

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA
ORIGINAL APPLICATION NO. 133 OF 2024 / EZ
(Earlier OA No.511/2024/PB)**

News Item titled "No crops, no brides:
How rising seas are killing India's
Coastal villages" appearing in
The Guardian dated 11.03.2024 ...Applicant

VERSUS

State of Odisha & Others ...Respondents

INDEX

Sl. No.	Description of the documents	Page Nos.
1.	Affidavit.	1-8
2.	Photocopy of the order dtd.10.05.2024 of the Hon'ble NGT, PB in OA No.511/2024. (ANNEXURE – R3/1)	9-12
3.	Photocopy of the the fact finding report submitted by the inspecting officers. (ANNEXURE – R3/2)	13-17
4.	Photocopy 4 nos. of Analysis Reports (2 for tube wells and 2 for pond water). (ANNEXURE – R3/3 Colly)	18-24

5.	Photocopy of the opinion submitted by the Chief Environmental Scientist and Addl. Chief Environmental Scientist of the Central Laboratory on water quality test reports pertaining to tube wells. (ANNEXURE – R3/4)	26
6.	Photocopy of the letter letter No.9729 dtd.28.06.2024 along with the Test Report of soil samples collected from agriculture land of villagers in Udayakani and Tandahar. (ANNEXURE – R3/5 Colly)	27-28

SPCB Odisha, R.No.3

Through

Kolkata

Date:

Sri Dipanjan Ghosh,
Advocates for the Respondent No.3
(State Pollution Control Board, Odisha)
e-mail: dpnjnghsh0@gmail.com
Phone No.:9903080977

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA
ORIGINAL APPLICATION NO. 133 OF 2024 / EZ
(Earlier OA No.511/2024/PB)**

28 AUG 2024

News Item titled "No crops, no brides:
How rising seas are killing India's
Coastal villages" appearing in
The Guardian dated 11.03.2024

...Applicant

VERSUS

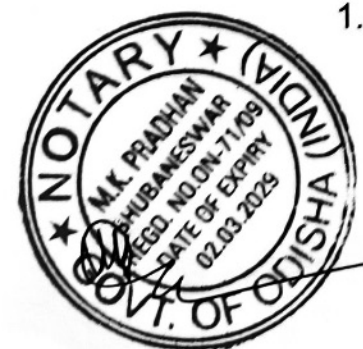
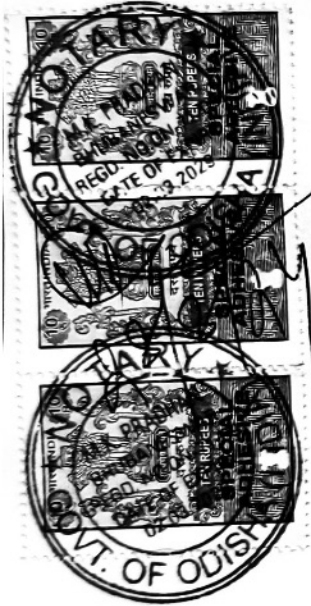
State of Odisha & Others

...Respondents

**AFFIDAVIT ON BEHALF OF THE STATE
POLLUTION CONTROL BOARD, ODISHA,
RESPONDENT NO.3**

I, Dr. Kailasam Murugesan, IFS, son of late Paramasivam Kailasam aged around 56 years, at present working as Member Secretary, State Pollution Control Board, having my office at Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, P.O. Nayapalli, Bhubaneswar, Dist – Khurda, Odisha-751012, do hereby solemnly affirm and state as under:

1. That I am the Member Secretary of the Respondent No.3 Board and, as such, am well-acquainted with the facts

and circumstances with the case and competent to swear this affidavit.

2. That I have gone through the OA and understood the contents thereof.
3. That the Hon'ble NGT, PB, New Delhi suo motu on the basis of the news item has registered a case vide OA No.511/2024/PB and in their order dtd.10.05.2024 impleaded various authorities including this Board as party respondents. This Board through its Member Secretary has been impleaded as R-3. Further, in the order, it has been directed to transfer this OA to the EZB, Kolkata to be listed on 16.07.2024. Copy of order dtd.10.05.2024 in OA No.511/2024 is annexed to this affidavit and marked as ANNEXURE – R3/1.
4. That the matter was transferred to the EZB, Kolkata and renumbered as OA No.133/2024/EZ, which was taken up for hearing on 16.07.2024 and adjourned to 02.09.2024.
5. That the officials of Regional Office, Bhubaneswar of the R-3 Board namely Dr.R.K.Mishra, the then Sr.Env.Scientist and Er.S.N.Mohanty, Dy.Env.Engineer




have inspected the alleged site i.e. Udayakani and Tandahar of Astarang block in the district of Puri on dtd.19.06.2024 in order to verify the allegations raised in the news item published in The Guardian. After verifying the allegations raised in the news item, they have submitted their report with some remarks / opinion. Copy of the fact finding report submitted by the inspecting officers is annexed to this affidavit and marked as **ANNEXURE – R3/2.**

6. That it is further humbly submitted that during inspection the inspecting officers have collected samples from the tube wells as well as ponds and submitted the same to the Central Laboratory for analysis. The test report No.OS/524/06/2024 dtd.25.06.2024 and No.OS/525/06/2024 dtd.25.06.2024 are pertaining to tube well samples from village Udayakani, Astarang Block, Dist- Puri. The report No.OS/526/06/2024 dtd.25.06.2024 and No.OS/527/06/2024 dtd.25.06.2024 are relating to pond water of Tandahara village of Astarang Block. The Chief Environmental Scientist and Addl. Chief Environmental Scientist of the Central



Laboratory after analysing both samples pertaining to tube wells have also submitted their opinion on the said two reports. The relevant portion of the same is extracted below:

Opinion: Such non-conformance with respect to Total Dissolved Solids (TDS), Total Alkalinity, Total Hardness (TH), Chloride and Magnesium in ground water may be due to the intrusion of saline water as the above cited locations which are near to sea beach (within 1 -2 km). As these parameters are not conforming even to the permissible limit in absence of alternate source, such sources are not meeting the drinking water specification of water and hence make those unsuitable for drinking purpose.



Copies of 4 nos. of Analysis Reports (2 for tube wells and 2 for pond water) referred above and the opinion submitted by the Chief Environmental Scientist and Addl. Chief Environmental Scientist of the Central



Laboratory on water quality test reports pertaining to tube wells are annexed to this affidavit and marked as **ANNEXURE – R3/3 Colly** and **ANNEXURE – R3/4** respectively.

7. That the inspecting officers have also collected soil samples from agricultural land of villagers in Udayakani and Tandahar and submitted to the Central Laboratory for analysis. After analysis, the report No.SW/18/06/2024 dtd.27.06.2024 has been forwarded by the Chief Environmental Scientist (Soil & HW and Bio-Lab), Central Laboratory to the Regional Officer, Bhubaneswar of this Board vide his letter No.9729 dtd.28.06.2024. Copy of the said letter along with the Test Report is annexed to this affidavit and marked as **ANNEXURE – R3/5 Colly**.

8. That the Respondent No.3 Board craves the leave of this Hon'ble Tribunal to file further affidavit if necessary for effective adjudication of this case.
9. That the annexures annexed to the present affidavit are true and correct copies of their originals.



MANJULA KUMAR PRADHAN
NOTARY PUBLIC
BHUBANESWAR
REGD.NO.ON-71/2009
PH-9437627119 (M)

28/08/24

10. That the contents of the above paragraphs are true and correct to the best of my knowledge, as derived from the official records, and that nothing material has been concealed therefrom.


DEPONENT
Member Secretary
State Pollution Control Board
Odisha, Bhubaneswar

VERIFICATION:


I, the above named deponent, do hereby verify that the contents of the above affidavit are true and correct to the best of my knowledge, as derived from official records, and that nothing material has been concealed therefrom.

Verified at Bhubaneswar on this the 28th day of August, 2024.

SWORN BEFORE ME



MANJULA KUMAR PRADHAN
NOTARY PUBLIC
BHUBANESWAR
REGD.NO.ON-71/2009
PH-9437627119 (M)


DEPONENT
Member Secretary
Pollution Control Board
Odisha, Bhubaneswar

28/08/24

ANNEXURE-R3/1

Item No.02

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 511/2024

News Item titled “No crops, no brides: how rising seas are killing India’s coastal villages” appearing in The Guardian dated 11.03.2024

Date of hearing: 10.05.2024

**CORAM: HON’BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON’BLE DR. A. SENTHIL VEL, EXPERT MEMBER**

ORDER

1. This Original Application is registered *suo-motu* on the basis of the news item titled “No crops, no brides: how rising seas are killing India’s coastal villages” appearing in The Guardian dated 11.03.2024.

2. The matter relates to the salinisation of farmland in Udaykani village in Odisha resulting in loss of livelihood, agricultural land and even marriage prospects as brides refuse to marry and move to areas where they see no future. As per the article, there has been no wedding in Udaykani since the last decade.

3. The article states that Udaykani, along with neighbouring Tandahar village, was hit hard by a super-cyclone, the most intense ever recorded in the northern Indian Ocean that lashed the state 25 years ago. Along with the growing environmental volatility of the Bay of Bengal over the years, it has meant a rise in soil and water salinity resulting in loss of livelihood and farmland and shriveling of crops upon the soil turning salty. It further alleges that the increasing salinity also makes the water undrinkable, forcing the residents of the area to barter their grain or oil for drinkable water from areas almost 10 miles away. Most of the youngsters have left the village and moved to cities for employment

and marriage prospects. The article states that Udaykani and the other nearby villages once had wells, aquifers that were replenished and boreholes for irrigation but repeated cyclones damaged all of them, rendering the groundwater saline. Since then, villagers have relied on rain-fed agriculture, with the major crop being rice. This means the harvest and revenue vary from year to year depending on the rainfall and soil condition.

4. The article quotes that with its 4,700-mile (7,500km) coastline, the Indian subcontinent is exposed to nearly 10% of the world's cyclones, according to India's National Disaster Management Authority. Most form over the Bay of Bengal and strike the eastern coast. The Bay of Bengal records four times as many cyclones as the Arabian Sea on India's western coast. Odisha state has recorded 28% erosion along its 280-mile coastline.

5. The salinisation of farmland is one of the most pressing environmental concerns. According to a study by the UN Food and Agriculture Organization more than 833m hectares of soil worldwide are already salt-affected, as is 10% of farmland, while some estimates suggest high salinity affects a third of irrigated agricultural land, with the figure increasing by 10% a year.

6. One of the major reasons for salinization of the coastal land in Odisha is on account of sea level rise due to climate change.

7. The above article highlights serious consequences on the environment and human life. Such adverse impacts are irreversible and can lead to disastrous consequences which cannot be rectified. Hence there is an immediate need to enforce adaptation measures and restoration measures to save guard the life and livelihood of coastal

communities. India has launched coastal mission but no serious efforts have been undertaken or implemented on the ground.

8. The news item raises substantial issue relating to compliance of the environmental norms and implementation of the provisions of scheduled enactment.

9. Power of the Tribunal to take up the matter *suo-motu* has been recognized by the Hon'ble Supreme Court in the matter of "*Municipal Corporation of Greater Mumbai vs. Ankita Sinha & Ors.*" reported in 2021 SCC Online SC 897.

10. Hence, we implead following as respondents in this matter:

- (i) National Coastal Zone Management Authority, through its Chairman, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi – 110 003
- (ii) Central Pollution Control Board, through its Member Secretary, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
- (iii) Odisha State Pollution Control Board, through its Member Secretary, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII, Bhubaneshwar – 751 012
- (iv) Ministry of Environment, Forest and Climate Change, through the Secretary, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi – 110 003

11. Let notice be issued to the above Respondents for filing their response before the appropriate bench of the Tribunal.

12. Since the matter relates to the Eastern Zonal Bench, Kolkata, therefore, OA is transferred to the Eastern Zonal Bench for appropriate

further action. Office is directed to transfer the original record of the OA to Eastern Zonal Bench, Kolkata.

13. List before Eastern Zonal Bench at Kolkata on 16.07.2024.

Prakash Shrivastava, CP

Dr. A. Senthil Vel, EM

May 10, 2024
Original Application No. 511/2024
AS.

ANNEXURE-R3/2

Fact finding report w.r.t. Hon'ble NGT O.A. No. 511/2024/PB-NewsItem titled "No Crops, no brides, and how rising sea are killing India Coastal Villages" appearing in "The Guardian dtd.11.03.2024"

Pramafacie of the inspection :-

The inspection was conducted by the undersigned Board Officials of Regional Office, SPC Board, Odisha, Bhubaneswar i.e. by Dr. R.K. Mishra, Sr. Env. Scientist and Er. S.N. Mohanty, Dy. Env. Engineer on 19th June, 2024 basing upon the direction through letter received from the Member Secretary, SPC Board, Bhubaneswar, Odisha vide No.8095, dtd.01.06.2024 and the same was received/recorded in Regional Office on dtd. 04.06.2024. Along with the above cited letter the copy aforesaid e-mail along with copy of the Order dtd. 10.05.2024 of the Hon'ble NGT PB, New Delhi and copy of News items that has been received/ annexed for obtaining basis informations about details of the grievances put forth by the petitioner over the issues viz:- "No Crops, no bride and rising Sea are killing Indian Coastal Villages.

Facts those have been cited in above O.A. :-

- a) The Original application has been registered "Suo Moto" on the basis of the news items that was appeared in "The Guardian" on dtd. 11.03.2024.
- b) The matter relates to the saline condition of framing lands and those which are existing within Udaykani along with neighbouring Village Tandahar under Astharanga (Block-cum-Tahasil) of Puri District, Odisha.
- c) Due to high saline conditions the framing land along with drinking water source have resulted loss of livelihood, agricultural practices and as a whole no bride (Girls of nearby different areas are not being agreed to get marry to the boys of in these Villages since last decade).
- d) Since 25 years back those areas were severely affected due to super cyclone which are existing at very proximity of Bay of Bengal and that had resulted loss of livelihood, framing land and Ground water sources have been turned into the saline.
- e) Crop production in those areas have been decreasing day-by-day and drinking water sources (i.e. Bore well/ Tube well water) are becoming miserable. These villagers are getting their drinking water facility from far off sources with help of mobile tanker.
- f) Most of the youngsters have left the village and moved to cities for employment and marriage prospect.
- g) The village Udykani and other nearby villages once had well, aquifers those were replenished and bore well for irrigation but repeated cyclone has damaged all of them rendering the ground water into saline conditions

and on the whole as the rice is the major crops in that issues the villagers are mostly depending upon rainfall pattern and soil condition.

- h) The above cited issues pin points the serious consequences in the Env. Condition of those areas and human life of AstharangaTahasil Under Puri Dist. Odisha.

⇒ **Main reason of the issues Highlighted in the Case:-**

The major reason for salinization of Costal Farming Land in Odisha is mostly due to the Sea level rise w.r.t. impact of climate change since some years back.

⇒ **Brief information about the site visit /inspection:-**

On the above cited case the SPC Board Odisha is Respondent No.03. To obtained the information-cum-feedback the areas in the issue were visited on 19.06.2024 by the Officials of Regional Office, Bhubaneswar i.e. Dr. R.K. Mishra, Sr. Env. Scientist & Er. S.N. Mohanty, Dy. Env. Engineer During visit to the sites some local people were meet from both the villages and ascertained about their issues. Everybody from both the villages had opined about those have been dug at various location within village areas.

⇒ **Following are the observations during site visit:-**

- a) Within both the villages they are existing 4-5 k.m. away distance on the village road site.
- b) Both the areas are at close proximity i.e. within 3-4 k.m. radius of Sea Coast.
- c) River Prachi and Keluni are falling into Sea of i.e. Bay of Bengal under AstharangaTahasil of Puri Dist. within some distance away from the two habitation.
- d) Many a people of both the village have dug Tube well within their premises/plot or so to say nearby to their residential plots but everywhere there was sweet water and more or less saline in test.
- e) People had informed that after the said issue was highlighted every day the District Administration i.e. Tehesil and Block Development Office is providing drinking water supply with help of mobile Tanker door to door once in a day.
- f) In both the village 60-70 number of puccka houses/buildings are present and approx. 400 to 500 populations.

- g) Nearby to both the villages barren Agricultural Lands are present.
- h) The local people are of the opinion that the paddy production has been decreased year after year since super cyclone.
- i) As per Information on the day of inspection gathered the time of super cyclone entire areas were inundated with over flow of sea water.
- j) During the course of discussion with some elderly people they had expressed that for their sons they are not getting bride for marriage since 10 years back from nearby local areas. Some employed young boys are getting married at far of places and not coming to the village regularly due to drinking water problem.
- k) People are not getting irrigated water for farming purpose due to saline problem. Whereas the year mostly depending upon rain water only during monsoon season.
- l) People of both the village they are mostly using the Tube well water for bathing purpose and cleaning of utensils, Cloths and as well as for Toilet purpose. In very hard case they are forcibly taking the tube well water for drinking and cooking purpose.

Details of the Tube well sampling along with one pond water to ascertain about the water quality status of both the areas concerned:-

- a) During the day of visit to sites selectivity Tube well water sample were collected from 08 different locations of both the saline water affected villages of Udayallani & Tandahar (Details of the sampling locations are annexed and cited in Analysis report along with one Pond water sample from Tandahar to know the surface water quality.
- b) These Tube well samples have been tested in the Central Lab. of SPC Board, Odisha by selecting some major drinking water parameters viz;- PH, Electrical Conductivity, Total Dissolved Solid, Boron, Hardness (Total Calcium and Magnesium), Chloride Sodium, Pottasium, Alkalinity, sodium, Absorption ratio, Percent Sodium The A/R is Annexed-I) .
- c) Besides that from both the villages soil samples were collected at 04 different Agricultural Field and has been tested in Soil Lab(Central) of SPC Board, Odisha by considering the Parameters like PH, Salinity, Nitrate, Phosphate (**Details of sampling site and Analysis Report is Annexed-II**)

Opinion/Remark of the SPC Board:-

- a) Remark of Central Lab, SPCB on the A/R (tube well sample those were collected on the day of visit to the site by the Board Officials) is enclosed for information of Hon'ble NGT (Copy Annexed):-

In Gist the water quality report reveals that all the borewell water those have been collected as saline in nature.

- b) Since Board has no expertise to draw a concluding remark over productivity/yielding status of Agricultural Field (Farming Land) of the above cited areas the Hon'ble Tribunal may like to forward the issues to the concern Department as follows:-

- i. Authority of Central Ground Water Board, Bhubaneswar (Odisha) and to the Registrar of Odisha University of Agricultural & Technology(OUAT), Bhubaneswar to go for detail study and survey with the help Officials of local Administration i.e. District Administration of Puri (Odisha) so as to obtain their expert opinion in that regard as SPCB, Odisha cannot provide full-fledged expert opinion in that regard i.e. how far the drinking water sources (Bore well or Tube well) are not fit for the purpose due to salinity problem and whether the Agricultural Field of these saline affected areas have lost their yielding/ harvesting capacity after super cyclone.
- ii. To overcome the plight of those areas w.r.t. supply of drinking water facility if agreed the Hon'ble Tribunal may direct the District Administration of Puri (Govt. of Odisha) so that a mega water supply project may be taken up on war footing measures so that one over Head Tank of adequate capacity may be set-up at a suitable location to the nearby river site of Puri District if possible or a borewell facility to be provided at a suitable sweet water zone area at a close proximity to draw sweet water followed by primary treatment like bleaching action and to be stored in the overhead tank before its supply to the above cited two villages through underground pipe network and stand post at different locations within these saline affected villages.
- iii. So as to mitigate the drinking water problem in the areas concerned in that regard the Hon'ble Tribunal may like to direct the Govt. of Odisha, Department like District Administration, Puri General Manager WATCO, Puri, Engineer in Chief (EIC) PHD, Bhubaneswar, Director of CGWB, BBSR so that a time bound comprehensive action plan to be taken up in that regard. Before that let the Central Ground Water Board Authority, Bhubaneswar may be directed to go for a detail survey of the area and submit the

report/about salinity status of ground water to Hon'ble Tribunal within specific time period so that a comprehensive action plan can be initiated with the formation of expert committee to take up further action.

- iv. To draw a clear concept about the yielding/harvesting capacity of the saline affected farming land as has been cited in the (O.A.), likewise a committee may be framed by taking a Officials of District Administration, Puri, concerned agriculture officer of that area, expert members from OUAT, Bhubaneswar. So that representative soil sample may be collected for necessary analysis in the OUAT laboratory and their expert committee reply may be sought w.r.t suitability of agricultural practices in those saline affected areas.



Er. S.N. Mohanty,
Dy.Env. Engineer



Dr. R.K. Mishra,
Sr.Env. Scientist



CENTRAL LABORATORY
STATE POLLUTION CONTROL BOARD, ODISHA
 Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,
 Bhubaneswar - 751 024

E-mail: centrallab@ospcbboard.org

OSPCB/CNL/F0718



TEST REPORT

Page 1 of 3

1. ULR No. : TC127402400000367F
- 2 (i). Report No. : OS/524/06/2024
- 3 (i) Date : 25.06.2024
- 2(ii). Amendment No : ---
- 3(ii) Amendment Date : ---
4. Sample Submitted By : Dr. R.K. Mishra, SES,
(Name and address) Regional Office, SPCB, Odisha, Bhubaneswar
5. Reference Letter No. : Nil
6. Date of sample receipt : 20.06.2024
7. Sample Description :
 - (i) Discipline : Chemical Testing
(Biological Testing, Chemical testing)
 - (ii) Group : Water
(Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)
 - (iii) Sub Group : Ground water
(Surface water/ Ground water/ Drinking water / Wastewater/ Effluent/ Ambient Air/ Stack/ Soil and Hazardous Waste)
8. Analysis Starting Date-Analysis Completion Date : 20.06.2024 – 24.06.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :
(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Tube well samples from village Udayakani, Astaranga Block, Dist : Puri			
		IS : 10500 (2012) *			Others/Jun-24/GW/932	Others/Jun-24/GW/933	Others/Jun-24/GW/934	Others/Jun-24/GW/935
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Tube well near Sri Govinda Pradhan Residence	Tube well near Sri Benudhar Kandi Residence	Tube well near Sri Dhobel Pradhan Residence	Tube well near Sri Jagannath Kandi Residence
Results								
1.	pH	6.5-8.5	No relaxation	4500-H ⁺ -B, APHA, 23 rd Edn., 2017	7.1	6.9	7.1	7.8
2.	Electrical Conductivity (EC), $\mu\text{S}/\text{cm}$	-	-	2510 B, APHA 23 rd Edn., 2017	5010.0	3530.0	6120.0	8280.0
3.	Total Dissolved Solids (TDS), mg/L	500, max	2000, max	2540 C, APHA, 23 rd Edn., 2017	3560.0	2296.0	4580.0	6020.0
4.	Boron (as B), mg/L	0.5, max	2.4, max	4500 B-B, APHA, 23 rd Edn., 2017	0.641	0.357	0.468	0.875
5.	Total Hardness (TH), as CaCO ₃ , mg/L	200, max	600, max	2340 C, APHA, 23 rd Edn., 2017	680.0	700.0	760.0	880.0
6.	Calcium Hardness (CaH) as CaCO ₃ , mg/L	-	-	3500-Ca-B, APHA, 23 rd Edn., 2017	300.0	260.0	240.0	240.0
7.	Calcium (as Ca), mg/L	75, max	200, max		120.2	104.2	96.2	96.2
8.	Magnesium Hardness (MgH) as CaCO ₃ , mg/L	-	-	3500-Mg-B, APHA, 23 rd Edn., 2017	380.0	440.0	520.0	640.0
9.	Magnesium (as Mg), mg/L	30, max	100, max		92.3	106.9	126.4	155.5

Patrole
25.6.2024

D. Anand
25/6/24

(Cont..)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Tube well samples from village Udayakani, Astaranga Block, Dist : Puri			
		IS : 10500 (2012) *			Others/Jun-24/GW/932	Others/Jun-24/GW/933	Others/Jun-24/GW/934	Others/Jun-24/GW/935
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Tube well near Sri Govinda Pradhan Residence	Tube well near Sri Benudhar Kandi Residence	Tube well near Sri Dhobei Pradhan Residence	Tube well near Sri Jagannath Kandi Residence
					Results			
10.	Chloride (as Cl ⁻), mg/L	250, max	1000, max	4500 Cl ⁻ B, APHA, 23 rd Edn., 2017	1771.4	1146.2	2396.6	333.4
11.	Sodium (Na), mg/L	-	-	3500-Na B, APHA APHA 23 rd Edn., 2017	1056.0	573.0	1388.5	1922.5
12.	Potassium (K), mg/L	-	-	3500 K -B, APHA 23 rd Edn., 2017	53.0	36.0	46.0	95.0
13.	Sulphate (as SO ₄ ²⁻), mg/L	200, max	400, max	4500-SO ₄ ²⁻ - E, APHA, 23 rd Edn., 2017	167.0	111.5	183.5	149.0
14.	Total Alkalinity, mg/L	200, max	600, max	2320 B, APHA, 23 rd Edn., 2017	460.0	324.0	328.0	408.0
15.	P. Alkalinity, mg/L	-	-		<5.0	<5.0	<5.0	<5.0

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Tube well samples from village Tandahar, Astaranga Block, Dist : Puri			
		IS : 10500 (2012) *			Others/Jun-24/GW/936	Others/Jun-24/GW/937	Others/Jun-24/GW/938	Others/Jun-24/GW/939
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Tube well in front of Gram Debati & Shiva Temple .	Tube well at Sri Ramesh Padhi Residence	Tube well near Sri Basudev Swain Residence	Tube well near Tapoi Sahoo Residence
					Results			
1.	pH	6.5-8.5	No relaxation	4500-H ⁺ -B, APHA, 23 rd Edn., 2017	7.3	7.1	7.3	7.1
2.	Electrical Conductivity (EC), µS/cm	-	-	2510 B, APHA 23 rd Edn., 2017	3770.0	2100.0	4180.0	4150.0
3.	Total Dissolved Solids (TDS), mg/L	500, max	2000, max	2540 C, APHA, 23 rd Edn., 2017	2380.0	1320.0	2890.0	2560.0
4.	Boron (as B), mg/L	0.5, max	2.4, max	4500 B-B, APHA, 23 rd Edn., 2017	0.302	0.277	0.231	0.253
5.	Total Hardness (TH) as CaCO ₃ , mg/L	200, max	600, max	2340 C, APHA, 23 rd Edn., 2017	440.0	440.0	620.0	700.0
6.	Calcium Hardness (CaH) as CaCO ₃ , mg/L	-	-	3500-Ca-B, APHA, 23 rd Edn., 2017	240.0	180.0	200.0	280.0
7.	Calcium (as Ca), mg/L	75, max	200, max		96.2	72.1	80.2	112.2

Upadku
25.6.2024

N. MATHANU
25/6/24

(Cont..)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Tube well samples from village Tandahar, Astaranga Block, Dist : Puri			
		IS : 10500 (2012) *			Others/Jun-24/GW/936	Others/Jun-24/GW/937	Others/Jun-24/GW/938	Others/Jun-24/GW/939
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Tube well in front of Gram Debatl & Shiva Temple .	Tube well at Sri Ramesh Padhi Residence	Tube well near Sri Basudev Swain Residence	Tube well near Tapoi Sahoo Residence
8.	Magnesium Hardness (MgH) as CaCO ₃ , mg/L	-	-	3500 -Mg-B, APHA, 23 rd Edn., 2017	200.0	260.0	420.0	420.0
9.	Magnesium (as Mg), mg/L	30, max	100, max	3500 -Mg-B, APHA, 23 rd Edn., 2017	48.6	63.2	102.1	102.1
10.	Chloride (as Cl ⁻), mg/L	250, max	1000, max	4500 Cl ⁻ B, APHA, 23 rd Edn., 2017	1042.0	521.0	1354.6	1146.2
11.	Sodium (Na), mg/L	-	-	3500-Na B, APHA 23 rd Edn., 2017	535.0	292.0	731.0	429.5
12.	Potassium (K), mg/L	-	-	3500 K -B, APHA 23 rd Edn., 2017	249.0	21.5	130.5	340.5
13.	Sulphate (as SO ₄ ²⁻), mg/L	200, max	400, max	4500-SO ₄ ²⁻ -E, APHA, 23 rd Edn., 2017	172.0	92.0	132.0	169.0
14.	Total Alkalinity, mg/L	200, max	600, max	2320 B, APHA, 23 rd Edn., 2017	328.0	344.0	408.0	344.0
15.	P. Alkalinity, mg/L	-	-		<5.0	<5.0	<5.0	<5.0

* Drinking water specification, IS : 10500 (2012) and it's amendment no.2, September, 2018

11. Deviation from Test Method , if any :

12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No
If Yes,

(a) Date of Sampling : (b) Method Used* :
(c) Name of Sampler with Designation :

-----End of Test Report-----

Usharani Patnaik
25.6.2024
Authorised Signatory
(Water/wastewater)

(Dr. (Mrs)Usharani Patnaik, Addl. Chief Env. Scientist)

Niranjan Mallick
25/6/24
Board Analyst

(Mr. Niranjan Mallick, Chief Env. Scientist)

Note :

- The results stated above relate only to the items tested.
- This report shall not be reproduced in full or in part without written approval from the In-charge of the Central Laboratory.
- The laboratory is not responsible for the authenticity of photocopied Test Reports.
- The Test Item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by applicable Regulation.

Head Office: State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar - 751 012, FAX : 2562822/2560955
TEL: 2564033/2563294 EPABX: 2561909/2562847, E-mail : paribesh1@ospboard.org Website : www.ospboard.org



CENTRAL LABORATORY STATE POLLUTION CONTROL BOARD, ODISHA

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,
Bhubaneswar - 751 024

E-mail: centrallab@ospboard.org

TEST REPORT

Page 1 of 2

1. ULR No. : -----
- 2 (i) Report No. : OS/525/06/2024
- 3 (i) Date : 25.06.2024
- 2(ii). Amendment No : ---
- 3(ii). Amendment Date : ---
4. Sample Submitted By : Dr. R.K. Mishra, SES,
(Name and address) Regional Office, SPCB, Odisha, Bhubaneswar
5. Reference Letter No. : Nil
6. Date of sample receipt : 20.06.2024
7. Sample Description :
 - (i) Discipline : Chemical Testing
(Biological Testing, Chemical testing)
 - (ii) Group : Water
(Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)
 - (iii) Sub Group : Ground water
(Surface water/ Ground water/ Drinking water / Wastewater / Effluent/ Ambient Air / Stack/ Soil and Hazardous Waste)
8. Analysis Starting Date-Analysis Completion Date : 20.06.2024 – 24.06.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :
(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Tube well samples from village Udayakani, Astaranga Block, Dist : Puri			
		IS : 10500 (2012) *			Others/Jun-24/GW/932	Others/Jun-24/GW/933	Others/Jun-24/GW/934	Others/Jun-24/GW/935
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Tube well near Sri Govinda Pradhan Residence	Tube well near Sri Benudhar Kandi Residence	Tube well near Sri Dhobei Pradhan Residence	Tube well near Sri Jagannath Kandi Residence
					Results			
1.	Salinity, P.S.U.	-	-	2520 B, APHA, 23 rd Edn., 2017	2.69	1.84	3.35	4.65
2.	Sodium Absorption Ratio (SAR)	-	-	IS : 2296 (1982,	17.61	9.42	21.90	28.18
3.	Percent Sodium (% Na)	-	-	IS : 2296 (1982)	75.43	62.54	78.66	80.67

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Tube well samples from village Tandahar, Astharanga Block, Dist : Puri			
		IS : 10500 (2012) *			Others/Jun-24/GW/936	Others/Jun-24/GW/937	Others/Jun-24/GW/938	Others/Jun-24/GW/939
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Tube well in front of Gram Debatl & Shiva Temple .	Tube well at Sri Ramesh Padhi Residence	Tube well near Sri Basudev Swain Residence	Tube well near Tapoi Sahoo Residence
					Results			
1.	Salinity, P.S.U.	-	-	2520 B, APHA, 23 rd Edn., 2017	1.98	1.05	2.21	2.19
2.	Sodium Absorption Ratio (SAR)	-	-	IS : 2296 (1982,	11.09	6.05	12.76	7.06
3.	Percent Sodium (% Na)	-	-	IS : 2296 (1982)	60.53	57.59	66.88	45.13

* Drinking water specification, IS : 10500 (2012)

Ratna
25.6.2024

M. Anand
25/6/24

(Cont..)



11. Deviation from Test Method , if any :
 12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No
 If Yes, (a) Date of Sampling : (b) Method Used* :
 (c) Name of Sampler with Designation

-----End of Test Report-----

Usharani Patnaik
25-6-2024

Authorised Signatory
 (Water/wastewater)
 (Dr. (Mrs)Usharani Patnaik, Addl. Chief Env. Scientist)

Niranjan Mallick
 Board Analyst

(Mr. Niranjan Mallick, Chief Env. Scientist)

Note :

- (i) The results stated above relate only to the items tested.
 (ii) This report shall not be reproduced in full or in part without written approval from the In-charge of the Central Laboratory.
 (iii) The laboratory is not responsible for the authenticity of photocopied Test Reports.
 (iv) The Test Item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by applicable Regulation.

Head Office: State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar - 751 012, FAX : 2562822/2560955
 TEL: 2564033/2563294 EPABX: 2561909/2562847, E-mail: paribesh1@ospcboard.org Website : www.ospcboard.org



OSPCB/CNL/F0718

CENTRAL LABORATORY STATE POLLUTION CONTROL BOARD, ODISHA

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,
Bhubaneswar - 751 024

E-mail: centrallab@ospceboard.org



TC-12740

TEST REPORT

Page 1 of 2

1. ULR No. : TC127402400000368F
- 2 (i). Report No. : OS/526/06/2024
- 3 (i) Date : 25.06.2024
- 2(ii). Amendment No : ---
- 3(ii) Amendment Date : ---
4. Sample Submitted By : Dr. R.K. Mishra, SES,
(Name and address) Regional Office, SPCB, Odisha, Bhubaneswar
5. Reference Letter No. : Nil
6. Date of sample receipt : 20.06.2024
7. Sample Description :
 - (i) Discipline : Chemical Testing
(Biological Testing,
Chemical testing)
 - (ii) Group : Water
(Water/ Pollution and Environment
/ Atmospheric Pollution/ Soil and
Hazardous Waste)
 - (iii) Sub Group : Surface water
(Surface water/ Ground water/ Drinking
water / Wastewater/ Effluent/ Ambient Air/
Stack/ Soil and Hazardous Waste)
8. Analysis Starting Date-Analysis Completion Date : 20.06.2024 – 24.06.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :

(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Pond water of Tandahara village, Astaranga Block, Dist : Puri
		IS : 2296, (1982) Class -B*	G.S.R.742 (B)**		
					Results
1.	pH	6.5-8.5	6.5-8.5	4500-H ⁺ -B, APHA, 23 rd Edn., 2017	8.4
2.	Electrical Conductivity (EC), $\mu\text{S}/\text{cm}$	-	-	2510 B, APHA 23 rd Edn., 2017	1890.0
3.	Total Dissolved Solids (TDS), mg/L	-	-	2540 C, APHA, 23 rd Edn., 2017	1220.0
4.	Boron (as B), mg/L	-	-	4500 B-B, APHA, 23 rd Edn., 2017	0.29
5.	Total Hardness (TH), as CaCO_3 , mg/L	-	-	2340 C, APHA, 23 rd Edn., 2017	220.0
6.	Calcium Hardness (CaH) as CaCO_3 , mg/L	-	-	3500-Ca-B, APHA, 23 rd Edn., 2017	120.0
7.	Calcium (as Ca), mg/L	-	-		48.1
8.	Magnesium Hardness (MgH) as CaCO_3 , mg/L	-	-	3500-Mg-B, APHA, 23 rd Edn., 2017	100.0
9.	Magnesium (as Mg), mg/L	-	-		24.3
10.	Chloride (as Cl ⁻), mg/L	-	-	4500 Cl ⁻ B, APHA, 23 rd Edn., 2017	625.2
11.	Sodium (Na), mg/L	-	-	3500-Na B, APHA APHA 23 rd Edn., 2017	348.0
12.	Potassium (K), mg/L	-	-	3500 K -B, APHA 23 rd Edn., 2017	41.0
13.	Sulphate (as SO_4^{2-}), mg/L	-	-	4500-SO ₄ ²⁻ -E, APHA, 23 rd Edn., 2017	18.1
14.	Total Alkalinity, mg/L	-	-		144.0
15.	P. Alkalinity, mg/L	-	-	2320 B, APHA, 23 rd Edn., 2017	8.0

* Tolerance limit for inland surface water subject to pollution (IS : 2296-1982), for Class 'B' (Outdoor bathing)

** Primary water quality criteria for bathing water (water used for organised outdoor bathing)

Leathia
25.6.2024

U. Mohanty
25/6/24 (Cont..)

11. Deviation from Test Method , if any :
12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No
If Yes,
- (a) Date of Sampling : (b) Method Used* :
- (c) Name of Sampler with Designation :

-----End of Test Report-----

Usharani Patnaik
25.6.2024
Authorised Signatory
(Water/wastewater)

(Dr. (Mrs)Usharani Patnaik, Addl. Chief Env. Scientist)

N. Mallick
25/6/24
Board Analyst

(Mr. Niranjana Mallick, Chief Env. Scientist)

Note :

- (i) The results stated above relate only to the items tested.
(ii) This report shall not be reproduced in full or in part without written approval from the In-charge of the Central Laboratory.
(iii) The laboratory is not responsible for the authenticity of photocopied Test Reports.
(iv) The Test Item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by applicable Regulation.

Head Office: State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar – 751 012, FAX : 2562822/2560955
TEL : 2564033/2563294 EPABX : 2561909/2562847, E-mail : paribesh1@ospboard.org Website : www.ospcboard.org



CENTRAL LABORATORY STATE POLLUTION CONTROL BOARD, ODISHA

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,
Bhubaneswar - 751 024

E-mail: centrallab@ospcboard.org

TEST REPORT

Page 1 of 1

1. ULR No. : -----
- 2 (i) . Report No. : OS/527/06/2024
- 3 (i) Date : 25.06.2024
- 2(ii). Amendment No : ---
- 3(ii). Amendment Date : ---
4. Sample Submitted By : Dr. R.K. Mishra, SES,
(Name and address) Regional Office, SPCB, Odisha, Bhubaneswar
5. Reference Letter No. : Nil
6. Date of sample receipt : 20.06.2024
7. Sample Description :

(i) Discipline : Chemical Testing (Biological Testing, Chemical testing)	(ii) Group : Water (Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)	(iii) Sub Group : Surface water (Surface water/ Ground water/ Drinking water / Wastewater / Effluent/ Ambient Air / Stack/ Soil and Hazardous Waste)
--	--	---
8. Analysis Starting Date-Analysis Completion Date : 20.06.2024 – 24.06.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :

(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Pond water of Tandahara village, Astaranga Block, Dist : Puri
		IS : 2296, (1982) Class -B*	G.S.R.742 (E)**		Others/Jun - 24/SW/940
					Pond water of Tandahara
					Results
1.	Salinity , P.S.U.	-	-	2520 B, APHA, 23 rd Edn., 2017	0.93
2.	Sodium Absorption Ratio (SAR)	-	-	IS : 2296 (1982,	10.20
3.	Percent Sodium (% Na)	-	-	IS : 2296 (1982)	73.52

* Tolerance limit for inland surface water subject to pollution (IS : 2296-1982), for Class 'B' (Outdoor bathing)

** Primary water quality criteria for bathing water (water used for organised outdoor bathing)

11. Deviation from Test Method , if any :
12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No
If Yes,
 - (a) Date of Sampling :
 - (b) Method Used* :
 - (c) Name of Sampler with Designation

-----End of Test Report-----

Usharani Patnaik
25.06.2024
Authorised Signatory
(Water/wastewater)

(Dr. (Mrs)Usharani Patnaik, Addl. Chief Env. Scientist)

Niranjan Mallick
25/6/24
Board Analyst

(Mr. Niranjan Mallick, Chief Env. Scientist)

Note :

- (i) The results stated above relate only to the items tested.
- (ii) This report shall not be reproduced in full or in part without written approval from the In-charge of the Central Laboratory.
- (iii) The laboratory is not responsible for the authenticity of photocopied Test Reports.
- (iv) The Test Item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by applicable Regulation.

ANNEXURE-R3/4

Opinion on water quality test report No. OS/524/06/2024 and OS/525/06/2024

Test Results of water samples collected from the four tube wells of village Udayakani and four tube wells of village Tandahar in Astaranga block of Puri district are given in OS/524/06/2024 and OS/525/06/2024 annexed herewith. To assess the ground water quality for its suitability as drinking water, comparison of the water quality has been made with respect to the drinking water specification (IS 10500 (2012) and its subsequent amendments.

Ground water quality of Udayakani Village

From the data it has been observed that the ground water quality of Udayakani Village at all monitoring stations did not conform to the acceptable limits with respect to Total Dissolved solids (TDS), Total alkalinity, Total Hardness (TH), Calcium, Magnesium and Chloride. Boron was observed to exceed the acceptable limit at two monitoring stations (Tube wells near Sri Govinda Pradhan residence and Sri Jagannath Kandi residence)

Further, ground water quality also did not conform to the Permissible limit in absence of alternate source, with respect to Total Dissolved solids (TDS) and Total Hardness (TH) at all four monitoring stations, whereas, with respect to Magnesium at three monitoring stations (Tube wells near Sri Benudhar Kandi residence, Sri Dhobei Pradhan residence and Sri Jagannath Kandi residence) and with respect to Chloride at three monitoring stations (Tube wells near Sri Benudhar Kandi residence, Sri Dhobei Pradhan residence and Sri Gobinda Pradhan residence).

Ground water quality of Tandahar Village

Ground water quality of Tandahar Village did not conform to the acceptable limits at all four monitoring stations with respect to Total Dissolved solids (TDS), Total Alkalinity, Total Hardness (TH), Chloride and Magnesium. Calcium was observed to exceed the acceptable limit at three monitoring stations (Tube wells in front of Gram Devati and Shiva temple, Sri Basudeva Swain residence and Sri Tapoi Sahoo residence).

Further, ground water quality also did not conform to the Permissible limit in absence of alternate source, with respect to Total Dissolved solids (TDS) and Chloride at three monitoring stations (Tube well in front of Gram Devati and Shiva temple, Sri Basudeva Swain residence and Sri Tapoi Sahoo residence).

Further, ground water quality did not conform to the Permissible limit in absence of alternate source, with respect to Total Hardness (TH) and Magnesium at two monitoring stations (Tube wells near Sri Basudeva Swain and Sri Tapoi Sahoo residence) and with respect to Chloride at three monitoring stations (Tube well in front of Grama Devati and Shiva temples, Sri Basudeva Swain and Sri Tapoi Sahoo residence).

Opinion

Such non-conformance with respect to Total Dissolved solids (TDS), Total Alkalinity, Total Hardness (TH), Chloride and Magnesium in ground water may be due to the intrusion of saline water as the above cited locations which are near to sea beach (within 1-2 Km). As these parameters are not conforming even to the Permissible limit in absence of alternate source, such sources are not meeting the drinking water specification of water and hence make those unsuitable for drinking purpose.

Udayakani
25.6.2024
Addl. Chief Env. Scientist
Central Laboratory
S.P.C. Board, Odisha

Udayakani
25.6.2024
Chief Env. Scientist
Central Laboratory

ANNEXURE-R3/5 Colly

FAX : 2562822/2560955
TEL : 2564033/2563294
EPABX : 2561909/2562847
E-mail : paribesh1@ospcboard.org
Website : www.ospcboard.org

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]

Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII,
Bhubaneswar – 751 012
(CENTRAL LABORATORY)

No. 9729 / VI-SC (LEM) MISC-155 /2024-25 Dt. 28/06/24

To

**The Regional Officer
SPCB, Odisha, Bhubaneswar**

Sub: Analysis Report of Soil sample collected from village Udayakani & Tandahar of Astaranga block, Dist-Puri

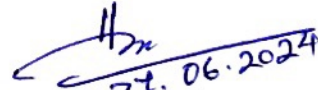
Ref: Your letter No. NIL dt.20.06.2024

Sir,

With reference to the above cited letter, please find enclosed herewith the analysis report for **04 nos.** of Soil sample for **04 nos.** of parameters submitted to the Central Laboratory on dt.20.06.2024 , collected from Village Udayakani & Tandahar of Astaranga block, Dist-Puri by Sri Dr.Rebatikanta Mishra, SES & Er. Soumendra Nath Mohanty, DEE.

Encl : SW/10/06/2024

Yours faithfully,


27.06.2024
**Chief Environment Scientist
(Soil & HW and Bio Lab)**



**CENTRAL LABORATORY
STATE POLLUTION CONTROL BOARD, ODISHA**

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,
Bhubaneswar - 751 024

E-mail: centrallab@ospboard.org

TEST REPORT

Page 1 of 2

1. ULR No. : -----
- 2(i). Report No. : SW/18/06/2024
- 3(i). Date : 27.06.2024
- 2 (ii). Amendment No : ---
- 3 (ii). Amendment Date : ---
4. Sample Submitted By : Dr. R.K Mishra, SES & Er.S.N. Mohanty, DEE
(Name and address) RO Bhubaneswar, SPCB, Odisha
5. Reference Letter No. : NIL dt.20.06.2024
6. Date of sample receipt : 20.06.2024
7. Sample Description :
 - (i) **Discipline** : Chemical Testing
(Biological Testing, Chemical testing)
 - (ii) **Group** : Soil and Hazardous waste
(Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)
 - (iii) **Sub Group** : Soil and Hazardous waste
(Surface water/ Ground water/ Wastewater Effluent/ Ambient Air/ Stack/ Soil and Hazardous Waste)
8. Analysis Starting Date-Analysis Completion Date : 20.06.2024 to 26.06.2024
9. If uncertainty is desired by Customer : No
10. Analysis Results :
(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Test Method	Soil sample collected from village Udayakani Astaranga ,Puri		Soil sample collected from village Tandahar Astaranga ,Puri	
			From Agr.land of Aparti Kandi	From Agr.land of Benudhar Kandi	From Agr.land of Chaitanya Padhi	From Agr.land of Bikram Sahu
			Others/June-24/SHW/97	Others/June-24/SHW/98	Others/June-24/SHW/99	Others/June-24/SHW/100
Analysis Result						
1.	pH (1:2.5 Ratio)	IS 2720 (P-26)1987 Reaffirmed 2016	5.74	6.94	6.26	6.24
2.	Salinity, ppt	By calculation from Chloride (A Text Book of Soil Analysis by T.C. Baruah and H.P. Barthakur) First Published 1997, Page No 217-218	0.724	0.893	0.511	30.66
3.	Nitrate, mg/kg	A Text Book of Soil Analysis by Baruah & Barthakur, Part 3, Page No 152-153	52.29	43.96	23.86	433.80
4.	Phosphate, mg/kg	CPCB Manual, Series: LATS/16/2002-03 (Chapter 5.13)	507.6	282.6	732.4	247.1

* All values are reported on dry weight basis

11. Deviation from Test Method, if any:
12. If Sampling Conducted by the Central Laboratory, Yes/ No. – No
If Yes,
 - (a) Date of Sampling :
 - (b) Method Used* :
 - (c) Name of Sampler with Designation :

18-

-----End of Test Report-----

Analysed by

Mamata Behera
27-06-2024

Board Analyst

Note :

- (i) The results stated above relate only to the items tested.
- (ii) This report shall not be reproduced in full or in part without written approval from the In-charge of the Central Laboratory.
- (iii) The laboratory is not responsible for the authenticity of photocopied Test Reports.
- (iv) The Test Item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by