3	15.1	11.5	2.2	1.4	3.1	9.0	2.1	11.5	11.4	5.7
2	COD (mg/L)	47.8	118.7	48.1	47.6	26.3	26.1	69.9	46.8	33.3	48.9	94.3	42.3
3	DO (mg/L)	4.8	6.8	6.2	6.8	7.5	6.6	9.3	6.5	6.8	5.8	6.7	9.7
4	DO_SAT% (%)	60	85	77	83	84	75	99	69	81	72	83	114
5	FCol-MPN (MPN/100mL)	714	135	3280	94	63	90	393	138	87	90	5440	157
6	Tcol-MPN (MPN/100mL)	3758	4440	4286	784	115	680	4695	2008	387	1797	5513	157
TRACE & TOXIC													
1	As (µg/L)				2.7	1.0		0.5	0.9	3.3	0.4	1.2	1.0
2	Cd (µg/L)				0.2	0.0	0.0	0.1	0.5	0.1	1.0	0.2	0.0
3	Cr (µg/L)				2.7	10.0	0.9	0.4	0.9	16.0	5.4	6.5	3.0
4	Cu (µg/L)				1.4	3.0	5.2	0.9	1.7	6.8		4.0	3.0
5	Hg (µg/L)										0.0		
6	Ni (µg/L)				1.9		0.2	0.1	1.0	10.1	3.3	0.2	12.0
7	Pb (µg/L)				0.9	1.0	0.7	0.2	5.4	9.0	9.0	0.5	0.0
8	Zn (µg/L)				2.4	0.0	4.0	6.4	0.4	1.1	0.0	15.4	6.0
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	94	89	70	104	118	109	114	118	98	126	83	105
2	HAR_Total (mgCaCO ₃ /L)	172	154	118	159	170	172	189	184	171	194	171	178
3	Na% (%)	18	14	27	23	15	21	16	18	18	18	24	22
4	RSC (-)	0.1	0.0	0.3	0.8	0.1	0.0	0.1	0.0	0.2	0.2	0.2	0.5
5	SAR (-)	0.5	0.4	0.9	0.7	0.5	0.8	0.5	0.6	0.6	0.6	0.9	0.8
PESTICIDES													

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Mancherial	Code	: AG000J3
State	: Andhra Pradesh	District	: Adilabad
Basin	: Godavari	Independent River	: Godavari
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Godavari
Division	: Upper Godavari Div., Hyderabad	Sub-Division	: Manjira SD, Nizamabad
Drainage Area	: 102900 Sq. Km.	Bank	: Right
Latitude	: 18°50'08"	Longitude	: 79°26'41"
	Opening Date	Closing Date	
Gauge	: 01.03.1964		
Discharge	: 01.06.1966		
Sediment	: 01.06.1966		
Water Quality	: 01.12.1979		

Water Quality Datasheet for the period : 2017-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water Analysis

S.No	Parameters	01.08.2017	01.09.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A
	PHYSICAL									
1	Q (cumec)	4.000	4.825	4.472	4.192	3.027	1.951	1.521	2.534	3.034
2	Colour_Cod (-)	Clear	Clear	Clear		Clear	Clear	Clear	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	400	564	525	747	325	430	258	323	517
4	Odour_Code (-)	odour free	odour free	odour free		odour free				
5	pH_GEN (pH units)	8.2	8.3	7.9	7.9	8.1	8.2	8.0	8.2	8.0
6	TDS (mg/L)	277	401	326	461	280	284	248	279	324
7	Temp (deg C)	26.0	26.0	25.0		16.0	15.0	28.0	26.0	32.0
8	Turb (NTU)	18.0	17.0	8.0	7.0	3.0	19.0	4.0	7.0	3.0
	CHEMICAL									
1	Alk-Phen (mgCaCO ₃ /L)	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	149	184	160	242	252	183	202	202	205
3	B (mg/L)			0.14	0.01	0.03	0.00	0.01	0.00	0.22
4	Ca (mg/L)	35	42	47	54	70	35	32	33	26
5	Cl (mg/L)	32.4	53.4	44.9	64.9	38.2	17.6	29.3	28.3	37.4
6	CO ₃ (mg/L)	0.0	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.59	0.35	0.55	0.66	0.61	0.63	0.68	0.76	0.71
8	Fe (mg/L)	0.7	0.2	0.1	0.7	0.0	0.4	0.0	0.1	0.3
9	HCO ₃ (mg/L)	182	205	195	295	308	224	247	247	250
10	K (mg/L)	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.5
11	Mg (mg/L)	11.5	29.0	22.3	31.2	31.3	25.8	31.4	19.4	19.3
12	Na (mg/L)	39.0	58.0	47.1	60.0	46.9	38.4	36.1	43.2	47.0
13	NH ₃ -N (mg N/L)	0.04	0.03	4.06	0.02	0.01	0.97	0.08	0.05	0.15
14	NO ₂ +NO ₃ (mg N/L)	5.34	4.00	8.29	7.13	6.49	3.23	3.75	6.56	4.11
15	NO ₂ -N (mg N/L)	0.01	0.40	0.04	0.26	0.05	0.02	0.02	0.03	0.02
16	NO ₃ -N (mg N/L)	5.33	3.59	8.25	6.87	6.44	3.21	3.73	6.53	4.09
17	o-PO ₄ -P (mg P/L)	0.020	0.480	0.430	0.650	0.420	0.460	0.640	1.100	0.750
18	SiO ₂ (mg/L)	17.8	20.3	22.0	21.8	22.6	19.9	21.3	5.4	15.7
19	SO ₄ (mg/L)	42.8	64.0	80.1	115.0	65.6	19.0	19.4	15.5	12.2

Water Quality Datasheet for the period : 2017-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water Analysis

S.No	Parameters	01.08.2017	01.09.2017	01.11.2017	01.12.2017	01.01.2018	01.02.2018	05.03.2018	02.04.2018	01.05.2018
		A	A	A	A	A	A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL										
1	BOD3-27 (mg/L)	1.6	1.3	1.2	0.2	0.6	2.3	1.8	0.5	1.1
2	COD (mg/L)	34.9	3.8	65.6	1.3	3.1	6.1	38.0	6.1	16.5
3	DO (mg/L)	6.5	6.6	6.2	6.1	8.1	7.0	7.2	6.1	7.3
4	DO_SAT% (%)	80	81	75		82	69	92	75	100
5	FCol-MPN (MPN/100mL)	270	16000	16000	20	170	340	70	70	
6	Tcol-MPN (MPN/100mL)	270	16000	16000	80	800	3000	170	800	
TRACE & TOXIC										
1	As (µg/L)									1.5
2	Cd (µg/L)									1.2
3	Cr (µg/L)									0.0
4	Cu (µg/L)	2.0		5.0	5.0	3.0	4.0	5.0	8.2	2.0
5	Hg (µg/L)									0.1
6	Ni (µg/L)									3.8
7	Pb (µg/L)									9.0
8	Zn (µg/L)	93.9	50.0	66.0	22.0	136.8	32.9	26.9	49.8	43.0
CHEMICAL INDICES										
1	HAR_Ca (mgCaCO ₃ /L)	88	106	117	134	174	88	79	82	65
2	HAR_Total (mgCaCO ₃ /L)	136	227	210	264	304	195	210	163	145
3	Na% (%)	38	36	33	33	25	30	27	37	41
4	RSC (-)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.2
5	SAR (-)	1.5	1.7	1.4	1.6	1.2	1.2	1.1	1.5	1.7
PESTICIDES										

Water Quality Summary for the period : 2017-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water Summary

S.No	Parameters	Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	368	236.6	0.000	7.294
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	9	747	258	454
3	pH_GEN (pH units)	9	8.3	7.9	8.1
4	TDS (mg/L)	9	461	248	320
5	Temp (deg C)	8	32.0	15.0	24.3
6	Turb (NTU)	9	19.0	3.0	9.6
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	9	8.0	0.0	0.9
2	ALK-TOT (mgCaCO ₃ /L)	9	252	149	198
3	B (mg/L)	7	0.22	0.00	0.06
4	Ca (mg/L)	9	70	26	41
5	Cl (mg/L)	9	64.9	17.6	38.5
6	CO ₃ (mg/L)	9	9.6	0.0	1.1
7	F (mg/L)	9	0.76	0.35	0.61
8	Fe (mg/L)	9	0.7	0.0	0.3
9	HCO ₃ (mg/L)	9	308	182	239
10	K (mg/L)	9	0.5	0.4	0.4
11	Mg (mg/L)	9	31.4	11.5	24.6
12	Na (mg/L)	9	60.0	36.1	46.2
13	NH ₃ -N (mg N/L)	9	4.06	0.01	0.6
14	NO ₂ +NO ₃ (mg N/L)	9	8.29	3.23	5.43
15	NO ₂ -N (mgN/L)	9	0.40	0.01	0.1
16	NO ₃ -N (mgN/L)	9	8.25	3.21	5.34
17	o-PO ₄ -P (mg P/L)	9	1.100	0.020	0.55
18	SiO ₂ (mg/L)	9	22.6	5.4	18.5
19	SO ₄ (mg/L)	9	115.0	12.2	48.2
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	9	2.3	0.2	1.2
2	COD (mg/L)	9	65.6	1.3	19.5
3	DO (mg/L)	9	8.1	6.1	6.8
4	DO_SAT% (%)	8	100	69	82
5	FCol-MPN (MPN/100mL)	8	16000	20	4118
6	Tcol-MPN (MPN/100mL)	8	16000	80	4640
TRACE & TOXIC					
1	As ($\mu\text{g}/\text{L}$)	1	1.5	1.5	1.5
2	Cd ($\mu\text{g}/\text{L}$)	1	1.2	1.2	1.2
3	Cr ($\mu\text{g}/\text{L}$)	1	0.0	0.0	0
4	Cu ($\mu\text{g}/\text{L}$)	8	8.2	2.0	4.3
5	Hg ($\mu\text{g}/\text{L}$)	1	0.1	0.1	0.1
6	Ni ($\mu\text{g}/\text{L}$)	1	3.8	3.8	3.8
7	Pb ($\mu\text{g}/\text{L}$)	1	9.0	9.0	9
8	Zn ($\mu\text{g}/\text{L}$)	9	136.8	22.0	57.9
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	9	174	65	104
2	HAR_Total (mgCaCO ₃ /L)	9	304	136	206
3	Na% (%)	9	41	25	33
4	RSC (-)	9	1.2	0.0	0.3
5	SAR (-)	9	1.7	1.1	1.4
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	18.41	289.5	367.5	129.0	53.74	55.37	1143	196.9	181.3	1162	34.58	81.02	979.4	4.413
2	EC_FLD ($\mu\text{mho}/\text{cm}$)					514									
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	421	357	462	479	515	458	289	482	524	468	592	396	385	482
4	pH_FLD (pH units)					8.5									
5	pH_GEN (pH units)	8.6	8.5	8.6	8.6	8.5	8.3	7.5	8.5	8.2	7.3	7.7	6.9	8.1	8.3
6	TDS (mg/L)					320	270	191	374	383	295	387	303	304	339
7	Temp (deg C)	26.2	28.3	26.9	26.4	26.0	25.9	26.3	26.0	26.6	25.5	26.5	25.6	24.9	26.0
8	Turb (NTU)					2.3	6.0	41.3	0.3	13.2	2.6	5.4	8.0	54.8	17.5
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	9.4	8.3	14.2	13.1	14.9	8.7	4.1	13.7	0.0	0.0	0.0	0.0	1.5	4.0
2	ALK-TOT (mgCaCO ₃ /L)	182	136	183	159	177	157	109	179	178	151	203	180	173	166
3	B (mg/L)	0.67	0.05	0.14	0.08	0.11	0.18	0.20	0.15	0.19	0.13	0.24	0.09		
4	Ca (mg/L)	38	31	38	21	28	29	25	30	37	33	35	32	32	39
5	Cl (mg/L)	41.1	17.6	35.6	36.0	45.7	41.0	19.1	38.8	39.8	18.8	42.0	33.0	21.5	42.9
6	CO ₃ (mg/L)	11.3	9.9	17.1	15.8	17.9	10.5	4.9	16.5	0.0	0.0	0.0	0.0	1.8	4.8
7	F (mg/L)	0.75	0.57	0.75	0.92	0.87	0.80	0.36	0.67	0.75	0.67	0.82	0.69	0.34	0.47
8	Fe (mg/L)	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.4
9	HCO ₃ (mg/L)	199	145	189	162	179	170	124	185	217	184	247	219	208	193
10	K (mg/L)	3.6	2.8	2.9	3.0	3.3	3.2	2.8	3.2	3.2	3.1	3.6	3.5	3.5	0.5
11	Mg (mg/L)	8.8	9.7	11.3	22.0	24.9	18.9	10.3	20.4	18.8	18.7	19.6	17.9	17.4	20.3
12	Na (mg/L)	52.6	20.3	43.4	45.3	33.2	31.7	15.0	38.2	35.1	28.5	62.4	52.6	32.5	48.5
13	NH ₃ -N (mg N/L)	0.02	0.04	0.05	1.08	0.04	0.15	0.07	0.20	0.02	0.12	0.07	0.02	0.04	0.03
14	NO ₂ +NO ₃ (mg N/L)	0.48	0.85	0.47	0.71	0.85	0.36	0.73	0.80	0.32	0.37	0.37	0.31	0.86	4.67
15	NO ₂ -N (mgN/L)	0.01	0.05	0.01	0.01	0.12	0.04	0.04	0.01	0.00	0.00	0.02	0.02	0.28	0.21
16	NO ₃ -N (mgN/L)	0.48	0.81	0.46	0.70	0.73	0.32	0.69	0.79	0.32	0.37	0.35	0.29	0.57	4.46
17	o-PO ₄ -P (mg P/L)	0.065	0.012			0.008	0.019	0.026	0.036	0.151	0.035	0.163	0.150	0.026	0.250
18	P-Tot (mgP/L)				0.032	0.009									
19	SiO ₂ (mg/L)	16.5	21.8	17.6	21.5	15.2	15.0	15.5	26.2	16.1	13.9	19.4	12.9	15.7	19.0
20	SO ₄ (mg/L)	35.4	15.5	15.6	25.0	26.3	23.3	12.9	27.8	27.5	22.2	40.6	36.4	18.6	53.4

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.3	1.3	1.0	0.6	0.5	0.4	1.2	1.0	1.2	2.1	1.0	1.0	1.4	1.4
2	COD (mg/L)	16.3	13.0	11.3	17.7	2.3	2.5	8.0	8.2	15.2	9.0	11.6	11.9	6.6	19.3
3	DO (mg/L)	6.3	6.4	6.5	5.9	5.6	5.7	6.6	6.2	6.3	6.4	5.3	5.4	6.5	
4	DO_SAT% (%)	77	82	81	73	69	71	82	76	79	78	65	65	81	
5	FCol-MPN (MPN/100mL)	135	470	8720	1152	5417	3048	9133	11660	2028	558	3778	2135	9268	8135
6	Tcol-MPN (MPN/100mL)	245	470	10560	1924	5417	7580	12333	13280	3688	5358	4368	10600	13250	8135
7	TOC (mg/L)	5.1			2.1	4.5	2.6	2.1	2.7	3.1	4.1	20.6	15.6		
TRACE & TOXIC															
1	As (µg/L)	1.0									10.9	7.6			
2	Cd (µg/L)	0.3			1.7						1.0	0.4			
3	Cr (µg/L)	5.3			22.4						1.4	1.4			
4	Cu (µg/L)	2.7									11.3	3.3			2.0
5	Hg (µg/L)				1.0							0.5			
6	Mn (mg/L)	0.00													
7	Ni (µg/L)				7.7						6.3	12.6			
8	Pb (µg/L)	4.0			17.9						0.0	1.6			
9	Se (µg/L)														
10	Zn (µg/L)	48.5			135.8						1.0	0.0			72.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	96	77	96	53	71	73	63	74	92	83	87	80	79	97
2	HAR_Total (mgCaCO ₃ /L)	132	117	143	145	175	152	107	159	170	161	169	154	152	181
3	Na% (%)	45	25	38	40	29	30	22	34	28	27	44	42	31	37
4	RSC (-)	1.0	0.5	0.8	0.5	0.1	0.1	0.1	0.4	0.5	0.0	0.7	0.5	0.5	0.1
5	SAR (-)	2.0	0.8	1.6	1.6	1.1	1.1	0.6	1.3	1.1	1.0	2.1	1.8	1.2	1.6
PESTICIDES															
1	Aldrin (µg/L)					0.0									
2	BHC (µg/L)	0.1				0.1									
3	DDT (µg/L)	0.1				0.1									
4	Dieldrin (µg/L)	0.1				0.0									
5	Endos (µg/L)	0.1				0.1									

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)	13.96	51.93	40.73	16.49	17.99	7.149	87.80	30.41	29.22	66.33	21.57	24.11	41.66	3.411
2	EC_FLD ($\mu\text{mho}/\text{cm}$)				917										
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	411	583	605	590	537	551	493	512	547	618	415	728	477	507
4	pH_FLD (pH units)				8.6										
5	pH_GEN (pH units)	8.4	8.5	8.7	8.4	8.4	8.5	8.4	8.4	7.9	7.4	7.6	8.1	8.1	8.0
6	TDS (mg/L)					340	319	306	344	352	365	307	237	275	338
7	Temp (deg C)	19.5	22.0	26.1	20.8	19.1	23.1	26.3	21.1	23.3	17.5	16.1	20.3	19.1	18.7
8	Turb (NTU)					0.5	1.2	3.4	0.0	2.3	5.8	0.8	3.0	2.8	9.3
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	5.9	9.9	9.6	13.4	9.4	15.7	12.3	6.2	0.0	0.0	0.0	0.9	4.4	0.0
2	ALK-TOT (mgCaCO ₃ /L)	196	232	204	233	204	225	180	216	191	222	193	167	184	209
3	B (mg/L)	0.18	0.13	0.07	0.24	0.03	0.20	0.19	0.17	0.13	0.09	0.18	0.00		0.04
4	Ca (mg/L)	30	56	35	28	33	39	32	35	49	41	38	31	40	51
5	Cl (mg/L)	25.3	26.3	44.5	37.3	47.5	48.0	40.0	32.3	35.8	31.3	38.9	20.3	28.5	41.4
6	CO ₃ (mg/L)	7.1	11.9	11.6	16.1	11.3	19.0	14.8	7.5	0.0	0.0	0.0	1.0	5.3	0.0
7	F (mg/L)	0.94	1.00	0.31	1.23	0.94	0.96	0.60	0.89	0.74	0.77	0.74	0.51	0.35	0.61
8	Fe (mg/L)	0.0	0.1	0.1	0.2	0.3	0.4	0.3	0.2	0.0	0.0	0.1	0.0	0.0	0.3
9	HCO ₃ (mg/L)	225	259	226	252	226	236	189	248	233	270	236	202	214	255
10	K (mg/L)	2.7	2.7	2.4	2.2	2.7	2.3	3.0	2.4	2.4	3.0	3.2	3.2	4.7	0.4
11	Mg (mg/L)	14.1	10.6	23.5	28.4	24.8	28.9	21.1	21.4	20.3	23.7	18.0	16.2	19.8	27.6
12	Na (mg/L)	47.3	41.8	53.3	50.7	36.8	37.0	35.1	44.1	46.1	50.7	57.7	33.4	48.8	48.1
13	NH ₃ -N (mg N/L)	0.04	0.06	0.05	0.11	0.13	0.05	0.13	0.16	0.01	0.07	0.06	0.01	0.01	1.26
14	NO ₂ +NO ₃ (mg N/L)	0.64	0.33	2.54	0.65	0.31	0.06	0.19	0.28	1.00	0.46	0.18	0.52	0.40	6.29
15	NO ₂ -N (mgN/L)	0.01	0.01	0.00	0.08	0.03	0.01	0.02	0.03	0.00	0.00	0.04	0.01	0.04	0.09
16	NO ₃ -N (mgN/L)	0.63	0.33	2.54	0.57	0.27	0.05	0.18	0.25	1.00	0.46	0.14	0.52	0.36	6.19
17	o-PO ₄ -P (mg P/L)	0.019	0.018			0.006	0.027	0.023	0.025	0.066	0.053	0.087	0.061	0.054	0.490
18	P-Tot (mgP/L)			0.011	0.102										
19	SiO ₂ (mg/L)	12.5	21.8	20.8	16.9	16.3	17.0	34.3	11.2	21.2	18.6	17.2	15.2	15.7	21.6
20	SO ₄ (mg/L)	17.3	21.8	23.8	25.5	18.5	21.4	20.8	22.6	26.6	31.8	44.4	23.2	39.4	69.9

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters	River Water													
		Winter Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.9	0.8	0.4	0.7	0.6	0.8	0.9	0.3	1.5	0.9	1.7	0.8	2.6	1.1
2	COD (mg/L)	40.6	21.5	53.1	43.0	2.7	4.7	5.9	9.8	11.6	5.7	11.4	7.8	9.8	19.0
3	DO (mg/L)	6.0	7.4	6.9	6.9	6.3	6.6	6.8	6.4	6.3	6.5	6.2		7.4	6.9
4	DO_SAT% (%)	65	85	85	76	68	77	84	71	73	68	63		80	76
5	FCol-MPN (MPN/100mL)	5515	6273	6210	868	4138	13250	16000	4420	716	63	773	2968	4635	4133
6	Tcol-MPN (MPN/100mL)	12115	10680	10833	1018	4205	16000	16000	5258	4700	111	2800	9050	5110	4970
7	TOC (mg/L)	14.9			1.0	2.8	2.5	2.2	2.0	1.3	4.3	28.1	4.5		
TRACE & TOXIC															
1	As (µg/L)						0.2		0.2						
2	Cd (µg/L)	0.0		88.0		1.0	0.7	0.0	0.0			0.6			
3	Cr (µg/L)	0.0		12.0		0.0	0.0	0.3	0.7			4.8			
4	Cu (µg/L)	0.0							9.0			1.5		1.0	4.3
5	Hg (µg/L)			0.3											
6	Mn (mg/L)	3.75													
7	Ni (µg/L)			9.0		1.9	1.4	2.4	1.4			0.3			
8	Pb (µg/L)	1.0		130.0		8.0	10.9	0.0	0.8			4.6			
9	Se (µg/L)														
10	Zn (µg/L)	0.1		439.0		17.4	12.5	23.0	11.0			4.0		0.1	64.4
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	75	139	89	71	83	98	81	88	122	102	96	77	99	128
2	HAR_Total (mgCaCO ₃ /L)	133	183	186	189	187	218	169	177	206	200	171	144	182	243
3	Na% (%)	43	33	38	36	30	27	31	35	34	35	41	33	37	30
4	RSC (-)	1.3	1.0	0.4	0.9	0.4	0.2	0.3	0.8	0.2	0.5	0.6	0.5	0.2	0.0
5	SAR (-)	1.8	1.3	1.7	1.6	1.2	1.1	1.2	1.4	1.5	1.6	1.9	1.2	1.6	1.4
PESTICIDES															
1	Aldrin (µg/L)			0.0		0.0	0.1	0.0	0.0						
2	BHC (µg/L)	0.1		0.1		0.0	0.3	0.0	0.0						
3	DDT (µg/L)	0.1		0.1		0.0	0.0	0.0	0.0						
4	Dieldrin (µg/L)	0.1		0.0		0.0	0.1	0.0	0.0						
5	Endos (µg/L)	0.1		0.1		0.1	0.0	0.0	0.0						

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)	2.919	0.697	11.72	18.19	16.34	9.919		24.05	4.200	15.99	23.09	3.391	8.454	6.737	2.363
2	EC_FLD ($\mu\text{mho}/\text{cm}$)															
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	505	431	548	551	644	609		488	591	599	596	516	642	362	366
4	pH_FLD (pH units)															
5	pH_GEN (pH units)	8.6	8.2	8.5	8.6	8.7	8.3		8.3	8.6	8.1	7.8	7.6	8.0	8.1	8.1
6	TDS (mg/L)						379		362	420	367	377	283	266	251	284
7	Temp (deg C)	22.0	24.5	25.7	27.7	22.7	24.2		28.0	28.3	25.3	22.0	20.3	23.0	26.3	28.7
8	Turb (NTU)						0.2		1.1	0.3	0.7	5.0	2.0	12.5	14.5	4.7
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)	14.6	0.0	5.3	5.3	11.4	13.8		14.7	4.2	1.4	0.0	0.0	0.0	4.7	0.0
2	ALK-TOT (mgCaCO ₃ /L)	310	191	231	187	225	198		199	210	218	215	173	172	170	203
3	B (mg/L)	0.08	0.44	0.12	0.10	0.13	0.52		0.15	0.03	0.21	0.15	0.06			0.08
4	Ca (mg/L)	50	28	57	26	20	29		26	30	37	38	33	31	47	30
5	Cl (mg/L)	47.0	28.6	33.3	42.0	50.3	60.6		45.4	45.6	39.6	36.6	24.5	21.7	22.1	31.7
6	CO ₃ (mg/L)	17.5	0.0	6.3	6.3	13.8	16.7		17.7	5.1	1.7	0.0	0.0	0.0	5.7	0.0
7	F (mg/L)	0.96	1.02	0.87	0.42	1.05	0.96		0.77	0.72	0.88	0.82	0.81	0.47	0.66	0.72
8	Fe (mg/L)	0.0	0.1	0.1	0.1	0.3	0.2		0.6	0.1	0.2	0.0	0.0	0.0	0.0	0.1
9	HCO ₃ (mg/L)	236	233	268	215	246	208		207	246	262	262	211	210	196	248
10	K (mg/L)	2.2	2.4	2.4	1.9	2.9	3.5		3.0	3.4	3.1	3.4	3.1	3.6	3.6	0.5
11	Mg (mg/L)	18.7	13.2	11.8	28.7	29.7	26.9		27.0	18.1	20.8	21.4	18.9	17.0	19.3	23.4
12	Na (mg/L)	43.0	51.0	45.3	49.1	66.2	48.0		48.7	54.7	55.8	50.9	44.5	35.9	31.9	42.1
13	NH ₃ -N (mg N/L)	0.34	0.07	0.06	0.05	0.31	0.24		0.17	0.04	0.03	0.05	0.02	0.03	0.35	0.09
14	NO ₂ +NO ₃ (mg N/L)	0.00	0.56	0.21	0.59	0.43	0.29		0.18	0.20	0.84	0.47	0.04	0.89	0.97	4.81
15	NO ₂ -N (mgN/L)		0.00	0.00	0.02	0.06	0.02		0.01	0.02	0.00	0.00	0.00	0.02	0.00	0.02
16	NO ₃ -N (mgN/L)	0.00	0.56	0.21	0.57	0.37	0.27		0.17	0.18	0.84	0.47	0.03	0.87	0.97	4.78
17	o-PO ₄ -P (mg P/L)	0.057	0.007	0.012			0.000		0.040	0.053	0.054	0.031	0.170	0.119	0.035	0.830
18	P-Tot (mgP/L)				0.134	0.241										
19	SiO ₂ (mg/L)	16.0	5.0	17.3	20.3	16.7	18.0		36.6	15.4	20.8	18.4	17.1	20.9	18.4	14.1
20	SO ₄ (mg/L)	28.5	17.0	26.7	24.7	32.0	22.3		27.3	29.0	20.7	30.5	23.0	19.8	23.0	15.7

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Mancherial (AG000J3)

Local River : Godavari

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water

S.No	Parameters	River Water														
		Summer							Mar - May							
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)	0.5	2.3	0.4	0.4	0.8	1.1		1.1	0.8	1.8	1.2	0.8	1.4	1.6	1.1
2	COD (mg/L)	38.0	65.8	23.5	21.0	7.3	8.6		4.7	7.4	6.2	4.9	6.2	6.8	5.9	20.2
3	DO (mg/L)	5.8	4.8	5.5	6.0	5.9	5.3		6.4	7.0	7.3	5.3	6.2	6.5	6.9	
4	DO_SAT% (%)	66	57	68	75	67	62		82	90	89	61	67		80	89
5	FCol-MPN (MPN/100mL)	70		5907	1467	2900	1857		8370	5437	84	5423	30	2250	8150	70
6	Tcol-MPN (MPN/100mL)	110		6580	1567	5050	2723		10720	5643	511	5523	8070	9100	8250	485
7	TOC (mg/L)		3.3			2.7	3.2		3.2	3.0	3.2	14.7	24.6			
TRACE & TOXIC																
1	As (µg/L)									0.6	2.6	3.0	0.7	0.8	0.9	1.5
2	Cd (µg/L)	4.0	0.0	1.0	3.0	0.8	1.7		0.0	0.0	0.9	0.0	14.8	0.0	0.0	1.2
3	Cr (µg/L)	2.0	0.0	6.0	2.0	7.1	0.0		0.0	0.8	0.6	0.5	0.0	0.0	0.0	0.0
4	Cu (µg/L)	2.5	0.0							5.7	0.5	2.4			2.0	5.1
5	Hg (µg/L)				1.3	0.7				0.0	0.6	0.5	0.0	0.0	0.5	0.1
6	Mn (mg/L)		0.01													
7	Ni (µg/L)			8.0	13.0	5.5	0.9		2.0	4.2	4.1	4.1	6.3	0.0	4.3	3.8
8	Pb (µg/L)	43.8	1.0	45.0	43.0	19.9	23.0		22.8	4.2	0.7	3.4	11.0	0.0	0.0	9.0
9	Se (µg/L)															
10	Zn (µg/L)		7.0	79.0	54.0	66.6	9.1		11.4	6.3	0.3	5.5	6.0	2.3	11.9	39.9
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)	125	70	143	64	49	73		66	76	92	94	83	78	118	75
2	HAR_Total (mgCaCO ₃ /L)	202	124	192	184	173	184		178	152	178	183	162	148	198	173
3	Na% (%)	32	47	33	37	45	36		37	44	40	37	37	34	26	35
4	RSC (-)	0.4	1.3	0.8	0.1	1.1	0.3		0.5	1.2	0.8	0.7	0.3	0.5	0.0	0.7
5	SAR (-)	1.3	2.0	1.4	1.6	2.2	1.5		1.6	2.0	1.8	1.6	1.5	1.3	1.0	1.4
PESTICIDES																
1	Aldrin (µg/L)				0.0	0.0	0.0		0.0	0.0						
2	BHC (µg/L)	0.1	0.1	0.0	0.1	0.0	0.0		0.1	0.0						
3	DDT (µg/L)	0.1	0.1	0.0	0.1	0.0	0.0		0.0	0.0						
4	Diieldrin (µg/L)	0.1	0.1	0.1	0.0	0.0	0.0		0.0	0.0						
5	Endos (µg/L)	0.1	0.1	0.0	0.1	0.0	0.0		0.1	0.0						

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Gandlapet	Code	: AGM00G6
State	: Andhra Pradesh	District	Nizamabad
Basin	: Godavari	Independent River	: Godavari
Tributary	: Peddavagu	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Peddavagu
Division	: Upper Godavari Div., Hyderabad	Sub-Division	: Manjira SD, Nizamabad
Drainage Area	: 1360 Sq. Km.	Bank	: Right
Latitude	: 18°49'44"	Longitude	: 78°26'12"
	Opening Date	Closing Date	
Gauge	: 18.07.1986		
Discharge	: 10.09.1986		
Sediment	:		
Water Quality	: 31.07.1988		

Water Quality Datasheet for the period : 2017-2018

Station Name : Gandlapet (AGM00G6)

Local River : Peddavagu

River Water Analysis

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters
	PHYSICAL
1	Q (cumec)
2	Colour_Cod (-)
3	EC_GEN ($\mu\text{mho}/\text{cm}$)
4	Odour_Code (-)
5	pH_GEN (pH units)
6	TDS (mg/L)
7	Temp (deg C)
8	Turb (NTU)
	CHEMICAL
1	Alk-Phen (mgCaCO ₃ /L)
2	ALK-TOT (mgCaCO ₃ /L)
3	B (mg/L)
4	Ca (mg/L)
5	Cl (mg/L)
6	CO ₃ (mg/L)
7	F (mg/L)
8	Fe (mg/L)
9	HCO ₃ (mg/L)
10	K (mg/L)
11	Mg (mg/L)
12	Na (mg/L)
13	NH ₃ -N (mg N/L)
14	NO ₂ +NO ₃ (mg N/L)
15	NO ₂ -N (mgN/L)
16	NO ₃ -N (mgN/L)
17	o-PO ₄ -P (mg P/L)
18	SiO ₂ (mg/L)
19	SO ₄ (mg/L)
	BIOLOGICAL/BACTERIOLOGICAL
1	BOD ₃₋₂₇ (mg/L)
2	COD (mg/L)
3	DO (mg/L)
4	DO_SAT% (%)
5	FCol-MPN (MPN/100mL)
6	Tcol-MPN (MPN/100mL)
	TRACE & TOXIC
1	As ($\mu\text{g}/\text{L}$)
2	Cd ($\mu\text{g}/\text{L}$)
3	Cr ($\mu\text{g}/\text{L}$)
4	Cu ($\mu\text{g}/\text{L}$)
5	Hg ($\mu\text{g}/\text{L}$)
6	Ni ($\mu\text{g}/\text{L}$)
7	Pb ($\mu\text{g}/\text{L}$)
8	Zn ($\mu\text{g}/\text{L}$)
	CHEMICAL INDICES
1	HAR_Ca (mgCaCO ₃ /L)
2	HAR_Total (mgCaCO ₃ /L)
3	Na% (%)
4	RSC (-)
5	SAR (-)
	PESTICIDES

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Saigaon	Code	: AGP00N8
State	: Karnataka	District	Bidar
Basin	: Godavari	Independent River	: Godavari
Tributary	: Manjira	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Manjira
Division	: Upper Godavari Div., Hyderabad	Sub-Division	: Manjira SD, Nizamabad
Drainage Area	: 9960 Sq. Km.	Bank	: Right
Latitude	: 18°04'33"	Longitude	: 77°03'09"
	Opening Date	Closing Date	
Gauge	: 01.08.1964		
Discharge	: 10.11.1967		
Sediment	: 19.07.1973		
Water Quality	: 16.08.1973		

Water Quality Datasheet for the period : 2017-2018

Station Name : Saigaon (AGP00N8)

Division : Upper Godavari Div., Hyderabad

Local River : Manjira

River Water Analysis

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters
	PHYSICAL
1	Q (cumec)
2	Colour_Cod (-)
3	EC_GEN ($\mu\text{mho}/\text{cm}$)
4	Odour_Code (-)
5	pH_GEN (pH units)
6	TDS (mg/L)
7	Temp (deg C)
8	Turb (NTU)
	CHEMICAL
1	Alk-Phen (mgCaCO ₃ /L)
2	ALK-TOT (mgCaCO ₃ /L)
3	B (mg/L)
4	Ca (mg/L)
5	Cl (mg/L)
6	CO ₃ (mg/L)
7	F (mg/L)
8	Fe (mg/L)
9	HCO ₃ (mg/L)
10	K (mg/L)
11	Mg (mg/L)
12	Na (mg/L)
13	NH ₃ -N (mg N/L)
14	NO ₂ +NO ₃ (mg N/L)
15	NO ₂ -N (mgN/L)
16	NO ₃ -N (mgN/L)
17	o-PO ₄ -P (mg P/L)
18	SiO ₂ (mg/L)
19	SO ₄ (mg/L)
	BIOLOGICAL/BACTERIOLOGICAL
1	BOD ₃₋₂₇ (mg/L)
2	COD (mg/L)
3	DO (mg/L)
4	DO_SAT% (%)
5	FCol-MPN (MPN/100mL)
6	Tcol-MPN (MPN/100mL)
	TRACE & TOXIC
1	As ($\mu\text{g}/\text{L}$)
2	Cd ($\mu\text{g}/\text{L}$)
3	Cr ($\mu\text{g}/\text{L}$)
4	Cu ($\mu\text{g}/\text{L}$)
5	Hg ($\mu\text{g}/\text{L}$)
6	Ni ($\mu\text{g}/\text{L}$)
7	Pb ($\mu\text{g}/\text{L}$)
8	Zn ($\mu\text{g}/\text{L}$)
	CHEMICAL INDICES
1	HAR_Ca (mgCaCO ₃ /L)
2	HAR_Total (mgCaCO ₃ /L)
3	Na% (%)
4	RSC (-)
5	SAR (-)
	PESTICIDES

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Saigaon (AGP00N8)

Local River : Manjira

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	18.95	20.43	83.49	36.17	33.47	1.229	171.6	96.65	0.394	19.48				
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	289	437	380	291	316	254	436	415	322	541				
3	pH_GEN (pH units)	7.9	8.2	8.2	8.4	8.2	8.2	8.0	7.9	8.7	8.1				
4	TDS (mg/L)					192	153	274	310	300	321				
5	Temp (deg C)	23.0	25.0	25.3	25.3	24.5	26.0	27.0	26.3	26.0	30.3				
6	Turb (NTU)					28.4	8.4	5.0	0.8	4.0	1.8				
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	2.8	5.0	6.8	0.0	5.9	2.7	4.1	0.1	0.0				
2	ALK-TOT (mgCaCO ₃ /L)	105	160	146	87	98	77	169	148	104	194				
3	B (mg/L)	0.30	0.11	0.07	0.15	0.10	0.23	0.15	0.10	0.26	0.04				
4	Ca (mg/L)	26	44	37	25	27	20	40	37	28	42				
5	Cl (mg/L)	15.7	31.5	20.0	28.0	25.9	22.7	30.9	18.3	22.5	35.9				
6	CO ₃ (mg/L)	0.0	3.4	6.0	8.2	0.0	7.1	3.3	4.9	0.2	0.0				
7	F (mg/L)	0.45	0.34	0.20	0.38	0.35	0.27	0.39	0.38	0.30	0.45				
8	Fe (mg/L)	0.3	0.1	0.1	0.1	0.3	0.2	0.2	0.3	0.1	0.1				
9	HCO ₃ (mg/L)	128	188	167	90	120	80	199	171	127	237				
10	K (mg/L)	3.8	4.5	5.7	2.7	4.1	3.1	4.3	3.4	3.0	4.5				
11	Mg (mg/L)	4.4	11.2	10.7	10.5	13.5	8.9	17.5	14.4	15.5	29.7				
12	Na (mg/L)	17.0	24.0	22.0	18.3	17.5	14.3	21.8	16.4	21.0	31.7				
13	NH ₃ -N (mg N/L)	0.05	0.04	0.05	0.05	0.10	0.03	0.07	0.10	0.01	0.10				
14	NO ₂ +NO ₃ (mg N/L)	0.88	1.08	1.05	1.14	1.25	0.55	1.83	1.73	1.49	1.44				
15	NO ₂ -N (mgN/L)		0.02	0.00	0.02	0.17	0.07	0.06	0.02	0.00	0.00				
16	NO ₃ -N (mgN/L)	0.88	1.06	1.04	1.12	1.08	0.48	1.77	1.71	1.49	1.44				
17	o-PO ₄ -P (mg P/L)	0.010	0.020		0.025	0.046									
18	P-Tot (mgP/L)				0.025	0.046									
19	SiO ₂ (mg/L)	17.0	20.3	14.8	13.3	11.2	11.1	20.9	13.4	12.8	15.7				
20	SO ₄ (mg/L)	6.0	9.7	2.5	15.8	16.5	15.6	21.0	15.0	16.2	38.0				

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Saigaon (AGP00N8)

Local River : Manjira

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.3	1.9	1.3	1.2	1.0	0.5	1.1	0.7	0.9	1.9				
2	COD (mg/L)	1.0	63.7	90.9	31.0	5.9	2.2	6.2	8.3	2.0	10.3				
3	DO (mg/L)	5.6	5.7	5.8	5.3	5.6	5.7	5.8	5.7	6.1	5.9				
4	DO_SAT% (%)	65	69	70	64	67	70	73	71	75	79				
5	FCol-MPN (MPN/100mL)		567	9200	1283	8010	16000	12333	11467	40	5767				
6	Tcol-MPN (MPN/100mL)		567	10500	2008	8010	16000	16000	16000	80	6700				
7	TOC (mg/L)				3.2	2.5	2.3	3.1	2.0	2.3	2.8				
TRACE & TOXIC															
1	As (µg/L)											3.7			
2	Cd (µg/L)											0.7			
3	Cr (µg/L)											1.2			
4	Cu (µg/L)											1.8			
5	Hg (µg/L)											0.0			
6	Ni (µg/L)											15.7			
7	Pb (µg/L)											4.2			
8	Zn (µg/L)											2.0			
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	65	111	91	63	66	50	101	91	70	106				
2	HAR_Total (mgCaCO ₃ /L)	83	157	136	107	123	87	174	151	135	230				
3	Na% (%)	30	24	25	26	22	24	21	19	25	23				
4	RSC (-)	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
5	SAR (-)	0.8	0.8	0.8	0.8	0.7	0.6	0.7	0.6	0.8	0.9				
PESTICIDES															
1	Aldrin (µg/L)					0.0									
2	BHC (µg/L)					0.1									
3	DDT (µg/L)					0.1									
4	Dieleadrin (µg/L)					0.0									
5	Endos (µg/L)					0.1									

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Saigaon (AGP00N8)

Local River : Manjira

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)		18.66					14.58			0.000			20.72	
2	EC_GEN ($\mu\text{mho}/\text{cm}$)		500					479			561			493	
3	pH_GEN (pH units)		8.0					8.2			8.2			8.5	
4	TDS (mg/L)						302			322			272		
5	Temp (deg C)		23.0					25.5			24.0			25.0	
6	Turb (NTU)							3.3			4.0			0.1	
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)		0.0				6.1			0.0			3.0		
2	ALK-TOT (mgCaCO ₃ /L)		197				192			211			171		
3	B (mg/L)		0.63				0.19			0.04					
4	Ca (mg/L)		56				30			47			52		
5	Cl (mg/L)		33.5				40.2			37.2			33.7		
6	CO ₃ (mg/L)		0.0				7.3			0.0			3.6		
7	F (mg/L)		0.29				0.31			0.37			0.23		
8	Fe (mg/L)		0.2				0.2			0.0			0.2		
9	HCO ₃ (mg/L)		240				219			257			202		
10	K (mg/L)		3.6				4.2			5.1			4.4		
11	Mg (mg/L)		6.8				27.6			27.7			28.3		
12	Na (mg/L)		23.0				30.4			37.5			24.7		
13	NH ₃ -N (mg N/L)		0.01				0.16			0.02			0.00		
14	NO ₂ +NO ₃ (mg N/L)		0.23				0.58			0.73			0.09		
15	NO ₂ -N (mgN/L)		0.01				0.03			0.00			0.01		
16	NO ₃ -N (mgN/L)		0.22				0.56			0.73			0.09		
17	o-PO ₄ -P (mg P/L)		0.000				0.021			0.001			0.009		
18	P-Tot (mgP/L)														
19	SiO ₂ (mg/L)		23.0				44.6			19.9			14.6		
20	SO ₄ (mg/L)		17.0				21.6			29.0			32.2		

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Saigaon (AGP00N8)

Local River : Manjira

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)		0.7					1.9			2.5			2.6	
2	COD (mg/L)			16.7				4.8			8.1			5.4	
3	DO (mg/L)			6.7				6.5			7.3			7.0	
4	DO_SAT% (%)			78				79			87			85	
5	FCol-MPN (MPN/100mL)							16000			16000			1400	
6	Tcol-MPN (MPN/100mL)							16000			16000			1400	
7	TOC (mg/L)							2.3			0.6				
TRACE & TOXIC															
1	As (µg/L)														
2	Cd (µg/L)							0.4							
3	Cr (µg/L)							0.0							
4	Cu (µg/L)														
5	Hg (µg/L)														
6	Ni (µg/L)							2.9							
7	Pb (µg/L)							13.0							
8	Zn (µg/L)							10.5							
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)		140					76			118			130	
2	HAR_Total (mgCaCO ₃ /L)			168				191			234			248	
3	Na% (%)			22				25			25			18	
4	RSC (-)			0.6				0.1			0.0			0.0	
5	SAR (-)			0.8				1.0			1.1			0.7	
PESTICIDES															
1	Aldrin (µg/L)							0.0							
2	BHC (µg/L)							0.0							
3	DDT (µg/L)							0.0							
4	Dieldrin (µg/L)							0.0							
5	Endos (µg/L)							0.0							

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Saigaon (AGP00N8)

Local River : Manjira

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)															
2	EC_GEN ($\mu\text{mho}/\text{cm}$)															
3	pH_GEN (pH units)															
4	TDS (mg/L)															
5	Temp (deg C)															
6	Turb (NTU)															
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)															
2	ALK-TOT (mgCaCO ₃ /L)															
3	B (mg/L)															
4	Ca (mg/L)															
5	Cl (mg/L)															
6	CO ₃ (mg/L)															
7	F (mg/L)															
8	Fe (mg/L)															
9	HCO ₃ (mg/L)															
10	K (mg/L)															
11	Mg (mg/L)															
12	Na (mg/L)															
13	NH ₃ -N (mg N/L)															
14	NO ₂ +NO ₃ (mg N/L)															
15	NO ₂ -N (mgN/L)															
16	NO ₃ -N (mgN/L)															
17	o-PO ₄ -P (mg P/L)															
18	P-Tot (mgP/L)															
19	SiO ₂ (mg/L)															
20	SO ₄ (mg/L)															

Water Quality Seasonal Average for the period: 2003-2018

Station Name : Saigaon (AGP00N8)

Local River : Manjira

Division : Upper Godavari Div., Hyderabad

Sub-Division : Manjira SD, Nizamabad

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)															
2	COD (mg/L)															
3	DO (mg/L)															
4	DO_SAT% (%)															
5	FCol-MPN (MPN/100mL)															
6	Tcol-MPN (MPN/100mL)															
7	TOC (mg/L)															
	TRACE & TOXIC															
1	As ($\mu\text{g}/\text{L}$)															
2	Cd ($\mu\text{g}/\text{L}$)															
3	Cr ($\mu\text{g}/\text{L}$)															
4	Cu ($\mu\text{g}/\text{L}$)															
5	Hg ($\mu\text{g}/\text{L}$)															
6	Ni ($\mu\text{g}/\text{L}$)															
7	Pb ($\mu\text{g}/\text{L}$)															
8	Zn ($\mu\text{g}/\text{L}$)															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)															
2	HAR_Total (mgCaCO ₃ /L)															
3	Na% (%)															
4	RSC (-)															
5	SAR (-)															
	PESTICIDES															
1	Aldrin ($\mu\text{g}/\text{L}$)															
2	BHC ($\mu\text{g}/\text{L}$)															
3	DDT ($\mu\text{g}/\text{L}$)															
4	Dieldrin ($\mu\text{g}/\text{L}$)															
5	Endos ($\mu\text{g}/\text{L}$)															

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Nanded	Code	: Nanded
State	: Maharashtra	District	Nanded
Basin	: Godavari	Independent River	: Godavari
Tributary	: -	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Godavari
Division	: U Godavari Div., Hyderabad	Sub-Division	: Purna SD, Nanded
Drainage Area	: 52038 Sq. Km.	Bank	:
Latitude	: 19°10'00"	Longitude	: 77°19'19"
	Opening Date	Closing Date	
Gauge	: 20.08.1976		
Discharge	:		
Sediment	:		
Water Quality	: 01.04.2014		

Water Quality Datasheet for the period : 2017-2018

Station Name : Nanded (Nanded)

Local River : Godavari

Division : U Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water Analysis

S.No	Parameters	29.08.2017	11.10.2017
		A	A
PHYSICAL			
1	Q (cumec)	1400	887.2
2	Colour_Cod (-)	Brown	
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	279	360
4	Odour_Code (-)	odour free	
5	pH_GEN (pH units)	7.6	8.2
6	TDS (mg/L)	213	203
7	Temp (deg C)	26.0	
8	Turb (NTU)	181.0	93.0
CHEMICAL			
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	104	108
3	B (mg/L)		0.03
4	Ca (mg/L)	22	30
5	Cl (mg/L)	33.0	25.4
6	CO ₃ (mg/L)	0.0	0.0
7	F (mg/L)	0.37	0.33
8	Fe (mg/L)	16.3	2.1
9	HCO ₃ (mg/L)	127	132
10	K (mg/L)	0.4	0.4
11	Mg (mg/L)	22.0	22.6
12	Na (mg/L)	23.8	26.4
13	NH ₃ -N (mg N/L)	0.02	0.28
14	NO ₂ +NO ₃ (mg N/L)	8.95	4.90
15	NO ₂ -N (mgN/L)	1.00	0.04
16	NO ₃ -N (mgN/L)	7.95	4.86
17	o-PO ₄ -P (mg P/L)	1.350	0.930
18	SiO ₂ (mg/L)	13.8	16.4

Water Quality Datasheet for the period : 2017-2018

Station Name : Nanded (Nanded)

Local River : Godavari

Division : U Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water Analysis

S.No	Parameters	29.08.2017	11.10.2017
		A	A
19	SO4 (mg/L)	36.1	50.4
BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	1.9	0.7
2	COD (mg/L)	15.1	42.6
3	DO (mg/L)	5.5	6.6
4	DO_SAT% (%)	68	
5	FCol-MPN (MPN/100mL)	2400	3000
6	Tcol-MPN (MPN/100mL)	2400	16000
TRACE & TOXIC			
1	Cu (μ g/L)	37.0	9.0
2	Zn (μ g/L)	73.0	31.0
CHEMICAL INDICES			
1	HAR_Ca (mgCaCO ₃ /L)	55	76
2	HAR_Total (mgCaCO ₃ /L)	147	170
3	Na% (%)	26	25
4	RSC (-)	0.0	0.0
5	SAR (-)	0.9	0.9
PESTICIDES			

Water Quality Summary for the period : 2017-2018

Station Name : Nanded (Nanded)

Local River : Godavari

Division : U Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	1525	0.000	39.73
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	2	360	279	320
3	pH_GEN (pH units)	2	8.2	7.6	7.9
4	TDS (mg/L)	2	213	203	208
5	Temp (deg C)	1	26.0	26.0	26
6	Turb (NTU)	2	181.0	93.0	137
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	2	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	2	108	104	106
3	B (mg/L)	1	0.03	0.03	0.03
4	Ca (mg/L)	2	30	22	26
5	Cl (mg/L)	2	33.0	25.4	29.2
6	CO ₃ (mg/L)	2	0.0	0.0	0
7	F (mg/L)	2	0.37	0.33	0.35
8	Fe (mg/L)	2	16.3	2.1	9.2
9	HCO ₃ (mg/L)	2	132	127	129
10	K (mg/L)	2	0.4	0.4	0.4
11	Mg (mg/L)	2	22.6	22.0	22.3
12	Na (mg/L)	2	26.4	23.8	25.1
13	NH ₃ -N (mg N/L)	2	0.28	0.02	0.15
14	NO ₂ +NO ₃ (mg N/L)	2	8.95	4.90	6.92
15	NO ₂ -N (mgN/L)	2	1.00	0.04	0.52
16	NO ₃ -N (mgN/L)	2	7.95	4.86	6.41
17	o-PO ₄ -P (mg P/L)	2	1.350	0.930	1.14
18	SiO ₂ (mg/L)	2	16.4	13.8	15.1
19	SO ₄ (mg/L)	2	50.4	36.1	43.2
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	2	1.9	0.7	1.3
2	COD (mg/L)	2	42.6	15.1	28.9
3	DO (mg/L)	2	6.6	5.5	6
4	DO_SAT% (%)	1	68	68	68
5	FCol-MPN (MPN/100mL)	2	3000	2400	2700
6	Tcol-MPN (MPN/100mL)	2	16000	2400	9200
TRACE & TOXIC					
1	Cu ($\mu\text{g}/\text{L}$)	2	37.0	9.0	23
2	Zn ($\mu\text{g}/\text{L}$)	2	73.0	31.0	52
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	2	76	55	65
2	HAR_Total (mgCaCO ₃ /L)	2	170	147	158
3	Na% (%)	2	26	25	26
4	RSC (-)	2	0.0	0.0	0
5	SAR (-)	2	0.9	0.9	0.9
PESTICIDES					

Water Quality Seasonal Average for the period: 2014-2018

Station Name : Nanded (Nanded)

Local River : Godavari

River Water

Division : U Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)			918.5	1144								
2	EC_GEN ($\mu\text{mho}/\text{cm}$)			346	320								
3	pH_GEN (pH units)			8.1	7.9								
4	TDS (mg/L)			206	208								
5	Temp (deg C)			26.0	26.0								
6	Turb (NTU)			1.0	137.0								
CHEMICAL													
1	ALK-TOT (mgCaCO ₃ /L)			144	106								
2	B (mg/L)				0.03								
3	Ca (mg/L)			31	26								
4	Cl (mg/L)			20.1	29.2								
5	F (mg/L)			0.01	0.35								
6	Fe (mg/L)			0.2	9.2								
7	HCO ₃ (mg/L)			175	129								
8	K (mg/L)			3.5	0.4								
9	Mg (mg/L)			17.1	22.3								
10	Na (mg/L)			19.7	25.1								
11	NH ₃ -N (mg N/L)			0.00	0.15								
12	NO ₂ +NO ₃ (mg N/L)			2.40	6.92								
13	NO ₂ -N (mgN/L)			0.00	0.52								
14	NO ₃ -N (mgN/L)			2.40	6.41								
15	o-PO ₄ -P (mg P/L)			0.031	1.140								
16	SiO ₂ (mg/L)			10.9	15.1								
17	SO ₄ (mg/L)			17.3	43.2								

Water Quality Seasonal Average for the period: 2014-2018

Station Name : Nanded (Nanded)

Local River : Godavari

Division : U Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)				1.1	1.3							
2	COD (mg/L)				7.4	28.9							
3	DO (mg/L)				6.7	6.0							
4	DO_SAT% (%)				83	68							
5	FCol-MPN (MPN/100mL)				16000	2700							
6	Tcol-MPN (MPN/100mL)				16000	9200							
TRACE & TOXIC													
1	Cu ($\mu\text{g}/\text{L}$)					23.0							
2	Zn ($\mu\text{g}/\text{L}$)					52.0							
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)				79	65							
2	HAR_Total (mgCaCO ₃ /L)				150	158							
3	Na% (%)				22	26							
4	SAR (-)				0.7	0.9							
PESTICIDES													

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Purna	Code	: AGR00A5
State	: Maharashtra	District	Parbhani
Basin	: Godavari	Independent River	: Godavari
Tributary	: Purna	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Purna
Division	: Upper Godavari Div., Hyderabad	Sub-Division	: Purna SD, Nanded
Drainage Area	: 15000 Sq. Km.	Bank	: Left
Latitude	: 19°10'33"	Longitude	: 77°00'50"
	Opening Date	Closing Date	
Gauge	: 23.06.1968		
Discharge	: 02.09.1969		
Sediment	: 10.10.1972	31.05.2006	
Water Quality	: 01.11.1972		

Water Quality Datasheet for the period : 2017-2018

Station Name : Purna (AGR00A5)

Local River : Purna

River Water Analysis

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

S.No	Parameters	23.08.2017	01.09.2017	10.10.2017	15.05.2018
		A	A	A	A
PHYSICAL					
1	Q (cumec)	15.88	24.55	47.18	38.79
2	Colour_Cod (-)			Light Brown	Clear
3	EC_FLD ($\mu\text{mho}/\text{cm}$)		435	399	403
4	EC_GEN ($\mu\text{mho}/\text{cm}$)	375	335	420	229
5	Odour_Code (-)			odour free	odour free
6	pH_FLD (pH units)		8.1	7.2	7.5
7	pH_GEN (pH units)	7.8	8.3	7.7	8.2
8	TDS (mg/L)	185	275	238	168
9	Temp (deg C)	24.0	35.1	32.1	36.0
10	Turb (NTU)	178.0	51.0	546.0	4.0
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	0.0	23.9	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	124	156	132	146
3	B (mg/L)			0.00	0.13
4	Ca (mg/L)	34	29	32	25
5	Cl (mg/L)	29.3	24.8	74.4	34.1
6	CO ₃ (mg/L)	0.0	28.8	0.0	0.0
7	F (mg/L)	0.35	0.10	0.43	0.45
8	Fe (mg/L)	3.2	1.0	30.3	0.8
9	HCO ₃ (mg/L)	151	132	161	178
10	K (mg/L)	0.4	0.4	0.6	0.8
11	Mg (mg/L)	18.5	26.3	39.8	11.4
12	Na (mg/L)	30.8	23.7	25.7	31.6
13	NH ₃ -N (mg N/L)	0.09	0.08	0.12	0.34
14	NO ₂ +NO ₃ (mg N/L)	8.13	3.77	4.36	3.94
15	NO ₂ -N (mgN/L)	0.66	0.05	0.02	0.03
16	NO ₃ -N (mgN/L)	7.48	3.73	4.34	3.91
17	o-PO ₄ -P (mg P/L)	0.460	0.500	0.970	0.200
18	SiO ₂ (mg/L)	15.5	17.0	18.4	10.7
19	SO ₄ (mg/L)	36.7	6.9	20.4	15.1

Water Quality Datasheet for the period : 2017-2018

Station Name : Purna (AGR00A5)

Local River : Purna

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water Analysis

S.No	Parameters	23.08.2017	01.09.2017	10.10.2017	15.05.2018
		A	A	A	A
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD3-27 (mg/L)	2.8	0.3	1.7	0.7
2	COD (mg/L)	29.4	63.9	63.9	76.7
3	DO (mg/L)	5.5	6.3	4.1	5.1
4	DO_SAT% (%)	65	91	56	75
5	FCol-MPN (MPN/100mL)	5000	500	3000	
6	Tcol-MPN (MPN/100mL)	5000	500	3000	
TRACE & TOXIC					
1	Cu (µg/L)	14.0	3.0	6.0	1.0
2	Zn (µg/L)	52.1	48.0	77.0	25.0
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	85	72	79	62
2	HAR_Total (mgCaCO ₃ /L)	162	181	245	109
3	Na% (%)	29	22	19	39
4	RSC (-)	0.0	0.0	0.0	0.7
5	SAR (-)	1.1	0.8	0.7	1.3
PESTICIDES					

Water Quality Summary for the period : 2017-2018

Station Name : Purna (AGR00A5)

Local River : Purna

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	233.6	0.000	6.614
2	EC_FLD ($\mu\text{mho}/\text{cm}$)	3	435	399	412
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	4	420	229	340
4	pH_FLD (pH units)	3	8.1	7.2	7.6
5	pH_GEN (pH units)	4	8.3	7.7	8
6	TDS (mg/L)	4	275	168	217
7	Temp (deg C)	4	36.0	24.0	31.8
8	Turb (NTU)	4	546.0	4.0	194.8
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	4	23.9	0.0	6
2	ALK-TOT (mgCaCO ₃ /L)	4	156	124	139
3	B (mg/L)	2	0.13	0.00	0.06
4	Ca (mg/L)	4	34	25	30
5	Cl (mg/L)	4	74.4	24.8	40.6
6	CO ₃ (mg/L)	4	28.8	0.0	7.2
7	F (mg/L)	4	0.45	0.10	0.33
8	Fe (mg/L)	4	30.3	0.8	8.8
9	HCO ₃ (mg/L)	4	178	132	155
10	K (mg/L)	4	0.8	0.4	0.6
11	Mg (mg/L)	4	39.8	11.4	24
12	Na (mg/L)	4	31.6	23.7	28
13	NH ₃ -N (mg N/L)	4	0.34	0.08	0.16
14	NO ₂ +NO ₃ (mg N/L)	4	8.13	3.77	5.05
15	NO ₂ -N (mgN/L)	4	0.66	0.02	0.19
16	NO ₃ -N (mgN/L)	4	7.48	3.73	4.86
17	o-PO ₄ -P (mg P/L)	4	0.970	0.200	0.533
18	SiO ₂ (mg/L)	4	18.4	10.7	15.4
19	SO ₄ (mg/L)	4	36.7	6.9	19.8
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	4	2.8	0.3	1.4
2	COD (mg/L)	4	76.7	29.4	58.5
3	DO (mg/L)	4	6.3	4.1	5.3
4	DO_SAT% (%)	4	91	56	72
5	FCol-MPN (MPN/100mL)	3	5000	500	2833
6	Tcol-MPN (MPN/100mL)	3	5000	500	2833
TRACE & TOXIC					
1	Cu ($\mu\text{g}/\text{L}$)	4	14.0	1.0	6
2	Zn ($\mu\text{g}/\text{L}$)	4	77.0	25.0	50.5
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	4	85	62	74
2	HAR_Total (mgCaCO ₃ /L)	4	245	109	174
3	Na% (%)	4	39	19	27
4	RSC (-)	4	0.7	0.0	0.2
5	SAR (-)	4	1.3	0.7	1
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Purna (AGR00A5)

Local River : Purna

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	20.31	32.24								131.9	470.3		74.67	29.20
2	EC_FLD ($\mu\text{mho}/\text{cm}$)													433	417
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	261	423								397	449		405	377
4	pH_FLD (pH units)													8.0	7.6
5	pH_GEN (pH units)	7.9	8.2								7.9	8.1		8.2	8.0
6	TDS (mg/L)										247	252		308	233
7	Temp (deg C)	23.0	24.3								24.0	18.0		27.7	30.4
8	Turb (NTU)										22.1	72.0		22.0	258.3
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	0.0	4.9								0.0	0.0		0.0	8.0
2	ALK-TOT (mgCaCO ₃ /L)	108	153								192	105		173	137
3	B (mg/L)	0.25	0.09								0.04	0.43			0.00
4	Ca (mg/L)	25	33								39	33		37	31
5	Cl (mg/L)	17.7	23.8								16.3	25.5		24.4	42.8
6	CO ₃ (mg/L)	0.0	5.9								0.0	0.0		0.0	9.6
7	F (mg/L)	0.50	0.42								0.49	0.33		0.16	0.29
8	Fe (mg/L)	0.1	0.1								0.1	0.1		0.2	11.5
9	HCO ₃ (mg/L)	131	174								234	128		211	148
10	K (mg/L)	2.8	3.2								3.4	4.4		3.9	0.5
11	Mg (mg/L)	4.7	11.6								22.9	18.0		20.3	28.2
12	Na (mg/L)	19.3	27.0								34.6	42.4		27.7	26.8
13	NH ₃ -N (mg N/L)	0.05	0.03								0.07	0.00		0.00	0.10
14	NO ₂ +NO ₃ (mg N/L)	0.87	1.45								4.60	3.90		3.20	5.42
15	NO ₂ -N (mgN/L)	0.01	0.06								0.00	0.13		1.38	0.24
16	NO ₃ -N (mgN/L)	0.87	1.38								4.60	3.76		1.82	5.18
17	o-PO ₄ -P (mg P/L)	0.090	0.021								0.101	0.167		0.027	0.643
18	SiO ₂ (mg/L)	14.0	23.7								22.1	19.1		15.2	17.0
19	SO ₄ (mg/L)	14.7	19.3								27.6	136.0		15.5	21.3

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Purna (AGR00A5)

Local River : Purna

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.1	1.6								2.3	0.9		1.3	1.6
2	COD (mg/L)	1.0	25.4								13.1	19.4		7.0	52.4
3	DO (mg/L)	5.5	6.4								5.9	5.1		5.8	5.3
4	DO_SAT% (%)	64	77								70	54		73	71
5	FCol-MPN (MPN/100mL)										6300	16000		10667	2833
6	Tcol-MPN (MPN/100mL)										11033	16000		16000	2833
7	TOC (mg/L)	5.5									1.7	7.1			
TRACE & TOXIC															
1	Al (mg/L)														
2	As (µg/L)										6.3				
3	Cd (µg/L)										0.3				
4	Cr (µg/L)										0.5				
5	Cu (µg/L)										2.3				7.7
6	Hg (µg/L)										0.3				
7	Ni (µg/L)										7.6				
8	Pb (µg/L)										1.9				
9	Zn (µg/L)										2.0				59.0
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	63	82								98	82		92	79
2	HAR_Total (mgCaCO ₃ /L)	83	130								193	157		176	196
3	Na% (%)	33	31								27	36		26	23
4	RSC (-)	0.5	0.5								0.2	0.0		0.0	0.0
5	SAR (-)	0.9	1.0								1.1	1.5		0.9	0.8
PESTICIDES															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Purna (AGR00A5)

Local River : Purna

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)		4.332									21.54			
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														
3	EC_GEN ($\mu\text{mho}/\text{cm}$)		525									465			
4	pH_FLD (pH units)														
5	pH_GEN (pH units)		8.3									8.1			
6	TDS (mg/L)											284			
7	Temp (deg C)		20.0									23.0			
8	Turb (NTU)											5.0			
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)		4.3									0.0			
2	ALK-TOT (mgCaCO ₃ /L)		201									193			
3	B (mg/L)		0.24									0.03			
4	Ca (mg/L)		50									42			
5	Cl (mg/L)		24.0									24.5			
6	CO ₃ (mg/L)		5.1									0.0			
7	F (mg/L)		0.55									0.39			
8	Fe (mg/L)		0.0									0.0			
9	HCO ₃ (mg/L)		235									235			
10	K (mg/L)		3.2									3.4			
11	Mg (mg/L)		10.9									24.3			
12	Na (mg/L)		32.5									34.6			
13	NH ₃ -N (mg N/L)		0.05									0.04			
14	NO ₂ +NO ₃ (mg N/L)		1.03									2.03			
15	NO ₂ -N (mgN/L)		0.00									0.00			
16	NO ₃ -N (mgN/L)		1.02									2.03			
17	o-PO ₄ -P (mg P/L)		0.064									0.001			
18	SiO ₂ (mg/L)		25.0									26.1			
19	SO ₄ (mg/L)		22.5									25.6			

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Purna (AGR00A5)

Local River : Purna

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)		0.8								0.5				
2	COD (mg/L)			17.9							4.1				
3	DO (mg/L)			7.1							6.4				
4	DO_SAT% (%)			79							75				
5	FCol-MPN (MPN/100mL)			660							16000				
6	Tcol-MPN (MPN/100mL)			930							16000				
7	TOC (mg/L)										0.5				
TRACE & TOXIC															
1	Al (mg/L)														
2	As (μ g/L)														
3	Cd (μ g/L)														
4	Cr (μ g/L)														
5	Cu (μ g/L)														
6	Hg (μ g/L)														
7	Ni (μ g/L)														
8	Pb (μ g/L)														
9	Zn (μ g/L)														
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)		125								104				
2	HAR_Total (mgCaCO ₃ /L)		170								205				
3	Na% (%)		29								27				
4	RSC (-)		0.6								0.0				
5	SAR (-)		1.1								1.1				
PESTICIDES															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Purna (AGR00A5)

Local River : Purna

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)			0.910								5.128			38.79	
2	EC_FLD ($\mu\text{mho}/\text{cm}$)														403	
3	EC_GEN ($\mu\text{mho}/\text{cm}$)			520								464			229	
4	pH_FLD (pH units)														7.5	
5	pH_GEN (pH units)			8.1								7.7			8.2	
6	TDS (mg/L)											319			168	
7	Temp (deg C)			21.0								23.5			36.0	
8	Turb (NTU)											19.5			4.0	
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)			0.0								0.0			0.0	
2	ALK-TOT (mgCaCO ₃ /L)			207								179			146	
3	B (mg/L)			0.20								0.02			0.13	
4	Ca (mg/L)			62								34			25	
5	Cl (mg/L)			27.5								24.1			34.1	
6	CO ₃ (mg/L)			0.0								0.0			0.0	
7	F (mg/L)			0.71								0.73			0.45	
8	Fe (mg/L)			0.2								0.0			0.8	
9	HCO ₃ (mg/L)			252								219			178	
10	K (mg/L)			3.0								4.1			0.8	
11	Mg (mg/L)			6.3								19.4			11.4	
12	Na (mg/L)			26.0								31.0			31.6	
13	NH ₃ -N (mg N/L)			0.05								0.07			0.34	
14	NO ₂ +NO ₃ (mg N/L)			1.70								2.28			3.94	
15	NO ₂ -N (mgN/L)			0.02								0.00			0.03	
16	NO ₃ -N (mgN/L)			1.68								2.28			3.91	
17	o-PO ₄ -P (mg P/L)			0.049								0.001			0.200	
18	SiO ₂ (mg/L)			21.0								24.5			10.7	
19	SO ₄ (mg/L)			18.0								25.8			15.1	

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Purna (AGR00A5)

Local River : Purna

Division : Upper Godavari Div., Hyderabad

Sub-Division : Purna SD, Nanded

River Water

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)			0.8								0.8			0.7	
2	COD (mg/L)			17.5								4.1			76.7	
3	DO (mg/L)			5.2								3.9			5.1	
4	DO_SAT% (%)			58								46			75	
5	FCol-MPN (MPN/100mL)			16000								8020				
6	Tcol-MPN (MPN/100mL)			16000								8060				
7	TOC (mg/L)											7.1				
TRACE & TOXIC																
1	Al (mg/L)															
2	As (µg/L)											1.1				
3	Cd (µg/L)											0.0				
4	Cr (µg/L)											0.2				
5	Cu (µg/L)											1.6			1.0	
6	Hg (µg/L)											0.1				
7	Ni (µg/L)											3.7				
8	Pb (µg/L)											17.6				
9	Zn (µg/L)											24.5			25.0	
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)			155								86			62	
2	HAR_Total (mgCaCO ₃ /L)			181								167			109	
3	Na% (%)			23								28			39	
4	RSC (-)			0.5								0.3			0.7	
5	SAR (-)			0.8								1.0			1.3	
PESTICIDES																

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Dhalegaon	Code	: AG000S9
State	: Maharashtra	District	Parbhani
Basin	: Godavari	Independent River	: Godavari
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Godavari
Division	: Upper Godavari Div., Hyderabad	Sub-Division	: Upper Godavari SD, Aurangabad
Drainage Area	: 30840 Sq. Km.	Bank	: Left
Latitude	: 19°13'13"	Longitude	: 76°21'52"
	Opening Date	Closing Date	
Gauge	: 04.01.1964		
Discharge	: 16.08.1964		
Sediment	: 11.07.1971		
Water Quality	: 01.07.1972		

Water Quality Datasheet for the period : 2017-2018

Station Name : Dhalegaon (AG000S9)

Division : Upper Godavari Div., Hyderabad

Local River : Godavari

River Water Analysis Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	27.08.2017	01.09.2017	10.10.2017
		A	A	A
	PHYSICAL			
1	Q (cumec)	0.000	0.000	0.000
2	Colour_Cod (-)			Brown
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	315	250	370
4	Odour_Code (-)			odour free
5	pH_GEN (pH units)	8.0	8.3	8.3
6	TDS (mg/L)	225	139	205
7	Temp (deg C)	25.0		23.0
8	Turb (NTU)	308.0	195.0	22.0
	CHEMICAL			
1	Alk-Phen (mgCaCO ₃ /L)	0.0	12.0	12.0
2	ALK-TOT (mgCaCO ₃ /L)	104	108	108
3	B (mg/L)			0.00
4	Ca (mg/L)	28	51	27
5	Cl (mg/L)	23.3	66.8	80.2
6	CO ₃ (mg/L)	0.0	14.4	14.4
7	F (mg/L)	0.30	0.40	0.38
8	Fe (mg/L)	7.9	12.1	0.1
9	HCO ₃ (mg/L)	127	103	103
10	K (mg/L)	0.5	0.5	0.5
11	Mg (mg/L)	17.7	27.2	41.6
12	Na (mg/L)	30.8	32.0	28.8
13	NH ₃ -N (mg N/L)	0.05	0.01	0.03
14	NO ₂ +NO ₃ (mg N/L)	4.88	3.46	3.81
15	NO ₂ -N (mgN/L)	0.32	0.02	0.01
16	NO ₃ -N (mgN/L)	4.56	3.43	3.80
17	o-PO ₄ -P (mg P/L)	0.420	0.120	0.700
18	SiO ₂ (mg/L)	14.8	15.5	12.4
19	SO ₄ (mg/L)	56.1	57.2	32.4
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD ₃₋₂₇ (mg/L)	1.8	1.1	1.6
2	COD (mg/L)	23.1	54.1	54.1
3	DO (mg/L)	4.9	6.6	4.6
4	DO_SAT% (%)	59		54
5	FCol-MPN (MPN/100mL)	16000	2400	1300
6	Tcol-MPN (MPN/100mL)	16000	2400	1300
	TRACE & TOXIC			
1	Cu ($\mu\text{g}/\text{L}$)	24.0	34.0	10.0
2	Zn ($\mu\text{g}/\text{L}$)	52.0	103.0	18.0
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO ₃ /L)	70	128	68
2	HAR_Total (mgCaCO ₃ /L)	144	242	241
3	Na% (%)	32	22	21
4	RSC (-)	0.0	0.0	0.0
5	SAR (-)	1.1	0.9	0.8
	PESTICIDES			

Water Quality Summary for the period : 2017-2018

Station Name : Dhalegaon (AG000S9)

Local River : Godavari

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	0.000	0.000	0.000
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	3	370	250	312
3	pH_GEN (pH units)	3	8.3	8.0	8.2
4	TDS (mg/L)	3	225	139	190
5	Temp (deg C)	2	25.0	23.0	24
6	Turb (NTU)	3	308.0	22.0	175
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	3	12.0	0.0	8
2	ALK-TOT (mgCaCO ₃ /L)	3	108	104	107
3	B (mg/L)	1	0.00	0.00	0
4	Ca (mg/L)	3	51	27	35
5	Cl (mg/L)	3	80.2	23.3	56.8
6	CO ₃ (mg/L)	3	14.4	0.0	9.6
7	F (mg/L)	3	0.40	0.30	0.36
8	Fe (mg/L)	3	12.1	0.1	6.7
9	HCO ₃ (mg/L)	3	127	103	111
10	K (mg/L)	3	0.5	0.5	0.5
11	Mg (mg/L)	3	41.6	17.7	28.8
12	Na (mg/L)	3	32.0	28.8	30.5
13	NH ₃ -N (mg N/L)	3	0.05	0.01	0.03
14	NO ₂ +NO ₃ (mg N/L)	3	4.88	3.46	4.05
15	NO ₂ -N (mgN/L)	3	0.32	0.01	0.12
16	NO ₃ -N (mgN/L)	3	4.56	3.43	3.93
17	o-PO ₄ -P (mg P/L)	3	0.700	0.120	0.413
18	SiO ₂ (mg/L)	3	15.5	12.4	14.2
19	SO ₄ (mg/L)	3	57.2	32.4	48.6
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	3	1.8	1.1	1.5
2	COD (mg/L)	3	54.1	23.1	43.8
3	DO (mg/L)	3	6.6	4.6	5.4
4	DO_SAT% (%)	2	59	54	56
5	FCol-MPN (MPN/100mL)	3	16000	1300	6567
6	Tcol-MPN (MPN/100mL)	3	16000	1300	6567
TRACE & TOXIC					
1	Cu ($\mu\text{g}/\text{L}$)	3	34.0	10.0	22.7
2	Zn ($\mu\text{g}/\text{L}$)	3	103.0	18.0	57.7
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	3	128	68	89
2	HAR_Total (mgCaCO ₃ /L)	3	242	144	209
3	Na% (%)	3	32	21	25
4	RSC (-)	3	0.0	0.0	0
5	SAR (-)	3	1.1	0.8	0.9
PESTICIDES					

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Dhalegaon (AG000S9)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PHYSICAL															
1	Q (cumec)	18.78	109.0	296.0	45.26			114.6	125.9					186.6	0.000
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	344	322	440	635			389	421					381	312
3	pH_GEN (pH units)	8.3	7.6	8.4	8.6			8.1	8.3					7.5	8.2
4	TDS (mg/L)							241	312					213	190
5	Temp (deg C)	26.0	26.0	27.0	28.5			28.0	27.0					26.0	24.0
6	Turb (NTU)							2.3	0.0					2.0	175.0
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)	19.8	1.4	12.3	15.7			4.1	8.1					0.0	8.0
2	ALK-TOT (mgCaCO ₃ /L)	148	93	137	130			143	147					149	107
3	B (mg/L)	0.16	0.16	0.19	0.09			0.18	0.17						0.00
4	Ca (mg/L)	28	31	33	26			30	28					32	35
5	Cl (mg/L)	26.5	21.2	38.7	62.0			31.5	24.3					20.1	56.8
6	CO ₃ (mg/L)	23.8	1.7	14.8	18.9			4.9	9.8					0.0	9.6
7	F (mg/L)	0.44	0.24	0.30	0.44			0.28	0.39					0.00	0.36
8	Fe (mg/L)	0.1	0.1	0.2	0.1			0.2	0.2					0.2	6.7
9	HCO ₃ (mg/L)	132	110	137	120			165	159					182	111
10	K (mg/L)	3.3	2.5	3.2	2.8			3.6	3.5					3.9	0.5
11	Mg (mg/L)	5.6	7.8	12.5	24.7			14.7	21.3					17.5	28.8
12	Na (mg/L)	45.5	22.3	46.7	55.3			28.5	27.0					16.5	30.5
13	NH ₃ -N (mg N/L)	0.05	0.82	0.05	0.11			0.13	0.11					0.00	0.03
14	NO ₂ +NO ₃ (mg N/L)	0.95	0.77	0.98	0.80			0.99	1.01					2.24	4.05
15	NO ₂ -N (mgN/L)	0.01	0.05	0.01	0.02			0.05	0.01					0.24	0.12
16	NO ₃ -N (mgN/L)	0.95	0.77	0.97	0.78			0.93	1.00					2.00	3.93
17	o-PO ₄ -P (mg P/L)	0.060	0.009					0.022	0.013					0.091	0.413
18	P-Tot (mgP/L)			0.013	0.043										
19	SiO ₂ (mg/L)	25.0	25.0	12.5	22.0			24.8	19.8					16.8	14.2
20	SO ₄ (mg/L)	21.0	18.7	17.3	70.3			27.0	29.5					17.8	48.6

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Dhalegaon (AG000S9)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	Flood													
		Jun - Oct													
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	0.8	1.5	1.0	0.8			0.8	1.0					1.1	1.5
2	COD (mg/L)	31.8	25.0	29.8	24.1			4.9	6.7					6.1	43.8
3	DO (mg/L)	4.8	5.7	6.2	5.6			5.7	6.8					5.9	5.4
4	DO_SAT% (%)	59	70	78	72			72	85					73	56
5	FCol-MPN (MPN/100mL)		2050	12333	293			260	16000					3000	6567
6	Tcol-MPN (MPN/100mL)		3000	13667	403			8010	16000					9000	6567
7	TOC (mg/L)	5.2			1.1			2.4	4.6						
TRACE & TOXIC															
1	Cd ($\mu\text{g}/\text{L}$)				8.4										
2	Cr ($\mu\text{g}/\text{L}$)				15.2										
3	Cu ($\mu\text{g}/\text{L}$)														22.7
4	Hg ($\mu\text{g}/\text{L}$)				2.0										
5	Ni ($\mu\text{g}/\text{L}$)				8.0										
6	Pb ($\mu\text{g}/\text{L}$)				14.3										
7	Zn ($\mu\text{g}/\text{L}$)				248.8										57.7
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	70	77	83	66			74	70					80	89
2	HAR_Total (mgCaCO ₃ /L)	93	110	134	169			135	159					153	209
3	Na% (%)	50	30	41	41			31	27					19	25
4	RSC (-)	1.1	0.0	0.2	0.0			0.2	0.0					0.0	0.0
5	SAR (-)	2.1	0.9	1.7	1.9			1.1	0.9					0.6	0.9
PESTICIDES															
1	Aldrin ($\mu\text{g}/\text{L}$)				0.0										
2	BHC ($\mu\text{g}/\text{L}$)				0.1										
3	DDT ($\mu\text{g}/\text{L}$)				0.1										
4	Dieldrin ($\mu\text{g}/\text{L}$)				0.0										
5	Endos ($\mu\text{g}/\text{L}$)				0.1										

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Dhalegaon (AG000S9)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
PHYSICAL															
1	Q (cumec)		11.25	3.114	1.478										
2	EC_GEN ($\mu\text{mho}/\text{cm}$)		599	840	780										
3	pH_GEN (pH units)		8.3	8.6	8.2										
4	TDS (mg/L)														
5	Temp (deg C)		23.3	22.0	25.0										
6	Turb (NTU)														
CHEMICAL															
1	Alk-Phen (mgCaCO ₃ /L)		4.4	6.5	0.0										
2	ALK-TOT (mgCaCO ₃ /L)		167	180	219										
3	B (mg/L)		0.21	0.12	0.18										
4	Ca (mg/L)		62	48	64										
5	Cl (mg/L)		53.2	72.3	65.0										
6	CO ₃ (mg/L)		5.3	7.8	0.0										
7	F (mg/L)		0.51	0.17	0.60										
8	Fe (mg/L)		0.1	0.1	0.3										
9	HCO ₃ (mg/L)		193	204	267										
10	K (mg/L)		4.2	3.3	0.6										
11	Mg (mg/L)		7.9	22.8	17.0										
12	Na (mg/L)		47.3	88.0	73.6										
13	NH ₃ -N (mg N/L)		0.05	0.05	0.05										
14	NO ₂ +NO ₃ (mg N/L)		0.81	1.54	1.83										
15	NO ₂ -N (mgN/L)		0.01	0.00	0.15										
16	NO ₃ -N (mgN/L)		0.81	1.54	1.68										
17	o-PO ₄ -P (mg P/L)		0.004												
18	P-Tot (mgP/L)			0.030	0.037										
19	SiO ₂ (mg/L)		25.0	24.1	25.0										
20	SO ₄ (mg/L)		28.0	98.0	98.0										

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Dhalegaon (AG000S9)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	Winter													
		Nov - Feb													
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)		0.8	0.8	1.2										
2	COD (mg/L)		0.0	6.8	65.0										
3	DO (mg/L)		7.3	6.7	6.9										
4	DO_SAT% (%)		85	75	84										
5	FCol-MPN (MPN/100mL)		1760	1260	800										
6	Tcol-MPN (MPN/100mL)		8020	9500	1300										
7	TOC (mg/L)				1.4										
TRACE & TOXIC															
1	Cd ($\mu\text{g}/\text{L}$)			131.0											
2	Cr ($\mu\text{g}/\text{L}$)			27.0											
3	Cu ($\mu\text{g}/\text{L}$)														
4	Hg ($\mu\text{g}/\text{L}$)			0.2											
5	Ni ($\mu\text{g}/\text{L}$)			24.0											
6	Pb ($\mu\text{g}/\text{L}$)			180.0											
7	Zn ($\mu\text{g}/\text{L}$)			170.0											
CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)		154	120	160										
2	HAR_Total (mgCaCO ₃ /L)		187	215	231										
3	Na% (%)		35	46	41										
4	RSC (-)		0.0	0.4	0.0										
5	SAR (-)		1.5	2.7	2.1										
PESTICIDES															
1	Aldrin ($\mu\text{g}/\text{L}$)			0.0											
2	BHC ($\mu\text{g}/\text{L}$)			0.1											
3	DDT ($\mu\text{g}/\text{L}$)			0.1											
4	Dieldrin ($\mu\text{g}/\text{L}$)			0.0											
5	Endos ($\mu\text{g}/\text{L}$)			0.1											

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Dhalegaon (AG000S9)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PHYSICAL																
1	Q (cumec)															
2	EC_GEN ($\mu\text{mho}/\text{cm}$)															
3	pH_GEN (pH units)															
4	TDS (mg/L)															
5	Temp (deg C)															
6	Turb (NTU)															
CHEMICAL																
1	Alk-Phen (mgCaCO ₃ /L)															
2	ALK-TOT (mgCaCO ₃ /L)															
3	B (mg/L)															
4	Ca (mg/L)															
5	Cl (mg/L)															
6	CO ₃ (mg/L)															
7	F (mg/L)															
8	Fe (mg/L)															
9	HCO ₃ (mg/L)															
10	K (mg/L)															
11	Mg (mg/L)															
12	Na (mg/L)															
13	NH ₃ -N (mg N/L)															
14	NO ₂ +NO ₃ (mg N/L)															
15	NO ₂ -N (mgN/L)															
16	NO ₃ -N (mgN/L)															
17	o-PO ₄ -P (mg P/L)															
18	P-Tot (mgP/L)															
19	SiO ₂ (mg/L)															
20	SO ₄ (mg/L)															

Water Quality Seasonal Average for the period: 2004-2018

Station Name : Dhalegaon (AG000S9)

Local River : Godavari

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	Summer														
		Mar - May														
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL																
1	BOD3-27 (mg/L)															
2	COD (mg/L)															
3	DO (mg/L)															
4	DO_SAT% (%)															
5	FCol-MPN (MPN/100mL)															
6	Tcol-MPN (MPN/100mL)															
7	TOC (mg/L)															
TRACE & TOXIC																
1	Cd ($\mu\text{g}/\text{L}$)															
2	Cr ($\mu\text{g}/\text{L}$)															
3	Cu ($\mu\text{g}/\text{L}$)															
4	Hg ($\mu\text{g}/\text{L}$)															
5	Ni ($\mu\text{g}/\text{L}$)															
6	Pb ($\mu\text{g}/\text{L}$)															
7	Zn ($\mu\text{g}/\text{L}$)															
CHEMICAL INDICES																
1	HAR_Ca (mgCaCO ₃ /L)															
2	HAR_Total (mgCaCO ₃ /L)															
3	Na% (%)															
4	RSC (-)															
5	SAR (-)															
PESTICIDES																
1	Aldrin ($\mu\text{g}/\text{L}$)															
2	BHC ($\mu\text{g}/\text{L}$)															
3	DDT ($\mu\text{g}/\text{L}$)															
4	Dieldrin ($\mu\text{g}/\text{L}$)															
5	Endos ($\mu\text{g}/\text{L}$)															

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Pachegaon	Code	: AGU00D3
State	: Maharashtra	District	Ahmednagar
Basin	: Godavari	Independent River	: Godavari
Tributary	: Pravara	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Pravara
Division	: Upper Godavari Div., Hyderabad	Sub-Division	: Upper Godavari SD, Aurangabad
Drainage Area	: 5800 Sq. Km.	Bank	: Left
Latitude	: 19°32'07"	Longitude	: 74°50'01"
	Opening Date	Closing Date	
Gauge	: 07.12.1978		
Discharge	: 23.07.1983		
Sediment	:		
Water Quality	: 01.04.2014		

Water Quality Datasheet for the period : 2017-2018

Station Name : Pachegaon (AGU00D3)

Local River : Pravara

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

River Water Analysis

S.No	Parameters	01.08.2017	01.09.2017	03.10.2017	01.11.2017
		A	A	A	A
PHYSICAL					
1	Q (cumec)	115.9	196.3	42.47	0.000
2	Colour_Cod (-)	Clear	Brown	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	185	185	250	449
4	Odour_Code (-)	odour free	odour free	odour free	odour free
5	pH_GEN (pH units)	8.0	7.8	8.4	8.0
6	TDS (mg/L)	133	133	246	272
7	Temp (deg C)	26.0	24.0	26.0	24.0
8	Turb (NTU)	44.0	83.0	11.0	18.0
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	15.9	0.0
2	ALK-TOT (mgCaCO ₃ /L)	156	104	124	188
3	B (mg/L)			0.25	0.03
4	Ca (mg/L)	27	24	45	34
5	Cl (mg/L)	12.0	19.1	60.7	42.8
6	CO ₃ (mg/L)	0.0	0.0	19.2	0.0
7	F (mg/L)	0.10	0.09	0.17	0.13
8	Fe (mg/L)	0.4	3.1	0.0	0.3
9	HCO ₃ (mg/L)	190	127	112	229
10	K (mg/L)	0.1	0.1	0.2	0.2
11	Mg (mg/L)	15.9	19.0	24.4	30.0
12	Na (mg/L)	12.0	11.2	38.7	42.4
13	NH ₃ -N (mg N/L)	0.04	0.07	0.14	3.32
14	NO ₂ +NO ₃ (mg N/L)	4.29	5.92	4.90	8.90
15	NO ₂ -N (mgN/L)	0.02	0.02	0.07	0.02
16	NO ₃ -N (mgN/L)	4.27	5.90	4.83	8.88
17	o-PO ₄ -P (mg P/L)	0.080	0.490	0.990	0.820
18	SiO ₂ (mg/L)	23.0	19.4	22.6	22.6

Water Quality Datasheet for the period : 2017-2018

Station Name : Pachegaon (AGU00D3)

Local River : Pravara

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

River Water Analysis

S.No	Parameters	01.08.2017	01.09.2017	03.10.2017	01.11.2017
		A	A	A	A
19	SO ₄ (mg/L)	5.3	7.9	36.8	66.5
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD ₃₋₂₇ (mg/L)	1.0	0.5	2.1	2.7
2	COD (mg/L)	17.2	2.2	27.9	47.5
3	DO (mg/L)	7.3	6.9	6.8	7.6
4	DO_SAT% (%)	90	82	84	90
5	FCol-MPN (MPN/100mL)	2400	340	300	3000
6	Tcol-MPN (MPN/100mL)	2400	3000	300	3000
	TRACE & TOXIC				
1	Cu (µg/L)	1.0	5.0	7.0	4.0
2	Zn (µg/L)	92.1	57.0	43.0	30.0
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO ₃ /L)	66	60	113	85
2	HAR_Total (mgCaCO ₃ /L)	133	140	215	210
3	Na% (%)	17	15	28	31
4	RSC (-)	0.5	0.0	0.0	0.0
5	SAR (-)	0.5	0.4	1.2	1.3
	PESTICIDES				

Water Quality Summary for the period : 2017-2018

Station Name : Pachegaon (AGU00D3)

Local River : Pravara

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	834.8	0.000	15.92
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	4	449	185	267
3	pH_GEN (pH units)	4	8.4	7.8	8
4	TDS (mg/L)	4	272	133	196
5	Temp (deg C)	4	26.0	24.0	25
6	Turb (NTU)	4	83.0	11.0	39
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	4	15.9	0.0	4
2	ALK-TOT (mgCaCO ₃ /L)	4	188	104	143
3	B (mg/L)	2	0.25	0.03	0.14
4	Ca (mg/L)	4	45	24	32
5	Cl (mg/L)	4	60.7	12.0	33.7
6	CO ₃ (mg/L)	4	19.2	0.0	4.8
7	F (mg/L)	4	0.17	0.09	0.12
8	Fe (mg/L)	4	3.1	0.0	1
9	HCO ₃ (mg/L)	4	229	112	165
10	K (mg/L)	4	0.2	0.1	0.2
11	Mg (mg/L)	4	30.0	15.9	22.3
12	Na (mg/L)	4	42.4	11.2	26.1
13	NH ₃ -N (mg N/L)	4	3.32	0.04	0.89
14	NO ₂ +NO ₃ (mg N/L)	4	8.90	4.29	6
15	NO ₂ -N (mgN/L)	4	0.07	0.02	0.03
16	NO ₃ -N (mgN/L)	4	8.88	4.27	5.97
17	o-PO ₄ -P (mg P/L)	4	0.990	0.080	0.595
18	SiO ₂ (mg/L)	4	23.0	19.4	21.9
19	SO ₄ (mg/L)	4	66.5	5.3	29.1
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	4	2.7	0.5	1.6
2	COD (mg/L)	4	47.5	2.2	23.7
3	DO (mg/L)	4	7.6	6.8	7.2
4	DO_SAT% (%)	4	90	82	87
5	FCol-MPN (MPN/100mL)	4	3000	300	1510
6	Tcol-MPN (MPN/100mL)	4	3000	300	2175
TRACE & TOXIC					
1	Cu ($\mu\text{g}/\text{L}$)	4	7.0	1.0	4.3
2	Zn ($\mu\text{g}/\text{L}$)	4	92.1	30.0	55.5
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	4	113	60	81
2	HAR_Total (mgCaCO ₃ /L)	4	215	133	174
3	Na% (%)	4	31	15	23
4	RSC (-)	4	0.5	0.0	0.1
5	SAR (-)	4	1.3	0.4	0.8
PESTICIDES					

Water Quality Seasonal Average for the period: 2014-2018

Station Name : Pachegaon (AGU00D3)

Local River : Pravara

River Water

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)			79.42	118.2		85.61		0.000	66.51			
2	EC_GEN ($\mu\text{mho}/\text{cm}$)			327	207		228		449	474			
3	pH_GEN (pH units)			7.7	8.0		7.1		8.0	7.5			
4	TDS (mg/L)			184	171		69		272	306			
5	Temp (deg C)			26.7	25.3		23.5		24.0	23.0			
6	Turb (NTU)			68.7	46.0		28.5		18.0	5.0			
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)			1.6	5.3		0.0		0.0	0.0			
2	ALK-TOT (mgCaCO ₃ /L)			126	128		90		188	112			
3	B (mg/L)				0.25		0.00		0.03	0.16			
4	Ca (mg/L)			27	32		23		34	24			
5	Cl (mg/L)			18.1	30.6		7.3		42.8	45.5			
6	CO ₃ (mg/L)			1.9	6.4		0.0		0.0	0.0			
7	F (mg/L)			0.11	0.12		0.01		0.13	0.93			
8	Fe (mg/L)			0.1	1.2		0.0		0.3	0.3			
9	HCO ₃ (mg/L)			149	143		110		229	137			
10	K (mg/L)			2.2	0.1		1.1		0.2	2.3			
11	Mg (mg/L)			14.9	19.8		10.8		30.0	13.6			
12	Na (mg/L)			23.8	20.6		9.7		42.4	45.9			
13	NH ₃ -N (mg N/L)			0.00	0.08		0.04		3.32	0.00			
14	NO ₂ +NO ₃ (mg N/L)			1.77	5.04		0.39		8.90	1.40			
15	NO ₂ -N (mgN/L)			1.05	0.04		0.00		0.02	0.00			
16	NO ₃ -N (mgN/L)			0.72	5.00		0.38		8.88	1.40			
17	o-PO ₄ -P (mg P/L)			0.075	0.520		0.046		0.820	0.200			
18	SiO ₂ (mg/L)			17.4	21.7		13.4		22.6	36.8			
19	SO ₄ (mg/L)			15.3	16.7		4.8		66.5	33.0			

Water Quality Seasonal Average for the period: 2014-2018

Station Name : Pachegaon (AGU00D3)

Local River : Pravara

Division : Upper Godavari Div., Hyderabad

Sub-Division : Upper Godavari SD, Aurangabad

River Water

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)				1.2	1.2		1.0		2.7	1.7		
2	COD (mg/L)				11.8	15.8		2.4		47.5	13.7		
3	DO (mg/L)				6.3	7.0				7.6	5.8		
4	DO_SAT% (%)				78	85				90	68		
5	FCol-MPN (MPN/100mL)				5701	1013		12500		3000	40		
6	Tcol-MPN (MPN/100mL)				16000	1900		16000		3000	3500		
7	TOC (mg/L)							1.7			3.7		
TRACE & TOXIC													
1	Cu ($\mu\text{g}/\text{L}$)					4.3				4.0			
2	Zn ($\mu\text{g}/\text{L}$)					64.0				30.0			
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)				67	80		58		85	60		
2	HAR_Total (mgCaCO ₃ /L)				129	162		103		210	117		
3	Na% (%)				28	20		17		31	46		
4	RSC (-)				0.1	0.2		0.1		0.0	0.0		
5	SAR (-)				0.9	0.7		0.4		1.3	1.9		
PESTICIDES													

HISTORY SHEET

		Water Year	: 2017-2018
Site	: Kopergaon	Code	: Kopergaon
State	: Maharashtra	District	Ahmednagar
Basin	: Godavari	Independent River	: Godavari
Tributary	: -	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Godavari
Division	: U Godavari Div., Hyderabad	Sub-Division	: U Godavari SD, Aurangabad
Drainage Area	: 6480 Sq. Km.	Bank	:
Latitude	: 19°52'42"	Longitude	: 74°28'50"
	Opening Date	Closing Date	
Gauge	: 08.07.1978		
Discharge	:		
Sediment	:		
Water Quality	: 01.04.2014		

Water Quality Datasheet for the period : 2017-2018

Station Name : Kopergaon (Kopergaon)

Local River : Godavari

River Water Analysis

Division : U Godavari Div., Hyderabad

Sub-Division : U Godavari SD, Aurangabad

S.No	Parameters	03.07.2017	01.08.2017	01.09.2017	03.10.2017	01.11.2017
		A	A	A	A	A
	PHYSICAL					
1	Q (cumec)	56.29	145.8	401.5	0.000	0.000
2	Colour_Cod (-)	Dark Brown	Light Brown	Brown	Clear	Clear
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	647	354	270	259	588
4	Odour_Code (-)	fishy	fishy	fishy	odour free	odour free
5	pH_GEN (pH units)	8.3	7.8	7.6	8.2	7.8
6	TDS (mg/L)	441	254	193	231	397
7	Temp (deg C)	25.0	25.0	25.0	24.0	22.0
8	Turb (NTU)	71.0	94.0	82.0	12.0	21.0
	CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	19.9	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	128	136	108	132	182
3	B (mg/L)				0.11	0.00
4	Ca (mg/L)	34	44	32	42	65
5	Cl (mg/L)	82.3	27.4	30.5	50.9	75.5
6	CO ₃ (mg/L)	24.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.19	0.16	0.10	0.17	0.17
8	Fe (mg/L)	1.9	6.0	2.4	0.1	0.3
9	HCO ₃ (mg/L)	107	166	132	161	222
10	K (mg/L)	0.3	0.3	0.2	0.3	0.3
11	Mg (mg/L)	30.9	27.4	19.9	25.3	22.3
12	Na (mg/L)	68.0	21.7	13.8	33.0	47.8
13	NH ₃ -N (mg N/L)	0.05	0.04	0.04	0.14	1.72
14	NO ₂ +NO ₃ (mg N/L)	10.79	6.19	4.82	5.05	7.85
15	NO ₂ -N (mgN/L)	0.13	0.95	0.08	0.17	0.19
16	NO ₃ -N (mgN/L)	10.66	5.24	4.74	4.88	7.66
17	o-PO ₄ -P (mg P/L)	0.200	0.480	0.520	0.500	0.540
18	SiO ₂ (mg/L)	8.2	16.3	20.3	19.8	22.7
19	SO ₄ (mg/L)	98.7	61.5	18.7	51.2	100.2
	BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	2.0	1.8	0.5	2.4	2.7
2	COD (mg/L)	5.2	29.3	2.2	16.4	11.5
3	DO (mg/L)	7.4	5.9	4.0	6.6	6.4
4	DO_SAT% (%)	90	71	48	78	73
5	FCol-MPN (MPN/100mL)	16000	16000	5000	16000	9000
6	Tcol-MPN (MPN/100mL)	16000	16000	5000	16000	9000
	TRACE & TOXIC					
1	Cu ($\mu\text{g}/\text{L}$)		10.0	4.0	9.0	4.0
2	Zn ($\mu\text{g}/\text{L}$)	75.9	100.7	52.0	40.0	27.0
	CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	85	111	79	106	161
2	HAR_Total (mgCaCO ₃ /L)	214	225	162	211	254
3	Na% (%)	41	17	16	26	29
4	RSC (-)	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	2.0	0.6	0.5	1.0	1.3
	PESTICIDES					

Water Quality Summary for the period : 2017-2018

Station Name : Kopergaon (Kopergaon)

Division : U Godavari Div., Hyderabad

Local River : Godavari

Sub-Division : U Godavari SD, Aurangabad

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
PHYSICAL					
1	Q (cumec)	365	1701	0.000	58.09
2	EC_GEN ($\mu\text{mho}/\text{cm}$)	5	647	259	423
3	pH_GEN (pH units)	5	8.3	7.6	7.9
4	TDS (mg/L)	5	441	193	303
5	Temp (deg C)	5	25.0	22.0	24.2
6	Turb (NTU)	5	94.0	12.0	56
CHEMICAL					
1	Alk-Phen (mgCaCO ₃ /L)	5	19.9	0.0	4
2	ALK-TOT (mgCaCO ₃ /L)	5	182	108	137
3	B (mg/L)	2	0.11	0.00	0.05
4	Ca (mg/L)	5	65	32	43
5	Cl (mg/L)	5	82.3	27.4	53.3
6	CO ₃ (mg/L)	5	24.0	0.0	4.8
7	F (mg/L)	5	0.19	0.10	0.16
8	Fe (mg/L)	5	6.0	0.1	2.1
9	HCO ₃ (mg/L)	5	222	107	158
10	K (mg/L)	5	0.3	0.2	0.3
11	Mg (mg/L)	5	30.9	19.9	25.2
12	Na (mg/L)	5	68.0	13.8	36.9
13	NH ₃ -N (mg N/L)	5	1.72	0.04	0.4
14	NO ₂ +NO ₃ (mg N/L)	5	10.79	4.82	6.94
15	NO ₂ -N (mgN/L)	5	0.95	0.08	0.3
16	NO ₃ -N (mgN/L)	5	10.66	4.74	6.64
17	o-PO ₄ -P (mg P/L)	5	0.540	0.200	0.448
18	SiO ₂ (mg/L)	5	22.7	8.2	17.5
19	SO ₄ (mg/L)	5	100.2	18.7	66
BIOLOGICAL/BACTERIOLOGICAL					
1	BOD ₃₋₂₇ (mg/L)	5	2.7	0.5	1.9
2	COD (mg/L)	5	29.3	2.2	12.9
3	DO (mg/L)	5	7.4	4.0	6.1
4	DO_SAT% (%)	5	90	48	72
5	FCol-MPN (MPN/100mL)	5	16000	5000	12400
6	Tcol-MPN (MPN/100mL)	5	16000	5000	12400
TRACE & TOXIC					
1	Cu ($\mu\text{g}/\text{L}$)	4	10.0	4.0	6.8
2	Zn ($\mu\text{g}/\text{L}$)	5	100.7	27.0	59.1
CHEMICAL INDICES					
1	HAR_Ca (mgCaCO ₃ /L)	5	161	79	108
2	HAR_Total (mgCaCO ₃ /L)	5	254	162	213
3	Na% (%)	5	41	16	26
4	RSC (-)	5	0.0	0.0	0
5	SAR (-)	5	2.0	0.5	1.1
PESTICIDES					

Water Quality Seasonal Average for the period: 2014-2018

Station Name : Kopergaon (Kopergaon)

Local River : Godavari

River Water

Division : U Godavari Div., Hyderabad

Sub-Division : U Godavari SD, Aurangabad

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
PHYSICAL													
1	Q (cumec)	447.2	288.0	384.2	150.9		447.3		0.000				
2	EC_FLD ($\mu\text{mho}/\text{cm}$)		437										
3	EC_GEN ($\mu\text{mho}/\text{cm}$)	411	783	361	382		550		588				
4	pH_FLD (pH units)		7.1										
5	pH_GEN (pH units)	7.4	7.2	8.0	8.0		8.2		7.8				
6	TDS (mg/L)	270	212	285	280		245		397				
7	Temp (deg C)	26.0	27.0	25.7	24.8		26.0		22.0				
8	Turb (NTU)	103.0	76.7	110.0	64.8		14.0		21.0				
CHEMICAL													
1	Alk-Phen (mgCaCO ₃ /L)	0.0	0.0	2.3	5.0		0.0		0.0				
2	ALK-TOT (mgCaCO ₃ /L)	109	129	141	126		103		182				
3	B (mg/L)	0.26	0.50		0.11		0.00		0.00				
4	Ca (mg/L)	31	42	36	38		30		65				
5	Cl (mg/L)	3.9	90.5	42.4	47.8		54.7		75.5				
6	CO ₃ (mg/L)	0.0	0.0	2.8	6.0		0.0		0.0				
7	F (mg/L)	0.20	0.40	0.20	0.15		0.24		0.17				
8	Fe (mg/L)	0.1	0.0	0.1	2.6		0.0		0.3				
9	HCO ₃ (mg/L)	133	158	166	142		126		222				
10	K (mg/L)	2.8	4.2	3.3	0.3		3.9		0.3				
11	Mg (mg/L)	17.7	23.9	20.3	25.9		17.0		22.3				
12	Na (mg/L)	22.3	94.7	34.9	34.1		49.0		47.8				
13	NH ₃ -N (mg N/L)	0.03	0.00	0.00	0.07		0.00		1.72				
14	NO ₂ +NO ₃ (mg N/L)	3.23	1.72	2.29	6.71		0.95		7.85				
15	NO ₂ -N (mgN/L)	0.04	0.00	0.95	0.33		0.00		0.19				
16	NO ₃ -N (mgN/L)	3.19	1.71	1.34	6.38		0.95		7.66				
17	o-PO ₄ -P (mg P/L)	0.137	0.405	0.323	0.425		0.108		0.540				
18	SiO ₂ (mg/L)	20.9	17.3	15.9	16.1		11.1		22.7				
19	SO ₄ (mg/L)	65.0	162.3	40.4	57.5		65.5		100.2				

Water Quality Seasonal Average for the period: 2014-2018

Station Name : Kopergaon (Kopergaon)

Local River : Godavari

River Water

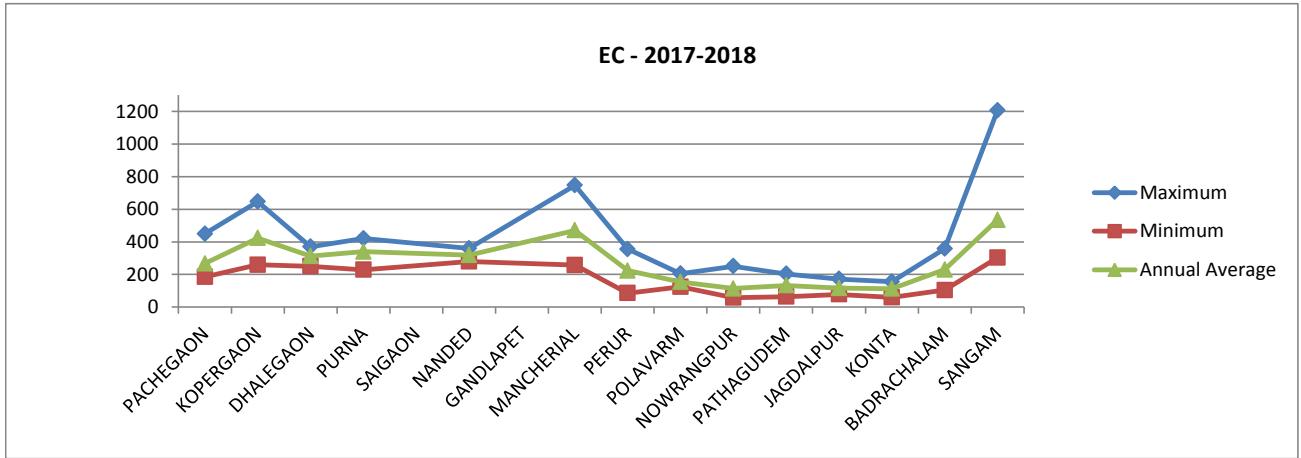
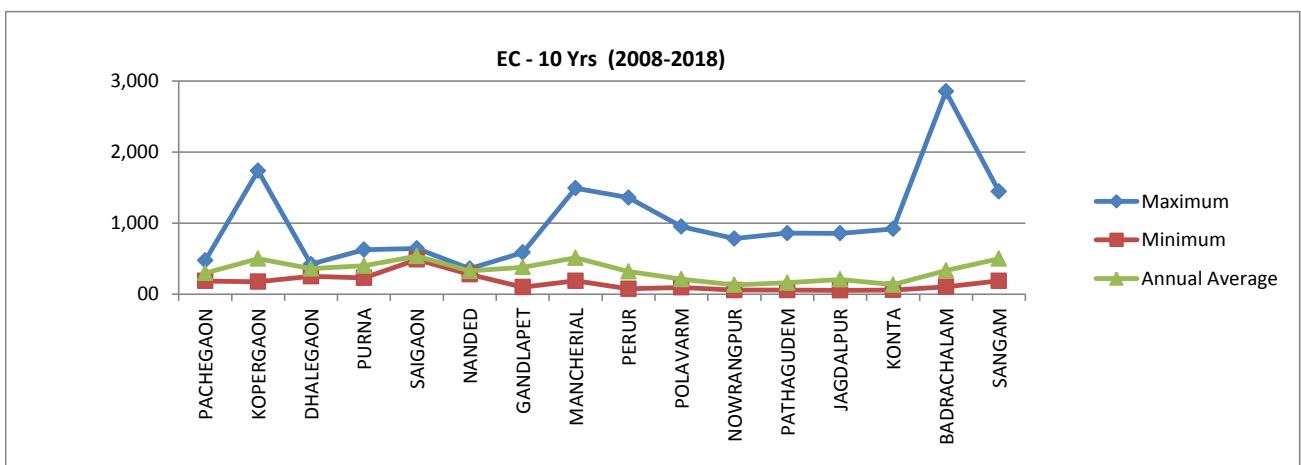
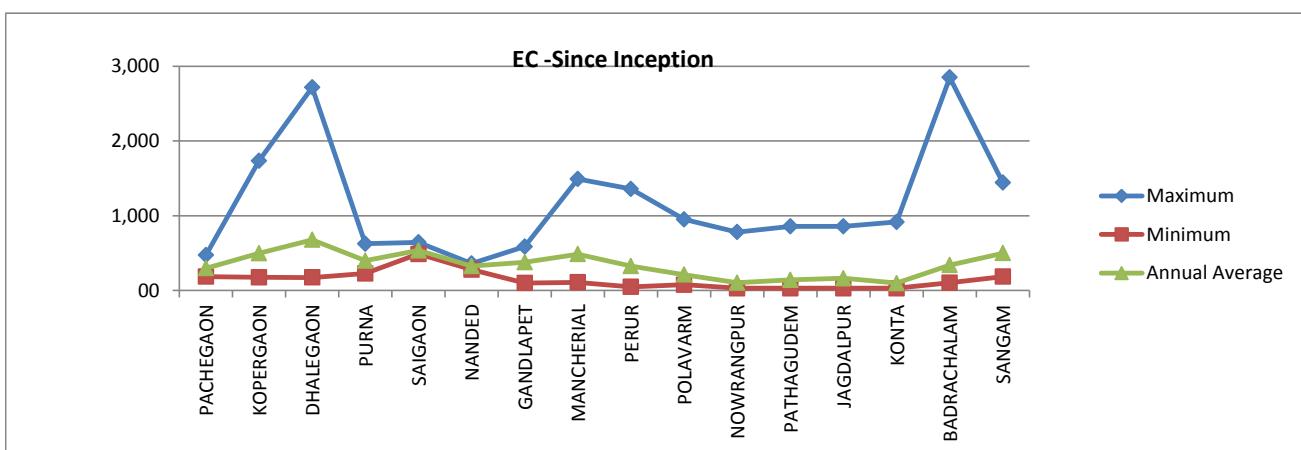
Division : U Godavari Div., Hyderabad

Sub-Division : U Godavari SD, Aurangabad

S.No	Parameters	Flood				Winter				Summer			
		Jun - Oct				Nov - Feb				Mar - May			
		2014	2015	2016	2017	2014-2015	2015-2016	2016-2017	2017-2018	2015	2016	2017	2018
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	1.9	0.5	2.0	1.7		0.5		2.7				
2	COD (mg/L)	16.8	17.3	5.9	13.3		11.7		11.5				
3	DO (mg/L)	6.0		5.7	6.0				6.4				
4	DO_SAT% (%)	73		70	72				73				
5	FCol-MPN (MPN/100mL)	9200	2100	12333	13250		16000		9000				
6	Tcol-MPN (MPN/100mL)	16000	16000	16000	13250		16000		9000				
7	TOC (mg/L)	6.1	10.5				4.6						
TRACE & TOXIC													
1	Cu (µg/L)				7.7				4.0				
2	Zn (µg/L)				67.1				27.0				
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO ₃ /L)	77	106	90	95		76		161				
2	HAR_Total (mgCaCO ₃ /L)	151	205	174	203		147		254				
3	Na% (%)	23	41	30	25		41		29				
4	RSC (-)	0.0	0.0	0.2	0.0		0.0		0.0				
5	SAR (-)	0.8	2.4	1.1	1.0		1.8		1.3				
PESTICIDES													

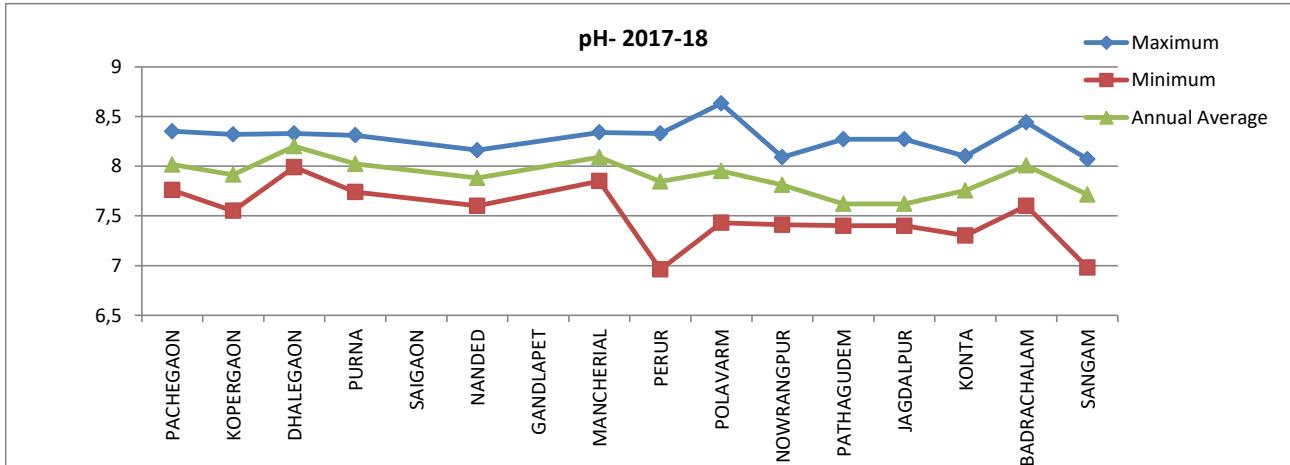
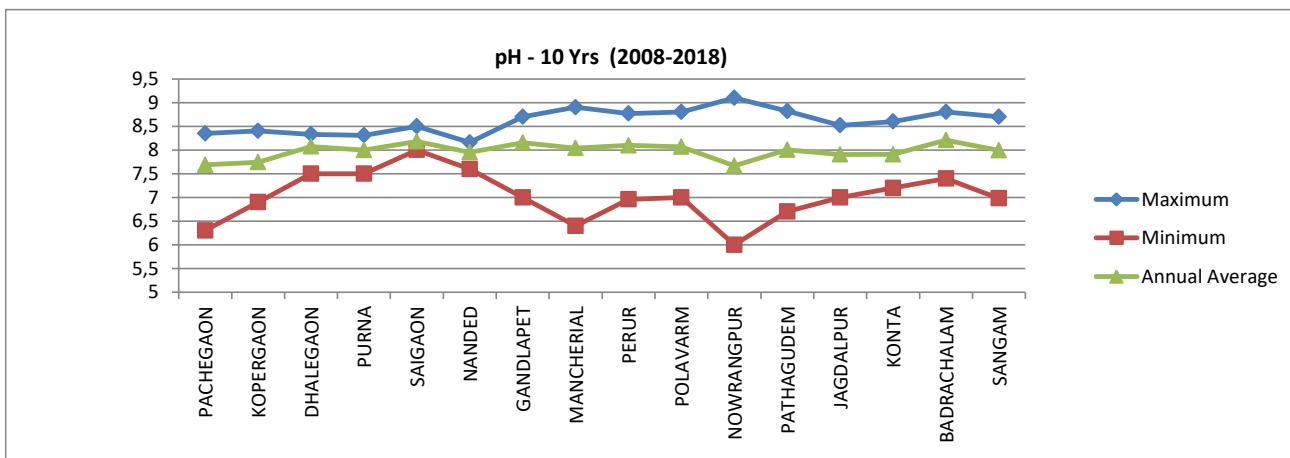
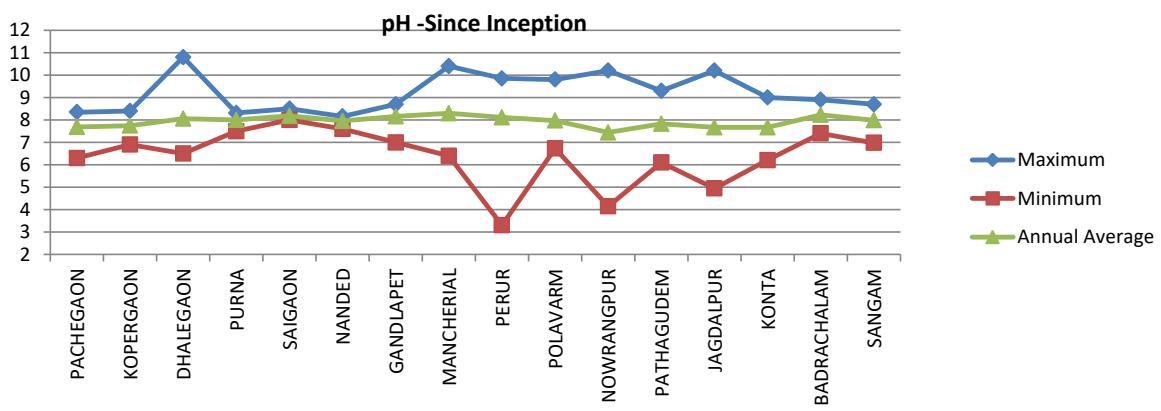
1. Electrical Conductivity

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	474.0	474.0	449.3	184.9	184.9	184.9	298.0	298.0	267.4
KOPERAON	1736.0	1736.0	646.5	177.0	177.0	259.3	499.5	499.5	423.4
DHALEGAON	2718.0	421.0	370.3	175.0	250.4	250.4	680.2	359.4	311.9
PURNA	626.0	626.0	420.2	228.6	228.6	228.6	400.6	400.6	339.6
SAIGAON	644.0	644.0		488.0	488.0		535.4	535.4	
NANDED	360.0	360.0	360.0	279.0	279.0	279.0	328.3	328.3	319.5
GANDLAPET	587.0	587.0		101.0	101.0		379.6	379.6	
MANCHERIAL	1490.0	1490.0	747.0	110.0	187.0	258.0	486.7	511.1	470.7
PERUR	1358.0	1358.0	355.2	48.0	76.0	85.5	327.6	321.4	223.4
POLAVARM	951.5	951.5	205.0	78.0	95.0	124.1	212.6	211.4	153.5
NOWRANGPUR	781.0	781.0	250.4	30.0	57.1	57.1	104.4	131.6	113.5
PATHAGUDEM	858.0	858.0	203.3	30.0	57.0	63.9	142.9	161.2	132.6
JAGDALPUR	857.0	857.0	172.0	30.0	53.0	77.6	163.7	207.0	116.7
KONTA	917.0	917.0	155.0	30.0	59.5	59.5	98.8	133.0	112.6
BADRACHALAM	2850.0	2850.0	358.1	103.9	103.9	103.9	342.2	333.9	229.8
SANGAM	1442.0	1442.0	1207.0	188.0	188.0	303.0	500.6	500.6	533.9



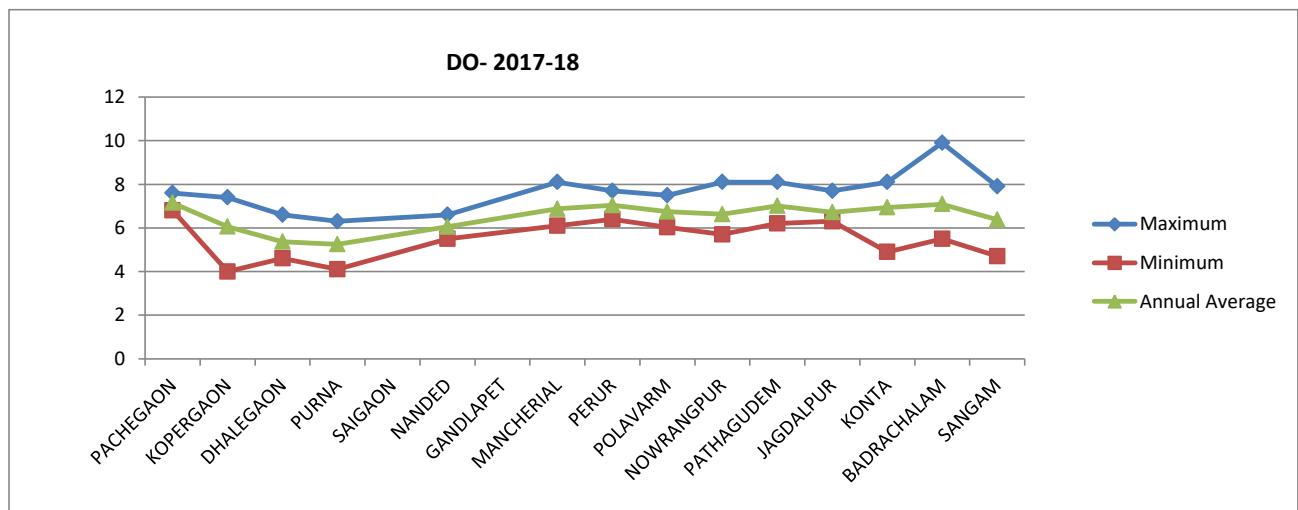
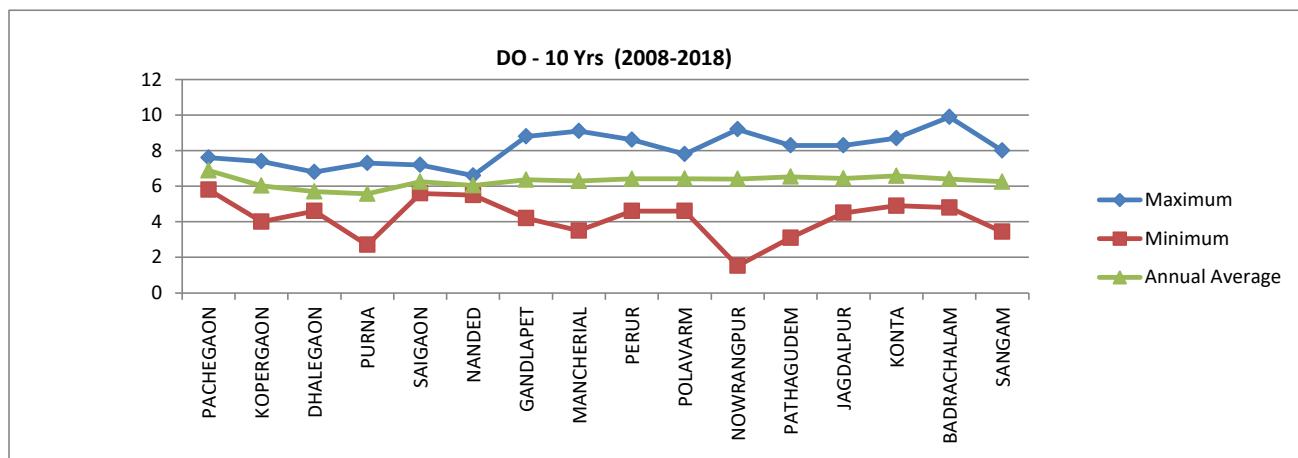
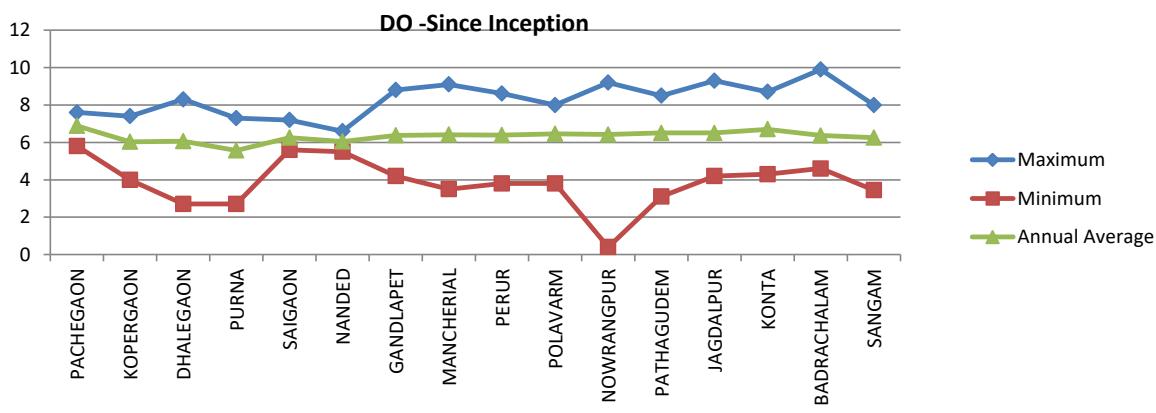
2. pH

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	8.4	8.4	8.4	6.3	6.3	7.8	7.7	7.7	8.0
KOPERGAON	8.4	8.4	8.3	6.9	6.9	7.6	7.7	7.7	7.9
DHALEGAON	10.8	8.3	8.3	6.5	7.5	8.0	8.1	8.1	8.2
PURNA	8.3	8.3	8.3	7.5	7.5	7.7	8.0	8.0	8.0
SAIGAON	8.5	8.5		8.0	8.0		8.2	8.2	
NANDED	8.2	8.2	8.2	7.6	7.6	7.6	8.0	8.0	7.9
GANDLAPET	8.7	8.7		7.0	7.0		8.2	8.2	
MANCHERIAL	10.4	8.9	8.3	6.4	6.4	7.8	8.3	8.0	8.1
PERUR	9.9	8.8	8.3	3.3	7.0	7.0	8.1	8.1	7.8
POLAVARM	9.8	8.8	8.6	6.7	7.0	7.4	8.0	8.1	8.0
NOWRANGPUR	10.2	9.1	8.1	4.2	6.0	7.4	7.4	7.7	7.8
PATHAGUDEM	9.3	8.8	8.3	6.1	6.7	7.4	7.8	8.0	7.6
JAGDALPUR	10.2	8.5	8.3	4.9	7.0	7.4	7.7	7.9	7.6
KONTA	9.0	8.6	8.1	6.2	7.2	7.3	7.7	7.9	7.8
BADRACHALAM	8.9	8.8	8.4	7.4	7.4	7.6	8.2	8.2	8.0
SANGAM	8.7	8.7	8.1	7.0	7.0	7.0	8.0	8.0	7.7



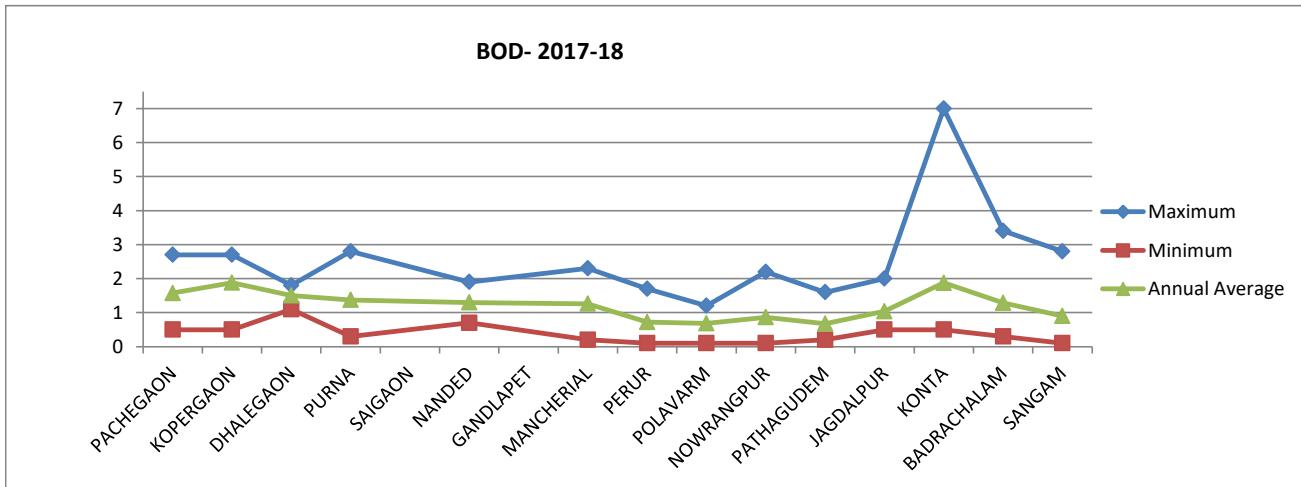
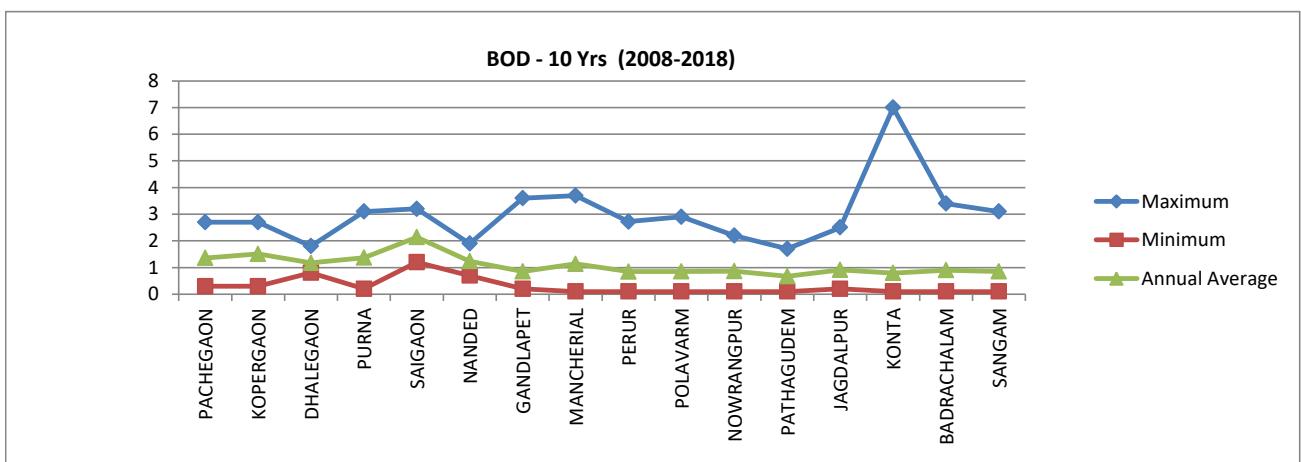
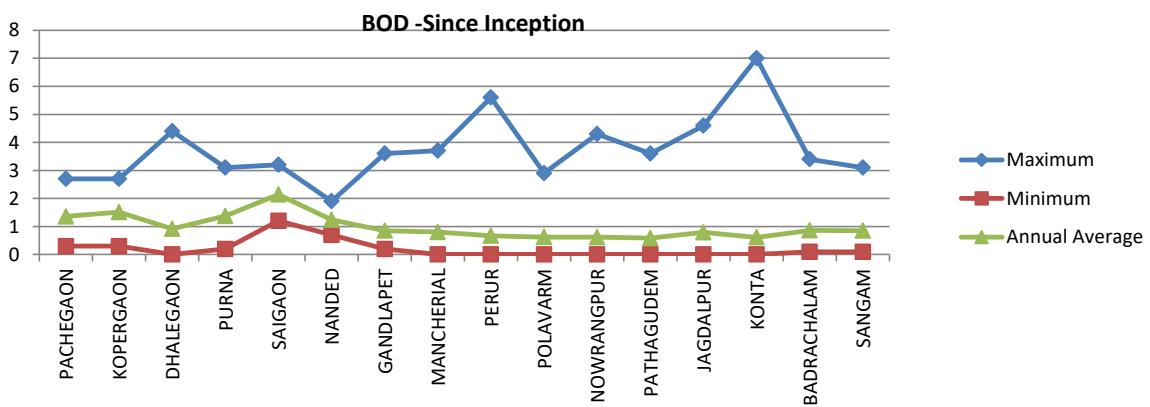
3.DISSOLVED OXEGEN

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	7.6	7.6	7.6	5.8	5.8	6.8	6.9	6.9	7.2
KOPERGAON	7.4	7.4	7.4	4.0	4.0	4.0	6.0	6.0	6.1
DHALEGAON	8.3	6.8	6.6	2.7	4.6	4.6	6.1	5.7	5.4
PURNA	7.3	7.3	6.3	2.7	2.7	4.1	5.6	5.6	5.3
SAIGAON	7.2	7.2		5.6	5.6		6.2	6.2	
NANDED	6.6	6.6	6.6	5.5	5.5	5.5	6.0	6.0	6.0
GANDLAPET	8.8	8.8		4.2	4.2		6.4	6.4	
MANCHERIAL	9.1	9.1	8.1	3.5	3.5	6.1	6.4	6.3	6.9
PERUR	8.6	8.6	7.7	3.8	4.6	6.4	6.4	6.4	7.0
POLAVARM	8.0	7.8	7.5	3.8	4.6	6.0	6.5	6.4	6.7
NOWRANGPUR	9.2	9.2	8.1	0.4	1.5	5.7	6.4	6.4	6.6
PATHAGUDEM	8.5	8.3	8.1	3.1	3.1	6.2	6.5	6.5	7.0
JAGDALPUR	9.3	8.3	7.7	4.2	4.5	6.3	6.5	6.4	6.7
KONTA	8.7	8.7	8.1	4.3	4.9	4.9	6.7	6.6	6.9
BADRACHALAM	9.9	9.9	9.9	4.6	4.8	5.5	6.4	6.4	7.1
SANGAM	8.0	8.0	7.9	3.4	3.4	4.7	6.3	6.3	6.4



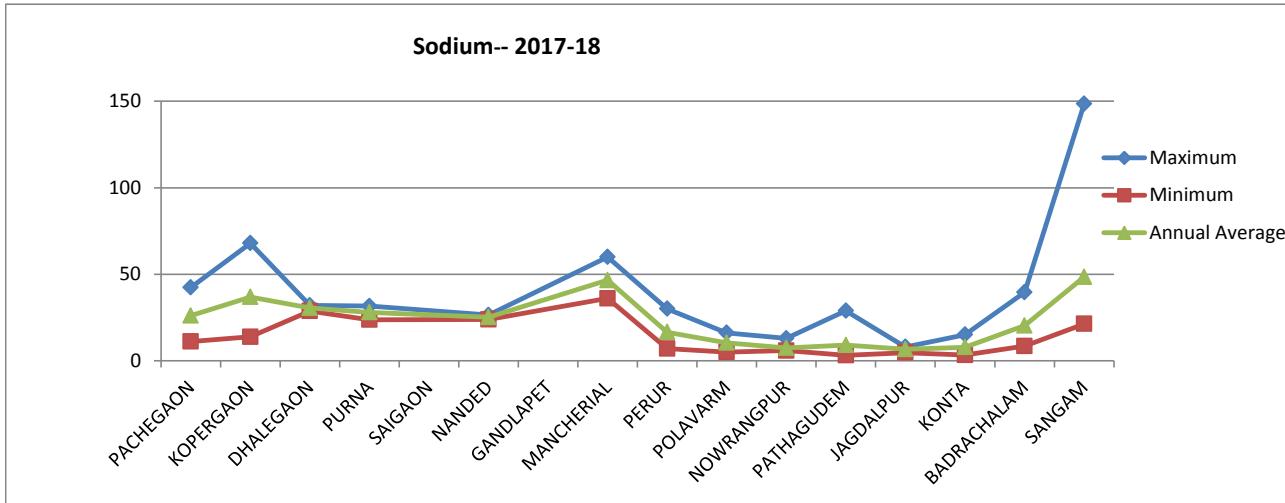
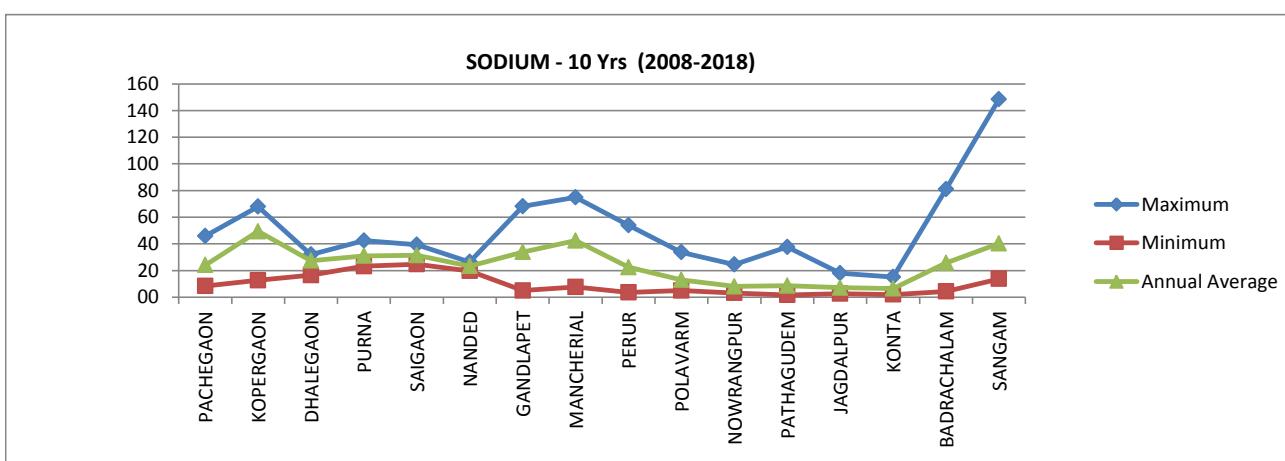
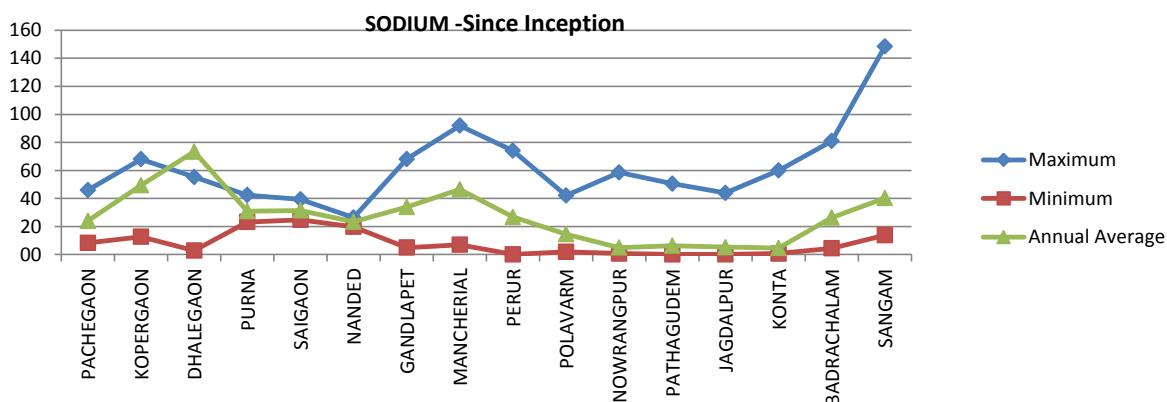
4. BOD

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	2.7	2.7	2.7	0.3	0.3	0.5	1.4	1.4	1.6
KOPERGAON	2.7	2.7	2.7	0.3	0.3	0.5	1.5	1.5	1.9
DHALEGAON	4.4	1.8	1.8	0.0	0.8	1.1	0.9	1.2	1.5
PURNA	3.1	3.1	2.8	0.2	0.2	0.3	1.4	1.4	1.4
SAIGAON	3.2	3.2		1.2	1.2		2.1	2.1	
NANDED	1.9	1.9	1.9	0.7	0.7	0.7	1.2	1.2	1.3
GANDLAPET	3.6	3.6		0.2	0.2		0.9	0.9	
MANCHERIAL	3.7	3.7	2.3	0.0	0.1	0.2	0.8	1.1	1.3
PERUR	5.6	2.7	1.7	0.0	0.1	0.1	0.7	0.8	0.7
POLAVARM	2.9	2.9	1.2	0.0	0.1	0.1	0.6	0.8	0.7
NOWRANGPUR	4.3	2.2	2.2	0.0	0.1	0.1	0.6	0.9	0.9
PATHAGUDEM	3.6	1.7	1.6	0.0	0.1	0.2	0.6	0.7	0.7
JAGDALPUR	4.6	2.5	2.0	0.0	0.2	0.5	0.8	0.9	1.0
KONTA	7.0	7.0	7.0	0.0	0.1	0.5	0.6	0.8	1.9
BADRACHALAM	3.4	3.4	3.4	0.1	0.1	0.3	0.9	0.9	1.3
SANGAM	3.1	3.1	2.8	0.1	0.1	0.1	0.9	0.9	0.9



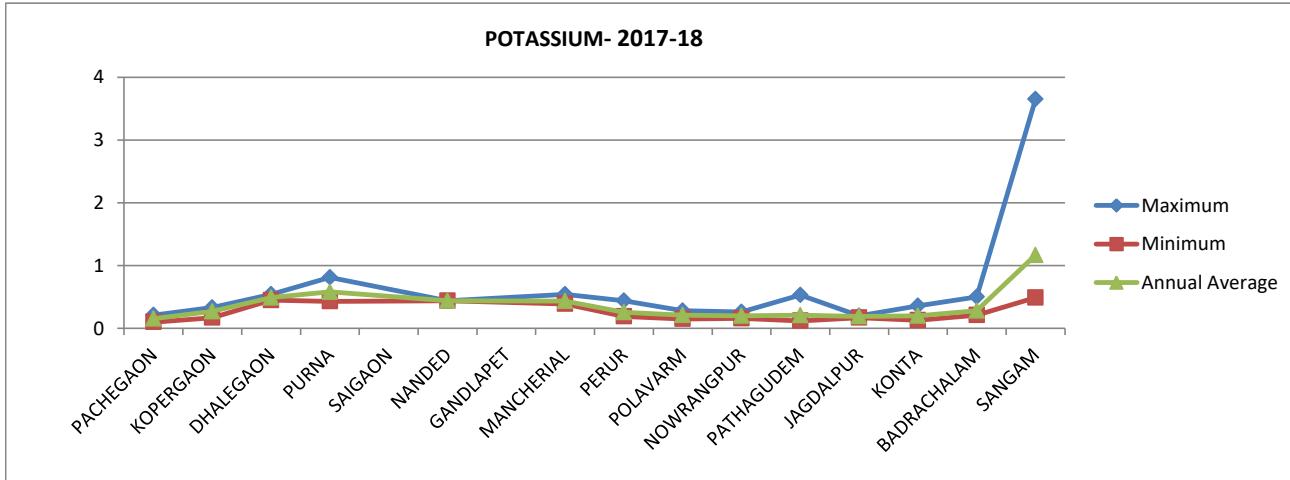
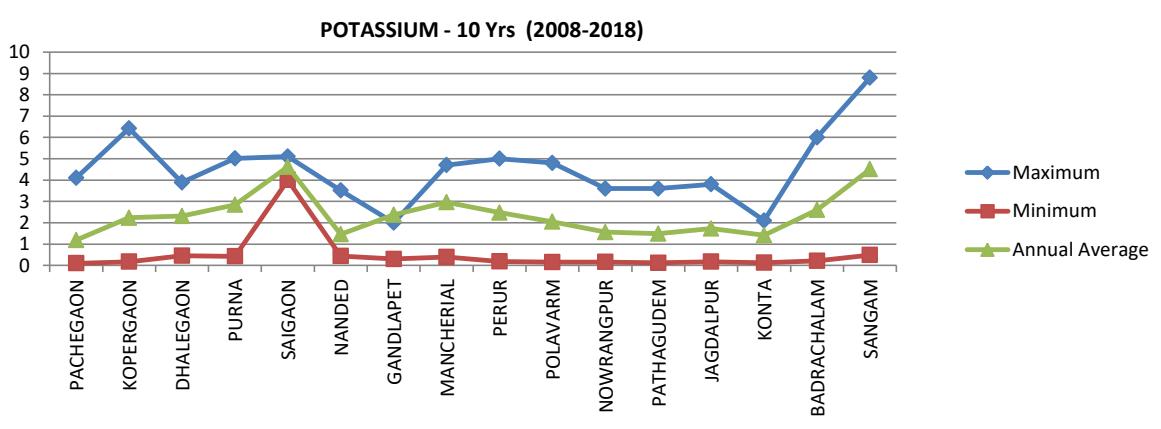
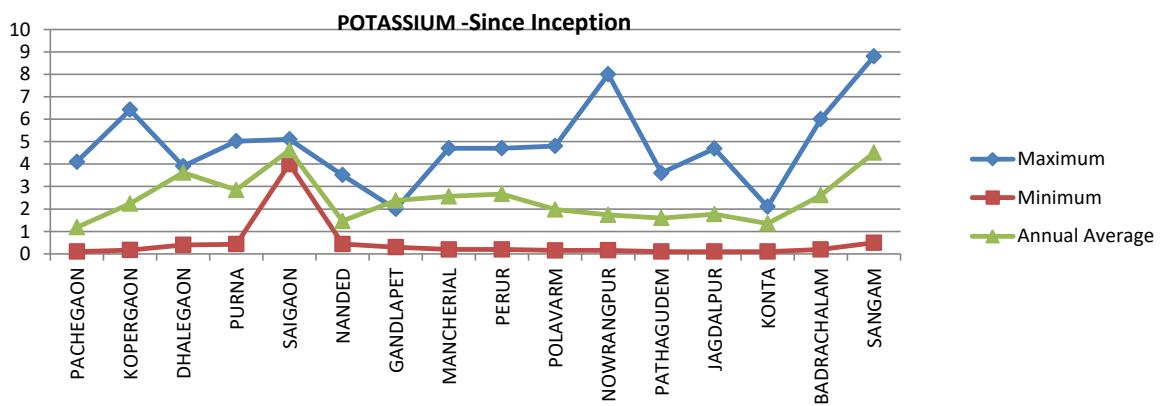
5. SODIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	45.9	45.9	42.4	8.3	8.3	11.1	24.1	24.1	26.1
KOPERGAON	68.0	68.0	68.0	12.6	12.6	13.8	49.4	49.4	36.9
DHALEGAON	55.3	32.0	32.0	2.8	16.5	28.8	73.4	27.4	30.5
PURNA	42.4	42.4	31.6	23.3	23.3	23.7	31.0	31.0	28.0
SAIGAON	39.4	39.4		24.7	24.7		31.5	31.5	
NANDED	26.4	26.4	26.4	19.7	19.7	23.8	23.3	23.3	25.1
GANDLAPET	68.1	68.1		5.0	5.0		33.9	33.9	
MANCHERIAL	92.0	74.9	60.0	7.0	7.6	36.1	46.5	42.4	46.5
PERUR	74.0	54.0	30.0	0.0	3.6	7.0	26.7	22.5	16.6
POLAVARM	42.1	33.7	16.2	2.0	5.0	5.1	14.6	13.0	10.3
NOWRANGPUR	58.5	24.6	12.9	0.7	3.2	5.8	5.0	8.1	7.4
PATHAGUDEM	50.5	37.6	28.9	0.0	1.6	3.2	6.3	8.6	9.0
JAGDALPUR	43.9	18.1	8.0	0.0	2.7	4.7	5.3	7.1	6.6
KONTA	60.0	15.1	15.1	0.7	2.0	3.3	4.7	6.6	7.9
BADRACHALAM	81.0	81.0	39.5	4.4	4.4	8.4	26.4	25.7	20.3
SANGAM	148.5	148.5	148.5	13.8	13.8	21.3	40.3	40.3	48.5



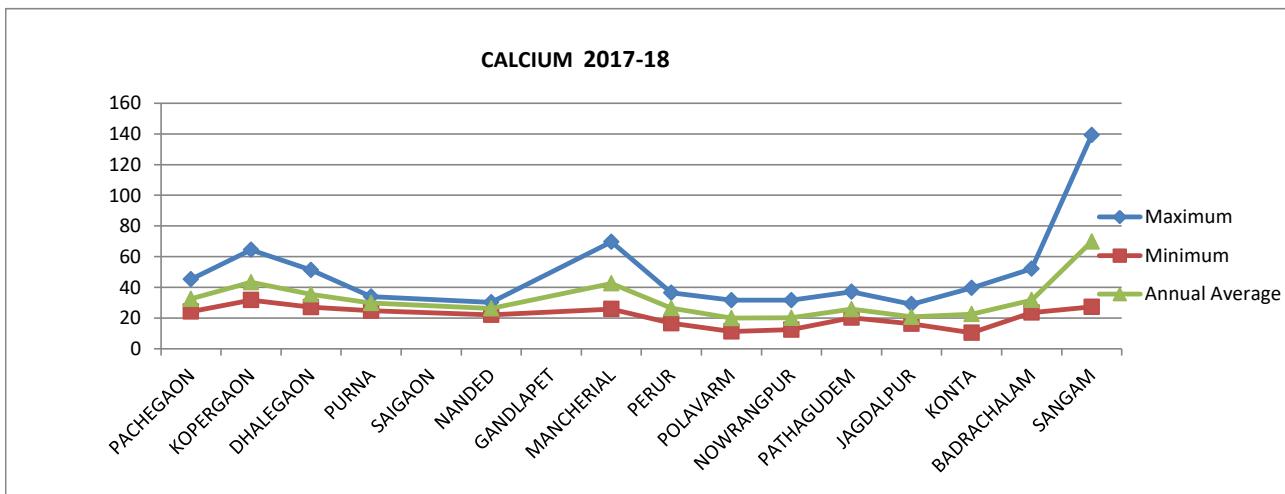
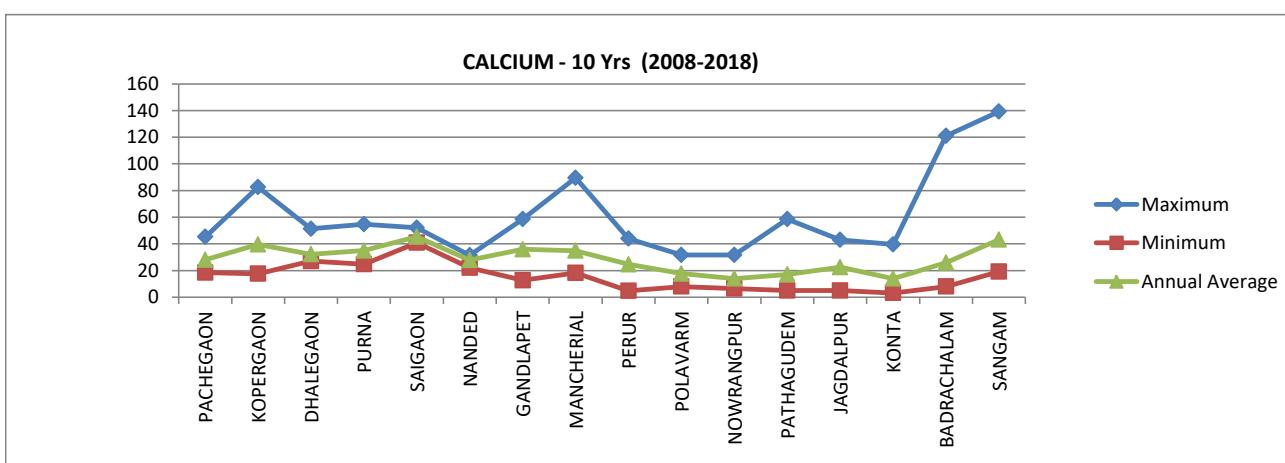
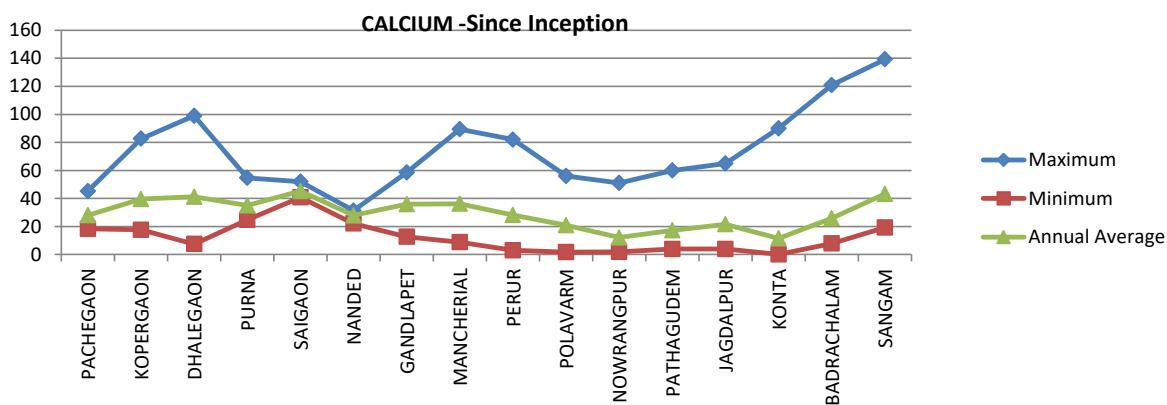
6.POTASSIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	4.1	4.1	0.2	0.1	0.1	0.1	1.2	1.2	0.2
KOPERAON	6.4	6.4	0.3	0.2	0.2	0.2	2.2	2.2	0.3
DHALEGAON	3.9	3.9	0.5	0.4	0.4	0.4	3.6	2.3	0.5
PURNA	5.0	5.0	0.8	0.4	0.4	0.4	2.8	2.8	0.6
SAIGAON	5.1	5.1		4.0	4.0		4.6	4.6	
NANDED	3.5	3.5	0.4	0.4	0.4	0.4	1.5	1.5	0.4
GANDLAPET	2.0	2.0		0.3	0.3		2.4	2.4	
MANCHERIAL	4.7	4.7	0.5	0.2	0.4	0.4	2.6	3.0	0.4
PERUR	4.7	5.0	0.4	0.2	0.2	0.2	2.7	2.5	0.3
POLAVARM	4.8	4.8	0.3	0.2	0.2	0.2	2.0	2.1	0.2
NOWRANGPUR	8.0	3.6	0.3	0.2	0.2	0.2	1.7	1.6	0.2
PATHAGUDEM	3.6	3.6	0.5	0.1	0.1	0.1	1.6	1.5	0.2
JAGDALPUR	4.7	3.8	0.2	0.1	0.2	0.2	1.8	1.7	0.2
KONTA	2.1	2.1	0.4	0.1	0.1	0.1	1.4	1.4	0.2
BADRACHALAM	6.0	6.0	0.5	0.2	0.2	0.2	2.6	2.6	0.3
SANGAM	8.8	8.8	3.7	0.5	0.5	0.5	4.5	4.5	1.2



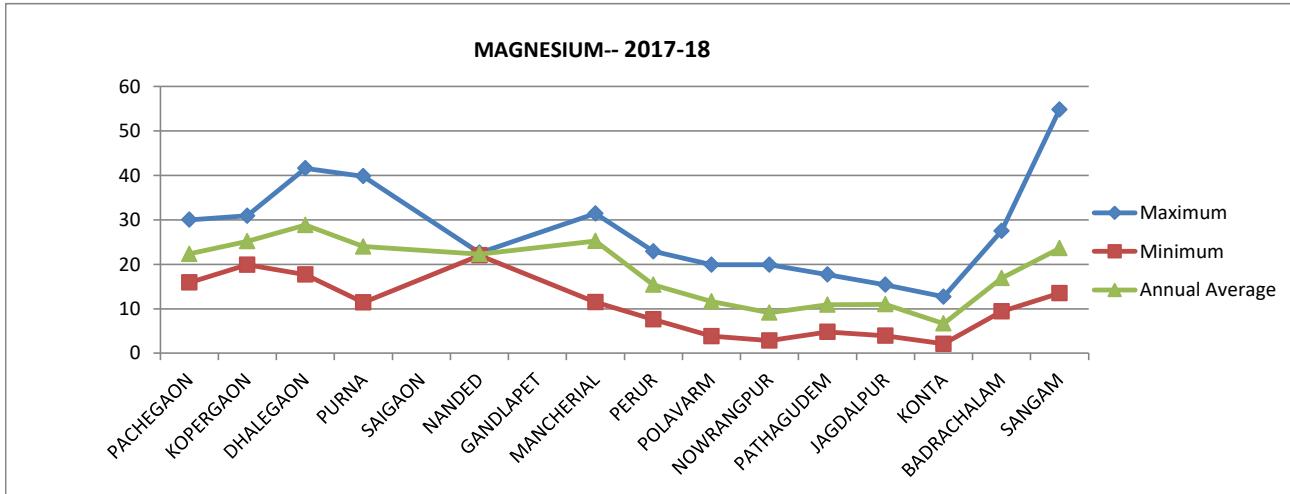
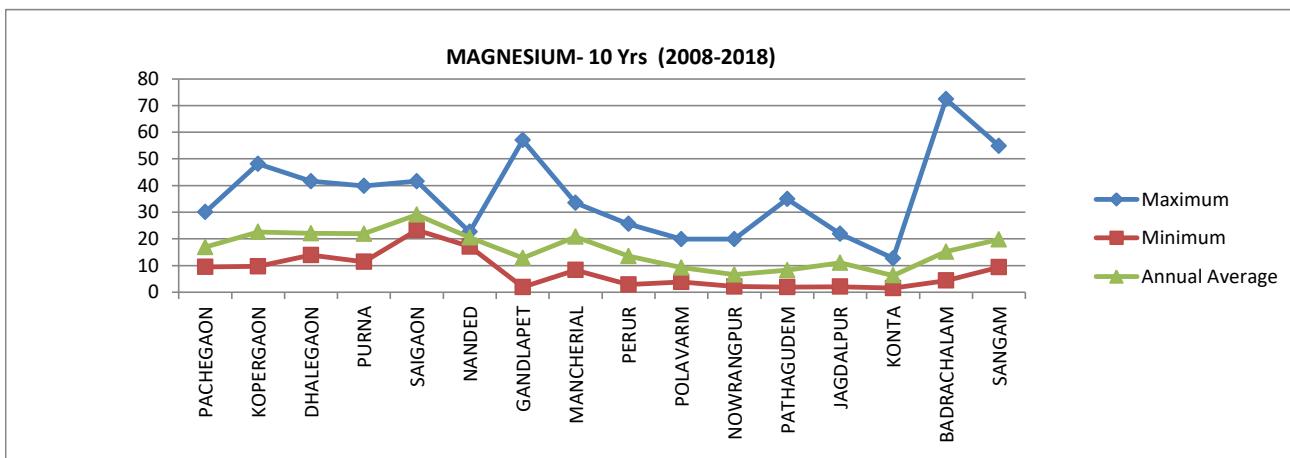
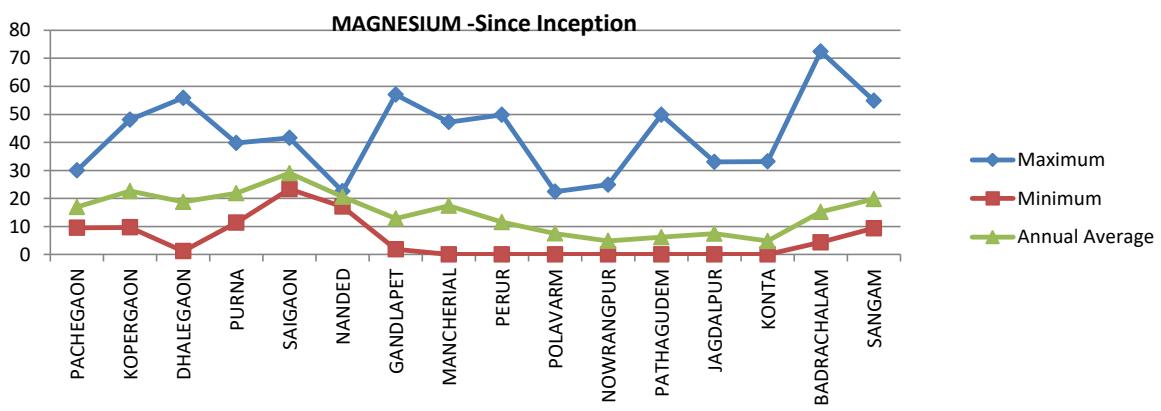
7.CALCIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	45.2	45.2	45.2	18.4	18.4	24.1	28.0	28.0	32.4
KOPERGAON	82.6	82.6	64.5	17.6	17.6	31.7	39.5	39.5	43.3
DHALEGAON	99.0	51.3	51.3	7.5	27.1	27.1	41.3	32.2	35.5
PURNA	54.7	54.7	33.9	24.7	24.7	24.7	35.0	35.0	29.8
SAIGAON	52.0	52.0		40.8	40.8		45.3	45.3	
NANDED	31.4	31.4	30.2	22.1	22.1	22.1	27.9	27.9	26.2
GANDLAPET	58.6	58.6		12.6	12.6		36.0	36.0	
MANCHERIAL	89.5	89.5	69.6	8.8	18.3	25.9	36.2	34.9	42.5
PERUR	82.0	44.0	36.4	3.0	4.8	16.6	28.3	24.6	26.4
POLAVARM	56.0	31.6	31.6	1.7	8.0	11.3	20.9	17.6	20.0
NOWRANGPUR	51.0	31.6	31.6	2.0	6.4	12.4	12.1	14.0	20.1
PATHAGUDEM	60.0	58.5	37.1	4.0	4.9	20.2	17.3	17.0	25.8
JAGDALPUR	65.0	43.0	29.0	4.0	4.9	16.2	21.6	22.5	20.7
KONTA	90.0	39.5	39.5	0.0	3.2	10.3	11.6	13.9	22.5
BADRACHALAM	120.9	120.9	52.2	8.0	8.0	23.6	25.8	25.9	31.8
SANGAM	139.2	139.2	139.2	19.2	19.2	27.2	43.2	43.2	69.8



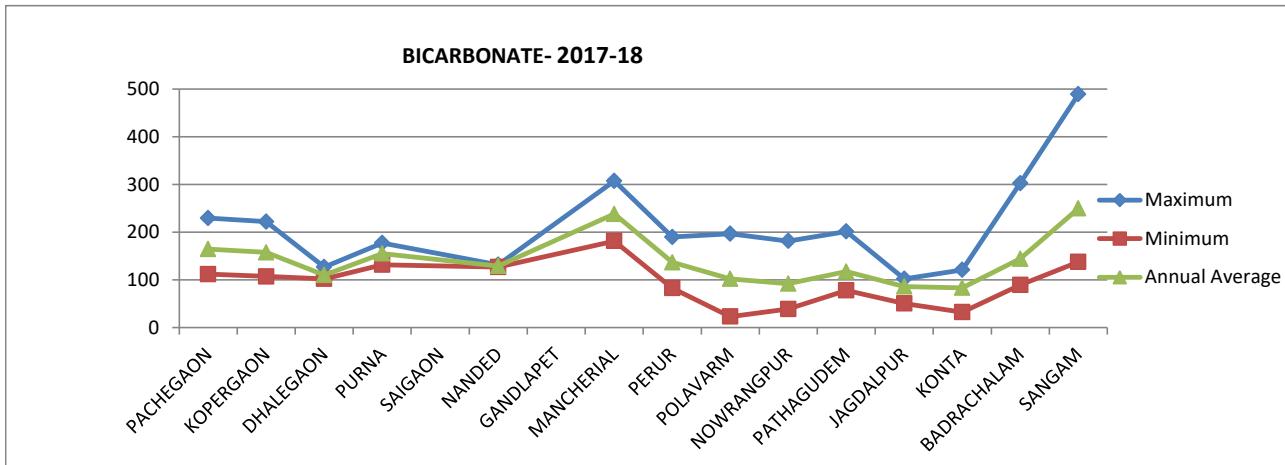
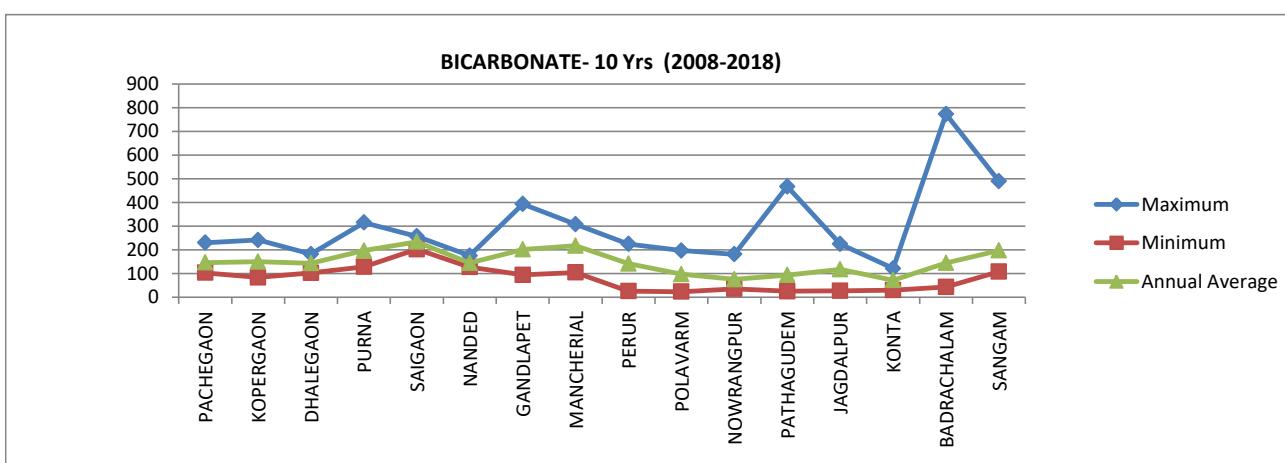
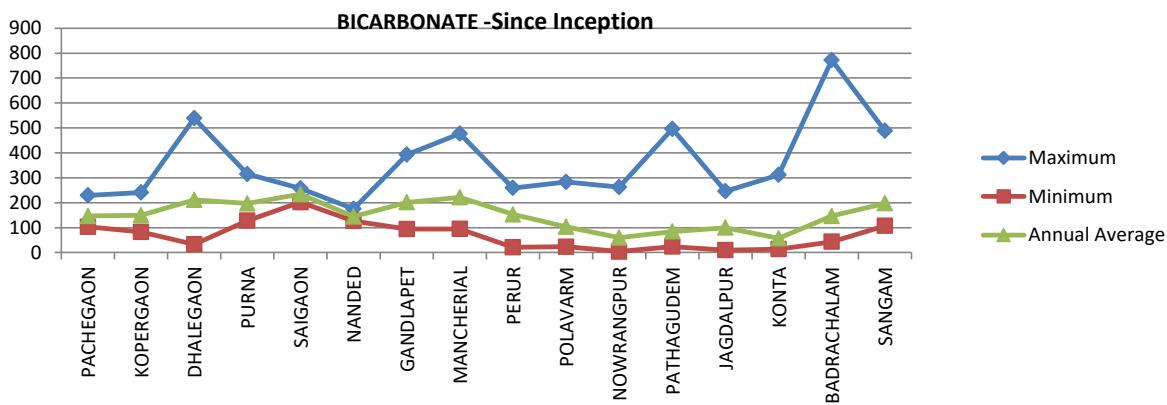
8.MAGNESIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	30.0	30.0	30.0	9.5	9.5	15.9	16.9	16.9	22.3
KOPERGAON	48.1	48.1	30.9	9.7	9.7	19.9	22.6	22.6	25.2
DHALEGAON	55.9	41.6	41.6	1.2	13.9	17.7	18.8	22.1	28.8
PURNA	39.8	39.8	39.8	11.4	11.4	11.4	21.9	21.9	24.0
SAIGAON	41.6	41.6		23.3	23.3		29.0	29.0	
NANDED	22.6	22.6	22.6	17.1	17.1	22.0	20.6	20.6	22.3
GANDLAPET	57.0	57.0		1.9	1.9		12.8	12.8	
MANCHERIAL	47.3	33.5	31.4	0.0	8.3	11.5	17.4	20.8	25.2
PERUR	49.8	25.6	22.9	0.0	2.9	7.6	11.6	13.6	15.4
POLAVARM	22.4	19.9	19.9	0.0	3.8	3.8	7.5	9.2	11.6
NOWRANGPUR	24.9	19.9	19.9	0.0	2.1	2.8	4.9	6.6	9.1
PATHAGUDEM	49.8	35.0	17.7	0.0	1.9	4.8	6.2	8.3	10.9
JAGDALPUR	33.0	21.9	15.4	0.0	2.1	3.9	7.5	11.0	11.0
KONTA	33.2	12.7	12.7	0.0	1.5	2.1	4.8	6.3	6.7
BADRACHALAM	72.4	72.4	27.5	4.4	4.4	9.4	15.2	15.2	16.9
SANGAM	54.8	54.8	54.8	9.4	9.4	13.5	19.8	19.8	23.6



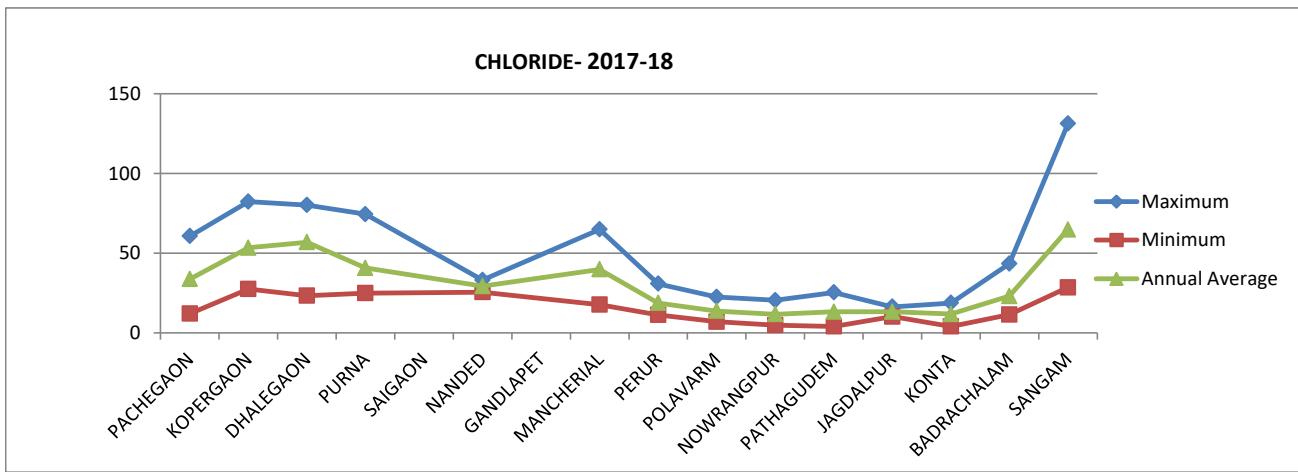
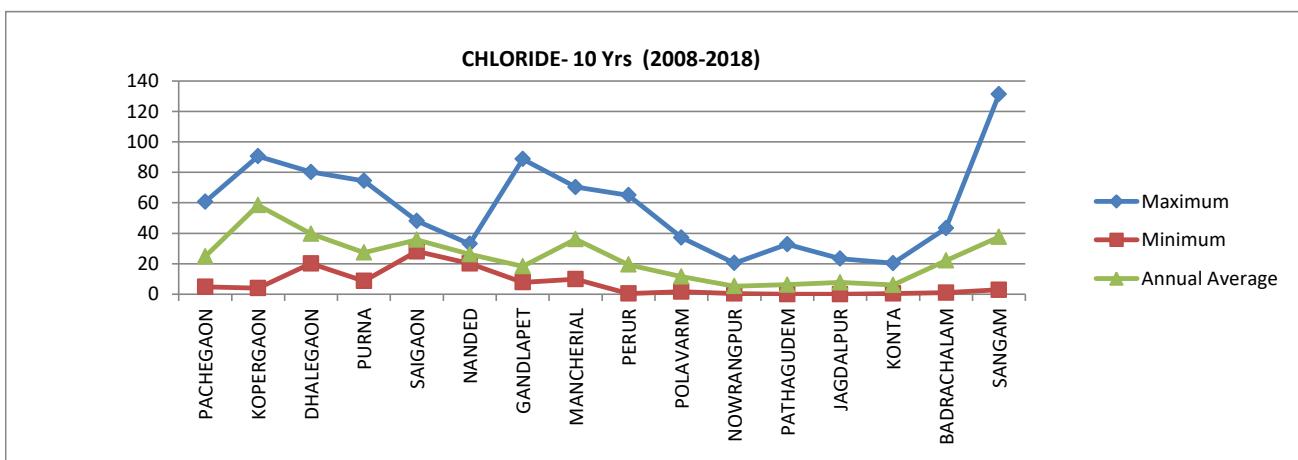
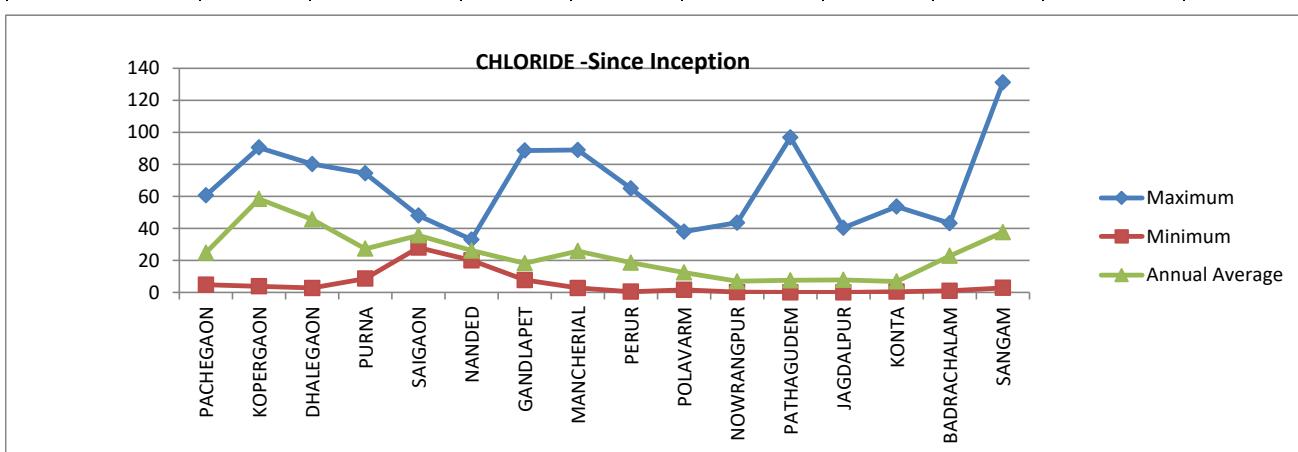
8.BICARBONATE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	229.4	229.4	229.4	103.0	103.0	112.2	146.4	146.4	164.7
KOPERGAON	241.0	241.0	222.0	83.0	83.0	107.4	149.8	149.8	157.6
DHALEGAON	538.6	181.6	126.9	32.9	102.5	102.5	211.0	143.3	110.6
PURNA	314.8	314.8	177.6	128.0	128.0	131.8	196.9	196.9	155.4
SAIGAON	257.0	257.0		202.0	202.0		234.0	234.0	
NANDED	175.3	175.3	131.8	126.9	126.9	126.9	144.7	144.7	129.3
GANDLAPET	392.8	392.8		93.9	93.9		201.6	201.6	
MANCHERIAL	477.0	307.5	307.5	95.0	104.2	181.5	221.5	217.2	238.2
PERUR	259.0	224.0	189.8	21.0	26.0	83.0	152.8	141.6	136.9
POLAVARM	283.0	196.6	196.6	23.4	23.4	23.4	103.3	96.9	102.3
NOWRANGPUR	262.3	181.5	181.5	3.9	35.0	39.0	60.3	75.3	92.2
PATHAGUDEM	495.9	466.9	201.6	24.0	24.9	78.1	84.5	93.3	117.5
JAGDALPUR	246.0	224.0	102.5	9.8	26.7	50.8	100.1	117.8	86.3
KONTA	312.0	121.0	121.0	14.0	30.0	32.7	57.2	72.1	83.4
BADRACHALAM	772.0	772.0	302.5	43.5	43.5	89.3	146.5	144.3	144.2
SANGAM	489.0	489.0	489.0	107.5	107.5	137.6	197.4	197.4	249.9



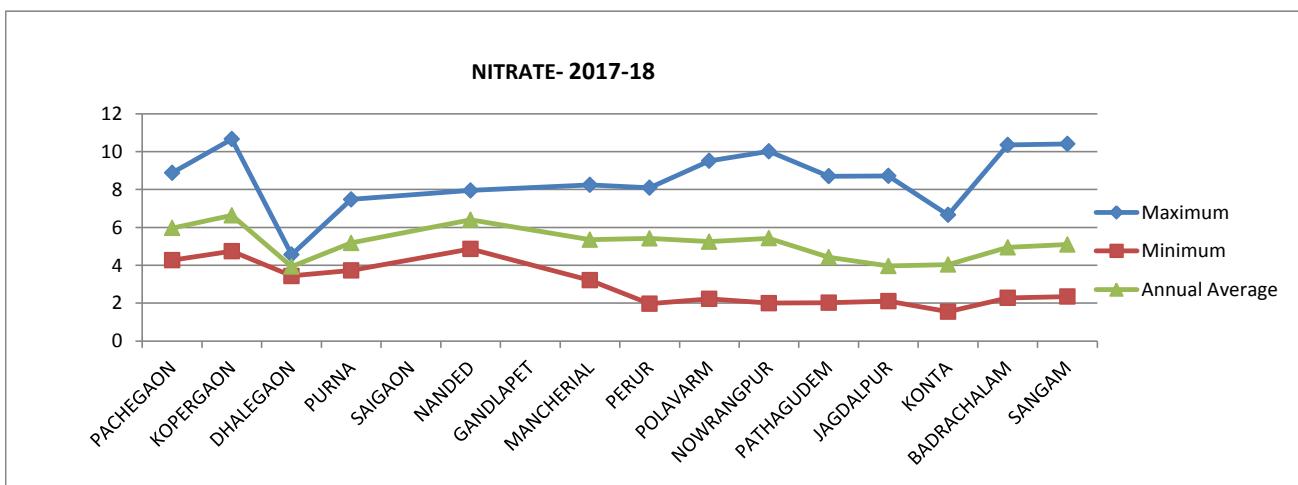
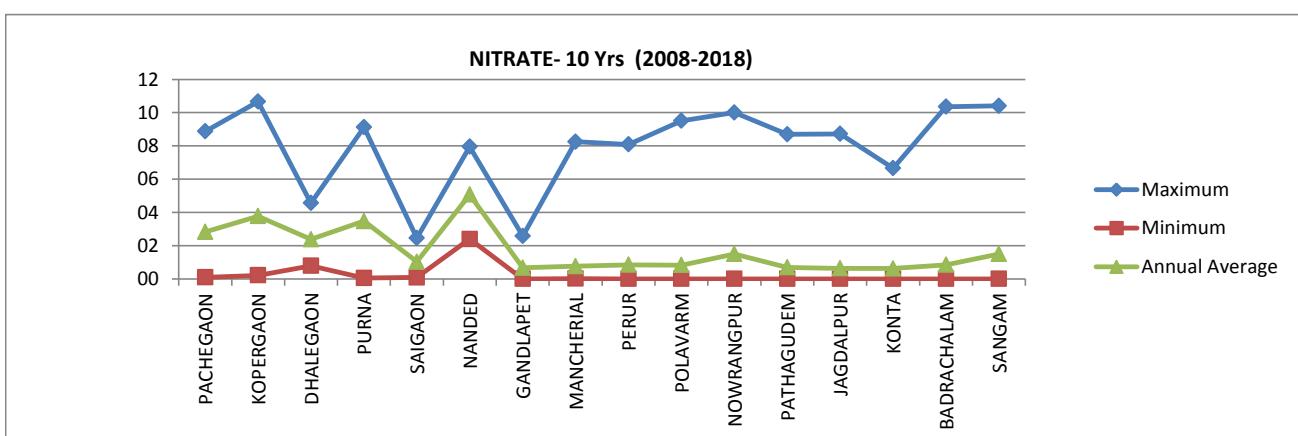
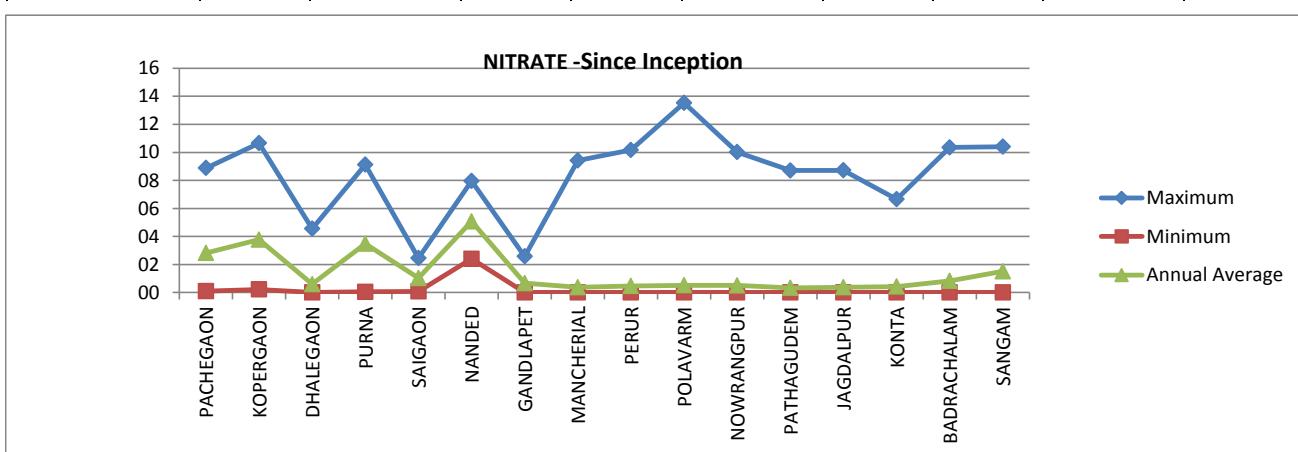
9.CHLORIDE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	60.7	60.7	60.7	4.8	4.8	12.0	24.9	24.9	33.7
KOPERGAON	90.5	90.5	82.3	3.9	3.9	27.4	58.5	58.5	53.3
DHALEGAON	80.2	80.2	80.2	2.8	20.1	23.3	45.6	39.7	56.8
PURNA	74.4	74.4	74.4	8.7	8.7	24.8	27.3	27.3	40.6
SAIGAON	48.1	48.1		28.1	28.1		35.7	35.7	
NANDED	33.0	33.0	33.0	20.1	20.1	25.4	26.2	26.2	29.2
GANDLAPET	88.6	88.6		7.8	7.8		18.3	18.3	
MANCHERIAL	89.0	70.3	64.9	2.8	9.9	17.6	26.0	36.2	39.8
PERUR	65.0	65.0	30.7	0.5	0.5	11.1	18.7	19.4	18.7
POLAVARM	38.0	37.1	22.4	1.6	1.6	6.9	12.5	11.6	13.7
NOWRANGPUR	43.6	20.4	20.4	0.2	0.5	4.8	7.0	5.3	11.7
PATHAGUDEM	96.8	32.8	25.3	0.0	0.0	3.9	7.6	6.2	13.1
JAGDALPUR	40.4	23.3	16.3	0.0	0.0	10.1	8.0	7.7	13.1
KONTA	53.6	20.3	18.7	0.5	0.5	3.9	6.9	6.0	11.7
BADRACHALAM	43.3	43.3	43.3	1.0	1.0	11.4	22.9	22.1	23.0
SANGAM	131.2	131.2	131.2	2.9	2.9	28.4	37.6	37.6	64.8



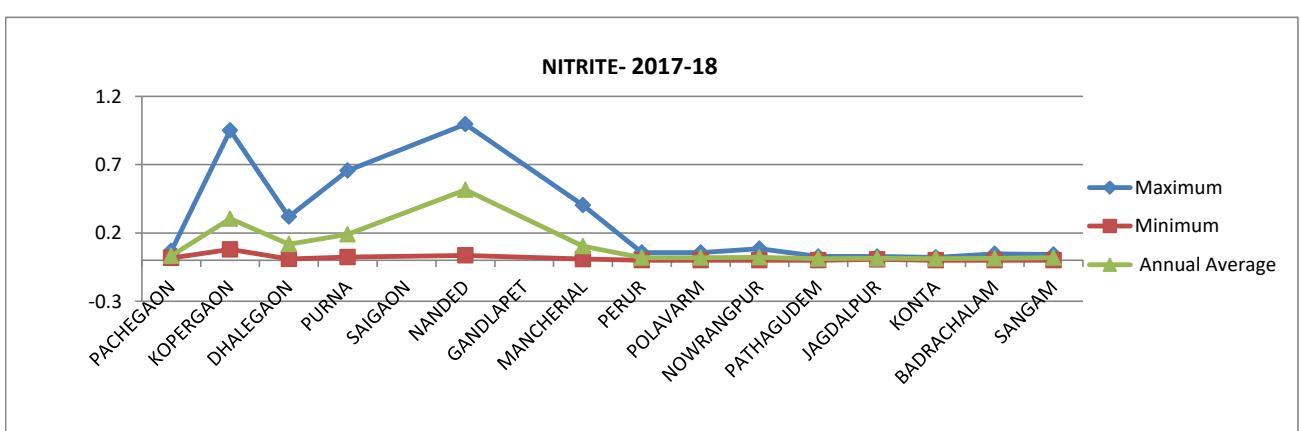
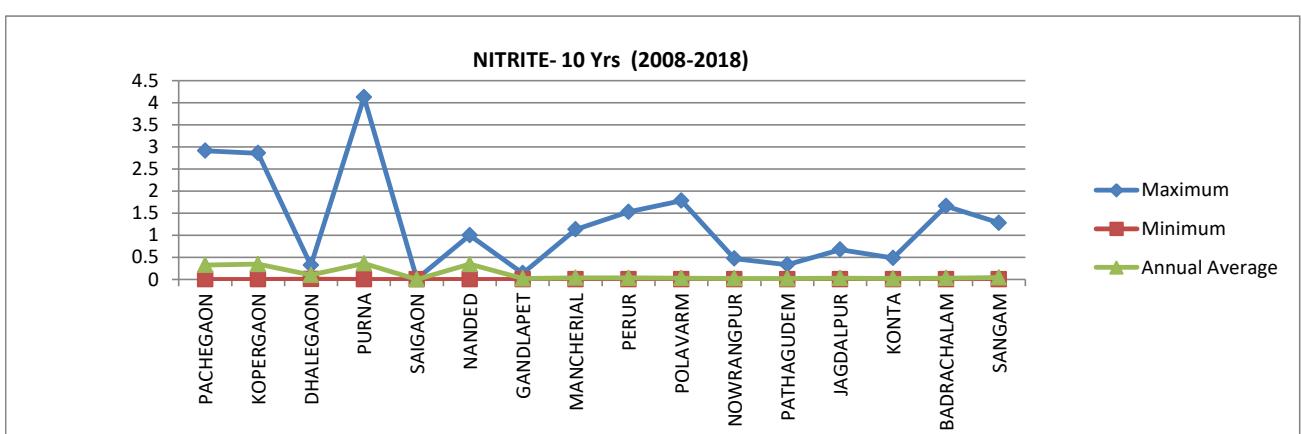
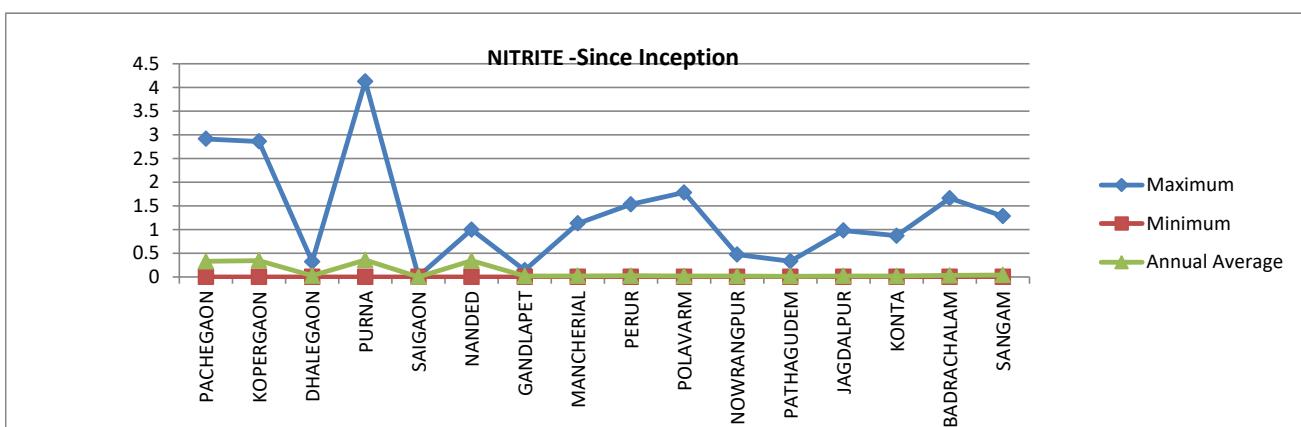
11. NITRATE - No3

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	8.9	8.9	8.9	0.1	0.1	4.3	2.8	2.8	6.0
KOPERGAON	10.7	10.7	10.7	0.2	0.2	4.7	3.8	3.8	6.6
DHALEGAON	4.6	4.6	4.6	0.0	0.8	3.4	0.6	2.4	3.9
PURNA	9.1	9.1	7.5	0.1	0.1	3.7	3.5	3.5	5.2
SAIGAON	2.5	2.5		0.1	0.1		1.0	1.0	
NANDED	8.0	8.0	8.0	2.4	2.4	4.9	5.1	5.1	6.4
GANDLAPET	2.6	2.6		0.0	0.0		0.7	0.7	
MANCHERIAL	9.4	8.3	8.3	0.0	0.0	3.2	0.4	0.8	5.3
PERUR	10.2	8.1	8.1	0.0	0.0	2.0	0.5	0.8	5.4
POLAVARM	13.5	9.5	9.5	0.0	0.0	2.2	0.5	0.8	5.2
NOWRANGPUR	10.0	10.0	10.0	0.0	0.0	2.0	0.5	1.5	5.4
PATHAGUDEM	8.7	8.7	8.7	0.0	0.0	2.0	0.3	0.7	4.4
JAGDALPUR	8.7	8.7	8.7	0.0	0.0	2.1	0.4	0.6	4.0
KONTA	6.7	6.7	6.7	0.0	0.0	1.6	0.4	0.6	4.0
BADRACHALAM	10.4	10.4	10.4	0.0	0.0	2.3	0.8	0.8	4.9
SANGAM	10.4	10.4	10.4	0.0	0.0	2.3	1.5	1.5	5.1



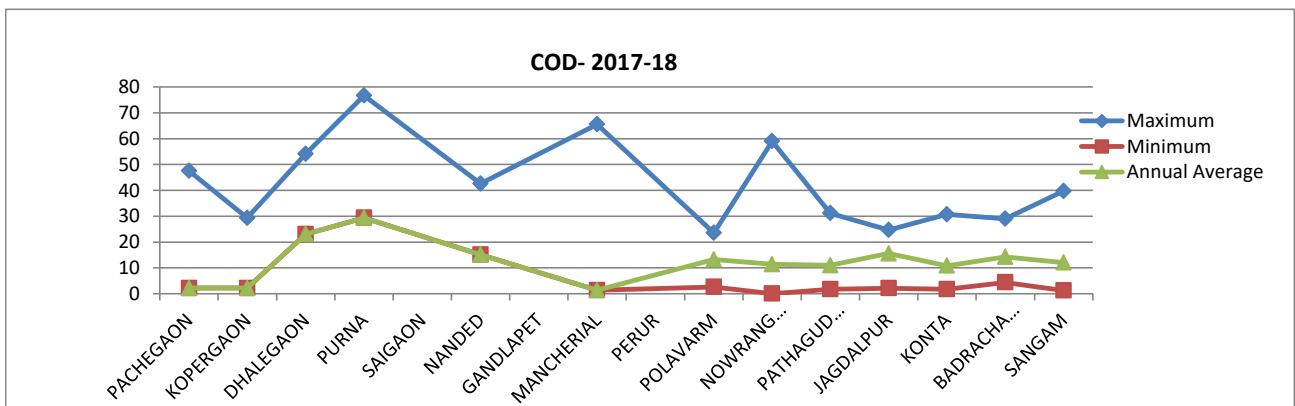
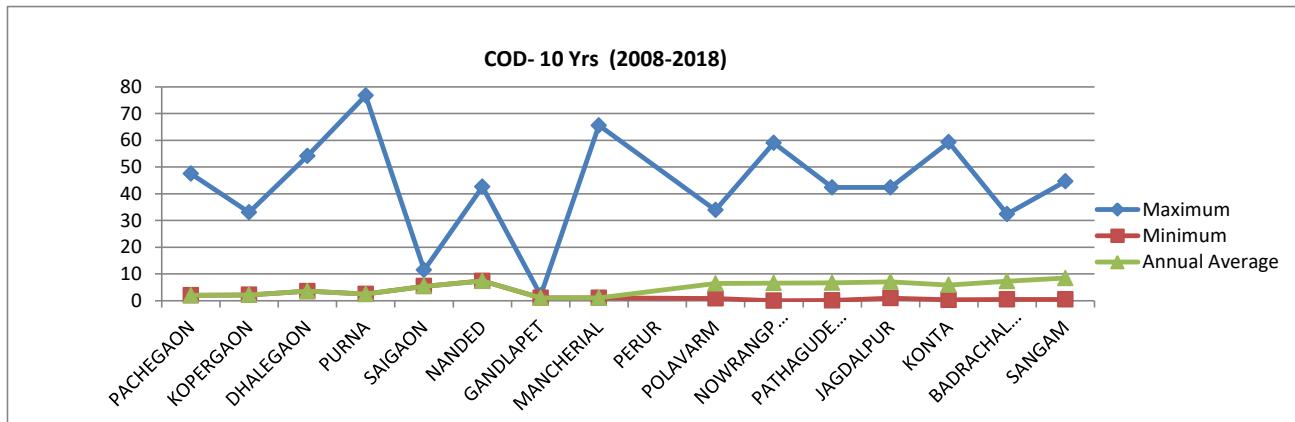
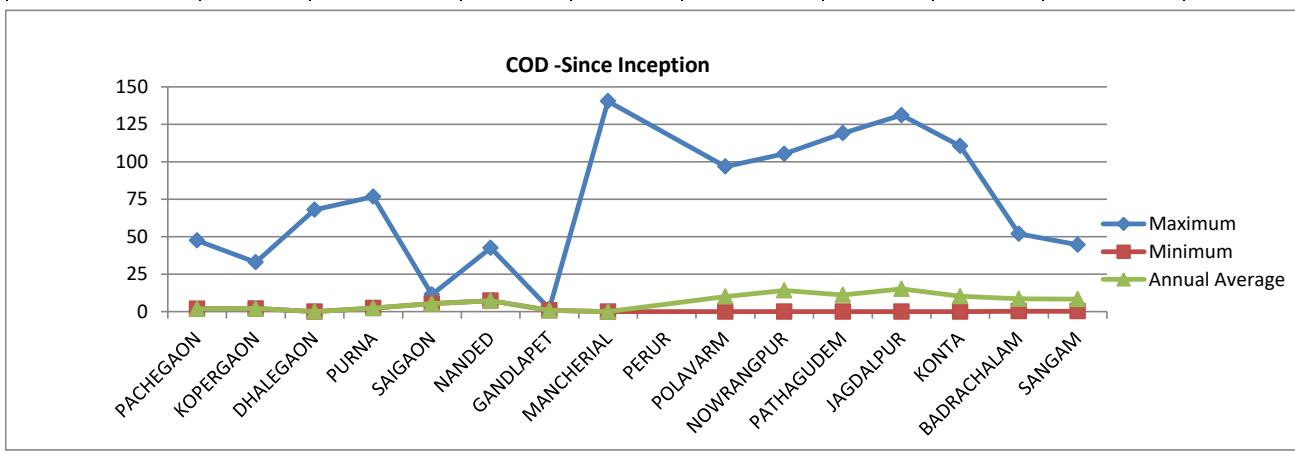
12. NITRITE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	2.9	2.9	0.1	0.0	0.0	0.0	0.3	0.3	0.0
KOPERGAON	2.9	2.9	1.0	0.0	0.0	0.1	0.3	0.3	0.3
DHALEGAON	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.1	0.1
PURNA	4.1	4.1	0.7	0.0	0.0	0.0	0.4	0.4	0.2
SAIGAON	0.0	0.0		0.0	0.0		0.0	0.0	
NANDED	1.0	1.0	1.0	0.0	0.0	0.0	0.3	0.3	0.5
GANDLAPET	0.1	0.1		0.0	0.0		0.0	0.0	
MANCHERIAL	1.1	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.1
PERUR	1.5	1.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
POLAVARM	1.8	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0
NOWRANGPUR	0.5	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
PATHAGUDEM	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAGDALPUR	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KONTA	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BADRACHALAM	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SANGAM	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0



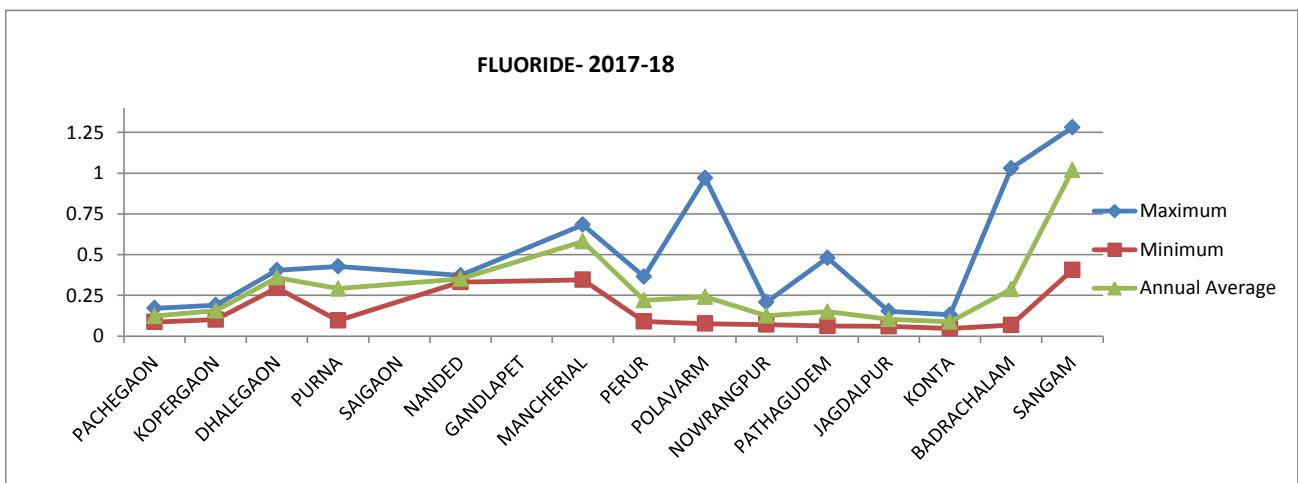
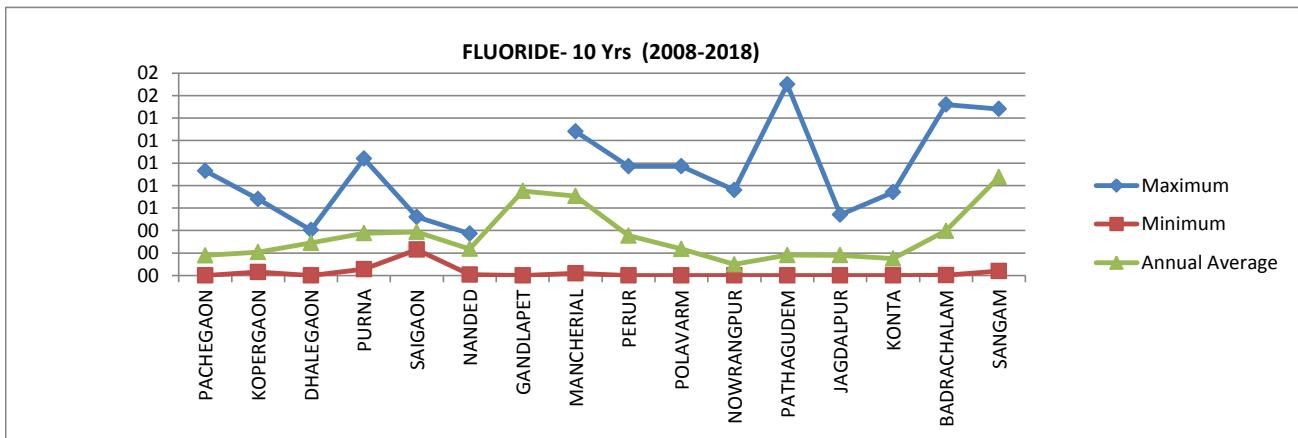
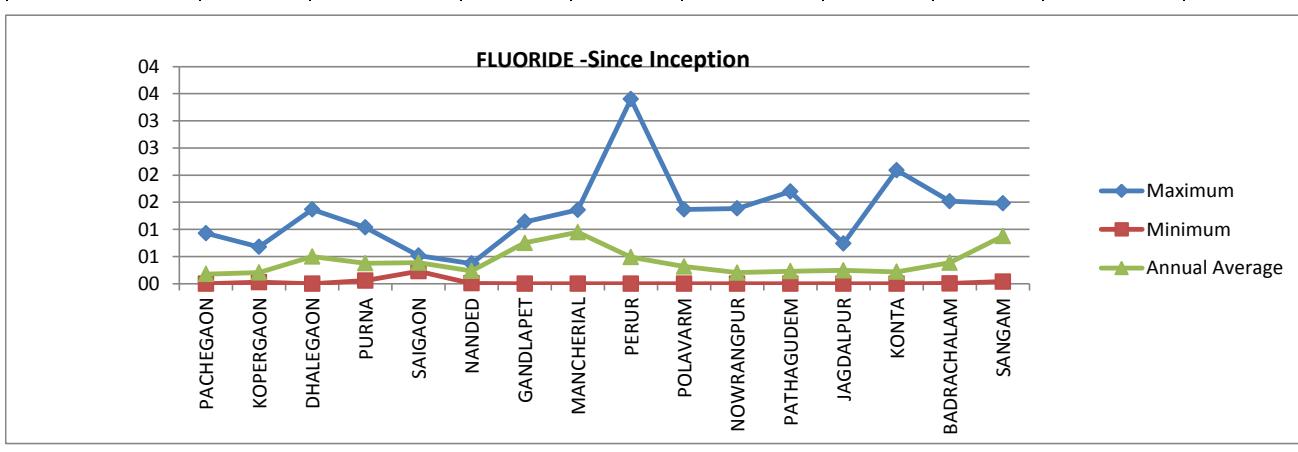
13.COD

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	47.5	47.5	47.5	2.0	2.0	2.2	2.0	2.0	2.2
KOPERAON	33.0	33.0	29.3	2.2	2.2	2.2	2.2	2.2	2.2
DHALEGAON	68.0	54.1	54.1	0.0	3.6	23.1	0.0	3.6	23.1
PURNA	76.7	76.7	76.7	2.4	2.4	29.4	2.4	2.4	29.4
SAIGAON	11.5	11.5		5.4	5.4		5.4	5.4	
NANDED	42.6	42.6	42.6	7.4	7.4	15.1	7.4	7.4	15.1
GANDLAPET	2.0	2.0		1.0	1.0		1.0	1.0	
MANCHERIAL	140.4	65.6	65.6	0.0	1.0	1.3	0.0	1.0	1.3
PERUR									
POLAVARM	96.8	33.9	23.5	0.0	0.8	2.6	10.2	6.4	13.2
NOWRANGPUR	105.3	59.0	59.0	0.0	0.0	0.0	14.2	6.6	11.4
PATHAGUDEM	119.0	42.4	31.1	0.0	0.1	1.8	11.3	6.7	11.0
JAGDALPUR	131.1	42.4	24.6	0.0	0.9	2.1	15.3	7.1	15.6
KONTA	110.5	59.3	30.7	0.0	0.3	1.8	10.3	5.9	10.8
BADRACHALAM	51.9	32.4	29.0	0.4	0.4	4.4	8.7	7.2	14.2
SANGAM	44.6	44.6	39.7	0.4	0.4	1.3	8.4	8.4	12.0



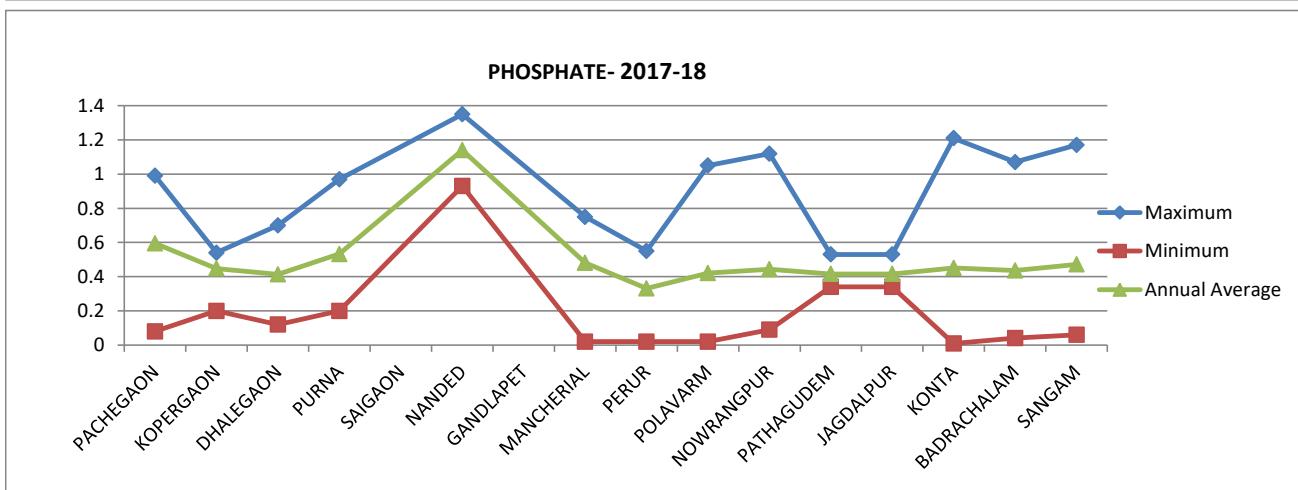
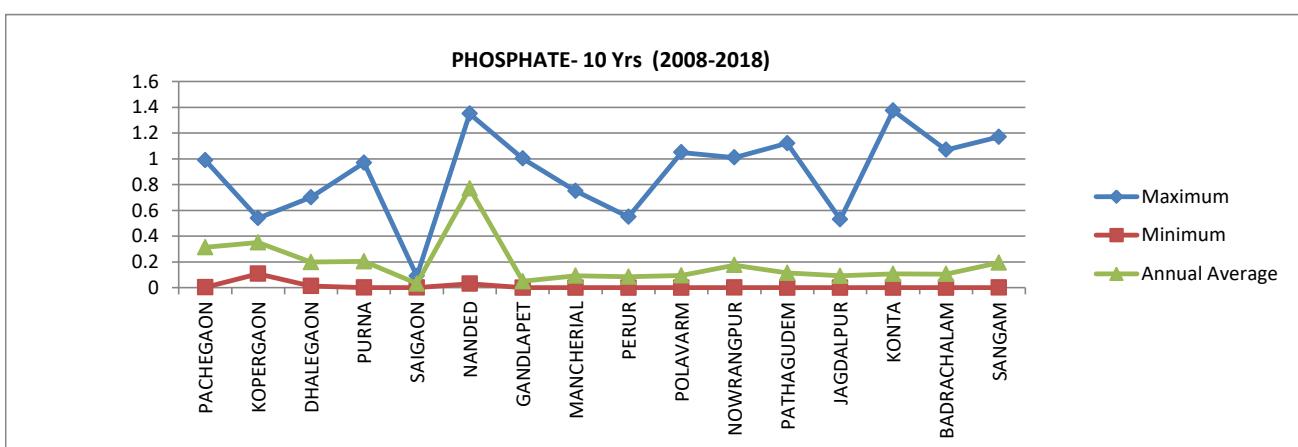
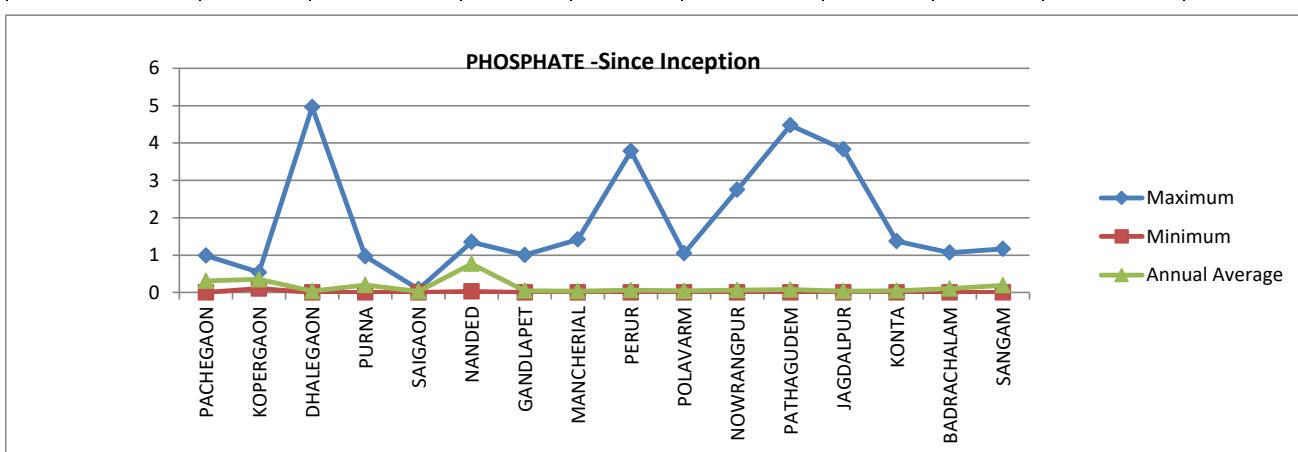
14.FLUORIDE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	0.9	0.9	0.2	0.0	0.0	0.1	0.2	0.2	0.1
KOPERAON	0.7	0.7	0.2	0.0	0.0	0.1	0.2	0.2	0.2
DHALEGAON	1.4	0.4	0.4	0.0	0.0	0.3	0.5	0.3	0.4
PURNA	1.0	1.0	0.4	0.1	0.1	0.1	0.4	0.4	0.3
SAIGAON	0.5	0.5		0.2	0.2		0.4	0.4	
NANDED	0.4	0.4	0.4	0.0	0.0	0.3	0.2	0.2	0.4
GANDLAPET	1.1			0.0	0.0		0.8	0.8	
MANCHERIAL	1.4	1.3	0.7	0.0	0.0	0.3	0.9	0.7	0.6
PERUR	3.4	1.0	0.4	0.0	0.0	0.1	0.5	0.4	0.2
POLAVARM	1.4	1.0	1.0	0.0	0.0	0.1	0.3	0.2	0.2
NOWRANGPUR	1.4	0.8	0.2	0.0	0.0	0.1	0.2	0.1	0.1
PATHAGUDEM	1.7	1.7	0.5	0.0	0.0	0.1	0.2	0.2	0.1
JAGDALPUR	0.7	0.5	0.2	0.0	0.0	0.1	0.2	0.2	0.1
KONTA	2.1	0.7	0.1	0.0	0.0	0.0	0.2	0.2	0.1
BADRACHALAM	1.5	1.5	1.0	0.0	0.0	0.1	0.4	0.4	0.3
SANGAM	1.5	1.5	1.3	0.0	0.0	0.4	0.9	0.9	1.0



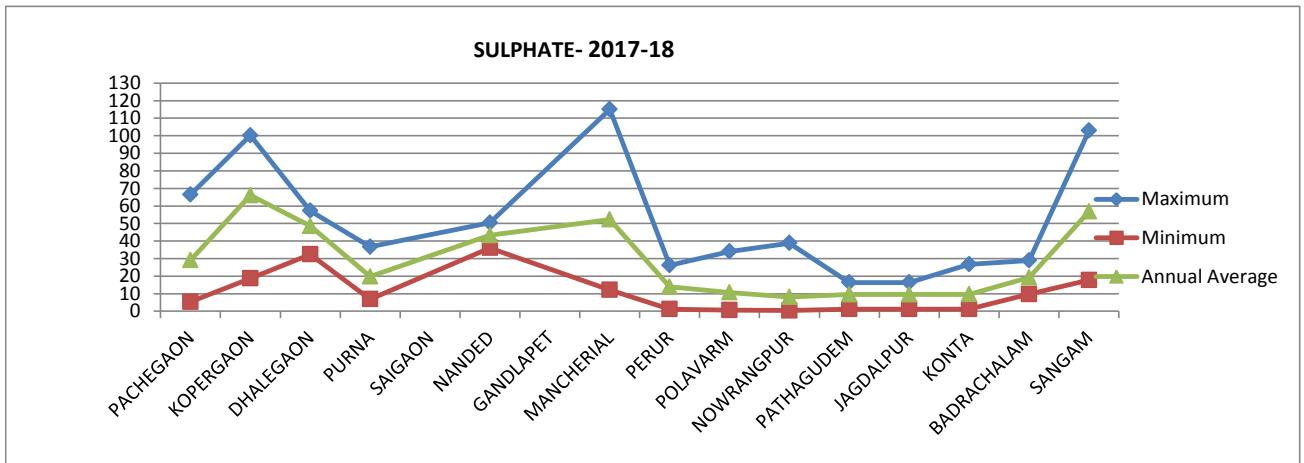
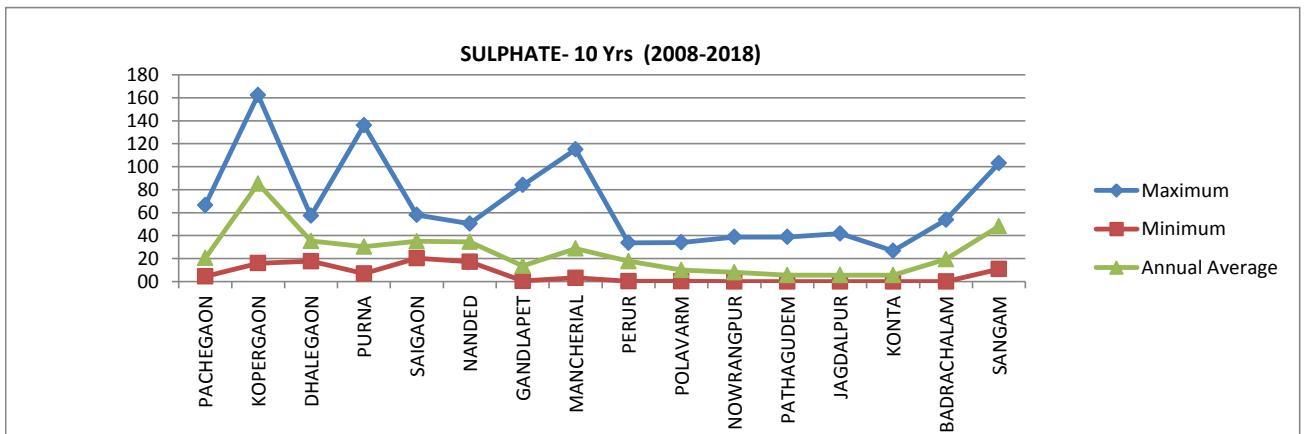
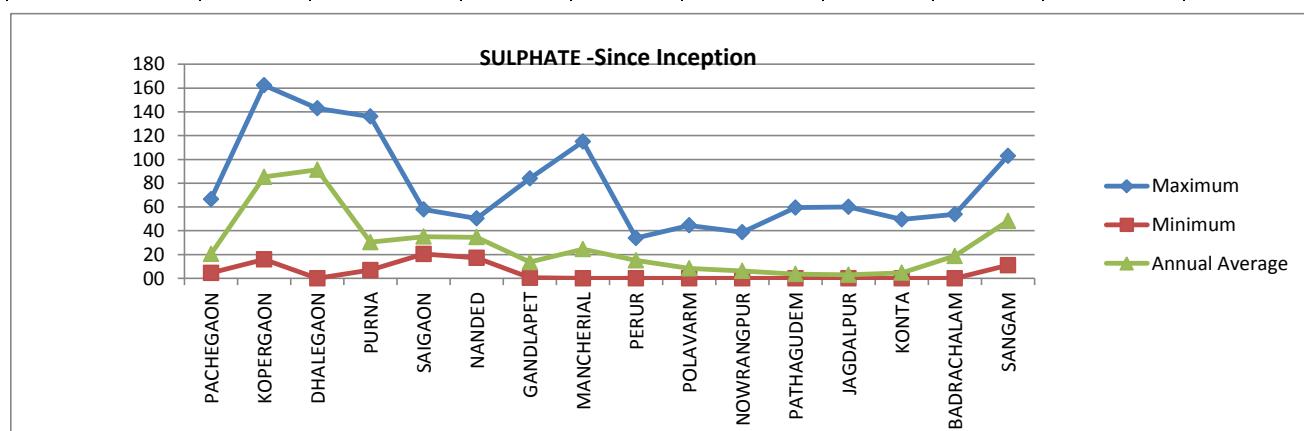
15.PHOSPHATE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	1.0	1.0	1.0	0.0	0.0	0.1	0.3	0.3	0.6
KOPERGAON	0.5	0.5	0.5	0.1	0.1	0.2	0.4	0.4	0.4
DHALEGAON	5.0	0.7	0.7	0.0	0.0	0.1	0.0	0.2	0.4
PURNA	1.0	1.0	1.0	0.0	0.0	0.2	0.2	0.2	0.5
SAIGAON	0.1	0.1		0.0	0.0		0.0	0.0	
NANDED	1.4	1.4	1.4	0.0	0.0	0.9	0.8	0.8	1.1
GANDLAPET	1.0	1.0		0.0	0.0		0.0	0.0	
MANCHERIAL	1.4	0.8	0.8	0.0	0.0	0.0	0.0	0.1	0.5
PERUR	3.8	0.6	0.6	0.0	0.0	0.0	0.1	0.1	0.3
POLAVARM	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.1	0.4
NOWRANGPUR	2.7	1.0	1.1	0.0	0.0	0.1	0.1	0.2	0.4
PATHAGUDEM	4.5	1.1	0.5	0.0	0.0	0.3	0.1	0.1	0.4
JAGDALPUR	3.8	0.5	0.5	0.0	0.0	0.3	0.0	0.1	0.4
KONTA	1.4	1.4	1.2	0.0	0.0	0.0	0.0	0.1	0.5
BADRACHALAM	1.1	1.1	1.1	0.0	0.0	0.0	0.1	0.1	0.4
SANGAM	1.2	1.2	1.2	0.0	0.0	0.1	0.2	0.2	0.5



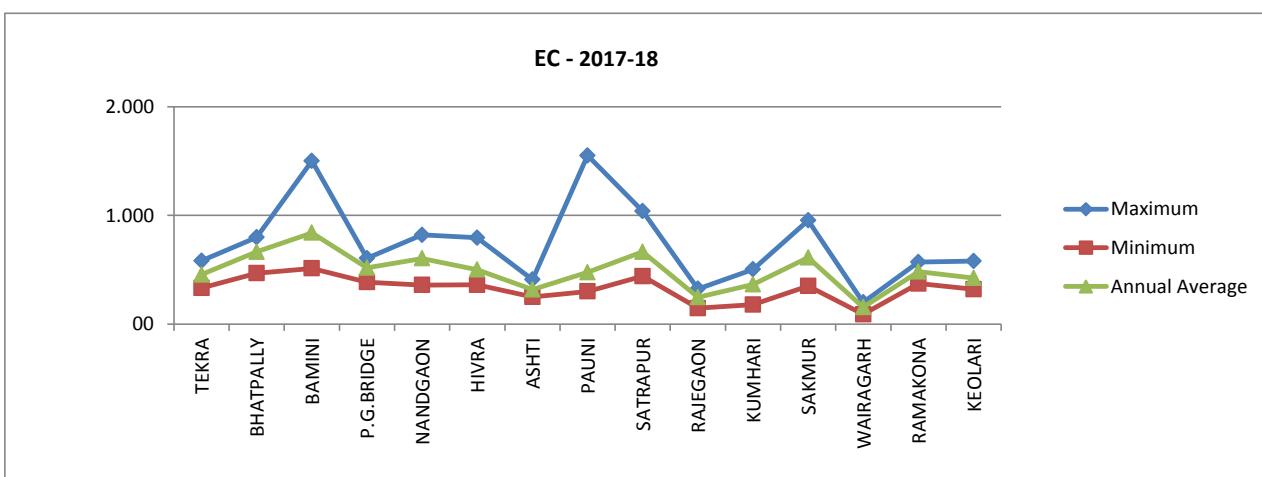
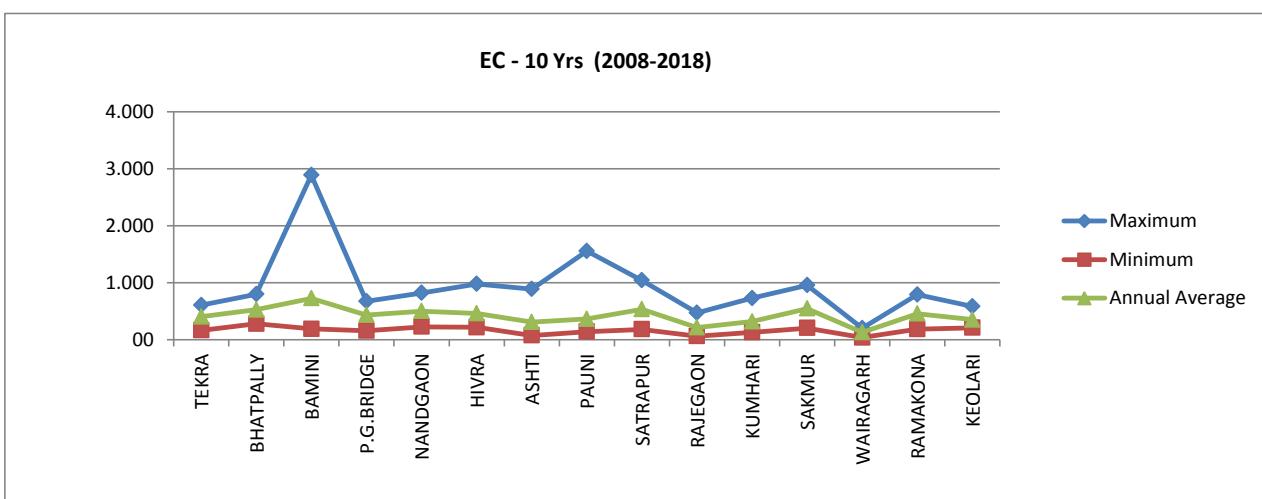
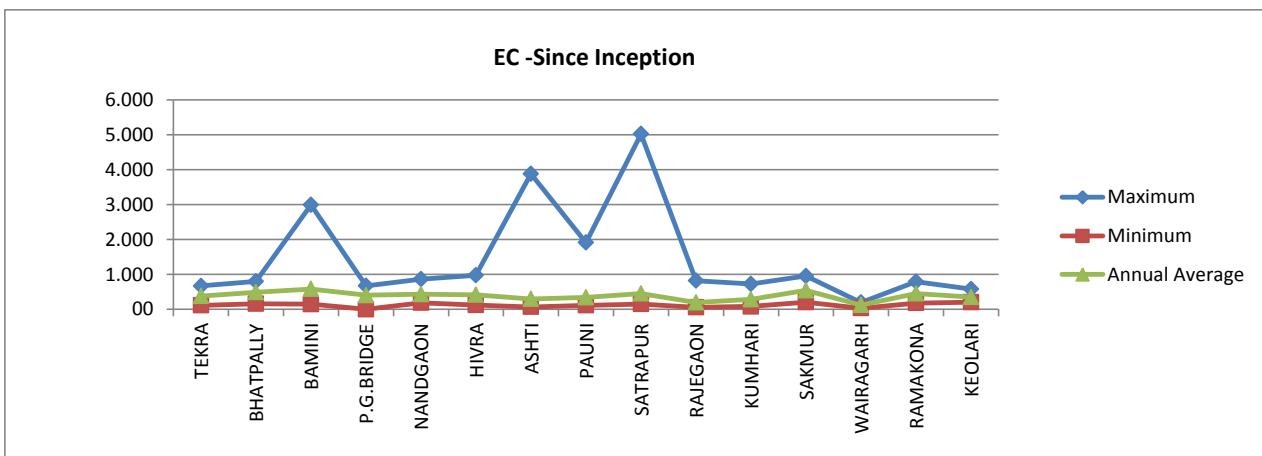
16.SULPHATE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
PACHEGAON	66.5	66.5	66.5	4.5	4.5	5.3	20.5	20.5	29.1
KOPERGAON	162.3	162.3	100.2	16.0	16.0	18.7	85.3	85.3	66.0
DHALEGAON	143.0	57.2	57.2	0.0	17.8	32.4	91.4	35.3	48.6
PURNA	136.0	136.0	36.7	6.9	6.9	6.9	30.3	30.3	19.8
SAIGAON	58.0	58.0		20.4	20.4		35.0	35.0	
NANDED	50.4	50.4	50.4	17.3	17.3	36.1	34.6	34.6	43.2
GANDLAPET	84.0	84.0		0.5	0.5		13.6	13.6	
MANCHERIAL	115.0	115.0	115.0	0.0	3.3	12.1	24.6	28.7	52.2
PERUR	33.8	33.8	26.2	0.0	0.3	1.2	15.1	17.7	14.0
POLAVARM	44.5	34.1	34.1	0.0	0.3	0.7	8.3	10.1	10.7
NOWRANGPUR	38.8	38.8	38.8	0.0	0.0	0.4	6.3	8.0	8.1
PATHAGUDEM	59.5	38.8	16.4	0.0	0.0	1.2	3.6	5.6	9.5
JAGDALPUR	60.0	41.8	16.4	0.0	0.0	1.2	2.9	5.6	9.5
KONTA	49.5	26.7	26.7	0.0	0.0	1.2	4.6	5.6	9.6
BADRACHALAM	53.8	53.8	29.0	0.0	0.0	9.7	18.8	19.4	19.2
SANGAM	103.0	103.0	103.0	11.0	11.0	17.7	48.2	48.2	56.8



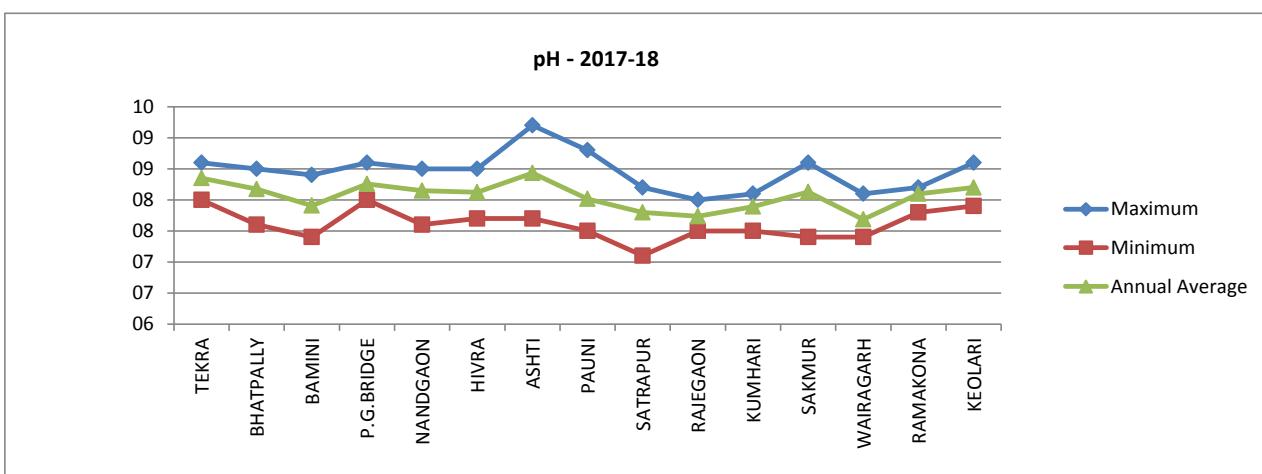
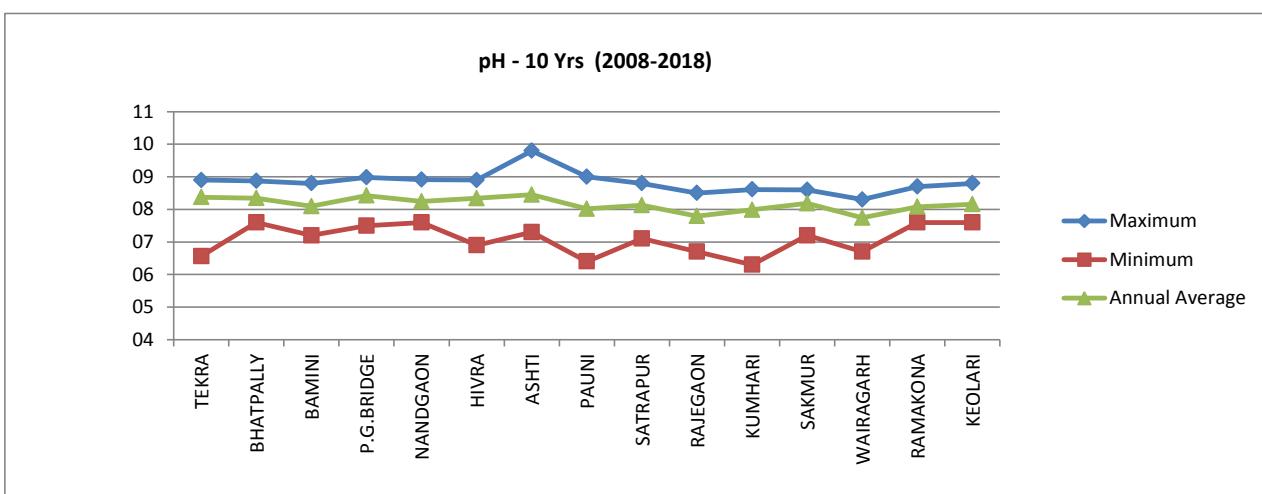
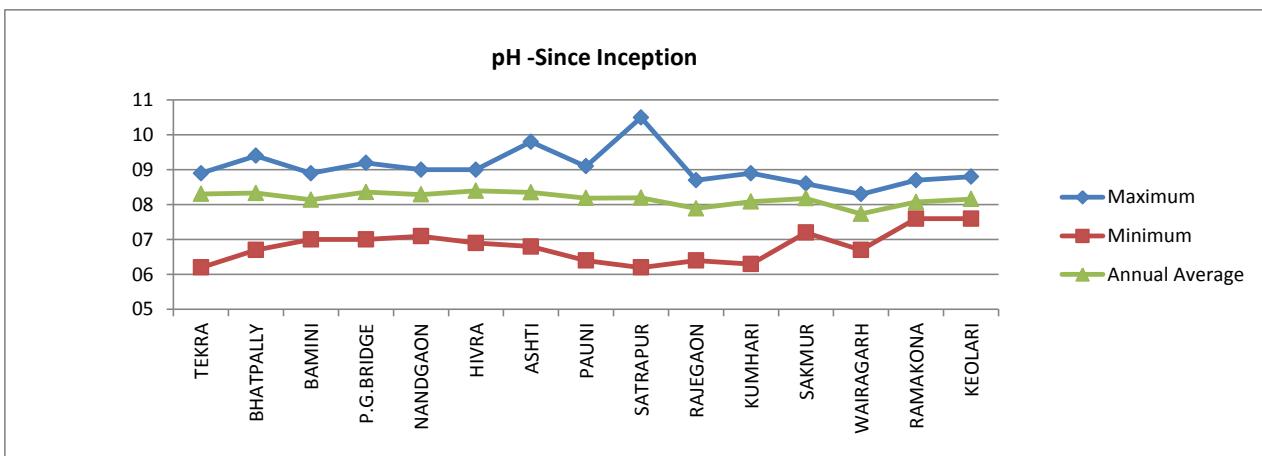
1. Electrical Conductivity

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	671.0	605.0	582.0	117.0	163.0	331.0	381.0	404.1	455.2
BHATPALLY	798.0	798.0	798.0	158.0	278.0	468.0	488.5	525.5	664.8
BAMINI	2991.0	2887.0	1501.0	148.0	188.0	513.0	586.4	724.1	840.5
P.G.BRIDGE	678.0	671.0	605.0	0.0	157.0	385.0	404.2	433.0	518.3
NANDGAON	868.0	820.0	820.0	192.0	225.0	360.0	431.1	499.1	604.2
HIVRA	978.0	978.0	795.0	127.0	215.0	361.0	416.6	460.3	501.3
ASHTI	3884.0	887.0	409.0	72.0	72.0	249.0	298.4	307.9	318.5
PAUNI	1914.0	1552.0	1552.0	119.0	140.0	301.0	341.1	361.3	475.1
SATRAPUR	5024.0	1040.0	1040.0	153.0	180.0	440.0	457.7	534.7	664.8
RAJEGAON	825.0	470.0	324.0	56.0	61.0	145.0	194.5	214.2	246.1
KUMHARI	726.0	726.0	503.0	83.0	130.0	178.0	288.6	317.3	365.2
SAKMUR	954.0	954.0	954.0	203.0	203.0	350.0	545.4	545.4	611.6
WAIRAGARH	199.0	199.0	199.0	36.0	36.0	90.0	127.7	127.7	155.1
RAMAKONA	790.0	790.0	570.0	181.0	181.0	372.0	455.0	455.0	483.3
KEOLARI	580.0	580.0	580.0	207.0	207.0	319.0	349.7	349.7	423.1



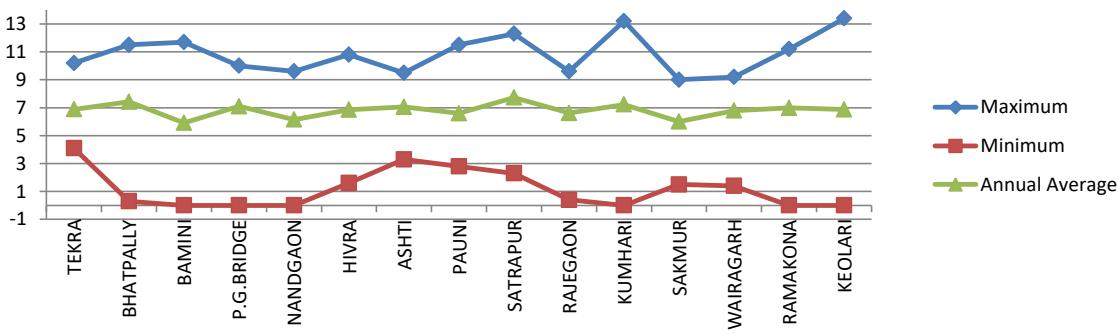
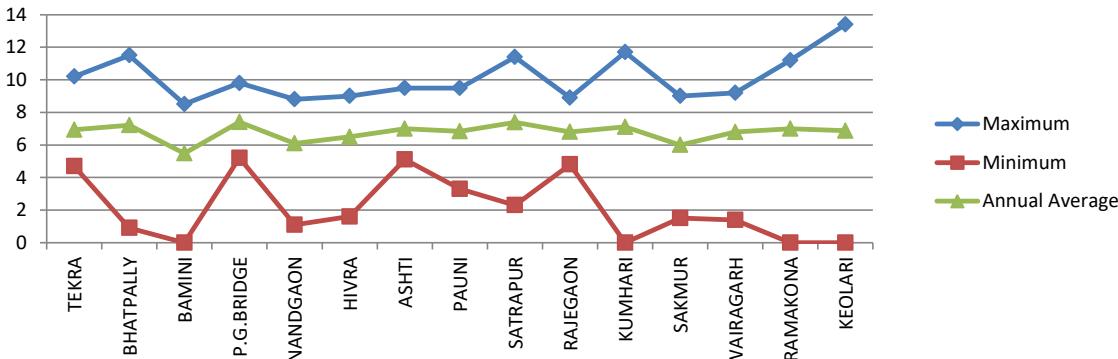
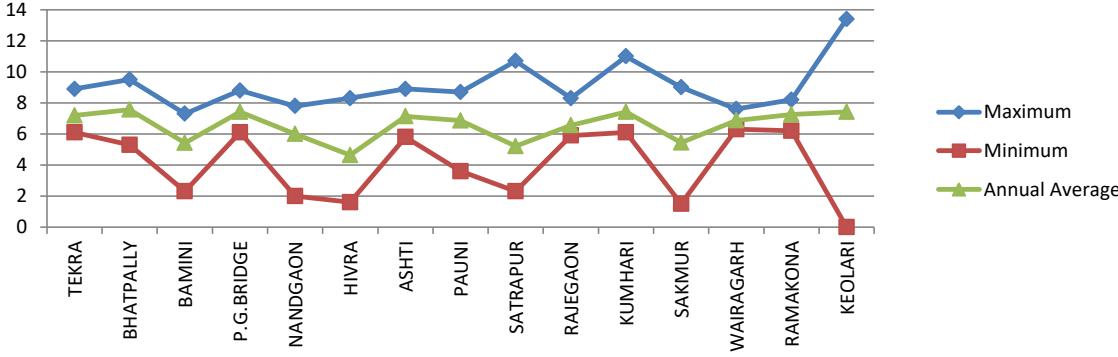
2.pH

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	8.9	8.9	8.6	6.2	6.6	8.0	8.3	8.4	8.4
BHATPALLY	9.4	8.9	8.5	6.7	7.6	7.6	8.3	8.3	8.2
BAMINI	8.9	8.8	8.4	7.0	7.2	7.4	8.1	8.1	7.9
P.G.BRIDGE	9.2	9.0	8.6	7.0	7.5	8.0	8.4	8.4	8.3
NANDGAON	9.0	8.9	8.5	7.1	7.6	7.6	8.3	8.2	8.1
HIVRA	9.0	8.9	8.5	6.9	6.9	7.7	8.4	8.3	8.1
ASHTI	9.8	9.8	9.2	6.8	7.3	7.7	8.4	8.5	8.4
PAUNI	9.1	9.0	8.8	6.4	6.4	7.5	8.2	8.0	8.0
SATRAPUR	10.5	8.8	8.2	6.2	7.1	7.1	8.2	8.1	7.8
RAJEGAON	8.7	8.5	8.0	6.4	6.7	7.5	7.9	7.8	7.7
KUMHARI	8.9	8.6	8.1	6.3	6.3	7.5	8.1	8.0	7.9
SAKMUR	8.6	8.6	8.6	7.2	7.2	7.4	8.2	8.2	8.1
WAIRAGARH	8.3	8.3	8.1	6.7	6.7	7.4	7.7	7.7	7.7
RAMAKONA	8.7	8.7	8.2	7.6	7.6	7.8	8.1	8.1	8.1
KEOLARI	8.8	8.8	8.6	7.6	7.6	7.9	8.2	8.2	8.2



3. Dissolved Oxygen

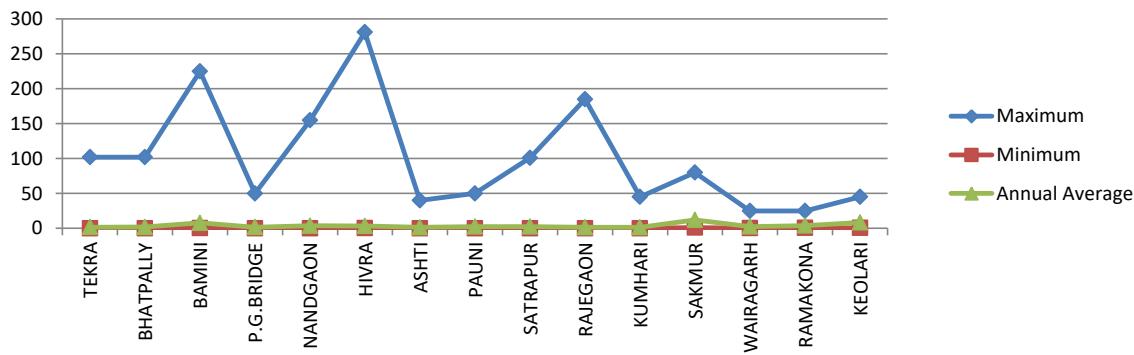
Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
TEKRA	10.2	10.2	8.9	4.1	4.7	6.1	6.9	6.9	7.2
BHATPALLY	11.5	11.5	9.5	0.3	0.9	5.3	7.4	7.2	7.6
BAMINI	11.7	8.5	7.3	0.0	0.0	2.3	5.9	5.5	5.4
P.G.BRIDGE	10.0	9.8	8.8	0.0	5.2	6.1	7.1	7.4	7.4
NANDGAON	9.6	8.8	7.8	0.0	1.1	2.0	6.2	6.1	6.0
HIVRA	10.8	9.0	8.3	1.6	1.6	1.6	6.9	6.5	4.6
ASHTI	9.5	9.5	8.9	3.3	5.1	5.8	7.1	7.0	7.1
PAUNI	11.5	9.5	8.7	2.8	3.3	3.6	6.6	6.8	6.9
SATRAPUR	12.3	11.4	10.7	2.3	2.3	2.3	7.7	7.4	5.2
RAJEGAON	9.6	8.9	8.3	0.4	4.8	5.9	6.6	6.8	6.6
KUMHARI	13.2	11.7	11.0	0.0	0.0	6.1	7.2	7.1	7.4
SAKMUR	9.0	9.0	9.0	1.5	1.5	1.5	6.0	6.0	5.4
WAIRAGARH	9.2	9.2	7.6	1.4	1.4	6.3	6.8	6.8	6.9
RAMAKONA	11.2	11.2	8.2	0.0	0.0	6.2	7.0	7.0	7.3
KEOLARI	13.4	13.4	13.4	0.0	0.0	0.0	6.9	6.9	7.4

DO -Since Inception**DO - 10 Yrs (2008-2018)****DO - 2017-18**

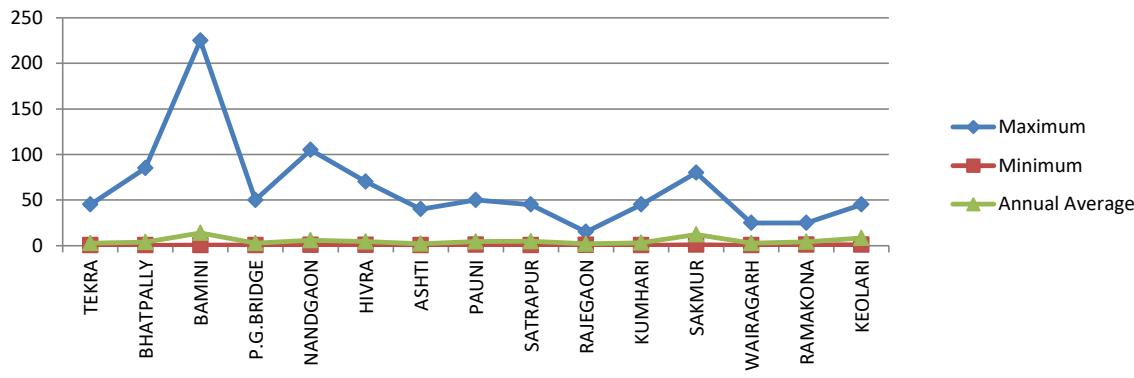
4. BOD

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	102.0	45.0	2.6	0.1	0.4	1.0	1.7	2.7	1.6
BHATPALLY	102.0	85.0	3.0	0.1	0.4	1.0	1.8	3.8	1.8
BAMINI	225.0	225.0	50.0	0.2	0.5	1.6	7.9	13.9	9.1
P.G.BRIDGE	50.0	50.0	4.5	0.0	0.5	1.3	1.7	2.8	2.5
NANDGAON	155.0	105.0	25.0	0.1	0.7	1.1	3.8	5.8	5.2
HIVRA	281.0	70.0	35.0	0.2	0.6	1.1	3.3	4.5	10.2
ASHTI	40.0	40.0	2.8	0.1	0.3	1.1	1.6	2.0	1.6
PAUNI	50.0	50.0	35.0	0.1	1.0	1.2	2.5	4.4	6.9
SATRAPUR	101.0	45.0	40.0	0.1	0.3	2.2	2.4	4.7	15.4
RAJEGAON	185.0	15.0	3.0	0.1	0.6	1.1	1.6	1.9	1.8
KUMHARI	45.0	45.0	5.4	0.1	0.4	1.2	1.4	3.2	1.9
SAKMUR	80.0	80.0	80.0	1.0	1.0	1.3	12.1	12.1	26.2
WAIRAGARH	25.0	25.0	2.4	0.4	0.4	1.2	2.7	2.7	1.5
RAMAKONA	25.0	25.0	2.3	0.9	0.9	1.0	4.0	4.0	1.7
KEOLARI	45.0	45.0	40.0	0.9	0.9	1.5	8.3	8.3	9.2

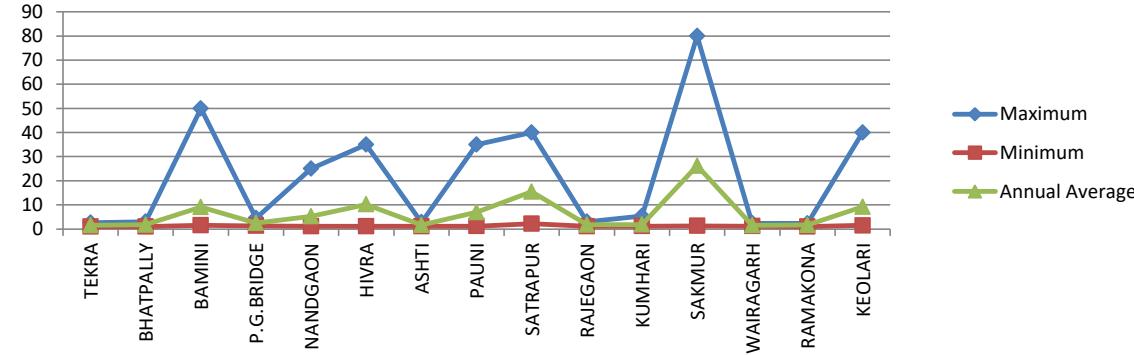
BOD -Since Inception



BOD - 10 Yrs (2008-2018)



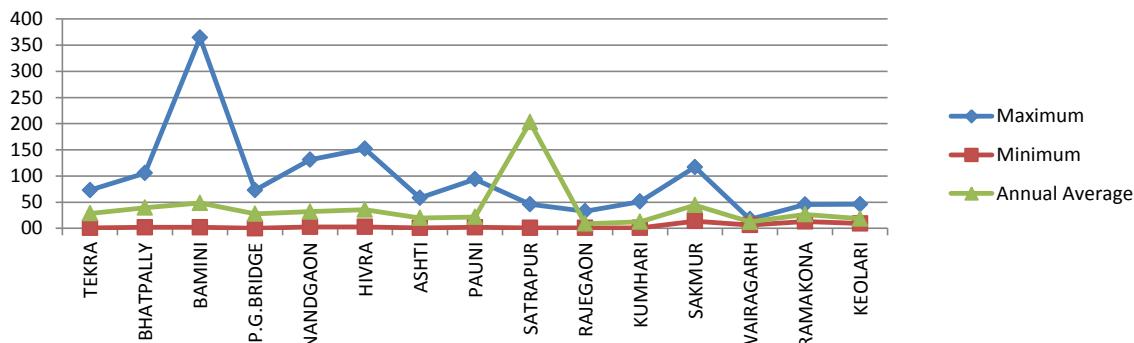
BOD - 2017-18



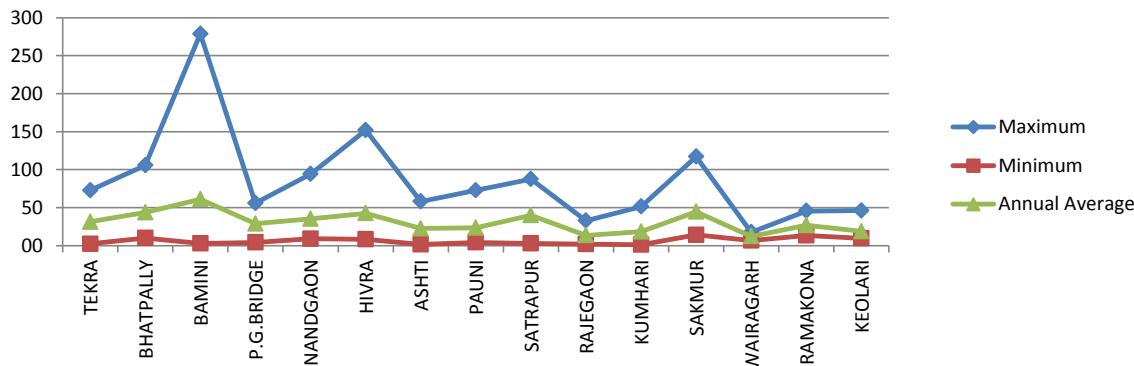
5. SODIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	73.0	72.6	54.5	1.0	2.4	2.4	28.7	31.3	34.7
BHATPALLY	105.6	105.6	65.0	2.0	9.9	37.4	39.5	43.5	50.0
BAMINI	364.4	278.8	158.5	2.0	3.0	34.1	48.5	61.2	82.6
P.G.BRIDGE	73.0	55.8	55.3	0.0	4.1	20.7	27.8	28.8	32.1
NANDGAON	131.0	94.2	53.0	3.0	9.0	24.9	31.8	35.3	36.1
HIVRA	152.0	152.0	77.9	3.0	8.2	17.7	35.5	42.6	44.0
ASHTI	58.2	58.2	32.4	1.0	1.7	17.9	19.9	22.5	25.2
PAUNI	93.8	72.7	32.7	2.0	4.3	18.7	21.9	23.4	25.2
SATRAPUR	46.0	87.6	69.2	1.0	2.7	6.4	203.0	40.0	43.6
RAJEGAON	32.9	32.9	18.0	1.0	1.9	13.8	9.1	13.6	15.8
KUMHARI	51.3	51.3	28.8	1.0	1.3	15.0	12.7	18.5	21.1
SAKMUR	117.0	117.0	84.2	14.0	14.0	24.2	44.5	44.5	53.1
WAIRAGARH	17.6	17.6	17.6	6.6	6.6	10.4	12.2	12.2	14.6
RAMAKONA	45.5	45.5	37.8	13.3	13.3	21.0	26.7	26.7	26.4
KEOLARI	46.2	46.2	28.5	9.5	9.5	16.8	18.8	18.8	21.0

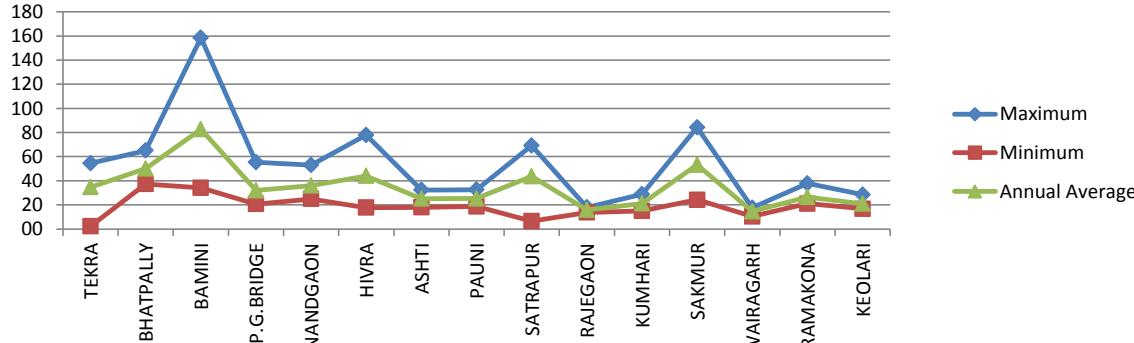
Sodium - Since Inception



Sodium - 10 Yrs (2008-2018)



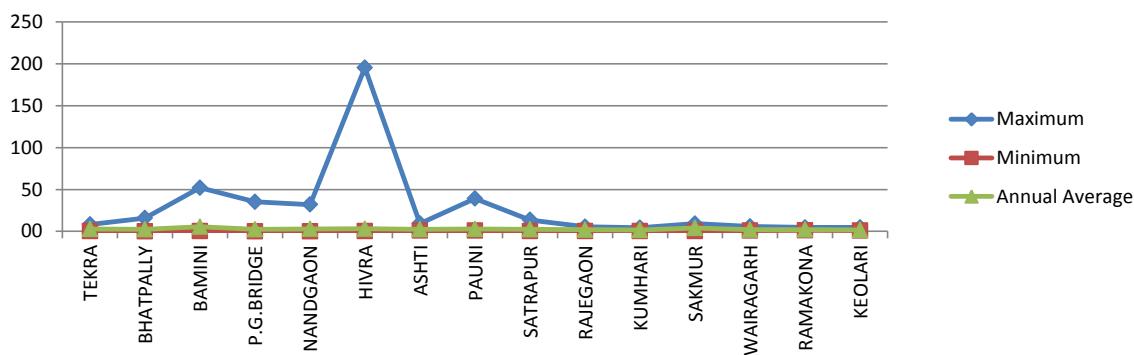
Sodium - 2017-18



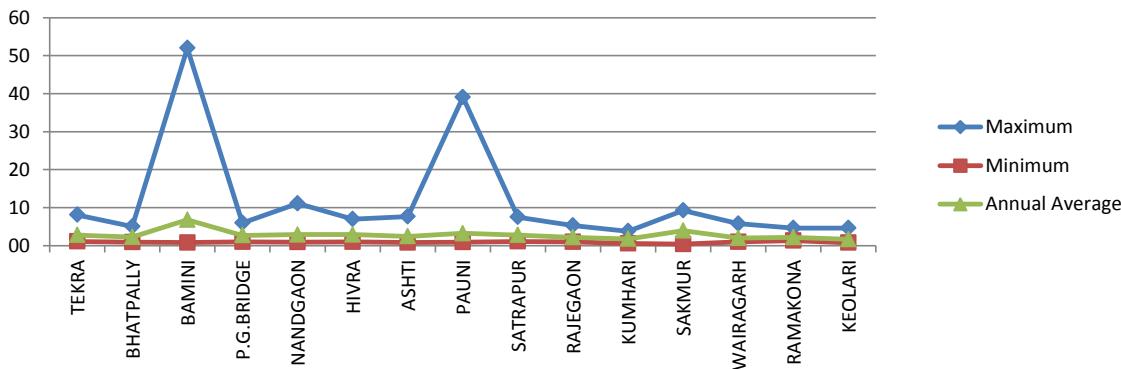
6. POTASSIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	8.1	8.1	3.6	0.4	1.1	2.5	2.9	2.8	3.0
BHATPALLY	16.0	5.0	3.2	0.0	0.9	1.9	2.3	2.3	2.5
BAMINI	52.0	52.0	21.3	0.4	0.8	4.3	5.4	6.8	9.6
P.G.BRIDGE	35.2	6.0	4.3	0.0	1.0	2.4	2.6	2.7	3.2
NANDGAON	32.1	11.1	4.3	0.1	0.9	2.4	3.0	2.9	3.2
HIVRA	195.5	7.0	4.4	0.4	1.0	2.6	3.2	2.9	3.4
ASHTI	9.4	7.7	3.5	0.8	0.8	1.9	2.5	2.4	2.5
PAUNI	39.1	39.1	3.7	0.8	0.9	2.3	2.9	3.2	2.9
SATRAPUR	13.7	7.5	4.3	0.4	1.1	2.6	2.5	2.8	3.3
RAJEGAON	5.5	5.3	5.3	0.4	1.0	1.8	2.0	2.2	2.5
KUMHARI	4.3	3.8	2.7	0.4	0.6	1.2	1.6	1.8	1.8
SAKMUR	9.3	9.3	7.2	0.4	0.4	2.7	3.9	3.9	4.6
WAIRAGARH	5.8	5.8	5.8	1.0	1.0	1.8	2.0	2.0	2.5
RAMAKONA	4.6	4.6	3.2	1.3	1.3	2.3	2.2	2.2	2.6
KEOLARI	4.6	4.6	2.7	0.8	0.8	1.5	1.6	1.6	1.9

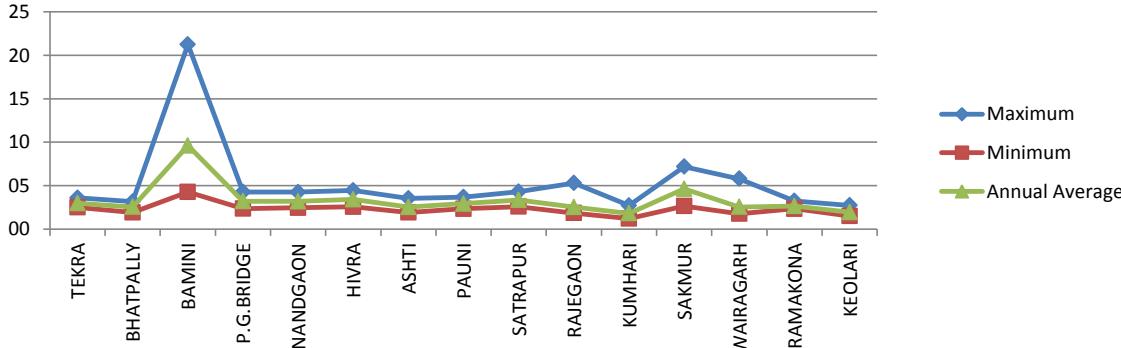
Potassium -Since Inception



Potassium - 10 Yrs (2008-2018)



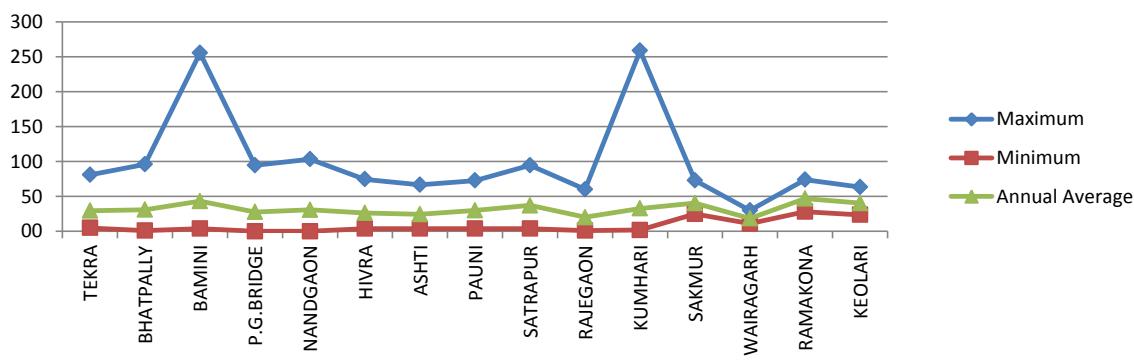
Potassium - 2017-18



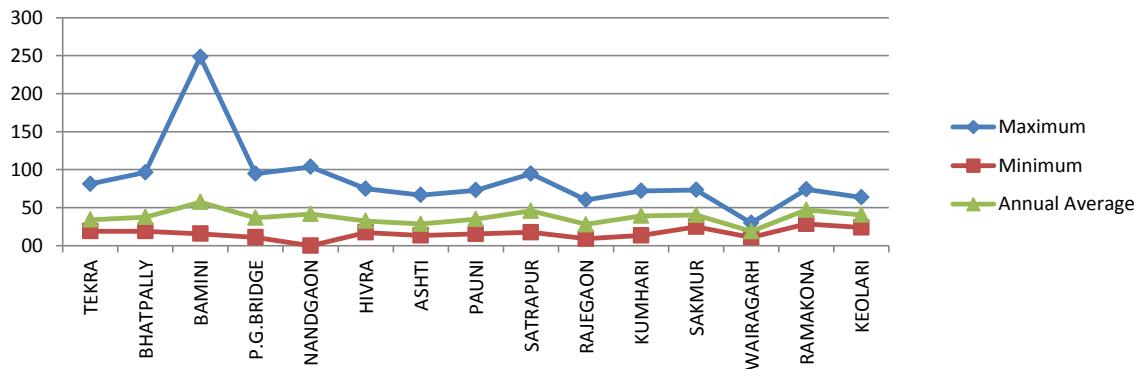
7.CALCIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	81.0	81.0	54.3	5.0	19.0	24.8	29.6	34.2	35.2
BHATPALLY	96.3	96.3	64.3	1.2	19.0	23.0	31.2	37.5	36.9
BAMINI	255.8	248.4	103.7	4.0	15.6	39.7	43.1	57.3	60.8
P.G.BRIDGE	94.5	94.5	52.8	0.0	10.8	24.8	27.9	36.6	38.4
NANDGAON	103.5	103.5	59.5	0.0	0.0	26.5	30.8	41.7	44.5
HIVRA	74.7	74.7	40.2	4.0	17.3	22.9	26.3	32.4	26.7
ASHTI	66.6	66.6	43.2	4.0	13.2	20.2	24.7	28.5	28.4
PAUNI	72.9	72.9	54.7	4.0	15.4	17.6	30.1	35.0	34.6
SATRAPUR	94.5	94.5	70.1	4.0	17.5	17.5	37.2	45.8	48.4
RAJEGAON	60.3	60.3	36.5	1.0	9.0	9.7	20.3	28.0	25.6
KUMHARI	259.0	72.0	70.1	2.0	13.2	13.2	32.9	39.3	41.1
SAKMUR	73.2	73.2	48.0	24.9	24.9	26.5	40.4	40.4	39.2
WAIRAGARH	30.0	30.0	24.0	11.0	11.0	14.1	18.7	18.7	18.4
RAMAKONA	74.1	74.1	57.6	28.4	28.4	37.0	46.9	46.9	44.8
KEOLARI	63.5	63.5	51.8	23.8	23.8	32.6	40.5	40.5	43.4

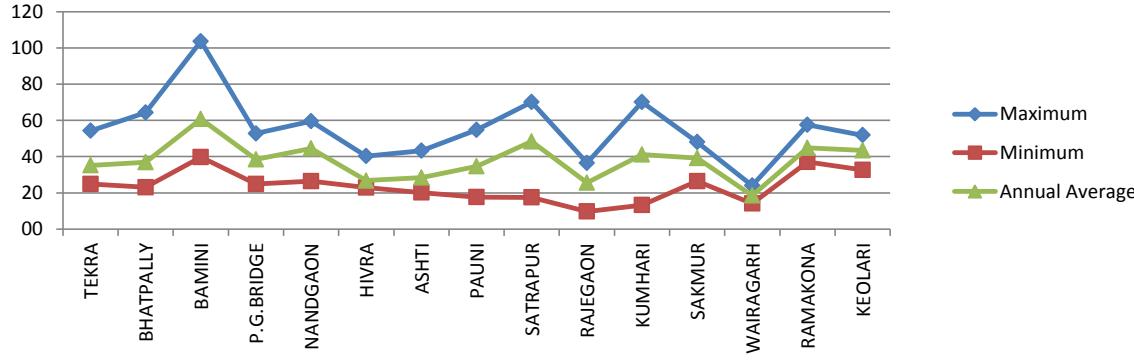
Calcium -Since Inception



Calcium - 10 Yrs (2008-2018)



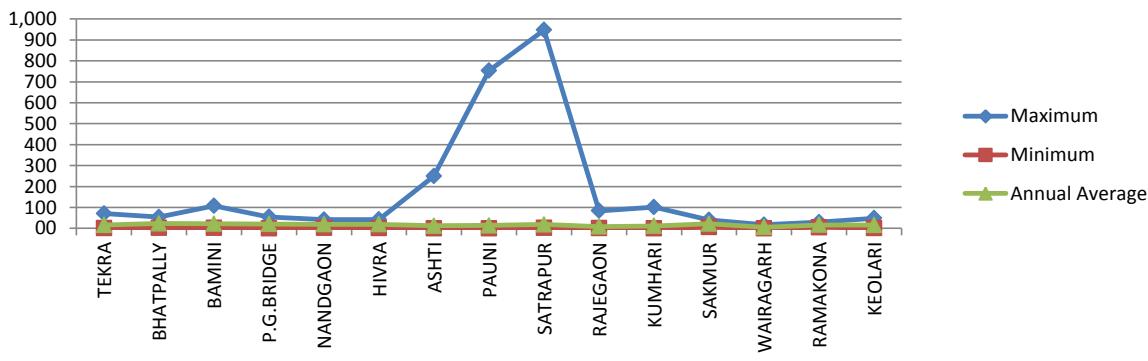
Calcium- 2017-18



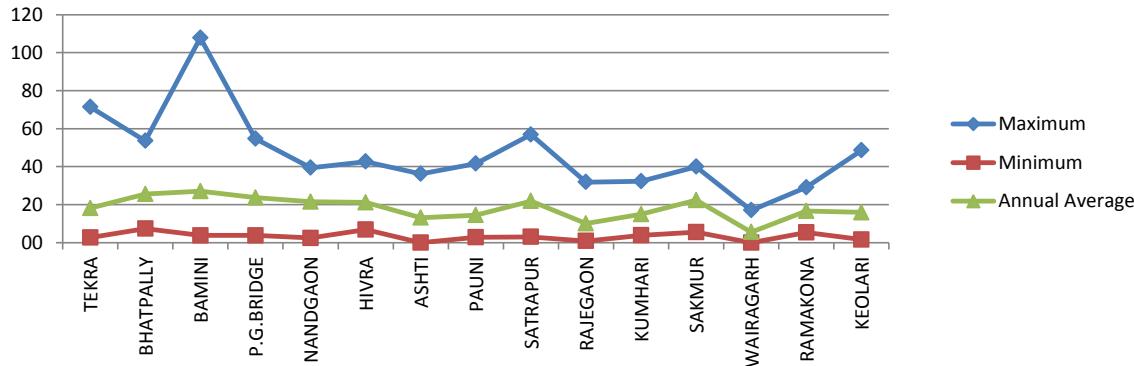
8. MAGNESIUM

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	71.4	71.4	39.1	1.1	2.7	5.9	15.4	18.1	18.2
BHATPALLY	53.6	53.6	46.1	2.6	7.4	16.6	23.6	25.6	29.0
BAMINI	107.8	107.8	61.2	2.2	3.8	5.9	22.3	27.1	24.7
P.G.BRIDGE	54.7	54.7	48.0	0.0	3.8	12.2	21.1	23.7	22.2
NANDGAON	41.9	39.4	29.1	2.4	2.4	12.3	19.3	21.6	22.1
HIVRA	42.6	42.6	23.9	1.7	6.8	11.2	19.5	21.1	19.2
ASHTI	250.0	36.2	27.3	0.0	0.0	6.6	12.2	13.1	12.6
PAUNI	753.3	41.6	23.9	0.5	2.8	7.0	13.9	14.5	12.7
SATRAPUR	947.7	56.9	37.5	2.2	3.1	6.9	18.8	21.9	23.5
RAJEGAON	84.0	31.9	12.8	0.9	0.9	2.8	8.3	10.1	7.0
KUMHARI	102.1	32.3	21.6	0.5	3.9	5.5	11.7	14.9	12.9
SAKMUR	39.9	39.9	34.4	5.5	5.5	11.8	22.3	22.3	23.1
WAIRAGARH	17.0	17.0	14.4	0.0	0.0	1.2	5.5	5.5	6.4
RAMAKONA	29.1	29.1	21.6	5.3	5.3	5.3	16.7	16.7	13.1
KEOLARI	48.6	48.6	21.6	1.6	1.6	1.6	15.9	15.9	15.3

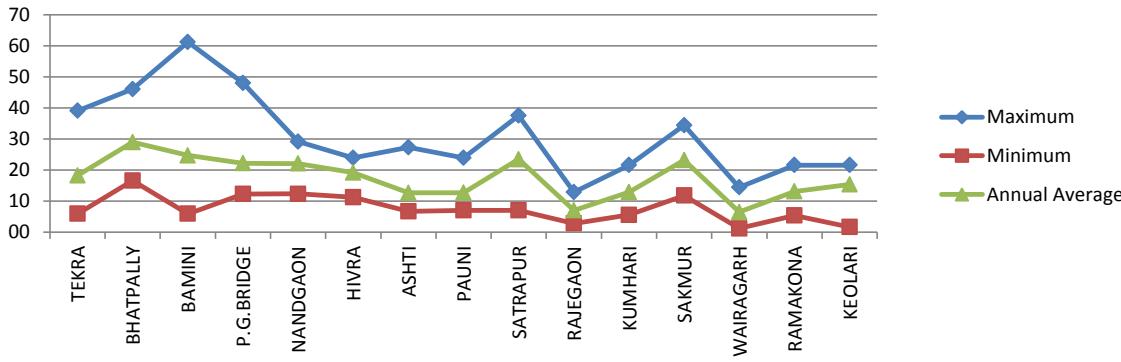
Magnesium -Since Inception



Magnesium - 10 Yrs (2008-2018)



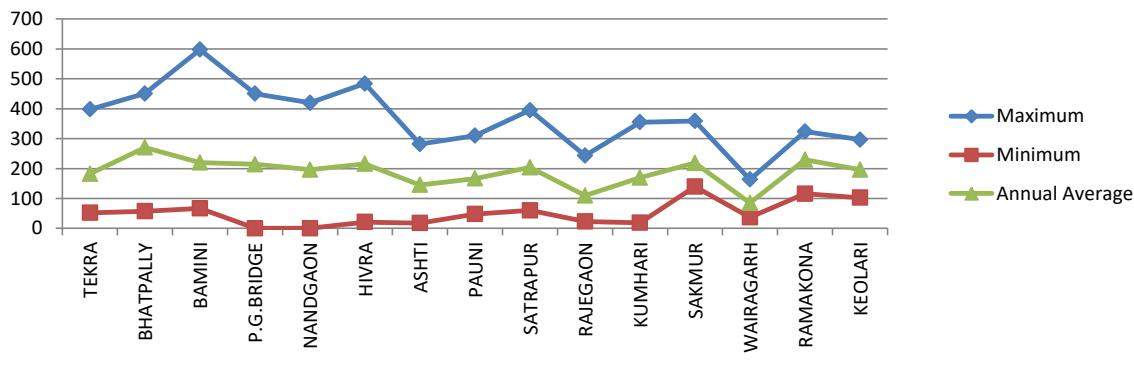
Magnesium- 2017-18



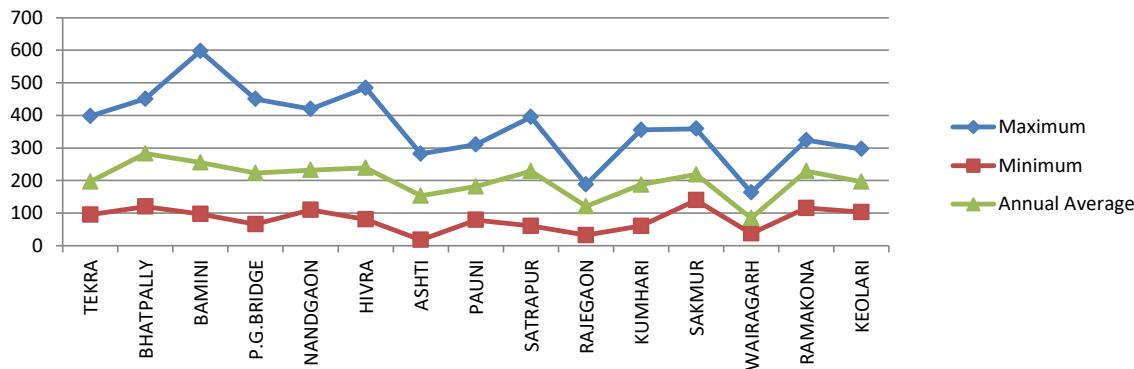
9. BICARBONATE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 - 2018)	2017-18
TEKRA	398.0	398.0	283.0	51.8	95.0	160.3	181.9	196.4	219.7
BHATPALLY	450.6	450.6	398.9	57.0	120.0	257.6	270.7	282.7	326.7
BAMINI	597.8	597.8	409.1	67.0	96.8	96.8	219.6	255.6	266.5
P.G.BRIDGE	450.0	450.0	330.8	0.0	65.9	200.9	214.2	222.7	261.5
NANDGAON	419.6	419.6	314.8	0.2	109.8	175.7	196.4	232.2	256.5
HIVRA	484.0	484.0	291.0	21.0	80.7	155.0	215.6	239.1	237.5
ASHTI	282.0	282.0	239.0	17.7	17.7	116.7	145.4	152.8	168.8
PAUNI	310.0	310.0	226.0	47.6	78.7	104.0	166.6	181.6	184.0
SATRAPUR	395.0	395.0	296.5	60.3	60.3	190.6	204.0	228.6	263.4
RAJEGAON	243.0	188.0	161.7	23.0	32.0	59.8	109.9	120.5	123.6
KUMHARI	355.3	355.3	355.3	19.0	60.4	77.7	169.3	187.2	208.1
SAKMUR	359.0	359.0	249.9	139.2	139.2	179.3	218.6	218.6	221.5
WAIRAGARH	163.2	163.2	132.7	37.0	37.0	63.7	84.6	84.6	94.7
RAMAKONA	323.8	323.8	262.1	115.6	115.6	190.3	229.3	229.3	222.1
KEOLARI	296.6	296.6	285.5	102.5	102.5	183.0	196.4	196.4	226.3

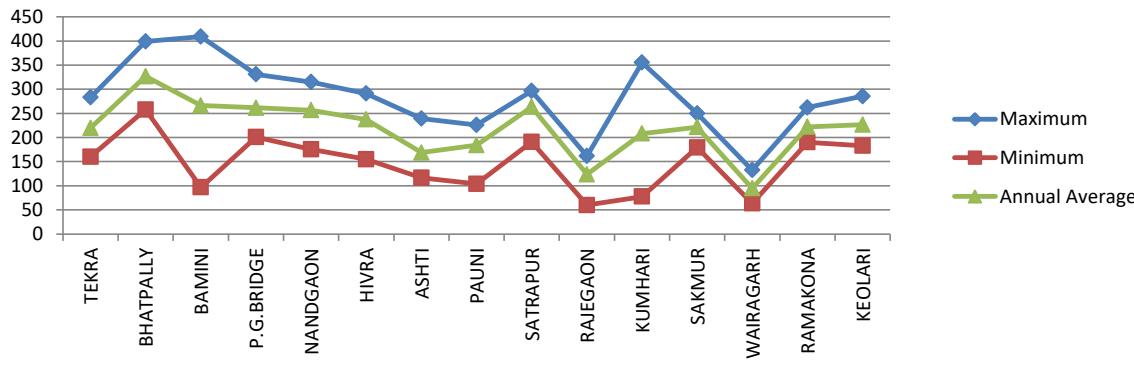
Bicarbonate -Since Inception



Bicarbonate - 10 Yrs (2008-2018)



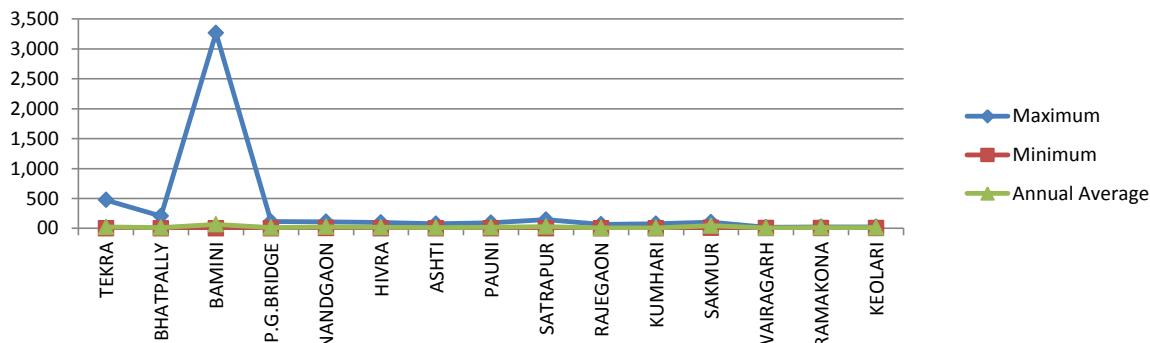
Bicarbonate- 2017-18



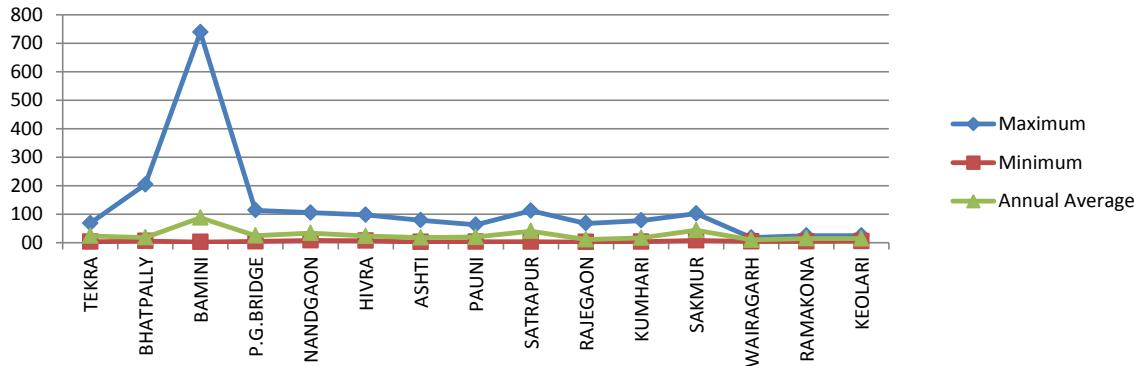
10. CHLORIDE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	474.0	68.2	39.8	1.1	3.2	16.5	22.0	23.8	27.1
BHATPALLY	204.0	204.0	28.6	1.0	5.8	11.1	13.4	18.1	21.5
BAMINI	3266.0	738.4	230.6	1.0	2.1	35.8	68.4	87.5	113.7
P.G.BRIDGE	113.3	113.3	59.6	0.0	4.0	15.9	14.9	24.3	31.8
NANDGAON	110.0	105.1	73.1	2.1	7.8	15.9	25.4	33.8	42.4
HIVRA	97.4	97.4	97.4	1.0	6.4	11.9	16.9	22.8	33.2
ASHTI	78.8	78.8	37.1	0.0	2.1	11.9	13.5	17.6	22.4
PAUNI	95.0	62.5	37.8	0.0	3.5	15.9	16.9	19.6	23.8
SATRAPUR	147.0	112.2	94.7	0.0	3.5	21.9	29.7	40.6	56.2
RAJEGAON	67.5	67.5	28.8	0.0	2.0	4.0	5.9	11.2	13.7
KUMHARI	77.7	77.7	47.7	0.0	2.8	8.2	7.7	17.0	24.9
SAKMUR	101.8	101.8	101.8	7.9	7.9	19.9	43.3	43.3	59.7
WAIRAGARH	17.7	17.7	17.7	3.7	3.7	6.0	9.3	9.3	11.0
RAMAKONA	24.9	24.9	24.7	4.0	4.0	9.9	14.8	14.8	16.2
KEOLARI	24.7	24.7	24.7	5.1	5.1	11.9	14.2	14.2	17.9

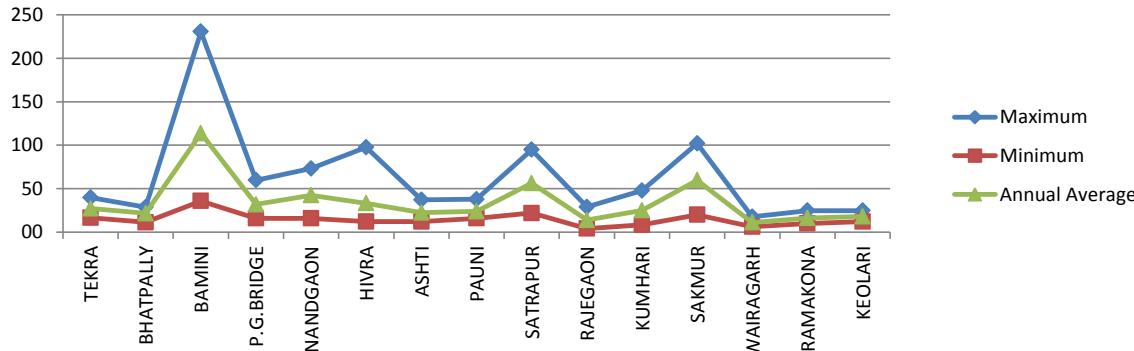
Chloride-Since Inception



Chloride - 10 Yrs (2008-2018)



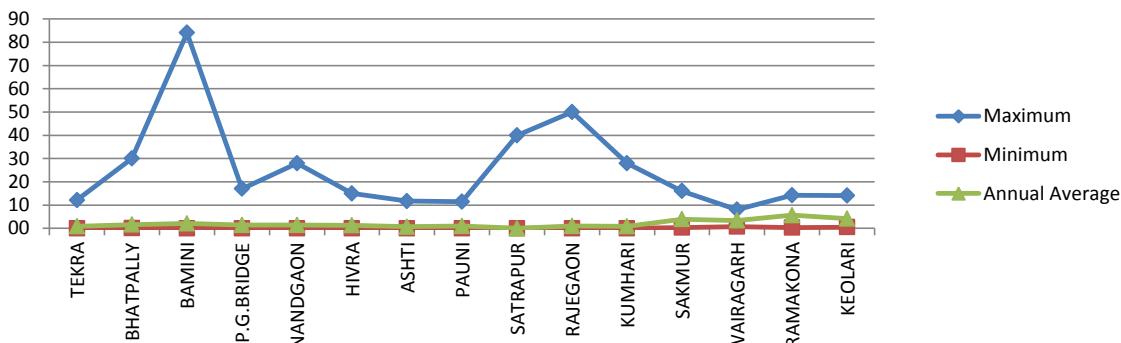
Chloride- 2017-18



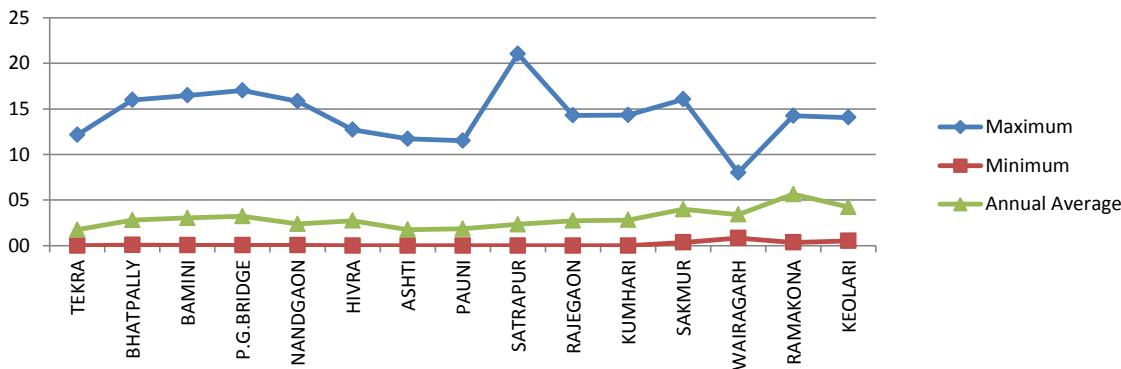
11. NITRATE - No3

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	12.1	12.1	6.3	0.0	0.0	0.8	0.9	1.7	2.1
BHATPALLY	30.0	16.0	11.0	0.1	0.1	0.8	1.6	2.8	3.0
BAMINI	84.1	16.5	4.7	0.0	0.0	0.4	2.1	3.0	2.4
P.G.BRIDGE	17.0	17.0	2.7	0.0	0.0	1.7	1.4	3.2	2.2
NANDGAON	28.0	15.8	2.5	0.0	0.0	0.3	1.4	2.4	1.7
HIVRA	15.0	12.7	12.5	0.0	0.0	1.0	1.3	2.7	2.6
ASHTI	11.7	11.7	8.7	0.0	0.0	1.1	0.7	1.8	2.2
PAUNI	11.5	11.5	7.9	0.0	0.0	1.2	1.0	1.9	2.2
SATRAPUR	40.0	21.0	7.3	0.0	0.0	0.4	0.0	2.3	2.0
RAJEGAON	50.0	14.3	2.7	0.0	0.0	1.0	1.0	2.7	1.9
KUMHARI	28.0	14.3	4.8	0.0	0.0	0.9	0.9	2.8	2.2
SAKMUR	16.0	16.0	2.6	0.3	0.3	1.7	4.0	4.0	2.1
WAIRAGARH	8.0	8.0	8.0	0.8	0.8	1.1	3.4	3.4	2.7
RAMAKONA	14.2	14.2	3.4	0.3	0.3	0.3	5.6	5.6	2.2
KEOLARI	14.1	14.1	7.7	0.5	0.5	0.5	4.2	4.2	2.3

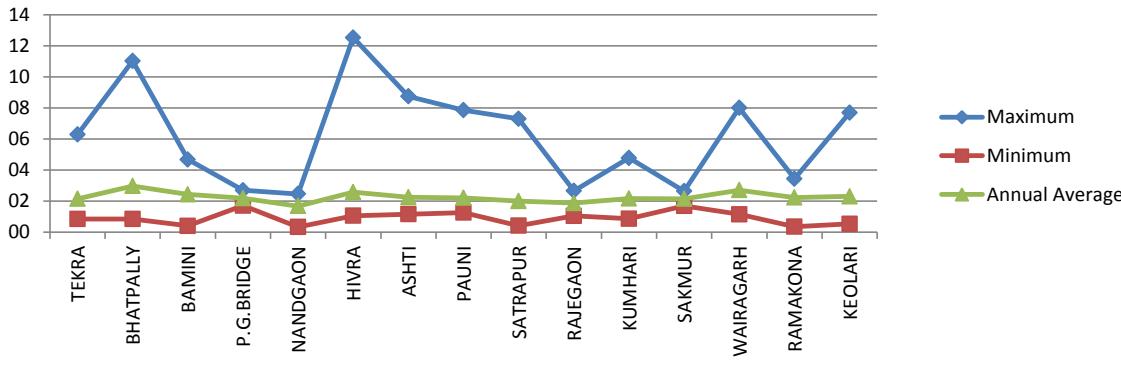
Nitrate-Since Inception



Nitrate - 10 Yrs (2008-2018)



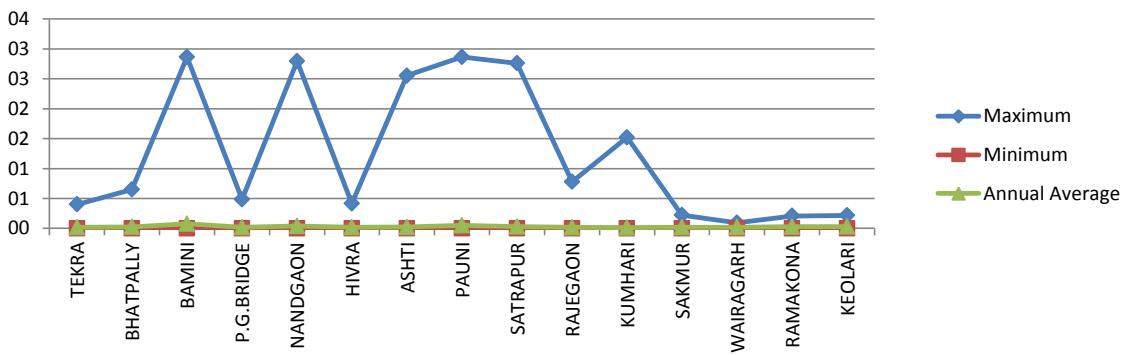
Nitrate- 2017-18



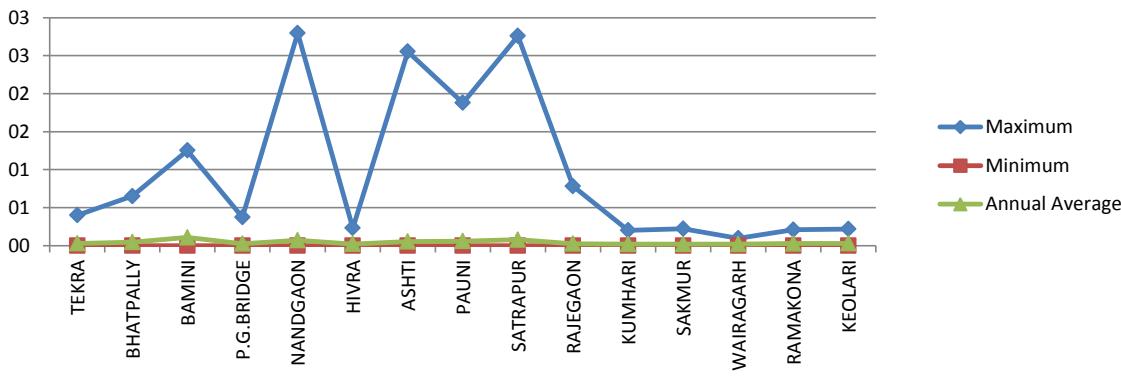
12. NITRITE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BHATPALLY	0.6	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
BAMINI	2.9	1.3	0.3	0.0	0.0	0.0	0.1	0.1	0.1
P.G.BRIDGE	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
NANDGAON	2.8	2.8	0.1	0.0	0.0	0.0	0.0	0.1	0.0
HIVRA	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
ASHTI	2.6	2.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0
PAUNI	2.9	1.9	0.1	0.0	0.0	0.0	0.1	0.1	0.0
SATRAPUR	2.8	2.8	0.1	0.0	0.0	0.0	0.0	0.1	0.0
RAJEGAON	0.8	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0
KUMHARI	1.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SAKMUR	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
WAIRAGARH	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
RAMAKONA	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
KEOLARI	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0

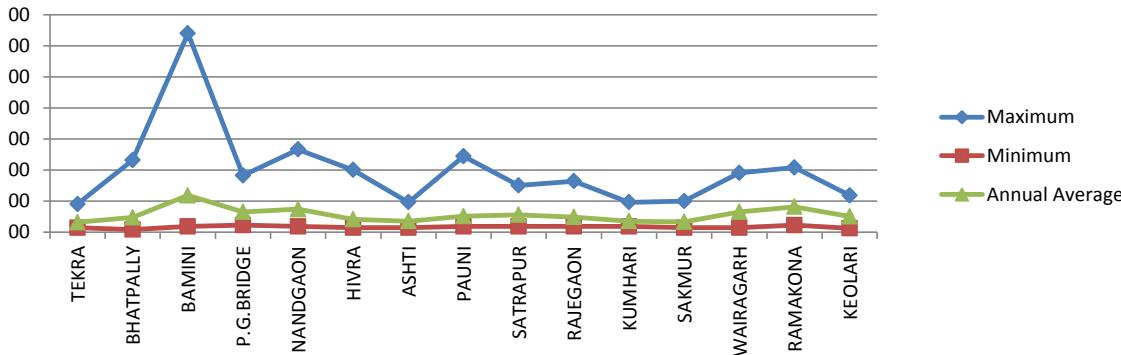
Nitrite-Since Inception



Nitrite - 10 Yrs (2008-2018)

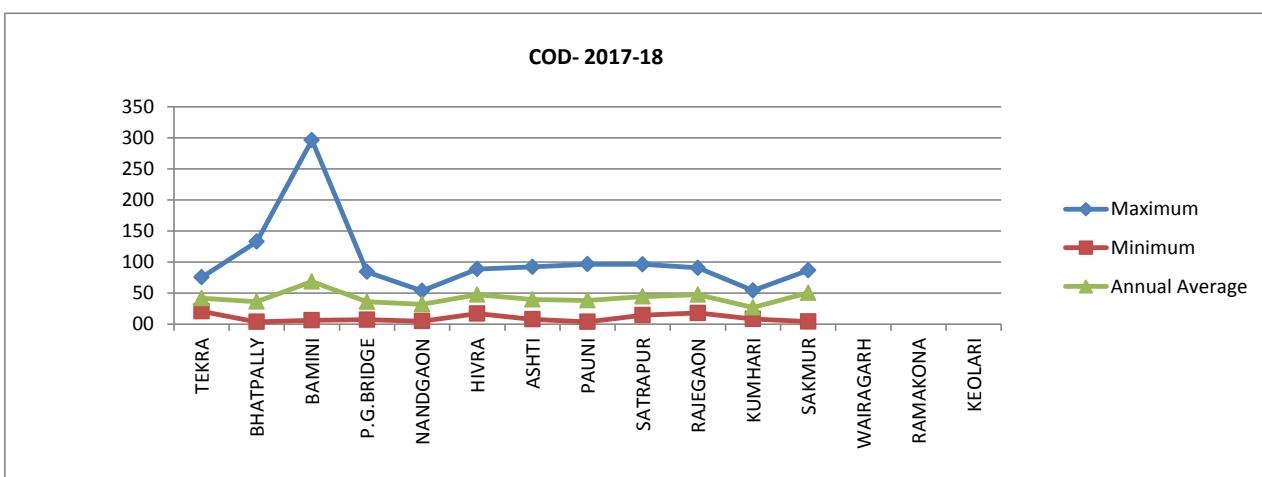
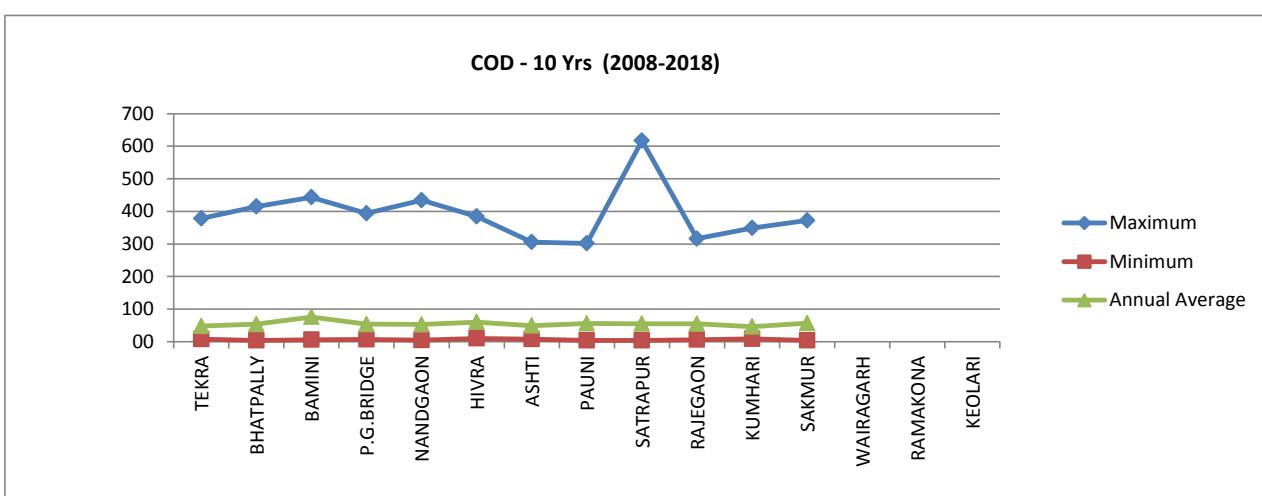
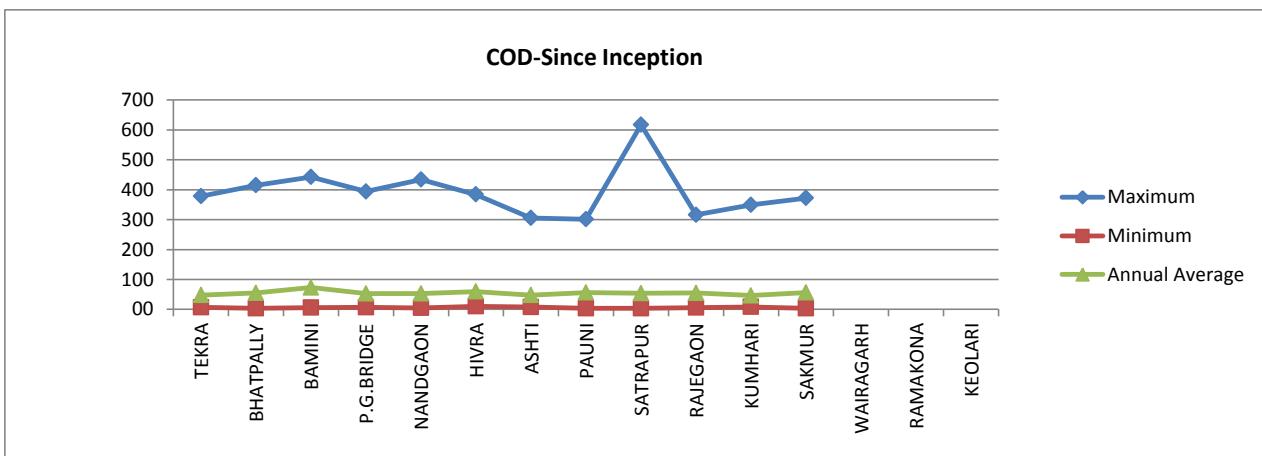


Nitrite- 2017-18



13.COD

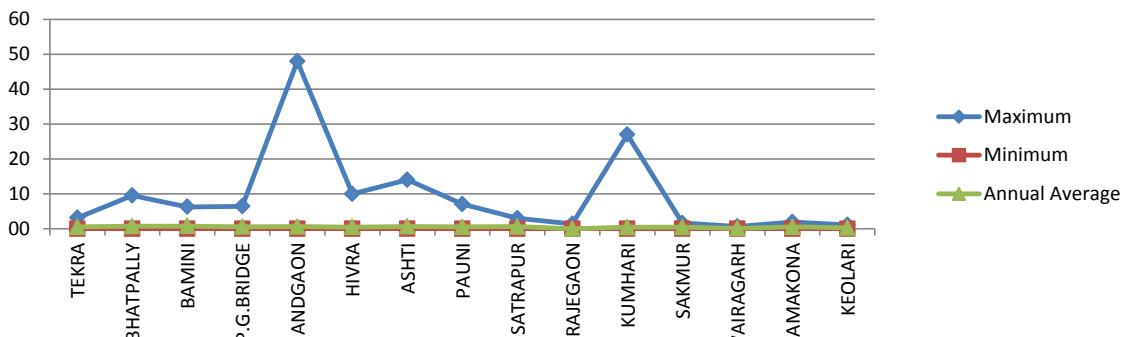
Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	378.0	378.0	75.2	7.2	7.2	20.5	47.8	47.9	41.5
BHATPALLY	415.0	415.0	132.6	3.4	3.4	3.4	54.9	53.5	36.1
BAMINI	443.0	443.0	296.3	6.0	6.0	6.0	73.0	75.7	68.5
P.G.BRIDGE	394.0	394.0	84.0	7.0	7.0	7.0	53.0	53.3	35.7
NANDGAON	434.0	434.0	53.6	4.7	4.7	4.7	52.9	52.4	32.0
HIVRA	384.0	384.0	88.7	10.0	10.0	16.8	59.6	59.9	47.5
ASHTI	305.8	305.8	92.0	7.7	7.7	7.7	47.7	48.8	39.4
PAUNI	301.4	301.4	96.3	3.6	3.6	3.6	56.7	55.7	38.1
SATRAPUR	617.1	617.1	96.2	3.4	3.6	14.3	53.7	55.0	44.3
RAJEGAON	316.0	316.0	90.4	5.6	5.6	17.7	54.7	54.7	47.3
KUMHARI	349.0	349.0	53.9	8.3	8.3	8.3	46.1	46.1	26.6
SAKMUR	372.0	372.0	86.4	3.8	3.8	3.8	56.6	56.6	50.4
WAIRAGARH									
RAMAKONA									
KEOLARI									



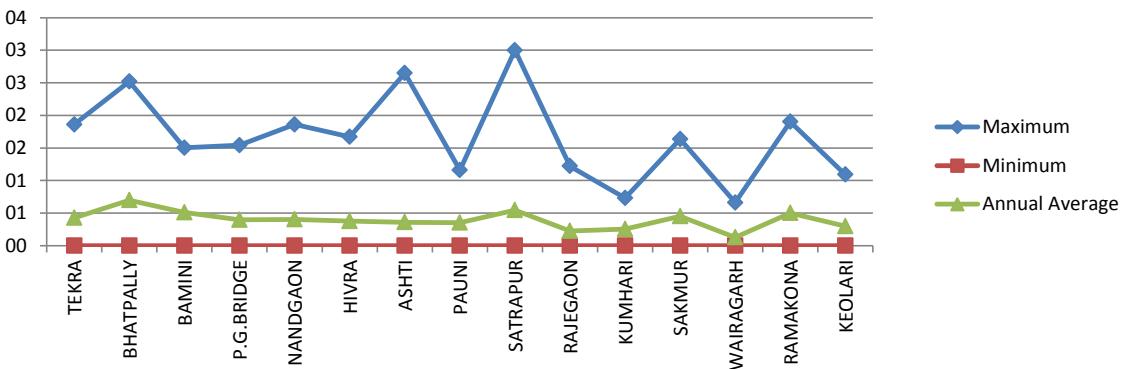
14.FLUORIDE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	3.1	1.9	1.2	0.0	0.0	0.1	0.5	0.4	0.5
BHATPALLY	9.5	2.5	2.5	0.0	0.0	0.0	0.7	0.7	1.1
BAMINI	6.3	1.5	1.4	0.0	0.0	0.2	0.8	0.5	0.6
P.G.BRIDGE	6.5	1.5	1.0	0.0	0.0	0.1	0.6	0.4	0.5
NANDGAON	48.0	1.9	1.2	0.0	0.0	0.0	0.6	0.4	0.5
HIVRA	10.0	1.7	0.9	0.0	0.0	0.0	0.5	0.4	0.4
ASHTI	14.0	2.7	0.6	0.0	0.0	0.0	0.6	0.4	0.3
PAUNI	7.0	1.2	0.6	0.0	0.0	0.0	0.5	0.4	0.3
SATRAPUR	3.0	3.0	1.0	0.0	0.0	0.0	0.6	0.5	0.5
RAJEGAON	1.4	1.2	0.2	0.0	0.0	0.0	0.0	0.2	0.0
KUMHARI	27.0	0.7	0.4	0.0	0.0	0.0	0.4	0.3	0.2
SAKMUR	1.6	1.6	1.0	0.0	0.0	0.0	0.5	0.5	0.5
WAIRAGARH	0.7	0.7	0.4	0.0	0.0	0.0	0.1	0.1	0.1
RAMAKONA	1.9	1.9	1.9	0.0	0.0	0.0	0.5	0.5	0.8
KEOLARI	1.1	1.1	0.7	0.0	0.0	0.0	0.3	0.3	0.3

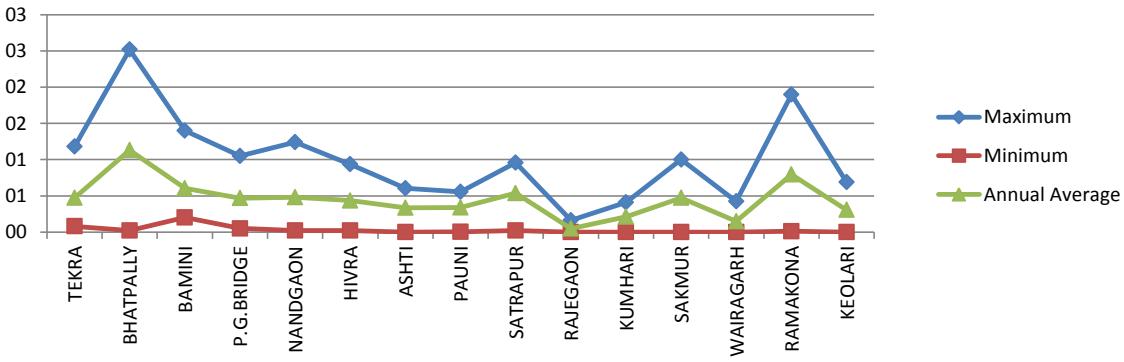
FLUORIDE-Since Inception



FLUORIDE - 10 Yrs (2008-2018)



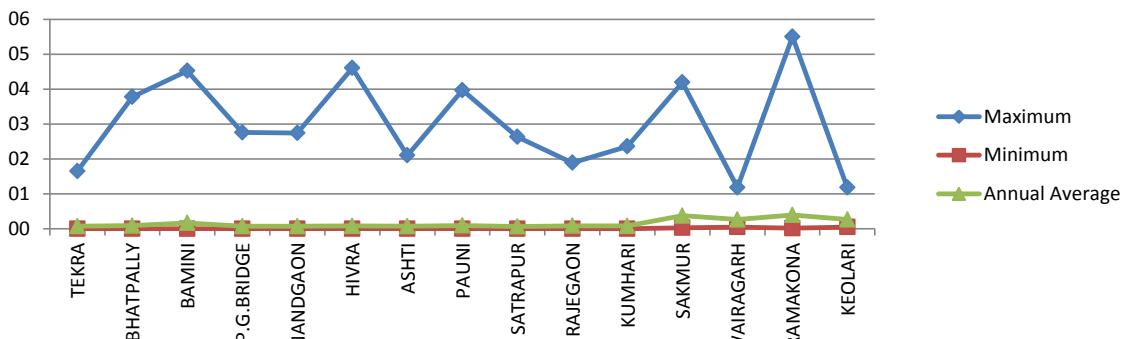
FLUORIDE- 2017-18



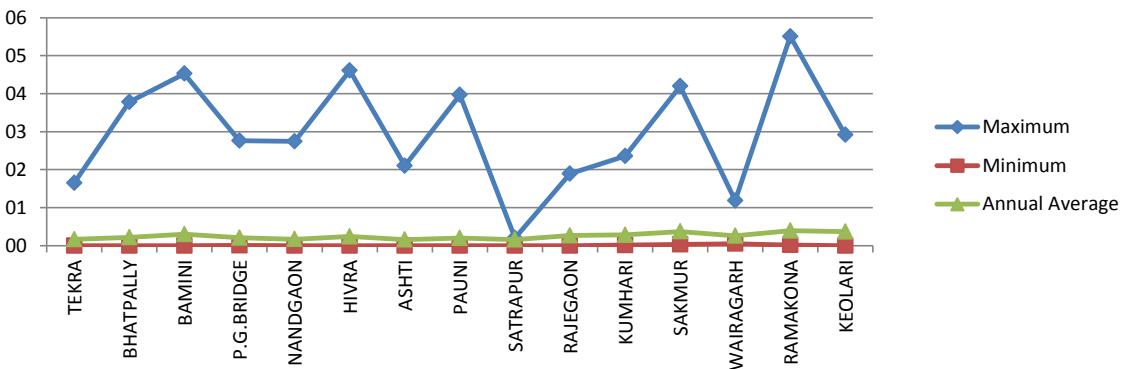
15.PHOSPHATE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	1.6	1.6	1.6	0.0	0.0	0.0	0.1	0.2	0.4
BHATPALLY	3.8	3.8	2.0	0.0	0.0	0.1	0.1	0.2	0.5
BAMINI	4.5	4.5	4.5	0.0	0.0	0.0	0.2	0.3	0.8
P.G.BRIDGE	2.8	2.8	1.1	0.0	0.0	0.0	0.1	0.2	0.5
NANDGAON	2.7	2.7	0.7	0.0	0.0	0.1	0.1	0.2	0.3
HIVRA	4.6	4.6	4.6	0.0	0.0	0.1	0.1	0.2	0.7
ASHTI	2.1	2.1	2.1	0.0	0.0	0.1	0.1	0.2	0.5
PAUNI	4.0	4.0	4.0	0.0	0.0	0.1	0.1	0.2	0.6
SATRAPUR	2.6	0.2	0.9	0.0	0.0	0.0	0.1	0.2	0.3
RAJEGAON	1.9	1.9	1.1	0.0	0.0	0.1	0.1	0.3	0.5
KUMHARI	2.4	2.4	1.7	0.0	0.0	0.1	0.1	0.3	0.5
SAKMUR	4.2	4.2	4.2	0.0	0.0	0.1	0.4	0.4	0.8
WAIRAGARH	1.2	1.2	1.2	0.0	0.0	0.1	0.3	0.3	0.4
RAMAKONA	5.5	5.5	1.9	0.0	0.0	0.1	0.4	0.4	0.5
KEOLARI	1.2	2.9	1.5	0.0	0.0	0.0	0.3	0.4	0.4

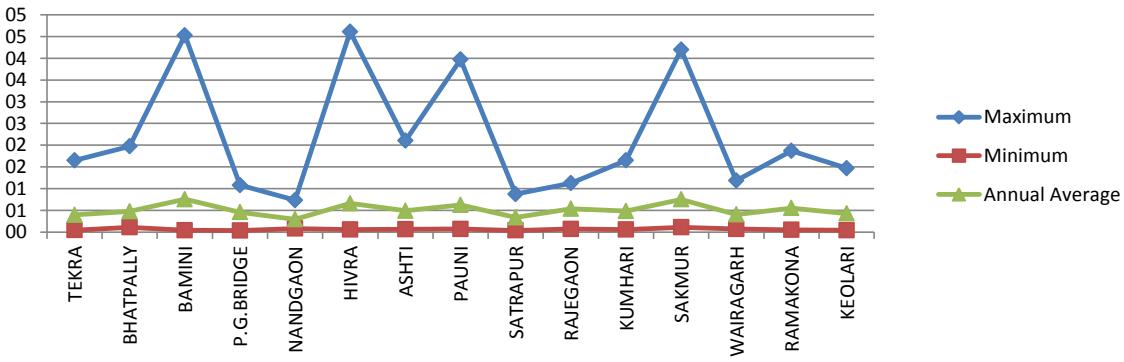
PHOSPHATE-Since Inception



PHOSPHATE- 10 Yrs (2008-2018)



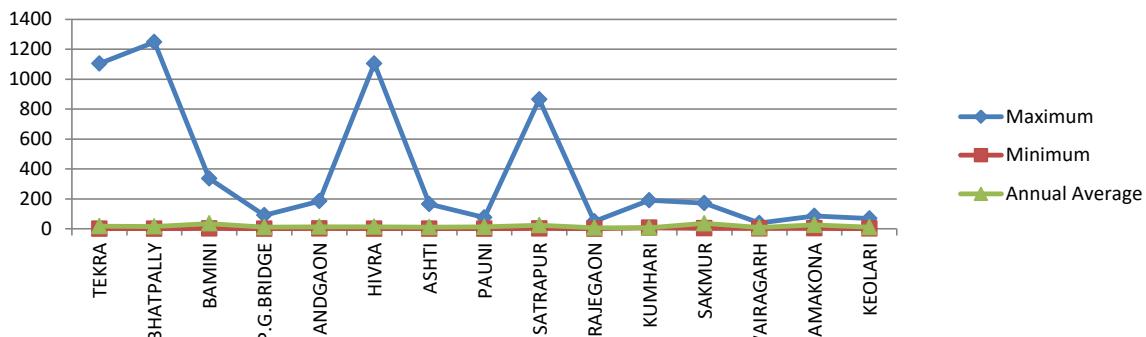
PHOSPHATE- 2017-18



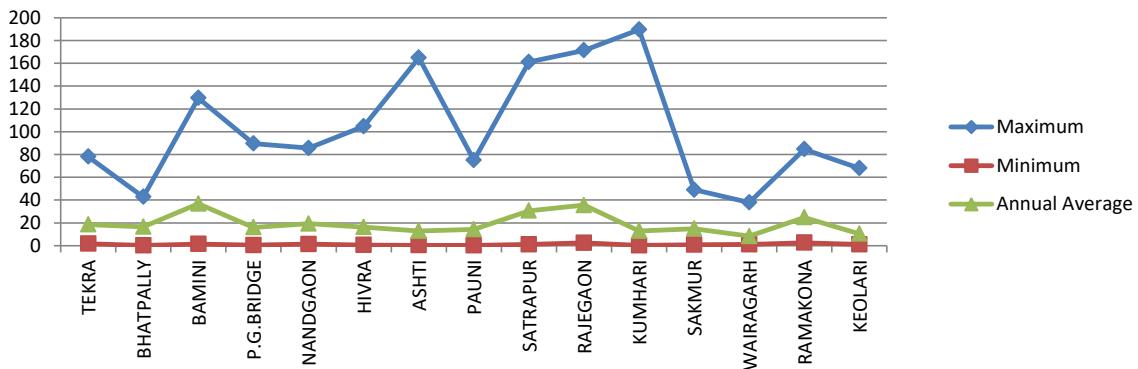
16.SULPHATE

Site Name (From U/s to D/s)	Avg. of yearly			Avg. of yearly			Annual Average		
	Maximum			Minimum					
	Since inception	10 years (2008 - 2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18	Since inception	10 years (2008 -2018)	2017-18
TEKRA	1104.0	78.0	31.9	0.0	1.6	4.6	17.5	18.5	17.1
BHATPALLY	1248.0	42.8	29.4	0.0	0.2	8.5	14.4	16.5	17.2
BAMINI	336.0	129.5	68.3	1.0	1.4	10.8	34.9	36.8	42.7
P.G.BRIDGE	89.6	89.6	25.7	0.0	0.4	0.4	10.3	16.0	15.4
NANDGAON	185.0	85.6	36.3	1.0	1.2	1.3	13.7	19.2	21.1
HIVRA	1104.0	104.6	22.0	0.0	0.5	0.5	13.6	16.3	7.3
ASHTI	164.9	164.9	21.6	0.3	0.3	0.3	9.8	12.9	7.5
PAUNI	75.0	75.0	18.0	0.0	0.1	0.1	11.8	14.2	8.4
SATRAPUR	864.0	161.1	161.1	1.0	1.0	6.8	23.6	30.6	43.8
RAJEGAON	49.0	171.3	41.3	0.0	2.4	0.9	6.5	35.5	17.4
KUMHARI	189.6	189.6	28.6	6.5	0.1	0.1	6.3	12.8	6.8
SAKMUR	171.3	49.0	171.3	2.4	0.9	18.0	35.5	14.9	48.2
WAIRAGARH	37.9	37.9	37.9	1.0	1.0	1.8	8.3	8.3	10.3
RAMAKONA	84.6	84.6	43.4	2.5	2.5	12.2	24.8	24.8	29.2
KEOLARI	68.0	68.0	26.2	0.9	0.9	0.9	10.4	10.4	5.7

SULPHATE-Since Inception



SULPHATE- 10 Yrs (2008-2018)



SULPHATE- 2017-18

