

Annexure- I

TOR Letter



File No: SIA/8(b)/3127/2025

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment
Authority(SEIAA), BIHAR)



Dated: 25/12/2025



To,

Mr. Ravishankar Prasad Ravi
Bihar state road development corporation limited
RCD MECHANICAL WORKSHOP CAMPUS NEAR PATNA AIRPORT SHEIKHPURA , Patna,
PATNA, BIHAR, 800007
saketa.k2053@gov.in

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Development of J P Ganga Path Samagra Udhyan Project (Phase I) at Patna, Bihar by Bihar State Road Development Corporation (BSRDCL) submitted to SEIAA, Bihar vide proposal number SIA/BR/INFRA2/559428/2025 dated 25/11/2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B3813BR5131279N
(ii) File No.	SIA/8(b)/3127/2025
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	8(b) Townships/ Area Development Projects / Rehabilitation Centres
(vii) Name of Project	Development of J P Ganga Path Samagra Udhyan Project (Phase I) at Patna, Bihar by Bihar State Road Development Corporation (BSRDCL)
(viii) Name of Company/Organization	Bihar State Road Development Corporation Limited
(ix) Location of Project (District, State)	PATNA, BIHAR
(x) Issuing Authority	SEIAA, Bihar
(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the SEIAA, Bihar for an appraisal by the State Environment Impact Assessment Authority(SEIAA), Bihar is under the provision of EIA notification 2006 and its subsequent amendments.
4. The above-mentioned proposal has been considered by State Environment Impact Assessment Authority(SEIAA) Bihar in the meeting held on 19/12/2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
5. The SEIAA, Bihar in its meeting held on 19/12/2025, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of specific and general conditions as detailed in Annexure (2).
6. The SEIAA, Bihar has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC Committee hereby decided to grant Terms of Reference for instant proposal of M/s. Mr. Ravishankar Prasad Ravi under the provisions of EIA Notification, 2006 and as amended thereof.
7. The SEIAA, Bihar reserves the right to stipulate additional conditions, if found necessary.
8. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
9. This issues with the approval of the Competent Authority.

Annexure 2

Details of Products & By-products

Name of the product /By-product	Product / By-product	Quantity	Unit	Mode of Transport / Transmission	Remarks (eg. CAS number)
Area development of 175.1 ha land from Gandhi maidan to Digha on both side of J.P. Ganga Path	Area development of 175.1 ha land from Gandhi maidan to Digha on both side of J.P. Ganga Path	175.1	Hectares (Ha)	Combination of two or three modes	

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, BIHAR

F. No.:- SIA/8(b)/3127/2025

Sub: Proposed Development of J P Ganga Path Samagra Udhyan Project (Phase I) at Patna, Bihar by M/s Bihar State Road Development Corporation Limited (BSRDCL) at Mauza – Digha, Sabalpur, Rajapul, Mainpura, District – Patna, State – Bihar – Terms of Reference regarding.

Ref:

1. Online Application – SIA/BR/INFRA2/559428/2025.
2. Scrutiny fee submission dated 28-11-2025.
3. SEAC meeting held on 17-12-2025.
4. SEIAA meeting held on 19-12-2025 to 20-12-2025.

Sir,

This has reference to the online proposal submitted in the State Level Environment Impact Assessment Authority to prescribe the Terms of Reference (ToR) for undertaking detailed EIA study (under violation category) for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, you had submitted online information in the prescribed format (Form - I) along with a Form - I (A) & Conceptual Plan. The details of the proposal as described in the application are as follows:

1. **Online Proposal No.**

2. **File No.:**

3. **Name of the Proposal**

4. **Category of the Proposal:**

5. **Project/Activity applied for**

SIA/BR/INFRA2/559428/2025

SIA/8(b)/3127/2025

Proposed Development of J P Ganga Path Samagra Udhyan Project (Phase I) at Patna, Bihar by M/s Bihar State Road Development Corporation Limited (BSRDCL) at Mauza – Digha, Sabalpur, Rajapul, Mainpura, District – Patna, State – Bihar

B1

8(b) – Township and Area Development Project.

In this regard, under the provisions of the EIA Notification, 2006 as amended, the ToR for the purpose of preparing Environment Impact Assessment report and Environment Management Plan for obtaining prior Environmental Clearance is prescribed with Public Consultation as follows:-

A. STANDARD TERMS OF REFERENCE

1. Project Details

- a) Need and benefits of the project.
- b) Submit data for built-up area for each building, the use and occupancy classification in line with NBC 2016 also to be indicated [for differential functional requirements].
- c) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

2. Land Environment

- a) Examine details of land use as per Master Plan and land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images. Check on flood plain of any river.

3. Land acquisition and R&R

- a) Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/villages and present status of such activities.

4. Environmental Monitoring and Management

- a) Examine baseline environmental quality along with projected incremental load due to the project.
- b) Environmental data to be considered in relation to the project development would be (a) land, (b) groundwater, (c) surface water, (d) air, (e) bio-diversity, (f) noise and vibrations, (g) socio economic and health.
- c) Submit Roles and responsibility of the developer etc for compliance of environmental regulations under the provisions of E(P) Act.

- d) Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.
- e) Possible carbon footprint contribution from each activities and mitigation measures proposed shall be included as part of Environment Management Plan.

5. Drainage

- a) Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area. Any obstruction of the same by the project.

6. Forest

- a) Submit the details of the trees to be felled for the project, if any.
- b) Submit the present land use and permission required for any conversion such as forest, agriculture etc.

7. Water Environment

- a) Ground water classification as per the Central Ground Water Authority.

8. Water Management

- a) Examine the details of Source of water, water requirement, use of treated waste water and prepare a water balance chart.
- b) Rain water harvesting proposals should be made with due safeguards for ground water quality.
- c) Maximize recycling of water and utilization of rain water. Examine details.
- d) Examine soil characteristics and depth of ground water table for rainwater harvesting.
- e) Permission from CGWA for abstraction of groundwater, if any, including dewatering during basement excavation.

9. Waste Management

- a) Examine details of solid waste generation treatment and its disposal.



- b) Construction & Demolition Waste Management Plan shall be prepared as part of EMP providing details of demolition activities involved along with quantification and disposal mechanism.

10. Energy Requirements

- a) A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project.
- b) Examine and submit details of use of solar energy and alternative source of energy to reduce the fossil energy consumption. Energy conservation and energy efficiency.
- c) DG sets are likely to be used during construction and operational phase of the project. Emissions from DG sets must be taken into consideration while estimating the impacts on air environment.

11. Road and Traffic

- a) Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project. Present and future traffic and transport facilities for the region should be analysed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.
- b) A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.
- c) Examine the details of transport of materials for construction which should include source and availability.

12. Disaster Management Plan

- a) Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster. This should cover details of vulnerabilities due to natural and manmade hazards (earthquake, flooding, cyclone, landslides, fire etc.) and details of disaster mitigation efforts for buildings and infrastructure through structural sufficiency and Fire and Life Safety compliance in line with National Building Code NBC, 2016.



13. Court Cases

- a) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

14. Miscellaneous

- a) Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website <http://moef.nic.in/Manual/Townships>.

15. Special Condition

- a) Prepare plan regarding disposal of construction waste during construction phase which, if dumped in the river, changes river morphology and course of flow significantly and submit the Construction and demolition plan.
- b) Effort should be made for removal of minimum number of existing trees as far as possible. Detailed action plan in this regard should be enclosed.
- c) Submit the species wise details such as GBH (Girth at Breast Height) etc. of the trees to be felled for the project.
- d) Submit the clearance of NMCG regarding the proposed project.
- e) Disclose the source and quantity of earth to be brought from other places for filling the site.

Sd/-
(Alok Kumar)
Member-Secretary
SEIAA, Bihar

Copy, through email, for information and necessary action to :-

1. Member Secretary, Bihar State Pollution Control Board, Patna.
2. Guard File.


(Alok Kumar)
Member-Secretary
SEIAA, Bihar

Annexure- II

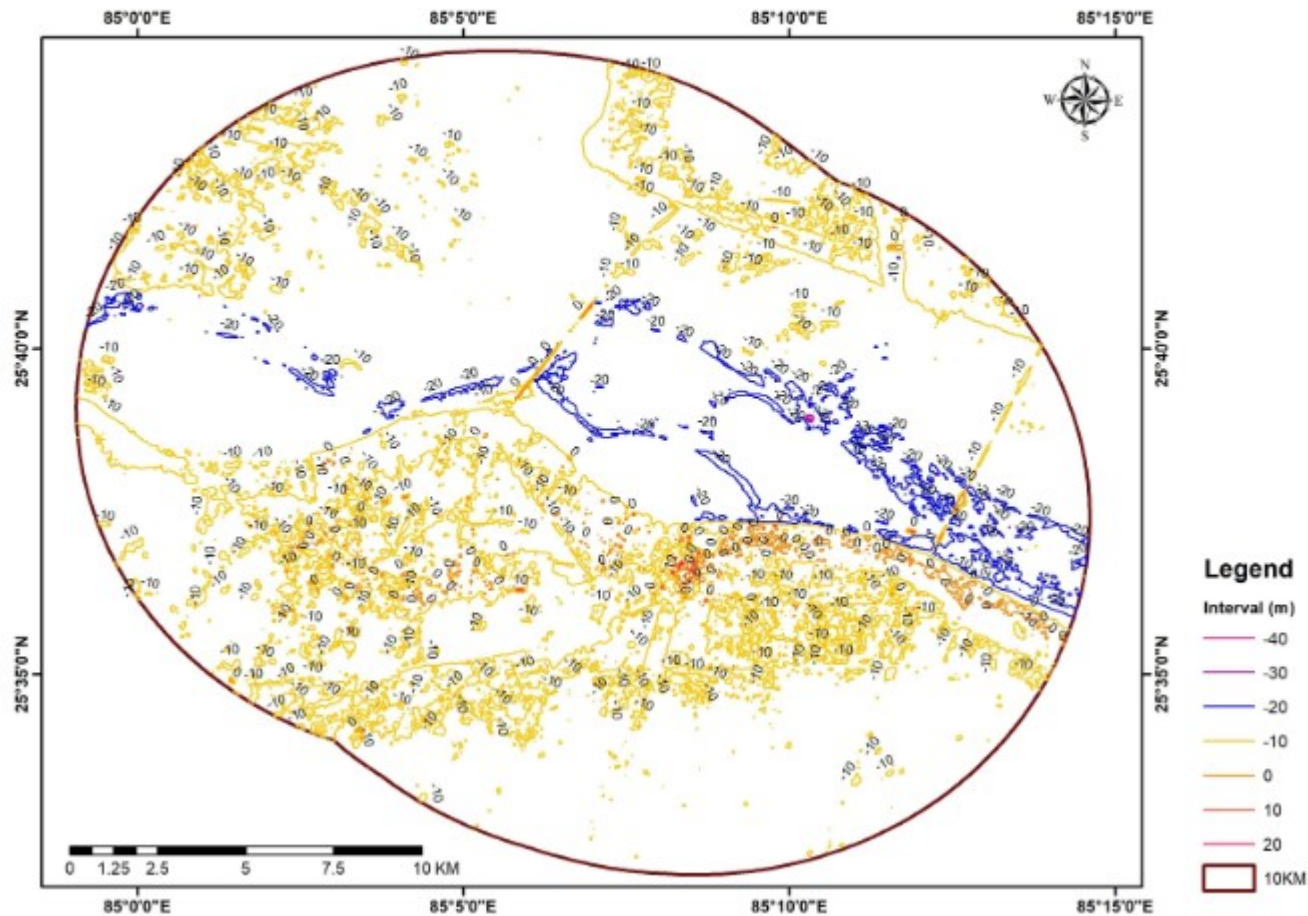
Layout Plan

[illegible]

Annexure- III

Contour Map

CONTOUR MAP OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE 1)



Annexure- IV

Land Documents



उप-महाप्रबंधक (तक०) का कार्यालय

परियोजना कार्यान्वयन इकाई, गुलजारबाग

बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, (बिहार सरकार का एक उपक्रम)

दूरभाष सं०- 9431005710,

ईमेल- dgmpigulzarbagh@gmail.com

वेबसाइट- bsrddl.bihar.gov.in

पत्रांक:-बी०एस०आर०डी०सी०एल०/पी०आई०यू०/गुलजारबाग/ 1033

पटना, दिनांक 18-11-2025

मैं, उप महाप्रबंधक (तक०), बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, परियोजना कार्यान्वयन इकाई, गुलजारबाग, पटना, यह घोषणा करता हूँ कि :-

5. बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड द्वारा पटना शहर अंतर्गत गंगा नदी के किनारे दीघा से गांधी मैदान के बीच, जे०पी० गंगा पथ के दोनों तरफ, लगभग 7 कि०मी० की लम्बाई में (175.1 हेक्टेयर) जे०पी० गंगा पथ समग्र उद्यान परियोजना (फेज-1) के निर्माण हेतु पथ निर्माण विभाग के ज्ञापांक प्र०-11/विविध-03-07/2023-1915(S) दिनांक 05.03.2025 द्वारा प्रशासनिक स्वीकृति प्रदान की गई है।
6. उक्त परियोजना के अंतर्गत भू-अर्जन की आवश्यकता नहीं है।

मैं उद्घोषित करता हूँ कि उपर्युक्त विवरण मेरे ज्ञान एवं विश्वास के अनुसार सत्य है।

दिनांक: 2025

स्थान: पटना

Ranishankar P.D. Rai

उप महाप्रबंधक (तक०)

परियोजना कार्यान्वयन इकाई, गुलजारबाग

बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड

पटना।

Annexure- V

Administrative Approval

सचिका सं०- प्र०-११/विविध-०३-०७/२०२३- १९१५(९) पटना, दिनांक : ०५/०३/२५

3442

Formar

आदेश:- प्रगति यात्रा के आलोक में पटना शहर अंतर्गत गंगा नदी के किनारे दीघा से गांधी मैदान के बीच, जे. पी. गंगा पथ के दोनों तरफ, लगभग 7 कि०मी० की लम्बाई में 'जे. पी. गंगा पथ समग्र उद्यान' परियोजना (फेज-1) के निर्माण हेतु राशि 38740.00 लाख (रुपये तीन सौ सत्तासी करोड़ चालीस लाख) मात्र रुपये की अनुमानित व्यय की प्रशासनिक स्वीकृति प्रदान की जाती है।

विषयगत कार्य की निविदा प्रावैधिक स्वीकृति प्राप्त होने के पश्चात् सम्पादित किया जाएगा। अन्य विभागों से अधिग्रहित पथों के मामले में पथ का विधिवत हस्तान्तरण के पश्चात् तथा यदि किसी पथ/पथांश में संबंधित विभाग द्वारा कार्य कराया गया है तो उसके DLP के बाद ही कार्यपालक अभियंता द्वारा कार्य कराना सुनिश्चित किया जाय।

3. विषयगत कार्य का वित्त पोषण बजट व्यय शीर्ष "5054-सड़कों तथा सेतुओं पर पूंजीगत परिव्यय - 03- राज्य राजमार्ग-337-सड़क निर्माण कार्य-0102 वृहद सड़कें मत्तदेय" विपत्र कोड 41-5054033370102 एवं बजट व्यय शीर्ष "5054-सड़कों तथा सेतुओं पर पूंजीगत परिव्यय - 03- राज्य राजमार्ग-789-अनुसूचित जातियों के लिए विशेष घटक योजना-0101 वृहद सड़कें मत्तदेय" विपत्र कोड 41-5054037890101 अन्तर्गत विकलनीय होगा।

4. विषयगत कार्यो का कार्यान्वयन बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, पटना द्वारा कराया जायेगा। प्रशाखा पदाधिकारी-सह-निकासी एवं व्ययन पदाधिकारी (मुख्यालय/लेखा), पथ निर्माण विभाग, बिहार, पटना कार्य के निमित्त निकासी पदाधिकारी होंगे, जो राशि की निकासी सचिवालय कोषागार, विश्वेश्वरैया भवन, नेहरू पथ (बेली रोड) पटना से करेंगे एवं बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, पटना को उपलब्ध करायेंगे। मुख्य महाप्रबंधक, बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, पटना द्वारा निर्दिष्ट उप महाप्रबंधक (तक.) कार्य के निमित्त व्ययन पदाधिकारी होंगे।

5. विषयगत कार्यों को पूरा करने के लिए निम्नलिखित लक्ष्य निर्धारित किया जाता है :-

वर्ष	बजट व्यय शीर्ष		वित्तीय लक्ष्य (लाख रु० में)	भौतिक लक्ष्य
	विपत्र कोड 41-5054033370102	विपत्र कोड 41-5054037890101		
2024-25	198.00	50.00	248.00	लगभग 0.64 प्रतिशत कार्य पूर्ण करना।
2025-26	9297.00	2325.00	11622.00	लगभग 30 प्रतिशत कार्य पूर्ण करना।
2026-27	12397.00	3099.00	15496.00	लगभग 40 प्रतिशत कार्य पूर्ण करना।
2027-28	9099.00	2275.00	11374.00	शेष सभी कार्य पूर्ण करना।
कुल	30991.00	7749.00	38740.00	

6. मुख्य अभियंता (अनुश्रवण), पथ निर्माण विभाग, पटना/प्रबंध निदेशक, बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, पटना एवं मुख्य महाप्रबंधक, बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, पटना विषयगत कार्यों की प्रगति की नियमित रूप से प्रतिमाह समीक्षा करेंगे।
7. इसकी सूचना प्रबंध निदेशक, बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, पटना / मुख्य महाप्रबंधक, बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड, पटना/मुख्य अभियंता, केन्द्रीय निरूपण संगठन, पथ निर्माण विभाग, पटना/ मुख्य अभियंता, दक्षिण बिहार उपभाग, पथ निर्माण विभाग, पटना / मुख्य अभियंता (अनुश्रवण), पथ निर्माण विभाग, बिहार, पटना को दे दी जाय।
8. प्रस्ताव पर लोक वित्त समिति की सहमति प्राप्त है।
9. वित्त विभाग, बिहार, पटना के संकल्प संख्या 12888, दिनांक 03.12.2024 के आलोक में प्रस्ताव पर मंत्रिपरिषद की स्वीकृति संचिका के पृ०-१७/टि० पर दिनांक-२५-०२-२५ को प्राप्त है।
10. प्रारूप पर आन्तरिक वित्तीय सलाहकार की सहमति संचिका के पृ०-१२/टि० पर दिनांक-२७/०२/२५ को प्राप्त है।

(अंजनी कुमार)
05/03/25

संयुक्त सचिव(प्र०को०),

पथ निर्माण विभाग, बिहार, पटना।

ज्ञाप सं० :- प्र०-11/विविध-03-07/2023- 1915 (S)

पटना, दिनांक - 05/03/25

प्रतिलिपि :- कोषागार पदाधिकारी, सचिवालय कोषागार विश्वेश्वरैया भवन, नेहरू पथ (बेली रोड), पटना को सूचनार्थ अग्रसारित।

(अंजनी कुमार)
05/03/25

संयुक्त सचिव(प्र०को०),

पथ निर्माण विभाग, बिहार, पटना।

ज्ञाप सं० :- प्र०-11/विविध-03-07/2023- 1915 (S)

पटना, दिनांक - 05/03/25

प्रतिलिपि :- वित्त विभाग (आय-व्ययक शाखा), पटना/ प्रमंडलीय आयुक्त, पटना प्रमंडल, पटना / जिला पदाधिकारी, पटना को सूचनार्थ अग्रसारित।

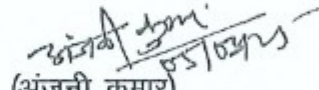
(अंजनी कुमार)
05/03/25

संयुक्त सचिव(प्र०को०),

पथ निर्माण विभाग, बिहार, पटना।

ज्ञाप सं० :- प्र०-11/विविध-03-07/2023- 1915(1) पटना, दिनांक - 05/07/25
प्रतिलिपि :- प्रबंध निदेशक, बिहार स्टेट रोड डेवलपमेन्ट कॉरपोरेशन लिमिटेड, पटना / मुख्य महाप्रबंधक, बिहार स्टेट रोड डेवलपमेन्ट कॉरपोरेशन लिमिटेड, पटना/ मुख्य अभियंता, दक्षिण बिहार उपभाग, पथ निर्माण विभाग, पटना/ मुख्य अभियंता, केन्द्रीय निरूपण संगठन, पथ निर्माण विभाग, पटना/ मुख्य अभियंता, अनुश्रवण उपभाग, पथ निर्माण विभाग, पटना को सूचनार्थ एवं आवश्यक कार्रवाई हेतु अग्रसारित।

2. मुख्य महाप्रबंधक, बिहार स्टेट रोड डेवलपमेन्ट कॉरपोरेशन लिमिटेड, पटना विषयगत कार्य प्रारम्भ करने के पूर्व डिजाइन, प्राक्कलन की जाँच के उपरान्त प्राक्कलन का प्रावैधिक स्वीकृति अविलम्ब प्रदान करेंगे।
3. प्रबंध निदेशक, बिहार स्टेट रोड डेवलपमेन्ट कॉरपोरेशन लिमिटेड, पटना / मुख्य महाप्रबंधक, बिहार स्टेट रोड डेवलपमेन्ट कॉरपोरेशन लिमिटेड, पटना इस कार्य की मासिक वित्तीय एवं भौतिक प्रगति प्रतिवेदन नियमित रूप से अभियंता प्रमुख, पथ निर्माण विभाग, बिहार, पटना / मुख्य अभियंता (अनुश्रवण) पथ निर्माण विभाग, बिहार, पटना को भेजना सुनिश्चित करेंगे।


(अंजनी कुमार)

संयुक्त सचिव(प्र०को०),

पथ निर्माण विभाग, बिहार, पटना।

ज्ञाप सं० :- प्र०-11/विविध-03-07/2023- 1915(5) पटना, दिनांक - 05/07/25
प्रतिलिपि :- माननीय उप मुख्य (पथ निर्माण) मंत्री, पथ निर्माण विभाग, बिहार, पटना के आप्त सचिव/ अपर सचिव, पथ निर्माण विभाग/ सरकार के विशेष सचिव, मंत्रिमंडल सचिवालय विभाग, बिहार / आ० वि० स०, पथ निर्माण विभाग/ संयुक्त सचिव (प्र०को०), पथ निर्माण विभाग/ सचिव (प्रावैधिक) अभियंता प्रमुख, पथ निर्माण विभाग/ मुख्य अभियंता (बजट एवं योजना), पथ निर्माण विभाग/ कार्यपालक अभियंता, योजना-1 एवं 2, पथ निर्माण विभाग / अपर मुख्य सचिव, पथ निर्माण विभाग, बिहार, पटना का प्रकोष्ठ / अभियंता प्रमुख, पथ निर्माण विभाग, बिहार, पटना का प्रकोष्ठ/ प्रशाखा पदाधिकारी, आय-व्ययक प्रशाखा-9/ प्रशाखा-10 एवं 11, पथ निर्माण विभाग, पटना/ मीशु मनीषा कुमारी, पी०एम०यु० लीड, पथ निर्माण विभाग, पटना को सूचनार्थ अग्रसारित।


(अंजनी कुमार)

संयुक्त सचिव(प्र०को०),

पथ निर्माण विभाग, बिहार, पटना।

ज्ञाप सं० :- प्र०-11/विविध-03-07/2023- 1915(5) पटना, दिनांक - 05/07/25
प्रतिलिपि :- आई०टी० मैनेजर, पथ निर्माण विभाग, बिहार, पटना को विभागीय वेबसाईट पर अपलोड करने हेतु प्रेषित।


(अंजनी कुमार)

संयुक्त सचिव(प्र०को०),

पथ निर्माण विभाग, बिहार, पटना।

Annexure- VI
Soil Test Report

REPORT ON

GEOTECHNICAL INVESTIGATIONS

FOR THE PROPOSED

Patna Riverfront Development

At

Patna

[CH. No. 4838]

[in response to a telephonic call on 01.11.2023 from Sri Makandar ji]

Submitted to
M/s. Archohm Consults Private Limited]
Noida

December, 2023



BAIDYANATH FOUNDATION CONSULTANTS PVT. LTD.

[Unit : Bihar Foundation Consultants]

Having an

NABL Accredited / ISO 9001: 2015 Certified Laboratory

Ganga Darshan Apartment, Flat No. 403.

West of Sadaquat Ashram Patna - 10

[e-mail : bifcon.pat@gmail.com, Phone No: +91 9431222149]

Patna Riverfront Development at Patna

CH. No. 4838



Baidyanath Foundation Consultants Pvt. Ltd.
403, Ganga Darshan Apartment, Patna-10
[Unit : Bihar Foundation Consultants]

PN - 231110K

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1	Introduction	1
2	Field Work	1
3	Laboratory Test	2
4	Presentation of Test Results	2
5	Soil Stratification	2
6	Foundation Analysis	2
7	Recommendations	3-5

Appendix

[Containing Figures and Tables]

- A. Bore Holes Location Map
- B. Field Test Observations & Laboratory Test Results
- C. Graph of Grain Size Analysis
- D. Triaxial shear / Direct shear strength test curves
- E. e -log p' Curves from Consolidation Tests [Not required]
- F. Sample calculation of pile & Uplift
- G. Sample calculation of lateral capacities of piles
- H. Liquefaction Analysis

Report on Sub Soil Investigations for the Proposed
Patna Riverfront Development at Patna
CH. No. 4838

1. INTRODUCTION

The subsoil investigations reported herein were taken up [in response to a telephonic call on 01.11.2023 from Sri Makandar ji] to find out the nature of subsoil at the site of the proposed construction and to recommend the type and capacity of its foundation.

After certain tests on the soil, as detailed below, the desired recommendations have been made on **pages 3-5** of this Report.

2. FIELD WORK

The fieldwork consisted of sinking bore holes, collecting soil samples and conducting the necessary field tests.

2.1. Boring

Taking guidance from IS: 1892, 150 mm diameter bore holes were sunk at locations shown in the bore hole location map.

2.2 Sampling

2.2.1 Undisturbed Soil Samples

Open drive samplers of 100-mm diameter and about 450-mm length were used for obtaining undisturbed samples of cohesive soils. The collection, sealing, labeling and transportation of the samples to the laboratory were done as per the IS guide-lines.

2.2.2 Disturbed Soil Samples

Disturbed soil samples were collected at suitable intervals of depth (not more than 2.5 m) and at all depths of change in the nature of the subsoil. These samples were sealed in polythene bags with proper identification labels.

2.3 Field Tests

2.3.1 Standard Penetration Tests (SPT)

These tests were conducted as per IS: 2131 – 1963. The depth interval between two consecutive tests was 1 to 1.5 m. The tests were located in between the levels at which undisturbed soil samples were collected.

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3. LABORATORY TESTS

Some or all of the following laboratory tests, as necessary, were done on the collected soil samples. Representative soil samples were selected for this from the different soil strata encountered during boring. The tests were performed as per the relevant Indian Standard Codes of Practice.

- (a) Natural moisture content
- (b) Bulk density
- (c) Grain size analysis (using sieves and / or hydrometer)
- (d) Specific gravity of soil solids
- (e) Atterberg's limit tests (liquid, plastic and shrinkage limits)
- (f) Shear Tests :
 - [I] Triaxial compression test (unconsolidated – undrained), generally for fine- grained soils
 - [II] Unconfined compression tests, only on cohesive soils
 - [III] Direct shear tests, generally for coarse-grained soils
- (g) Other tests as and when required.

4. PRESENTATION OF TEST RESULTS

The field and laboratory test are given in the **Appendix B**.

5. SOIL STRATIFICATION

The results of field tests in single bore hole sunk at the site [vide Location Sketch in App. A] and the results of laboratory tests conducted on the collected soil samples indicate that the soil stratification at the site is as described below.

The sub soil is clayey silt [type MI] up to the depth of about 7.5 m followed by clayey silty sand [type SC-SM] up to the investigated depth of 25.5 m bgl.

Ground water table was struck at 2.25 m depth below GL in November, 2023. It is subject to seasonal variations.

6. FOUNDATION ANALYSIS

The safe capacity of foundation of any type and size may be determined on the basis of the soil data given in this Report by using the standard methods of foundation design and following the relevant Indian Standard Codes.

The detailed design of foundations are given in section **7 (Recommendations)**.

(b) LIQUEFACTION ANALYSIS

This analysis was done as per IRC-SP 114. The results are given in **Appendix – H**.

7. RECOMMENDATIONS

The design of the foundation for the proposed structure depends on the nature of both [a] the subsoil and [b] the structure.

The sub soil is clayey silt [type MI] up to the depth of about 7.5 m followed by clayey silty sand [type SC-SM] up to the investigated depth of 25.5 m bgl.

Ground water table was struck at 2.25 m depth below GL in November, 2023. It is subject to seasonal variations.

The types of foundation recommended are:

- 1.** The subsoil is very loose up to about 6.0 m. Hence shallow foundation may not be economical and is not recommended.
- 2.** The subsoil is clayey silt to clayey silty sand. Hence placement of u/r piles may not be desirable. Plane piles of lengths 8.0 m to 25.0 m with shaft diameters 0.30 m, 0.40 m, 0.50 m and 0.60 m may be adopted, using casing pipes wherever needed.

By way of example, the values of safe capacities of plane piles of the above sizes and depths (vide Samples of Calculations in Appendix F) and are tabulated below:

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**[Table 1. Safe Capacities of Plane Piles in Compression and Uplift
Factor of safety = 2.5 in skin friction and 3 in bearing]**

Pile length [m]	Safe Capacities [tonnes] For Plane Piles <i>(COMPRESSIVE SAFE LOADS ARE SUBJECT TO CHECKING FOR SLENDERNESS RATIO**)</i>							
	Pile dia. = 0.30 m		Pile dia. = 0.40 m		Pile dia. = 0.50 m		Pile dia. = 0.60 m	
	Safe Load (t) in							
	Compression	Uplift	Compression	Uplift	Compression	Uplift	Compression	Uplift
8.0	6.7	4.9	11.3	7.1	17.3	9.1	22.9	10.9
10.0	9.6	7.6	16.7	11.9	25.9	16.6	37.1	21.0
12.0	12.6	10.4	22.1	16.9	34.6	24.4	49.9	32.3
14.0	15.6	13.3	27.5	22.0	43.2	32.5	62.4	43.9
16.0	18.6	16.2	32.9	27.3	51.7	40.7	74.8	55.7
18.0	21.6	19.2	38.3	32.6	60.0	48.9	86.8	67.6
20.0	24.6	22.2	43.6	37.9	68.3	57.2	98.7	79.6
22.0	27.6	25.2	48.9	43.2	76.6	65.5	110.7	91.5
24.0	30.7	28.2	54.4	48.5	85.4	73.8	123.5	103.4
25.0	32.2	29.7	57.2	51.2	89.8	78.0	129.9	109.5

**For a preliminary checking of the slenderness ratio, the modulus of subgrade reaction (k)

(a) **for cohesive soils** may be estimated from the following empirical relation given in IS: 2950-1981 (Second Revision) Table 1.: $k \text{ (kN/m}^3\text{)} = 240 c$, where $c \text{ (kN/m}^2\text{)}$ is the value of cohesion of the soil at the concerned depth.

(b) **for cohesionless soils** the IS Code shall be consulted

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Patna Riverfront Development at Patna
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Lateral load capacities

The safe values of lateral load capacities of pile (long, fixed headed piles with $e = 0$) of stem diameters 0.3 m, 0.4 m, 0.5 m, and 0.6 m and lengths = or more than the value of L in column 2 below.

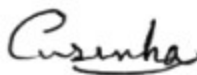
Table 2: Lateral Load Capacity (H) in t of Fixed headed Long Piles with eccentricity = 0

Stem diameters (m)	For Long piles > or equal to L (m)	H (t)
1	2	3
0.30	6.43	26.3
0.40	8.10	41.7
0.50	9.68	59.5
0.60	11.20	79.7

Notes :

1. If a subsoil condition much different from those reported herein is met with during foundation trenching or piling, suitable steps should be taken.
2. If concreting of piles is to be done below water table, DMC and tremie method should be adopted.
3. If u/r piles are provided, care should be taken to ensure proper formation of bulbs.
4. Shallow foundations or pile caps should be isolated from the surrounding expansive soil by layers of compacted local sand.
5. As per the provisions of the IS Code, **an appropriate number of piles must be subjected to routine load tests to check the veracity of the above recommended values of the safe capacities of piles.**

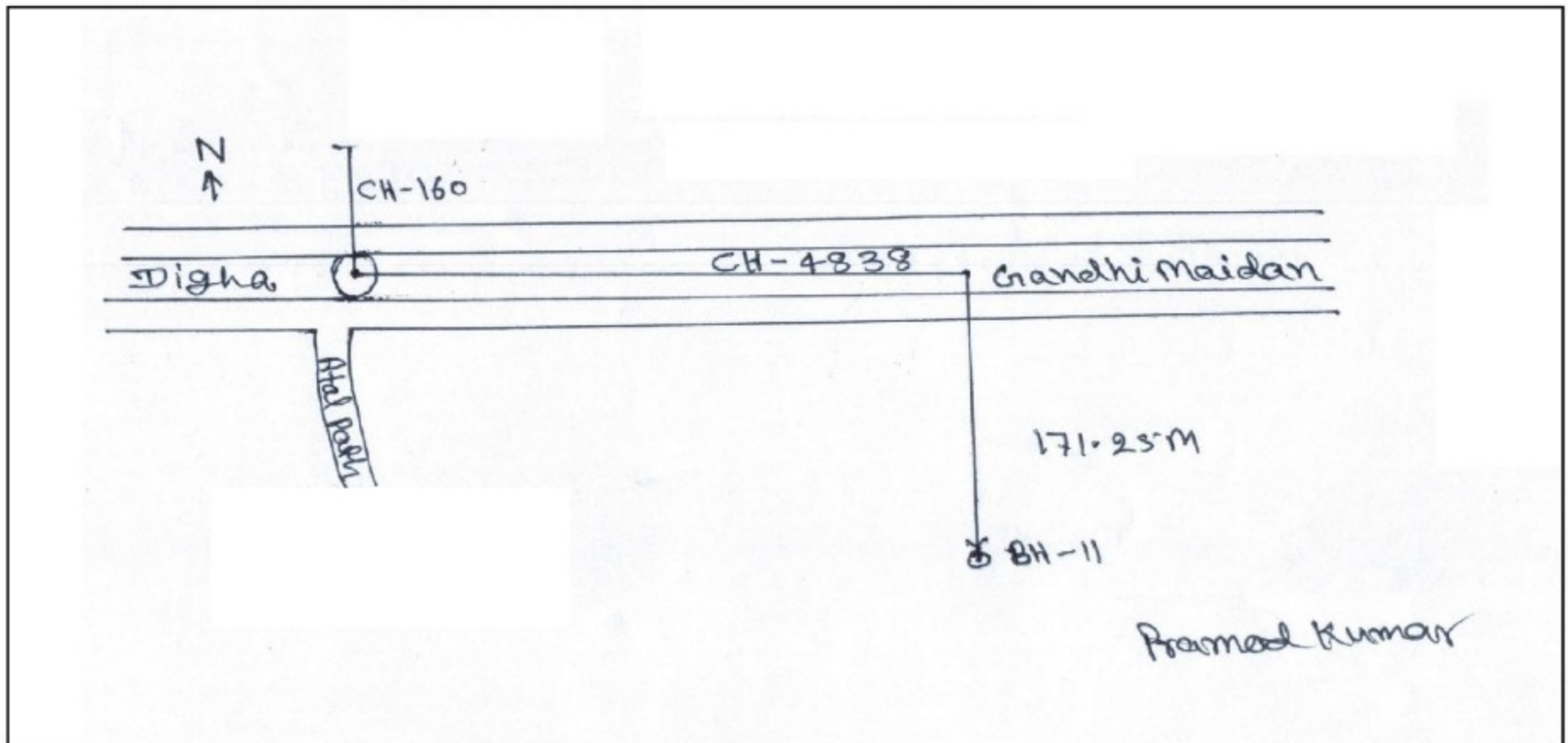
For Baidyanath Foundation Consultants Pvt. Ltd.,


(Prof. C.N. Sinha, Dr.-Ing., FIE)
Chief Consultant.

Patna Riverfront Development at Patna

CH. No.4838

P.N-23110 K



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[Unit : Bihar Foundation Consultants]

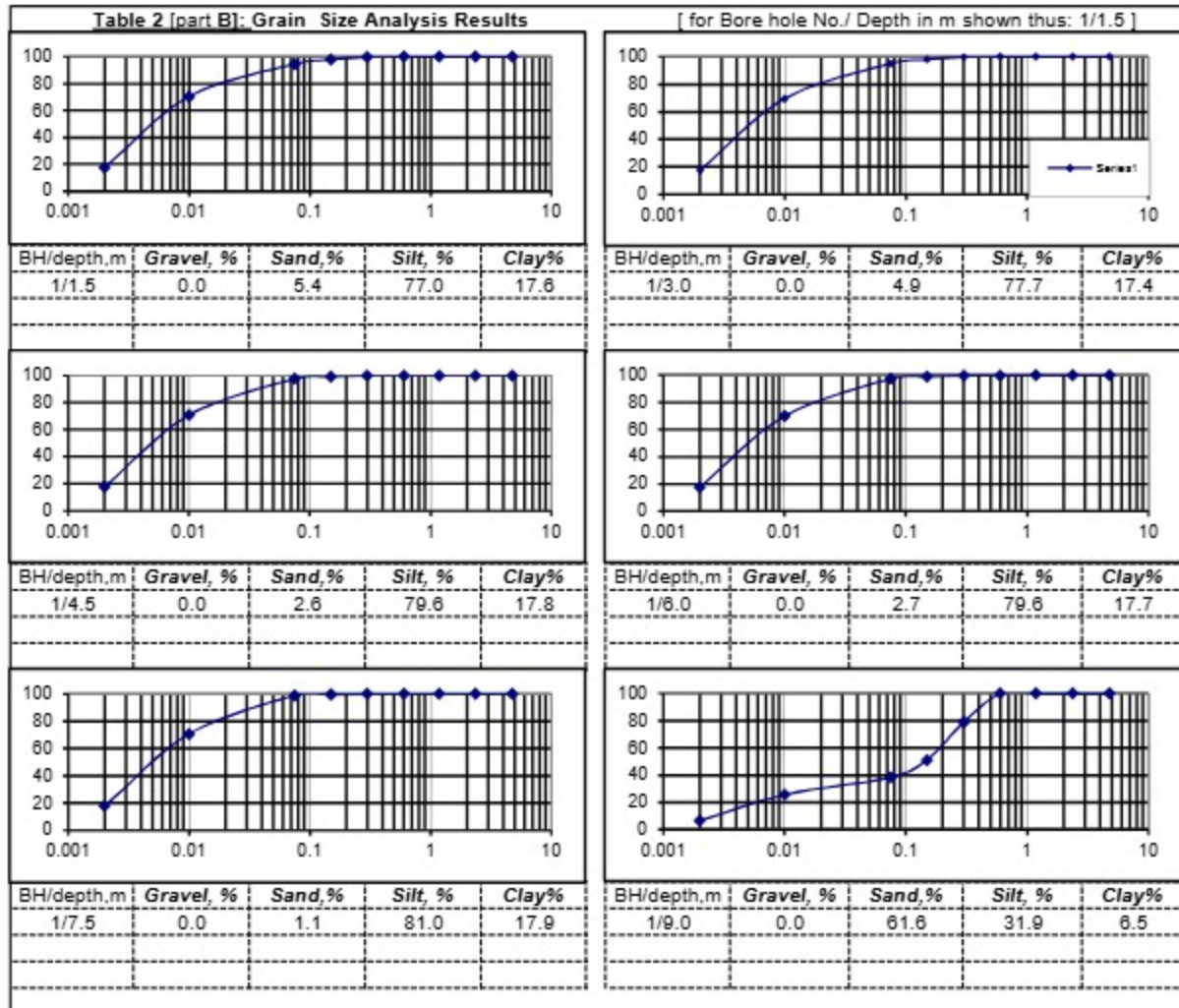
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Appendix - A

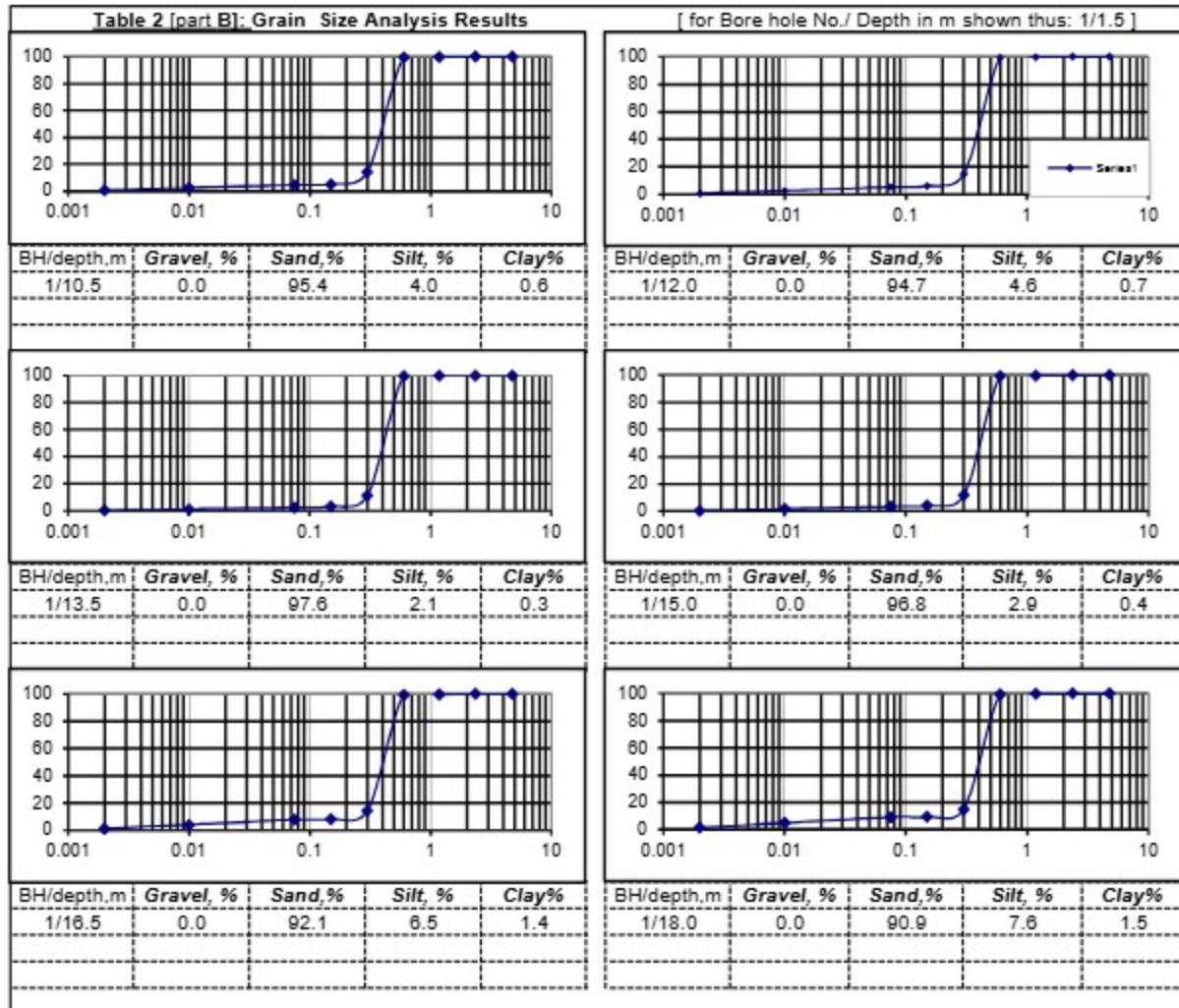
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Patna Riverfront Development at Patna						BORING METHOD : Rotary										
BORE HOLE NO. : 1			Site Incharge :- Pramod Kumar				TERMINATION DEPTH : 25.5 m				RECORD ON : 17.11.2023					
Depth Below GL (m)	Sample No.	SPT 'N' Value observation	Visual Description of Soil with IS Classification	Depth(m)		Thickness (m)	Liquid Limit	Plastic Limit	Plasticity Index, %	Bulk Density (gm/cm3)	Natural Moisture Content (%)	Specific Gravity	Shear Test			Compression Index (Cc)
				from	to								Type of Test	Cohesion, c (kg/cm ²)	Friction Angle, ϕ°	
1.0			Greyish reddish clayey silt, MI	0.0		1.5										
1.5	S1	14			1.5		39.9	26.4	13.5	1.94	28.2	2.64		0.12	15.9	
2.5			Greyish clayey silt, MI	1.5		6.0										
3.0	S2	2							1.94	28.9	2.64		0.03	12.0		
4.0																
4.5	S3	4					43.4	29.4	14.0	1.94	28.9	2.66		0.05	14.2	
5.5																
6.0	S4	4								1.94	28.9	2.66		0.05	14.2	
7.0																
7.5	S5	9			7.5		38.6	27.1	11.5	1.94	28.6	2.65		0.08	15.4	
8.5			Greyish clayey silty sand, SC-SM	7.5		7.5										
9.0	S6	19							1.88	32.1	2.62		0.00	28.9		
10.0																
10.5	S7	34								1.84	35.2	2.62		0.00	30.5	
11.5																
12.0	S8	38								1.84	35.6	2.62		0.00	31.4	
13.0																
13.5	S9	43								1.84	35.9	2.62		0.00	31.6	
14.5																
15.0	S10	44		15.0					1.84	36.0	2.62		0.00	31.7		

NAME OF WORK : Sub soil Investigation for C/O				CH. No. 4838			BORING FINISH DATE : 17.11.2023				WATER TABLE : 2.25 m bgl.					
Patna Riverfront Development at Patna							BORING METHOD : Rotary									
BORE HOLE NO. : 1			Site Incharge :- Pramod Kumar					TERMINATION DEPTH : 25.5 m				RECORD ON : 17.11.2023				
Depth Below GL (m)	Sample No.	SPT 'N' Value observation	Visual Description of Soil with IS Classification	Depth(m)		Thickness (m)	Liquid Limit	Plastic Limit	Plasticity Index, %	Bulk Density (gm/cm3)	Natural Moisture Content (%)	Specific Gravity	Shear Test			Compression Index (C _c)
				from	to								Type of Test	Cohesion, c (kg/cm ²)	Friction Angle, φ ^o	
16.0			Reddish clayey silty sand, SC-SM	15.0		10.5										
16.5	S17	49								1.84	36.5	2.62		0.00	31.9	
17.5																
18.0	S18	48								1.84	36.4	2.62		0.00	31.8	
19.0																
19.5	S19	52								1.84	36.5	2.62		0.00	32.2	
20.5																
21.0	S20	48								1.84	36.4	2.62		0.00	31.8	
22.0																
22.5	S21	44								1.84	35.1	2.62		0.00	31.4	
23.5																
24.0	S22	50								1.84	36.5	2.62		0.00	32.0	
25.0																
25.5	S23	55					25.5				1.84	36.6	2.62		0.00	32.5

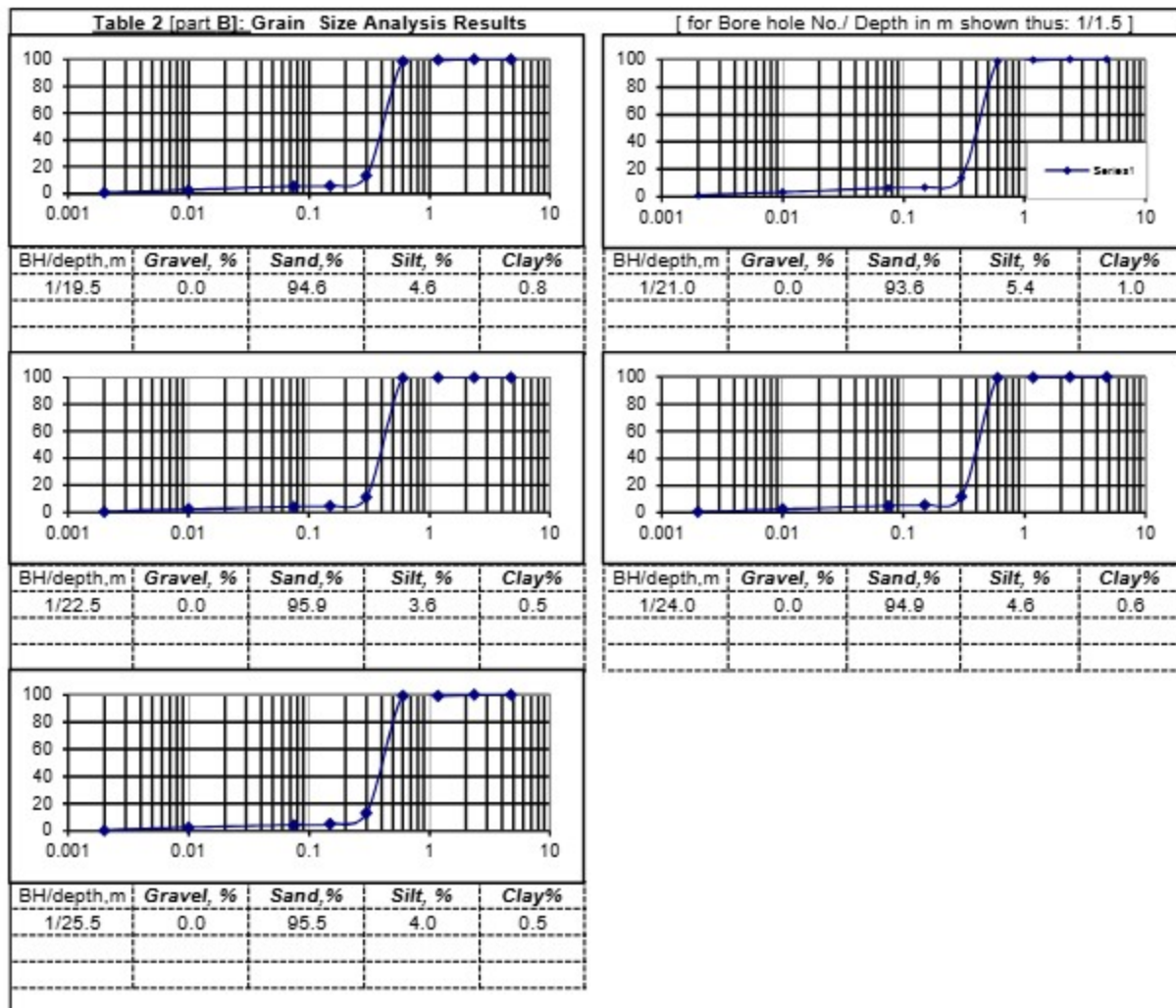
Report on sub-soil investigation for the proposed
Patna Riverfront Development at Patna
[CH No. 4838]



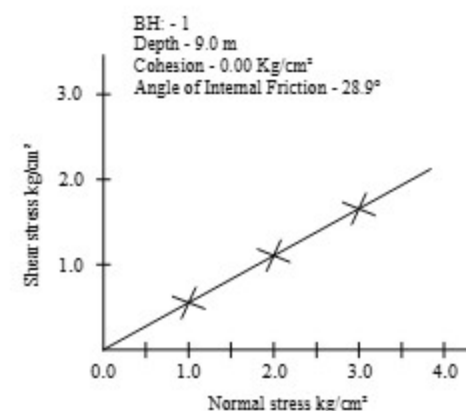
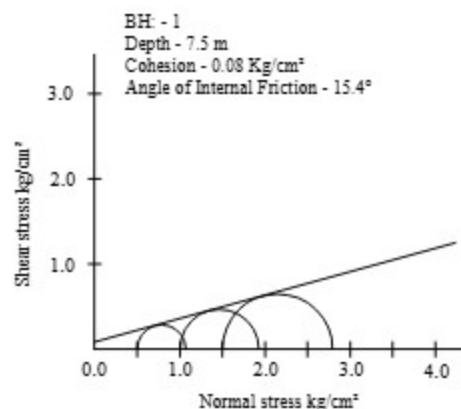
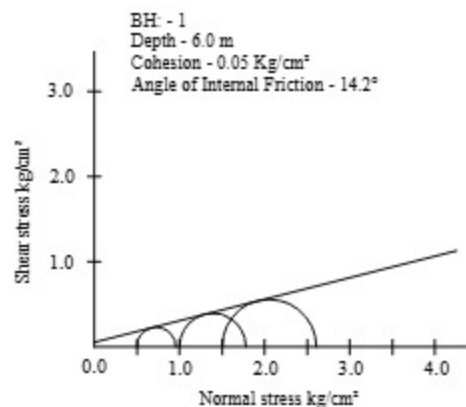
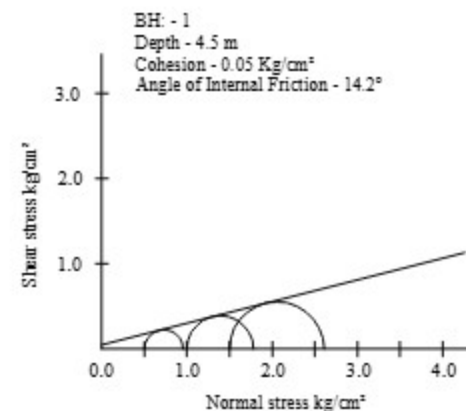
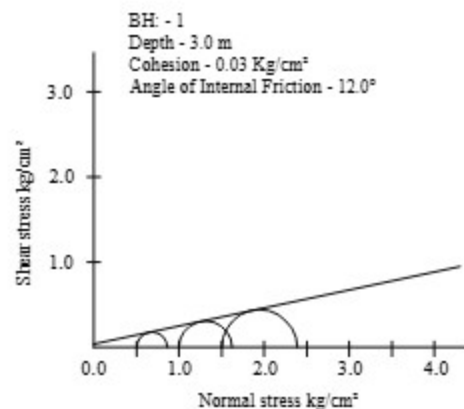
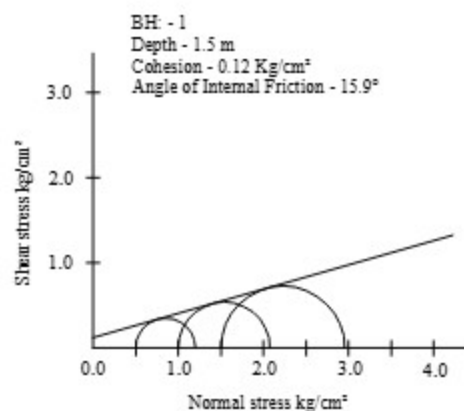
Report on sub-soil investigation for the proposed
Patna Riverfront Development at Patna
[CH No. 5191]



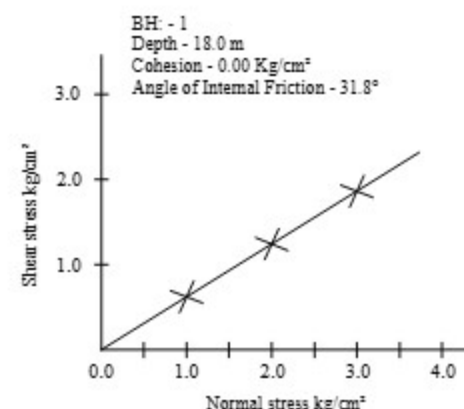
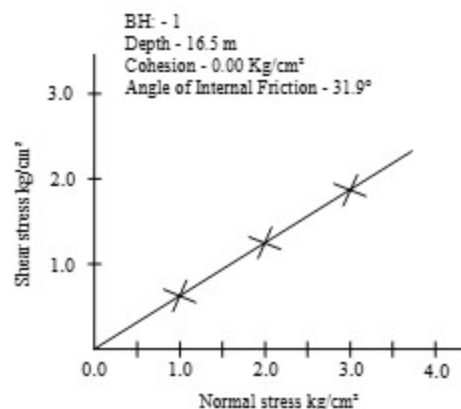
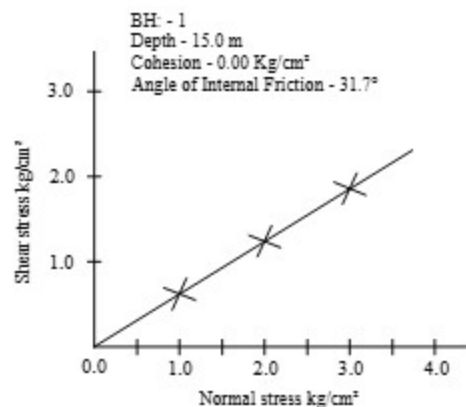
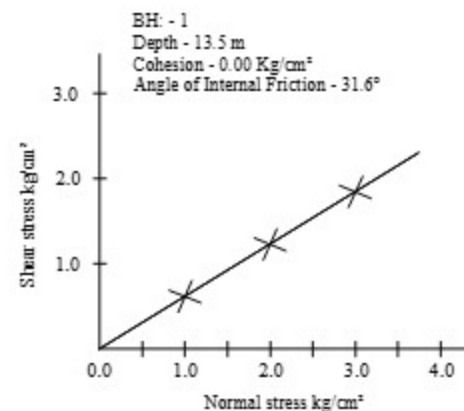
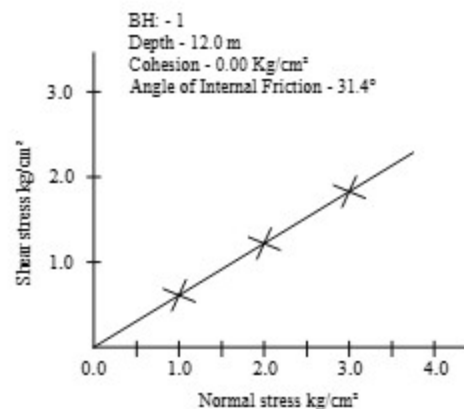
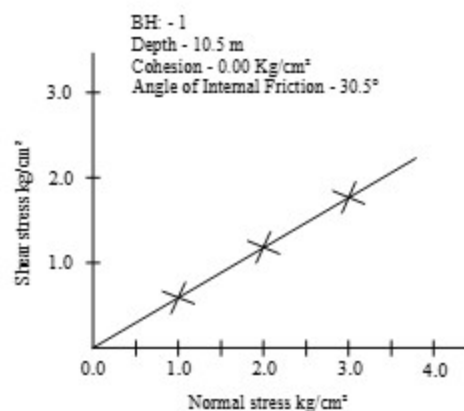
Report on sub-soil investigation for the proposed
Patna Riverfront Development at Patna
[CH No. 5191]



TRIAXIAL / DIRECT SHEAR TEST PLOTS



TRIAXIAL / DIRECT SHEAR TEST PLOTS



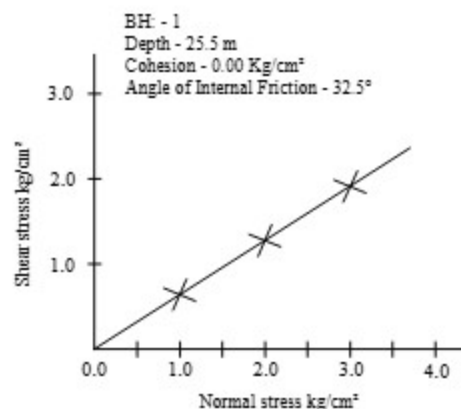
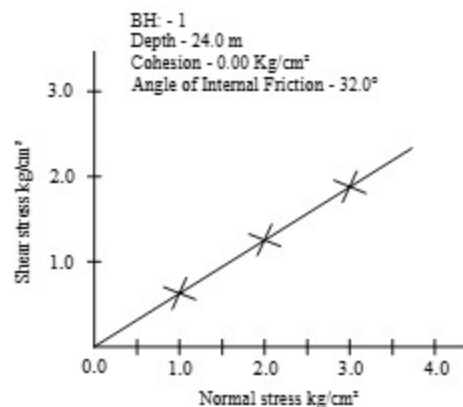
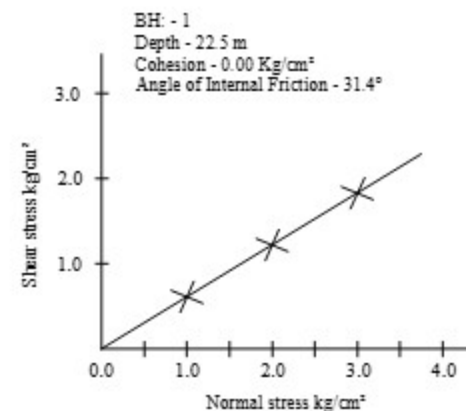
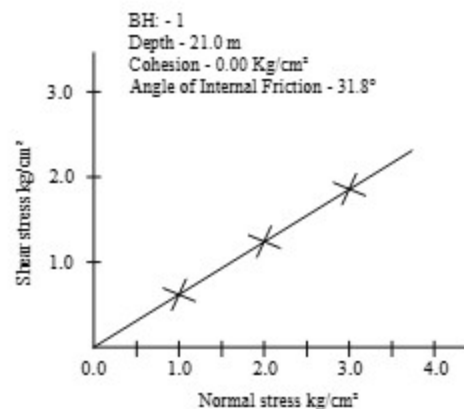
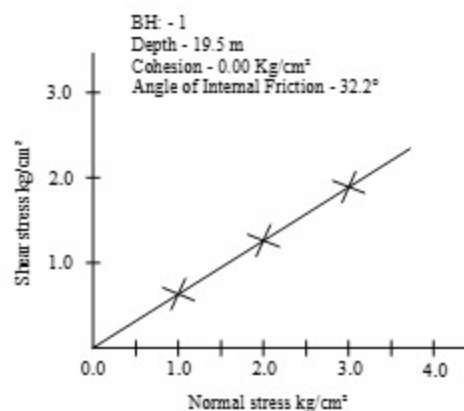
Baidyanath Foundation Consultants Pvt. Ltd.,
[Unit : Bihar Foundation Consultants]

Project No. 231110K

For the Proposed

Patna Riverfront Development at Patna
CH. No. 4838

TRIAXIAL / DIRECT SHEAR TEST PLOTS



CH. No. 4838

using both cohesion (c), in t/m^2 and angle of internal friction (ϕ°).

0.30

& circ'mfr'nce (in m) of pile base, $j = 3.14 \times D = 0.942$

where t = thickness of soil layer in contact with pile.

$$= c A_{\perp}$$

where $N_c=9$

In SAND: Skin friction, $Q_s = K P_{avg} A \tan \delta$, where

$$K = 1.5$$

and $\delta =$. End bearing, $Q_b = A_p(0.5 D_v N_s + P_{tip} N_s)$

where P = overburden press. at mid-layer or pile tip, as the case be,

and the values of N_q and N_y are to be taken from the IS Code.

*Max'm permissible $P[t/m^2]$ = 15 to 20 X pile diameter (D) X γ_{sub}

$$= \frac{4.5}{4.23} \text{ to } \frac{6}{5.64} \times \gamma_{\text{sub}} \text{ t/m}^2.$$

Total Ultimate capacity of pile, $Q_u = Q_s + Q_b$.

friction, $f_c = 2.5$

Safe capacity of pile, $Q_{st} = (Q_s / t_s + Q_b / t_b)$

bearing, $t_b = 3.0$

Depth of soil layer (m)	Soil type	γ_{sub} t/m ³	c t/m ²	α	ψ	t [m]	p = $\gamma \times t$ t/m ²	P_{tip}	Permissible		A = $j \times t$ m ²	Qs' (for 1 layer) t	Qs =	Qb t	Qu	Qsf [rounded off] tonnes	Pile Length m
								= Σp t/m ²	P_{tip} t/m ²	P_{mid} t/m ²			$\Sigma Qs'$ t		t		
0.0-0.5	clayey silt					0.5	0.00	0.00	0.0	0.0	Not considered due to cut-off and very soft layers.					0.5	
0.5-6.0	clayey silt	0.94	0.50	1.00	14.00	5.5	5.17	5.17	4.2	2.6	5.18	7.60	7.60	1.70	9.29		6.0
6.0-8.0	clayey silt	0.94	0.70	1.00	15.40	2.0	1.88	7.05	4.2	4.2	1.88	4.61	12.21	5.33	17.54	6.7	8.0
8.0-10.0	clayey silty sand	0.88	0.00		29.40	2.0	1.76	8.81	4.2	4.2	1.88	6.73	18.94	6.04	24.97	9.6	10.0
10.0-12.0	clayey silty sand	0.84	0.00		30.50	2.0	1.68	10.49	4.2	4.2	1.88	7.04	25.98	6.59	32.56	12.6	12.0
12.0-14.0	clayey silty sand	0.84	0.00		31.25	2.0	1.68	12.17	4.2	4.2	1.88	7.25	33.22	6.94	40.17	15.6	14.0
14.0-16.0	clayey silty sand	0.84	0.00		31.70	2.0	1.68	13.85	4.2	4.2	1.88	7.38	40.60	7.15	47.76	18.6	16.0
16.0-18.0	clayey silty sand	0.84	0.00		31.95	2.0	1.68	15.53	4.2	4.2	1.88	7.45	48.05	7.20	55.25	21.6	18.0
18.0-20.0	clayey silty sand	0.84	0.00		32.00	2.0	1.68	17.21	4.2	4.2	1.88	7.46	55.52	7.20	62.71	24.6	20.0
20.0-22.0	clayey silty sand	0.84	0.00		32.00	2.0	1.68	18.89	4.2	4.2	1.88	7.46	62.98	7.20	70.18	27.6	22.0
22.0-24.0	clayey silty sand	0.84	0.00		32.00	2.0	1.68	20.57	4.2	4.2	1.88	7.46	70.45	7.50	77.95	30.7	24.0
24.0-25.0	clayey silty sand	0.84	0.00		32.35	1.0	0.84	21.41	4.2	4.2	0.94	3.78	74.23	7.64	81.87	32.2	25.0

Lateral load capacity of a piles

As per IS 2911(Part 1/Sec 2)--

The participation of bulbs of u/r piles in resisting lateral loads being negligible, in any calculations for lateral load, they are treated as non-existent and u/r piles as plane piles.

For a Pile in Sand and Normally Loaded clay,

its Stiffness Factor, T is calculated using the equation:

$$\text{Stiffness factor, } T = (EI/\eta_n)^{1/3} \quad \text{m}$$

Where for concrete of Grade M = 25

(a) E = Young's modulus of pile material = 25000 kN/m²

(b) I = moment of inertia of the pile of dia. d (m) = $\pi d^4/64$, in m⁴

(c) η_n = η Modulus of subgrade reaction, in (kN/m³ x 10³)

whose value is obtained from the above Table 3 after determining the average value of corrected N (Nc) as in the column on the right :-

Also, deflection y of the pile head is given by the equation below:

$$(d) \quad y = \frac{H(e+z)^3}{12EI} \times 10^3 \text{ mm} \quad \text{FOR FIXED HEAD PILE mm}$$

Where

(e) z_f = depth below ground to the point of fixity of pile m

(f) H = lateral load kN

(g) e = cantilever length above ground/bed to the point of load application m

1	2	3	4	5	6	7
Pile dia., d	I	EI / η_n	T (m)	5T (m)	z_f	H
m	m ⁴	m ⁵	m	m	m	t
0.30	0.000397	3.52	1.29	6.43	2.83	26.3
0.40	0.001256	11.13	1.62	8.10	3.56	41.7
0.50	0.003066	27.18	1.94	9.68	4.26	59.5
0.60	0.006359	56.37	2.24	11.20	4.93	79.7

Table 3. Values of η_n in SAND / NC CLAY

soil type	N* =	η_n	(kN/m ³ x 10 ³)	Corrected values of N & average N*
Soil type	0 - 4	<	0.4	< 0.2
loose	4 - 10	0.4 to	2.5	0.2 - 1.4
med.dense	10 - 35	2.5 to	7.5	1.4 - 5.0
Dense	> 35	7.5 to	20	5 - 12.0

*In the present case, average N = 14.1 and the soil is NC clay in submerged state.	DRY soil	SUBMERGED	4
HENCE,	$\eta_n = 2.82$ (kN/m ³ x 10 ³)		9
In the present case,			19

the piles are fixed to the cap and hence, e = 0.

From the Curve given in the IS Code.

for e = 0, and a fixed end pile in sand or NC clay,

depth of fixity $z_f = 2.2 T$

Assuming a permissible value of lateral deflection of the fixed pile head = y = 5 mm

For the above permissible value of the lateral deflection the value of the permissible lateral load on the fixed pile head of a long pile (of length > or equal to 4T, shown in column no. 5 in the Table on left hand side), is given by H (vide column No. 7) in the same Table.

The formula used is derived from

the equation for 'y' given against (d) on the left side:

$$H = (y \times 12 EI) / (z_f)^3 \quad \text{tonnes}$$

fill given or assumed data in Yellow chart data in brown cells
Read Results in blue cells in col. 5, '5T' - the minimum length [m] of a 'LONG' pile in Col. 7, 'H' - the horizontal lat'al load (t).

Report on sub-soil investigation for the proposed
Patna Riverfront Development at Patna
CH. No. 4838

Soil Liquefaction Analysis for BH - 1, CH. No. 4838

Earthquake Magnitude:- 7.0

Depth Below: BGL (2) in m	Type of strata	Observed SPT Value	Saturated Density (Ton/m ³)	Submerged Density (Ton/m ³)	Fine Content (%)	Earthquake Zone	Peak Ground Acceleration (amag)	Earthquake Magnitude	Stress Reduction Co-efficient (ra)	Total Over Burden Pressure (Ton/m ²) (o _{ov})	Effective Over Burden Pressure (Ton/m ²) (o _{ve})	Cyclic Stress Ratio (CSR)	Cu	N _{C60}	Q ₆₀	SPT Corrected (N1 ₆₀)	α	β	N1 ₆₀ cs	CRR7.5	Cyclic Resistance Ratio (CRR)	Relative Density, Dr%	τ	K _o	K _α	Magnitude Scaling Factor (Ms F)	FOs _L	Conclusion
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	30
1.5	MI	14	1.94	0.94	94.6	V	0.36	7.0	0.989	2.91	1.41	0.48	1.70	14	1	23.8	0.50	1.20	29.1	0.41	0.49	38.00	0.81	1	1	1.19	1.03	Non-Liquefiable
3.0	MI	2	1.94	0.94	95.1	V	0.36	7.0	0.977	5.82	2.82	0.47	1.70	2	1	3.4	0.50	1.20	4.58	0.07	0.08	34.60	0.83	1	1	1.19	0.17	Liquefiable
6.0	MI	4	1.94	0.94	97.3	V	0.36	7.0	0.954	11.64	5.64	0.46	1.35	4	1	5.4	0.50	1.20	6.96	0.09	0.10	31.10	0.84	1	1	1.19	0.23	Liquefiable
9.0	SC-SM	19	1.88	0.88	38.4	V	0.36	7.0	0.931	16.92	7.92	0.47	1.14	19	1	21.6	0.50	1.20	26.4	0.32	0.38	43.20	0.78	1	1	1.19	0.83	Liquefiable
12.0	SC-SM	38	1.84	0.84	18.1	V	0.36	7.0	0.854	22.08	10.08	0.44	1.01	38	1	38.2	3.25	1.07	44	0.22	0.26	46.10	0.77	1	1	1.19	0.61	Liquefiable
15.0	SC-SM	44	1.84	0.84	20.8	V	0.36	7.0	0.774	27.60	12.60	0.40	0.90	44	1	39.6	3.75	1.08	46.7	0.26	0.31	46.30	0.77	1	1	1.19	0.79	Liquefiable
18.0	SC-SM	48	1.84	0.84	23	V	0.36	7.0	0.693	33.12	15.12	0.36	0.82	48	1	39.4	4.06	1.10	47.4	0.27	0.29	56.20	0.72	0.9	1	1.19	0.82	Liquefiable
21.0	SC-SM	48	1.85	0.85	37.9	V	0.36	7.0	1.000	38.85	17.85	0.51	0.76	48	1	36.3	0.50	1.20	44.1	0.22	0.23	55.30	0.72	0.9	1	1.19	0.45	Liquefiable
22.5	SC-SM	44	1.84	0.84	39.1	V	0.36	7.0	1.000	41.40	18.90	0.51	0.73	44	1	32.3	0.50	1.20	39.3	0.10	0.10	59.30	0.70	0.8	1	1.19	0.19	Liquefiable
24.0	SC-SM	50	1.84	0.84	15.5	V	0.36	7.0	1.000	44.16	20.16	0.51	0.71	50	1	35.6	2.64	1.05	40	0.13	0.12	63.20	0.68	0.8	1	1.19	0.24	Liquefiable
25.5	SC-SM	55	1.84	0.84	16.4	V	0.36	7.0	1.000	46.92	21.42	0.51	0.69	55	1	38.0	2.87	1.06	43	0.20	0.38	66.80	0.67	0.8	2	1.19	0.74	Liquefiable
As per IRC-SP 114, Clause 8.4.4.(v).(c)., sands with corrected N value (Col 17) greater than 30, should be treated as Non- Liquefiable.																												
Conclusion: The above soil lying in seismic zone - V, has been found out to be liquefiable at max no of depth. Certain preventive measures needs to be taken.																												

Some Comments on the Liquefaction Tables

- It is to be noted that according to " IRC:SP:114-2018, Clause 8.4.4 -IV) The evaluation of a liquefaction susceptibility may be omitted when saturated sandy soils are found at depth greater than 20 m from ground surface." Hence, in the Liquefaction Potential Tables sent with the present Report, the soil below 21 m depth need not be considered as liquefiable.
- Proper steps have to be taken for mitigating the liquefaction hazards. These include vibrofloatatio, stone or sand columns etc. The improvement should be done over an area extending 2 m to 3 m all around the plan area of the proposed structure and at least 2 m beyond the depth of the liquefiable zone.

Annexure- VII

NOC WDR

Letter-7673, Dated-11.07.2025 From UD&HD, Patna, Bihar.

1 message

UDHD BIHAR <udhd@bihar.gov.in>
To: mdroadcorp <mdroadcorp@gmail.com>

Fri, Jul 11, 2025 at 12:02 PM

Dear Sir/Madam,

Please find the attachment.

--

Thanks & Regards,



Urban Development & Housing Department,
Government of Bihar
Email: udhd@bihar.gov.in
Web : state.bihar.gov.in/urban

 Lt-7673.pdf
12724K

On Brajesh

CO2
12/7/25

Smt Kajal
Prh
12/7

पत्रांक:-09/न० वि० बि० भ० उ०-04/2025

7673

न०वि० एवं आ०वि०

231

बिहार सरकार
नगर विकास एवं आवास विभाग

प्रेषक

राजीव कुमार श्रीवास्तव, भा०प्र०से०
सरकार के अपर सचिव,
नगर विकास एवं आवास विभाग।

सेवा में,

प्रबंध निदेशक,
बिहार स्टेट रोड डेवलपमेंट कॉरपोरेशन लिमिटेड,
बिहार, पटना।

पटना, दिनांक:-11/07/25-

विषय : जे०पी०गंगा पथ समग्र उद्यान परियोजना के निर्माण कार्य हेतु अनापत्ति के संबंध में।

प्रसंग: आपका पत्रांक-BSRDCL,4397/2024 दिनांक:-01.03.2025

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के अनुपालन में अधीक्षण अभियंता, बाढ़ नियंत्रण एवं जल निस्सरण अंचल,पटना के पत्रांक-780 दिनांक-22.05.2025 (छायाप्रति संलग्न) द्वारा जे० पी० गंगा पथ समानान्तर दीघा से गाँधी मैदान (ए० एन० सिन्हा संस्थान) तक प्रस्तावित जे०पी०गंगा पथ समग्र उद्यान परियोजना के निर्माण कार्य हेतु Flood Plain/Active Flood Plain Area के आच्छादन के संदर्भ में कार्यपालक अभियंता, गंगा सोन बाढ़ सुरक्षा प्रमंडल, दीघा का स्थल निरीक्षणोपरान्त प्राप्त संबंधित प्रस्ताव अनुशंसा के साथ उपलब्ध कराया गया है।

अधीक्षण अभियंता, बाढ़ नियंत्रण एवं जल निस्सरण अंचल,पटना से प्राप्त उक्त प्रस्ताव संलग्न कर अग्रेतर कार्रवाई हेतु समर्पित किया जाता है।

अनु०-यथोक्त।

विश्वासभाजन

(राजीव कुमार श्रीवास्तव)

सरकार के अपर सचिव,
नगर विकास एवं आवास विभाग।

संचिका संख्या

09/न०वि०वि०भ०अ०-04/2025

टिप्पणी पृष्ठ सं०

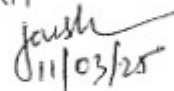
पृ०सं० 03-04/टि० पर अंकित टिप्पणी कृपया अवलोकनार्थ।

जे०पी० गंगा पथ समग्र उद्यान परियोजना का निर्माण कार्य दीघा से गाँधी मैदान (ए०न० सिन्हा संस्थान) तक जे०पी० गंगा पथ के सामानान्तर किया जाना प्रस्तावित है। प्रस्तावित जे०पी० गंगा पथ समग्र उद्यान परियोजना के निर्माण पर बिहार भवन उपविधि-2014 (संशोधित-2022) में निहित प्रावधानों के परिपेक्ष्य में प्रस्तावित स्थल के Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संबंध में जल संसाधन विभाग से मंतव्य/आनापत्ति हेतु संचिका पृष्ठांकित की गयी है।

उल्लेखनीय है कि दिनांक-06.03.2025 को बिहार राज्य अंतर्गत तटबंधित नदियों के लिए Flood Plain Zoning लागू किया जा चुका है एवं संबंधित आदेश संचिका के पत्राचार भाग पर रक्षित है (पृ०सं० 48-44/प०)। बिहार भवन उपविधि-2014 (संशोधित-2022) के अंतर्गत उपविधि-22 Construction near river front की कंडिका-1 (i) (ii) (iii) में गंगा नदी के किनारे Town Protection wall से 15 मीटर, Toe of the Embankment से 25 मीटर तथा Maximum Oscillated Edge से 30 मीटर की दूरी (towards country side) तक की भूमि पट्टी में किसी तरह के निर्माण अथवा पुनर्निर्माण पर प्रतिबंध का प्रावधान है। Maximum Oscillated Edge की दशा में जल संसाधन विभाग के संबंधित कार्यपालक अभियंता से NOC प्राप्त किये जाने का प्रावधान है।

उक्त के आलोक में प्रस्तावित स्थल के Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संबंध में मंतव्य/आनापत्ति हेतु अधीक्षण अभियंता, बाढ़ नियंत्रण योजना एवं मोनिटरिंग अंचल, पटना पृष्ठांकित किया जा सकता है।

संचिका अग्रेत्तर कार्रवाई हेतु उपस्थापित।



(जैकी जैस)

सहायक अभियंता



(रंजीत कुमार रंजन)

कार्यपालक अभियंता, प्रमंडल-13

अधीक्षण अभियंता, अंचल-4

कृपया ।

अ०२१० (बाढ़ प्र०)



(पो० सौरभ अग्रवाल अंसारी)

SEF-1
11.3.25EE-15
11/3/25V. K. S. Sengupta
11/3/25

संचिका संख्या-

टिप्पणी पृष्ठ संख्या-

कृपया पृ0-05/टि0 अवलोकनीय ।

प्रस्तुत संचिका जे0पी0 गंगा पथ के सामानान्तर दीघा से गाँधी मैदान (ए0एन0 सिन्हा स्थान) तक प्रस्तावित जे0पी0 गंगा पथ समग्र उद्यान परियोजना के निर्माण कार्य हेतु Flood Plain/Active Flood Plain Area से अच्छादित / अच्छादित नहीं होने के संदर्भ मंतव्य/ अनापत्ति प्राप्त होने हेतु पृष्ठांकित की गयी है ।

उक्त के आलोक में वांछित प्रतिवेदन उपलब्ध कराने हेतु मुख्य अभियंता, पटना को अवगत किये जाने निमित्त पत्राचार भाग पर रक्षित पत्र प्रारूप पर अभियंता प्रमुख(बाढ़) का अनुमोदन प्राप्त किया जा सकता है ।

निपालक अभियंता बाढ़ (मो0)-15

(Signature)
18/03/25
(विकास कुमार)

कृपया उपर्युक्त टिप्पणी ।

उक्त के आलोक में पत्राचार भाग पर रक्षित पत्र प्रारूप पर अभियंता प्रमुख(बाढ़) का अनुमोदन प्राप्त करना चाहेंगे ।

निरीक्षण अभियंता-(बाढ़)मो0

(Signature)
18/03/25
(अनुराग शर्मा)

उपस्थित डिप्टी, कृपया
पत्राचार पत्र अनुमोदितार्थ ।

(Signature)
18/03/25

(Signature)
18/03/25
(विशेष गौरव)

(Signature)
19/03/25
(धनोज रमण)

18-15
19/3/25

V. K. S. AG
(Signature)
19/03/25

संचिका संख्या-

कृपया पृ0-06/टि0 अवलोकनीय ।

प्रस्तुत संचिका जे0पी0 गंगा पथ के सामानान्तर दीघा से गाँधी मैदान (ए0एन0 सिन्हा संस्थान) तक प्रस्तावित जे0पी0 गंगा पथ समग्र उद्यान परियोजना के निर्माण कार्य हेतु Flood Plain/ Active Flood Plain Area से अच्छादित / अच्छादित नहीं होने के संदर्भ मंतव्य/ अनापत्ति प्राप्त करने हेतु पृष्ठांकित की गयी है ।

तदोपरांत प्रतिवेदन उपलब्ध कराने हेतु मुख्य अभियंता, पटना को विभागीय पत्रांक-1328 दिनांक-19.03.2025 से निदेशित किया । परंतु वांछित प्रतिवेदन अबतक अप्राप्त है (पृ0-49/प0) ।

उक्त के आलोक में वांछित प्रतिवेदन उपलब्ध कराने हेतु मुख्य अभियंता, पटना को स्मारित किये जाने निमित्त पत्राचार भाग पर रक्षित पत्र प्रारूप पर अभियंता प्रमुख(बाढ़) का अनुमोदन प्राप्त किया जा सकता है ।

कार्यपालक अभियंता बाढ़ (मो0)-15

कृपया उपर्युक्त टिप्पणी ।

उक्त के आलोक में पत्राचार भाग पर रक्षित स्मार प्रारूप पर अभियंता प्रमुख(बाढ़) का अनुमोदन प्राप्त करना चाहेंगे ।

Vikash Kumar
19/05/25
(विकास कुमार)

अधीक्षण अभियंता (बाढ़) मो0

Anurag Sharma
19/05/25
(अनुराग शर्मा)

S.R.
20/5/25

कृपया

Vikash Kumar
20/5/25
(विकास कुमार)

Ete(Flood)
20/05/25

अधीक्षण (बाढ़)

Shard Kumar
20/5/25
(शरद कुमार)

FCM)

S.R.
20/5/25

EE-15

Vikash Kumar
20/5/25

Vikash Kumar
20/5/25

A.E (Jacky)

P. R. Singh
03/06/25

पृ०सं०-08/टि० पर अंकित टिप्पणी कृपया अवलोकनार्थ।

जे०पी० गंगा पथ समग्र उद्यान परियोजना का निर्माण कार्य दीघा से गाँधी मैदान (ए०न० सिन्हा संस्थान) तक जे०पी० गंगा पथ के सामानान्तर किया जाना प्रस्तावित है। प्रस्तावित जे०पी० गंगा पथ समग्र उद्यान परियोजना के निर्माण पर बिहार भवन उपविधि-2014 (संशोधित-2022) में विहित प्रावधानों के परिपेक्ष्य में प्रस्तावित स्थल के Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संबंध में नगर विकास एवं आवास विभाग, बिहार सरकार द्वारा दिनांक-08.03.2025 को जल संसाधन विभाग से मंतव्य/अनापत्ति हेतु संचिका पृष्ठांकित की गयी थी।

इस संबंध में प्रस्तावित स्थल के Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संबंध में मंतव्य/अनापत्ति हेतु दिनांक-11.03.2025 को बाढ़ नियंत्रण योजना एवं मॉनिटरिंग अंचल को संचिका पृष्ठांकित की गयी। तदोपरान्त दिनांक-02.05.2025 को बाढ़ नियंत्रण योजना एवं मॉनिटरिंग अंचल द्वारा जे०पी० गंगा पथ के सामानान्तर दीघा से गाँधी मैदान (ए०न० सिन्हा संस्थान) तक प्रस्तावित जे०पी० गंगा पथ समग्र उद्यान परियोजना के निर्माण कार्य हेतु Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संदर्भ में मुख्य अभियंता, पटना से प्राप्त अनुशंसित प्रतिवेदन उपलब्ध कराया गया है (पृ०सं० 59-51/प०)। जिसके मुख्य बिन्दु निम्नवत् है:-

- गंगा नदी के भाग में पटना शहर के सुरक्षा हेतु पटना शहरी सुरक्षा दीवाल निर्मित है एवं जे०गंगा पथ, पटना शहरी सुरक्षा दीवाल एवं गंगा नदी के बीच अवस्थित है।
- विभागीय आदेश संख्या-143 दिनांक-06.03.2025 के कंडिका-6 (ख) से स्पष्ट है कि जे०पी० गंगा पथ के सामानान्तर दीघा से गाँधी मैदान तक प्रस्तावित जे०पी० गंगा पथ समग्र उद्यान योजना के निर्माण कार्य में उपयोग होने वाली भूमि Flood Plain/Active Flood Plain Area में आच्छादित है।
- उक्त विभागीय आदेश के कंडिका-6(ग) में स्पष्ट अंकित है कि निर्धारित Flood Plain Zoning को prohibited zoning अंतर्गत रखा गया है।
- उक्त विभागीय आदेश के कंडिका-7(क) एवं 7(ख) के अनुसार prohibited zoning में किन-किन गतिविधियों को अनुमान्य एवं किन-किन गतिविधियों को प्रतिबंधित किया गया है। यह स्पष्ट रूप से अंकित है।

उक्त के आलोक में अग्रेतर कार्रवाई हेतु संचिका संयुक्त सचिव (अभि०), जल संसाधन विभाग को पृष्ठांकित किया जा सकता है।

संचिका अग्रेतर कार्रवाई हेतु उपस्थापित।

(जैकी जैस)

सहायक अभियंता

(रंजीत कुमार रजन)

कार्यपालक अभियंता, प्रमंडल-13

अधीक्षण अभियंता, अंचल-4

उपरोक्त टिप्पणी

A. E. (Jacky)

03/06/25

सि० लक्ष्मी (अभि०)

आ० अधिकारी (अभि०)

उपस्थित

03/06/25

संख्या 176
निर्गत की तिथि
गति तिथि

08/05/25

03/06/25

31/6/25

कृपया पृ0-09/टि0 अवलोकनीय ।

प्रस्तुत संचिका जे0पी0 गंगा पथ के सामानान्तर दीघा से गाँधी मैदान (ए0एन0 सिन्हा संस्थान) तक प्रस्तावित जे0पी0 गंगा पथ समग्र उद्यान परियोजना के निर्माण कार्य हेतु Flood Plain/ Active Flood Plain Area से अच्छादित / अच्छादित नहीं होने के संदर्भ मंतव्य/ अनापत्ति प्राप्त करने हेतु पृष्ठांकित की गयी है ।

विभागीय पत्रांक-2624 दिनांक-20.05.2025 एवं पत्रांक-1328 दिनांक-19.03.2025 से प्राप्त निदेश के आलोक में मुख्य अभियंता, पटना द्वारा पत्रांक-1831 दिनांक-23.05.2025 से अनुशंसा सहित प्रतिवेदन उपलब्ध कराया गया है (पृ0-59-51/प0) ।

मुख्य अभियंता, पटना द्वारा प्रतिवेदित किया गया है कि विभागीय पत्रांक-143 दिनांक-06.03.2025 से निर्गत बिहार राज्य अंतर्गत तटबंधित नदियों के लिए Flood plain zoning लागू किये जाने के संबंध में निर्गत आदेश के कंडिका 06(ख) में यह स्पष्ट अंकित है कि "जिन नदियों के एक ही किनारे पर तटबंध निर्मित है, उन नदियों के लिए तटबंध से लेकर नदी की चौड़ाई होते हुए नदी के दूसरे किनारे से 500 मीटर तक की चौड़ाई के क्षेत्र को Flood plain zoning निर्धारित किया जाता है" (पृ0-54/प0) ।

उल्लेखनीय है कि विषयक स्थल पर गंगा नदी के किनारे पटना शहर के सुरक्षा हेतु पटना शहरी सुरक्षा दीवाल निर्मित है एवं जे0पी0 गंगा पथ, पटना शहरी सुरक्षा दीवाल एवं गंगा नदी के बीच अवस्थित है ।

- उक्त विभागीय आदेश के कंडिका-6(ख) से स्पष्ट है कि जे0पी0 गंगा पथ के सामानान्तर दीघा से गाँधी मैदान तक प्रस्तावित जे0पी0 गंगा पथ समग्र उद्यान योजना के निर्माण कार्य में उपयोग होने वाली भूमि Flood plain /Active flood plain area में अच्छादित है ।
- उक्त विभागीय आदेश के कंडिका-6(ग) में स्पष्ट अंकित है कि निर्धारित Flood plain zoning को prohibited zoning अन्तर्गत रखा गया है ।
- उक्त विभागीय आदेश के कंडिका-7(क) एवं 7(ख) के अनुसार prohibited zoning में किन-किन गतिविधियों को अनुमत्य एवं किन-किन गतिविधियों को प्रतिबंधित किया गया है। यह स्पष्ट रूप से अंकित है ।

Flood Plain Zoning के संदर्भ में मुख्य अभियंता, पटना से प्राप्त प्रतिवेदन की समीक्षा योजना एवं मोनिटरिंग अंचल-4, जल संसाधन विभाग के स्तर से किया जाना समीचीन प्रतीत होता है । पूर्व में इसी प्रकार के मामले का निष्पादन योजना एवं मोनिटरिंग अंचल-4, जल संसाधन विभाग द्वारा किया गया है ।

समीक्षोपरांत प्रधान सचिव महोदय का अनुमोदन प्राप्त करते हुए संचिका नगर विकास एवं आवास विभाग को पृष्ठांकित करने निमित्त कार्रवाई हेतु संचिका अधीक्षण अभियंता, योजना एवं मोनिटरिंग अंचल-4, जल संसाधन विभाग को पृष्ठांकित किया जा सकता है ।

कार्यपालक अभियंता बाढ़ (मो0)-15

(विकास कुमार)

बिहार सरकार

जल संसाधन विभाग

संचिका संख्या-

कृपया पृ0-10/टि0 से आगत टिप्पणी ।

जे0पी0 गंगा पथ के सामानान्तर दीघा से गाँधी मैदान (ए0एन0 सिन्हा संस्थान) तक प्रस्तावित जे0पी0 गंगा पथ समग्र उद्यान परियोजना के निर्माण कार्य हेतु Flood Plain/ Active Flood Plain Area से अच्छादित / अच्छादित नहीं होने के संदर्भ मंतव्य/ अनापत्ति समर्पित करने हेतु विभागीय निदेश के आलोक में मुख्य अभियंता, पटना द्वारा अनुशंसा सहित प्रतिवेदन उपलब्ध कराया गया है ।

मुख्य अभियंता, पटना से प्राप्त प्रतिवेदन की समीक्षा कर प्रधान सचिव महोदय का अनुमोदन प्राप्त करते हुए संचिका नगर विकास एवं आवास विभाग को पृष्ठांकित करने निमित्त अग्रेतर कार्रवाई हेतु संचिका अधीक्षण अभियंता, योजना एवं मोनिटरिंग अंचल-4, जल संसाधन विभाग को पृष्ठांकित करना चाहेंगे ।

अधीक्षण अभियन्ता/(बाढ़)मो0

सचिव अ0अ0 (जो सं० मो०-4) की पृष्ठांकित
करता-भट्टी, कृपया ।

अनुराग शर्मा
(अनुराग शर्मा)

अ0प्र0(बाढ़)

कृपया ।

23/6/25
(विवेक गोस्व)

अधी० अभि० (जो० सं० मो०-4)

23/6/25
(शरद कुमार)

26/06/2025

EE-13

संख्या 218
नियत की तिथि 24/6/25
प्राप्ति तिथि

पृ०सं०-10/टि० पर अंकित टिप्पणी कृपया अवलोकनार्थ।

जे०पी० गंगा पथ समग्र उद्यान परियोजना का निर्माण कार्य दीघा से गाँधी मैदान (ए०न० सिन्हा संस्थान) तक जे०पी० गंगा पथ के सामानान्तर किया जाना प्रस्तावित है। प्रस्तावित जे०पी० गंगा पथ समग्र उद्यान परियोजना के निर्माण स्थल के Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संबंध में नगर विकास एवं आवास विभाग, बिहार सरकार द्वारा दिनांक-08.03.2025 को जल संसाधन विभाग से मंतव्य/अनापत्ति हेतु संचिका पृष्ठांकित की गयी।

इस संबंध में प्रस्तावित स्थल के Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संबंध में मंतव्य/अनापत्ति हेतु दिनांक-11.03.2025 को बाढ़ नियंत्रण योजना एवं मोनिटरिंग अंचल को संचिका पृष्ठांकित की गयी। तदोपरान्त दिनांक-02.05.2025 को बाढ़ नियंत्रण योजना एवं मोनिटरिंग अंचल द्वारा प्रस्तावित जे०पी० गंगा पथ समग्र उद्यान परियोजना के निर्माण स्थल Flood Plain/Active Flood Plain Area से आच्छादित/आच्छादित नहीं होने के संदर्भ में मुख्य अभियंता, बाढ़ नियंत्रण एवं जल निस्सरण, पटना से प्राप्त अनुशंसित प्रतिवेदन संलग्न कर संचिका योजना एवं मोनिटरिंग अंचल-4 को पृष्ठांकित की गई (पृ०सं० 59-51/प०)। जिसके मुख्य बिन्दु निम्नवत् है:-

- गंगा नदी के भाग में पटना शहर के सुरक्षा हेतु पटना शहरी सुरक्षा दीवाल निर्मित है एवं जे०पी० गंगा पथ, पटना शहरी सुरक्षा दीवाल एवं गंगा नदी के बीच अवस्थित है।
- विभागीय आदेश संख्या-143 दिनांक-06.03.2025 के कंडिका-6 (ख) से स्पष्ट है कि जे०पी० गंगा पथ के सामानान्तर दीघा से गाँधी मैदान तक प्रस्तावित जे०पी० गंगा पथ समग्र उद्यान योजना के निर्माण कार्य में उपयोग होने वाली भूमि Flood Plain/Active Flood Plain Area से आच्छादित है।
- उक्त विभागीय आदेश के कंडिका-6(ग) में स्पष्ट अंकित है कि निर्धारित Flood Plain Zone को prohibited zone अंतर्गत रखा गया है।
- उक्त विभागीय आदेश के कंडिका-7(क) एवं 7(ख) के अनुसार prohibited zone में किन-किन गतिविधियों को अनुमान्य एवं किन-किन गतिविधियों को प्रतिबंधित किया गया है। यह स्पष्ट रूप से अंकित है।

जल संसाधन विभाग के आदेश संख्या-143 दिनांक-06.03.2025 में निहित प्रावधानों के आलोक में मुख्य अभियंता, बाढ़ नियंत्रण एवं जल निस्सरण, पटना से प्राप्त अनुशंसित प्रतिवेदन की विभागीय स्तर पर समीक्षा की गई। उक्त विभागीय आदेश की कंडिका-6 में निहित प्रावधान निम्नवत् है :-

(क) जिन नदियों के दोनों किनारों पर तटबंध निर्मित है, उन नदियों के लिए दोनों किनारे पर निर्मित तटबंध के मध्य के क्षेत्र को Flood Plain Zone निर्धारित किया जाता है।

(ख) जिन नदियों के एक ही किनारे पर तटबंध निर्मित है, उन नदियों के लिए तटबंध से लेकर नदी की चौड़ाई होते हुए नदी के दूसरे किनारे से 500 मीटर तक की चौड़ाई के क्षेत्र को Flood Plain Zone निर्धारित किया जाता है।

(ग) उपरोक्त कंडिका- क एवं ख में निर्धारित Flood Plain Zone को Prohibited Zone अंतर्गत रखा गया है।

संचिका संख्या 09/न०वि०वि०म०अ०-04/2025

टिप्पणी पृष्ठ सं०

अंश 'ख'

उक्त विभागीय आदेश की कंडिका-7 (क) की उप कंडिका-i से xix तक Prohibited Zone में अनुमान्य गतिविधियाँ "जैसे- पार्क, खेल के मैदान, बगीचे, मनोरंजक गतिविधियाँ आदि, जिनमें किसी स्थायी संरचना का निर्माण/अधिष्ठापन न हो" का उल्लेख किया गया है एवं कंडिका-7 (ख) की उप कंडिका-i से vi तक Prohibited Zone में प्रतिबंधित गतिविधियाँ का उल्लेख किया गया है। साथ ही उक्त आदेश की कंडिका-8 में यह स्पष्ट किया गया है कि Prohibited Zone में मूलभूत सुविधाएँ यथा स्कूल, अस्पताल, सड़कें तथा आंगनवाड़ी केंद्र इत्यादि को स्थापित करने हेतु अस्थाई/चलंत संरचना, जो अनफोल्ड/यथास्वरूप स्थानान्तरित किए जा सकें को उपयोग में लाया जा सकता है।

अतएव निदेशानुसार मुख्य अभियंता, बाढ़ नियंत्रण एवं जल निस्सरण, पटना से प्राप्त अनुशंसित प्रतिवेदन में उल्लेखित उपरोक्त बिन्दुओं एवं विभागीय आदेश संख्या-143 दिनांक-06.03.2025 में निहित प्रावधानों के आलोक में आवश्यक कार्रवाई हेतु संचिका नगर विकास एवं आवास विभाग को पृष्ठांकित करने पर विचार किया जा सकता है।

उक्त प्रस्ताव पर प्रधान सचिव महोदय का अनुमोदन प्राप्त करना चाहेंगे। अनुमोदनोपरांत संचिका नगर विकास एवं आवास विभाग को पृष्ठांकित किया जा सकेगा।

Jaish
22/6/25

(जैकी जैस)
सहायक अभियंता

कार्यपालक अभियंता, प्र०-13 (प्रतिनियुक्ति पर)
अधीक्षण अभियंता, अंचल-4

उपरोक्त टिप्पणी कृपया अवलोकनार्थ।

- विषयांकित मामला जे० पी० गंगा पथ समग्र उद्यान परियोजना के निर्माण हेतु Flood Plain/Active Flood Plain Area आच्छादित/आच्छादित नहीं होने के संबंध में नगर विकास एवं आवास विभाग, बिहार द्वारा जल संसाधन विभाग से मंतव्य/अनापत्ति हेतु संचिका पृष्ठांकित की गयी।
- मुख्य अभियंता, बाढ़ नियंत्रण एवं जल निस्सरण, पटना से अनुशंसा प्राप्त कर बाढ़ मोनिटरिंग अंचल द्वारा संचिका इस अंचल को अग्रोत्तर कार्रवाई हेतु उपलब्ध करायी गई है। अनुशंसा के मुख्य बिन्दु टिप्पणी पृष्ठ-12/टि० के अंश 'क' पर वर्णित है।
- Flood Plain Zoning से संबंधित दिनांक-06.03.2025 को निर्गत विभागीय आदेश में अनुमान्य गतिविधियाँ एवं प्रतिबंधित गतिविधियाँ पृष्ठ-13/टि० के अंश 'ख' पर अंकित हैं।
- उपरोक्त मंतव्य पर प्रधान सचिव महोदय का सहमति प्राप्त कर संचिका नगर विकास एवं आवास विभाग को पृष्ठांकित किया जा सकता है।

Asom
22/06/25

(अवधेश कुमार सिन्हा)

मुख्य अभियंता, यो० एवं मो०

अपेक्षित टिप्पणी कृपया | अंश 'ख' प्रस्ताव
पर क्रमानुसार संपूर्ण नगर विकास एवं आवास विभाग को पृष्ठांकित किया जा
सकता है।

यो० एवं मोनिट० अंचल संख्या-4

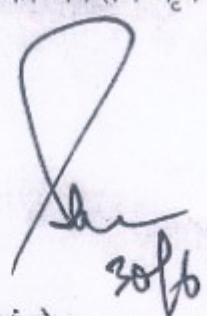
ACF (M)
21.06.2025

सं० प्र०/1200
06.06.25

पूर्व पृष्ठ की टिप्पणी।

जे०पी० गंगा पथ समग्र उद्यान परियोजना का निर्माण कार्य स्थल पर मांगे गये मंतव्य से संबंधित पृ० 13/टि० अंश 'ख' प्रस्ताव को भवदीय कृपया अनुमोदित करना चाहेंगे।

प्रधान सचिव

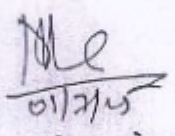


03/04/2005
(शरद कुमार)

(संतोष कुमार मल्ल)

01/04/2005
(शरद कुमार)

मुख्य अभियंता (मौ० शरद कुमार)



(ई० ब्रजेश मोहन)

SE-4

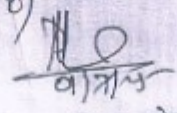
उपरोक्त अनुमोदन द्वारा आवश्यकता है।

संचिका नगर विकास एवं आवास विभाग को प्रेषित की जा सकती है।

मु० का०, पौ० मो०

01/04/2005
(A.K.Singh)

संचिका नगर विकास एवं आवास विभाग को प्रेषित किया जा रहा है।



(ई० ब्रजेश मोहन)

प्रधान सचिव जल संसाधन विभाग
का गोपनीय कार्यालय
संख्या 3345
आगत 30/6/25
दिनांक विधि

30/6/2005
07.25

30/6/2005
07.25
मौ० 30/6/25

पूर्व पृष्ठ की टिप्पणी।

पृ० 13/टि० अंश 'ख' प्रस्ताव के अनुमोदनोपरांत भवदीय संचिका कृपया नगर विकास एवं आवास विभाग को पृष्ठांकित करना चाहेंगे।

प्रधान सचिव

(शरद कुमार)

नगर विभाग एवं आवास विभाग

(सचिव कुमार जल्ल)

प्रधान सचिव जल संसाधन विभाग
कल रोड नवीय कोलांन
संख्या: 3409
आगत: 22/7/25
पिंकल सिचि

2/7
4/7/25

4/07/25

S.O - 09

04-7-25

Annexure- VIII

Lab Report



TEST REPORT

TEST REPORT NO: ETS/1210-1/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR

Analysis Start Date : 10-03-2025

Analysis End Date : 05-06-2025

Sampling Done By : ETS STAFF

Sampling Location : AAQ-1 AN SINHA INSTITUTE

Sampling Method : AS PER CPCB GUIDELINES

Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)

Weather Condition : CLEAR

Test Parameters			Particulate Matter (PM10)	Particulate Matter (PM2.5)	Sulphur Dioxide (SO ₂)	Nitrogen Dioxide (NO ₂)	Carbon Monoxide(CO)
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2025	ETS/ZU-001	158.1	96.9	13.1	43.3	1.10
2	05.03.2025	ETS/ZU-008	184.7	110.2	16.8	46.1	1.56
3	09.03.2025	ETS/ZU-015	192.0	108.1	14.0	39.1	1.76
4	12.03.2025	ETS/ZU-022	186.6	115.8	12.4	40.6	1.10
5	16.03.2025	ETS/ZU-029	198.8	100.8	17.5	46.3	1.00
6	19.03.2025	ETS/ZU-036	191.7	88.3	15.3	45.1	2.03
7	22.03.2025	ETS/ZU-043	219.5	127.1	12.8	40.9	1.72
8	26.03.2025	ETS/ZU-050	210.7	121.5	17.9	46.0	1.29
9	01.04.2025	ETS/ZU-057	200.8	128.4	16.2	45.7	1.89
10	04.04.2025	ETS/ZU-064	220.3	95.2	15.2	44.9	1.91
11	08.04.2025	ETS/ZU-071	213.4	110.7	16.4	41.8	1.53
12	11.04.2025	ETS/ZU-078	225.1	99.5	13.6	42.7	1.49
13	15.04.2025	ETS/ZU-085	179.8	106.6	14.7	41.6	1.37
14	18.04.2025	ETS/ZU-092	203.6	101.3	15.6	45.3	1.00
15	23.04.2025	ETS/ZU-099	204.9	89.6	17.1	40.8	1.60
16	27.04.2025	ETS/ZU-106	241.0	93.7	18.3	41.7	1.82
17	01.05.2025	ETS/ZU-113	225.8	85.0	12.7	40.2	1.99
18	04.05.2025	ETS/ZU-120	233.6	85.6	13.8	44.4	1.60
19	08.05.2025	ETS/ZU-127	227.8	86.0	14.0	42.3	1.76
20	11.05.2025	ETS/ZU-134	212.4	87.5	10.9	44.5	0.91
21	15.05.2025	ETS/ZU-141	221.0	86.2	12.4	47.8	1.76
22	18.05.2025	ETS/ZU-148	197.5	87.1	15.2	49.8	1.87
23	22.05.2025	ETS/ZU-155	193.7	85.0	14.0	40.3	1.87
24	25.05.2025	ETS/ZU-162	201.1	94.4	17.4	46.7	1.02
Minimum			158.1	85.0	10.9	39.1	0.91
Maximum			241.0	128.4	18.3	49.8	2.03
Average			206.0	99.6	14.9	43.7	1.54
98 Percentile			237.6	127.8	18.1	48.9	2.01

****End of Test Report****



Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

For Enviro Tech Services Pvt. Ltd. AUTHORIZED SIGNATORY

Md Humraj
(Quality Manager)

Note:-

1. Test reports without ETS LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated only refer to the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 7 days of issue of test report.
4. Our liability is limited to invoice value only.
5. The sample shall be destroyed after 15 days & Biological / Perishable sample shall be destroyed immediately after issue of test report.
6. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.



TEST REPORT

TEST REPORT NO: ETS/1210-2/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Analysis Start Date : 10-03-2025
Analysis End Date : 05-06-2025
Sampling Done By : ETS STAFF
Sampling Location : AAQ-2 CASTING YARD, L&T, MAINPURA
Sampling Method : AS PER CPCB GUIDELINES
Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)
Weather Condition : CLEAR

Test Parameters			Particulate Matter (PM10)	Particulate Matter (PM2.5)	Sulphur Dioxide (SO2)	Nitrogen Dioxide (NO2)	Carbon Monoxide(CO)
Unit			µg/m3	µg/m3	µg/m3	µg/m3	mg/m3
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	03.03.2025	ETS/ZU-002	148.2	90.8	12.2	40.6	0.91
2	06.03.2025	ETS/ZU-009	173.1	103.3	15.8	43.2	1.29
3	10.03.2025	ETS/ZU-016	180.0	101.3	13.1	36.6	1.45
4	13.03.2025	ETS/ZU-023	175.0	108.6	11.7	38.2	0.91
5	17.03.2025	ETS/ZU-030	186.4	94.5	16.4	43.4	0.82
6	20.03.2025	ETS/ZU-037	179.7	82.8	14.4	42.2	1.68
7	24.03.2025	ETS/ZU-044	205.7	119.2	12.1	38.4	1.43
8	27.03.2025	ETS/ZU-051	197.5	113.9	16.7	43.1	1.07
9	03.04.2025	ETS/ZU-058	188.3	120.3	15.1	42.8	1.55
10	06.04.2025	ETS/ZU-065	206.5	89.3	14.2	42.1	1.59
11	10.04.2025	ETS/ZU-072	200.1	103.7	15.4	39.2	1.27
12	13.04.2025	ETS/ZU-079	211.0	93.3	12.8	40.0	1.23
13	17.04.2025	ETS/ZU-086	168.4	100.0	13.7	39.0	1.14
14	20.04.2025	ETS/ZU-093	190.9	95.0	14.6	42.5	0.82
15	24.04.2025	ETS/ZU-100	192.1	84.0	16.0	38.3	1.32
16	27.04.2025	ETS/ZU-107	225.9	87.8	17.2	39.2	1.52
17	03.04.2025	ETS/ZU-114	211.7	79.7	11.9	37.6	1.64
18	06.04.2025	ETS/ZU-121	219.1	80.3	13.0	41.6	1.32
19	10.05.2025	ETS/ZU-128	213.6	80.6	13.1	39.6	1.45
20	13.05.2025	ETS/ZU-135	199.2	82.0	10.3	41.8	0.75
21	16.05.2025	ETS/ZU-142	207.2	80.8	11.7	44.8	1.45
22	20.05.2025	ETS/ZU-149	185.2	81.6	14.2	46.7	1.54
23	23.05.2025	ETS/ZU-156	181.6	79.7	13.1	37.8	1.54
24	27.05.2025	ETS/ZU-163	188.5	88.5	16.3	43.8	0.84
Minimum			148.2	79.7	10.3	36.6	0.75
Maximum			225.9	120.3	17.2	46.7	1.68
Average			193.1	93.4	14.0	40.9	1.27
98 Percentile			222.8	119.8	17.0	45.8	1.66



For End of Test Report****
Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY

Md Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

Note:-

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TEST REPORT

TEST REPORT NO: ETS/1210-3/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Analysis Start Date : 10-03-2025
Analysis End Date : 05-06-2025
Sampling Done By : ETS STAFF
Sampling Location : AAQ-3 SURYA MANDIR
Sampling Method : AS PER CPCB GUIDELINES
Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)
Weather Condition : CLEAR

Test Parameters			Particulate Matter(PM10)	Particulate Matter(PM2.5)	Sulphur Dioxide(SO ₂)	Nitrogen Dioxide(NO ₂)	Carbon Monoxide(CO)
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	05.03.2025	ETS/ZU-003	153.4	94.0	12.7	42.0	0.81
2	08.03.2025	ETS/ZU-010	179.1	106.9	16.3	44.7	1.14
3	12.03.2025	ETS/ZU-017	186.2	104.9	13.6	37.9	1.29
4	15.03.2025	ETS/ZU-024	181.1	112.4	12.1	39.5	0.81
5	19.03.2025	ETS/ZU-031	192.8	97.8	17.0	44.8	0.73
6	22.03.2025	ETS/ZU-038	185.9	85.7	14.8	43.7	1.48
7	26.03.2025	ETS/ZU-045	212.9	123.3	12.4	39.7	1.27
8	29.03.2025	ETS/ZU-052	204.4	117.9	17.4	44.6	0.96
9	05.04.2025	ETS/ZU-059	194.8	124.5	15.7	44.3	1.39
10	08.04.2025	ETS/ZU-066	213.7	92.3	14.7	43.6	1.40
11	12.04.2025	ETS/ZU-073	207.0	107.3	15.9	40.6	1.12
12	15.04.2025	ETS/ZU-080	218.3	96.6	13.3	41.4	1.09
13	19.04.2025	ETS/ZU-087	174.2	103.5	14.2	40.4	1.01
14	22.04.2025	ETS/ZU-094	197.5	98.2	15.1	43.9	0.73
15	26.04.2025	ETS/ZU-101	198.8	86.9	16.6	39.6	1.17
16	29.04.2025	ETS/ZU-108	233.8	90.9	17.8	40.4	1.34
17	05.04.2025	ETS/ZU-115	219.0	82.5	12.3	39.0	1.47
18	08.04.2025	ETS/ZU-122	226.6	83.0	13.4	43.1	1.17
19	12.05.2025	ETS/ZU-129	221.0	83.4	13.6	41.0	1.29
20	15.05.2025	ETS/ZU-136	206.0	84.9	10.6	43.2	0.68
21	18.05.2025	ETS/ZU-143	214.4	83.6	12.1	46.4	1.29
22	22.05.2025	ETS/ZU-150	191.6	84.5	14.7	48.3	1.37
23	25.05.2025	ETS/ZU-157	187.9	82.5	13.6	39.1	1.37
24	29.05.2025	ETS/ZU-164	195.1	91.6	16.9	45.4	0.76
Minimum			153.4	82.5	10.6	37.9	0.68
Maximum			233.8	124.5	17.8	48.3	1.48
Average			199.8	96.6	14.4	42.4	1.13
98 Percentile			230.5	124.0	17.6	47.4	1.48



For *****End of Test Report*****
Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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(Signature of Humraj)
(Customer Manager)



TEST REPORT

TEST REPORT NO: ETS/1210-4/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Analysis Start Date : 10-03-2025
Analysis End Date : 05-06-2025
Sampling Done By : ETS STAFF
Sampling Location : AAQ-4 RUBAN HOSPITAL, PATLIPUTRA COLONY
Sampling Method : AS PER CPCB GUIDELINES
Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)
Weather Condition : CLEAR

Test Parameters			Particulate Matter(PM10)	Particulate Matter(PM2.5)	Sulphur Dioxide(SO ₂)	Nitrogen Dioxide(NO ₂)	Carbon Monoxide(CO)
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2025	ETS/ZU-004	168.7	103.4	14.0	46.2	0.95
2	05.03.2025	ETS/ZU-011	197.0	117.6	17.9	49.2	1.33
3	09.03.2025	ETS/ZU-018	204.8	115.4	15.0	41.7	1.50
4	12.03.2025	ETS/ZU-025	199.2	123.6	13.3	43.5	0.95
5	16.03.2025	ETS/ZU-032	212.1	107.6	18.7	49.3	0.85
6	19.03.2025	ETS/ZU-039	204.6	94.3	16.4	48.1	1.72
7	22.03.2025	ETS/ZU-046	234.2	135.6	13.6	43.7	1.47
8	26.03.2025	ETS/ZU-053	224.7	129.6	19.0	49.1	1.11
9	01.04.2025	ETS/ZU-060	214.3	137.0	17.3	48.7	1.60
10	04.04.2025	ETS/ZU-067	235.1	101.5	16.3	48.0	1.64
11	08.04.2025	ETS/ZU-074	227.7	118.0	17.5	44.7	1.31
12	11.04.2025	ETS/ZU-081	240.1	106.3	14.5	45.5	1.27
13	15.04.2025	ETS/ZU-088	191.6	113.9	15.6	44.4	1.17
14	18.04.2025	ETS/ZU-095	217.3	108.0	16.6	48.3	0.85
15	23.04.2025	ETS/ZU-102	218.6	95.6	18.3	43.6	1.37
16	27.04.2025	ETS/ZU-109	257.1	100.0	19.6	44.6	1.56
17	01.05.2025	ETS/ZU-116	240.9	90.6	13.5	42.9	1.70
18	04.05.2025	ETS/ZU-123	249.3	91.3	14.7	47.4	1.37
19	08.05.2025	ETS/ZU-130	243.1	91.7	15.0	45.1	1.50
20	11.05.2025	ETS/ZU-137	226.7	93.3	11.7	47.5	0.79
21	15.05.2025	ETS/ZU-144	235.8	92.0	13.3	51.0	1.50
22	18.05.2025	ETS/ZU-151	210.8	92.8	16.3	53.1	1.58
23	22.05.2025	ETS/ZU-158	206.7	90.6	15.0	43.0	1.58
24	25.05.2025	ETS/ZU-165	214.5	100.7	18.6	49.9	0.87
Minimum			168.7	90.6	11.7	41.7	0.79
Maximum			257.1	137.0	19.6	53.1	1.72
Average			219.8	106.3	15.9	46.6	1.32
98 Percentile			253.5	136.3	19.3	52.2	1.71



End of Test Report

For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY

Mid Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO: ETS/1210-5/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Analysis Start Date : 10-03-2025
Analysis End Date : 05-06-2025
Sampling Done By : ETS STAFF
Sampling Location : AAQ-5 YADAV COLONY
Sampling Method : AS PER CPCB GUIDELINES
Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)
Weather Condition : CLEAR

Test Parameters			Particulate Matter(PM10)	Particulate Matter(PM2.5)	Sulphur Dioxide(SO2)	Nitrogen Dioxide(NO2)	Carbon Monoxide(CO)
Unit			µg/m3	µg/m3	µg/m3	µg/m3	mg/m3
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2025	ETS/SL-001	171.6	105.1	14.2	47.0	0.53
2	05.03.2025	ETS/SL-008	200.4	119.6	18.2	50.0	0.75
3	09.03.2025	ETS/SL-015	208.3	117.3	15.2	42.4	0.85
4	12.03.2025	ETS/SL-022	202.5	125.7	13.5	44.1	0.53
5	16.03.2025	ETS/SL-029	215.7	109.4	19.0	50.2	0.48
6	19.03.2025	ETS/SL-036	208.0	95.8	16.6	48.9	0.98
7	22.03.2025	ETS/SL-043	238.2	137.9	13.9	44.4	0.83
8	26.03.2025	ETS/SL-050	228.6	131.8	19.4	49.9	0.62
9	01.04.2025	ETS/SL-057	217.9	139.3	17.6	49.6	0.91
10	04.04.2025	ETS/SL-064	239.0	103.3	16.5	48.7	0.92
11	08.04.2025	ETS/SL-071	231.6	120.1	17.8	45.4	0.74
12	11.04.2025	ETS/SL-078	244.2	108.0	14.8	46.3	0.72
13	15.04.2025	ETS/SL-085	194.9	115.7	15.9	45.1	0.66
14	18.04.2025	ETS/SL-092	220.9	109.9	16.9	49.2	0.48
15	23.04.2025	ETS/SL-099	222.3	97.2	18.6	44.3	0.77
16	27.04.2025	ETS/SL-106	261.5	101.7	19.9	45.3	0.88
17	01.05.2025	ETS/SL-113	245.0	92.2	13.8	43.6	0.96
18	04.05.2025	ETS/SL-120	253.5	92.9	15.0	48.2	0.77
19	08.05.2025	ETS/SL-127	247.2	93.3	15.2	45.9	0.85
20	11.05.2025	ETS/SL-134	230.5	94.9	11.8	48.3	0.44
21	15.05.2025	ETS/SL-141	239.8	93.5	13.5	51.9	0.85
22	18.05.2025	ETS/SL-148	214.3	94.5	16.5	54.0	0.90
23	22.05.2025	ETS/SL-155	210.2	92.2	15.2	43.7	0.90
24	25.05.2025	ETS/SL-162	218.2	102.4	18.9	50.7	0.49
Minimum			171.6	92.2	11.8	42.4	0.44
Maximum			261.5	139.3	19.9	54.0	0.98
Average			223.5	108.1	16.2	47.4	0.74
98 Percentile			257.8	138.7	19.7	53.0	0.97



End of Test Report

AUTHORIZED SIGNATORY

Humraj
(Quality Manager)

Note:-

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO: ETS/1210-6/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Analysis Start Date : 10-03-2025
Analysis End Date : 05-06-2025
Sampling Done By : ETS STAFF
Sampling Location : AAQ-6 DEVI ASTHAN, RAMJI CHAK, DANAPUR
Sampling Method : AS PER CPCB GUIDELINES
Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)
Weather Condition : CLEAR

Test Parameters			Particulate Matter(PM10)	Particulate Matter(PM2.5)	Sulphur Dioxide(SO2)	Nitrogen Dioxide(NO2)	Carbon Monoxide(CO)
Unit			µg/m3	µg/m3	µg/m3	µg/m3	mg/m3
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	05.03.2025	ETS/ZU-006	141.4	86.6	11.7	38.7	1.10
2	08.03.2025	ETS/ZU-013	165.1	98.6	15.0	41.3	1.54
3	12.03.2025	ETS/ZU-020	171.7	96.7	12.5	35.0	1.74
4	15.03.2025	ETS/ZU-027	167.0	103.6	11.2	36.4	1.10
5	19.03.2025	ETS/ZU-034	177.8	90.2	15.7	41.4	0.98
6	22.03.2025	ETS/ZU-041	171.5	79.0	13.7	40.3	2.01
7	26.03.2025	ETS/ZU-048	196.3	113.7	11.5	36.7	1.72
8	29.03.2025	ETS/ZU-055	188.5	108.7	16.0	41.2	1.27
9	05.04.2025	ETS/ZU-062	179.6	114.9	14.5	40.9	1.89
10	08.04.2025	ETS/ZU-069	197.0	85.2	13.6	40.2	1.91
11	12.04.2025	ETS/ZU-076	190.9	99.0	14.7	37.4	1.52
12	15.04.2025	ETS/ZU-083	201.3	89.1	12.3	38.1	1.47
13	19.04.2025	ETS/ZU-090	160.6	95.5	13.0	37.2	1.37
14	22.04.2025	ETS/ZU-097	182.1	90.6	13.9	40.5	0.98
15	26.04.2025	ETS/ZU-104	183.3	80.1	15.3	36.6	1.59
16	29.04.2025	ETS/ZU-111	215.5	83.8	16.4	37.3	1.81
17	05.04.2025	ETS/ZU-118	202.0	76.0	11.4	35.9	1.98
18	08.04.2025	ETS/ZU-125	208.9	76.5	12.3	39.7	1.59
19	12.05.2025	ETS/ZU-132	203.7	76.9	12.5	37.8	1.74
20	15.05.2025	ETS/ZU-139	190.0	78.2	9.8	39.8	0.91
21	18.05.2025	ETS/ZU-146	197.7	77.1	11.2	42.7	1.74
22	22.05.2025	ETS/ZU-153	176.7	77.8	13.6	44.5	1.84
23	25.05.2025	ETS/ZU-160	173.3	76.0	12.5	36.1	1.84
24	29.05.2025	ETS/ZU-167	179.8	84.4	15.6	41.8	1.03
Minimum			141.4	76.0	9.8	35.0	0.91
Maximum			215.5	114.9	16.4	44.5	2.01
Average			184.2	89.1	13.3	39.1	1.53
98 Percentile			212.5	114.3	16.2	43.7	2.00



For Enviro Tech Services Pvt. Ltd.
*****End of Test Report*****

AUTHORIZED SIGNATORY
(Signature)
(Manager)

Note:-

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO: ETS/1210-7/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Analysis Start Date : 10-03-2025
Analysis End Date : 05-06-2025
Sampling Done By : ETS STAFF
Sampling Location : AAQ-7 KURJI MORE
Sampling Method : AS PER CPCB GUIDELINES
Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)
Weather Condition : CLEAR

Test Parameters			Particulate Matter(PM10)	Particulate Matter(PM2.5)	Sulphur Dioxide(SO ₂)	Nitrogen Dioxide(NO ₂)	Carbon Monoxide(CO)
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2025	ETS/ZU-007	133.8	82.0	11.0	36.7	1.03
2	05.03.2025	ETS/ZU-014	156.3	93.2	14.2	39.0	1.47
3	09.03.2025	ETS/ZU-021	162.4	91.5	11.8	33.1	1.65
4	12.03.2025	ETS/ZU-028	157.9	98.1	10.5	34.4	1.03
5	16.03.2025	ETS/ZU-035	168.2	85.3	14.8	39.1	0.93
6	19.03.2025	ETS/ZU-042	162.2	74.7	13.0	38.1	1.91
7	22.03.2025	ETS/ZU-049	185.7	107.5	10.8	34.6	1.62
8	26.03.2025	ETS/ZU-056	178.2	102.8	15.1	38.9	1.21
9	01.04.2025	ETS/ZU-063	169.8	108.7	13.7	38.6	1.78
10	04.04.2025	ETS/ZU-070	186.3	80.5	12.9	38.0	1.80
11	08.04.2025	ETS/ZU-077	180.6	93.6	13.9	35.4	1.44
12	11.04.2025	ETS/ZU-084	190.4	84.3	11.5	36.1	1.39
13	15.04.2025	ETS/ZU-091	151.9	90.2	12.4	35.2	1.29
14	18.04.2025	ETS/ZU-098	172.2	85.7	13.2	38.3	0.93
15	23.04.2025	ETS/ZU-105	173.3	75.8	14.5	34.5	1.49
16	27.04.2025	ETS/ZU-112	203.8	79.3	15.6	35.3	1.73
17	01.05.2025	ETS/ZU-119	191.1	71.9	10.7	34.0	1.88
18	04.05.2025	ETS/ZU-126	197.7	72.4	11.6	37.6	1.49
19	08.05.2025	ETS/ZU-133	192.7	72.7	11.8	35.7	1.65
20	11.05.2025	ETS/ZU-140	179.7	74.0	9.3	37.7	0.85
21	15.05.2025	ETS/ZU-147	186.9	72.9	10.5	40.5	1.65
22	18.05.2025	ETS/ZU-154	167.1	73.6	12.9	42.1	1.75
23	22.05.2025	ETS/ZU-161	163.9	71.9	11.8	34.1	1.75
24	25.05.2025	ETS/ZU-168	170.2	79.8	14.7	39.6	0.95
Minimum			133.8	71.9	9.3	33.1	0.85
Maximum			203.8	108.7	15.6	42.1	1.91
Average			174.3	84.3	12.6	36.9	1.44
98 Percentile			201.0	108.1	15.4	41.4	1.89

For Enviro Tech Services Pvt. Ltd.

****End of Test Report****

AUTHORIZED SIGNATORY
Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO: ETS/1210-8/03/2025

DATE OF REPORT : 10-06-2025

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Analysis Start Date : 10-03-2025
Analysis End Date : 05-06-2025
Sampling Done By : ETS STAFF
Sampling Location : AAQ-8 BALUPAR, PATLIPUTRA INDUSTRIAL AREA
Sampling Method : AS PER CPCB GUIDELINES
Sampling Machine Placed At Height : 1.5 MTR. (FROM GROUND)
Weather Condition : CLEAR

Test Parameters			Particulate Matter(PM10)	Particulate Matter(PM2.5)	Sulphur Dioxide(SO2)	Nitrogen Dioxide(NO2)	Carbon Monoxide(CO)
Unit			µg/m3	µg/m3	µg/m3	µg/m3	mg/m3
Limit (as Per CPCB)			24 Hrs.=100	24 Hrs.=60	24 Hrs.=80	24 Hrs.=80	1 Hrs.=04
Test Method			IS:5182(Pt-23)	Grav.Method	IS:5182(Pt-2)	IS:5182(Pt-6)	IS:5182(Pt-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	03.03.2025	ETS/ZU-008	120.4	73.7	10.0	33.0	0.89
2	06.03.2025	ETS/ZU-015	140.6	83.9	12.8	35.1	1.26
3	10.03.2025	ETS/ZU-022	146.2	82.3	10.7	29.8	1.43
4	13.03.2025	ETS/ZU-030	142.1	88.2	9.5	31.0	0.89
5	17.03.2025	ETS/ZU-036	151.4	76.7	13.3	35.2	0.82
6	20.03.2025	ETS/ZU-043	146.0	67.3	11.6	34.3	1.63
7	24.03.2025	ETS/ZU-050	167.2	96.8	9.8	31.2	1.41
8	27.03.2025	ETS/ZU-057	160.4	92.5	13.6	35.0	1.06
9	03.04.2025	ETS/ZU-064	153.0	97.7	12.4	34.8	1.53
10	06.04.2025	ETS/ZU-071	167.7	72.5	11.5	34.2	1.56
11	10.04.2025	ETS/ZU-078	162.5	84.3	12.5	31.9	1.24
12	13.04.2025	ETS/ZU-085	171.4	75.8	10.4	32.4	1.21
13	17.04.2025	ETS/ZU-092	136.8	81.3	11.1	31.7	1.11
14	20.04.2025	ETS/ZU-099	155.0	77.0	11.8	34.5	0.82
15	24.04.2025	ETS/ZU-106	155.9	68.2	13.1	31.1	1.29
16	27.04.2025	ETS/ZU-113	183.4	71.4	14.0	31.8	1.48
17	03.04.2025	ETS/ZU-120	171.9	64.7	9.7	30.6	1.63
18	06.04.2025	ETS/ZU-127	177.9	65.2	10.5	33.8	1.29
19	10.05.2025	ETS/ZU-134	173.5	65.5	10.7	32.1	1.43
20	13.05.2025	ETS/ZU-141	161.7	66.6	8.3	33.9	0.74
21	16.05.2025	ETS/ZU-148	168.3	65.6	9.5	36.4	1.43
22	20.05.2025	ETS/ZU-155	150.4	66.3	11.5	37.9	1.51
23	23.05.2025	ETS/ZU-162	147.5	64.7	10.7	30.7	1.51
24	27.05.2025	ETS/ZU-167	153.1	71.9	13.2	35.6	0.84
Minimum			120.4	64.7	8.3	29.8	0.74
Maximum			183.4	97.7	14.0	37.9	1.63
Average			156.8	75.8	11.3	33.3	1.25
98 Percentile			180.9	97.3	13.8	37.2	1.63

****End of Test Report****

AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-9/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 02-05-2025

Monitoring Start Date : 02-05-2025

Monitoring End Date : 03-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-1 KURJI MORE

Category Of Area : RESIDENTIAL AREA

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	51.4	55	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	40.1	45	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****



For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY

Ud Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-10/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 02-05-2025

Monitoring Start Date : 02-05-2025

Monitoring End Date : 03-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-2 ATAL PATH

Category Of Area : RESIDENTIAL AREA

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	50.8	55	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	38.2	45	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****



For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY

Md Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-11/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 04-05-2025

Monitoring Start Date : 04-05-2025

Monitoring End Date : 05-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-3 DIGHA GHAT SHAMSHAAN STHAL

Category Of Area : RESIDENTIAL AREA

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	53.2	55	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	42.1	45	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****

For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-12/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 08-05-2025

Monitoring Start Date : 08-05-2025

Monitoring End Date : 09-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-4 CASTING YARD, L&T, MAINPURA

Category Of Area : RESIDENTIAL AREA

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	47.4	55	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	36.3	45	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****



For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-13/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 10-05-2025

Monitoring Start Date : 10-05-2025

Monitoring End Date : 11-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-5 GANDHI MAIDAN

Category Of Area : RESIDENTIAL AREA

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	51.7	55	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	35.3	45	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****

For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY
Md Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-14/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 14-05-2025

Monitoring Start Date : 14-05-2025

Monitoring End Date : 15-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-6 JP SETU

Category Of Area : RESIDENTIAL AREA

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	46.5	55	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	34.6	45	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****



For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-15/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 15-05-2025

Monitoring Start Date : 15-05-2025

Monitoring End Date : 16-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-7 LCT GHAT

Category Of Area : SILENCE ZONE

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	52.2	50	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	35.4	40	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****



For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY
Md Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-16/03/2025

DATE OF REPORT : 10-06-2025

NOISE MONITORING REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT
(PHASE I) AT PATNA, BIHAR

Date of Monitoring : 15-05-2025

Monitoring Start Date : 15-05-2025

Monitoring End Date : 16-05-2025

Monitoring Done By : ETS STAFF

Monitoring Duration : 24.0 HOURS

Place Of Monitoring : NQ-8 RAILWAY KHEL PARISAR, PATLIPUTRA

Category Of Area : RESIDENTIAL AREA

Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1.	Noise Level Day Time	Leq :dB (A)	54.1	55	IS: 9989
2.	Noise Level Night Time	Leq :dB (A)	32.2	45	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

****End of Test Report****



For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-17/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 10-04-2025

Analysis Start Date : 13-04-2025

Analysis End Date : 16-04-2025

Sample ID No : 1210-17

Sampling Done By : ETS STAFF

Sampling & Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-1 PROJECT SITE

Sampling Quantity : 2 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
2.	Sand	%	54.0	IS:2720 (Pt-4)
3.	Silt	%	31.1	IS:2720 (Pt-4)
4.	Clay	%	14.9	IS:2720 (Pt-4)
5.	pH (1:2 Suspension)	..	7.68	IS:2720 (Pt-26)
6.	Cation Exchange Capacity(CEC)	meq/100	28.66	IS:2720 (Pt-24)
7.	Electrical Conductivity (1:2)	µmho/cm	311.1	IS:14767
8.	Water Holding Capacity (WHC)	%	38.3	IS 2720 (Part-2)
9.	Sodium (Na)	mg/kg	148.4	APHA-3055B
10.	Calcium (Ca)	mg/kg	981.0	IS 2720 (Part-23)
11.	Magnesium (Mg)	mg/kg	505.7	ETS/STP/SOIL-08
12.	Bulk Density	g/cm ³	1.56	IS 2386 (Part-4)
13.	Total Nitrogen (N)	mg/kg	171.9	APHA, Pt 4500:(N)
14.	Phosphorus (PO ₄)	mg/kg	38.5	ETS/STP/SOIL-19
15.	Potassium (K)	mg/kg	216.3	APHA-3055B
16.	Organic Matter	%	1.39	IS : 2720 (P-22)
17.	Organic Carbon	%	0.80	BS 1377 -3)
18.	Sulphate as (SO ₄)	mg/kg	1.53	IS:3025(P-24)
19.	Porosity	%	43.04	IS 13030

****End of Test Report****



AUTHORIZED SIGNATORY

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

(Signature)
Raj Humraj
(Quality Manager)

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TEST REPORT

TEST REPORT NO : ETS/1210-18/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 10-04-2025

Analysis Start Date : 13-04-2025

Analysis End Date : 16-04-2025

Sample ID No : 1210-18

Sampling Done By : ETS STAFF

Sampling& Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-2 SABHYATA DWAR

Sampling Quantity : 2 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
2.	Sand	%	48.5	IS:2720 (Pt-4)
3.	Silt	%	34.1	IS:2720 (Pt-4)
4.	Clay	%	17.4	IS:2720 (Pt-4)
5.	pH (1:2 Suspension)	..	8.11	IS:2720 (Pt-26)
6.	Cation Exchange Capacity(CEC)	meq/100	29.2	IS:2720 (Pt-24)
7.	Electrical Conductivity (1:2)	µmho/cm	328.9	IS:14767
8.	Water Holding Capacity(WHC)	%	40.4	IS 2720 (Part-2)
9.	Sodium (Na)	mg/kg	140.8	APHA-3055B
10.	Calcium (Ca)	mg/kg	1073.8	IS 2720 (Part-23)
11.	Magnesium (Mg)	mg/kg	547.4	ETS/STP/SOIL-08
12.	Bulk Density	g/cm ³	1.28	IS 2386 (Part-4)
13.	Total Nitrogen (N)	mg/kg	134.1	APHA,Pt 4500:(N)
14.	Phosphorus (PO ₄)	mg/kg	47.2	ETS/STP/SOIL-19
15.	Potassium (K)	mg/kg	186.4	APHA-3055B
16.	Organic Matter	%	2.67	IS : 2720 (P-22)
17.	Organic Carbon	%	1.53	BS 1377 -3)
18.	Sulphate as (SO ₄)	mg/kg	2.23	IS:3025(P-24)
19.	Porosity	%	53.86	IS 13030

****End of Test Report****



AUTHORIZED SIGNATORY
Md Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

Note:-

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TEST REPORT

TEST REPORT NO : ETS/1210-19/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 15-04-2025

Analysis Start Date : 18-04-2025

Analysis End Date : 22-04-2025

Sample ID No : 1210-19

Sampling Done By : ETS STAFF

Sampling & Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-3 MAINPURA

Sampling Quantity : 2 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
2.	Sand	%	44.6	IS:2720 (Pt-4)
3.	Silt	%	34.0	IS:2720 (Pt-4)
4.	Clay	%	21.4	IS:2720 (Pt-4)
5.	pH (1:2 Suspension)	..	7.49	IS:2720 (Pt-26)
6.	Cation Exchange Capacity(CEC)	meq/100	32.4	IS:2720 (Pt-24)
7.	Electrical Conductivity (1:2)	µmho/cm	354.4	IS:14767
8.	Water Holding Capacity(WHC)	%	39.6	IS 2720 (Part-2)
9.	Sodium (Na)	mg/kg	157.7	APHA-3055B
10.	Calcium (Ca)	mg/kg	1085.5	IS 2720 (Part-23)
11.	Magnesium (Mg)	mg/kg	561.0	ETS/STP/SOIL-08
12.	Bulk Density	g/cm ³	1.83	IS 2386 (Part-4)
13.	Total Nitrogen (N)	mg/kg	138.9	APHA, Pt 4500:(N)
14.	Phosphorus (PO ₄)	mg/kg	46.6	ETS/STP/SOIL-19
15.	Potassium (K)	mg/kg	196.9	APHA-3055B
16.	Organic Matter	%	1.60	IS : 2720 (P-22)
17.	Organic Carbon	%	0.92	BS 1377 -3)
18.	Sulphate as (SO ₄)	mg/kg	1.20	IS:3025(P-24)
19.	Porosity	%	33.0	IS 13030

****End of Test Report****

AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-20/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 15-04-2025

Analysis Start Date : 18-04-2025

Analysis End Date : 22-04-2025

Sample ID No : 1210-20

Sampling Done By : ETS STAFF

Sampling & Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-4 RAJIV NAGAR

Sampling Quantity : 2.0 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Texture	---	Sandy Clay Loam	IS:2720 (Pt-4)
2.	Sand	%	51.3	IS:2720 (Pt-4)
3.	Silt	%	26.7	IS:2720 (Pt-4)
4.	Clay	%	22.0	IS:2720 (Pt-4)
5.	pH (1:2 Suspension)	..	7.85	IS:2720 (Pt-26)
6.	Cation Exchange Capacity(CEC)	meq/100	32.9	IS:2720 (Pt-24)
7.	Electrical Conductivity (1:2)	µmho/cm	329.7	IS:14767
8.	Water Holding Capacity(WHC)	%	32.4	IS 2720 (Part-2)
9.	Sodium (Na)	mg/kg	123.9	APHA-3055B
10.	Calcium (Ca)	mg/kg	997.9	IS 2720 (Part-23)
11.	Magnesium (Mg)	mg/kg	452.5	ETS/STP/SOIL-08
12.	Bulk Density	g/cm ³	1.40	IS 2386 (Part-4)
13.	Total Nitrogen (N)	mg/kg	155.2	APHA, Pt 4500:(N)
14.	Phosphorus (PO ₄)	mg/kg	48.5	ETS/STP/SOIL-19
15.	Potassium (K)	mg/kg	242.9	APHA-3055B
16.	Organic Matter	%	1.19	IS : 2720 (P-22)
17.	Organic Carbon	%	0.68	BS 1377 -3)
18.	Sulphate as (SO ₄)	mg/kg	0.94	IS:3025(P-24)
19.	Porosity	%	49.27	IS 13030

****End of Test Report****

For Enviro Tech Services Pvt. Ltd.



AUTHORIZED SIGNATORY
R.S. Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-21/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 20-04-2025

Analysis Start Date : 23-04-2025

Analysis End Date : 26-04-2025

Sample ID No : 1210-21

Sampling Done By : ETS STAFF

Sampling & Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-5 ST. XAVIER'S COLLEGE OF MANAGEMENT AND TECHNOLOGY, PATNA

Sampling Quantity : 2.0 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
2.	Sand	%	49.0	IS:2720 (Pt-4)
3.	Silt	%	30.4	IS:2720 (Pt-4)
4.	Clay	%	20.5	IS:2720 (Pt-4)
5.	pH (1:2 Suspension)	..	7.28	IS:2720 (Pt-26)
6.	Cation Exchange Capacity(CEC)	meq/100	27.8	IS:2720 (Pt-24)
7.	Electrical Conductivity (1:2)	µmho/cm	383.8	IS:14767
8.	Water Holding Capacity(WHC)	%	40.9	IS 2720 (Part-2)
9.	Sodium (Na)	mg/kg	158.2	APHA-3055B
10.	Calcium (Ca)	mg/kg	1295.3	IS 2720 (Part-23)
11.	Magnesium (Mg)	mg/kg	522.9	ETS/STP/SOIL-08
12.	Bulk Density	g/cm ³	1.21	IS 2386 (Part-4)
13.	Total Nitrogen (N)	mg/kg	115.2	APHA, Pt 4500:(N)
14.	Phosphorus (PO ₄)	mg/kg	57.2	ETS/STP/SOIL-19
15.	Potassium (K)	mg/kg	222.5	APHA-3055B
16.	Organic Matter	%	1.29	IS : 2720 (P-22)
17.	Organic Carbon	%	0.73	BS 1377 -3)
18.	Sulphate as (SO ₄)	mg/kg	1.46	IS:3025(P-24)
19.	Porosity	%	56.10	IS 13030

****End of Test Report****



AUTHORIZED SIGNATORY

Md Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-22/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 02-05-2025

Analysis Start Date : 05-05-2025

Analysis End Date : 08-05-2025

Sample ID No : 1210-22

Sampling Done By : ETS STAFF

Sampling & Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-6 PMCH CAMPUS

Sampling Quantity : 2.0 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
2.	Sand	%	55.4	IS:2720 (Pt-4)
3.	Silt	%	34.1	IS:2720 (Pt-4)
4.	Clay	%	10.5	IS:2720 (Pt-4)
5.	pH (1:2 Suspension)	..	7.83	IS:2720 (Pt-26)
6.	Cation Exchange Capacity(CEC)	meq/100	23.4	IS:2720 (Pt-24)
7.	Electrical Conductivity (1:2)	µmho/cm	358.5	IS:14767
8.	Water Holding Capacity(WHC)	%	34.7	IS 2720 (Part-2)
9.	Sodium (Na)	mg/kg	148.5	APHA-3055B
10.	Calcium (Ca)	mg/kg	1150.3	IS 2720 (Part-23)
11.	Magnesium (Mg)	mg/kg	500.5	ETS/STP/SOIL-08
12.	Bulk Density	g/cm ³	1.69	IS 2386 (Part-4)
13.	Total Nitrogen (N)	mg/kg	208.5	APHA,Pt 4500:(N)
14.	Phosphorus (P)	mg/kg	73.5	ETS/STP/SOIL-19
15.	Potassium (K)	mg/kg	354.9	APHA-3055B
16.	Organic Matter	%	2.65	IS : 2720 (P-22)
17.	Organic Carbon	%	1.51	BS 1377 -3)
18.	Sulphate as (SO ₄)	mg/kg	1.86	IS:3025(P-24)
19.	Porosity	%	38.05	IS 13030

Ashish

****End of Test Report****

AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-23/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 02-05-2025

Analysis Start Date : 05-05-2025

Analysis End Date : 08-05-2025

Sample ID No : 1210-23

Sampling Done By : ETS STAFF

Sampling & Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-7 AGRICULTURAL LAND

Sampling Quantity : 2.0 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
2	Sand	%	46.2	IS:2720 (Pt-4)
3	Silt	%	33.6	IS:2720 (Pt-4)
4	Clay	%	20.2	IS:2720 (Pt-4)
5	pH (1:2 Suspension)	..	7.99	IS:2720 (Pt-26)
6	Cation Exchange Capacity(CEC)	meq/100	20.4	IS:2720 (Pt-24)
7	Electrical Conductivity (1:2)	µmho/cm	301.4	IS:14767
8	Water Holding Capacity(WHC)	%	34.3	IS 2720 (Part-2)
9	Sodium (Na)	mg/kg	130.1	APHA-3055B
10	Calcium (Ca)	mg/kg	1292.0	IS 2720 (Part-23)
11	Magnesium (Mg)	mg/kg	533.6	ETS/STP/SOIL-08
12	Bulk Density	g/cm ³	1.84	IS 2386 (Part-4)
13	Total Nitrogen (N)	mg/kg	122.6	APHA, Pt 4500:(N)
14	Phosphorus (PO ₄)	mg/kg	32.6	ETS/STP/SOIL-19
15	Potassium (K)	mg/kg	184.9	APHA-3055B
16	Organic Matter	%	1.98	IS : 2720 (P-22)
17	Organic Carbon	%	1.13	BS 1377 -3)
18	Sulphate as (SO ₄)	mg/kg	0.99	IS:3025(P-24)
19	Porosity	%	32.64	IS 13030

****End of Test Report****



AUTHORIZED SIGNATORY
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-24/04/2025

DATE OF REPORT : 10-06-2025

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT PATNA, BIHAR

Date of Sampling : 10-05-2025

Analysis Start Date : 13-05-2025

Analysis End Date : 16-05-2025

Sample ID No : 1210-24

Sampling Done By : ETS STAFF

Sampling & Testing Method : ETS/LAB/SOIL-01

Sampling Location : SQ-8 AGRICULTURAL LAND (NEAR CASTING YARD, L&T, (MAINPURA)

Sampling Quantity : 2.0 kg.

Packing Condition : SEALED

Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
2	Sand	%	43.7	IS:2720 (Pt-4)
3	Silt	%	35.1	IS:2720 (Pt-4)
4	Clay	%	21.2	IS:2720 (Pt-4)
5	pH (1:2 Suspension)	..	7.60	IS:2720 (Pt-26)
6	Cation Exchange Capacity(CEC)	meq/100	25.5	IS:2720 (Pt-24)
7	Electrical Conductivity (1:2)	µmho/cm	347.8	IS:14767
8	Water Holding Capacity(WHC)	%	33.7	IS 2720 (Part-2)
9	Sodium (Na)	mg/kg	144.1	APHA-3055B
10	Calcium (Ca)	mg/kg	1115.8	IS 2720 (Part-23)
11	Magnesium (Mg)	mg/kg	495.3	ETS/STP/SOIL-08
12	Bulk Density	g/cm ³	1.65	IS 2386 (Part-4)
13	Total Nitrogen (N)	mg/kg	202.3	APHA,Pt 4500:(N)
14	Phosphorus (P)	mg/kg	41.7	ETS/STP/SOIL-19
15	Potassium (K)	mg/kg	245.3	APHA-3055B
16	Organic Matter	%	1.53	IS : 2720 (P-22)
17	Organic Carbon	%	0.88	BS 1377 -3)
18	Sulphate as (SO ₄)	mg/kg	1.23	IS:3025(P-24)
19	Porosity	%	39.58	IS 13030

****End of Test Report****



AUTHORIZED SIGNATORY

Humraj
(Quality Manager)

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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TEST REPORT

TEST REPORT NO : ETS/1210-25/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR

Date of Sampling : 01.05.2025
Analysis Start Date : 03.05.2025
Analysis End Date : 06.05.2025
Sample ID No : 1210-25
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : GW-1 AN SINHA INSTITUTE
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.40	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	480.6	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	197.7	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	265.7	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	95.4	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	70.0	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	39.66	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	7.70	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.35	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.12	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.14	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	22.1	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	47.9	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.70	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C6H5OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	738.5	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	17.7	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
35.	Faecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

Note:-

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

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For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY

Humraj
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TEST REPORT

TEST REPORT NO : ETS/1210-26/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
 "DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT
 PATNA, BIHAR

Date of Sampling : 01.05.2025
 Analysis Start Date : 03.05.2025
 Analysis End Date : 06.05.2025
 Sample ID No : 1210-26
 Sampling Done By : ETS STAFF
 Sampling Description : GROUND WATER
 Sampling Location : GW-2 CASTING YARD, L&T, MAINPURA
 Sampling Method : ETS/STP/WATER-01
 Sampling Quantity : 2.0 +0.5 Lt.
 Packing Condition : SEALED
 Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.96	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	372.7	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	157.6	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	180.7	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	79.1	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	44.8	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	40.48	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	10.30	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.30	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.20	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.12	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	17.2	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	52.6	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.56	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C6H5OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	572.9	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	18.7	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
35.	Faecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

****End of Test Report****

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

AUTHORIZED SIGNATORY

Humraj
(Quality Manager)

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TEST REPORT

TEST REPORT NO : ETS/1210-27/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT
PATNA, BIHAR
Date of Sampling : 05.05.2025
Analysis Start Date : 08.05.2025
Analysis End Date : 11.05.2025
Sample ID No : 1210-27
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : GW-3 SURYA MANDIR
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.21	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	487.2	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	218.8	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	238.4	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	85.3	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	56.1	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	41.20	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	8.74	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.27	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.26	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.18	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	23.9	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	58.1	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.61	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C6H5OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	749.4	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	20.2	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
35.	Faecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

*****End of Test Report*****

AUTHORIZED SIGNATORY

Mid Humraj
(Quality Manager)

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

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TEST REPORT

TEST REPORT NO : ETS/1210-28/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT
PATNA, BIHAR
Date of Sampling : 05.05.2025
Analysis Start Date : 08.05.2025
Analysis End Date : 11.05.2025
Sample ID No : 1210-28
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : GW-4 RUBAN HOSPITAL, PATLIPUTRA COLONY
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.78	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	468.1	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	218.3	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	239.5	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	77.6	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	53.8	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	43.5	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	5.55	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.23	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.24	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.08	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	25.6	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	60.6	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.67	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	718.9	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	18.4	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
35.	Faecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

For Enviro Tech End of Test Report****

AUTHORIZED SIGNATORY

Indu Humraj
(Quality Manager)

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

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TEST REPORT

TEST REPORT NO : ETS/1210-29/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
 "DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT
 PATNA, BIHAR

Date of Sampling : 10.05.2025
 Analysis Start Date : 13.05.2025
 Analysis End Date : 16.05.2025
 Sample ID No : 1210-29
 Sampling Done By : ETS STAFF
 Sampling Description : GROUND WATER
 Sampling Location : GW-5 YADAV COLONY
 Sampling Method : ETS/STP/WATER-01
 Sampling Quantity : 2.0 +0.5 Lt.
 Packing Condition : SEALED
 Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	8.11	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	321.9	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	191.6	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	215.5	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	64.6	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	48.7	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	35.64	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	4.92	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.37	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.24	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.07	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	22.9	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	56.3	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.08	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	495.2	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	19.3	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

****End of Test Report****

For Enviro Tech Services Pvt. Ltd.
AUTHORIZED SIGNATORY

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

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Md Humraj
(Quality Manager)



TEST REPORT

TEST REPORT NO : ETS/1210-30/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer

: BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT
PATNA, BIHAR
: 12.05.2025
: 15.05.2025
: 18.05.2025
: 1210-30
: ETS STAFF
: GROUND WATER
: GW-6 DEVI ASTHAN, RAMJI CHAK, DANAPUR
: ETS/STP/WATER-01
: 2.0 +0.5 Lt.
: SEALED
: P.V.C. AND GLASS BOTTLE

Date of Sampling
Analysis Start Date
Analysis End Date
Sample ID No
Sampling Done By
Sampling Description
Sampling Location
Sampling Method
Sampling Quantity
Packing Condition
Packed In

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.73	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	586.7	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	235.0	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	248.3	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	96.2	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	54.6	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	41.51	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	4.45	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.32	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.25	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.03	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	27.3	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	66.3	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.47	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C6H5OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	883.0	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	18.7	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
35.	Faecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

For Enviro Tech Services Pvt. Ltd. End of Test Report.

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

AUTHORIZED SIGNATORY

Md Humraj
(Quality Manager)

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TEST REPORT

TEST REPORT NO : ETS/1210-31/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer

: BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT
PATNA, BIHAR
Date of Sampling : 18.05.2025
Analysis Start Date : 21.05.2025
Analysis End Date : 24.05.2025
Sample ID No : 1210-31
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : GW-7 KURJI MORE
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.55	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	561.6	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	249.8	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	272.5	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	89.7	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	60.3	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	39.66	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	5.24	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.32	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.08	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.10	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	30.1	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	60.6	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.45	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	863.6	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	19.1	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable	Shall Not Be Detectable	IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable	Shall Not Be Detectable	IS:1622-1981
35.	Faecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable	Shall Not Be Detectable	APHA-9221

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Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

AUTHORIZED SIGNATORY

Mid Hunraj
(Quality Manager)

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TEST REPORT

TEST REPORT NO : ETS/1210-32/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer

: BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I) AT
PATNA, BIHAR
Date of Sampling : 20.05.2025
Analysis Start Date : 23.05.2025
Analysis End Date : 26.05.2025
Sample ID No : 1210-32
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : GW-8 BALUPAR, PATLIPUTRA INDUSTRIAL AREA
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 LL
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Drinking Water Standards / Limit (IS:10500 2012)		Test Method
				Desirable	Permissible	
1.	Colour	Hazen	<5.0	5	15	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.48	6.5 - 8.5	No Relaxation	IS:3025 (Pt-11)
4.	Taste	---	Agreeable	Agreeable	Agreeable	IS:3025 (Pt-8)
5.	Turbidity	NTU	<1.0	1	5	IS:3025 (Pt-10)
6.	Total Dissolved Solid (TDS)	mg/L	298.4	500	2000	IS:3025 (Pt-18)
7.	Total Alkalinity (CaCO ₃)	mg/L	167.7	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	186.8	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	55.8	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	43.2	75	200	IS:3025 (Pt-40)
11.	Mineral Oil	mg/L	<0.01	0.5	No Relaxation	IS:3025 (Pt-39)
12.	Sulphate (SO ₄)	mg/L	33.17	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	4.03	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.32	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.20	0.3	No Relaxation	IS:3025 (Pt-53)
16.	Aluminium (Al)	mg/L	<0.02	0.03	0.2	APHA-3500 (B)
17.	Selenium (Se)	mg/L	<0.01	0.01	No. Relaxation	APHA-3113 (B)
18.	Cyanide (CN)	mg/L	<0.01	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.12	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	19.3	30	100	IS:3025 (Pt-45)
21.	Sodium (Na)	mg/L	48.6	Not Specified	Not Specified	APHA-3500 (Na)
22.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
23.	Zinc(Zn)	mg/L	0.70	5	15	APHA-3111 (B)
24.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
25.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
26.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
27.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
30.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
31.	Conductivity (25 °C)	Micro mhos/cm	459.5	Not Specified	Not Specified	APHA-2510
32.	Temperature	°C	18.1	Not Specified	Not Specified	IS:3025 (Pt-9)
33.	E. Coli	MPN/100ml	Absent	Shall Not Be Detectable	Shall Not Be Detectable	IS:1622-1981
34.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable	Shall Not Be Detectable	IS:1622-1981
35.	Faecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable	Shall Not Be Detectable	APHA-9221

For Enviro Tech Services Pvt. Ltd. End of Test Report

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

AUTHORIZED SIGNATORY

Mid Humraj
(Quality Manager)

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(AN ISO 45001:2018 Certified Laboratory)

Plot No. 1/32, S.S. of G.T. Road Industrial Area, Ghaziabad (U.P.) - 201001

email : etslab2025@etslab.in | Website : www.etslab.in | Ph.: 9911516076, 8130255461

TEST REPORT

TEST REPORT NO : ETS/1210-33/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer

: BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR
: 05.05.2025
: 08.05.2025
: 11.05.2025
: ETS STAFF
: SURFACE WATER
: SW-6 SEASONAL STREAM OF THE GANGA RIVER NEAR BANKIPUR
: ETS/STP/WATER-01
: 2.0 +0.5 Lt.
: SEALED
: P.V.C. AND GLASS BOTTLE

Date of Sampling
Analysis Start Date
Analysis End Date
Sampling Done By
Sampling Description
Sampling Location
Sampling Method
Sampling Quantity
Packing Condition
Packed In

S. No.	Test Parameters	Unit	Result	Test Method
1.	Colour	Hazen	<5.0	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	IS:3025 (Pt-5)
3.	pH	---	8.12	IS:3025 (Pt-11)
4.	Turbidity	NTU	23.8	IS:3025 (Pt-10)
5.	Total Dissolved Solids (TDS)	mg/l.	501.7	IS:3025 (Pt-16)
6.	Total Alkalinity (CaCO ₃)	mg/L	182.7	IS:3025 (Pt-23)
7.	Total Hardness(CaCO ₃)	mg/L	206.1	IS:3025 (Pt-21)
8.	Chloride (Cl)	mg/L	86.3	IS:3025 (Pt-32)
9.	Calcium (Ca)	mg/L	62.0	IS:3025 (Pt-40)
10.	Mineral Oil	mg/L	<0.01	IS:3025 (Pt-39)
11.	Sulphate (SO ₄)	mg/L	48.7	IS:3025 (Pt-24)
12.	Nitrate (NO ₃)	mg/l.	0.87	IS:3025 (Pt-34)
13.	Fluoride (F)	mg/L	0.48	IS:3025 (Pt-50)
14.	Iron (Fe)	mg/L	0.69	IS:3025 (Pt-53)
15.	Aluminium (Al)	mg/L	<0.01	APHA-3500 (B)
16.	Selenium (Se)	mg/L	<0.01	APHA-3113 (B)
17.	Cyanide (CN)	mg/L	<0.02	APHA-4500 (C)
18.	Copper(Cu)	mg/L	<0.05	APHA-3111(B)
19.	Magnesium (Mg)	mg/L	24.3	IS:3025 (Pt-45)
20.	Manganese(Mn)	mg/L	<0.1	APHA-3111(B)
21.	Zinc(Zn)	mg/L	0.46	APHA-3111 (B)
22.	Cadmium(Cd)	mg/L	<0.001	APHA-3111 (B)
23.	Lead(Pb)	mg/L	<0.01	APHA-3111 (B)
24.	Boron	Mg/L	<0.05	IS:3026(Pt-57)
25.	Mercury(Hg)	mg/L	<0.001	APHA-3112 (B)
26.	Molybdenum(mo)	mg/L	<0.05	IS:3025(Pt-2)
27.	Nickel (Ni)	mg/L	<0.01	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	APHA-3500 Cr-B
30.	Conductivity (25 °C)	Micro mhos/cm	771.7	APHA-2510
31.	Chemical Oxygen Demand (COD)	mg/L	29.7	APHA-5220 (B)
32.	Biological Oxygen Demand (BOD at 27°C for 3 day)	mg/L	5.02	APHA-4500 (D)
33.	Dissolved Oxygen (DO)	mg/L	8.05	APHA-5210
34.	E. Coli	MPN/100ml	5717.2	IS:1622-1981
35.	Total Coliform	MPN/100ml	23114.8	IS:1622-1981
36.	Faecal Coliform	MPN/100ml	8043.8	APHA-9221

For Enviro Tech Services Pvt. Ltd.

AUTHORIZED SIGNATORY

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

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TEST REPORT

TEST REPORT NO : ETS/1210-34/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR

Date of Sampling : 05.05.2025
Analysis Start Date : 08.05.2025
Analysis End Date : 11.05.2025
Sampling Done By : ETS STAFF
Sampling Description : SURFACE WATER
Sampling Location : SW-2 SEASONAL STREAM OF THE GANGA RIVER NEAR RAJAPUR PUL
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Test Method
1.	Colour	Hazen	<5.0	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.74	IS:3025 (Pt-11)
4.	Turbidity	NTU	10.2	IS:3025 (Pt-10)
5.	Total Dissolved Solids (TDS)	mg/L	462.1	IS:3025 (Pt-16)
6.	Total Alkalinity (CaCO ₃)	mg/L	224.2	IS:3025 (Pt-23)
7.	Total Hardness (CaCO ₃)	mg/L	250.9	IS:3025 (Pt-21)
8.	Chloride (Cl)	mg/L	68.9	IS:3025 (Pt-32)
9.	Calcium (Ca)	mg/L	46.1	IS:3025 (Pt-40)
10.	Mineral Oil	mg/L	<0.01	IS:3025 (Pt-39)
11.	Sulphate (SO ₄)	mg/L	31.2	IS:3025 (Pt-24)
12.	Nitrate (NO ₃)	mg/L	1.28	IS:3025 (Pt-34)
13.	Fluoride (F)	mg/L	0.38	IS:3025 (Pt-60)
14.	Iron (Fe)	mg/L	0.13	IS:3025 (Pt-53)
15.	Aluminium (Al)	mg/L	<0.01	APHA-3500 (B)
16.	Selenium (Se)	mg/L	<0.01	APHA-3113 (B)
17.	Cyanide (CN)	mg/L	<0.02	APHA-4500 (C)
18.	Copper (Cu)	mg/L	<0.05	APHA-3111 (B)
19.	Magnesium (Mg)	mg/L	33.1	IS:3025 (Pt-45)
20.	Manganese (Mn)	mg/L	<0.1	APHA-3111 (B)
21.	Zinc (Zn)	mg/L	0.41	APHA-3111 (B)
22.	Cadmium (Cd)	mg/L	<0.001	APHA-3111 (B)
23.	Lead (Pb)	mg/L	<0.01	APHA-3111 (B)
24.	Boron	Mg/L	<0.05	IS:3026 (Pt-57)
25.	Mercury (Hg)	mg/L	<0.001	APHA-3112 (B)
26.	Molybdenum (Mo)	mg/L	<0.05	IS:3025 (Pt-2)
27.	Nickel (Ni)	mg/L	<0.01	APHA-3111 (B)
28.	Arsenic (As)	mg/L	<0.01	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	APHA-3500 Cr-B
30.	Conductivity (25 °C)	Micro mhos/cm	710.7	APHA-2510
31.	Chemical Oxygen Demand (COD)	mg/L	22.6	APHA-5220 (B)
32.	Biological Oxygen Demand (BOD at 27°C for 3 day)	mg/L	3.26	APHA-4500 (D)
33.	Dissolved Oxygen (DO)	mg/L	7.79	APHA-5210
34.	E. Coli	MPN/100ml	5042.7	IS:1622-1981
35.	Total Coliform	MPN/100ml	17234.6	IS:1622-1981
36.	Faecal Coliform	MPN/100ml	7141.6	APHA-9221

Format no ETS /LAB/TR-09 Issue No 04 dt 01/06/2019 Rev No 03 dt 01/06/2019

****End of Test Report****
AUTHORIZED SIGNATORY

Md Humraj
(Quality Manager)

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TEST REPORT

TEST REPORT NO : ETS/1210-35/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer

: BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR

Date of Sampling

: 10.05.2025

Analysis Start Date

: 13.05.2025

Analysis End Date

: 16.05.2025

Sampling Done By

: ETS STAFF

Sampling Description

: SURFACE WATER

Sampling Location

: SW-3 SEASONAL STREAM OF THE GANGA RIVER NEAR PATLIPUTRA COLONY

Sampling Method

: ETS/STP/WATER-01

Sampling Quantity

: 2.0 +0.5 Lt.

Packing Condition

: SEALED

Packed In

: P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Test Method
1.	Colour	Hazen	<5.0	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.82	IS:3025 (Pt-11)
4.	Turbidity	NTU	16.9	IS:3025 (Pt-10)
5.	Total Dissolved Solids (TDS)	mg/L	480.7	IS:3025 (Pt-16)
6.	Total Alkalinity (CaCO ₃)	mg/L	231.6	IS:3025 (Pt-23)
7.	Total Hardness(CaCO ₃)	mg/L	275.6	IS:3025 (Pt-21)
8.	Chloride (Cl)	mg/L	62.5	IS:3025 (Pt-32)
9.	Calcium (Ca)	mg/L	51.9	IS:3025 (Pt-40)
10.	Mineral Oil	mg/L	<0.01	IS:3025 (Pt-39)
11.	Sulphate (SO ₄)	mg/L	32.3	IS:3025 (Pt-24)
12.	Nitrate (NO ₃)	mg/L	1.19	IS:3025 (Pt-34)
13.	Fluoride (F)	mg/L	0.40	IS:3025 (Pt-60)
14.	Iron (Fe)	mg/L	0.15	IS:3025 (Pt-53)
15.	Aluminium (Al)	mg/L	<0.01	APHA-3500 (B)
16.	Selenium (Se)	mg/L	<0.01	APHA-3113 (B)
17.	Cyanide (Cn)	mg/L	<0.02	APHA-4500 (C)
18.	Copper(Cu)	mg/L	<0.05	APHA-3111(B)
19.	Magnesium (Mg)	mg/L	36.8	IS:3025 (Pt-45)
20.	Manganese(Mn)	mg/L	<0.1	APHA-3111(B)
21.	Zinc(Zn)	mg/L	0.54	APHA-3111 (B)
22.	Cadmium(Cd)	mg/L	<0.001	APHA-3111 (B)
23.	Lead(Pb)	mg/L	<0.01	APHA-3111 (B)
24.	Boron	Mg/L	<0.05	IS:3026(Pt-57)
25.	Mercury(Hg)	mg/L	<0.001	APHA-3112 (B)
26.	Molybdenum(mo)	mg/L	<0.05	IS:3025(Pt-2)
27.	Nickel (Ni)	mg/L	<0.01	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	APHA-3500 Cr-B
30.	Conductivity (25 °C)	Micro mhos/cm	740.0	APHA-2510
31.	Chemical Oxygen Demand (COD)	mg/L	24.6	APHA-5220 (B)
32.	Biological Oxygen Demand (BOD at 27°C for 3 day)	mg/L	3.74	APHA-4500 (D)
33.	Dissolved Oxygen (DO)	mg/L	5.22	APHA-5210
34.	E. Coli	MPN/100ml	4066.0	IS:1622-1981
35.	Total Coliform	MPN/100ml	13649.3	IS:1622-1981
36.	Faecal Coliform	MPN/100ml	7352.9	APHA-9221

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AUTHORIZED SIGNATORY

Ind Humraj
(Quality Manager)



TEST REPORT

TEST REPORT NO : ETS/1210-36/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR

Date of Sampling : 10.05.2025
Analysis Start Date : 13.05.2025
Analysis End Date : 16.05.2025
Sampling Done By : ETS STAFF
Sampling Description : SURFACE WATER
Sampling Location : SW-4 GANGA RIVER NEAR KURJEE
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Test Method
1.	Colour	Hazen	<5.0	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.78	IS:3025 (Pt-11)
4.	Turbidity	NTU	16.4	IS:3025 (Pt-10)
5.	Total Dissolved Solids (TDS)	mg/L	471.2	IS:3025 (Pt-16)
6.	Total Alkalinity (CaCO ₃)	mg/L	214.3	IS:3025 (Pt-23)
7.	Total Hardness(CaCO ₃)	mg/L	230.1	IS:3025 (Pt-21)
8.	Chloride (Cl)	mg/L	70.8	IS:3025 (Pt-32)
9.	Calcium (Ca)	mg/L	48.0	IS:3025 (Pt-40)
10.	Mineral Oil	mg/L	<0.01	IS:3025 (Pt-39)
11.	Sulphate (SO ₄)	mg/L	31.8	IS:3025 (Pt-24)
12.	Nitrate (NO ₃)	mg/L	0.71	IS:3025 (Pt-34)
13.	Fluoride (F)	mg/L	0.38	IS:3025 (Pt-60)
14.	Iron (Fe)	mg/L	0.15	IS:3025 (Pt-53)
15.	Aluminium (Al)	mg/L	<0.01	APHA-3500 (B)
16.	Selenium (Se)	mg/L	<0.01	APHA-3113 (B)
17.	Cyanide (Cn)	mg/L	<0.02	APHA-4500 (C)
18.	Copper(Cu)	mg/L	<0.05	APHA-3111(B)
19.	Magnesium (Mg)	mg/L	27.6	IS:3025 (Pt-45)
20.	Manganese(Mn)	mg/L	<0.1	APHA-3111(B)
21.	Zinc(Zn)	mg/L	0.53	APHA-3111 (B)
22.	Cadmium(Cd)	mg/L	<0.001	APHA-3111 (B)
23.	Lead(Pb)	mg/L	<0.01	APHA-3111 (B)
24.	Boron	Mg/L	<0.05	IS:3025(Pt-57)
25.	Mercury(Hg)	mg/L	<0.001	APHA-3112 (B)
26.	Molybdenum(mo.)	mg/L	<0.05	IS:3025(Pt-2)
27.	Nickel (Ni)	mg/L	<0.01	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	APHA-3500 Cr-B
30.	Conductivity (25 °C)	Micro mhos/cm	726.9	APHA-2510
31.	Chemical Oxygen Demand (COD)	mg/L	24.3	APHA-5220 (B)
32.	Biological Oxygen Demand (BOD at 27°C for 3 day)	mg/L	4.67	APHA-4500 (D)
33.	Dissolved Oxygen (DO)	mg/L	7.14	APHA-5210
34.	E. Coli	MPN/100ml	2984.0	IS:1622-1981
35.	Total Coliform	MPN/100ml	11367.2	IS:1622-1981
36.	Faecal Coliform	MPN/100ml	5690.40	APHA-9221 Ltd

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****End of Test Report****
AUTHORIZED SIGNATORY

Ind Humraj
(Quality Manager)

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TEST REPORT

TEST REPORT NO : ETS/1210-37/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR
Date of Sampling : 10.05.2025
Analysis Start Date : 13.05.2025
Analysis End Date : 16.05.2025
Sampling Done By : ETS STAFF
Sampling Description : SURFACE WATER
Sampling Location : SW-5 RIVERINE POND NEAR BANKIPUR
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Test Method
1.	Colour	Hazen	<5.0	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	IS:3025 (Pt-5)
3.	pH	---	8.11	IS:3025 (Pt-11)
4.	Turbidity	NTU	10.6	IS:3025 (Pt-10)
5.	Total Dissolved Solids (TDS)	mg/L	481.4	IS:3025 (Pt-16)
6.	Total Alkalinity (CaCO ₃)	mg/L	190.7	IS:3025 (Pt-23)
7.	Total Hardness (CaCO ₃)	mg/L	212.0	IS:3025 (Pt-21)
8.	Chloride (Cl)	mg/L	77.3	IS:3025 (Pt-32)
9.	Calcium (Ca)	mg/L	48.0	IS:3025 (Pt-40)
10.	Mineral Oil	mg/L	<0.01	IS:3025 (Pt-39)
11.	Sulphate (SO ₄)	mg/L	44.4	IS:3025 (Pt-24)
12.	Nitrate (NO ₃)	mg/L	0.66	IS:3025 (Pt-34)
13.	Fluoride (F)	mg/L	0.40	IS:3025 (Pt-60)
14.	Iron (Fe)	mg/L	0.14	IS:3025 (Pt-53)
15.	Aluminium (Al)	mg/L	<0.01	APHA-3500 (B)
16.	Selenium (Se)	mg/L	<0.01	APHA-3113 (B)
17.	Cyanide (Cn)	mg/L	<0.02	APHA-4500 (C)
18.	Copper (Cu)	mg/L	<0.05	APHA-3111 (B)
19.	Magnesium (Mg)	mg/L	22.44	IS:3025 (Pt-45)
20.	Manganese (Mn)	mg/L	<0.1	APHA-3111 (B)
21.	Zinc (Zn)	mg/L	0.429	APHA-3111 (B)
22.	Cadmium (Cd)	mg/L	<0.001	APHA-3111 (B)
23.	Lead (Pb)	mg/L	<0.01	APHA-3111 (B)
24.	Boron	Mg/L	<0.05	IS:3025 (Pt-57)
25.	Mercury (Hg)	mg/L	<0.001	APHA-3112 (B)
26.	Molybdenum (mo)	mg/L	<0.05	IS:3025 (Pt-2)
27.	Nickel (Ni)	mg/L	<0.01	APHA-3111 (B)
28.	Arsenic (As)	mg/L	<0.01	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	APHA-3500 Cr-B
30.	Conductivity (25 °C)	Micro mhos/cm	739.8	APHA-2510
31.	Chemical Oxygen Demand (COD)	mg/L	27.91	APHA-5220 (B)
32.	Biological Oxygen Demand (BOD at 27°C for 3 day)	mg/L	3.67	APHA-4500 (D)
33.	Dissolved Oxygen (DO)	mg/L	8.14	APHA-5210
34.	E. Coli	MPN/100ml	385.9	IS:1622-1981
35.	Total Coliform	MPN/100ml	979.7	IS:1622-1981
36.	Faecal Coliform	MPN/100ml	627.2	APHA-9221

For Enviro Tech End of Test Report
AUTHORIZED SIGNATORY

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Md Humraj
(Quality Manager)



TEST REPORT

TEST REPORT NO : ETS/1210-38/05/2025

DATE OF REPORT : 10.06.2025

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDCL)
"DEVELOPMENT OF J.P. GANGA PATH SAMAGRYA UDYAN PROJECT (PHASE I)
AT PATNA, BIHAR

Date of Sampling : 10.05.2025
Analysis Start Date : 13.05.2025
Analysis End Date : 16.05.2025
Sampling Done By : ETS STAFF
Sampling Description : SURFACE WATER
Sampling Location : SW-6 GANGA RIVER NEAR DIGHAT BOAT CLUB
Sampling Method : ETS/STP/WATER-01
Sampling Quantity : 2.0 +0.5 Lt.
Packing Condition : SEALED
Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameters	Unit	Result	Test Method
1.	Colour	Hazen	<5.0	IS:3025 (Pt-4)
2.	Odour	---	Agreeable	IS:3025 (Pt-5)
3.	pH	---	7.15	IS:3025 (Pt-11)
4.	Turbidity	NTU	18.03	IS:3025 (Pt-10)
5.	Total Dissolved Solids (TDS)	mg/L	312.1	IS:3025 (Pt-16)
6.	Total Alkalinity (CaCO ₃)	mg/L	188.4	IS:3025 (Pt-23)
7.	Total Hardness(CaCO ₃)	mg/L	160.1	IS:3025 (Pt-21)
8.	Chloride (Cl)	mg/L	55.4	IS:3025 (Pt-32)
9.	Calcium (Ca)	mg/L	34.0	IS:3025 (Pt-40)
10.	Mineral Oil	mg/L	<0.01	IS:3025 (Pt-39)
11.	Sulphate (SO ₄)	mg/L	45.9	IS:3025 (Pt-24)
12.	Nitrate (NO ₃)	mg/L	0.75	IS:3025 (Pt-34)
13.	Fluoride (F)	mg/L	0.36	IS:3025 (Pt-60)
14.	Iron (Fe)	mg/L	0.24	IS:3025 (Pt-53)
15.	Aluminium (Al)	mg/L	<0.01	APHA-3500 (B)
16.	Selenium (Se)	mg/L	<0.01	APHA-3113 (B)
17.	Cyanide (CN)	mg/L	<0.02	APHA-4500 (C)
18.	Copper(Cu)	mg/L	<0.05	APHA-3111(B)
19.	Magnesium (Mg)	mg/L	18.4	IS:3025 (Pt-45)
20.	Manganese(Mn)	mg/L	<0.1	APHA-3111(B)
21.	Zinc(Zn)	mg/L	0.35	APHA-3111 (B)
22.	Cadmium(Cd)	mg/L	<0.001	APHA-3111 (B)
23.	Lead(Pb)	mg/L	<0.01	APHA-3111 (B)
24.	Boron	Mg/L	<0.05	IS:3026(Pt-57)
25.	Mercury(Hg)	mg/L	<0.001	APHA-3112 (B)
26.	Molybdenum(mo.)	mg/L	<0.05	IS:3025(Pt-2)
27.	Nickel (Ni)	mg/L	<0.01	APHA-3111 (B)
28.	Arsenic(As)	mg/L	<0.01	APHA-3500 (B)
29.	Chromium (Cr+6)	mg/L	<0.01	APHA-3500 Cr-B
30.	Conductivity (25 °C)	Micro mhos/cm	480.5	APHA-2510
31.	Chemical Oxygen Demand (COD)	mg/L	16.4	APHA-5220 (B)
32.	Biological Oxygen Demand (BOD at 27°C for 3 day)	mg/L	2.10	APHA-4500 (D)
33.	Dissolved Oxygen (DO)	mg/L	5.94	APHA-5210
34.	E. Coli	MPN/100ml	1830.0	IS:1622-1981
35.	Total Coliform	MPN/100ml	4310.0	IS:1622-1981
36.	Faecal Coliform	MPN/100ml	2190.0	APHA-9221

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****End of Test Report****
AUTHORIZED SIGNATORY

Hunraj
(Quality Manager)