

ANNEXURE I
Land document

पटना महानगर क्षेत्र प्राधिकार

(बिहार सरकार का उपक्रम)

पाँचवां तल्ला, बिहार राज्य भवन निर्माण निगम लिमिटेड

हॉस्पिटल रोड, शास्त्री नगर, पटना - 800023

सं०/सं०:- PMAA/PEN/^{DILAWARPUR}/_{BIHTA} / G+4 - G+8 /97/2018 - ११ पटना, दिनांक- २२.०६.२०१९

प्रेषक,

प्रभारी निदेशक,
पटना महानगर क्षेत्र प्राधिकार,
बिहार पटना।

सेवा में,

श्री विश्व रंजन, कुलसचिव
Indian Institute of Technology
Bihta, Patna,

विषय:- प्लान केस संख्या- PMAA/PEN/^{DILAWARPUR}/_{BIHTA} / G+4 -G+8 /97/2018 की स्वीकृति के संबंध में।

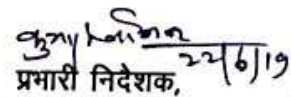
महाशय,

आपके आवेदन सं०:- PMAA/PEN/^{DILAWARPUR}/_{BIHTA} / G+4-G+8 /97/2018 दिनांक-3.07.2018 के संदर्भ में श्री विश्व रंजन कुलसचिव, Indian Institute of Technology Bihta Patna, के, भवन निर्माण के लिए पटना महानगर क्षेत्र प्राधिकार में बिहार शहरी आयोजना तथा विकास अधिनियम, 2012 के अधीन अधिसूचित विकास योजना/पटना महानगर क्षेत्र प्राधिकार/आयोजना स्कीम/पटना मास्टर प्लान 2031 के आलोक में मौजा- दिलावरपुर, थाना सं०-46, रकवा-135.175 एकड़, प्लॉट सं०-940, 950, 954-1152, 1717-1864, 1880-1882, 1887-1889, 2027, 2028, 2084, 2093 मौजा-दयालपुर दौलतपुर (दौलत), थाना सं०-43, रकवा-88.07 एकड़ प्लॉट सं०-4027, 4028, 4031, 4041-4077, 4082, 4084-4150, 4152, 4154, 4156-4197, 4199-4200, 4205, 4207, 4210-4212, 4214, 4216, 4217, 4219-4270, 4272-4274, 4276-4292, 4298, 4299, 4302, 4303, 4308, 4309, 4041, 4319, 4111, 4321, 4030, 4032-4035, 4037-4048, 4051-4054, 4056, 4063-4068, 4070, 4078, 4079, 4083, 4098, 4102, 4105, 4145, 4151, 4153, 4202, 4203, 4204, 4206, 4208, 4209, 4213, 4215, 4218, 4271, 4295, 4296, 4301, 4305, 4306, 4307, 4036, 4088, 4093, 4275, 4297 मौजा- राघोपुर, थाना संख्या-45, रकवा- 2.32 एकड़ प्लॉट सं०- 1-4, 68, 69, 1515 मौजा- अमहारा, थाना संख्या- 44, रकवा-274.89 एकड़, प्लॉट सं०- 4, 5, 7, 9, 10, 11, 19, 23, 25, 26, 29, 31, 36, 37, 38, 49- 53, 55, 56, 57, 59, 63- 96, 120, 130-142, 144, 146-149, 151-155, 157-165, 167-170, 174, 175, 192, 195, 199, 202- 205, 209, 211-220, 227-233, 241, 243, 247, 249-262, 266, 268, 269, 271, 289, 290, 293, 295-297, 299-309, 311, 313, 318, 320, 321, 323, 324, 326-329, 331-334, 337, 341-350, 355-381, 386, 394-405, 416, 426, 431-434, 444, 445, 448, 450, 453, 460, 461, 476, 478, 479, 491, 492, 494, 496, 498, 1093, 1098-1103, 1107, 1108, 1111, 1123, 1129, 1139, 1134, 1139, 1140, 1144-1148, 1151, 1153, 1155, 1156, 1159, 1165, 1171, 1176, 1189, 1190, 1191, 1192, 1195, 1201, 1204, 1206, 1207, 1210, 1214-1219, 1223, 1224, 1227, 1228, 1230-1234, 1237-1240, 1242- 1244, 1248, 1249, 1250, 1254 -1257, 1260, 1261, 2040, 2044-2046, 2048, 2049, 1-3, 9, 20, 22, 34, 39-42, 45-48, 54, 58, 60-61, 92, 171, 173 194, 197, 198, 206, 208,

234, 348, 253, 257, 314, 338, 387, 389, 393, 409, 408, 411, 427, 435, 438, 440, 441, 443, 446, 1124-1127, 1142, 1145, 1175, 1199, 2042, 21, 33, 44, 62, 143, 145, 150, 156, 172, 186, 188, 189, 190, 191, 193, 196, 200, 201, 207, 298, 221-226, 235-240, 242, 244, 245, 263, 264, 265, 270, 291, 383, 385, 390, 391, 392, 406, 407, 410, 412-415, 417-425, 428, 429, 436, 437, 439, 1092, 1109, 1110, 1112-1119, 1121, 1122, 1128, 1130, 1136, 1143, 1177, 1183, 1200, 1209, 2051, 2052 कुल रकवा-500.455 एकड़ के प्लॉट पर (G+4-G+8) जिला, पटना में सांस्थिक भवन, दिनांक-1.6.2019 को स्वीकृतार्थ नक्शा के बाबत निम्नलिखित शर्तों/निर्वधनों के अध्याधीन एतद् द्वारा अनुमति प्रदान की जाती है।

1. भूमि/भवन का उपयोग अन्य रूप से सांस्थिक भवन, प्रयोजन के लिए किया जाएगा और इस प्राधिकार के पूर्व अनुमोदन के बिना उपयोगों को किसी अन्य उपयोग के लिए परिवर्तित नहीं किया जाएगा।
2. विकास पूर्ण रूप से आवश्यक अनुमति के पृष्ठांकन के साथ संलग्न योजनाओं के अनुसार किया जाएगा।
3. अनुमोदन योजना में दर्शाया गया (Open Parking) अनुमान्य से ज्यादा है। अनुमान्य @30%32593.5 m² पार्किंग स्थान खुला रखा जाएगा और इसके किसी भाग पर निर्माण नहीं किया जाएगा।
4. प्रश्नगत भूमि आवेदक के विधिपूर्ण स्वामित्व एवं शांतिपूर्ण कब्जा में अवश्य हो।
5. पूर्व के स्वीकृत नक्शे के अनुसार भू-खण्ड के सामने सड़क की चौड़ाई 30.00मी० प्रतिवेदित है।
6. अनुमति (अनुज्ञा) जारी किये जाने की तारीख से तीन वर्षों की अवधि के लिए विधि मान्य होगी।
7. इस उपबन्ध के अधीन दी गयी अनुमति को उस भूखण्ड जिसके लिए योजना अनुमोदित की गयी हो के अधिकार हक, हित की बाबत साक्ष्य नहीं मानी जाएगी।
8. योजना के अनुमोदन के पश्चात् भू-अभिलेख के कारण या अधिकार/हक/हित की बाबत कोई विवाद होने पर विवाद की अवधि के दौरान योजना का अनुमोदन स्वतः रद्द समझी जायेगी।
9. भू-स्वामित्व एवं नक्शा से संबंधित समस्त दस्तावेजों/कागजात के सत्यता की जिम्मेदारी आवेदक की है। भविष्य में इसमें किसी प्रकार की त्रुटि/हेर-फेर/कपटपूर्ण रचना पाये जाने पर नक्शा अस्वीकृत किये जाने के साथ आवेदक के विरुद्ध विधि सम्मत कार्रवाई की जायेगी।
10. निर्माणकर्ता को प्राधिकार के विनिर्देशों के अनुसार मल जल निकास, सड़क एवं अन्य आधारभूत संरचनाओं का विकास बिहार भवन उपविधि 2014 में प्रावधानित उपविधि 8(5) के आलोक में करना होगा।
11. श्रम सेस के संबंध में नगर विकास एवं आवास विभाग/श्रम संसाधन विभाग द्वारा निर्गत अनुदेशों का अनुपालन निर्माणकर्ता द्वारा सुनिश्चित किया जाएगा।
12. समय-समय पर सरकार द्वारा निर्गत आदेशों एवं नीतियों का विस्तृत रूप में पालन करना अनिवार्य होगा।
13. स्थल पर Rainwater Harvesting का प्रावधान निश्चित रूप से करना होगा।
14. बिहार भवन उपविधि 2014 एवं पटना मास्टर प्लान 2031 के साथ DCR में प्रावधानित के अनुसार निर्माण कार्य सम्पन्न कराना होगा।

विश्वासभाजन,


प्रभारी निदेशक,

पटना महानगर क्षेत्र प्राधिकार,
बिहार, पटना।

Annexure-II
Previous EC letter

2 COPY OF EC LETTER

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, BIHAR

Beltron Bhawan, Shastri Nagar, Patna-800023

Ref. No. 07

Dated: 26.10.12

To,

Sri Subhash Pandey,
Registrar,
Indian Institute of Technology, Patna
Patliputra Colony,
Patna-800013

Sub: Environmental Clearance for the proposed IIT, Patna at Bihta.

Sir,

With reference to your letter No. IITP/WC/205/2012 dated 30/07/2012 and subsequent letter No. IITP/WC/208/2012 dated 30/7/2012, the proposal has been examined by SEAC and processed in accordance with the EIA Notification, 2006 and its amendment thereof. It is noted that the salient features of the project for which Environmental Clearance has been accorded by SEIAA are as follows:

Land area	:	20,23,436.5 sqm
Built-up area	:	137,997.62 sqm
Water consumption	:	Total water demand for the Campus is 1500m ³ /d
Power requirement	:	7.0 MVA
Connectivity	:	The project site is adjacent to SH-2. Bihta is the nearest large town. The project site is at a distance of 35 km (approx) from Patna.
Community facilities	:	Sports complex, stadium, swimming pool, gymnasium, club houses, cafeteria, indoor auditorium, open air theatre.
Parking needs	:	Total number of Car parking within IITP campus is 1133 nos. (approx), which is as per the design standard requirement.

Part A- SPECIFIC CONDITIONS

I. Construction Phase

Facility of labourers during construction:-

- i. Provision of drinking water, wastewater disposal and solid waste management should be ensured for labour camps. Water usage during construction should be optimized to avoid any wastage.
- ii. Proper sanitation facilities should be provided for construction workers to ensure environmental sanitation. Sewage generated from the areas occupied by the construction labourers have to be directed into the existing sewage drain of the area. In case of non availability of the sewer system, an onsite treatment system has to be provided.
- iii. Health and safety of the workers should be ensured during construction. Personnel protective equipment like helmets, earmuffs, etc. should be provided to the workers. For vibration control damped tools must be used and the number of hours that a worker uses them must be limited.

Steps to avoid disturbance during construction:-

- i. Disposal of muck including excavated material during construction phase should not create any adverse effects on the neighboring communities and disposed off taking the necessary precautions for general safety and health aspects.
- ii. Diesel generator sets during construction phase should have acoustic enclosure and should conform to E(P) Rules prescribed for air and noise emission standards.
- iii. Vehicles/equipment deployed during construction phase should be in good condition and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.
- iv. Regular supervision of the above and other measures should be in place all through the construction phase so as to avoid disturbance to the surroundings.
- v. Adequate sprinkler arrangement shall be provided. Care should be taken to keep all material storages adequately covered and contained so that they are not exposed to winds.
- vi. Loading and unloading operations should not be carried out in open areas.
- vii. Use of Ready-Mix concrete is recommended for this project.
- viii. Adequate measures to be adopted to avoid wastage of water for curing of concrete structures.
- ix. Promotion of use of cleaner fuel and fuel quality improvement should be done. Excessive energy consumption and fuel usage should be avoided.
- x. Accumulation/stagnation of water should be avoided to ensure vector control.

Selection of materials for better energy efficiency:-

- i. Use of energy efficient construction materials should be ensured to achieve the desired thermal comfort.
- ii. Fly Ash is to be used for construction as per Notification No. S.O. 759(E) dated 14.09.1999 amended vide Notification No. S.O. 979 (E) dated 27.8.2003 and S.O. 2804 (E) dated 03.11.2005 of the Ministry of Environment & Forests, Govt. of India.
- iii. Construction technologies that require less material and possess high strength should be adopted. Materials with low embodied energy and high strength should be used preferably.
- iv. Use of energy efficient lighting systems e.g. High Pressure Sodium Vapour (HPSV) lamps, LED etc should be promoted. Solar energy should be used for outdoor lighting. Out of total 169 nos. outdoor lighting, at least 25 % of external lighting will be based on solar power, as proposed. Solar water heating will also be introduced in building requiring hot water.
- v. Passive solar cooling to be incorporated in building design. Buildings should be oriented for ensuring natural ventilation and day lighting.
- vi. Proper insulation of roof should be provided to achieve desired thermal comfort. Use of light coloured, reflective roofs having an SRI (solar reflectance index) of 50 % or more should be incorporated.
- vii. Adequate open space, greenery and water bodies to be provided as per rules.
- viii. Restrict the use of glazed surface as per National Building Code 2005.

Water Body Conservation:-

- i. The water bodies, if any, should not be lined and the embankments should not be cemented. The water bodies are to be kept in natural conditions without disturbing the ecological habitat.

Plantation Proposed:-

- i. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. Plantation should be done in consultation of the Department of Forests, Govt. of Bihar.

Water supply:-

- i. Water requirement during construction phase shall be met from municipal supply. Ground water should not be abstracted without prior permission of the competent authority as per the Central Ground Water Board.

Sewage Treatment Plant:-

- i. As per the proposal submitted by the proponent waste water shall be treated in STP.

Rain Water Harvesting Scheme:-

- i. The proponent must collect rainwater from roof-top catchments and reuse for various purposes after necessary cleaning. Water bodies should be created and used for storing rain water. Adequate retention time and storage provisions should be provided for harvesting rainwater.

- ii. Adequate firefighting storage should be provided as per norms.

Municipal Solid Waste Management:-

- i. Adequate provision shall be made for storage of solid waste and adequate means of access shall be provided. Space should be kept reserved for waste storage, collection etc. in site planning and architectural designs.

Transport Management:-

- i. Both internal and external traffic planning and management should be adequate to ensure uninterrupted traffic movement in the area during construction as well as operation phase.
- ii. The design of service road and the entry and exit from the project area should conform to the norms & standards of competent authority for traffic management. Bell mouth type arrangement should be made at the entry & exit. Proper traffic management plan should be adopted in consultation with Traffic authorities.

Others:-

- i. Efficient management of indoor air quality must be ensured for health and safety of the users.
- ii. Adequate measures to be adopted for water conservation during construction and operation stage. Use of efficient irrigation equipment, evaporative cooling unit in air-conditioning system etc should be considered.
- iii. Provisions should be kept for the integration of solar water heating system.

II. Operation Phase

Water Supply:-

- i. Water requirement during operation phase shall be met from municipal supply. Ground water should not be abstracted without prior permission of the competent authority.
- ii. As proposed, low flow appurtenances shall be used in the buildings. Water meters conforming to ISO standards should be installed in the buildings to monitor the daily water consumption. Use of water efficient devices/fixtures and appliances should be promoted. Installation of dual flushing system should be considered to conserve water.
- iii. The proponent practice rainwater harvesting on regular basis.

Sewage Treatment Plant:-

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- i. As per the proposal submitted by the proponent wastewater shall be treated in STP. Treated sewage should conform to E(P) Rules. Treatment Plants should be monitored on a regular basis. Reuse of treated wastewater should be carried out as proposed.

Emission from Diesel Generator Sets:-

- i. The stack height and emissions from D.G. sets should conform to the norms of Central Pollution Control Board. The certification of space design for DG sets should be done by competent authority.

Ensure Energy Efficiency:-

- i. Use of energy efficient electrical systems should be promoted. High efficiency lamps with electronic ballasts should be used.
- ii. Energy efficient Motors and properly rated Transformers should be installed. Manufacturer's certificate to this effect shall be obtained and kept on record. Backup power supply be based on cleaner fuel.
- iii. The project proponent should resort to solar energy at least for street lighting/indoor lighting and water heating.
- iv. Energy Audits should be conducted on a regular basis.

Transport Management:-

- i. Use of public mode of transportation should be promoted. Use of the least polluting type of transportation should be promoted. Adequate parking space should be provided as per norms.
- ii. Pathways should be covered or shadowed by tree canopy as far as practicable. Transport system should be such that traffic will be calm in neighborhoods. Traffic within the project site should be restricted by regulation. Adequate vertical and horizontal clearances of overhead electric power and telecommunication lines should be provided.

Solid Waste Management:-

- i. The proponent should abide by the Municipal Solid Wastes (Management and Handling) Rules, 2000. The proponent must develop the Solid Waste Management and Disposal Scheme ensuring storage and segregation of biodegradable and non-biodegradable wastes. The solid waste is to be disposed off in consultation with municipal authority.
- ii. The proponent should provide different coloured bins for different categories of waste and ensure complete segregation of biodegradable and non-biodegradable wastes. The solid waste from different collection and storage bins should be finally collected at transfer stations. Further

segregation will be done at transfer stations to collect recyclables such as plastic, polythene, glass, metals, textiles, rubbers, leathers, paper etc. Separate compartments shall be provided for each type of recyclables.

- iii. Spent oil from DG sets should be stored in HDPE drums in isolated covered facility and disposed off as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008. Spent oil from DG Sets should be disposed off through registered recyclers only.
- iv. Various types of electrical and electronic wastes generated in the buildings, which includes PC, Xerox machine components etc. should be collected separately for transportation to the authorized recyclers approved by the State/Central Pollution Control Boards. There should also be provision for storage of these wastes in the building before transportation. The e-waste collected should be processed by authorized recycling unit. The proponent should abide by e-waste (Management & Handling) Rules, 2011.

Others:-

- i. The implementation of Environmental Management Plan should be carried out, as proposed. Regular monitoring should be carried out during construction and operation phases.
- ii. The project proponent should provide guidelines to the users to ensure conservation of energy and water. In house environmental awareness campaigns should be carried out at regular intervals to ensure environmental protection.
- iii. Firefighting systems should be designed in compliance with the WBFS and NBC norms. Preventive measures should be adopted for Risk & Disaster Management as per the provisions of the National Building Code 2005.
- iv. As a measure of precaution against accidents, Disaster Management Plan should be prepared. Good housekeeping practices and preventive measures should be adopted to prevent spread of diseases/vectors from the laboratory areas to the neighboring habitation areas.
- v. Environmental Management Information System shall be maintained properly.

Part-B General Conditions

1. The environmental safeguards contained in the EMI Report should be implemented in letter and spirit.
2. All the labourers to be engaged for construction works should be screened for health and adequately treated before issue of work permits. Provision should be made for the supply of kerosene or cooking gas to the labourers during construction phase.

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3. In case of any violation of the conditions laid down in this Environmental Clearance, Section 16 of the Environment (Protection) Act, 1986, will be applicable. In case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEAC, West Bengal.
4. The State Expert Appraisal Committee, Bihar reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.
5. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives.
6. These stipulations would be enforced among others under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 2006 including the amendments and clarification circulars.

Yours faithfully,

(S.K. Kam)
Member Secretary,
SEIAA, Bihar

ANNEXURE III

Site Plan

ANNEXURE IV
Landscape Plan

ANNEXURE V
Fire NOC

Letter No. 1568.

OFFICE OF THE STATE FIRE OFFICER-CUM-DIRECTOR, BIHAR, PATNA.

From,

Rattanmani Sanjeev,
State Fire Officer,
Bihar, Patna.

To,

Office of the Registrar,
Indian Institute of Technology Patna.

Patna Dt. 30-05-2018.

Sub :-

The views regarding proposed Institutional building of above 15 mtr. in height to be constructed at Bihta, Dist- Patna.

Sir,

Please refer to your letter no.- IITPR/2018/362 dt. - 10-05-2018 through which this aforesaid plan has been sent to us for examination, which was examined by the Fire Service committee.

During examination of the plan it was found that a G+5, Institutional building, shall be constructed on 40 feet wide road, belongs to Indian Institute of Technology Patna, on having Thana no.- 43,44,45 at Bihta, Dist- Patna.

We clear the plan after giving following advice/suggestions/ recommendations based on NBC guideline, local building by laws & the local circumstances which must be followed by the concerned Architect / Developer/ Land owner as the case may be.

i) Construction :-

- a) The whole construction of the proposed building shall be carried out as per approved plan drawing conforming the relevant building rules of local Municipal Corporation as per Building Bye laws Bihar, 2014.
- b) The floor area exceeds 750 m² shall be suitably compartmented by separation walls up to ceiling level having at least two hours Fire resisting capacity.
- c) The interior finish decoration of the building shall be made low flame spread materials conforming I.S. specifications.
- d) Provision of ventilation at the crown of the central core-duct of the building shall be provided.
- e) Arrangements shall have to be made for sealing all the vertical ducts by the materials of adequate Fire resisting capacity.

ii) Open Space & Approach :-

- a) The open space surrounding the building shall conform the relevant building rules as well as permit the accessibility and maneuverability of Fire appliance with turning facility 3.60 m/s (minimum).
- b) The approach roads shall be sufficiently strong to withstand the load of Fire Engine weighting up to 20 M.T.
- c) The width and height of the access gates into the premises shall not be less than 4.5 M and 5M respecting abutting the road.

iii) Stair Case :-

- a) The Staircase of the building shall be enclosed type. Entire construction shall be made of brick / R.C.C. type having Fire resisting capacity not less than 4 hours respectively marked in the plan.
- b) The Staircase of the building shall have permanent vents at the top equal to 5% of the cross sectional area of the staircase enclosures and openable sashes at each floor level equal to 15% of the said cross section area shall have to be provided in the external wall of the building.
- c) All the Staircase of the building shall be negotiable to each other in each floor without entering into any room and shall be extended up to respective terrace. The roof of the stair wall shall be 1M above the surrounding roof area.
- d) The width of the Staircases and corridor and travel distance of different categories of occupancies shall have to confirm the relevant building rules.
- e) In case of two staircase, one must be on outer wall.
- f) Both staircase are not went down to basement floor, for approach to basement, there should be another staircase for approach.

iv) LIFT :-

- a) The walls of the Lift enclosure of the building shall be at least two hours Fire resisting type respectively marked in the plan with the event at top of area not less than 0.2 m².

- b) The lift of the building shall be designed at high speed "Fire Lift" and conspicuously indicated marked in the plan.
- c) In case of failure of normal electric supply, it shall automatically trip over to alternate supply. For apartment houses these change over of supply could be done through manually operated change over switch. Alternatively, the lift shall be so wired that in case of power failure, it comes down at the ground level and comes to stand still with door open.
- d) Arrangement shall be provided for extraction of smoke in all the lift shaft by incorporation smoke venting system designed to permit 30 Air changes per hour in case of Fire and shall be of such design as to operate on actuation of sprinkler or Fire Alarm. In case of failure of normal electric supply. It shall automatically trip to alternate supply.
- e) All other requirements shall conform the I.S. specification including the communication facility in the lift cars connecting with the Fire Control Room of the building.
- v) That active Fire protection system such as down comer system with landing valve and hose reel at each floor incorporated with 900 LPM pump at Terrace level, ISI marked Fire extinguishers as per relevant specification & I.S 2190:1992, F.R. check door, manual call alarm point, Fire safety luminescent sign & other Fire precautionary measures as mentioned in NBC be provided before occupancy
- vi) That an underground water static tank of not less than 50,000 Ltrs. capacity with automatic refilling arrangements preferably on front side where Fire Brigade vehicles can reach easily & overhead water static tank of not less than 10,000 Ltrs. Capacity should be made available before occupancy.
- vii) That the internal finishing shall be non-combustible or class - I surface spread of flame.
- viii) That electric cables must be shield at each floor with intumescent coating.
- ix) That Fire exit drill be carried out regularly at least twice in a year after occupation.
- x) That the building must be constructed on at least 40 feet wide road and it is responsibility of the concerned Architect to be ensure the road width because he is the passing authority.
- xi) That AMC should be given to a qualified firm or person for the maintenance of above recommended Fire equipments.
- xii) That the setback shall be checked by the Architect / Passing authority as per the established rule. If any thing wrong, the Architect / Passing authority shall be held responsible.
- xiii) It is hereby made clear that in case of any legal dispute arising in future, in which above recommendations have not been complied, the responsibility will fall entirely upon the Developers / Architect / Landowner as the case may be and not on the recommending Govt. authority (i.e. the office of the State Fire Office, Bihar).
- xiv) It is hereby made also clear that this office (i.e. the office of the State Fire Officer-cum-Director, Bihar, Patna) is not responsible for any legal dispute of the land upon which the proposed building shall be constructed.

This shall be treated as provisional. On compliance of all the above Fire and Life Safety recommendations, this office shall be approached for necessary inspection and testing of the installation. Final in favor of the occupancy shall be issued on being satisfied with the tests and performances of safety aspects of installation of the building.

N.B. - Any deviation and changes the nature of use of the building in respect of the approved plan drawing without obtaining prior permission from this office, this provisional will be treated as cancelled.

The maps are being returned with sign and stamp.

Encl - As Above

Yours faithfully,

(Ratanjani Sanjeev)

State Fire Officer-cum-Director
Bihar, Patna

ANNEXURE VI
Structural Stability Certificate

Er. Ram Kumar Mahto

B.Tech (Civil),
Registered Structural Engineer,
UDHD, Govt. of Bihar.
Reg. No.- BR / UDHD / SE 23-0120

Address:

201, Shresha Residency, B. Area,
Mithapur, Patna.
Mob.No.- 8708692438

REF: SC-009

DATE: 19-08-2023

Stability Certificate

This is to certify that all buildings and structures as listed below including their foundations for building works for IIT Patna have been designed to ensure stability for their intended use and as per provisions of design Indian Standard Codes (IS 456/875/1893 & 13920).

1. Workshops Building
2. D type Qli.
3. Girls Hostel
4. Married Accommodation building
5. C type building


Er. Ram Kumar Mahto
Registered Structural Engineer
UDHD, Government of Bihar
Reg. No.-BR/UDHD/SE/23-0120
Authorized Signatory

Er. Ram Kumar Mahto

B.Tech (Civil),

Registered Structural Engineer,

UDHD, Govt. of Bihar.

Reg. No.- BR / UDHD / SE 23-0120

Address:

201, Shresha Residency, B. Area,

Mithapur, Patna.

Mob.No.- 8708692438

REF.: S.E/15

DATE: 08-01-2024

Stability Certificate

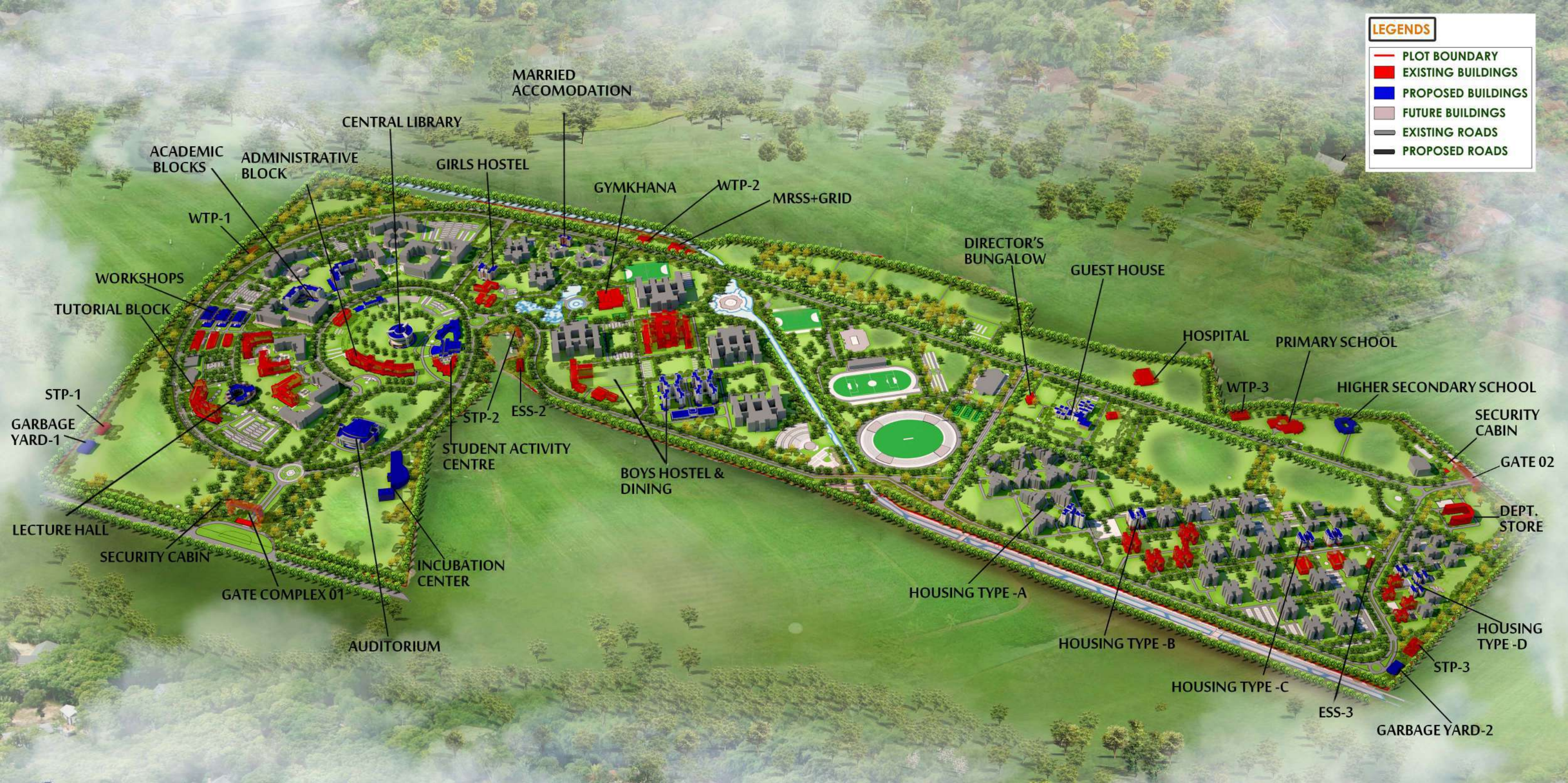
This is to certify that all buildings and structures as listed below including their foundations for building works for IIT Patna have been designed to ensure stability for their intended use and as per provisions of design Indian Standard Codes (IS 456/875/1893 & 13920)

1. Type- B Housing
2. Lecture Theater
3. Academic Block
4. Boys Hostel – Block A & B
5. Type A – Housing
6. Central Library
7. Auditorium
8. Student Activity Centre
9. Guest House


Er. Ram Kumar Mahto
Registered Structural Engineer
UDHD, Government of Bihar
Reg. No.- BR/UDHD/SE/23-0120
Authorized Signatory

ANNEXURE VII

Blue Eyed View



LEGENDS

- PLOT BOUNDARY
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- FUTURE BUILDINGS
- EXISTING ROADS
- PROPOSED ROADS



BIRD EYE VIEW

INDIAN INSTITUTE OF TECHNOLOGY- BIHTA, PATNA





LEGENDS

- PLOT BOUNDARY
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- FUTURE BUILDINGS
- EXISTING ROADS
- PROPOSED ROADS

PROPOSED BUILDINGS

- A- Guest House
- B- Auditorium
- C- Library
- D- Lecture Theatre
- E- Academic Block (01) & (02)
- F- Student Activity Centre
- G- Workshops (01), (02), (03)
- H- ESS 04
- I- Boys Hostel-03 + Dining
- J- Girls Hostel -02
- K- Type A Housing
- K1- Type A Housing
- L- Type C Housing
- M- Type D Housing
- N- Married Accommodation
- O- Higher Secondary School
- P- Incubation Centre
- Q- Garbage Yard-01
- R- Garbage Yard-02

EXISTING BUILDINGS

- 01- Administrative building
- 02- Academic 3 (Dept. of Elec. Eng.)
- 03- Academic 6 (Dept. of Chem. Eng. & Chemistry)
- 04- Academic 4 (Dept. of Civil Eng., Humanities & Social Science)
- 05- Tutorial Building
- 06- Workshops(a), (b), (c)
- 07- Student Activity Centre (1/3)
- 08- Girls Hostel + Dining
- 09- Gymkhana
- 10- Boys Hostel + Dining-02
- 11- Boys Hostel-01
- 12- Director's Bungalow
- 13- Type B Housing
- 14- Type C Housing
- 15- Type D Housing
- 16- Departmental Store
- 17- Security Office
- 18- Primary School
- 19- Hospital
- 20- STP 1
- 21- STP 2
- 22- STP 3
- 23- WTP 1
- 24- WTP 2
- 25- WTP 3
- 26- ESS 1
- 27- ESS 2
- 28- ESS 3
- 29- MRSS + Grid
- 30- Gate Complex 1
- 31- Gate Complex 2

DATE	REV. NO.	REV. BY	DESCRIPTION
DWG ISSUED ON-	23.05.2018	AT: NEW DELHI	
Sign:	Sign:	Sign:	PROJECT CODE
			18001
NAME: Prashant	NAME: Snehal	NAME: A. K. Pathak	BUILDING CODE
Prepared by	Checked by	Validated by	R
Architect	Architect	Architect	
PROJECT:			
CONSTRUCTION OF ACADEMIC & RESIDENTIAL COMPLEXES UNDER PHASE-II FOR THE CAMPUS OF IIT PATNA, AT BIHTA.			



CLIENT:
INDIAN INSTITUTE OF TECHNOLOGY PATNA, BIHTA



PROJECT MANAGEMENT:
CENTRAL PUBLIC WORKS DEPARTMENT, PATNA

CONTRACTOR:



NAGARJUNA CONSTRUCTION COMPANY, HYDERABAD

ARCHITECT

SURESH GOEL & ASSOCIATES
ARCHITECTS - ENGINEERS - PLANNERS



S-83, PANCHSHILA PARK
NEW DELHI-110017
TEL: (011) 26014466, 26016341
MAIL: patna.sga@sureshgoel.com
sga@sureshgoel.com

SIGNATURE OF ARCHITECT

EIA LANDSCAPE PLAN

BUILDING TYPE:	NORTH
MASTER PLAN	E
DRAWING TITLE:	S
LANDSCAPE PLAN	W
DRAWING NO.	REVISION
SGA-18001-R-S2-MP-01	R2
SHEET SIZE: A0	MASTER DRG. NO.
SCALE: 1:3000	

THIS DRAWING IS THE COPYRIGHT OF THE ARCHITECT AND MAYBE USED OR REPRODUCED ONLY WITH HIS PRIOR PERMISSION.

Annexure-VIII
Approved TOR



File No: SIA/8(b)/2546/2024

Government of India

Ministry of Environment, Forest and Climate Change

(Issued by the State Environment Impact Assessment Authority(SEIAA),
BIHAR)



Dated 10/07/2024



To,

Sanjay Kumar
IIT PATNA
Indian Institute of Technology (IIT), Bihta, Patna, Bihar, 801106
sanjay051272@gmail.com

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 Expansion of Indian Institute of Technology, Patna at Bihta, Bihar submitted to SEIAA, Bihar vide proposal number SIA/BR/INFRA2/473619/2024 dated 22/05/2024.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24B3813BR5391554N
(ii) File No.	SIA/8(b)/2546/2024
(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	Expansion of Indian Institute of Technology, Patna at Bihta, Bihar
(viii) Name of Company/Organization	IIT PATNA
(ix) Location of Project (District, State)	PATNA, BIHAR
(x) Issuing Authority	SEIAA, Bihar
(xii) Applicability of General Conditions	no
(xiii) 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 Expert Appraisal Committee (SEAC) in the SEIAA 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 25/06/2024 & 26/06/2024. 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 brief about configuration of plant/equipment, products and byproducts and salient features of the project along with environment settings, as submitted by the Project proponent in Form-1 (Part A & Part B) Reports/presented during SEIAA are annexed to this EC.
6. The SEIAA, Bihar in its meeting held on 25/06/2024 & 26/06/2024, 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 annexure 1.
7. 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 State Expert Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of M/s. Sanjay Kumar under the provisions of EIA Notification, 2006 and as amended thereof.
8. The SEIAA, Bihar reserves the right to stipulate additional conditions, if found necessary.
9. 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.
10. This issues with the approval of the Competent Authority.

Annexure 1

Standard Terms of Reference for (Townships/ Area Development Projects / Rehabilitation Centres)

1. Project Details

S. No	Terms of Reference
1.1	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 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

S. No	Terms of Reference
	under the provisions of EP 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

S. No	Terms of Reference
	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. <u>Violation:-</u> 1. The State Government/SPCB to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no consent to operate to be issued till the project is granted EC. 2. The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of EC. The quantum shall be recommended by the SEAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC and approval of the regulatory authority. 3. Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment. 4. Preparation of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation. 5. Budget of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage shall be completed within three years and to be prepared accordingly. 6. Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 and its amendment for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report. 7. Copy of permission obtained from concerned state Ground water department /CGWA for Ground water withdrawal. 8. Plantation details (Existing/Proposed) along with species to be used, capital and recurring expenditure with maintenance; Layout plan earmarking space for development of peripheral green belt. 9. The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants. 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 EP Act.

S. No	Terms of Reference
	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

S. No	Terms of Reference
	the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website http://moef.nic.in/Manual/Townships. Violation:- 1. The State Government/SPCB to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no consent to operate to be issued till the project is granted EC. 2. The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of EC. The quantum shall be recommended by the SEAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC and approval of the regulatory authority. 3. Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment. 4. Preparation of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation. 5. Budget of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage shall be completed within three years and to be prepared accordingly. 6. Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 and its amendment for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report. 7. Copy of permission obtained from concerned state Ground water department /CGWA for Ground water withdrawal. 8. Plantation details (Existing/Proposed) along with species to be used, capital and recurring expenditure with maintenance; Layout plan earmarking space for development of peripheral green belt. 9. The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants.



F. No. - SIA/8(b)/2546/2024
STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY,
BIHAR

2nd Floor, Beltron Bhawn
Shastri Nagar
Patna - 800 023

E-mail:- seiaabihar@gmail.com
seiaa.ms.br@gmail.com

To,

**The Registrar,
M/s Indian Institute of Technology (IIT),
Bihta, Patna – 801 106,
Email:- registrar@iitp.ac.in.**

Sub:

**Proposed Township and Area Development Project
"Expansion of Indian Institute of Technology (IIT)" at
Block:- Bihta, District:- Patna, State:- Bihar; by M/s Indian
Institute of Technology, [Total Plot Area:- 20,23,436.50 m²,
Total Built-up Area:- 2,68,503.20 m² (Proposed Built-up
Area:- 1,30,549 m² + Existing Built-up Area:- 1,37,954.20
m²)] – Terms of Reference regarding.**

Ref:

1. Online Application – SIA/BR/INFRA2/473619/2024.
2. Scrutiny fee submission dated 22-05-2024.
3. SEAC meeting held on 29-05-2024.
4. SEIAA meeting held on 25-06-2024 and 26-06-2024.

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

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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. <u>Online Proposal No.</u> | SIA/BR/INFRA2/473619/2024 |
| 2. <u>File No.:</u> | SIA/8(b)/2546/2023 |
| 3. <u>Name of the Proposal</u> | Proposed Township and Area Development Project "Expansion of Indian Institute of Technology (IIT)" at Block:- Bihta, District:- Patna, State:- Bihar; by M/s Indian Institute of Technology, |
| 4. <u>Category of the Proposal:</u> | B1 (under violation category) |
| 5. <u>Project/Activity applied for</u> | 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

Activity: Townships/ Area Development Projects / Rehabilitation Centers

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 EP 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.

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- 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>.
- b) The Committee allow the use of baseline data collected during the period of March to May 2024 for preparation of EIA report.

Violation:-

1. The State Government/SPCB to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no consent to operate to be issued till the project is granted EC.
2. The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of EC. The quantum shall be recommended by the SEAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC and approval of the regulatory authority.
3. Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment.

4. Preparation of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation.
5. Budget of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage shall be completed within three years and to be prepared accordingly.
6. Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 and its amendment for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.
7. Copy of permission obtained from concerned state Ground water department /CGWA for Ground water withdrawal.
8. Plantation details (Existing/Proposed) along with species to be used, capital and recurring expenditure with maintenance; Layout plan earmarking space for development of peripheral green belt.
9. The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants.

Sd/-
(Abhay 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.


(Abhay Kumar)
Member-Secretary
SEIAA, Bihar

Annexure-IX

One season Baseline data (Pre-Monsoon)



TEST REPORT

TEST REPORT NO : ETS/1432-1/04/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR.

Date of Sampling : 24.04.2024

Analysis Start Date : 27.04.2024

Analysis End Date : 30.04.2024

Sampling Done By : ETS STAFF

Sampling Description : GROUND WATER

Sampling Location : GW-1 PROJECT SITE

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	---	7.61	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 Dissolve Solid (TDS)	mg/L	452.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	119.0	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	178.8	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	42.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	66.0	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	37.6	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.84	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	N.D	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	18.7	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.72	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	653.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	18.3	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	46.0	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

Note:-

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CHECKED BY
SHRADDHA GUPTA

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

For Enviro-Tech Services
AUTHORIZED SIGNATORY
Pushkar Mittal
Lab In-charge



TEST REPORT

TEST REPORT NO : ETS/1432-2/04/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR.
Date of Sampling : 24.04.2024
Analysis Start Date : 27.04.2024
Analysis End Date : 30.04.2024
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : NETAJI SUBASH MEDICAL COLLEGE
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	---	7.52	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 Dissolve Solid (TDS)	mg/L	362.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	128.0	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	147.8	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	36.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	56.0	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	41.6	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.73	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.25	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.23	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	N.D	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	19.5	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.72	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	686.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	18.5	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	51.2	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

Note:-

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CHECKED BY
SHRADDHA GUPTA
Date: 10/06/2024

For Enviro-Tech Services
AUTHORIZED SIGNATORY
Pushkar Mittal
Lab In-charge



TEST REPORT

TEST REPORT NO : ETS/1432-3/05/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 05.05.2024
Analysis Start Date : 07.05.2024
Analysis End Date : 10.05.2024
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : RAGHOPUR
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	---	7.65	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 Dissolve Solid (TDS)	mg/L	315.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	102.0	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	135.8	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	47.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	53.0	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	35.6	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.75	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.25	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.28	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	N.D	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	22.5	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.71	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	643.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	17.3	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	40.5	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

CHECKED BY
SHRADDHA GUPTA

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
AUTHORIZED SIGNATORY

Pushkar Mittal
Lab In-charge



ENVIRO-TECH SERVICES

An Analytical Laboratory



ISO 45001

(A GOVERNMENT APPROVED LAB)

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

email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063

TEST REPORT

TEST REPORT NO : ETS/1432-4/05/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR.
Date of Sampling : 05.05.2024
Analysis Start Date : 07.05.2024
Analysis End Date : 10.05.2024
Sampling Done By : ETS STAFF
Sampling Description : GROUND WATER
Sampling Location : SDRF, BIHTA
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	---	7.61	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 Dissolve Solid (TDS)	mg/L	510.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	153.6	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	184.8	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	44.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	62.0	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	34.6	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.78	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.25	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.32	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	N.D	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	17.2	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.78	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	763.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	19.3	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	35.8	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

Note:-

CHECKED BY
SHRADDHA GUPTA

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
AUTHORIZED SIGNATORY
Pushkar Mittal
Lab In-charge

TEST REPORT

TEST REPORT NO : ETS/1432-5/05/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR

Date of Sampling : 05.05.2024

Analysis Start Date : 07.05.2024

Analysis End Date : 10.05.2024

Sampling Done By : ETS STAFF

Sampling Description : GROUND WATER

Sampling Location : RAJPUR

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	---	7.61	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 Dissolve Solid (TDS)	mg/L	422.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	114.0	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	175.8	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	68.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	43.0	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	32.6	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.73	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.25	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.18	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	N.D	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.02	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	25.2	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.47	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	640.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	16.3	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	32.5	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

Note:-

CHECKED BY

1. Test reports with SHRADDHA GUPTA PROGRAM 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.

For Enviro-Tech Services

AUTHORIZED SIGNATORY

Lab In-charge

TEST REPORT

TEST REPORT NO : ETS/1432-6/05/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR

Date of Sampling : 10.05.2024

Analysis Start Date : 13.05.2024

Analysis End Date : 16.05.2024

Sampling Done By : ETS STAFF

Sampling Description : GROUND WATER

Sampling Location : BIHTA PUBLIC SCHOOL

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	---	7.74	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 Dissolve Solid (TDS)	mg/L	467.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	148.0	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	163.5	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	60.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	47.0	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	40.5	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.77	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.28	1	1.5	IS:3025 (Pt-60)
15.	Iron (Fe)	mg/L	0.21	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	N.D	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.01	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	12.4	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.72	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	623.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	17.3	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	53.4	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

Note:-

1. Test reports without ETS-LAB HOLOGRAM and ETS/1432-6/05/2024 are invalid.
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.

CHECKED BY
SHRADDHA GUPTA

AUTHORIZED SIGNATORY

Pushkar Mittal
Lab In-charge



ETS-LAB



ENVIRO-TECH SERVICES

An Analytical Laboratory



ISO 45001

(A GOVERNMENT APPROVED LAB)

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

email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063

TEST REPORT

TEST REPORT NO : ETS/1432-7/05/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR

Date of Sampling : 10.05.2024

Analysis Start Date : 13.05.2024

Analysis End Date : 16.05.2024

Sampling Done By : ETS STAFF

Sampling Description : GROUND WATER

Sampling Location : YAMUNAPUR

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	---	7.20	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 Dissolve Solid (TDS)	mg/L	293.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	121.4	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	142.4	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	55.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	44.0	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	37.4	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.61	45	No Relaxation	IS:3025 (Pt-34)
14.	Fluoride (F)	mg/L	0.55	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	N.D	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	23.3	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.83	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	443.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	18.3	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	46.1	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

Note:-

CHECKED BY
SHRADDHA GUPTA

1. Test reports without ETS LAB HOLOGRAM ARE NOT VALID. Issued on 04/01/2019 Rev No 03 dt 01/06/2019

2. The results indicated only refer to the tested samples and listed applicable parameters.

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For Enviro-Tech Services

AUTHORIZED SIGNATORY

Pushkar Mittal

Lab In-charge



ETS-LAB

ENVIRO-TECH SERVICES

An Analytical Laboratory



ISO 45001

(A GOVERNMENT APPROVED LAB)

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

email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063

TEST REPORT

TEST REPORT NO: ETS/1432-8/05/2024

DATE OF REPORT: 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR

Date of Sampling : 10.05.2024

Analysis Start Date : 13.05.2024

Analysis End Date : 16.05.2024

Sampling Done By : ETS STAFF

Sampling Description : GROUND WATER

Sampling Location : SHIV PURI 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	---	7.84	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 Dissolve Solid (TDS)	mg/L	410.0	500	2000	IS:3025 (Pt-16)
7.	Total Alkalinity (CaCO ₃)	mg/L	131.0	200	600	IS:3025 (Pt-23)
8.	Total Hardness(CaCO ₃)	mg/L	147.3	200	600	IS:3025 (Pt-21)
9.	Chloride (Cl)	mg/L	50.0	250	1000	IS:3025 (Pt-32)
10.	Calcium (Ca)	mg/L	61.0	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	35.2	200	400	IS:3025 (Pt-24)
13.	Nitrate (NO ₃)	mg/L	0.68	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	0.21	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	N.D	0.05	No. Relaxation	APHA-4500 (C)
19.	Copper(Cu)	mg/L	0.01	0.05	1.5	APHA-3111(B)
20.	Magnesium (Mg)	mg/L	18.6	30	100	IS:3025 (Pt-45)
21.	Manganese(Mn)	mg/L	<0.1	0.1	0.3	APHA-3111(B)
22.	Zinc(Zn)	mg/L	0.84	5	15	APHA-3111 (B)
23.	Cadmium(Cd)	mg/L	<0.001	0.003	No. Relaxation	APHA-3111 (B)
24.	Lead(Pb)	mg/L	<0.01	0.01	No. Relaxation	APHA-3111 (B)
25.	Mercury(Hg)	mg/L	<0.001	0.001	No. Relaxation	APHA-3112 (B)
26.	Nickel (Ni)	mg/L	<0.01	0.02	No. Relaxation	APHA-3111 (B)
27.	Arsenic(As)	mg/L	<0.01	0.01	0.05	APHA-3500 (B)
28.	Chromium (Cr+6)	mg/L	<0.01	0.05	No. Relaxation	APHA-3500 Cr-B
29.	Phenolic Compound (C ₆ H ₅ OH)	mg/L	<0.001	0.001	0.002	APHA-5530
30.	Conductivity (25 °C)	mhos/cm	670.0	Not Specified	Not Specified	APHA-2510
31.	E. Coli	Coli/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
32.	Total Coliform	MPN/100ml	Absent	Shall Not Be Detectable		IS:1622-1981
33.	Temperature	°C	18.3	Not Specified	Not Specified	IS:3025 (Pt-9)
34.	Sodium (Na)	mg/L	54.1	Not Specified	Not Specified	APHA-3500 (Na)
35.	Fecal Coliform	MPN/100ml	Absent	Shall Not Be Detectable		APHA-9221

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

For Enviro-Tech Services

AUTHORIZED SIGNATORY

Pushkar Mittal
Lab In-charge

Note:-

1. Test reports without ETS LAB HOLOGRAM are not valid for use as evidence. 01/06/2019 Rev No 03 dt 01/06/2019

2. The results indicated only refer to the tested samples and listed applicable parameters.

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TEST REPORT

TEST REPORT NO : ETS/1432-17/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Analysis Start Date : 05.03.2024
Analysis End Date : 28.05.2024
Sampling Done By : ETS STAFF
Sampling Location : PROJECT SITE
Sampling Method : ETS/STP/AIR-01
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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2024	ETS/DI-01	77.3	54.7	8.5	40.7	1.84
2	04.03.2024	ETS/DI-02	82.0	42.9	7.2	22.2	0.87
3	09.03.2024	ETS/DI-03	74.6	40.2	9.7	34.8	2.27
4	12.03.2024	ETS/DI-04	72.8	50.8	8.4	32.3	3.79
5	15.03.2024	ETS/DI-05	79.2	43.3	8.1	35.8	2.81
6	18.03.2024	ETS/DI-06	74.4	55.9	9.3	40.3	4.11
7	22.03.2024	ETS/DI-07	83.8	43.8	7.8	26.1	4.98
8	25.03.2024	ETS/DI-08	80.3	50.1	7.6	17.7	4.43
9	01.04.2024	ETS/DI-09	82.1	38.7	9.0	26.1	3.14
10	04.04.2024	ETS/DI-10	73.6	44.1	10.6	28.0	1.84
11	08.04.2024	ETS/DI-11	87.1	45.8	12.4	29.0	0.97
12	11.04.2024	ETS/DI-12	78.8	55.0	10.5	36.6	1.62
13	15.04.2024	ETS/DI-13	81.4	51.7	5.2	41.3	4.65
14	18.04.2024	ETS/DI-14	85.2	52.4	12.9	42.5	4.22
15	23.04.2024	ETS/DI-15	73.2	48.2	15.4	27.0	4.76
16	27.04.2024	ETS/DI-16	77.1	50.5	21.2	43.5	3.46
17	01.05.2024	ETS/DI-17	83.8	46.6	20.2	26.3	4.54
18	04.05.2024	ETS/DI-18	84.4	44.5	14.7	44.2	3.68
19	08.05.2024	ETS/DI-19	81.0	43.0	12.0	32.2	2.70
20	11.05.2024	ETS/DI-20	80.6	43.7	10.8	31.7	4.11
21	15.05.2024	ETS/DI-21	78.4	38.3	14.8	19.7	3.89
22	18.05.2024	ETS/DI-22	76.6	53.5	17.2	40.2	3.03
23	22.05.2024	ETS/DI-23	75.2	43.3	8.4	21.5	3.68
24	25.05.2024	ETS/DI-24	83.9	40.7	11.9	24.8	1.51
Minimum			72.8	38.3	5.2	17.7	0.87
Maximum			87.1	55.9	21.2	44.2	4.98
Average			79.4	46.7	11.4	31.9	3.20
98 PERCENTILE			86.23	55.49	20.74	43.88	4.88

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

Note:-

1. Test reports without ETS LAB HOLOGRAM ARE INVALID.
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.

CHECKED BY
SHRADDHA GUPTA

For Enviro-Tech Services
AUTHORIZED SIGNATORY
Anshu Kar Mittal
Lab in-charge

TEST REPORT

TEST REPORT NO : ETS/1432-18/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Analysis Start Date : 07.03.2024
Analysis End Date : 30.05.2024
Sampling Done By : ETS STAFF
Sampling Location : NETAJI SUBASH MEDICAL COLLEGE
Sampling Method : ETS/STP/AIR-01
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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	03.03.2024	ETS/DI-25	92.8	65.6	10.2	48.8	2.40
2	07.03.2024	ETS/DI-26	98.4	51.5	8.6	26.6	1.20
3	10.03.2024	ETS/DI-27	89.5	48.2	11.6	41.8	3.00
4	14.03.2024	ETS/DI-28	87.3	61.0	10.1	38.8	5.04
5	17.03.2024	ETS/DI-29	95.0	52.0	9.7	43.0	3.72
6	21.03.2024	ETS/DI-30	89.3	67.1	11.2	48.4	5.52
7	24.03.2024	ETS/DI-31	100.6	52.6	9.4	31.3	6.60
8	28.03.2024	ETS/DI-32	96.4	60.1	9.1	21.2	5.88
9	03.04.2024	ETS/DI-33	98.5	46.5	10.8	31.3	4.20
10	06.04.2024	ETS/DI-34	88.3	52.9	12.7	33.6	2.40
11	10.04.2024	ETS/DI-35	104.5	54.9	14.9	34.8	1.32
12	13.04.2024	ETS/DI-36	94.6	66.0	12.6	43.9	2.16
13	17.04.2024	ETS/DI-37	97.7	62.0	6.2	38.7	6.24
14	20.04.2024	ETS/DI-38	102.2	62.9	15.5	36.2	5.64
15	24.04.2024	ETS/DI-39	87.9	57.9	18.5	32.4	6.36
16	27.04.2024	ETS/DI-40	92.5	60.6	25.4	42.7	4.56
17	03.05.2024	ETS/DI-41	100.5	56.0	24.2	31.6	6.00
18	06.05.2024	ETS/DI-42	101.3	53.4	17.6	40.2	4.92
19	10.05.2024	ETS/DI-43	97.2	51.6	14.4	38.6	3.60
20	13.05.2024	ETS/DI-44	96.7	52.5	13.0	38.0	5.40
21	16.05.2024	ETS/DI-45	94.1	45.9	17.8	23.6	5.16
22	20.05.2024	ETS/DI-46	91.9	64.2	20.6	48.2	4.08
23	23.05.2024	ETS/DI-47	90.2	51.9	10.1	25.8	4.80
24	27.05.2024	ETS/DI-48	100.7	48.8	14.3	29.8	2.04
Minimum			87.3	45.9	6.2	21.2	1.20
Maximum			104.5	67.1	25.4	48.8	6.60
Average			95.3	56.1	13.7	36.2	4.26
98 PERCENTILE			103.47	66.59	24.89	48.62	6.49

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

Note:-

1. Test reports without ETS LAB HOLOGRAM are not valid.
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.

CHECKED BY
SHRADHA GUPTA

For Enviro-Tech Services

AUTHORIZED SIGNATORY
Lab In-charge



TEST REPORT

TEST REPORT NO : ETS/1432-19/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Analysis Start Date : 05.03.2024
Analysis End Date : 28.05.2024
Sampling Done By : ETS STAFF
Sampling Location : DARYAPUR, BIHTA
Sampling Method : ETS/STP/AIR-01
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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2024	ETS/DI-49	142.1	115.1	8.5	40.7	52.4
2	04.03.2024	ETS/DI-50	98.5	68.4	7.2	22.2	36.2
3	09.03.2024	ETS/DI-51	110.7	84.6	9.7	34.8	33.7
4	12.03.2024	ETS/DI-52	153.2	119.1	8.4	51.4	46.6
5	15.03.2024	ETS/DI-53	146.5	91.2	8.1	65.6	43.2
6	18.03.2024	ETS/DI-54	210.7	117.7	9.3	50.1	51.3
7	22.03.2024	ETS/DI-55	127.3	92.2	7.8	26.1	43.8
8	25.03.2024	ETS/DI-56	189.7	140.8	7.6	17.7	54.5
9	01.04.2024	ETS/DI-57	122.8	81.5	9.0	26.1	32.3
10	04.04.2024	ETS/DI-58	136.3	92.8	10.6	28.0	36.4
11	08.04.2024	ETS/DI-59	109.2	69.0	12.4	29.0	35.5
12	11.04.2024	ETS/DI-60	165.9	115.8	10.5	58.1	32.5
13	15.04.2024	ETS/DI-61	204.7	148.5	5.2	41.3	44.3
14	18.04.2024	ETS/DI-62	183.2	151.3	12.9	42.5	22.3
15	23.04.2024	ETS/DI-63	120.5	101.5	15.4	27.0	28.4
16	27.04.2024	ETS/DI-64	144.4	70.5	21.2	43.5	32.9
17	01.05.2024	ETS/DI-65	176.4	158.0	20.2	26.3	34.6
18	04.05.2024	ETS/DI-66	188.4	132.4	34.7	67.2	92.6
19	08.05.2024	ETS/DI-67	111.9	90.5	12.0	32.2	33.9
20	11.05.2024	ETS/DI-68	105.1	92.1	10.8	31.7	35.4
21	15.05.2024	ETS/DI-69	136.3	80.6	14.8	19.7	30.9
22	18.05.2024	ETS/DI-70	189.5	112.7	17.2	40.2	42.3
23	22.05.2024	ETS/DI-71	127.0	91.1	8.4	21.5	39.4
24	25.05.2024	ETS/DI-72	112.4	85.6	11.9	24.8	33.6
Minimum			98.5	68.4	5.2	17.7	22.3
Maximum			210.7	158.0	34.7	67.2	92.6
Average			146.4	104.3	12.2	36.2	40.4
98 PERCENTILE			207.94	154.92	28.49	66.46	75.07

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



Note:-

1. Test reports without ETS-LAB LOGOGRAM 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.

For Enviro-Tech Services

AUTHORIZED SIGNATORY
Lab In-charge

TEST REPORT

TEST REPORT NO : ETS/1432-20/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR

Analysis Start Date : 07.03.2024

Analysis End Date : 30.05.2024

Sampling Done By : ETS STAFF

Sampling Location : BILAP, DAYALPUR DAULATPUR

Sampling Method : ETS/STP/AIR-01

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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl.N.	Monitoring Date	Sample ID	Test Results				
1	03.03.2024	ETS/DI-73	126.9	102.8	7.6	36.3	50.3
2	07.03.2024	ETS/DI-74	88.0	61.1	6.4	19.8	34.8
3	10.03.2024	ETS/DI-75	98.9	75.5	8.7	31.1	32.4
4	14.03.2024	ETS/DI-76	136.8	106.4	7.5	45.9	44.7
5	17.03.2024	ETS/DI-77	130.8	81.4	7.2	58.6	41.5
6	21.03.2024	ETS/DI-78	188.2	105.1	8.3	44.7	49.2
7	24.03.2024	ETS/DI-79	113.7	82.3	7.0	23.3	42.0
8	28.03.2024	ETS/DI-80	169.4	125.7	6.8	15.8	52.3
9	03.04.2024	ETS/DI-81	109.7	72.8	8.0	23.3	31.0
10	06.04.2024	ETS/DI-82	121.7	82.9	9.5	25.0	34.9
11	10.04.2024	ETS/DI-83	97.5	61.6	11.1	25.9	34.1
12	13.04.2024	ETS/DI-84	148.1	103.4	9.4	51.9	31.2
13	17.04.2024	ETS/DI-85	182.8	132.6	4.6	36.9	42.5
14	20.04.2024	ETS/DI-86	163.6	135.1	11.5	38.0	21.4
15	24.04.2024	ETS/DI-87	107.6	90.6	13.8	24.1	27.3
16	27.04.2024	ETS/DI-88	128.9	63.0	18.9	38.8	31.6
17	03.05.2024	ETS/DI-89	157.5	141.1	18.0	23.5	33.2
18	06.05.2024	ETS/DI-90	168.2	118.2	31.0	60.0	88.9
19	10.05.2024	ETS/DI-91	99.9	80.8	10.7	28.8	32.5
20	13.05.2024	ETS/DI-92	93.9	82.2	9.6	28.3	34.0
21	16.05.2024	ETS/DI-93	121.7	72.0	13.2	17.6	29.6
22	20.05.2024	ETS/DI-94	169.2	100.6	15.4	35.9	40.6
23	23.05.2024	ETS/DI-95	113.4	81.4	7.5	19.2	37.8
24	27.05.2024	ETS/DI-96	100.4	76.4	10.6	22.1	32.3
Minimum			88.0	61.1	4.6	15.8	21.4
Maximum			188.2	141.1	31.0	60.0	88.9
Average			130.7	93.1	10.9	32.3	38.8
98 PERCENTILE			185.69	138.34	25.44	59.35	72.07

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

For Enviro-Tech Services

Pushkar Mittal
Lab In-charge
AUTHORIZED SIGNATORY

Note:-

1. Test reports with **WATERMARK HOLOGRAM** are not issued by our laboratory.
2. The results in this report are for 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/1432-21/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Analysis Start Date : 05.03.2024
Analysis End Date : 28.05.2024
Sampling Done By : ETS STAFF
Sampling Location : BIHTA PUBLIC SCHOOL
Sampling Method : ETS/STP/AIR-01
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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl. N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2024	ETS/DI-145	187.2	133.1	7.7	43.9	54.1
2	04.03.2024	ETS/DI-146	131.1	143.4	9.4	42.3	32.3
3	09.03.2024	ETS/DI-147	122.7	90.3	9.0	43.7	38.9
4	12.03.2024	ETS/DI-148	146.8	88.2	9.4	37.8	53.4
5	15.03.2024	ETS/DI-149	186.1	102.9	9.9	42.4	48.9
6	18.03.2024	ETS/DI-150	79.1	66.2	7.0	19.3	27.7
7	22.03.2024	ETS/DI-151	121.5	98.1	7.2	22.9	31.6
8	25.03.2024	ETS/DI-152	110.2	91.8	6.5	17.4	21.7
9	01.04.2024	ETS/DI-153	124.5	90.9	11.9	31.6	35.0
10	04.04.2024	ETS/DI-154	141.2	115.7	12.5	43.7	34.9
11	08.04.2024	ETS/DI-155	156.5	121.6	13.9	47.7	33.5
12	11.04.2024	ETS/DI-156	162.5	128.2	6.1	35.7	46.5
13	15.04.2024	ETS/DI-157	149.9	115.9	6.8	36.7	27.6
14	18.04.2024	ETS/DI-158	159.2	92.1	9.1	32.4	23.4
15	23.04.2024	ETS/DI-159	119.7	86.5	16.9	34.4	18.8
16	27.04.2024	ETS/DI-160	137.6	67.6	20.3	39.1	31.5
17	01.05.2024	ETS/DI-161	175.5	133.5	22.3	40.0	66.6
18	04.05.2024	ETS/DI-162	148.7	83.8	12.9	20.8	39.4
19	08.05.2024	ETS/DI-163	81.5	46.7	8.7	15.4	28.2
20	11.05.2024	ETS/DI-164	85.8	58.9	10.2	16.2	38.3
21	15.05.2024	ETS/DI-165	115.5	89.6	10.6	15.4	32.1
22	18.05.2024	ETS/DI-166	150.2	106.8	10.3	13.9	35.9
23	22.05.2024	ETS/DI-167	103.0	72.5	5.2	14.8	28.6
24	25.05.2024	ETS/DI-168	114.2	76.7	6.1	15.2	21.5
Minimum			79.1	46.7	5.2	13.9	18.8
Maximum			187.2	143.4	22.3	47.7	66.6
Average			133.8	95.9	10.4	30.1	35.4
98 PERCENTILE			186.72	138.81	21.41	45.94	60.88

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

Note:-

1. Test reports without ETS-LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated on this report are for the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 15 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.



For Enviro-Tech Services

Pushkar Mittal
Lab In-charge
AUTHORIZED SIGNATORY



TEST REPORT

TEST REPORT NO : ETS/1432-22/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Analysis Start Date : 07.03.2024
Analysis End Date : 30.05.2024
Sampling Done By : ETS STAFF
Sampling Location : YAMUNAPUR
Sampling Method : ETS/STP/AIR-01
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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl. N.	Monitoring Date	Sample ID	Test Results				
1	03.03.2024	ETS/DI-97	121.8	98.7	7.3	34.9	48.2
2	07.03.2024	ETS/DI-98	84.4	58.6	6.2	19.0	34.0
3	10.03.2024	ETS/DI-99	94.9	72.5	8.3	29.8	31.7
4	14.03.2024	ETS/DI-100	131.3	102.1	7.2	44.1	43.8
5	17.03.2024	ETS/DI-101	125.6	78.2	6.9	56.2	40.6
6	21.03.2024	ETS/DI-102	180.6	100.9	8.0	42.9	48.2
7	24.03.2024	ETS/DI-103	109.1	79.0	6.7	22.4	41.2
8	28.03.2024	ETS/DI-104	162.6	120.7	6.5	15.2	51.2
9	03.04.2024	ETS/DI-105	105.3	69.9	7.7	22.4	30.4
10	06.04.2024	ETS/DI-106	116.8	79.6	9.1	24.0	34.2
11	10.04.2024	ETS/DI-107	93.6	59.2	10.6	24.9	33.4
12	13.04.2024	ETS/DI-108	142.2	99.3	9.0	49.8	30.6
13	17.04.2024	ETS/DI-109	175.5	127.3	4.5	35.4	41.6
14	20.04.2024	ETS/DI-110	157.1	129.7	11.1	36.4	21.0
15	24.04.2024	ETS/DI-111	103.3	87.0	13.2	23.1	26.7
16	27.04.2024	ETS/DI-112	123.8	60.4	18.2	37.3	30.9
17	03.05.2024	ETS/DI-113	151.2	135.5	17.3	22.5	32.5
18	06.05.2024	ETS/DI-114	161.5	113.5	29.7	57.6	87.0
19	10.05.2024	ETS/DI-115	95.9	77.6	10.3	27.6	31.9
20	13.05.2024	ETS/DI-116	90.1	79.0	9.3	27.2	33.3
21	16.05.2024	ETS/DI-117	116.8	69.1	12.7	16.9	29.0
22	20.05.2024	ETS/DI-118	162.5	96.6	14.7	34.5	39.8
23	23.05.2024	ETS/DI-119	108.9	78.1	7.2	18.4	37.0
24	27.05.2024	ETS/DI-120	96.4	73.4	10.2	21.3	31.6
Minimum			84.4	58.6	4.5	15.2	21.0
Maximum			180.6	135.5	29.7	57.6	87.0
Average			125.5	89.4	10.5	31.0	37.9
98 PERCENTILE			178.26	132.81	24.42	56.98	70.57

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

For Enviro-Tech Services

Rishal Mittal
Lab In-charge
AUTHORIZED SIGNATORY

Note:-

1. Test reports with ETS-LAB LOGOGRAM are not issued by our laboratory.
2. The results indicated only refer to the test parameters and are not applicable to other 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/1432-23/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR

Analysis Start Date : 05.03.2024

Analysis End Date : 28.05.2024

Sampling Done By : ETS STAFF

Sampling Location : MOUNT LITERA ZEE SCHOOL, BIHTA

Sampling Method : ETS/STP/AIR-01

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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl. N.	Monitoring Date	Sample ID	Test Results				
1	01.03.2024	ETS/DI-121	179.8	127.8	7.4	42.1	53.0
2	04.03.2024	ETS/DI-122	125.9	137.6	9.0	40.6	31.6
3	09.03.2024	ETS/DI-123	117.8	86.7	8.7	42.0	38.1
4	12.03.2024	ETS/DI-124	140.9	84.6	9.0	36.3	52.3
5	15.03.2024	ETS/DI-125	178.7	98.8	9.5	40.7	47.8
6	18.03.2024	ETS/DI-126	76.0	63.6	6.7	18.5	27.2
7	22.03.2024	ETS/DI-127	116.6	94.2	6.9	22.0	30.9
8	25.03.2024	ETS/DI-128	105.8	88.1	6.2	16.7	21.2
9	01.04.2024	ETS/DI-129	119.6	87.3	11.4	30.4	34.3
10	04.04.2024	ETS/DI-130	135.5	111.1	12.0	42.0	34.2
11	08.04.2024	ETS/DI-131	150.2	116.7	13.3	45.8	32.8
12	11.04.2024	ETS/DI-132	156.0	123.0	5.8	34.3	45.5
13	15.04.2024	ETS/DI-133	143.9	111.3	6.6	35.2	27.1
14	18.04.2024	ETS/DI-134	152.9	88.4	8.8	31.1	22.9
15	23.04.2024	ETS/DI-135	114.9	83.1	16.2	33.0	18.4
16	27.04.2024	ETS/DI-136	132.1	64.9	19.5	37.6	30.8
17	01.05.2024	ETS/DI-137	168.4	128.1	21.4	38.4	65.2
18	04.05.2024	ETS/DI-138	142.7	80.4	12.4	20.0	38.5
19	08.05.2024	ETS/DI-139	78.2	44.9	8.4	14.8	27.6
20	11.05.2024	ETS/DI-140	82.4	56.5	9.8	15.6	37.5
21	15.05.2024	ETS/DI-141	110.9	86.0	10.2	14.8	31.4
22	18.05.2024	ETS/DI-142	144.2	102.5	9.8	13.3	35.2
23	22.05.2024	ETS/DI-143	98.9	69.6	5.0	14.2	28.0
24	25.05.2024	ETS/DI-144	109.6	73.6	5.8	14.6	21.1
Minimum			76.0	44.9	5.0	13.3	18.4
Maximum			179.8	137.6	21.4	45.8	65.2
Average			128.4	92.0	10.0	28.9	34.7
98 PERCENTILE			179.25	133.26	20.55	44.10	59.61

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

For Enviro-Tech Services


Pushkar Mittal
AUTHORIZED SIGNATORY

Note:-

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TEST REPORT

TEST REPORT NO : ETS/1432-24/03/2024

DATE OF REPORT : 10.06.2024

AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Analysis Start Date : 07.03.2024
Analysis End Date : 30.05.2024
Sampling Done By : ETS STAFF
Sampling Location : PROJECT SITE NEAR MAIN GATE
Sampling Method : ETS/STP/AIR-01
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 (Part-23)	IS 5182 (Part-24)	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS 5182 (Part-10)
Sl. N.	Monitoring Date	Sample ID	Test Results				
1	03.03.2024	ETS/DI-169	79.6	56.3	8.8	41.9	1.91
2	07.03.2024	ETS/DI-170	84.4	44.2	7.4	22.9	0.90
3	10.03.2024	ETS/DI-171	76.8	41.4	10.0	35.8	2.36
4	14.03.2024	ETS/DI-172	75.0	52.3	8.7	33.3	3.94
5	17.03.2024	ETS/DI-173	81.6	44.6	8.3	36.9	2.92
6	21.03.2024	ETS/DI-174	76.6	57.6	9.6	41.5	4.27
7	24.03.2024	ETS/DI-175	86.3	45.1	8.0	26.9	5.17
8	28.03.2024	ETS/DI-176	82.7	51.6	7.8	18.2	4.61
9	03.04.2024	ETS/DI-177	84.6	39.9	9.3	26.9	3.26
10	06.04.2024	ETS/DI-178	75.8	45.4	10.9	28.8	1.91
11	10.04.2024	ETS/DI-179	89.7	47.2	12.8	29.9	1.01
12	13.04.2024	ETS/DI-180	90.2	56.7	10.8	37.7	1.69
13	17.04.2024	ETS/DI-181	83.8	53.2	5.4	42.5	4.84
14	20.04.2024	ETS/DI-182	87.8	54.0	13.3	43.8	4.39
15	24.04.2024	ETS/DI-183	75.4	49.7	15.9	27.8	4.95
16	27.04.2024	ETS/DI-184	79.4	52.1	21.8	44.8	3.60
17	03.05.2024	ETS/DI-185	86.3	48.0	20.8	27.1	4.72
18	06.05.2024	ETS/DI-186	86.9	45.8	15.1	45.5	3.82
19	10.05.2024	ETS/DI-187	83.5	44.3	12.4	33.2	2.81
20	13.05.2024	ETS/DI-188	83.0	45.1	11.1	32.7	4.27
21	16.05.2024	ETS/DI-189	80.8	39.4	15.2	20.3	4.05
22	20.05.2024	ETS/DI-190	78.9	55.1	17.7	41.4	3.15
23	23.05.2024	ETS/DI-191	77.5	44.6	8.7	22.1	3.82
24	27.05.2024	ETS/DI-192	86.4	41.9	12.3	25.5	1.57
Minimum			75.0	39.4	5.4	18.2	0.90
Maximum			90.2	57.6	21.8	45.5	5.17
Average			82.2	48.1	11.8	32.8	3.33
98 PERCENTILE			89.98	57.16	21.36	45.19	5.07

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

Note:-

1. Test reports with SHRADHA SINGH TO OGRAM 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.
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For Enviro-Tech Services

AUTHORIZED SIGNATORY

Pushkal Mittal
Lab In-charge



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email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063



TEST REPORT

TEST REPORT NO : ETS/1432-9/05/2024

DATE OF REPORT : 10.06.2024

NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 18.05.2024
Monitoring Start Date : 18.05.2024
Monitoring End Date : 19.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : PROJECT SITE
Category Of Area : SILENCE ZONE
Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	48.4	50
2.	Noise Level Night Time	Leq :dB (A)	31.2	40

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

For Enviro-Tech Services

Ashish Mittal
AUTHORIZED SIGNATORY
Lab in charge

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.
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TEST REPORT

TEST REPORT NO : ETS/1432-10/05/2024

DATE OF REPORT : 10.06.2024

NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 18.05.2024
Monitoring Start Date : 18.05.2024
Monitoring End Date : 19.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : NETAJI SUBASH MEDICAL COLLEGE
Category Of Area : SILENCE ZONE
Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	56.4	50
2.	Noise Level Night Time	Leq :dB (A)	34.8	40

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

For Enviro-Tech Services


Pushkar Mittal
AUTHORIZED SIGNATORY
Lab in-charge

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TEST REPORT

TEST REPORT NO : ETS/1432-11/05/2024

DATE OF REPORT : 10.06.2024

NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 20.05.2024
Monitoring Start Date : 20.05.2024
Monitoring End Date : 21.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : DARYAPUR, BIHTA
Category Of Area : RESIDENTIAL AREA
Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	52.1	55
2.	Noise Level Night Time	Leq :dB (A)	38.8	45

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

For Enviro-Tech Services
Pushkar Mittal
Lab In-charge
AUTHORIZED SIGNATORY

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TEST REPORT

TEST REPORT NO : ETS/1432-12/05/2024

DATE OF REPORT : 10.06.2024

NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 20.05.2024
Monitoring Start Date : 20.05.2024
Monitoring End Date : 21.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : BILAP, DAYALPUR DAULATPUR
Category Of Area : RESIDENTIAL AREA
Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	53.3	55
2.	Noise Level Night Time	Leq :dB (A)	40.5	45

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



For Enviro-Tech Services

Pushkar Mittal
AUTHORIZED SIGNATORY
Lab In-charge

Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

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TEST REPORT

TEST REPORT NO : ETS/1432-13/05/2024

DATE OF REPORT : 10.06.2024

NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 22.05.2024
Monitoring Start Date : 22.05.2024
Monitoring End Date : 23.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : BIHTA PUBLIC SCHOOL
Category Of Area : SILENCE ZONE
Sampling Method : ETS/LAB/NOISE-01

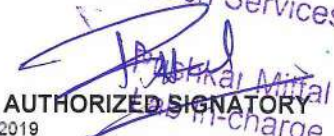
S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	48.7	50
2.	Noise Level Night Time	Leq :dB (A)	36.3	40

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

For Enviro-Tech Services

AUTHORIZED SIGNATORY
J. Prakash Mittal
In-charge

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TEST REPORT

TEST REPORT NO : ETS/1432-14/05/2024

DATE OF REPORT : 10.06.2024

NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 24.05.2024
Monitoring Start Date : 24.05.2024
Monitoring End Date : 25.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : YAMUNAPUR
Category Of Area : RESIDENTIAL AREA
Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	52.6	55
2.	Noise Level Night Time	Leq :dB (A)	34.1	45

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

For Enviro-Tech Services

Pushkar Mittal
AUTHORIZED SIGNATORY
Lab In-charge

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TEST REPORT

TEST REPORT NO : ETS/1432-15/05/2024

DATE OF REPORT : 10.06.2024

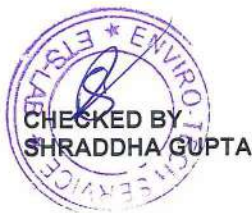
NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 24.05.2024
Monitoring Start Date : 24.05.2024
Monitoring End Date : 25.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : MOUNT LITERA ZEE SCHOOL, BIHTA
Category Of Area : SILENCE ZONE
Sampling Method : ETS/LAB/NOISE-01

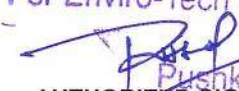
S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	48.1	50
2.	Noise Level Night Time	Leq :dB (A)	33.5	40

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

For Enviro-Tech Services

AUTHORIZED SIGNATORY
Lab In-charge

Note:-

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TEST REPORT

TEST REPORT NO : ETS/1432-16/05/2024

DATE OF REPORT : 10.06.2024

NOISE MONITORING REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Monitoring : 24.05.2024
Monitoring Start Date : 24.05.2024
Monitoring End Date : 25.05.2024
Monitoring Done By : ETS STAFF
Monitoring Duration : 24.0 HOURS
Place Of Monitoring : KANCHANPUR KHARAGPUR
Category Of Area : RESIDENTIAL AREA
Sampling Method : ETS/LAB/NOISE-01

S. No.	Test Parameters	Unit	Result	Ambient Noise Standards/Specification (CPCB)
1.	Noise Level Day Time	Leq :dB (A)	50.4	55
2.	Noise Level Night Time	Leq :dB (A)	41.8	45

Remark: Day time is reckoned in between 02.00 A.M. and 10.00 P.M.
Night time is reckoned in between 10.00 P.M. and 02.00 A.M.

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



Format no ETS /LAB/TR-02 Issue No 04 dt 01/02/2019 Rev No 02 dt 01/02/2019

For Enviro-Tech Services


Preshka Mittal
AUTHORIZED SIGNATORY
Lab In-charge

Note:-

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TEST REPORT

TEST REPORT NO : ETS/1432-25/05/2024

DATE OF REPORT :10.06.2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 10.05.2024
Analysis Start Date : 13.05.2024
Analysis End Date : 16.05.2024
Sample ID No : 1432-25
Sampling Done By : ETS STAFF
Sampling& Testing Method : ETS/LAB/SOIL-01
Sampling Location : PROJECT SITE
Sampling Quantity : 2 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	12.80	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	52.6	IS:2720 (Pt-4)
4.	Silt	%	33.1	IS:2720 (Pt-4)
5.	Clay	%	14.3	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	7.78	IS:2720 (Pt-26)
7.	Cation Exchange Capacity (CEC)	meq/100g	28.22	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.99	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	333.3	IS:14767
10.	Water Holding Capacity (WHC)	%	30.8	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	114.0	APHA-3125B
12.	Calcium (Ca)	mg/kg	1205.1	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	422.2	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.49	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	158.7	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	49.9	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	266.3	APHA-3125B
18.	Organic Matter	%	2.02	IS : 2720 (P-22)
19.	Organic Carbon	%	1.55	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	1.74	IS:3025(P-24)
21.	Porosity	%	17.82	IS 13030
22.	Manganese,(Mn)	mg/kg	3.38	ETS/STP/SOIL-18
23.	Nickel,(Ni)	mg/kg	1.64	ETS/STP/SOIL-18
24.	Zinc,(Zn)	mg/kg	1.15	ETS/STP/SOIL-18
25.	Lead,(Pb)	mg/kg	2.02	ETS/STP/SOIL-18

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



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

For Enviro-Tech Services

AUTHORIZED SIGNATORY
Pushkar Mittal
Lab In-charge

Note:-

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An Analytical Laboratory



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

email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063

TEST REPORT

TEST REPORT NO : ETS/1432-26/05/2024

DATE OF REPORT : 10.06.2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 10.05.2024
Analysis Start Date : 13.05.2024
Analysis End Date : 16.05.2024
Sample ID No : 1432-26
Sampling Done By : ETS STAFF
Sampling & Testing Method : ETS/LAB/SOIL-01
Sampling Location : NETAJI SUBASH MEDICAL COLLEGE
Sampling Quantity : 2 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	15.42	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	65.0	IS:2720 (Pt-4)
4.	Silt	%	23.3	IS:2720 (Pt-4)
5.	Clay	%	11.7	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	7.21	IS:2720 (Pt-26)
7.	Cation Exchange Capacity(CEC)	meq/100g	29.77	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.05	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	349.5	IS:14767
10.	Water Holding Capacity(WHC)	%	32.1	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	119.7	APHA-3125B
12.	Calcium (Ca)	mg/kg	1126.3	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	443.4	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.56	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	180.9	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	37.8	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	191.3	APHA-3125B
18.	Organic Matter	%	2.12	IS : 2720 (P-22)
19.	Organic Carbon	%	1.62	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	1.82	IS:3025(P-24)
21.	Porosity	%	15.37	IS 13030
22.	Manganese, (Mn)	mg/kg	3.54	ETS/STP/SOIL-18
23.	Nickel, (Ni)	mg/kg	1.72	ETS/STP/SOIL-18
24.	Zinc, (Zn)	mg/kg	1.21	ETS/STP/SOIL-18
25.	Lead, (Pb)	mg/kg	1.82	ETS/STP/SOIL-18

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



CHECKED BY
SHRADDHA GUPTA

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For Enviro-Tech Services

Pushkar Mittal
AUTHORIZED SIGNATORY

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TEST REPORT

TEST REPORT NO : ETS/1432-27/05/2024

DATE OF REPORT : 10.06.2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 18.05.2024
Analysis Start Date : 21.05.2024
Analysis End Date : 24.05.2024
Sample ID No : 1432-27
Sampling Done By : ETS STAFF
Sampling & Testing Method : ETS/LAB/SOIL-01
Sampling Location : AGRICULTURAL LAND NEAR DARYAPUR, BIHTA
Sampling Quantity : 2 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	14.10	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	62.3	IS:2720 (Pt-4)
4.	Silt	%	21.5	IS:2720 (Pt-4)
5.	Clay	%	16.2	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	7.32	IS:2720 (Pt-26)
7.	Cation Exchange Capacity(CEC)	meq/100g	27.72	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.96	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	326.8	IS:14767
10.	Water Holding Capacity(WHC)	%	30.3	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	111.7	APHA-3125B
12.	Calcium (Ca)	mg/kg	1014.1	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	414.0	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.46	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	155.6	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	49.0	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	261.1	APHA-3125B
18.	Organic Matter	%	1.96	IS : 2720 (P-22)
19.	Organic Carbon	%	1.52	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	1.70	IS:3025(P-24)
21.	Porosity	%	17.45	IS 13030
22.	Manganese,(Mn)	mg/kg	3.31	ETS/STP/SOIL-18
23.	Nickel,(Ni)	mg/kg	1.60	ETS/STP/SOIL-18
24.	Zinc,(Zn)	mg/kg	1.13	ETS/STP/SOIL-18
25.	Lead,(Pb)	mg/kg	1.68	ETS/STP/SOIL-18

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



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TEST REPORT

DATE OF REPORT : 10.06.2024

TEST REPORT NO : ETS/1432-28/05/2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 16.05.2024
Analysis Start Date : 19.05.2024
Analysis End Date : 22.05.2024
Sample ID No : 1432-28
Sampling Done By : ETS STAFF
Sampling & Testing Method : ETS/LAB/SOIL-01
Sampling Location : NEAR SATI TEMPLE, RA
Sampling Quantity : 2.0 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	16.02	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	55.2	IS:2720 (Pt-4)
4.	Silt	%	24.7	IS:2720 (Pt-4)
5.	Clay	%	20.1	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	8.17	IS:2720 (Pt-26)
7.	Cation Exchange Capacity(CEC)	meq/100g	26.36	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.86	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	310.8	IS:14767
10.	Water Holding Capacity(WHC)	%	28.8	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	106.3	APHA-3125B
12.	Calcium (Ca)	mg/kg	1038.0	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	393.7	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.39	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	147.9	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	46.6	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	248.4	APHA-3125B
18.	Organic Matter	%	1.86	IS : 2720 (P-22)
19.	Organic Carbon	%	1.44	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	1.62	IS:3025(P-24)
21.	Porosity	%	16.60	IS 13030
22.	Manganese,(Mn)	mg/kg	3.15	ETS/STP/SOIL-18
23.	Nickel,(Ni)	mg/kg	1.53	ETS/STP/SOIL-18
24.	Zinc,(Zn)	mg/kg	1.08	ETS/STP/SOIL-18
25.	Lead,(Pb)	mg/kg	1.88	ETS/STP/SOIL-18

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



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For Enviro-Tech Services

Rishika Mittal
In charge
AUTHORIZED SIGNATORY

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TEST REPORT

DATE OF REPORT : 10.06.2024

TEST REPORT NO : ETS/1432-29/05/2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 20.05.2024
Analysis Start Date : 23.05.2024
Analysis End Date : 26.05.2024
Sample ID No : 1432-29
Sampling Done By : ETS STAFF
Sampling & Testing Method : ETS/LAB/SOIL-01
Sampling Location : BIHTA PUBLIC SCHOOL
Sampling Quantity : 2 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	13.56	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	60.8	IS:2720 (Pt-4)
4.	Silt	%	22.1	IS:2720 (Pt-4)
5.	Clay	%	17.1	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	7.07	IS:2720 (Pt-26)
7.	Cation Exchange Capacity (CEC)	meq/100g	29.18	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.66	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	343.3	IS:14767
10.	Water Holding Capacity (WHC)	%	31.8	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	117.4	APHA-3125B
12.	Calcium (Ca)	mg/kg	962.8	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	434.7	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.54	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	177.3	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	37.1	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	187.5	APHA-3125B
18.	Organic Matter	%	2.05	IS : 2720 (P-22)
19.	Organic Carbon	%	1.58	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	1.79	IS:3025(P-24)
21.	Porosity	%	15.07	IS 13030
22.	Manganese, (Mn)	mg/kg	3.48	ETS/STP/SOIL-18
23.	Nickel, (Ni)	mg/kg	1.68	ETS/STP/SOIL-18
24.	Zinc, (Zn)	mg/kg	1.19	ETS/STP/SOIL-18
25.	Lead, (Pb)	mg/kg	2.08	ETS/STP/SOIL-18

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



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For Enviro-Tech Services

[Signature]
Authorized Signatory

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TEST REPORT

TEST REPORT NO : ETS/1432-30/05/2024

DATE OF REPORT : 10.06.2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 20.05.2024
Analysis Start Date : 23.05.2024
Analysis End Date : 26.05.2024
Sample ID No : 1432-30
Sampling Done By : ETS STAFF
Sampling & Testing Method : ETS/LAB/SOIL-01
Sampling Location : PRIMARY SCHOOL NEAR DOULATPUR
Sampling Quantity : 2 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	12.93	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	62.4	IS:2720 (Pt-4)
4.	Silt	%	22.0	IS:2720 (Pt-4)
5.	Clay	%	15.6	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	7.13	IS:2720 (Pt-26)
7.	Cation Exchange Capacity (CEC)	meq/100g	37.24	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.26	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	342.1	IS:14767
10.	Water Holding Capacity (WHC)	%	35.7	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	127.3	APHA-3125B
12.	Calcium (Ca)	mg/kg	1136.8	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	454.1	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.28	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	210.6	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	62.1	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	292.3	APHA-3125B
18.	Organic Matter	%	1.96	IS: 2720 (P-22)
19.	Organic Carbon	%	1.67	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	2.70	IS:3025(P-24)
21.	Porosity	%	21.13	IS 13030
22.	Manganese, (Mn)	mg/kg	3.44	ETS/STP/SOIL-18
23.	Nickel, (Ni)	mg/kg	1.70	ETS/STP/SOIL-18
24.	Zinc, (Zn)	mg/kg	1.15	ETS/STP/SOIL-18
25.	Lead, (Pb)	mg/kg	2.34	ETS/STP/SOIL-18

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



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

For Enviro-Tech Services

Rishkar Mittal
Lab In-charge
AUTHORIZED SIGNATORY

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TEST REPORT

TEST REPORT NO : ETS/1432-31/05/2024

DATE OF REPORT : 10.06.2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 20.05.2024
Analysis Start Date : 23.05.2024
Analysis End Date : 26.05.2024
Sample ID No : 1432-31
Sampling Done By : ETS STAFF
Sampling & Testing Method : ETS/LAB/SOIL-01
Sampling Location : RAMTARI
Sampling Quantity : 2 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	14.00	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	54.8	IS:2720 (Pt-4)
4.	Silt	%	24.1	IS:2720 (Pt-4)
5.	Clay	%	11.1	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	7.58	IS:2720 (Pt-26)
7.	Cation Exchange Capacity (CEC)	meq/100g	30.26	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.47	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	378.1	IS:14767
10.	Water Holding Capacity (WHC)	%	40.2	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	125.3	APHA-3125B
12.	Calcium (Ca)	mg/kg	1230.1	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	510.7	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.90	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	230.1	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	51.6	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	317.4	APHA-3125B
18.	Organic Matter	%	2.20	IS: 2720 (P-22)
19.	Organic Carbon	%	1.71	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	1.88	IS:3025(P-24)
21.	Porosity	%	18.25	IS 13030
22.	Manganese, (Mn)	mg/kg	4.19	ETS/STP/SOIL-18
23.	Nickel, (Ni)	mg/kg	1.73	ETS/STP/SOIL-18
24.	Zinc, (Zn)	mg/kg	1.25	ETS/STP/SOIL-18
25.	Lead, (Pb)	mg/kg	2.13	ETS/STP/SOIL-18

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



For Enviro-Tech Services
P. P. Mittal
Lab In-charge
AUTHORIZED SIGNATORY

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TEST REPORT

TEST REPORT NO : ETS/1432-32/05/2024

DATE OF REPORT : 10.06.2024

SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR
Date of Sampling : 20.05.2024
Analysis Start Date : 23.05.2024
Analysis End Date : 26.05.2024
Sample ID No : 1432-32
Sampling Done By : ETS STAFF
Sampling & Testing Method : ETS/LAB/SOIL-01
Sampling Location : DANAGANJ
Sampling Quantity : 2 kg.
Packing Condition : SEALED
Packed In : ZIP POLLY BAG

S. No.	Test Parameters	Unit	Result	Test Method
1.	Moisture	%	16.10	IS:2720 (Pt-2)
2.	Texture	...	Sandy Clay Loam	IS:2720 (Pt-4)
3.	Sand	%	58.7	IS:2720 (Pt-4)
4.	Silt	%	31.3	IS:2720 (Pt-4)
5.	Clay	%	10.0	IS:2720 (Pt-4)
6.	pH (1:2 Suspension)	..	7.43	IS:2720 (Pt-26)
7.	Cation Exchange Capacity (CEC)	meq/100g	32.26	IS:2720 (Pt-24)
8.	Sodium Absorption Ratio (SAR)*	%	1.52	ETS/STP/SOIL-16
9.	Electrical Conductivity (1:2)	µmho/cm	367.1	IS:14767
10.	Water Holding Capacity (WHC)	%	41.5	IS 2720 (Part-2)
11.	Sodium (Na)	mg/kg	127.3	APHA-3125B
12.	Calcium (Ca)	mg/kg	924.8	IS 2720 (Part-23)
13.	Magnesium (Mg)	mg/kg	421.1	ETS/STP/SOIL-08
14.	Bulk Density	g/cm ³	1.43	IS 2386 (Part-4)
15.	Total Nitrogen (N)	mg/kg	193.6	APHA, Pt 4500:(N)
16.	Phosphorus (PO ₄)	mg/kg	57.1	ETS/STP/SOIL-19
17.	Potassium (K)	mg/kg	287.3	APHA-3125B
18.	Organic Matter	%	2.10	IS: 2720 (P-22)
19.	Organic Carbon	%	1.80	BS 1377 -3)
20.	Sulphate as (SO ₄)	mg/kg	2.35	IS:3025(P-24)
21.	Porosity	%	18.17	IS 13030
22.	Manganese (Mn)	mg/kg	3.56	ETS/STP/SOIL-18
23.	Nickel, (Ni)	mg/kg	1.72	ETS/STP/SOIL-18
24.	Zinc, (Zn)	mg/kg	1.20	ETS/STP/SOIL-18
25.	Lead, (Pb)	mg/kg	2.17	ETS/STP/SOIL-18

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



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

For Enviro-Tech Services

Rishkar Mittal
Rishkar Mittal
Lab In-charge
AUTHORIZED SIGNATORY

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.



ETS-LAB



ENVIRO-TECH SERVICES

An Analytical Laboratory



ISO 45001

(A GOVERNMENT APPROVED LAB)

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

email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063

TEST REPORT

TEST REPORT NO : ETS/1432-33/05/2024

DATE OF REPORT : 10.06.2024

WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : IIT PATNA CAMPUS
BIHTA DISTT-PATNA BIHAR

Date of Sampling : 15.05.2024
Analysis Start Date : 17.05.2024
Analysis End Date : 20.05.2024
Sampling Done By : ETS STAFF
Sampling Description : SURFACE WATER
Sampling Location : SONE RIVER (25°33'31.07"N 84°47'28.35"E)
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	---	7.32	IS:3025 (Pt-11)
4.	Turbidity	NTU	11.34	IS:3025 (Pt-10)
5.	Total Dissolve Solid (TDS)	mg/L	319.0	IS:3025 (Pt-16)
6.	Total Alkalinity (CaCO ₃)	mg/L	142.8	IS:3025 (Pt-23)
7.	Total Hardness (CaCO ₃)	mg/L	173.9	IS:3025 (Pt-21)
8.	Chloride (Cl)	mg/L	57.0	IS:3025 (Pt-32)
9.	Calcium (Ca)	mg/L	43.9	IS:3025 (Pt-40)
10.	Mineral Oil	mg/L	<0.01	IS:3025 (Pt-39)
11.	Sulphate (SO ₄)	mg/L	42.5	IS:3025 (Pt-24)
12.	Nitrate (NO ₃)	mg/L	2.80	IS:3025 (Pt-34)
13.	Fluoride (F)	mg/L	0.40	IS:3025 (Pt-60)
14.	Iron (Fe)	mg/L	0.21	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	28.97	IS:3025 (Pt-45)
20.	Manganese (Mn)	mg/L	<0.1	APHA-3111(B)
21.	Zinc (Zn)	mg/L	0.80	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)	µs/Cm	558.7	APHA-2510
31.	Chemical Oxygen Demand (COD)	mg/L	17.16	APHA-5220 (B)
32.	Biological Oxygen Demand (BOD at 27°C for 3 day)	mg/L	3.74	APHA-4500 (D)
33.	Dissolve Oxygen (DO)	mg/L	5.72	APHA-5210
34.	E. Coli	MPN/100ml	470	IS:1622-1981
35.	Total Coliform	MPN/100ml	1080	IS:1622-1981
36.	Faecal Coliform	MPN/100ml	620	APHA-9221

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

For Enviro-Tech Services

AUTHORIZED SIGNATORY

Lab In-charge

Note:-

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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.

Annexure-X

Date of start of construction



Vol:- I

Government of India

Name of Work : Construction of Academic and Residential complexes under phase II for the campus of IIT Patna, at Bihta on Engineering, Procurement and Construction (EPC) basis including comprehensive maintenance of Lifts, HVAC, Firefighting system, Substations for Six years.
SH: C/o Guest House, Auditorium, Central Library, Central Lecture Hall, Work Shop, Academic Block, Student Activity Centre, A Type Quarters, B Type Quarters, C Type Quarters, D Type Quarters, Boys Hostel, Girls Hostel, Married Accommodation Building, Sub Stations and associated Civil, Electrical and Horticultural Development Works.

Agreement No. : 02/IITP PD-I/2017-18

Name of Agency : M/s NCC Ltd.

Estimated Cost : Construction= Rs 464,52,12,822/- Comprehensive Maintenance= Rs. 17,02,22,612/-
Total = Rs. 481,54,35,434/-

Earnest Money : Rs. 491.45 Lakh

Security Money : Rs. 10,69,92,468/-

Tendered Cost : Construction= Rs 413,37,77,710/- Comprehensive Maintenance= Rs. 14,59,21,000/-
Total = Rs. 427,96,98,710/-

Date of start (Stipulated) : 12/12/2017

Date of completion (Stipulated) : 11/08/2020

Time of Completion : 30 (Thirty) Months
Maintenance: 6 Year i/c defect liability period of one year.

Date of Start (Actual) : 12.12.2017

Date of Completion (Actual) :

Certified that this copy of certified agreement contains 254 page (P1 to P 254)

For NCC Limited

G. VASUDEVA RAO
Sr. General Manager (Contracts)

Executive Engineer
IIT Patna Project Division-I
CPWD, Patna

Annexure-XI
Existing STP details



भारतीय प्रौद्योगिकी संस्थान पटना
INDIAN INSTITUTE OF TECHNOLOGY PATNA
Bihta, Patna - 801106, Bihar, India

GeM Payment note

Date- 18.03.2024

Subject: -Payment of Rs. 1, 67,079/- towards Operation and Maintenance Contract for Sewage treatment Plant (STP), 2 nos. at IIT Patna.

The work Operation and Maintenance Contract for Sewage Treatment Plant, 2 nos. has been awarded to M/s D-Tech Solutions, Delhi vide GeM Order No. GEMC-511687799222439 amounting to Rs. 1, 67,079/-. The Contract period is from 16th May 2023 to 15th May 2024. Accordingly M/s D-Tech Solutions, Delhi has submitted GeM Invoice No. GEM-41758240 dated 16.03.2024 for the periods from 16th February 2024 to 15th March 2024 for an amount of Rs. 1,67,079/-.

The Operation and maintenance of two (02) STPs for the above mentioned month has been done by party. therefore it is recommended to release the payment to M/s D-tech Solutions, Delhi of Rs. 1, 67,079/- (Rupees One Lakh Sixty Seven Thousand Seventy Nine only).

The necessary statutory deduction is to be made by accounts section and a copy of payment made be sent to IWD for record.

Bill is enclosed.

Somvir Maji
AE, Civil (RZ)

P. Jyoti
Accountant 18/3/2024

Ramendra Jha
EE, Civil (RZ) 18/3/24.

Manoj Kumar Yadav
18/3/24
PIC (WTP/STP)

[Signature]
18-03-2024
Head IWD

T. S.
Asst. Dir. Fin. B.
[Signature]
18-03-2024



कुलसचिव कार्यालय
OFFICE OF THE REGISTRAR

भारतीय प्रौद्योगिकी संस्थान
Indian Institute of Technology Patna

Bihta, Patna-801106, Bihar, India

Phone: 06115-233 084 | Fax: 06115-233 123

<http://www.iitp.ac.in> | Email: registrar@iitp.ac.in

IITP/IWD/Ry/2024/25

Date: 03.06.2024

To,

D-Tech Solation
D-411, Block-D, Street No. -4
Swaroop Nagar, North West
Delhi- 110042

Subject: Regarding extension of contract no. GEMC-511687799222439 dated 24.04.2023.

Reference: Your letter dated 02.05.2024

Dear Sir,

This is with reference to above mentioned letter expressing interest in extending the contract for further one year. This is to convey that the existing contract is being extended from 16.05.2024 to 15.05.2025 on same rate, terms and conditions,

Sl. No.	Name of Work	Unit	Qty.	Rate including GST
01.	Operation and Maintenance Contract for Sewage Treatment Plant, 2 nos. (STP-02 & STP-03) at IIT Patna.	Per Months	12	Rs. 1,67,079/-
Total Amount including GST				Rs. 20,04,948/-

You are requested to continue the contract according on offline mode payment basis. Please acknowledge the receipt as token of acceptance.

Your faithfully

Registrar, IIT Patna

Copy to: Head, IWD
AR (FA)

Contract | अनुबंध



Contract No | अनुबंध क्रमांक: GEMC-511687799222439

Contract Generated Date | अनुबंध तिथि: 24-Apr-2023

Bid/RA/PBP No. | बोली/आरए/पीबीपी संख्या: GEM/2022/B/2675266

Organisation Details | संगठन विवरण

Type | प्ररूप : Central Autonomous
Ministry | मंत्रालय : Ministry of Education
Department | विभाग : Department of Higher Education
Organisation Name | संगठन का नाम : Indian Institute of Technology (IIT)
Office Zone | कार्यालय क्षेत्र : Indian Institute Of Technology Patna

Buyer Details | खरीदार विवरण

Designation | पद : Assistant Engineer Hostel Zone
Contact No. | संपर्क नंबर : 06115-233149-
Email ID | ईमेल आईडी : buyer13.iiti.bh@gembuyer.in
GSTIN | जीएसटीआईएन : -
Address | पता : IIT Patna, Kanpa Road, Bihta, PATNA, BIHAR-801103, India

Financial Approval Detail | वित्तीय स्वीकृति विवरण

IFD Concurrence | आईएफडी सहमति : No
Designation of Administrative Approval | प्रशासनिक अनुमोदन का पदनाम : Director, IIT patna
Designation of Financial Approval | वित्तीय अनुमोदन का पदनाम : Director, IIT patna

Paying Authority Details | भुगतान प्राधिकरण विवरण

Role : PAO
Payment Mode | भुगतान का तरीका : Offline
Designation | पद : Deputy Registrar
Email ID | ईमेल आईडी : consignee1.iit.patna@gembuyer.in
GSTIN | जीएसटीआईएन : 10AAAAI2401A120
Address | पता : IIT Patna, Kanpa Road, Bihta, Patna, BIHAR-801103, India

Consignee Details | परेषिती विवरण

S.No क्र.सं.	Consignee Name & Address परेषिती नाम & पता	Service Description सेवा विवरण
1	Contact संपर्क : 0612-3028005- Email ID ईमेल आईडी : con1.iit.patna@gembuyer.in GSTIN जीएसटीआईएन : - Address पता : IIT Patna, Kanpa Road, Bihta, PATNA, BIHAR-801103, India	Operation and Maintenance of Effluent/Sewage Treatment Plant - 2 stp complete system

Service Provider Details | सेवा प्रदाता विवरण

GeM Seller ID | जेम विक्रेता आईडी : C33D1900010S1246
Company Name | कंपनी का नाम : D-Tech Solutions
Contact No. | संपर्क नंबर : 07973200974
Email ID | ईमेल आईडी : dtechsolutiondelhi@gmail.com
Address | पता : D -411,Block D,Street No-4, Swaroop Nagar,D-411, Street No-4, Swaroop Nagar,Swaroop Nagar, North West delhi, DELHI-110042, -
MSME verified | एमएसएमई सत्यापित : Yes
MSME Registration number | एमएसएमई पंजीकरण संख्या : UDYAM-DL-06-0058013
MSE Social Category | एमएसई सामाजिक श्रेणी : General
MSE Gender | एमएसई लिंग श्रेणी : Female
GSTIN | जीएसटीआईएन : 07BETPP2542E1ZB

*GST / Tax invoice to be raised in the name of | जिसके नाम के पक्ष में GST/TAX इनवॉइस पेश किया जाएगा - Consignee

Service Details | सेवा विवरण

Service Start Date (latest by) | सेवा प्रारंभ दिनांक (नवीनतम) : 16-May-2023

Service End Date | सेवा समाप्ति तिथि: 15-May-2024

Category Name | श्रेणी नाम : Operation and Maintenance of Effluent/Sewage Treatment Plant

Billing Cycle | बिलिंग चक्र : monthly

Description विवरण	Quantity (Please select 1 in case operation and maintenance service is required for complete system, otherwise mention actual quantity for each line item)	Per month quote of the service
Status/condition of equipment/machine/system (At the time of bid)	Under AMC and functional	
Working days in a week for skilled manpower	7 days	
Working days in a week for semi-skilled manpower	7 days	
The Bidder shall be an Indian Proprietary firm, Partnership firm or Company registered under respective act(s)	Yes	
Working days in a week for managerial/supervisory staff	7 days	
The bidding entity should be a profit making one in the preceding three financial years	Yes	
Cost of consumable/Material	Consumables to be provided by service provider (inclusive in contract cost)	

treatment plants and its machines and equipment as mentioned by the buyer in the bid documents.

The operations of Effluent/Sewage treatment plant and its machines and equipment will be as per the requirement of buyer and might be required round-the-clock. Regular checking of parameters is required for the smooth operation of the plant. All measures should be taken to operate the plant satisfactorily.

4.2 Scope of Work

- i. The scope of work includes operation (as applicable), servicing, repairing and the maintenance of STP/ETP system comprising of various pumps, motors, blowers, pipelines, settling tanks, filter unit, etc. together with the electrical panels and connections.
- ii. Responsibility to maintain STP/ETP in a healthy state all the time, to plan and undertake preventive maintenance of STP/ETP at regular intervals and attend routine maintenance activity every day and other additional required duties mentioned in the bid.
- iii. Adherence to various obligations as mentioned under the service provider's obligations.

5. Terms and Conditions

5.1 Buyer's Obligations

- i. The buyer shall nominate a Nodal Officer/Engineer in-Charge from its organization to coordinate with the service provider to facilitate operation and maintenance of the sewage/effluent treatment plant.
- ii. The buyer shall provide access and adequate space to the authorized personnel of the service provider to work in the specified area.
- iii. The buyer will provide sewage, water and electricity on continuous basis.
- iv. If needed the complete layout of site/location/building of Effluent/Sewage Treatment Plant Installations are placed and also complete diagram shall be provided to the service provider.
- v. The items not included in scope of the service (i.e., to be provided by buyer), if any, shall be provided by the buyer in a timely manner for smooth running of O&M service.
- vi. The buyer must notify to the designated representative of the service provider, as soon as possible after the buyer becomes aware of them;
 - a. For any problems, complaints, incidents or accidents that occur during the contract including any form of inappropriate behaviour/ improper uniform by the personnel.
 - b. For any dishonest, wrongful or negligent acts or omissions of its personnel or agents in connection with the services
- vii. The buyer can issue instructions as may be necessary or appropriate for the prompt and effective implementation of the services to officials, agents and representatives, of the service provider
- viii. *Buyer must ensure that the service provider complies with the Rule 144(xi) of General Financial Rules (GFR), 2017 and the product supplied, if any, must also comply with Make In India guidelines of DPIIT.*

ix. Price Variation Clause:

"It is advisable to include Price Variation Clause in the long term contracts to take care of the increase/decrease in prices of various ingredients which majorly affect the overall price of the service. Buyers are therefore advised to include the Price Variation Clause (PVC) in the bid document through ATC for long term contracts. The additional payment, if any, on account of PVC can be done offline till such time online functionality is developed on GeM."

5.2 Standard Service Provider Obligations

- i. The service provider shall ensure that the level of service provided is of the highest professional standard and shall ensure full compliance to the terms and conditions of the contract.
- ii. A complaint escalation matrix is to be provided by service provider.
- iii. The service provider shall attend to emergency works in time. No extra payment will be made for working on odd hours for emergency works.
- iv. The service provider will be required to submit a list of the manpower being deployed with photo ID, address proof, police verification certificate and educational qualifications before deputed the workers. The service provider shall be solely responsible for the credentials/ acts of his staff/workers.
- v. The service provider shall provide at his own cost proper uniform and badges and photo identity cards to the manpower deployed.
- vi. In an event that, for any reason, the manpower provided changes their contact number during the tenure of the contract then the service provider will immediately notify the buyer of the above change.
- vii. The persons employed by the service provider shall solely be the responsibility of the service provider and buyers shall have no obligation for any sort of claims raised by the service provider's employees/personnel. For all intents and purposes, the service provider shall be the "Employer" within the meaning of different Labour Legislations in respect of manpower so employed and deployed in the buyer's premises and shall be responsible to fulfil all obligations under applicable laws without any recourse to the buyer.
- viii. The service provider shall be liable for ensuring compliance with the provisions of all applicable laws including but not limited to Labour Law (Central/State) and specially Workmen Compensation Act, EPF Laws, ESI Laws, Income tax laws and Minimum Wages Laws, Contract Labour (Regulations Abolition Act), Pollution Control Board and any other relevant acts as may become applicable during the tenure of the contract. The onus of compliance to all the applicable Laws/Acts/Rules shall rest with the service provider only and the buyer will not be liable in any manner.
- ix. The service provider shall cover all its personnel under the relevant laws of EPF, Labour, ESI etc. Proof of the same should be submitted by the service provider.
- x. The service provider shall be responsible for any type of statutory/mandatory claims or penalties in light of the default with reference to the above-mentioned Laws/Acts/ Rules.
- xi. The service provider shall cover its personnel for personal accident and death whilst performing the duty and the Buyer shall own no liability and obligation in this regard.
- xii. It is the responsibility of the service provider to disburse wages timely to all its deployed personnel. The buyer has no responsibility in this regard.
- xiii. The service provider shall submit a copy of wages sheet showing monthly wages paid to all its deployed personnel from time to time or as required by buyer.
- xiv. The service provider shall produce to the buyer the details of payments of statutory benefits like bonus, leave, relief etc. to its personnel from time to time or as required by buyer.
- xv. Attendance of man power shall be entered in attendance register on regular basis. The same shall be made available for verification to the buyer/buyer's authorized representative, as and when required.
- xvi. Tax deduction/collection at source for the service provider shall be governed by the prevailing rules.
- xvii. The service provider shall also provide at its own cost all benefits- statutory or otherwise, to all its deployed personnel and the buyer shall not have any liability whatsoever on this account.
 - a. The service provider shall deploy manpower who are above eighteen years of age and are not above 65 years of age.
 - b. If required by the buyer and wherever applicable, the service provider shall provide documentary proof for the qualifications and experience of the manpower deployed by them. The bio-data, qualification and experience of the said manpower should be certified by the service provider.
 - c. The personnel being deployed shall ordinarily be continued and should not be changed without written intimation and consultation with the buyer. In case the manpower deputed by the service provider is found not suitable, the service provider shall replace such manpower without any additional cost to the buyer, if directed by the buyer. The service provider shall not deploy or shall discontinue deploying such person(s).
- i. The service provider shall get the police verification done for all its deployed personnel at site
- ii. The service provider shall ensure medical fitness of all its deployed personnel at site.
- iii. The service provider shall ensure adequate supervision to ensure correct performance of the services in accordance with the requirements agreed upon.
 - a. In an event that the service provider fails to deliver or fails to carry out tasks as per schedule due to the absence of personnel or any other reasons, the service provider at his own cost shall make an alternate arrangement by providing similar manpower for which agreement is entered into, without any extra charges. Failure to do so will evoke a penalty and the buyer shall have the right to recover damages as per the provisions of the contract.
 - b. The service provider shall be personally responsible for any theft, misconduct and /or disobedience on the part of personnel deployed by them.
- iv. Duty hours of workman/supervisor for the job will be same as followed under the Industrial Act and as per instructions of the buyer. However, the Workmen/Supervisors can be called upon at any time and they have to work on holidays/rest days also, if necessary, based on the demand of work.
- v. The service provider shall maintain registers and checklists for each activity and the work done by each of the personnel deployed and make available to the buyer/ buyer's

ix. The service provider shall also submit a duly signed comprehensive report every month, detailing the services performed during the month like sheets of system performance, chemical consumption records, electrical consumption records, daily inlet outlet discharge quantities etc.

5.4 Safeguarding of proprietary and confidential information

i. The service provider shall not carry and/or transmit any material, information, application details, equipment or any other goods/material in physical or electronic form, which are proprietary to or owned by the buyer, out of the buyer's premises without prior written permission from the buyer.

ii. The service provider acknowledges that the buyer's business data and other proprietary information or materials, whether developed by the buyer or being used by the buyer pursuant to a license agreement with a third party (the foregoing collectively referred to herein as "proprietary information") are confidential and proprietary to the buyer; and the service provider agrees to take reasonable care to safeguard the proprietary information and to prevent the unauthorized use or disclosure thereof, which shall not be less than that the care taken by the service provider to protect his own proprietary information.

iii. Ownership and Retention of Documents: The buyer shall own the documents, prepared by or for the service provider arising out of or in connection with this contract. Forthwith upon expiry or earlier termination of this contract and at any other time on demand by the buyer, the service provider shall deliver to the buyer all documents provided by or originating from the buyer and all documents produced by or from or for the service provider in the course of performing the services, unless otherwise directed in writing by the buyer at no additional cost.

5.5 Independent Contractors

i. The relationship between the buyer and the service provider under this agreement is that of principal to principal basis and neither party shall have the power or authority to bind or obligate the other party except as expressly set forth in this Agreement. Therefore, neither the service provider nor the personnel of the service provider shall become the employee of the buyer under this Agreement. The buyer shall also not be liable to the service provider nor its personnel, beyond the scope and the fees as mentioned in the STC. For the sake of clarity, it is stated that the buyer shall not be responsible for any claim such as salary or allowances, bonus, compensation, damages or anything arising out of their employment/duty under this STC. The service provider shall make them known about this position in writing before deploying the personnel to the buyer's site. The buyer shall in no way be responsible for the violation of any laws from the time being in force, either by the service provider or its employees.

6. SLA Penalties and Termination

S No.	Description of default	Penalty
1.	Delay in commencement of work	Every week of delay from the schedule date of commencement of work will attract a penalty of 0.1% of total contract value
2.	Delay in mobilization of resource	Every week of delay from the schedule date of commencement of work will attract a penalty of 0.1% of total contract value
3.	Non resolution of complaints	If complaint is resolved within the agreed timelines of contract - No penalty If complaint is not resolved within the agreed timelines of contract - Penalty of INR 1,000 for per hour of delay or as stipulated by buyer
4.	If an employee of the service provider is found responsible for misconduct/disobedience or has misbehaved in any manner or resorted to any violent behaviour etc. with the employees of buyer organisation or other employees of service provider	1 st Instance - 0.05% of the contract value and replacement of resource 2 nd Instance - 0.1% of the contract value and replacement of resource 3 rd Instance onwards - 0.2% of the contract value and replacement of resource The buyer can take further action as deemed fit by competent authority at buyer's end.
5.	Consumables/spare parts supplied for use during the contract are not as per specification (if applicable)	Apart from immediate replacement of such consumables/spare parts following penalties: 1 st Instance - 0.5% of the contract value 2 nd Instance - 1% of the contract value 3 rd Instance onwards - 2% of the contract value
6.	Downtime of plants, machines and equipment due to the fault attributable to the service provider	Penalty and downtime as defined by the buyer
7.	Non-adherence of dress/uniform by the service provider employees or labours or any sub-contractors of the service provider	1 st Instance - INR 200 2 nd Instance - INR 500 3 rd Instance onwards - INR 1000
8.	Violation of applicable Safety, Health & Environment related guidelines/norms by service provider or its employees/labours/sub-contractors	In addition to applicable legal penalties, the following will be applicable 1 st Instance - 0.5% of the contract value 2 nd Instance - 1% of the contract value

are bound to accept the orders accordingly.

2.2. Buyer Added Bid Specific ATC:

Buyer uploaded ATC document [Click here to view the file.](#)

Note: This is system generated file. No signature is required.

नोट: यह सिस्टम जनरेटेड फाइल है। कोई हस्ताक्षर की आवश्यकता नहीं है।

Scope of Work

1. The contractor will execute Comprehensive operation and Maintenance of Sewage Treatment Plant at IIT Patna to get the desired effluent Characteristics, which include (But not limited) to the following:

A. Brief detail of work:

- i) Numbers of STP: 2 (Two)
- ii) Capacity of STP: 15 Cum/Hour
- iii) Description and Component of STP: Please refer annexure 1 and 2
- iv) Operation and Maintenance Manual: Please refer annexure 3
- v) Required characteristics of effluent: Please refer table 2 of annexure 1
- vi) List of Minimum Manpower deployment: Please refer annexure 4
- vii) Design, Supply and Installation of STP done by ION Exchange (I) Ltd.

The entire 15 Cum per Hour Sewage Treatment Plant will be operated & maintained by the contractor as per the maintenance manual. The Plant is in operation for last one year and has been installed by ION Exchange under SPCL under CPWD.

B) The treated sewerage should be efficient and meet the effluent characteristics as with 100% use for irrigation/horticulture purpose, re-charging of wells and supply for makeup tank of HVAC/ recycling for use in building.

C. The contractor will operate & maintain all the Electro-mechanical equipment also as per the IITP manual. It includes electrical panel, sewerage transfer pumps, dewatering pumps and all other pumps and accessories. All mechanical equipments duly protected against corrosion as well.

D. The contractor will deploy sufficient skilled manpower for maintaining STP round the clock. Contract also includes at least one monthly visit by a qualified engineer for preventive maintenance and any number of breakdown maintenance visits. The response for the break down should not be more than twenty-four hours.

E. Maintenance shall consist of monthly examinations and any necessary adjustments and lubrication of the equipment. The required supplies and parts replaced shall be furnished by the contractor without any additional cost to IITP. However, if replacement of main parts, pipes, pump & equipment, blowers, resins, filter media etc. needed, cost shall be borne by IITP. Requirement of any such items shall be intimated to IITP at least 3 months in advance.

F. Preparation and submission of required test report as recommended/required by Local Pollution Control Board. However test report fee shall be borne by IITP. A record of the maintenance services rendered by the contractor shall be maintained duly counter signed by the C-DOT representative.

G. The contractor shall bear responsibility for the characteristics of the final effluent and shall do the needful to the equipment or plant, if the same fails to meet the desired characteristics without any extra cost to IITP. Testing for the characteristics (BOD/COD/DO /PH/SS etc) shall be as per Local Pollution control Board norms or Quarterly whichever is less.

H. In addition to the indicated frequency of testing as above, test may be got conducted by IITP at any time .

I. Civil structure of STP, tanks, surrounding area, drains, sludge drying beds etc should also be maintained. Contractor will keep the surrounding neat and clean. Contractor will maintain the trees, shrubs, flowers, grass etc to keep the area clean & green.

J. In addition to the above, contractor shall do the work as per instruction issued by the competent authority time to time for proper and smooth running of STP. Any emergency work arisen should be attended promptly.

K) The installation shall operate under all condition of load without any sound or vibration which is objectionable in the opinion of IITP site representative.

In case of rotating machinery sound or vibration noticeable shall be considered objectionable. Such condition shall be corrected by the contractor at his own expense. The contractor shall guaranty that the equipment installed shall maintain the specified noise control level.

The above Comprehensive operation and maintenance shall include the following for desired effluent characteristics:

- i) Daily Operation on three shift basis and 365 basis.
- ii) Daily maintaining the Operation Log book on Hour basis.
- iii) Reporting to Engineer Incharge in case of any breakdown.
- iv) Daily cleaning of Bar Screen, Oil and grease tank, removal of scum, lamella plate cleaning, cleaning of sewage outlet ports and overall cleaning of STP area.
- v) Routine servicing of all pump/Blowers/Motors/electrical Panel/ Filter press etc. as per operation and maintenance manual.
- vi) Restoring any breakdown in any equipment listed above within 24 hours.
- vii) Supply and changing all oils etc as per manual.
- viii) Supply and dosing all chemicals.
- ix) Periodic Tank cleaning as per requirement and O& M manual.
- x) Maintaining all electrical panels, starters, wiring system etc.
- xi) Provide cleaning of Multi grade filter and Activated Charcoal filter including providing its media is in the scope of the agency.

Registrar IIT Patna

Annexure - 1

SPECIFICATION FOR STP ALREADY IN OPERATION

SEWAGE TREATMENT PLANT (STP)

A/ CIVIL WORKS:

Design basis for various units of STP:-

a) Main Sewage Receiving Sump cum Lifting Station (MSRSCLS)

The total sewage & sullage generated from the various scattered unit will be collected in this sump. This sump will be provided with a detention time of 30 minutes at peak flow. The wastewater collected in this sump will be pumped to inlet & screen chamber by two submersible pumps of necessary capacity and head.

b) Bar Screen Chamber & Oil & Grease Trap

From the MSRSCLS, the pumped sewage will be sent for screening. There will be 2 nos. Screen Channels (1W + 1S), each screen channel comprising semi manual bar screen suitable for design peak flow shall be provided. After screening, the sewage shall be transferred to Equalization tanks by gravity. En-route to the Equalization Tank the screened sewage will be made to pass through an Oil & Grease Trap of conventional design by gravity. The hydraulics will be so designed that gravity conveyance of screened sewage via Oil & Grease Trap is possible.

Bar screen chamber will be designed for the peak flow. Screen chamber is provided with measures to remove the floating matter. Removal of floating matter is essential because it can otherwise choke pipelines/ pumps etc and hinder the normal operation of the sewage treatment plant (STP). Screen chamber consists of vertical bars, normally spaced 1 cm apart and inclined away from the incoming flow. Solids retained by the bars are to be removed manually/semi-manually.

Screens are fixed in rectangular channels that receive the flow from the collection system. The screens should be readily accessible for cleaning. Hydraulically, the flow velocity shall not exceed 1.0 m/s in the channel.

c) Equalization Chamber

This unit is designed for average flow with minimum detention time of 8 hours. The basic purpose of the unit is to ensure homogeneous incoming wastewater as both canteen sullage and raw sanitary sewage will be collected and equalized in this tank. The bottom of the tank has to be provided with a coarse bubble aeration system to avoid septic conditions. The aeration will prevent settling of solids and also to build up the dissolved oxygen level in the wastewater. Aeration ensures complete mixing of the wastewater and the solids are maintained in suspension. Settling of solids could lead to accumulation and stagnation, leading to anaerobic and septic conditions, the result being strong odor problems. Aeration also aids in maintaining a residual dissolved oxygen level in the wastewater, which aids in treatment efficiency.

From Equalization tank the wastewater will be pumped to FAB reactor tanks.

There will be nos (1W + 1S) of Equalization tank transfer pumps (horizontal centrifugal non-clog pump).

d) FAB Reactors

The FAB reactor consists of a tank filled with specially developed media. These media are made of special material of suitable density that can be fluidized using an aeration device through diffusers.

A bio-film develops on the media, which move along the effluent in the reactor. The movement within the reactor is generated by providing aeration with help of diffusers placed at the bottom of the reactor.

This thin film on the media enables the bacteria to act upon the bio-degradable matter in the effluent and reduce BOD/COD content in presence of oxygen from the air used for fluidization.

e) Tube Settler Tank

The mixed liquor suspended solids (MLSS) from the FAB reactor flows into the tube settler tank by gravity. The biomass settles by gravity and the supernatant overflows the weirs to the adjoining Chlorine contact tank.

f) Sludge Holding Tank

The segregated biological sludge from tube settler tank will be led to this sump. Provision will be there to partially recycle back the sludge to the FAB unit to maintain the biomass concentration if required during initial commissioning stage. Wasted sludge will be taken to sludge holding tank for further action and disposal. This tank will have provision of aeration by equalization tank blowers to avoid settling of sludge in this tank. This sludge will be periodically transferred to a centralized Sludge drying bed.

g) Sludge Pumps

Two numbers return sludge pumps (Horizontal centrifugal / sludge pumps) [1 working + 1 standby] are to be provided to recycle the settled sludge from the sludge holding tank into the FAB reactor if required.

The excess sludge if any will be bled off from the return sludge line taken to Sludge holding tank

h) Final Treated Water Tank

This tank is provided to hold the treated water for atleast 1 (one) hour. From this tank the treated water will be reused in toilet flushing and green belt development. Two (1W + 1S) centrifugal pumps shall be used for this purpose.

i) Chlorine contact Tank

Chlorination of the treated water will be done to control faecal coliform bacteria. The basic purpose of this unit is to ensure that the faecal coliform count is less than 1000 number/ 100 ml.

Chlorination will be done by dosing hypochlorite solution via dosing tank and dosing pump arrangement.

This tank will have baffles to facilitate mixing of chlorine solution with the treated wastewater.

j) Cutting holes, chases & like through all types of walls/floors and finishing for all services crossing, including sealing, cover plates, making good structure and finishes to an approved standard.

The characteristics of raw sewage have been provided in Table-1. The Treated sewage shall satisfy the requirement as provided in Table-2.

TABLE-1

THE QUALITY OF RAW SEWAGE

• pH	:	7-8
• Flow	:	15m ³ /hr & 5 m ³ /hr
• BOD ₃ 27°C	:	200 - 300 mg/l
• TSS	:	250 - 300 mg/l
• Fecal Coliform	:	10 ⁶ - 10 ⁷ MPN per 100 ml
• Oil & Grease	:	100 mg/l

TABLE-2

THE DESIRED QUALITY OF TREATED SEWAGE

(Following the effluent discharge standards as prescribed by the gazette notification of the Ministry of Environment, Forest and Climate Change, Govt. of India dated 13th October, 2017)

• pH	:	6.5 – 9.0
• Flow	:	15 m ³ /hr & 5 m ³ /hr
• BOD ₃ 27°C	:	< 30 mg/l
• TSS	:	< 100 mg/l
• Fecal Coliform	:	< 1000 MPN per 100 ml

B) ELECTRICAL & MECHANICAL WORKS:-

List of equipment & accessories:-

- a) Main sewage receiving sump transfer pump.
- b) Bar screen.
- c) Air grid equalization tank.
- d) Fluidized aerobic bed (FAB) reactor feed pumps.
- e) FAB reactor containing air grid, media and blower.
- f) PVC tube settler modules.
- g) Hypochlorite dosing tank (LDPE-100 liters) and hypochlorite design tank.
- h) Filter feed pump.
- i) Dual media filter.
- j) Activated carbon filter.
- k) Air grid for sludge holding tank (HDPE).
- l) Interconnecting pipelines and valve.

ANNEXURE -2

List of Equipments installed at STP-2

SR. No.	DESCRIPTION	MAKE	MODEL	CAPACITY	HEAD RANGE	POWER/HP/RPM	QTY/STP
1	MAIN SEWAGE RECEIVING SUMP TRANSFER PUMP	KIRLOSKAR	ETERNA 1500 CW SUBMERSIBLE PUMP	16.2 M ³ /HR	7-20.5 MTRS	415 V AC 3 PH/2 HP/2900 RPM	02 NOS
2	SLUDGE TRANSFER BAR SCREEN	ION	SS304	06 mm			01 NO
3	FAB FMR FEED PUMP	JHONSON/ION	KGEN-11-4	13-15 M ³ /HR	10 MTRS	415 V AC 3 PH/3 HP/3000 RPM	02 NOS
4	FAB FMR CONTAINING AIR GRID MEDIA	ION					01 LOT
5	BLOWER	EVEREST/ION	M/5175	400 M ³ /HR	0.37 KG/CM ²	415 V AC 3 PH/10HP/1500 RPM	02 NOS
6	HYPO-CHLORITE DOZING TANK & PUMP	ION	HDPE	225 LTRS			01 NOS.
7	FILTER FEED PUMP TO (MGF)	MILTON RAY/ION	B-13L	17 LPM	3.5 KG/CM ²	230 V AC 1 PH	01 NOS.
8	DUAL MEDIA/MULTIGRADE FILTER	KIRLOSKAR	KDS 225	14.8 M ³ /HR	22.0 MTRS	415 V AC 3PH/2 HP/2840 RPM	02 NOS
9	ACTIVATED CARBON FILTER	ION	MGF-1000	15 M ³ /HR	3.5 KG/CM ²		01 NOS.
10	SLUDGE RECIRCULATION	ION	ACF-1000	15 M ³ /HR			01 NOS.
11	TREATED WATER DISTRIBUTION PUMP	KIRLOSKAR	SP-OM	15.84 M ³ /HR	6.5-13.5 MTRS	415 V AC 3 PH/1 HP/2700 RPM	02 NOS
12	BAR SCREEN	KIRLOSKAR	KDS 225	14.8 M ³ /HR	22.0 MTRS	415 V AC 3 PH/2 HP/2840 RPM	02 NOS
13	VCC PANEL	ION	MSEP	06 MM			
14	FILTER PRESS	DEVIKA	16 DRIVES	125 AMPS	415 V AC 3 PH		01 NO
15	SCREW PUMP FOR FILTER PRESS	W2P	W2P-2421-HM	540 LTRS/CM ²	4-5 KG/CM ²	HYDRAULIC MOTOR OPERATED	01 NOS
16	HYDRAULIC PUMP WITH MOTOR FOR FP	USHA TELEHOIST	EH-236	2 M ³ /HR	4-5 KG/CM ²	415 V AC 3 PH/2HP/300 RPM	02 NOS
17	SEWAGE CUM MOTER SET (SLUDGE RECEIVING)	KSB	KRTOPF100-195-34(Portable)	3.4 KW	50 m ³ /hrs 10 mtrs.	415 V AC 3 PH/2 HP/2900 RPM	01 NO
18	SEWAGE SUBMERSIBLE PUMP (EQUITY TANK)	KSB	AMAPORTER 503 ND	1.5 KW	09 MTRS	20 M ³ /HRS	01 NOS.
19	SUBMERSIBLE PUMPING SET (TREATED WATER TANK) AT ONLY STP NO. 2	TEXMO	ASM SP 750/1HP	1 HP	06 MTRS	27 M ³ /HRS	01 NOS.
20	CENTRIFUGAL PUMP (TREATED WATER TANK)	KSB KIRLOSKAR	MEGA GB 80-250	10 HP	21 MTRS	70 M ³ /HRS	02 NOS

ANNEXURE - 2

List of Equipments installed at STP - 3

	DESCRIPTION	MAKE	MODEL	CAPACITY	HEAD RANGE	POWER/HP/RPM	QTY/STP
1	MAIN SEWAGE RECEIVING SLUMP TRANSFER PUMP	KIRLOSKAR	ETERNA 1500 CW SUBMERSIBLE PUMP	16.2 M ³ /HR	7-20.5 MTRS	415 V AC 3 PH/2 HP/2900RPM	02 NOS
2	SEWAGE TRANSFER BAR SCREEN	ION	SS304	06 mm			01 NO
3	LAB/FMR FLED PUMP	JHONSON/ION	KGEN-11-4	13-15 M ³ /HR	10 MTRS	415 V AC 3 PH/3 HP/3000 RPM	02 NOS
4	FAB/FMR CONTAINING AIR GRH, MEDIA	ION					01 LOT
5	BLOWER	ERVEREST/ION	M/5175	400 M ³ /HR	0.37 KG/CM ²	415 V AC 3 PH/10HP/ 1500 RPM	02 NOS
6	HYPO-CHLORITE DOZING TANK & PUMP	ION	HDPE	225 LTRS			01 NOS.
7	FILTER FEED PUMP TO (MGF)	MILTON RAY/ION	B-13L	17 LPM	3.5 KG/CM ²	230 V AC 1 PH	01 NOS.
8	DUAL MEDIA/MULTIGRADE FILTER	KIRLOSKAR	KDS 225	14.8 M ³ /HR	22.0 MTRS	415 V AC 3PH/2 HP /2840 RPM	02 NOS
9	ACTIVATED CARBON FILTER	ION	MGF-1000	15M ³ /HR	3.5 KG/CM ²		01 NOS.
10	SLUDGE RECIRCULATION	ION	ACF-1000	15M ³ /HR			01 NOS.
11	TREATED WATER DISTRIBUTION PUMP	KIRLOSKAR	SP-OM	15.84 M ³ /HR	6.5-13.5 MTRS	415 V AC 3 PH/1 HP/2700 KPM	02 NOS
12	BAR SCREEN	KIRLOSKAR	KDS 225	14.8 M ³ /HR	22.0 MTRS	415 VAC 3 PH/2 HP/2840 RPM	02 NOS
13	MCC PANEL	ION	MSEP	06 MM			
14	FILTER PRESS	DEVIKA	16 DRIVES	125 AMPS	415 V AC 3 PH		01 NO
15	SCREW PUMP FOR FILTER PRESS	W2P	W2P-2421-HM	840 LTRS/CM ²	4-5 KG/CM ²	HYDRAULIC MOTOR OPERATED	01 NOS
16	HYDRAULIC PUMP WITH MOTOR FOR FP	USHA TELEHOIST	EH-236	2M ³ /HR	4-5 KG/CM ²	415 VA AC 3 PH/2HP/300 RPM	02 NOS
17	SEWAGE CUM MOTER SET (SLUDGE RECEIVING)					415 V AC 3 PH/2 HP/2900 RPM	01 NO
18	SEWAGE SUBMERSIBLE PUMP (EQUITY TANK)	KSB	KRTUPF100-195-34(Portable)	3.4 KW	50 m ³ /hrs 10 mtrs.		01 NOS.
19	CENTRIFUGAL PUMP (TREATED WATER TANK)	KSB	AMAPORTER 503 ND	1.5 KW	09 MTRS	20M ³ /HRS	01 NOS.
		KIRLOSKAR	MEGA GB 80-250	10 HP	21 MTRS	70 M ³ /HRS	02 NOS



INDIAN INSTITUTE OF TECHNOLOGY, PATNA
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL ENGINEERING LABORATORY

Sampling Date: 16-03-2024

Sample Location: Effluent - STP-3

S. No.	Parameter	Values
1	pH	7.10
2	Total Suspended Solids (TSS), mg/L	54
3	Total Dissolved Solids (TDS), mg/L	362
4	COD, mg/L	72
5	BOD ₅ at 20°C, mg/L	36
6	<i>E coli</i> (Total), MPN/100 mL	3.50E+04
7	<i>E coli</i> (Fecal), MPN/100 mL	9.20E+03

NR: Not Required



INDIAN INSTITUTE OF TECHNOLOGY, PATNA
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL ENGINEERING LABORATORY

Sampling Date: 16-03-2024

Sample Location: Mixed Liquor - Aeration Tank - STP-3

S. No.	Parameter	Values
1	pH	6.96
2	Total Suspended Solids (TSS), mg/L	196
3	Total Dissolved Solids (TDS), mg/L	454
4	COD, mg/L	260
5	BOD ₅ at 20°C, mg/L	112
6	<i>E coli</i> (Total), MPN/100 mL	NR
7	<i>E coli</i> (Fecal), MPN/100 mL	NR

NR: Not Required



INDIAN INSTITUTE OF TECHNOLOGY, PATNA
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL ENGINEERING LABORATORY

Sampling Date: 16-03-2024

Sample Location: Raw Sewage - STP-3

S. No.	Parameter	Values
1	pH	7.10
2	Total Suspended Solids (TSS), mg/L	290
3	Total Dissolved Solids (TDS), mg/L	472
4	COD, mg/L	360
5	BOD ₅ at 20°C, mg/L	124
6	<i>E coli</i> (Total), MPN/100 mL	2.80E+06
7	<i>E coli</i> (Fecal), MPN/100 mL	1.70E+04

NR: Not Required



INDIAN INSTITUTE OF TECHNOLOGY, PATNA
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL ENGINEERING LABORATORY

Sampling Date: 16-03-2024

Sample Location: Effluent - STP-2

S. No.	Parameter	Values
1	pH	7.20
2	Total Suspended Solids (TSS), mg/L	42
3	Total Dissolved Solids (TDS), mg/L	302
4	COD, mg/L	40
5	BOD ₅ at 20°C, mg/L	18
6	<i>E coli</i> (Total), MPN/100 mL	2.10E+04
7	<i>E coli</i> (Fecal), MPN/100 mL	5.40E+03

NR: Not Required



INDIAN INSTITUTE OF TECHNOLOGY, PATNA
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL ENGINEERING LABORATORY

Sampling Date: 16-03-2024

Sample Location: Mixed Liquor - Aeration Tank - STP-2

S. No.	Parameter	Values
1	pH	7.00
2	Total Suspended Solids (TSS), mg/L	272
3	Total Dissolved Solids (TDS), mg/L	398
4	COD, mg/L	340
5	BOD ₅ at 20°C, mg/L	112
6	<i>E coli</i> (Total), MPN/100 mL	NR
7	<i>E coli</i> (Fecal), MPN/100 mL	NR

NR: Not Required



INDIAN INSTITUTE OF TECHNOLOGY, PATNA
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL ENGINEERING LABORATORY

Sampling Date: 16-03-2024

Sample Location: Raw Sewage - STP-2

S. No.	Parameter	Values
1	pH	7.12
2	Total Suspended Solids (TSS), mg/L	290
3	Total Dissolved Solids (TDS), mg/L	408
4	COD, mg/L	384
5	BOD ₅ at 20°C, mg/L	136
6	<i>E coli</i> (Total), MPN/100 mL	3.50E+06
7	<i>E coli</i> (Fecal), MPN/100 mL	1.10E+05

NR: Not Required

Annexure -XII

Existing solid waste details

NOTE SHEET

11.03.2024

Subject: -Payment towards Annual contract for Collection, Segregation, Transportation of Solid Waste, Composting of Biodegradable Waste Fraction and Management of Non-biodegradable Waste Fraction generated as per the scopes of the work at IIT Patna.

The work of annual contract of Collection, Segregation, Transportation of Solid Waste. Composting of Biodegradable Waste Fraction and Management of Non-biodegradable Waste Fraction generated as per the scopes of the work at IIT Patna has been awarded to M/s Swacha Bharat vide LOA No. IITP/IWD/RS/16/2021 dated 14/07/2021 and subsequent agreement dated 21/10/2021. M/s Swacha Bharat has submitted their bill no. SB/IA11/24 dated 08.03.2024 for the month of:

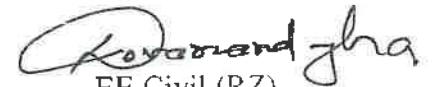
March 2024 of Rs. 1,68,591/-

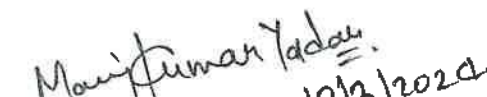
As the Solid Waste Collection and disposal has been done by the party for the above mentioned month, it is recommended to release the bill to M/s Swacha Bharat of Rs. 1,68,591/- as claimed by agency.

The necessary statutory deduction to be made by Account department and a copy of payment made be sent to IWD for record.


11.03.24
AE, Civil

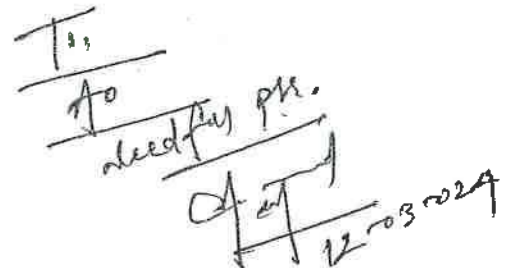

Accountant 11/3/2024


EE Civil (RZ)


12/3/2024
PIC (STP & WTP)


15.03.2024
Head, IWD

Registrar, IITP


12.03.2024

Test report of Solid waste Compost.

बिहार सरकार
कृषि विभाग,
कार्यालय-संयुक्त निदेशक (रसायन),
गुण नियंत्रण, बिहार, पटना-800001

Government of Bihar
DEPARTMENT OF AGRICULTURE
Office of Joint Director (Chemistry),
Quality Control, Bihar, Patna-800001.
Email Id-jdaqcpbhar@gmail.com
Mobile-9431818718

Memo No - 379

Date - 27-4-23

Form L-1

See clause 30 FCO 1985

कार्बनिक उर्वरक नमूना का विश्लेषण प्रतिवेदन / Analysis Report of Organic Fertilizer Sample

सेवा में/To,

Block Agriculture Officer,
Bihra, Patna.
Bihar.

The analysis report of the Organic Fertiliser samples forwarded by your reference No -
is as per details given below

89

Dated - 08.04.2023

- 1 कार्बनिक उर्वरक का नाम / Name of Organic Fertiliser
- 2 नमूना लेने की तारीख / Date of sampling
- 3 कोड नं. / Code No of sample as indicated by the inspector
- 4 प्रयोगशाला में नमूना प्राप्ति की तारीख / Date of receipt of sample in the Laboratory
- 5 प्रयोगशाला नमूना नं. / Laboratory sample No.
- 6 विश्लेषण की तारीख / Date of analysis of sample
- 7 कार्बनिक उर्वरक का विश्लेषण / Analysis of Organic Fertiliser (On Fresh wt basis)

Organic Manure

05.04.2023

01/Bihra/2023

11.04.2023

8

27.04.2023

क्र. नं. Sl.No	Parameters	विनिर्देश के अनुसार / Specification as per FCO (in %)	विश्लेषण के अनुसार संयोजन / Composition as per analysis (in %)	अंतर / Variation	अनुमति योग्य सीमा / Permissible Tolerance limit	
(A)	Physical Characteristics -					STANDARD
(i)	Moisture Content	25.00(max)	24.18			
(ii)	Bulk Density (g/cm ³)	<1.0	0.79			
(iii)	Particle Size	90.00	100.00			
(B)	Chemical Characteristics -					
(i)	Total Organic Carbon (Min)	14.00	16.59			
(ii)	Total Nitrogen	0.50	0.84			
(iii)	Total P ₂ O ₅	0.5	0.72			
(iv)	Total K ₂ O	0.5	0.58			
Sum Total of (B) (ii) (iii) & (iv)	Sum Total of (B) (ii) (iii) & (iv)		2.14			
(v)	C : N Ratio	<20	19.75			
(vi)	pH	6.5-7.5				
(vii)	Conductivity (as dsm-1) not more than (as dsm ⁻¹)	4				

Remarks:- नमूना, विनिर्देशों के अनुसार है। The sample is according to specification.

Copy to:-

1. Director of Agriculture, Bihar, Vikash Bhawan, New Secretariate, Patna.

Joint Director (Chemistry),
Quality Control, Bihar, Patna

बिहार सरकार
कृषि विभाग
कार्यालय ससुका निदेशक (स्वावलं),
मुल निगमन, बिहार, पटना-800001

Government of Bihar
DEPARTMENT OF AGRICULTURE
Office of Joint Director (Chemistry),
Quality Control, Bihar, Patna-800001
Email id-jdagcbbihar@gmail.com
Mobile-9431518718

Date 26/03/2024

Memo No - 126

Form L-1

See clause 30 FCO 1985

कार्बनिक खर्वरक नमूना का विश्लेषण प्रतिवेदन / Analysis Report of Organic Fertilizer Sample

कृषि अधिकारी,

Block Agriculture Officer,
Bihra (Patna),
Bihar

The analysis report of the Organic Fertilizer samples forwarded by your reference No. 242 is as per details given below

Dated - 25.03.2024

1. Sample Name: Name of Organic Fertilizer
2. Date of Sampling: Date of sampling
3. Sample Code No: Code No. of sample as indicated by the inspector
4. Date of Receipt: Date of receipt of sample in the Laboratory
5. Laboratory Sample No: Laboratory sample No
6. Date of Analysis: Date of analysis of sample
7. Analysis Method: Analysis of Organic Fertilizer (On Fresh wt. basis)

Organic Manure

28.03.2024

04/143

24.04.2024

Sl. No.	Parameters	सिद्धि का स्तर / Specification as per FCO (in %)	प्रमाणित संयुक्त संयुक्त / Composition as per analysis (in %)	अंतर / Variation	अनुमति सीमा / Permissible Tolerance limit
(A)	Physical Characteristics -				
(i)	Moisture Content	25.00(max)	18.35		
(ii)	Bulk Density (g/cm ³)	>1.0	0.85		
(iii)	Particle Size	100.00	100.00		
(B)	Chemical Characteristics -				
(i)	Total Organic Carbon (Mn)	14.00	14.31		
(ii)	Total Nitrogen	0.50	0.84		
(iii)	Total P ₂ O ₅	0.5	0.88		
(iv)	Total K ₂ O	0.5	0.58		
Sum Total of (B) (i) (ii) & (iv)	Sum Total of (B) (i) (ii) & (iv)		2.28		
(v)	C : N Ratio	20	17.04		

Remarks:- नमूना, सिद्धि का स्तर अनुसार है। The sample is according to specification.

Copy to:-

1. Director of Agriculture, Bihar, Patna.

Joint Director (Chemistry)
Quality Control, Bihar, Patna

भारतीय गैर न्यायिक INDIA NON JUDICIAL

एक हजार रुपये

रु.1000

ONE THOUSAND RUPEES

Rs.1000

बिहार BIHAR

क्र. संख्या 10875 तिथि 21/10/21 मूल्य 1000 सीट संख्या AH 980355
केल का नाम पता 1-9-200 NIT- 191986410

कामेश्वर प्र. सिंह, मुद्रांक विक्रेता
लॉ. सं-6/79, निर्वाहन कार्यालय, पटना

AGREEMENT

This agreement made this day of 21 day of October 2021 at Patna in the presence of witnesses

BETWEEN

Indian Institute of Technology, Patna (hereinafter referred to as the "IIT Patna" which expression shall include its administrators, successors, executors and assigns) of the ONE PART

AND

M/s SWACHA BHARAT (Registered under Society Act), (hereinafter referred to as the service provider which expression shall unless the context requires otherwise include its administrators, successors, executors and permitted assigns) of the OTHER PART.

WHEREAS, IIT Patna (owner), of Collection, Segregation, Transportation of Solid Waste, Composting of Biodegradable Waste Fraction and Management of Non-biodegradable Waste Fraction generated as per the Scopes of the Work at IIT Patna (hereinafter referred to as the "PROJECT") had invited e-tenders as per Tender documents vide NIT No.- IITP/IWD/RS/NIT/02/2021 dated 02.03.2021.

AND WHEREAS M/s SWACHA BHARAT (Registered under Society Act.) had participated in the above referred tender vide their tender dated 26.03.2021 and IIT PATNA has accepted their aforesaid tender for Collection, Segregation, Transportation of Solid Waste, Composting of Biodegradable Waste Fraction and Management of Non-

10/10/21

Confidential Copy
K. S. S. S. S. S.

10/10/21

biodegradable Waste Fraction generated as per the Scopes of the Work at IIT Patna on the terms and conditions contained in its Letter of Intent No. IITP/IWD/RS/16/2021 dated 14.07.2021 and the documents referred to therein, which have been unequivocally accepted by M/s SWACHA BHARAT (Registered under Society Act). vide their acceptance dated 29.07.2021 resulting into a contract.

NOW THEREFORE THIS AGREEMENT WITNESSETH AS UNDER:

ARTICLE 1.0 - AWARD OF CONTRACT

1.1 SCOPE OF WORK

IIT Patna has awarded the contract to M/s SWACHA BHARAT (Registered under Society Act). for the work of Collection, Segregation, Transportation of Solid Waste, Composting of Biodegradable Waste Fraction and Management of Non-biodegradable Waste Fraction generated as per the Scopes of the Work at IIT Patna on the terms and conditions in its letter of intent No. IITP/IWD/RS/16/2021 dated 14.07.2021 and the documents referred to therein. The award has taken effect from 01.08.2021 i.e. next month of issue of letter of intent. The terms and expressions used in this agreement shall have the same meanings as are assigned to them in the "Tender Documents" referred to in the succeeding Article. The agreement is effective from 01/08/2021 i.e from date of award.

ARTICLE 2.0 - CONTRACT DOCUMENTS

- 2.1 The contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents attached herewith (hereinafter referred to as "Contract Documents").
- a) IIT PATNA Notice Inviting E-Tender vide NIT No. IITP/IWD/RS/NIT/02/2021 dated 02.03.2021.
 - b) Bid submitted by M/s Swacha Bharat on 26/03/2021 IIT, Letter of Intent No- IITP/IWD/RS/16/2021 Dated: 14/07/2021.
- 2.2 All the aforesaid tender documents referred to in Para 2.1 above shall form an integral part of this Agreement, in so far as the same or any part thereof column, to the tender documents and what has been specifically agreed to by IIT PATNA in its Letter of Intent. Any matter inconsistent therewith, contrary or repugnant thereto or deviations taken by the Contractor in its "TENDER" but not agreed to specifically by IIT PATNA in its Letter of Intent, shall be deemed to have been withdrawn by the Contractor without any cost implication to IIT PATNA. For the sake of brevity, this Agreement along with its aforesaid contract documents and Letter of Intent shall be referred to as the "Contract".

ARTICLE 3.0 - CONDITIONS & CONVENANTS

- 3.1 The scope of Contract, Consideration, Terms of payments, Advance, Security Deposits, Taxes wherever applicable, Insurance, Agreed Time Schedule, Compensation for delay and all other terms and conditions contained in NIT No.- IITP/IWD/RS/NIT/02/2021 dated 02/03/2021 & Letter of Intent no.

Mov
21/10/21

MS
22/10/21

IITP/IWD/RS/16/2021 dated 14/07/2021 are to be read in conjunction with other aforesaid contract documents. The contract shall be duly performed by the contractor strictly and faithfully in accordance with the terms of this contract.

- 3.2 The scope of work shall also include all such items which are not specifically mentioned in the Contract Documents but which are reasonably implied for the satisfactory completion of the entire scope of work envisaged under this contract unless otherwise specifically excluded from the scope of work in the Letter of Intent.
- 3.3 Contractor shall adhere to all requirements stipulated in the Contract documents.
- 3.4 Timely operation & production of compost as per SWM Rules, 2016 & FCO, 2009 is the essence of Contract and it shall be stringently adhered to.
- 3.5 This agreement constitutes full and complete understanding between the parties and terms of the presents. It shall supersede all prior correspondence to the extent of inconsistency or repugnancy to the terms and conditions contained in Agreement. Any modification of the Agreement shall be effected only by a written instrument signed by the authorized representative of both the parties.
- 3.6 The total contract price for the entire scope of this contract as detailed in Letter of Intent be governed by the stipulations of the contract documents.

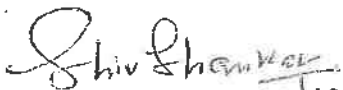
ARTICLE 4.0 - GOVERNING LAW AND JURISDICTION

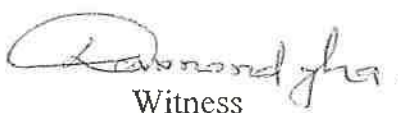
- 4.1 The Laws applicable to this contract shall be the laws in force in India and jurisdiction of Patna Court (s) only.
- 4.2 Notice of default given by either party to the other party under the Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto, if delivered against acknowledgment due or by FAX or by registered mail duly addressed to the signatories at the address mentioned herein above.

IN WITNESS WHEREOF, the parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the Competent Authorities of both the parties) on the day, month and year first above mentioned at Patna.


For and on behalf of M/s Swacha Bharat


For and on behalf of IIT Patna


Witness 21/10/21


Witness
21/10/21



भारतीय प्रौद्योगिकी संस्थान पटना Indian Institute of Technology Patna

बिहटा, पटना-801106, बिहार, भारत | Bihta, Patna-801106, Bihar, India

Phone: +91-612-3028084 | Fax: +91-612-3028123

http://www.iitp.ac.in | email: registrar@iitp.ac.in

कुलसचिव कार्यालय
OFFICE OF THE REGISTRAR

IITP/IWD/RS/16/2021

14.07.2021

To,
M/s Swacha Bharat
(Clean India)
21 C/1A, Shivpuri, Patna - 800023
Mobile No – 7549200476, 9334461392

Subject: - Letter of intent (LOI) for Collection, Segregation, Transportation of Solid Waste, Composting of Biodegradable Waste Fraction and Management of Non-biodegradable Waste Fraction generated as per the Scopes of the Work at IIT Patna.

Ref: - NIT No.: IITP/IWD/RS/NIT/02/2021 dated 02/03/2021

Dear Sir,

As per the approval of competent authority, IIT Patna is pleased to inform that your offer against our NIT No.: IITP/IWD/RS/NIT/02/2021 dated 02/03/2021 for “Collection, Segregation, Transportation of Solid Waste, Composting of Biodegradable Waste Fraction and Management of Non-biodegradable Waste Fraction generated as per the Scopes of the Work at IIT Patna, at Bihta” amounting to Rs.52,44,372/- against our estimated cost of Rs.48,12,372/- is hereby accepted.

Sl. No.	Brief Description of item/work	Unit	Qty.	Rate	Amount
1	Collection, Segregation, Transportation of Solid Waste, Composting of Biodegradable Waste Fraction and Management of Non-biodegradable Waste Fraction generated as per the scope of work including all consumables, tools, machineries, shredders, turner, aerators, sieving machine, handling equipment, safety equipment, gloves, etc. (IIT Shall provide only civil infrastructure with compost pit and shed without machinery) for composting of bio-degradable waste and for overall waste management from collection to treatment/disposal as per waste type.	Per Month	36	1,45,677/-	52,44,372/-
Total Amount					52,44,372/-

The accepted rate is inclusive of all materials, labours, taxes, cess, tools, equipment's etc., the total amount is Rs.52,44,372/-. Nothing extra shall be paid for the above scope of work. You are requested to submit Performance Guarantee of 3% (Rs.1,57,331/-) within 15 days of issue of this letter and to sign a service contract with IITP before start of work.

Notice inviting tender/Tender Notice/Special condition of contract/Special condition for safety at the worksite, price offer and technical bid is integral part of this letter. The duration for the completion of the work is 36 Months. You are requested to start the work from 1st August 2021. You have to maintain a standard operating procedure for work in view of Covid-19.

CS
24/7/21

Solid waste shall be collected from new buildings also as and when it is required and rate shall be increased as per area of new buildings proportionately as per NIT.

Please submit the detail & document of manpower & equipment to be deployed at site for gate pass etc.

Please sign a duplicate copy of this letter as taken of your acceptance.

Yours sincerely,

Uisg
Registrar 16/7/21

Copy to: -

- Head, IWD
- DR Gen. Admin
- AR Finance
- PIC STP/WTP

Vaibhaw
Ankit

Annexure- XIII

Electricity load

IIT PATNA								
ELECTRICAL LOAD CALCULATION (SUMMARY-ESS-2)								
S. No.	DESCRIPTION	NO. OF FLOOR	GRID			D.G. BACK UP		
			C.L. (KW)	D.F.	DEMAND LOAD (KW)	C.L. (KW)	D.F.	DEMAND LOAD (KW)
1	BOYS HOSTEL(BLOCK-1)	G+7	388	1.0	388	262	1.0	262
2	BOYS HOSTEL(BLOCK-2)	G+7	388	1.0	388	262	1.0	262
3	GIRLS HOSTEL	G+5	153	1.0	153	39	1.0	39
4	MARRIED ACCOMMODATION	G+5	109	1.0	109	22	1.0	22
5	DINING BLOCK	G	100	1.0	100	30.0	1.0	30
	TOTAL				1138			614
	OVERALL DIVERSITY				0.40			0.50
	DEMAND LOAD	KW			455			307
	POWER FACTOR				0.90			0.80
	DEMAND LOAD IN KVA	KVA			506			384
	TRANSFORMER CAPACITY							
	DEMAND LOAD	KVA			506			
	LOADING FACTOR				0.85			
	TRANSFORMER CAPACITY				595			
	TRANSFORMER CAPACITY	1x800 KVA, 11KV/0.415 KV DRY TYPE TRANSFORMER WITH OFF LOAD TAP CHANGER						
	D.G. SET CAPACITY							
	DEMAND LOAD							384
	LOADING FACTOR							0.85
	D.G. SET CAPACITY							452
	D.G. SET CAPACITY	1X500 KVA, 415 VOLT, RADIATOR COOLED DG SET						



IIT PATNA								
ELECTRICAL LOAD CALCULATION (SUMMARY-ESS-3)								
S. No.	DESCRIPTION	NO. OF FLOOR	GRID			D.G. BACK UP		
			C.L. (KW)	D.F.	DEMAND LOAD (KW)	C.L. (KW)	D.F.	DEMAND LOAD (KW)
1	TYPE-A	G+8	218	1.0	218	23	1.0	23
2	TYPE-B	G+8	225	1.0	225	24	1.0	24
3	TYPE-C (BLOCK-1)	G+6	157	1.0	157	23	1.0	23
4	TYPE-C (BLOCK-2)	G+6	157	1.0	157	23	1.0	23
5	TYPE-D (BLOCK-1)	G+3	72	1.0	72	7.7	1.0	8
6	TYPE-D (BLOCK-2)	G+3	72	1.0	72	8	1.0	8
7	TYPE-D (BLOCK-3)	G+3	72	1.0	72	8	1.0	8
	TOTAL				973			116
	OVERALL DIVERSITY				0.40			0.70
	DEMAND LOAD	KW			389			81
	POWER FACTOR				0.90			0.80
	DEMAND LOAD IN KVA	KVA			433			102
	TRANSFORMER							
	DEMAND LOAD	KVA			433			
	LOADING FACTOR				0.85			
	TRANSFORMER				509			
	TRANSFORMER CAPACITY	1X500 KVA, 11KV/0.415 KV DRY TYPE TRANSFORMER WITH OFF LOAD TAP CHANGER						
	D.G. SET CAPACITY							
	DEMAND LOAD							102
	LOADING FACTOR							0.85
	D.G. SET CAPACITY							120
	D.G. SET CAPACITY	1X500 KVA, 415 VOLT, RADIATOR COOLED DG SET						



IIT PATNA								
ELECTRICAL LOAD CALCULATION (SUMMARY-ESS-4)								
S. No.	DESCRIPTION	NO. OF FLOOR	GRID			D.G. BACK UP		
			C.L. (KW)	D.F.	DEMAND LOAD (KW)	C.L. (KW)	D.F.	DEMAND LOAD (KW)
1	CIVIL WORKSHOP	G+M	188	1.0	188	37	1.0	37
2	CHEMICAL WORKSHOP	G+M	139	1.0	139	37	1.0	37
3	MECHANICAL WORKSHOP	G+M	160	1.0	160	37	1.0	37
4	ACADEMIC BLOCK-1	G+5	1205	1.0	1205	430	1.0	430
5	ACADEMIC BLOCK-2	G+5	1205	1.0	1205	430	1.0	430
6	STUDENT ACTIVITY CENTER	LG+G	106	1.0	106	69	1.0	69
7	CENTRAL LIBRARY(106061 SQF)	G+5	1074	1.0	1074	584	1.0	584
8	SERVER LOAD (LIBRARY) (WORKING & F		425	1.0	425	425	1.0	425
9	CENTRAL LECTURE HALL (3206	G+1	292	1.0	292	128	1.0	128
10	AUDITORIUM (81991 SQF)	G+1	735	1.0	735	735	1.0	735
11	ESS BLOCK	G	5	1.0	5	5	1.0	5
12	EXTERNAL LIGHTING LOAD		30	0.7	21	30	0.7	21
13	FIRE FIGHTING		150	0.0	15	150	0.0	15
	TOTAL				5570			2953
	OVERALL DIVERSITY				0.40			0.45
	DEMAND LOAD	KW			2228			1329
	POWER FACTOR				0.90			0.80
	DEMAND LOAD IN KVA	KVA			2475			1661
	TRANSFORMER CAPACITY							
	DEMAND LOAD	KVA			2475			
	LOADING FACTOR				0.85			
	TRANSFORMER CAPACITY				2912			
	TRANSFORMER CAPACITY	3X1600 KVA (2W+1S), 11KV/0.415 KV TRANSFORMER WITH OFFLOAD TAP CHANGER						
	D.G. SET CAPACITY							
	DEMAND LOAD							1661
	LOADING FACTOR							0.85
	D.G. SET CAPACITY							1954
	D.G. SET CAPACITY	2X1000 KVA, RADIATOR COOLED DG SET						



Annexure- XIV
CGWA NOC

000190
01/10

Central Ground Water Authority
Ministry of Water Resources
Government of India

No. 21-4(129)/CGWA/MER/2012-14839

Dated-
07 NOV 2012

To,
The Registrar
Indian Institute of Technology, Patna
Patliputra Colony, Patna-800013

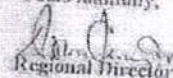
Sub: Request for ground water clearance in respect of M/s Indian Institute of Technology (IIT), for their proposed infrastructural development of institute at village Bihta, Block Dilabarpur, Tehsil Bihta, District Patna, Bihar-reg.

Sir,

The area where the industry /project area falls comes under safe category as per the ground water assessment carried out by Central Ground Water Board (2004). Since the total requirement of ground water is 1500 m³/day, NOC is not required for ground water withdrawal from Central Ground Water Authority. However, to neutralize the adverse impact of ground water withdrawal that may arise on a long term basis, the industry/ project is advised to undertake the following measures:

1. Ground Water withdrawal shall not exceed the proposed quantity of 1500 m³/day.
2. All abstraction structures should be fitted with water meter by the industry and monitoring of ground water abstraction to be undertaken accordingly on regular basis, at least once in a month. The data may be submitted on a yearly basis to the Regional Director, Central Ground Water Board, Mid Eastern Region, Patna for perusal and records.
3. The industry is advised to implement rain water harvesting and monitoring of the ground water levels in and around the area as per the hydrogeological investigation.
4. The industry shall ensure proper conservation measures, recycling and reuse of waste water after adequate treatment.
5. The industry shall monitor the ambient ground water regime of the area through piezometers and submit the data on a yearly basis to the Regional Director, Central Ground Water Board, Mid Eastern Region, Patna for perusal and records.

Yours faithfully,


Regional Director

Copy for information to file:

1. Member Secretary, Bihar State Pollution Control Board, Beltron Bhawan, Shastri Nagar, Patna-800023, with a request to ensure that Rain Water Harvesting and Artificial Recharge methods are being implemented by the firm and quantity of ground water withdrawal is not exceeding 1500 m³/day.
2. Regional Director, Central Ground Water Board, Mid Eastern Region, 6th-7th Floor, Lok Nayak Bhawan, Dak Bungalow, Patna-800001. This has reference to your letter No. CGWB/MER/CGWA/2012-2027 dated 20.09.2012.
3. TS to Chairman, Central Ground Water Board, NH-IV, Faridabad.
4. Guard File 2012-13

Regional Director

West Block-2, Wing-3, Ground Floor, R. K. Puram, Sector-1, New Delhi-110066
(011) 26175373, 26175367 Fax (011) 26175365 e-mail: bangalore@cgwb.gov.in web site: <http://cgwb.gov.in>

Copy: 

Annexure- XV
Certified EC Compliance



Government of India / भारत सरकार
 Ministry of Environment, Forest & Climate Change
 पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
 Regional office (Eastern Central Zone)/ (पूर्वी मध्य क्षेत्रीय कार्यालय)
 Bungalow No.A-2, Shyamli colony, Ranchi - 834002
 बंगला सं.ए. 2-श्यामली कालोनी, राँची 834002 -
 Tel: 0651-2410007, 2410002, E-mail: ro.ranchi-mef@gov.in



जहाँ है संरक्षण ।
 वहाँ है खुशखबरी ॥

No. 113-56/ROR-2018/3156

Dated: 23.05.2019

To,

Member Secretary,
 State Environment Impact Assessment Authority, (SEIAA-Bihar)
 3rd floor, Belton Bhawan,
 Shastri Nagar, Patna,
 Bihar- 800023.

Sub: - Monitoring report related to Environment clearance for Construction of Indian Institute of Technology (IIT) Patna, at Bihta, Patna, Bihar, Expansion- reg.

Ref: SEIAA, Bihar, Patna Ref. no. 97 dated 26.10.2012

Sir,

I am directed to inform that the construction project of Indian Institute of Technology (IIT), located at Bihta, Patna, Bihar was monitored by Regional Office, Ranchi on 03.05.2019. The project proponent had requested for a certified copy of the latest compliance report from Regional Office, Ranchi as they have proposed for expansion of an area 1,39,044 sqm. (aprox.) for further development of the IIT Patna project.

The detailed monitored compliance report is enclosed herewith. Most of the conditions have been complied and the following observations related to partial compliance / non-compliance are mentioned hereunder.

A (I) Specific Conditions:

(a) Steps to avoid disturbance during construction

(Condition no. v): The sand dumps should have uniform levels and also more number of fixed water sprinklers points at the sand dumping areas to minimize dust pollution during windy periods.

(Condition no. vi): The height of the hessian cloth barricade should be increased in the academic building site to shield from dust blowing from sand dump areas.

(Condition no. vii): More greenery should be developed in the available surrounding area of the Ready-Mix concrete plant.

(b) Plantation Proposed

(Condition no. i): The avenue plantation activity should be carried out both side of the entrance road and other area of the campus. Project proponent should submit the year wise plantation data along with planted species and covered area to RO, Ranchi.

(c) Rain Water Harvesting Scheme

(Condition no. i): Rain water harvesting practice and recycling system of collected rain water is yet to be implemented.

(d) Water Supply

(Condition no. ii): The water meters have not been installed in the building and the daily water consumption is not being monitored.

These issues with the approval of the ADG (Central).

Yours faithfully,

Dr. Hemen Hazarika
Scientist 'D'

E-mail: ro.ranchi-mef@gov.in

Enclosure: As stated.

Copy to:

1. The Director, Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhavan, Jorbagh Road, Aliganj, New Delhi-110003.
- ✓ 2. The Registrar, Indian Institute of Technology, Bihta, Patna- 801106 (Bihar)
3. Member Secretary, Bihar State Pollution Control Board, Parivesh Bhawan, Plot No. Ns-B/2, Paliputra Industrial Area, Patliputra, Patna (Bihar) - 800010.

[Signature]
20/05/19
Dr. Hemen Hazarika
Scientist 'D'

E-mail: ro.ranchi-mef@gov.in

Government of **India**
Ministry of environment forests and climate Change (MoER&CC)
Regional Office - Ranchi
Monitoring Report
Part - I
Data sheet

1.		Project Type River valley/Mining /Industry / Thermal /Nuclear /Other Specify	2.	Township and Area Development Projects 8(b)
2.		Name of Project	3.	Indian Institute of Technology Patna at Bihta
3.		Clearance letter (s) / OM No. and date	4.	SEIA, Bihar, Patna Ref. no. 97 dated 26.10.2012
4.		Location	5.	At BihtaCampa Road, 4 KM from Bihta Station
	a.	Taluk (s) District		Amhara and Dilwarpur Block, Bihta, Patna
	b.	State (s)		Bihar
	c.	Latitudes/Longitudes		25°31'55.92 N 84°51'09.90 E
5.		Address of Correspondence		Registrar, Indian Institute of Technology Patna, Bihta - 801106
	a.	Address of concerned project Chief Engineer (with Pin code & Telephone / Fax Number		Head, Institute Works Department, Indian Institute of Technology Patna
	b.	Address of Executive project Engineer / Manager (with Pin code & Telephone / Fax Number		Shri S K Jha Executive Engineer, IWD, IIT Patna
6.		Salient features:		
	a.	Salient features of the project		Project Location: 25° 31' 55.92"N, 84°51'09.90" E. Land Area 20, 23,436.5 sqm. Present built up area:- 137954 sqm Built up area proposed for expansion :- 139044 sqm Water requirement : 775 KLD (Existing + Proposed) Built up Area in Environmental Clearance dated 26-10-2012 : 1,37,997.62 sqm

	b.	Of the environmental management plans	:	Regular monitoring of EMP is being carried out and a copy of EMP has been submitted to RO, Ranchi. Environment Management committee has been formed for the purpose. Which are mentioned here, 1. PIC-landscape----- Chairman 2. Associate Head----- Member 3. Dr. Subrata Hait (Civil)----- Member 4. Executive Engineer (RZ)... Member																		
7		Breakup of the project area:	:	Attached																		
	a.	Project area Land Area Ground Coverage Built up Area Parking Area Parking ECS Road Area Hardscape Area Green Area (Trees, Shrubs & Grass)	:	<table><tr><td>20, 23,436.5 Sqm</td><td>Total</td></tr><tr><td>Existing</td><td></td></tr><tr><td>40,287 Sqm</td><td>80,000 sqm</td></tr><tr><td>1,37,997 Sqm.</td><td>2,76,998 sqm</td></tr><tr><td>28,325 Sqm.</td><td>76,125 sqm</td></tr><tr><td>1133 ECS</td><td>3045 ECS</td></tr><tr><td>56,850 Sqm</td><td>90,350 sqm</td></tr><tr><td>21,877 Sqm</td><td>41,254 sqm</td></tr><tr><td>65,263 Sqm</td><td>1,30,398 sqm</td></tr></table>	20, 23,436.5 Sqm	Total	Existing		40,287 Sqm	80,000 sqm	1,37,997 Sqm.	2,76,998 sqm	28,325 Sqm.	76,125 sqm	1133 ECS	3045 ECS	56,850 Sqm	90,350 sqm	21,877 Sqm	41,254 sqm	65,263 Sqm	1,30,398 sqm
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65,263 Sqm	1,30,398 sqm																					
8		Breakup of project affected population with enumeration of those losing houses dwelling units only, agricultural land only, both dwelling units and agricultural land and landless labourers/artisans	:	Vacant plot allotted by Bihar Government. No population is affected.																		
	a.	SC, ST /adivasis	:	Nil																		
	b.	Others	:	Nil																		
9		Financial details:	:																			
	a.	Project Cost has originally planned and subsequent revised estimates and the years of price reference	:	520 Crores																		
	b.	Allocations made for Environmental management plans, with item wise and year wise breakup	:	Rs 8.60 Crores																		

c.	Benefits cost ratio / Internal date of return and the year of assessment :	Not applicable as this is an educational Institution recognized by Gov. of India.	As per project proponent
d.	Whether (C) includes the cost of environmental management as shown in (b) above :	Not applicable	
e.	Total expenditure on the project so far :	495 Crores	
f.	Actual expenditure incurred on the environmental management plans so far :	Rs 8.60 Crores	
10.	Forest land requirement :	No Forest land involved	
a.	The status of approval of a diversion of forest land for non forestry use :	N.A.	As per project proponent
b.	The status of compensatory afforestation, if any :	N.A.	
c.	The Status of Clear felling :	N.A.	
d.	Comments on the viability and sustainability of compensatory afforestation programme in the light of actual filed experience so far :	N.A.	
11.	The status of clear filling in non-forest area (Such as submergence area of reservoir, approach road), if any with quantitative information :	Nil	
12.	Status of construction:		
a.	Date of commencement :	January 2013	
b.	Date of completion (actual and / or planned) :	Partly in 2016 and remaining planned in September 2019	
13.	Reasons for the delay if the project is yet start :	Project Started	
14.	Date of site visit:		
a.	The dates on which the project was monitored by the Regional Office on previous occasions, if any :	24.05.2018	
b.	Date of site visit for this monitoring report :	03.05.2019	

PART - II
Descriptive report on status of compliance to conditions of environmental clearance

1.	Project type	Building & Construction Project
2.	Name of the project	Proposed Indian Institute of Technology Patna at Bihta
3.	No & date of environmental clearance	SEIAA, Bihar, Patna Ref. no. 97 dated 26.10.2012
4.	Address for correspondence	
	(a) Project Office	Registrar, Indian Institute of Technology Patna, Bihta - 801106
	(b) Corporate Office	Shri S. K. Jha Executive Engineer, IWD, IIT Patna-801106
5.	Date of site visits :	
	(a) Dates of earlier monitoring	24.05.18
	(b) Date of monitoring	03.05.19

The project was visited on 03.05.19 along with Er. Devanand Jha, (IIT, IWD), Er. S.K. Jha (IIT, IWD), Er. Anil Burma, Er. Sujit Kumar (CPWD). Discussions were held with different unit heads of the IIT Patna Bihar. During discussion period project proponent stated that present built up area is 1,37,934 sqm and area proposed for further expansion is 1,39,044 sqm. Construction for remaining portion is in process. Based on the site visit, documents provided and discussion held with project officials, the point-wise status of compliance to the various environmental clearance conditions, are as follows:

Part A- Specific Conditions	
Conditions	Status of Compliance
I. Construction Phase	
Facility of labourers during construction	
i. Provision of drinking water, wastewater disposal and solid waste management should be ensured for labour camps. Water usage during construction should be optimized to avoid any wastage.	Complied : At the project site it was observed that for the construction workers provision of drinking water is being provided. The construction phase involves generation of construction waste/debris, waste oil and chemicals from construction machinery and domestic solid waste from camp site etc. Which is being handled as per the C&D waste management and handling rules 2016. For the wastewater generated from labour camps adequate number of separate male and female portable toilets, septic tanks and soak pits are

		provided (as can be seen from photos no. 25 & 26) and onsite for disposal of sewage is being done as per the design aspects of Bureau of Indian Standards.
ii	Proper sanitation facilities should be provided for construction workers to ensure environmental sanitation. Sewage generated from the areas occupied by the construction labourers have to be directed into the existing sewage drain of the area. In case of non availability of the sewer system, an onsite treatment system has to be provided.	Complied: Proper sanitation facilities are given to the workers. The sewage generated from the portable toilets is vacuum-collected and emptied into the main sewerage system of the area. Soak pits are provided at the construction areas to absorb wash water and other domestic waste water.
iii	Health and safety of the workers should be ensured during construction. Personnel protective equipment like helmets, earmuffs, etc. should be provided to the workers. For vibration control damped tools must be used and the number of hours that a worker uses them must be limited.	Complied: It was noted that the workers engaged in construction activities are exposed to occupational health and safety hazards and risks, for which proper measures are being taken. A work permit system is implemented for all works related to working at heights (typically when working over 2m and above). All works related to working at heights are undertaken only during the daytime when sufficient sunlight is available. All excavation activities are conducted under supervision of the site supervisor. Proper signage is provided at site of excavated areas. The year wise distributed list of personal protective measures for workers has been submitted to RO, Ranchi.
Steps to avoid disturbance during construction		
i	Disposal of muck including excavated material during construction phase should not create any adverse effects on the neighboring communities and disposed off taking the necessary precautions for general safety and health aspects.	Being complied: At the project site it was observed that a soil stratum at site constitutes of sandy soil and no material is found during excavation. All water seeps down the ground and no stagnation of water is there. Project site falls in plain area where excavation material generated is a very less. All surplus excavated earth is stored within the site and used for site leveling and green belt development, as can be seen from photo no.18. Since there is no stagnation of water, no muck is generated was observed in the project sites. All excavation has been done in the campus within the boundary wall.
ii	Diesel generator sets during construction phase should have acoustic enclosure and should conform to E(P) Rules prescribed for air and noise emission standards.	Complied: The DG sets used by construction agency have inbuilt acoustic enclosure as per norms and conform to E(P) rules. Rubber padding provided for vibration control. Regular maintenance repair of equipment has been

		shown by project proponent during the project monitoring period. The DG stack emission data tested by global testing and research laboratory which was found within limit.
iii	Vehicles / equipment deployed during construction phase should be in good condition and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.	Complied: It was noted that downwash of trucks (especially tyres) is being done prior to departure from site to reduce the mud and dirt carryout. Vehicles employed in construction are in good condition. Pollution under control (PUC) certificates are kept in record and also submitted to RO, Ranchi. Restriction on use of equipment generating high noise during night time as stated by project proponent.
iv	Regular supervision of the above and other measures should be in place all through the construction phase so as to avoid disturbance to the surroundings.	Being complied: Regular supervision of the above and other measures has been taken, so that proposed site construction has not created any disturbance to the surroundings.
v	Adequate sprinkler arrangement shall be provided. Care should be taken to keep all material storages adequately covered and contained so that they are not exposed to winds.	Partially complied: It was observed that heaps of sand, earth etc., is normally covered and also, sprinkling of water has been resorted on the sand stored in open. Wet suppression is being applied to at least 80 percent of disturbed surface areas on a daily basis especially during dry and windy days. Downwash of trucks (especially tyres) is being done prior to departure from site to reduce the mud and dirt carryout. During material handling the material is being dropped from a low height in order to reduce any fugitive dust emissions. Haul trucks keep covered with suitable covering material like tarpaulin sheets to prevent fugitive emissions during transportation of construction materials. Site barricading is done to prevent dust of construction and demolition site to spread from the site, as can be seen from photos no.27-30. The sand dumps should have uniform levels and also more number of fixed water sprinklers points at the sand dumping areas to minimize dust pollution during windy periods.
vi	Loading and unloading operations should not be carried out in open areas.	Partially complied: At the project site working area barricaded from all sides. Stacking of materials is also done within barricaded area. It is thus ensured that no loading and unloading of material is done in open area, as can be seen from photos no 27-30. The height of the hessian cloth barricade should be increased in the academic building site to shield from dust blowing from sand dump area.

vii	Use of Ready-Mix concrete is recommended for this project.	Partially complied: Ready-Mix concrete (RMC) is being used at the project site. As can be seen from photos no. 22 & 23. Concrete from the plant is transported through TMs to work site. More greenery should be developed in the available surrounding area of the Ready-Mix concrete plant.
viii	Adequate measures to be adopted to avoid wastage of water for curing of concrete structures.	Being complied: To reduce the water demand during construction phase curing of RCC is done by wrapping with hessian cloth, ponding of water on horizontal surface. There is no wastage of water in curing. Wet coverings with hessian clothes are extensively used for curing. The coverings are kept continuously moist so that a film of water remains on the concrete surface throughout the curing period.
ix	Promotion of use of cleaner fuel and fuel quality improvement should be done. Excessive energy consumption and fuel usage should be avoided.	Being complied: LPG is used by labourers for cooking food. High speed Diesel is used in DG sets and vehicles. Excessive energy consumption and fuel usage was avoided.
x	Accumulation/stagnation of water should be avoided to ensure vector control.	Complied: Soil strata are sandy and all water seeps down the ground. There is no accumulation of water in the work area. There is no natural water body.
Selection of materials for better energy efficiency		
i	Use of energy efficient construction materials should be ensured to achieve the desired thermal comfort.	Complied : Double glazed glass unit (DGUs) have been used. Fly ash brick wall on external face is provided for thermal insulation. Puff insulation has been provided over roof and light colour heat resistance terrace tiles with SRI>78% has been provided over roof.
ii	Fly Ash is to be used for construction as per Notification No. S.O. 769(E) dated 14.09.1999 amended vide Notification No. S.O. 979 (E) dated 27.8.2003 and S.O. 2804 (E) dated 03.11.2009 of the Ministry of Environment & Forests, Govt. of India.	Complied : Portland Pozzolana Cement (PPC) which contains fly ash is used in the work. Fly ash bricks have been used in masonry. As can be seen from photo no. 33

iii	Construction technologies that require less material and possess high strength should be adopted. Materials with low embodied energy and high strength should be used preferably.	Complied : Construction is done with RCC framed structure technology which is suitable in the seismic zone.
iv	Use of energy efficient lighting systems e.g. High Pressure Sodium Vapour (HPSV) Lamps, LED etc. should be promoted. Solar energy should be used for outdoor lighting. Out of total 169 nos. outdoor lighting, at least 25 % of external lighting will be based on solar power, as proposed, Solar water heating will also be introduced in building requiring hot water.	Being complied : Energy efficient lighting systems like HPSV lamps and LEDs have been used all over external lighting system. The campus has Grid connected 1MW _p (1000 kW _p) solar PV plant giving power to non-essential supply of various buildings, compliance at least 25% of external lighting from Solar PV is not necessary. (This is required in case of standalone solar PV Systems, as per the PPT). Maximum utilization of natural light LED in common areas. Use of solar lights in street and landscaping has been done. Appropriate design to reduce heat gain and loss, roof-top thermal insulation has been done.
v	Passive solar cooling to be incorporated in building design. Buildings should be oriented for ensuring natural ventilation and day lighting.	Complied : Building orientation has been done considering sun path. Shading devices have been used in Design. Passive design maximizes the use of 'natural' sources of heating, cooling and ventilation to create comfortable conditions inside buildings. It harnesses environmental conditions such as solar radiation, cool night air and air pressure differences to drive the internal environment. Project proponent stated that passive measures do not involve mechanical or electrical systems.
vi	Proper insulation of roof should be provided to achieve desired thermal comfort. Use of light coloured, reflective roofs having an SRI (solar reflectance index) of 50 % or more should be incorporated.	Complied : For thermal comfort puff insulation has been provided over roof and light color heat resistance terrace tiles with SRI>78% has been provided over roof.
vii	Adequate open space, greenery and water bodies to be provided as per rules.	Being complied : Existing Green Area (Trees, Shrubs and Grass) is 65,263 Sqm with projected total of 1,30,398 Sqm out of 20,23,436.5 Sqm land area.
viii	Restrict the use of glazed surface as per National Building Code 2005.	Being complied : Limited glazing has been used. Glazing is on northern side.
Water Body Conservation		
i	The water bodies, if any, should not be lined and the embankments should not be cemented. The water bodies are to be kept in natural conditions without disturbing the ecological habitat.	Complied: It was noted that there is no natural water body within the project site. At present as natural soil of the site is of sandy pervious nature, water doesn't retain on the ground surface. It was observed that there was dry pond keep for future water body, as can be seen from

		photos no. 34.
Plantation Proposed		
i	The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping. Plantation should be done in consultation of the Department of Forests, Govt. of Bihar.	Partially complied : Project proponent reported that comprehensive plantation drive in the campus has been undertaken by the forest department, Danapur, Bihar. 10,000 Nos. plantations have been done in the year 2016 including one-year maintenance. Project proponent also ensures that Forest department help will be taken for further plantation of selected species. It was observed that plantation work is underprogress in the remaining area of the campus, as can be seen from photo no 5. The avenue plantation activity should be carried out both side of the entrance road and other area of the campus. Project proponent should submit the year wise plantation data along with planted species and covered area to RO, Ranchi.
Water supply		
i	Water requirement during construction phase shall be met from municipal supply. Ground water should not be abstracted without prior permission of the competent authority as per the Central Ground Water Board.	Complied : Water for construction is obtained from water tankers available in the market and treated water from nearby the STPs. Permission of Central Ground water authority to extract 1500 KLD of water for its use as specified under Letter No 21-4(129)-CGWA/MER/2012-4839 copy of which has been submitted to RO, Ranchi.
Sewage Treatment Plant		
i	As per the proposal submitted by the proponent waste water shall be treated in STP.	Complied: Wastewater is treated in 3 Nos. STPs of 120 KLD each based on FLUIDIZED AEROBIC BED REACTOR (FAB TECHNOLOGY). Technology. It was also observed that a newly constructed sewage treatment plant along with old STP plants, as can be seen from photos no. 14 to 17.
Rain Water Harvesting Scheme		
i	The proponent must collect rainwater from roof-top catchments and reuse for various purposes after necessary cleaning. Water bodies should be created and used for storing rain water. Adequate retention time and storage provisions should be provided for harvesting rainwater.	Partially Complied : Rain from the Roof of the building is collected and discharged in to surface rainwater channel network at ground level, filtered and finally discharged to groundwater discharging pits constructed as per specifications given in National Building Code. However, rain water harvesting practice and recycling system of collected rain water is yet to be implemented.

	exit from the project area should conform to the norms & standards of competent authority for traffic management. Bell mouth type arrangement should be made at the entry & exit. Proper traffic management plan should be adopted in consultation with Traffic authorities.	from project area has been designed as per norms and standard. Bell mouth type arrangement has been made at Entry and Exit of the campus. Project proponent stated that traffic authorities will be consulted, if and when requirement is felt.
Others:		
i	Efficient management of indoor air quality must be ensured for health and safety of the users.	Being complied: All air conditioned areas have provision of fresh air duct for improved air quality. Indoor air quality test have been performed and report has been submitted to RO, Ranchi, which was found within the prescribe limit.
ii	Adequate measures to be adopted for water conservation during construction and operation stage. Use of efficient irrigation equipment, evaporative cooling unit in air-conditioning system etc should be considered.	Being complied: To reduce the water demand during construction Curing of RCC is done by wrapping with hessian cloth, ponding of water on horizontal surface. There is no wastage of water in curing. Wet coverings with hessian clothes are extensively used for curing. The coverings are kept continuously moist so that a film of water remains on the concrete surface throughout the curing period. Drip irrigation system and sprinklers have been adopted to minimize use of water in irrigation. VRV System of Air conditioning which do not require water has been used in the campus. Dual plumbing has been installed to segregate the fresh water use with supply of recycled water for non-potable water requirements such as flushing, horticulture, etc.
iii	Provisions should be kept for the integration of solar water heating system.	Complied: Solar hot water systems is fully functional in girls hostel, as can be seen from photo no. 4
I. Operation Phase		
Water Supply		
i	Water requirement during operation phase shall be met from municipal supply. Ground water should not be abstracted without prior permission of the competent authority.	Being complied: The source of water supply during operational phase is mainly ground water. Central ground water authority has granted for withdrawal of 1500 KLD underground water vide letter No 21-4(129)-CGWA/MER/2012-4839 copy of which has been attached. Regular water sprinkling have also been by water tankers in RMC and dusty area as can be seen from photo. no. 24.

	exit from the project area should conform to the norms & standards of competent authority for traffic management. Bell mouth type arrangement should be made at the entry & exit. Proper traffic management plan should be adopted in consultation with Traffic authorities.	from project area has been designed as per norms and standard. Bell mouth type arrangement has been made at Entry and Exit of the campus. Project proponent stated that traffic authorities will be consulted, if and when requirement is felt.
Others:		
i	Efficient management of indoor air quality must be ensured for health and safety of the users.	Being complied: All air conditioned areas have provision of fresh air duct for improved air quality. Indoor air quality test have been performed and report has been submitted to RÜ, Ranchi, which was found within the prescribe limit.
ii	Adequate measures to be adopted for water conservation during construction and operation stage. Use of efficient irrigation equipment, evaporative cooling unit in air-conditioning system etc should be considered.	Being complied: To reduce the water demand during construction Curing of RCC is done by wrapping with hessian cloth, ponding of water on horizontal surface. There is no wastage of water in curing. Wet coverings with hessian clothes are extensively used for curing. The coverings are kept continuously moist so that a film of water remains on the concrete surface throughout the curing period. Drip irrigation system and sprinklers have been adopted to minimize use of water in irrigation. VRV System of Air conditioning which do not require water has been used in the campus. Dual plumbing has been installed to segregate the fresh water use with supply of recycled water for non-potable water requirements such as flushing, horticulture, etc.
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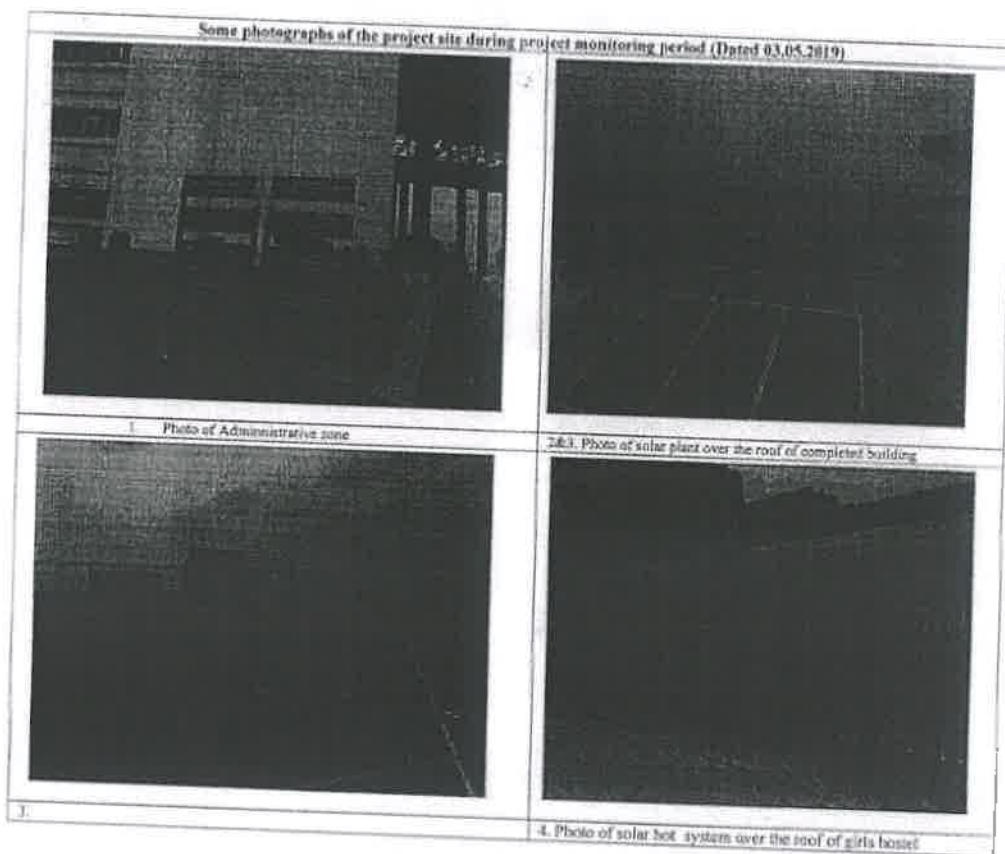
ii	As proposed, low flow appurtenances shall be used in the buildings. Water meters conforming to ISO standards should be installed in the buildings to monitor the daily water consumption. Use of water efficient devices/fixtures and appliances should be promoted. Installation of dual flushing system should be considered to conserve water.	Partially complied: Aerators and low flow appurtenances are used in all buildings. Water meter will be installed shortly. Use of water efficient devices/fixtures and appliances is being promoted. Dual flushing cisterns have been provided in all buildings. The water meters have not been installed in the building and the daily water consumption is not being monitored.
iii	The proponent practice rainwater harvesting on regular basis.	Partially complied: Rainwater harvesting practice is done on regular basis. All buildings are having ground water recharge system. Harvesting pits are periodically cleaned to keep functioning. The campus is zero Liquid Discharge. <i>Rain water harvesting practice and of recycling system of collected rain water is yet to be implemented, as in mentioned i. (Rain Water Harvesting Scheme)</i>
Sewage Treatment Plant		
i	As per the proposal submitted by the proponent wastewater shall be treated in STP. Treated sewage should conform to E(P) Rules. Treatment Plants should be monitored on a regular basis. Reuse of treated wastewater should be carried out as proposed.	Complied: Wastewater is being treated in STPs. Treated sewage has BOD < 10 MG/L & COD < 100 MG/L & conform to E(P) rules. Quality of treated water is tested and monitored regularly. Treated water is being used for horticulture and flushing purpose. As can be seen from photo no. 13 to 17.
Emission from Diesel Generator Set		
i	The stack height and emissions from D.G. sets should conform to the norms of Central Pollution Control Board. The certification of space design for DG sets should be done by competent authority.	Complied: Stack height and emissions from D.G. sets conform to the norms of Central Pollution Control Board, as can be seen from photo no. 32. Stack emission test report has been submitted to RO, Ranchi which was found within the limit. As per the project proponent certification of space standard of DG sets are not required as all DG sets are of 500 KVA capacity with inbuilt acoustic enclosure and kept in a space with terrace and no surrounding walls on three sides (i/c radiator side).
Ensure Energy Efficiency		
i	Use of energy efficient electrical systems should be promoted. High efficiency lamps with electronic ballasts should be used.	Complied: Energy efficient lighting systems (LED type) has been used all over external lighting system. Solar water heating system has been provided in Girls Hostel. As can be seen from photos no. 3 to 6.
ii	Energy efficient Motors and properly rated Transformers should be installed. Manufacturer's certificate to this effect shall	Complied: Energy efficient Motors (IE2 class) and properly rated transformers installed. Manufacturer's Certificate has been received and

	be obtained and kept on record. Backup power supply be based on cleaner fuel.	is kept in record and also a copy was submitted to RO Ranchi. DG Sets run on High speed Diesel oil.
iii	The project proponent should resort to solar energy at least for street lighting/indoor lighting and water heating.	Complied: The campus has Grid connected 1MW _p (1000 kw _p) solar PV Plant giving power to Non-essential supply of various buildings and is better than standalone solar PV Systems used for street lighting. Solar water heating system has been provided in Girls Hostel, as can be seen from photos no 2 to 6.
iv	Energy audits should be conducted on a regular basis.	Complied: An internal audit energy report has been submitted to RO, Ranchi.
Transport Management		
i	Use of public mode of transportation should be promoted. Use of the least polluting type of transportation should be promoted. Adequate parking space should be provided as per norms.	Complied: To promote public mode of transport, Bus services at regular interval plies from IIT campus to Patna city in collaboration with BSTC. Inside the campus, bus plies point to point within the campus. Bicycle is common mode of transport in the campus.
ii	Pathways should be covered or shadowed by tree canopy as far as practicable. Transport system should be such that traffic will be calm in neighborhoods. Traffic within the project site should be restricted by regulation. Adequate vertical and horizontal clearances of overhead electric power and telecommunication lines should be provided.	Complied: Extensive tree plantation is being carried out and give shadows has been done along pathways. Traffic is mostly pedestrians and cyclists. Traffic presently is much lower than design traffic capacity of roads. All LT Cables are laid underground. No overhead electric cables are there in the campus.
Solid Waste Management		
i	The proponent should abide by the Municipal Solid Wastes (Management and Handling) Rules, 2000. The proponent must develop the Solid Waste Management and Disposal Scheme ensuring storage and segregation of biodegradable and non-biodegradable wastes. The solid waste is to be disposed off in consultation with municipal authority.	Complied: Solid waste management plan is followed in consultation with the Municipal Authority. A signed copy of Solid Waste Management and Disposal Scheme ensuring storage and segregation of biodegradable and non-biodegradable wastes has been submitted to RO, Ranchi
ii	The proponent should provide different coloured bins for different categories of waste and ensure complete segregation of biodegradable and non-biodegradable wastes. The solid waste from different collection and storage bins should be finally collected at transfer stations. Further segregation will be done at transfer stations to collect recyclables such as plastic, polythene, glass, metals, textiles, rubbers, leathers, paper etc. Separate compartments shall be provided for each type	Complied: All habitable buildings are provided with colored dustbins of different categories to ensure efficient segregation and further processed as can be seen from photo no. 7

	of recyclables.	
iii	Spent oil from DG sets should be stored in HDPE drums in isolated covered facility and disposed off as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008. Spent oil from DG Sets should be disposed off through registered recyclers only.	Complied: Spent lube oil from DG Sets are handed over to authorized agency engaged for AMC of DG Set for further disposal.
iv	Various types of electrical and electronic wastes generated in the buildings, which includes PC, Xerox machine components etc. should be collected separately for transportation to the authorized recyclers approved by the State/Central Pollution Control Boards. There should also be provision for storage of these wastes in the building before transportation. The e-waste collected should be processed by authorized recycling unit. The proponent should abide by e-waste (Management & Handling) Rules, 2011.	Being Complied: This is a new campus. Electronic waste generated is negligible so far. Some outdated electronic equipments were disposed off through buy back system of purchase.
Others		
i	The implementation of Environmental Management Plan should be carried out, as proposed. Regular monitoring should be carried out during construction and operation phases.	Complied. Regular monitoring of EMP is being carried out. Environment Management committee has been formed for the purpose. Which are mentioned here, 1. PIC-landscape----- Chairman 2. Associate Head----- Member 3. Dr. Subrata Hail (civil)-----Member 4. Executive Engineer (RZ)..... Member
ii	The project proponent should provide guidelines to the users to ensure conservation of energy and water. In house environmental awareness campaigns should be carried out at regular intervals to ensure environmental protection.	Being complied : To encourage conservation of energy and water, poster campaigning are undertaken in the campus. Various social media tools are used to spread awareness for environment.
iii	Firefighting systems should be designed in compliance with the WBFS and NBC norms. Preventive measures should be adopted for Risk & Disaster Management as per the provisions of the National Building Code 2005.	Complied: All fire fighting system has been designed as per NBC 2016. In this regards a copy of disaster management plan has been submitted to RO, Ranchi.

iv	As a measure of precaution against accidents, Disaster Management Plan should be prepared. Good housekeeping practices and preventive measures should be adopted to prevent spread of diseases/vectors from the laboratory areas to the neighboring habitation areas.	Complied: Disaster Management Plan is in place. There is a team of staff to supervise the work of outsourced housekeeping agencies. The discharge from laboratories is negligible and stored in a container and to be disposed through authorized agencies.
v	Environmental Management Information System shall be maintained properly.	This condition is complied with
Part - B General Conditions		
1	The environmental safeguards contained in the EMP Report should be implemented in letter and spirit.	Complied : Safeguards contemplated in the EMP Report are implemented in letter and spirit.
2	All the labourers to be engaged for construction works should be screened for health and adequately treated before issue of work permits. Provision should be made for the supply of kerosene or cooking gas to the labourers during construction phase.	Complied : Laborers engaged during construction have regular health checkup has been done at wing of IIT, Panta Hospital, where staff nurse is available for first-aid, As can be seen from photos no. 21. In this regards some health checkup report of workers has been submitted to Ro, Ranchi. Cooking single gas has been provided to labours for making food.
3	In case of any violation of the conditions laid down in this Environmental Clearance, Section 16 of the Environment (Protection) Act, 1986, will be applicable. In case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEAC, West Bengal.	Agreed Upon
4	The State Expert Appraisal Committee, Bihar reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.	Agreed Upon
5	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives.	Being complied: At the project site it was observed that there was no storage of diesel in the campus. Diesel brought from dealers is directly filled up in fuel tank of DG sets. So project proponent stated that approval of chief controller of explosives is not necessary.
6	These stipulations would be enforced among others under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment	Complied : On this condition a copy of CTE No. P/T (NOC)-1881/12 dated 13.4.12 has been submitted to RO, Ranchi.

	(Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 2006 including the amendments and clarification circulars.	
7	The Project Proponent should inform the public that the project has been accorded environmental clearance by SEIAA & the copies of clearance letters are available with the State Pollution Control Board and may also be seen on SEIAA website (www.seiaabihar.org). This should be advertised within 7 days from this date of issue of the clearance letter, at least 2 local papers for wide circulation.	Complied: Environmental clearance status has been published in 2 Newspapers. Which are as, 1. Times of India (Published date 15.11.12) 2. Probhat khabar (Published date 15.11.12)





5. Photo of under progress plantation activity



6. Photo of solar light in the street and landscaping



7. Photo of different colour ditches



8. Photo of avenue plantation site, not yet started



9. Photo of chemical waste collection place



10



11. Photo of biodegradable and non biodegradable segregation and storage place



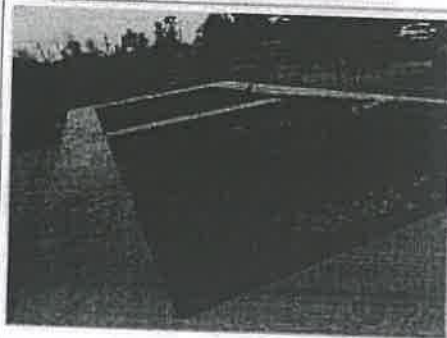
12. Photo of under construction biodegradable and non biodegradable segregation and storage place



13. Photo of STP pipe line



14-16. Photo of STP





17. Photo of newly constructed treated sewage collection ponds



18. Photo of newly building construction area



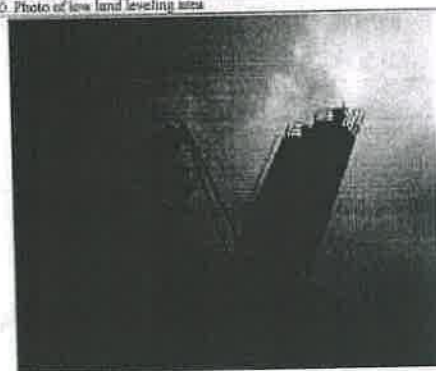
19. Photo of ITT traffic point



20. Photo of low land leveling area



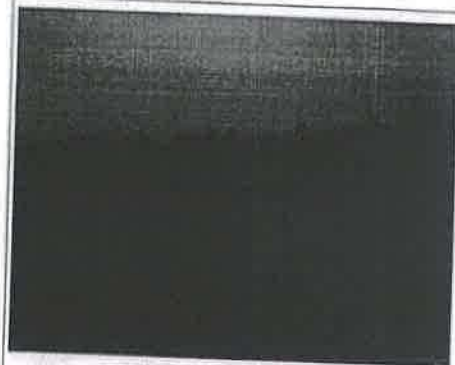
21. Photo of ITT patra Hospital



22&23. Photo of RMC plant



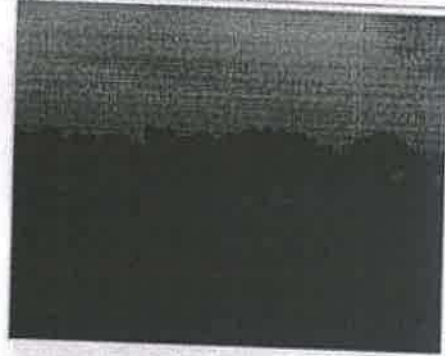
17. Photo of newly constructed treated sewage collection points



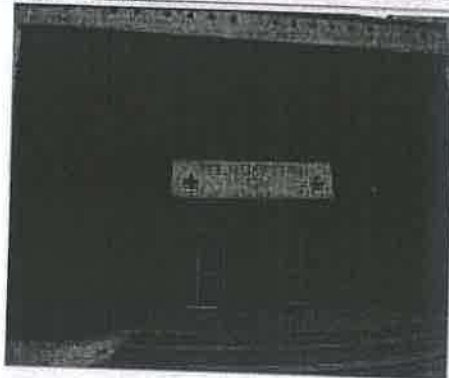
18. Photo of newly building construction area



19. Photo of IT traffic point



20. Photo of low land leveling area



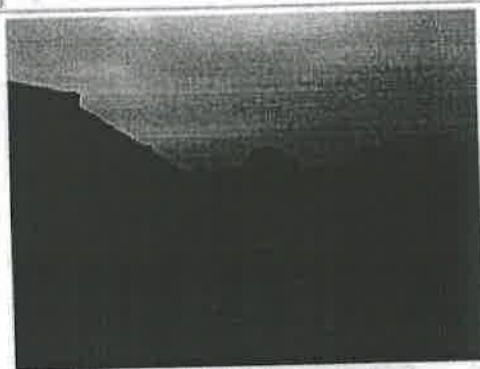
21. Photo of IT para Hospital



22&23. Photo of RMC plant



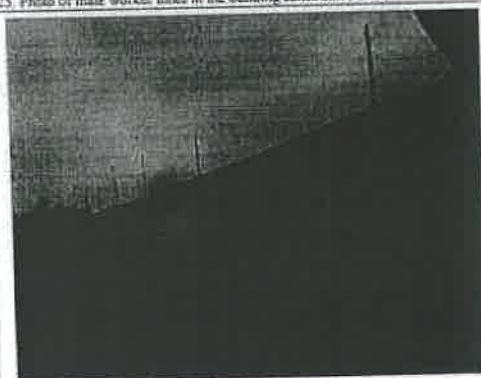
23



24. Photo of water sprinkling at RMC plant



25. Photo of male worker toilet in the building constructed area



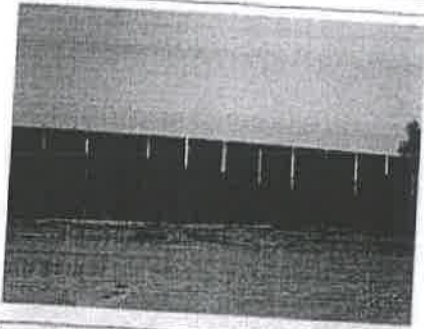
26. Photo of female worker toilet building constructed area



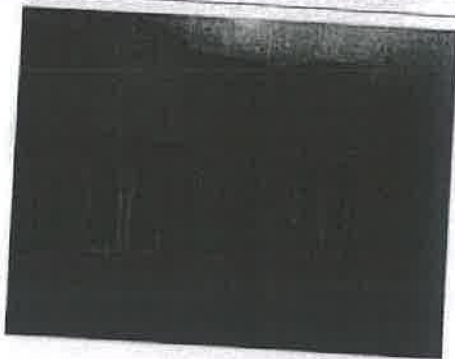
27-30. Photo ofessian cloth barrier at RMC plant to protect the dust in the

28

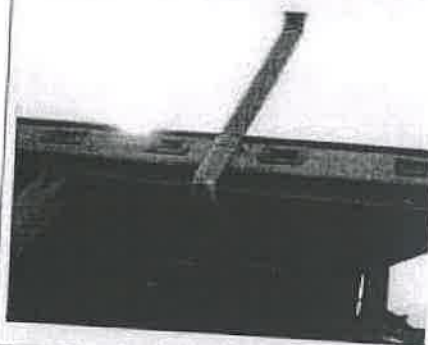
nearby area



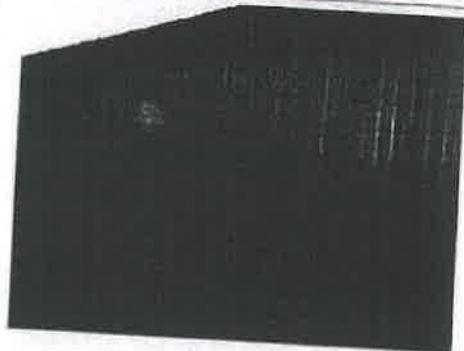
30.



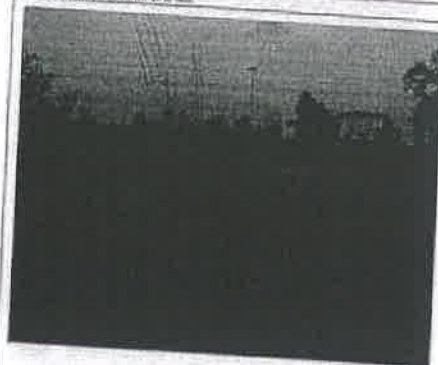
30. Photo ofessian cloth covered the sand dumping area



31. Photo of water treatment plant



32. Photo of stack of LKJ net



33. Photo of fly ash brick

34. Photo of dry pond keep for water body

Summary of the report

Site inspection of the project has been carried out on 03.05.2019. Following observations were made during the site inspection that needs special attention :

A. Following conditions found to be partially complied:

A (I) Specific Conditions:

Steps to avoid disturbance during construction

(Condition no. v): The sand dumps should have uniform levels and also more number of fixed water sprinklers points at the sand dumping areas to minimize dust pollution during windy periods.

(Condition no. vi): The height of the hessian cloth barricade should be increased in the academic building site to shield from dust blowing from sand dump area.

(Condition no. vii): More greenery should be developed in the available surrounding area of the Ready-Mix concrete plant.

Plantation Proposed

(Condition no. i): The avenue plantation activity should be carried out both side of the entrance road and other area of the campus. Project proponent should submit the year wise plantation data along with planted species and covered area to RO, Ranchi.

Rain Water Harvesting Scheme

(Condition no. i): Rain water harvesting practice and recycling system of collected rain water is yet to be implemented.

Water Supply

(Condition no. ii): The water meters have not been installed in the building and the daily water consumption is not being monitored.


29/05/19
Dr. Hemen Hazarika
Scientist "D"