

International Multidisciplinary
Research Journal

Golden Research
Thoughts

Chief Editor
Dr.Tukaram Narayan Shinde

Publisher
Mrs.Laxmi Ashok Yakkaldevi

Associate Editor
Dr.Rajani Dalvi

Honorary
Mr.Ashok Yakkaldevi

Welcome to GRT

RNI MAHMUL/2011/38595

ISSN No.2231-5063

Golden Research Thoughts Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial board. Readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

International Advisory Board

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Mohammad Hailat Dept. of Mathematical Sciences, University of South Carolina Aiken	Hasan Baktir English Language and Literature Department, Kayseri
Kamani Perera Regional Center For Strategic Studies, Sri Lanka	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Dept of Chemistry, Lahore University of Management Sciences[PK]
Janaki Sinnasamy Librarian, University of Malaya	Ecaterina Patrascu Spiru Haret University, Bucharest	Anna Maria Constantinovici AL. I. Cuza University, Romania
Romona Mihaila Spiru Haret University, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pinteau, Spiru Haret University, Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Anurag Misra DBS College, Kanpur	George - Calin SERITAN Faculty of Philosophy and Socio-Political Sciences Al. I. Cuza University, IasiMore
Titus PopPhD, Partium Christian University, Oradea, Romania		

Editorial Board

Pratap Vyamktrao Naikwade ASP College Devrukh, Ratnagiri, MS India	Iresh Swami Ex - VC. Solapur University, Solapur	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University, Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yalikal Director Management Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU, Nashik
Salve R. N. Department of Sociology, Shivaji University, Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	Sonal Singh Vikram University, Ujjain	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary, Play India Play, Meerut (U.P.)	Maj. S. Bakhtiar Choudhary Director, Hyderabad AP India.	S.KANNAN Annamalai University, TN
	S. Parvathi Devi Ph.D.-University of Allahabad	Satish Kumar Kalhotra Maulana Azad National Urdu University
	Sonal Singh, Vikram University, Ujjain	

Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.aygrt.isrj.org



ANALYSIS FOR PRESENCE OF TOTAL DISSOLVED SOLID
CONTENT IN THE SPRING SURFACE WATER IN RAINY
SEASON AT DIFFERENT LOCATION OF RIVER PRAVARA
OF AKOLE TEHSIL DIST.AHMEDNAGAR, M.S. (INDIA)



First Author Details :

Vinod Yemame

Department of Botany, Adv.M.N.Deshmukh Arts, Sci., and Com. College Rajur,
Tal-Akole, Dist-Ahmednagar M.S.

Co - Author Details :

M. S. Salunke

Department of chemistry

ABSTRACT

In this paper, we discuss about the recently collected sample of spring surface water at different locations of the River Pravara of Akole Tehsil, Ahmednagar M.S., India and its experimental analysis for the presence of TDS content. We represent the data graphically and interpreted the data to find amount of TDS present in surface water of River Pravara at different stations. Lastly we concluded that the surface water samples containing TDS amount is within the permissible limits as per norms of WHO. So spring surface water of River Pravara becomes drinkable.



KEYWORDS : TDS, Surface Water, Pravara River, Sites, sample, etc.

INTRODUCTION :

Water is precious solvent of Nature. Water plays unique role for Human being and aquatic organisms. In water TDS may be naturally present. TDS is the Secondary maximum contaminant level in water. TDS mean Total Dissolved Solids. TDS is a measure of dissolved matters like salts, mineral, small amount of organic matter present in solution in water. The recommended maximum level of TDS is 500 mg/L. Natural source water is generally in between 30 mg/L to 6000 mg/L. If the concentration of TDS is low then the taste of water becomes flat. If the concentration of TDS is high then the taste of water becomes unacceptable. Elevated levels of TDS may create problem to aquatic life. High level of TDS in water may scale in water pipes, water heaters etc.,. It was reported that TDS concentrations in drinking water may create incidence of cancer, coronary heart disease etc. Water plays an important role are mankind and ecosystem. Therefore it is necessary to check quality of drinking water. The quality of water is described by its physical, chemical and biological characteristics.

RESEARCH AREA –

Akole tehsil, is situated in Sahyadri region of Western ghat of India. Akole tehsil is full of biodiversity is observed in and near Pravara River. The River Pravara rises on the Eastern slopes of the Sahayadris between Kulang and Ratangad. It is one of the major tributaries of the Godavari River. The total length of Pravara is 120 miles. Pravara River is an important river in the Western ghat of Maharashtra. River Pravara is located at latitude 19.32 and longitude 73.18, also the mean sea level at Ratangad is 3523 Ft. Ratangad is the place known for heavy rainfall region. The average rain fall at Ratangad is near about 120 inch.

MATERIAL AND METHOD –

The sample bottles were cleaned by soap solution and then treated with 5% HNO₃ acid over a night and finally washed with de-ionised water repeatedly to avoid contamination. The Spring surface water samples were collected from River Pravara in one liter size plastic bottles as per norms of the APHA (4) in the morning session. All the experiment was done within 24 hrs. of the sampling. A much simpler and quicker way of determining the dissolved solids is by the conductivity cell method. Total salt concentration = A x Conductivity (mg l⁻¹) where A is a constant. by a factor between 0.55 and 0.75.

GEOGRAPHICAL LOCATION – A SATELITE VIEW OF RIVER PRAVARA

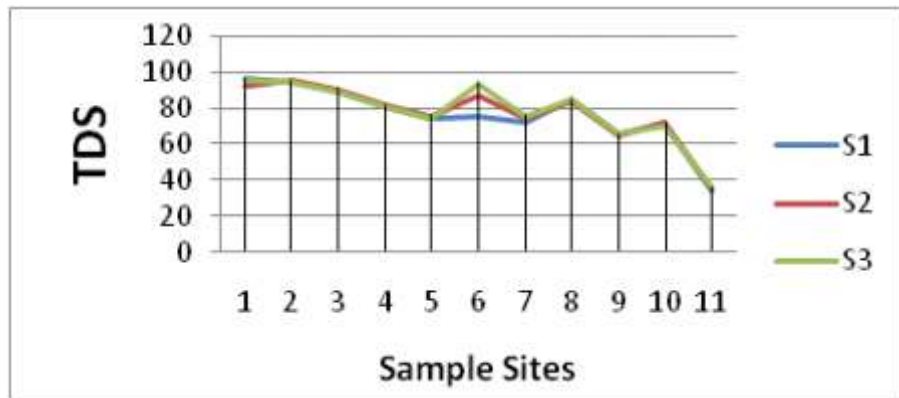


RIVER PRAVARA

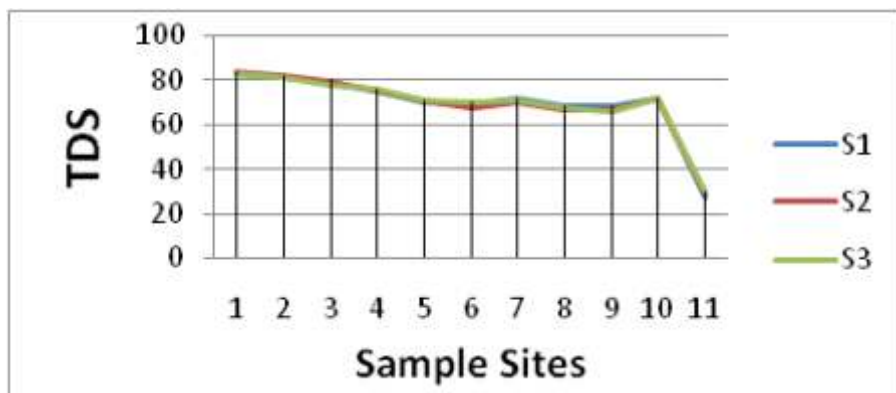


WESTERN GHAT

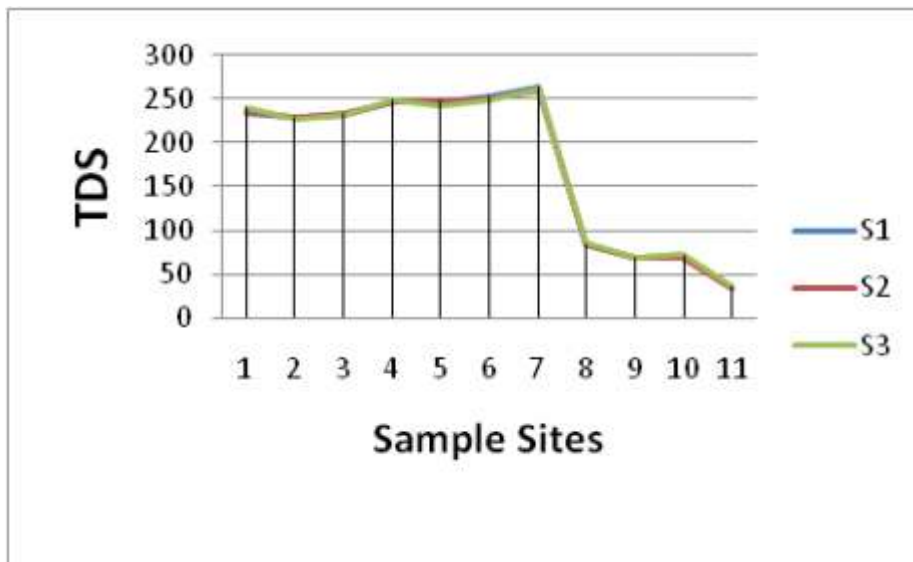
PRESENTATION – RAINY SEASON



JULY LAST-WK - 2015



JULY FIRST WK - 2015



AUGST-FIRST WEEK - 2015

4. RESULTS AND DISCUSSION-

JULY LAST-WEEK - 2015

Table No -1

Sample sites	TDS		
	S1	S2	S3
AGASTI BRIDGE-S1	97	93	96
UNCHKHADAK-S2	95	96	95
MEHENDURI BRIDGE-S3	90	91	90
NIMBRAL BRIDGE-S4	81	82	81
VITHE BRIDGE - S5	75	76	75
NILWANDEDAM-FRONT SIDE-S6	76	87	94
CHITALWEDHE BRIDGE -S7	72	75	76
RAJUR - DIGAMBER-S8	85	84	85
RANDHA FALL -S9	66	65	66
WILSON DAM - BRIDGE-S10	71	72	70
WILSON DAM-S11	34	35	36

JULY FIRST WEEK - 2015

Table No-2

Sample sites	TDS		
	S1	S2	S3
AGASTI BRIDGE	83	84	83
UNCHKHADAK	81	82	81
MEHENDURI BRIDGE	79	80	78
NIMBRAL BRIDGE	75	75	76
VITHE BRIDGE	70	71	71
NILWANDEDAM-FRONT SIDE	69	68	70
CHITALWEDHE BRIDGE -	72	70	71
RAJUR - DIGAMBER	68	67	68
RANDHA FALL	68	67	66
WILSON DAM - BRIDGE	72	72	72
WILSON DAM	31	29	30

AUGST-FIRST WEEK - 2015

Table No -3

Sample sites	TDS		
	S1	S2	S3
AGASTI BRIDGE	234	236	240
UNCHKHADAK	230	229	228
MEHENDURI BRIDGE	232	234	236
NIMBRAL BRIDGE	248	247	249
VITHE BRIDGE	248	246	242
NILWANDE DAM-FRONT SIDE BRIDGE	254	251	250
CHITALWEDHE BRIDGE	265	260	262
RAJUR - DIGAMBER	85	84	85
RANDHA FALL -	68	69	68
WILSON DAM - BRIDGE	71	70	72
WILSON DAM	34	35	36

AUGST LAST WEEK - 2015

Table No -4

Sample sites	TDS		
	S1	S2	S3
AGASTI BRIDGE	83	84	83
UNCHKHADAK	81	82	81
MEHENDURI BRIDGE	79	80	78
NIBRAL BRIDGE	75	75	76
VITHE BRIDGE	70	71	71
NILWANDEDAM-FRONT SIDE BRIDGE	69	68	70
CHITALWEDHE BRIDGE -	72	70	71
RAJUR - DIGAMBER	68	67	68
RANDHA FALL	68	67	66
WILSON DAM - BRIDGE			
WILSON DAM	31	29	30

RESULT AND DISCUSSION – Site Selection

In present investigation, there are 11 sites selected within the region River Pravara, Three

sample were collected from each station to assess the quality of spring surface water in the term of TDS. In some cases of sampling the level of TDS becomes elevated. Higher level of TDS may primary stressor to aquatic life and also to human being.

The result of Spring Surface water quality assessment in terms of TDS are Summarized in Table No. – 1, Table No. - 2, Table No. – 3 and Table No. – 4.

Data Analysis – SITE – 1

In present investigation, at sampling station S1, it has been observed that in the month of July when the River Pravara was in full of water the TDS values were 83 p.p.m. The color of spring surface water becomes turbid, opaque in the month JULY 2015. In the month of August 2015 the highest TDS values of Spring Surface water becomes reported 240 p.p.m. At that time color of spring surface water becomes clear and the temperature was reported 26.30. This higher values of TDS show need of treatment to lower down the values of TDS to preserve the aquatic life and health of human being. Demineralization processes are required to remove TDS from water.

SITE – 2

In present investigation at sampling station S2, the reported TDS values of spring surface water become 81 p.p.m. in the month of July 2015 when Monsoon was in the full swing. In the month of August 2015 the reported TDS values become 230 p.p.m. and the temperature was reported 26.30.

The flow of River Pravara in the month of August was like small stream so TDS values become high. On the station S2, a precaution has been taken to lower down TDS.

The processes like reverse osmosis, electro dialysis may be used to public water supplies to lower down the concentration of TDS.

SITE – 3

In present investigation, the values of TDS reported were 78 p.p.m. in the month of July 2015 rainy season. In this month water flow was very sturdy. When there is a rest period of monsoon season in the month of August 2015 the high values of TDS were reported 236 p.p.m. In the month of August 2015, rest period of monsoon season the stream flow of River Pravara was very slow. The high values of TDS show need to be control TDS in spring surface water of River Pravara. The treatment like lime–soda ash softening etc. may given to water of public water supplies.

SITE - 4

In the present investigation, the TDS values were reported in the month of July 2015 were 75 P.P.M. These values are in the permissible limit as per prescribed by WHO. When the stream flow of River Pravara was sturdy in the last week of July 2015, the values were reported 82 P.P.M. These values show slightly elevation of TDS from first week to last week of July 15. The highest values of TDS were reported 249 P.P.M. in the month of August 2015.

SITE – 5

In the present investigation, the reported values of TDS in the month of July 2015 were 71 P.P.M. and 76 P.P.M. The highest values were reported in the month of August 2015. The taste of Spring Surface water become unacceptable. There is a need to control the values of TDS.

SITE – 6

In the present investigation, the reported values of TDS were 70 P.P.M. and 94 P.P.M. These values of TDS become near to hard water. The taste of water becomes unpleasant. In the month of August 2015, the rest period of monsoon the values of TDS were reported 254 P.P.M. These values show elevation of TDS in the rest period of monsoon. It is necessary to remove TDS from public water supply.

SITE – 7

In the present investigation, the values of TDS reported in the month of July 15 were in the range of 70 P.P.M. to 76 P.P.M. There is a need of primary treatment like filtration to control TDS. The values of TDS reported in the month of August 2015 were 260 P.P.M. to 265 P.P.M. The higher values of TDS may cause scale in water pipes, water heaters etc.

SITE – 8

In the present investigation, the values of TDS reported in the month of July 2015, vary from ranges 67 P.P.M. to 85 P.P.M. In such cases filtration of spring surface water is necessary as a primary treatment. In the month of August 2015, the values reported for TDS becomes 85 P.P.M. The both values of TDS indicate that primary treatment filtration is required to spring surface water of River Pravara. The spring surface water has TDS values near to hard water.

SITE – 9

In the present investigation, the values reported in the month of July 2015 were in the range from 65 P.P.M. to 68 P.P.M. The water at bridge side becomes opaque – green and turbid. The water flow was stagnant. These values were in the range of permissible limits as per prescribed by WHO. The taste of water becomes pleasant. The water has approach of near hard water in concern with TDS values.

SITE – 10

In the present investigation, the values reported in the month of July 15 were in the range from 29 P.P.M. to 36 P.P.M. The water from dam was clear and has temperature 23.9°C. The taste of water becomes pleasant. These values are in the permissible limit as per WHO. No any treatment is needed to such water in concern of TDS. The spring surface water becomes near approach to rain water.

RECOMMENDATIONS –

The researcher collected different samples of spring surface water of Pravara River from 11 different sites, it has been found that the values of TDS ranges from 30 p.p.m. to 280 p.p.m. In some cases in the rest period of rainy season from sample location S1 to S7 high values TDS were reported but there is a need of water purification to lower down the level of TDS in the monsoon season. When water is stagnant in the month of August, there is a need of water purification to lower down TDS up to permissible limit.

CONCLUSIONS –

It is concluded that the TDS content in spring surface water of River Pravara depend on different locations, months. The researcher collected sample from 11 different site of River Pravara. It has been found that in some cases the TDS values are at Elevated level. Higher values of TDS show negative correlation with Biological activity. In the rest period of rainy season the water flow of River Pravara becomes very slow like small stream, Then the values of TDS range from 250 to 280 p.p.m. so there is a

need of water purification to lower down the level of TDS.

ACKNOWLEDGEMENTS–

The authors are thankful to Head, Dept of Environmental Science, P.V.P. College, Loni (M.S).

REFERENCES –

1. Andrew Gelman,(2005). Analysis of variance? Why it is more important than ever, The Annals of Statistics 33: 1–53.
2. David A Freedman, Statistical Models: Theory and Practice, Cambridge University Press, 2005.
3. D. R. Cox, Principles of statistical inference. Cambridge New York: Cambridge University Press, 2006.
4. Indian Institute of Technology Madras Environmental Chemistry and Analysis, Prof. M.S.Subramanian
5. GOLDAN RESEARCH THOUGHTS Vol-4 Issue-7 Jan -2015 .M.S Salunke
6. GOLDAN RESEARCH THOUGHTS Vol-4 Issue-8 Feb- 2015 .S.K.Thorat
7. INDIAN STREAMS RESEARCH JOURNAL Vol-4 Issue 12 Jan 2015 V.B. Yelmame
8. INDIAN STREAMS RESEARCH JOURNAL Vol-4 Issue 12 Jan 2015 M.S Salunke
9. International Journal of Pharmaceutical Research and Development Vol-6 Issue 12 Feb 2015 Muthe R.C.
10. International Journal of Pharmaceutical Research and Development Vol-6 Issue 12 Feb 2015 .M.S Salunke

Publish Research Article

International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Book Review for publication, you will be pleased to know that our journals are

Associated and Indexed, India

- ★ International Scientific Journal Consortium
- ★ OPEN J-GATE

Associated and Indexed, USA

- EBSCO
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Database
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database
- Directory Of Research Journal Indexing

Golden Research Thoughts
258/34 Raviwar Peth Solapur-413005, Maharashtra
Contact-9595359435
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com
Website : www.aygrt.isrj.org