

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL (S Z), AT CHENNAI
O.A No.212 OF 2021

State of Andhra Pradesh,
Rep:by its Secretary,
Water Resources Department,
Secretariat, Velagapudi,
Guntur District.

... Applicant

Vs

Union of India,
Rep by its Secretary,
Ministry of Jal Shakthi,
ShramShakthiBhavan,
New Deli and others

...Respondents

REPLY FILED BY THE 5TH RESPONDENT
WITH THE ANNEXURES

Sl.No	Particulars	Page No.
1.	Reply filed by the 5 th Respondent	1 - 8
2.	Annexure R1 (G.O.Ms. No.105, Dt.10.06.2015)	9-10
3.	Annexure R2 (Copy of the Short Affidavit Dt. 17.02.2017)	11-12
4.	Annexure R3 (NGT (SZ)Order copy Dt.17.02.2017)	13-15
5	Annexure R4 (Copy of Assessment of Fluoride in ground water along with Photos)	16-27
6.	Annexure R5 (G.O.Ms. No.107, Dt.11.06.2015)	28
7	Annexure R6 (Agreement Forwarding slip of Package no.1 of DLIS)	29

DATED AT HYDERABAD ON THIS THE 7TH DAY OF OCTOBER, 2021.

Through

Mrs. H.YASMEEN ALI
Standing Counsel for the State of Telangana
Respondent No. 5

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL(SZ)
AT CHENNAI

O.A No.212/2021

State of Andhra Pradesh,
Rep:by its Secretary,
Water Resources Department,
Secretariat, Velagapudi,
Guntur district.

.... Applicant

Vs

Union of India,
Rep by its Secretary,
Ministry of Jal Shakthi,
ShramShakthiBhavan,
New Deli and others

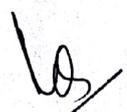
....Respondents

REPLY FILED BY THE 5TH RESPONDNET

I, RajatKumar, S/O B.K. Sinha, aged about 58 years,
Designation: Special Chief Secretary, I & CAD Department,
Government of Telangana, Hyderabad do hereby solemnly and
sincerely affirm and state on oath asfollows:

1. I am the Special Chief Secretary, I &CAD Department,
Government of Telangana, Hyderabad, the5th respondent herein and
as such I am well acquainted with the facts of the case.
2. I submit that I have read the O.A. filed by the Applicant and
deny all the allegations and averments contained therein, except
those that are specifically admitted herein.
3. I submit that the Application is barred by limitation, tainted with
malice, suppression of facts, has been filed with an oblique motive

Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat
Hyderabad-500 063


Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.

and is against the interest of the people of Telangana. At the outset, it is submitted that before adverting into the merits of the case, the answering Respondents crave leave to raise certain preliminary objections which go to the root of the matter and which require adjudication at the very outset by the Hon'ble Tribunal.

4. I submit that the Applicant has alleged in the Limitation paragraph on Page No.19 of the Application that the OA is not barred by limitation. This assertion is false, as would be evident from the contents and documents attached to the Application itself and from certain other documents that have been deliberately suppressed by the Applicant.

5. I submit that the Applicant has filed the present Application under Section 14 of the National Green Tribunal Act, 2010 ('**NGT Act**') which provides that an application for adjudication of disputes under that section should not be entertained by this Hon'ble Tribunal unless it is made within a period of 6 months from the date when the "cause of action first arose". Any condonation of delay, though not sought for in the present case, is restricted under the proviso to Section 14, to a maximum of 60 days.

6. I submit that the Dindi Lift Irrigation Scheme envisages to provide drinking water to the most severely affected areas by Fluorosis and irrigation facilities to drought prone areas of Deverakonda & Munugodu constituencies of Nalgonda district and

Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.


Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.

some parts of Achampet & Kalwakurthy constituencies of Mahaboobnagar district by lifting the flood water from the foreshore of Srisailam Reservoir to Dindi Reservoir at 0.5 TMC per day for 60days to a quantum of 30TMC. It involves two stage pumping, two off line and three online reservoirs system. The Gross command is 3,68,880 Acres and the net commendable area is 3,41,000 Acres and covers 5 Mandals of Mahaboobnagar District and 14 Mandals of Nalgonda District. For the said Scheme Administrative approval on the basis of the estimate for an amount of Rs.6,190.00 crore was accorded by the Government of Telangana by issuing G.O.Ms.No.107, Irrigation & CAD Department, dated 11.6.2015. Thereafter, the Government of Telangana vide G.O.Rt.No.126, Irrigation & CAD Department, dated 16.3.2021 has accorded permission for conducting detailed survey and investigation of Distributory Canal System including preparation of Hydraulic particulars under Singarajpally Reservoir of Dindi Lift Irrigation Project.

7. I submit that from the above sequence of events it would transpire that the subject project was widely publicized and covered extensively in media. It is therefore inconceivable that the present Applicant, being a State cannot plead ignorance of the subject project construction. The Applicant has also curiously evaded to state as to when they became aware about the project. Under the circumstances, it has to be taken that the Applicants had knowledge/deemed to have knowledge about the Project from the

Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.


Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.

very beginning. Examined in that background, the present Application filed on 20.9.2021 would certainly be time-barred.

8. I submit that the Applicant cannot even contend that they have the limitation to file the present Application due to a recurring cause of action as the same is contrary to Section 14 of the NGT Act which clearly does not provide for a recurring cause of action and rather states that in the series of events, limitation would specifically be counted from when the cause of action first arose. Hence, the very basis on which the present Application is predicated is defective, and the same is therefore time barred.

9. I submit that the present Application has been filed on 20.9.2021 which is clearly outside the period of limitation and is therefore fit to be dismissed in limine without any requirement of further proceedings or hearings on the merits of the Application, which in any case is a frivolous attempt to a stall a welfare project. No sufficient cause for filing the Application outside the statutory limitation period has been mentioned or provided.

10. I submit that the application is a sheer abuse of the process of law and appears to be motivated as there are numerous mischievous and misleading averments in the Application.

11. I submit that the Applicant himself has referred to **G.O.Ms.No.105, dated 10.6.2015** and also the proceedings dated

Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat
Hyderabad-500 063


Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.

11.10.2017 regarding the conceivment of the subject project. He has also mentioned about the litigation relating to O.A.No.273/2015 and filed the Judgment rendered therein and also the order of the Hon'ble Supreme Court dated 20.7.2016 made in W.P.No.116/2016. He has also relied on the copies of the letters dated 11.2.2017, 1.7.2017, 16.3.2018 and 2.4.2018. Thus, the State of Andhra Pradesh is aware of the construction of the Project right from 2016; but slept over the matters for all these years and filed the present Application after more than 5 years. Thus the Application filed by the Applicant is barred by limitation.

12. Apart from the above, the present O.A. is not only barred by limitation, it is not maintainable before this Hon'ble Tribunal, as the above said Application has been filed by the State of Andhra Pradesh, represented by its Secretary, Water Resources Department, Velagapudi, Guntur district, challenging the subject project on several grounds, relying on the provisions of A.P. Reorganisation Act. The State of Andhra Pradesh cannot maintain the Application, inasmuch as it is not a 'person' as defined under Section 2(j) of National Green Tribunal Act, 2010 and the subject matter of the Application is dispute between the two States. The Hon'ble Supreme Court in **Atmalinga Reddy v. Union of India reported in 2008(7) 788** having regard to Article 262 of Constitution of India held that the jurisdiction of Courts including the Hon'ble Supreme Court are excluded, as the Parliament has enacted Inter State River Water Disputes Act, 1956 in relation to water disputes between the States


Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.

and as such, It is clear that the above said dispute cannot be made subject matter for consideration either before the Hon'ble High Court under Article 226 of Constitution of India or in the Hon'ble Supreme Court under Article 32 of Constitution of India. The Hon'ble supreme Court further held that under Article 131 of Constitution, either the Central Government or State Government can institute a Suit in the Hon'ble Supreme Court on its original side. In certain cases, the said jurisdiction cannot be invoked, in view of Section 11 of 1956 Act. Hence the present Application is barred by limitation and not maintainable in law. The relevant case law being relied upon by the 5th respondent herein on the preliminary objection is filed herewith for the kind perusal of this Hon'ble Court.

PRAYER

It is therefore prayed in light of the facts, circumstances and grounds enumerated hereinabove that this Hon'ble Tribunal may be pleased to:

- A. Dismiss the present Application as barred by limitation and not maintainable under law.
- B. Pass any other order that this Hon'ble Tribunal so deem fit in the present case.


DEPONENT

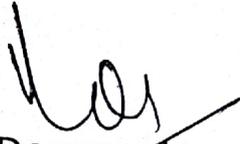
**Special Chief Secretary to Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.**

VERIFICATION

I, RajatKumar, S/O B.K. Sinha, aged about 58 years,
Designation: Special Chief Secretary, I & CAD Department,
Government of Telangana, Hyderabad, the 5th respondent herein,
do hereby verify and declare that the contents stated in the above
reply affidavit are true and correct to the best of my knowledge and
belief.

Date: 5.10.2021

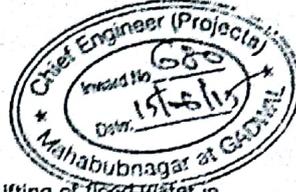
Place: Hyderabad.


Deponent.
Special Chief Secretary, Government
Irrigation & CAD Department
Telangana Secretariat,
Hyderabad-500 063.

TELANG

- 49 -

GOVERNMENT OF TELANGANA
ABSTRACT



PALAMURU – RANGA REDDY LIFT IRRIGATION PROJECT - For Lifting of flood water in 60 days from foreshore of Srisaillam Reservoir in Mahabubnagar district to serve net ayacut of 10.00 Lakh acres in drought prone areas of Mahabubnagar (7.00 Lakh acres), Rangareddy (2.70 Lakh acres) and Nalgonda (0.30 Lakh acres) Districts including providing drinking water facilities to enroute villages and industrial water use excluding the ayacut under Medium and Minor Irrigation tanks - Administrative approval for an amount of Rs 35,200 crore - Accorded - Orders - Issued.

IRRIGATION AND CAD (PROJECTS-I) DEPARTMENT

G.O. Ms. No.105

Dated:10-06-2015

Read:

From the Engineer-in-Chief (Irrigation), Hyderabad, Lr No. ENC(1)/DCE-IV/OT4/ AEE10/ CE/PRLIS/2015, Dt:04-06-2015 & 09.06.2015.

ORDER:

In the reference read above, the Engineer-in-Chief (Irrigation), Hyderabad has informed that the Palamuru -Ranga Reddy Lift Irrigation Scheme envisages to irrigate upland areas of about a net ayacut of 10 lakh acres, drinking water to Hyderabad city and industrial use in Mahabubnagar, Rangareddy and Nalgonda districts, by lifting 90 TMC of flood water in 60 days during flood season (i.e., 1.50 TMC per day) from foreshore of Srisaillam Project located on Krishna river in Mahabubnagar district to Laxmidivipally(V), Kondurg (M) near Snadnagar town (from +250.00 M to +675.00m) which is the highest elevation in between Mahabubnagar and Ranga Reddy districts with 5 stage lifting and then utilizing water by gravity. The scheme contemplates enroute Irrigation under different reservoirs as per their command ability. There are five stages in the project starting from foreshore of Srisaillam Reservoir and ending with K.P.Laxmidivipally Reservoir. The work is proposed to be taken up during the year 2015-16 by calling tenders on e-procurement platform.

2. The ENC has requested to accord administrative approval to the project for an amount of Rs.35,250 crore with SSR 2014-15.
3. The Government after careful examination of the proposal of the Engineer-in-Chief (Irrigation), Hyderabad hereby accord Administrative approval to the Palamuru – Rangareddy Lift Irrigation Scheme for an amount of Rs 35,200 Crore (Rupees thirty five thousand two hundred crore only).
4. The Chief Engineer(Projects), Mahabubnagar shall take necessary action accordingly.

ACE
SE/NTD
2/6
For CE's
(Kind Perusal)

M
12/6/15

210 -
-8-

//2//

5. This order issues with the concurrence of Finance (W&P) Department, vide their U.O. No. 3526/133/WP/A1/15, dated:08.06.2015.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

SHAILENDRA KUMAR JOSHI
PRINCIPAL SECRETARY TO GOVERNMENT

To
The Engineer-in-Chief (Irrigation), Hyderabad
The Chief Engineer(Projects), Mahabubnagar

Copy to:

The Accountant General, T.S., Hyderabad.
The Director of Works & Accounts, Hyderabad.
The Finance (W&P) Dept.
The OSD to Minister for Irrigation.
The P.S. to Pri. Secretary.

//FORWARDED :: BY ORDER//

Endmt No: CECP/MBNR/PRUS/General/EE3/573 D.H/OB/2015
Copy forwarded to IG SE/PJP Circle / Gadwal for
information and necessary action

P.K.V. Laxmi
SECTION OFFICER

TO
IG SE/PJP Circle
Gadwal

// F.B.O. //

Deputy Chief Engineer
O/o. CE (Projects) Mahabubnagar,
& PJP Camp Gadwal - 509 125.

T. KHAGENDER
CHIEF ENGINEER (Projects) (FAC)
Mahabubnagar,
PJP Camp, GADWAL - 509 125
Mahabub Nagar Dist

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTH ZONE, AT CHENNAI

APPLICATION NO. 273 OF 2016 (SZ)

IN THE MATTER OF:

SRI B. HARSHVARDHAN

...APPLICANT -

VERSUS

UNION OF INDIA AND OTHERS

...RESPONDENTS

SHORT AFFIDAVIT ON BEHALF OF RESPONDENT NO. 2 & 3

I, V. Linga Raju, S/o V.B. Raju, aged about 58 years, Chief Engineer, Palamuru Rangareddy Lift Irrigation Scheme, I&CAD Department, Government of Telangana, Hyderabad, Telangana having my office at 5th Floor, Jalsoudha Building, Panjagutta Road, Irram Manzil, Hyderabad, Telangana, presently at Chennai, Tamil Nadu, do hereby solemnly affirm and state on oath as under:

1. It is to be clarified that there is no Department called or functioning as a Water Resources Department in the State of Telangana and it is the Irrigation Department that is responsible for water resources as well. For this reason, the PRLIS project has the word "Irrigation" whereas its intention is to store and use the flood water for dry areas of Telangana, which would otherwise go waste.
2. The Government of Telangana states that it would be withdrawing its Environment Clearance application filed on 11 January 2017 for the reasons below.
3. The Government of Telangana states that it would be implementing the PRLIS to move its entitlement and share of water during the flood period from the backwaters of Srisaillam Reservoir to the dry areas in the various districts of


Chief Engineer
Irrigation Department
Government of Telangana
Hyderabad

Telangana State including Hyderabad to transport and store water for drinking and human consumption.

- 4. PRLIS as is presently being planned and implemented, has no plan for provision for irrigation. Irrigation requires planning and construction of a network of canals originating from the proposed reservoirs. The schematic diagram of PRLIS which is being pursued presently clearly establishes that there are no such canals envisaged. Infrastructural enhancements, such as construction of canals, would be required for the purpose of irrigation requiring prior environmental clearance. The same would be carried out only after obtaining prior environmental clearance.
- 5. It is further reaffirmed that no bids/tenders have been initiated or contracts awarded for irrigation by way of canals.

[Signature]
 Chief Engineer
 Palamur, Ranga Reddy
 - L.I. Scheme, 5th Floor.
 Jalasoudha Building, Hyderabad - 500 082

VERIFICATION:

I, V. Lingaraju, the deponent above-mentioned do hereby verify that the contents of the foregoing Affidavit are true and correct, no part of it is false and nothing material has been concealed therefrom.

Verified by me at Chennai on this 17th day of February, 2017.

[Signature]
 DEPONENT
 Chief Engineer
 Palamur, Ranga Reddy
 - L.I. Scheme, 5th Floor.
 Jalasoudha Building, Hyderabad - 500 082

-13-

ANNEXURE - R3

**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

Application No.273 of 2016 (SZ)

Applicant(s)
Sri. B. Harsha Vardhan,
Hyderabad,
Telangana.

Respondent(s)
Vs. The Union of India, Rep. by its
Secretary to the Government,
MoEF & CC New Delhi and 4 others.

Legal Practitioners for Applicant(s)
M/s. Sanjay Upadhyay,
Kamalesh Kannan. S,
S. Sai Sathya Jith,
Mridula Vijai Raghavan,
Thejesh Jagadish

Legal Practitioners for Respondents
Mr. Mohan Parasaran,
Senior Counsel for
Mrs. H. Yasmeen Ali for R2 and R3
Mr. M.R. Gokul Krishnan for R1 and R5
Mr. Parthasarathy for R4

Note of the Registry	Orders of the Tribunal
Order No. 7	<p>Date: 17th February, 2017</p> <p>On behalf of respondent Nos.2 and 3, the Chief Engineer, Palamuru Rangareddy Lift Irrigation Scheme filed an affidavit stating that the Government of Telangana would be withdrawing the application submitted for Environmental Clearance (EC) before the Ministry of Environment, Forests and Climate Change (MoEF&CC) on 11.01.2017. The affidavit also asserts that the State of Telangana would be implementing the disputed project only with regard to the supply of drinking water and not for irrigation.</p> <p>Learned counsel appearing for the State of Telangana including the Additional Advocate General, in the presence</p>

of Sri. Joshi, the Special Chief Secretary present in Court submitted that the disputed project as such will not be proceeded with and the State of Telangana undertakes that they will not proceed with the Irrigation part of the project without obtaining prior EC. It is also submitted that the project now proposed to be proceeded with is confined to the supply of drinking water by taking water from Srisaillam Reservoir through the Reservoirs in between, which finally reaches K.P. Lakshmidvipalli Reservoir.

Learned counsel appearing for the applicant submitted that the project is nothing less than the original project as is clear from the DPR and therefore there should be an order directing the State not to proceed with the work without prior EC.

In view of the submission made on behalf of the State of Telangana and the affidavit filed, we do not find it in the interest of justice, to stop the work of the project with regard to the supply of drinking water. It is made clear that no part of the project, with regard to irrigation shall be proceeded with, without prior EC.

Learned counsel appearing for the applicant also submitted that there is a separate department namely Rural Water Supply and Sanitation Department for supply of drinking water and the disputed project is envisaged not

by that department but by the Irrigation Department and therefore by naming the Irrigation project as drinking water project there will be no change in the ambit and scope of the project and the affidavit is not filed by the Rural Water Supply and Sanitation Department, and other drinking water projects were already envisaged by the State of Telangana for water supply in the same area.

Learned counsel appearing for the respondents seeks time to file proper affidavit from the concerned department. Let the affidavit be filed within a period of two weeks.

Learned counsel appearing for respondent Nos. 2 and 3 including the Additional Advocate General submitted that the tender invited for the irrigation part of the project will not be proceeded with. The submission is recorded.

List the matter on 15.03.2017

.....*sl*.....J.M
(Justice M.S. Nambiar)

.....*sl*.....E.M
(Shri P.S. Rao)



See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/326133822>

Assessment of Fluoride in Ground Water for Drinking and Agricultural Purposes in Ramannapet Mandal of Nalgonda District, Telangana, India

Article · July 2018

CITATIONS

2

READS

159

1 author:



Dr. Jayashankar

Professor Jayashankar Telangana State Agricultural University

22 PUBLICATIONS 3 CITATIONS

[SEE PROFILE](#)



Original Research Article

Assessment of Fluoride in Ground Water for Drinking and Agricultural Purposes in Ramannapet Mandal of Nalgonda District, Telangana, India

D. Vijaya Lakshmi*, K. Jeevan Rao, T. Ramprakash and A. Pratap Kumar Reddy

Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, Rajendranagar, PJTSAU, Hyderabad, Telangana, India

*Corresponding Author: D. Vijaya Lakshmi, Research Associate (Soil Science), Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, Rajendranagar, PJTSAU, Hyderabad, Telangana, India

Received: 19 January 2016

Revised: 01 February 2016

Accepted: 18 February 2016

ABSTRACT

The fluoride concentration in ground water was analyzed during *kharif* and *rabi* (2012-13) seasons to identify the suitability of water for drinking and irrigation purposes in all the villages of Ramannapet Mandal of Nalgonda District, Telangana. Fluoride present in the ground water samples collected during *kharif* and *rabi* varied from 0.53 to 3.86 and 0.99 to 3.94, with an average of 1.71 and 2.08 ppm, respectively. As per drinking water standards, 53 % (16 samples) of the ground water samples in *kharif* and 67% (20 samples) of the ground water samples in *rabi* have fluoride content greater than that of maximum permissible limit of 1.50 ppm fluoride. On an average, maximum concentration of fluoride was noticed in 16 and 20 villages during *kharif* and *rabi*, respectively. Therefore drinking water is sufficient to produce severe form of dental fluorosis and mild form of skeletal fluorosis consumed for a long period. As far as irrigation is concerned, data show that none of the bore well and open well water samples have fluoride content above 10 mg L⁻¹, which is the safe limit for all type of crop plants. Thus, all water samples tested in this investigation can safely be used for agricultural purpose.

Keyword: Fluoride; Ground Water; Drinking; Irrigation; Nalgonda

INTRODUCTION

The occurrence of the high fluoride concentrations in ground water is a problem faced by many countries; India is one among

the 23 nations in the world. Over all 200 million people in worldwide and 65 million people among 29 states of India are facing the problem

with fluorosis as groundwater of Indian aquifers varies from < 1.0 to 25.0 ppm. The probability of occurrence of high fluoride concentration in ground and surface water was detected in various states in India. Telangana state is facing major problem with fluoride pollution because ground water is used as drinking and an irrigation source, a natural occurrence of excessive amounts of fluoride levels in ground water. Nalgonda district is one of the poorest and most drought-prone districts of Telangana in southern India. The area has long been associated with high groundwater fluoride concentrations which have been reported to reach up to 20 ppm [1]. In spite of continuous efforts by the government, external support agencies, NGOs and private enterprises the problem still remains unsolved.

The main natural sources of fluoride in the ground water of Nalgonda district are weathering and dissolution of rocks and minerals, emissions from volcanoes and marine aerosols [2]. This high concentration of fluoride in drinking water causes dental and skeletal fluorosis in human beings and also has negative effect on crop production. So periodical measurement and control of the concentration of fluoride is very important to avoid both biological and environmental damage. Hence, keeping in view the above facts a survey was conducted to identify the suitability of ground water for drinking and irrigation purposes.

MATERIALS AND METHODS

The study area forms a part of Nalgonda district, Telangana, which is located at a distance of 90 km away from Hyderabad (Fig. 1). This area experiences arid to semiarid

climate. The study area goes through hot climate during the summer (March–May) with a temperature range from 30°C to 46.5°C, and in winter (November–January), it varies between 14°C and 29°C. The average annual rainfall in this area is about 1000 mm, occurring mostly during south-west monsoon (June–September). Groundwater samples were collected during the *kharif* (September) and *rabi* (March) seasons of 2012-13 from existing water sources (open wells and bore wells) with the help of a handheld Global Positioning System (GPS). Geographical information *viz.*, latitude and longitude of the benchmark sites were recorded, so that the delineation of the areas having fluoride pollution can be done and ground water fluoride status maps can be prepared by depicting the element in water at village level. Totally 30 benchmark sites were fixed depending on the number of villages of study area for collection of water samples. The depth of the wells varied from 16 to about 30 m below ground level.

Water samples were collected in clean polyethylene bottles of 600 ml capacity. The sampling bottles were soaked in 1:1 diluted HCl solution for 24 h and washed with distilled water. In the case of bore wells, water samples were collected after pumping the water for 10 min. In the case of open wells, water samples were collected 30 cm below the water level using a depth sampler. Samples collected were transported to the laboratory and filtered using 0.45µm Millipore filter paper fortified with 1 ml toluene to arrest any biological activity. The samples were stored at 4°C until used for fluoride analysis. Fluoride was analyzed by using Specific Ion Electrode method [3].

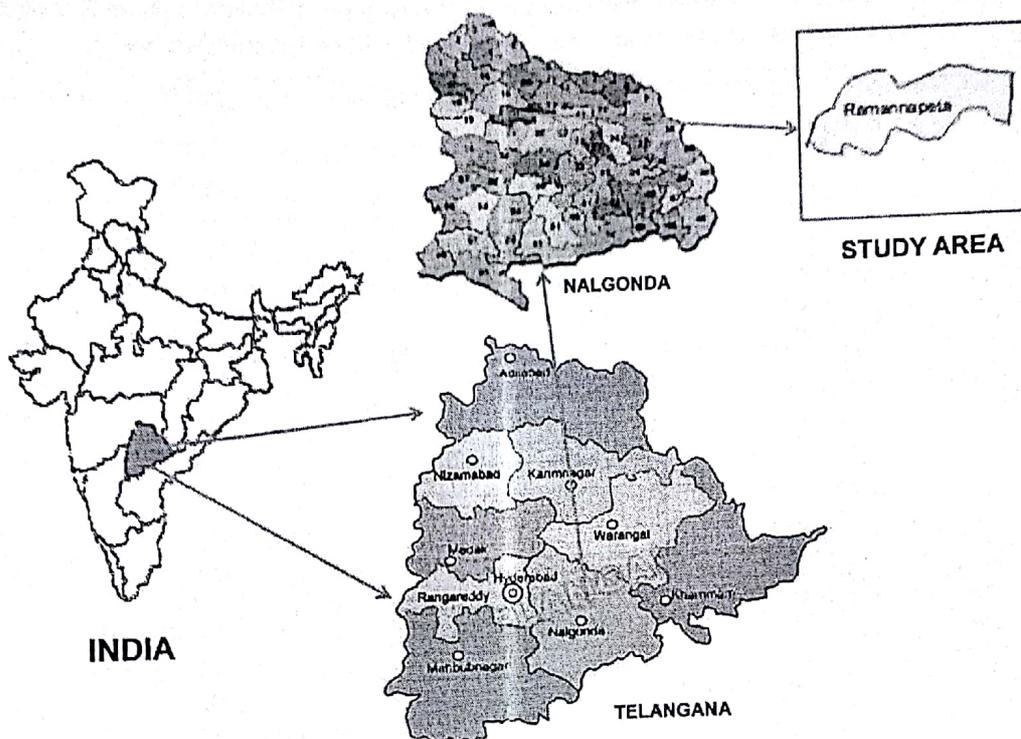


Fig. 1: Location map of the study area

RESULTS AND DISCUSSION

Fluoride content of ground water collected from open and bore wells in the villages of Ramannapet mandals of Nalgonda district during *kharif* and *rabi* are presented in Table 1. Fluoride present in the ground water samples collected during *kharif* and *rabi* varied from 0.53 to 3.86 and 0.99 to 3.94, with an average

of 1.71 and 2.08ppm F, respectively. Lowest content of fluoride was recorded in Venkatapuram village (0.53 and 0.99 ppm during *kharif* and *rabi*, respectively) while the highest was recorded in Rontakolla village (3.86 and 3.94 ppm during *kharif* and *rabi*, respectively). Groundwater F status map during *kharif* and *rabi* are shown in figures 2 and 3.

Table 1: Fluoride content in ground water samples collected in different villages of Ramannapet mandal during *kharif* (September) and *rabi* (March) seasons of 2012-13.

S.No.	Village	Fluoride Content (ppm)	
		<i>kharif</i>	<i>rabi</i>
1	Ramannapet	1.46	1.51
2	Neernemula	0.78	1.17
3	Shobanadripuram	0.95	1.05
4	Laxmapuram	1.72	2.25
5	Nidhanpalle	0.98	1.21
6	Bogaram	1.03	1.27
7	Thummalagudem	1.15	2.53
8	Yellanki	2.28	2.75
9	Siripuram	2.07	2.12
10	Dubbaka	2.52	2.56
11	Rontakolla	3.86	3.94
12	Munipampula	2.35	2.33
13	Palliwada	0.92	2.58
14	Nagulanchagudem	1.29	3.12
15	Bachuppala	1.37	1.43
16	Suraram	2.43	2.48
17	Thurkapalle	2.76	2.73
18	Venkatapuram	0.53	0.99
19	Kunkudupamula	1.27	1.36
20	Peddabavigudem	2.09	2.52
21	Yennaram	1.98	1.99
22	Kallonikunta	2.04	2.15
23	Kakkireni	0.94	1.29
24	Pilligudem	2.82	2.84
25	Uttatoor	1.54	1.67
26	Iskilla	0.97	1.23
27	Lacchigudem	2.08	2.58
28	Janampalle	2.04	3.12
29	Sanjeevaiahnagar	0.85	1.39
30	Kommaigudem	2.23	2.36
	Range	0.53-3.86	0.99-3.94
	Mean	1.71	2.08

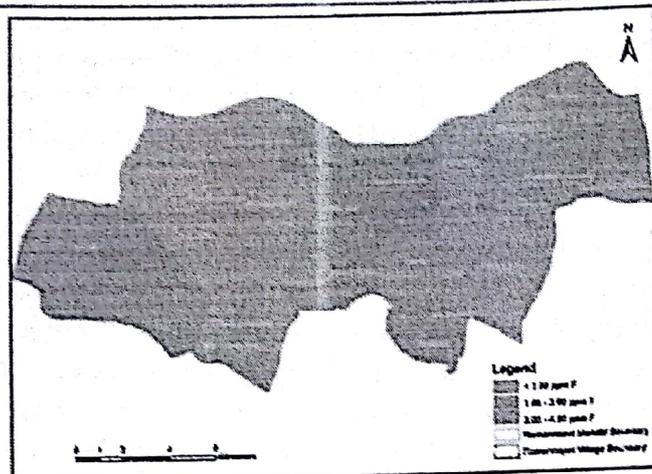


Fig.2: Ground water fluoride status map of Ramannapet mandal (Kharif, 2012)

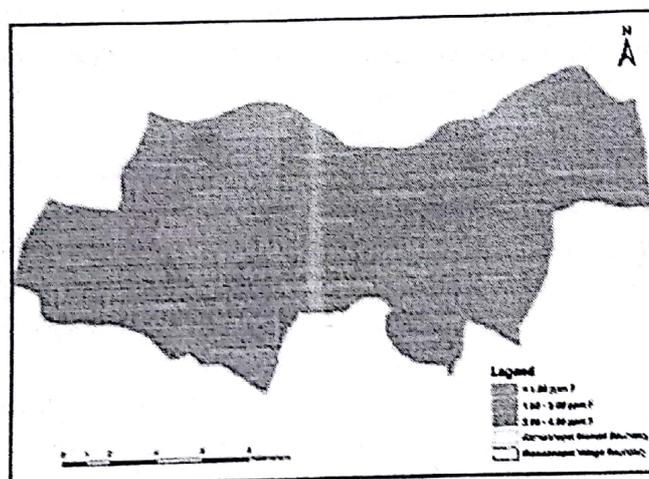


Fig.3: Ground water fluoride status map of Ramannapet mandal (Rabi, 2012-13)

As per drinking water standards of ICMR [4], the highest desirable concentration of F is 1.0 ppm in tropical countries and that of maximum permissible level is 1.50 ppm. Out of 30 samples, 53% of the ground water samples in kharif and 67% of the ground water samples in rabi have F content greater than that of maximum permissible limit of 1.50 ppm fluoride. On an average, maximum concentration of fluoride was noticed in 16 and 20 villages during *kharif* and *rabi*, respectively. Therefore drinking water is sufficient to produce severe form of dental fluorosis and mild form of skeletal fluorosis consumed for a long period. The rocks of this area possess

fluoride content higher than the world average. Weathering of rocks and leaching of fluoride bearing minerals from the basement granitic rocks are the major reasons which contribute to elevated concentration of fluoride in ground water. The other important natural phenomenon that contributes to high fluoride is evaporation [5]. Similar results reported by Reddy *et al.* [6] and Kishore and Hanumantharao [7] in Nalgonda district. According to FAO [8], the normal and moderately suitable range of fluorides concentration in irrigation water is from < 19 ppm (1.0 me L⁻¹) and 19 to 171 ppm (1.0-15 me L⁻¹), respectively. Safe limit of 10 mg F L⁻¹ of

Irrigation water has been proposed for all type of crop plants by Leone *et al.* [9]. The present investigation showed that none of the water samples were found to cross this limits and hence suitable for irrigation purpose. However continuous application of irrigation waters having toxic concentration of fluoride is likely to affect adversely the crop growth.

Especially higher F concentrations were observed in bore well water samples (>1.5ppm) and the F concentration in dug well water samples found to be within permissible limit of 1.5 ppm. The concentration in general, increases with the depth of bore wells and this indicates the possible geogenic nature of fluoride.

SEASONAL VARIATIONS OF FLUORIDE

When compared to two seasons, the concentration of fluoride in groundwater during *kharif* was lower than the *rabi*. Seasonal distribution is found significantly and the variation of fluoride is dependent on many factors. Generally, a high rate of evapotranspiration and over-exploitation of groundwater resources for agricultural and drinking water purposes during *rabi* season causes a low freshwater exchange and results in precipitation of salts, including F rich salts, temporarily in the top layers of the soil. During *kharif* season, the infiltrating waters leach these soils and replenishment of the groundwater by rainfall indicated a clean recharge from external sources. Hence, the concentration of fluoride is observed to be greater in the *rabi* season groundwater than in *kharif* season. As a result, 67% (20 samples) of the total groundwater samples from the *rabi* season are above the permissible limit of fluoride (1.50 ppm), compared to 53% (16 samples) of those from the *kharif* season.

Seasonal distribution of fluoride is also dependent on amount of soluble and insoluble fluoride in source rocks, the duration of contact

of water with rocks and soil temperature, rainfall and oxidation- reduction process [10 & 11].

CONCLUSION

High concentration of fluoride in groundwater of up to 3.94 ppm was measured. About 60% of wells had fluoride concentration above the permissible limit of 1.5 ppm set by Indian drinking water standard. The use of groundwater for drinking purpose from these wells has to be restricted. Suitable measures such as defluorinating the ground water before use and recharging the ground water by rainwater harvesting for irrigation purpose need to be practiced to improve the groundwater quality in this area.

ACKNOWLEDGEMENT

The authors are grateful to Professor Jayashankar Telangana State Agricultural University for providing financial assistance during my post-graduation under Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, Rajendranagar, Hyderabad during the study.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no competing interests.

REFERENCES

1. Rao NS. Groundwater quality: Focus on fluoride concentration in rural parts of Guntur district, Andhra Pradesh, India. *Hydrol Sci J* 2003; 8(5): 835-847.
2. Rao MS, Mamatha P. Water quality in sustainable water management. *Curr Sci* 2004; 87(7): 942-947.
3. Wedepohl KH. Handbook of geochemistry (Vol. II-I) (Ed.). Berlin: Springer; 1969.
4. ICMR (Indian Council of Medical research). New Delhi manual of standards of

- quality of drinking water supplies special report series 1975; p 44.
5. Brindha K, Rajesh P, Murugan P, Elango L. Natural and anthropogenic influence on the fluoride and nitrate concentration of ground water in parts of Nalgonda district, Andhra Pradesh. *J Appl Geochem* 2010; 42(2): 231-241.
 6. Reddy DV, Nagabhushanam P, Sukhija BS, Reddy AGS, Smedley PL. Fluoride dynamics in the granitic aquifer of the Wailapally watershed, Nalgonda district, India. *J Hydrol* 2009; 592: 72-36.
 7. Kishore M, Hanumantharao Y. A survey on fluoride concentration in drinking water of Tipparthy revenue sub-division, Nalgonda district, Andhra Pradesh, India and batch mode defluoridation with renewable resources. *Rasayan J Chem* 2010; 3(2): 341-346.
 8. FAO. Water Quality for Agriculture. FAO Irrigation and Drainage Paper. Rome: FAO; 1994, p 29.
 9. Leone JA, Brennan EG, Danies RH, Robbins WR. Some effects of fluorine on peach, tomato and wheat when absorbed through the roots. *J Soil Sci* 1948; 66: 259-266.
 10. Mahapatra MK, Mishra A, Das BP. Fluorosis first reported in Naupada district of Orissa India. *Ecology, Environ Conserv* 2005; 11(2): 277-280.
 11. Paya P, Bhatt SA. Fluoride contamination in groundwater of Patan district, Gujarat, India. *Int J of Eng Stud* 2010; 2(2): 171-177.

Cite this article as:

D. Vijaya Lakshmi, K. Jeevan Rao, T. Ramprakash and A. Pratap Kumar Reddy. Assessment of Fluoride in Ground Water for Drinking and Agricultural Purposes in Ramannapet Mandal of Nalgonda District, Telangana, India. *J Pharm Chem Biol Sci* 2015; 3(4):169-175





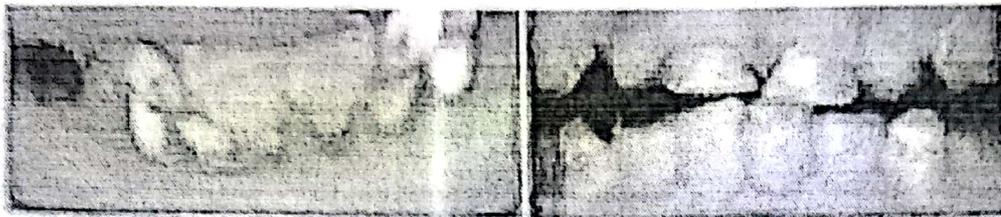
Stages of Fluorosis

- 1) Dental
- 2) Genu Valgum
- 3) Skeletal
- 4) Neurological



- Jhebus photos

- 27 -



Symptoms of skeletal fluorosis (E-G)



Figure 2: Symptoms of dental (A-D) and skeletal fluorosis (E-G).

- 19 -
Annexure R5

**GOVERNMENT OF TELANGANA
ABSTRACT**

Dindi Lift Irrigation Scheme - Administrative approval on the bases of line estimate for an amount of Rs 6,190 crore - Accorded - Orders - Issued.

=====

IRRIGATION AND CAD (PROJECTS-I) DEPARTMENT

G.O.MS.No. 107

Dated:11-06-2015

Read:

From the Engineer-in-Chief (Irrigation), Hyderabad, Lr No. CE/
AMRP/W16/7969/2005/Vol.IV, dated: 09.06.2015.

ORDER:

The Dindi Lift Irrigation Scheme envisages to provide drinking water to the most severely affected areas by Fluorosis and irrigation facilities to drought prone areas of Deverakonda & Munugodu constituencies of Nalgonda district and some parts of Achampet & Kalwakurthy constituencies of Mahaboobnagar district by lifting the flood water from the foreshore of Srisailem Reservoir to Dindi Reservoir at 0.5 TMC per day for 60days to a quantum of 30TMC. It involves two stage pumping, two off line and three online reservoirs system. The Gross command is 3,68,880 Acres and the net commendable area is 3,41,000 Acres and covers 5 Mandals of Mahaboobnagar District and 14 Mandals of Nalgonda District.

2. In the reference read above, the Engineer-in-Chief (Irrigation), Hyderabad while furnishing the line estimate for the project has requested to accord administrative approval to the line estimate of Dindi Lift Irrigation Scheme for an amount of Rs.6,300 crore.

3. The Government after careful examination of the proposal of the Engineer-in-Chief (Irrigation), Hyderabad hereby accord Administrative approval to the line estimate of Dindi Lift Irrigation Scheme for an amount of Rs.6,190 crore (Rupees six thousand one hundred and ninety crore only).

4. The Chief Engineer, NSP, Hyderabad shall take necessary action accordingly.

5. This order issues with the concurrence of Finance (W&P) Department, vide their U.O. No.31/WP/A2/2015, dated:10.06.2015.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

**SHAILENDRA KUMAR JOSHI
PRINCIPAL SECRETARY TO GOVERNMENT**

To
The Engineer-in-Chief (Irrigation), Hyderabad
The Chief Engineer, NSP, 6th Floor,
Gagan Vihar, Hyderabad.

Copy to:

The Accountant General, T.S., Hyderabad.
The Director of Works & Accounts, Hyderabad.
The Finance (W&P) Dept.
The OSD to Minister for Irrigation.
The P.S. to Prl. Secretary.

//FORWARDED :: BY ORDER//

SECTION OFFICER

I 529-

Annexure 2.6

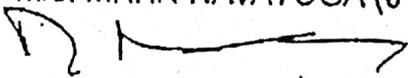
Office of the Superintending Engineer,
DLIS Circle, Kondamallepally, Nalgonda District.

Forwarding Slip to accompany Lumpsum Agreement No. 4/SE/DLISC/2016-17/

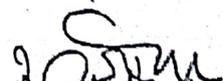
Dt. 5-12-2016.

1	Name of the work	DINDI LIS - Earth Work Excavation and Formation of Embankment from km.0.000 to km.15.000 of DLIS main Canal including construction of CM&CD works, Tunnels for a length of 2100m and Formation of Singarajpally Reservoir (Package No.1)
2	Administrative/Revised Admn. Sanctioned amount	Rs. 6190 Crores vide G.O.MS.No. 107, Dt. 11.08.2015
3	Technical/Revised Technical Sanctioned amount	Rs. 719.64 Crores vide CE, NSP & AMRSLBC Project, Hyderabad CER No. 3/DLIS/2016-17 Dt. 11.07.2016
4	Name of the Contractor & Address	M/s MRKR - NAVAYUGA (JV) 8/2/268/1/D/A/Plot No: 7, Road No: 3 Aurora Colony, Banjara Hills, Hyderabad-34.
5 (a)	Value of work to be done under this agreement	Rs. 624,16,16,913.10/
(b)	Value of work as per estimate	Rs. 633,28,09,368/-
(c)	Period of completion	24 Months
6	Reference to publication of Tender	
(a)	Tender Notice No.	01 SE/DLIS/2016-17 Dt. 20-07-2016
(b)	Published in Irrigation wing Tender digest.	Yes
(c)	Published in News papers	Yes
7	Time allowed in the Tender Notice for submission of Tender	14 days
8 (a)	Total number of Tenders received	3
(b)	Details of Tenders received	
9	Is the lowest Tenders accepted	Yes
10	Has the Contractor signed the copy of A.P.S.S. and its addenda volume kept in Circle office?	Yes
11	Is data furnished for all items?	Yes
12	Are the rates in the agreement are within the estimate rate or not? If so, what is the overall percentage excess or less?	(-) 1.44% (Minus One point four four percent) less than ECV of Rs.633,28,09,368/- Priced with SSR of 2016-17
13	Are the printed Tender schedules approved in the C.E.'s office followed without any change? If not what are the deviations made?	Yes
14	Authority and reference in which the Tenders were approved.	Commissioner COT Vide Lr. No. Rc.No. 948/Pkg.1/DLIS/SO2/DEE1/EE/COT/2016 Dt. 05-10-2016. Communicated to this office vide Memo No.: CE/DLIS/DEE/AEE/Package 1/2016 Dt. 13-10-2016

For M/s. MRKR-NAVAYUGA (JV)



(Authorized Signatory)


Superintending Engineer,
Dindi Lift Irrigation Scheme Circle

BEFORE THE HON'BLE NATIONAL
GREEN TRIBUNAL (SZ)
AT CHENNAI

O.A No.212/2021

State of Andhra Pradesh,
Rep:by its Secretary,
Water Resources Department,
Secretariat, Velagapudi,
Guntur district.

.... Applicant

Vs

Union of India,
Rep by its Secretary,
Ministry of Jal Shakthi,
ShramShakthiBhavan,
New Deli and others

....Respondents

REPLY FILED BY THE 5TH RESPONDNET

H.Yasmeen Ali,

Counsel for the 5th Respondent