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Tantia University

Guideline title	WATER DISCHARGE GUIDELINES AND QUALITY STANDARDS
Effective date	08-10-2024
Next scheduled review	Three years after the effective date, or earlier if applicable rules change

The purpose of this policy is to establish measurable water-quality standards and clearly defined procedures for the collection, treatment, testing, monitoring, reuse, and discharge of wastewater to safeguard ecosystems, wildlife, soil, groundwater resources, and human health.

This document translates the University's broader water-discharge commitments into practical operational guidelines and measurable performance standards. It specifies the responsibilities of operating units, the water-quality limits to be achieved, the locations and frequency of sampling, and the corrective actions required when test results exceed the applicable limits.

The applicable regulatory standards shall be determined by the intended discharge destination and the conditions specified in the University's current Consent to Establish and Consent to Operate. Where any consent condition, regulatory order, or subsequent legal requirement prescribes a stricter standard than this document, the stricter requirement shall prevail.

Regulatory basis

Instrument	Application to these guidelines
Water (Prevention and Control of Pollution) Act, 1974	Prevention and control of water pollution and regulatory consent requirements.
Environment (Protection) Act, 1986 and Environment (Protection) Rules, 1986	General standards for discharge of environmental pollutants.
Bio-Medical Waste Management Rules, 2016, as amended	Segregation, pre-treatment, treatment and discharge requirements for healthcare and laboratory liquid waste.
Rajasthan State Pollution Control Board order on STPs/ETPs in Health Care Facilities, 29 December 2023	Conditions for own STP (Sewage Treatment Plant) / ETP (Effluent Treatment Plant), discharge limits, disinfection and sludge disposal in Rajasthan.
Current RSPCB Consent to Establish/Consent to Operate issued to the relevant facility	Facility-specific binding conditions; stricter conditions prevail.

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Applicability and discharge streams

These guidelines apply to all individuals and entities involved in the generation, collection, handling, treatment, testing, reuse, or discharge of wastewater on University premises. This includes University employees, students, patients, residents, contractors, vendors, and service providers, all of whom shall comply with the prescribed wastewater management procedures and applicable water-quality standards.

Wastewater stream	Typical sources	Required route
Domestic sewage	Toilets, washrooms, hostels and offices	Sewer/STP route approved for the facility; no discharge to open land or storm-water drains.
Kitchen wastewater	Mess, canteen and food-service areas	Pass through food-particle and grease traps before entering the approved treatment route.
Healthcare wastewater	Hospitals, clinics, wards, operation and cleaning areas	Segregation and disinfection/pre-treatment as applicable, followed by ETP/STP treatment and compliant discharge.
Laboratory and chemical liquid waste	Diagnostic, teaching, research and veterinary laboratories	Collect separately; recover, neutralise or pre-treat as applicable before mixing with other wastewater. Unused or concentrated chemicals must not enter drains.
Storm water	Roofs, paved areas and open spaces	Keep separate from sewage and effluent. Prevent contamination by chemicals, oils, waste and sludge.
Treated water for reuse	Final STP/ETP outlet	Reuse only for an approved non-potable purpose, such as gardening or landscaping, and only when applicable quality requirements are met.

Water discharge standards

The following limits shall serve as the operational acceptance criteria for healthcare-related wastewater. Compliance shall be assessed by sampling and testing the treated effluent at the final outlet, before it is discharged into a sewer, reused, or released beyond the University premises. All applicable water-quality standards must be achieved through appropriate treatment processes; dilution with clean water shall not be permitted as a means of meeting the prescribed limits.

Own STP/ETP or no terminal municipal STP

The following standards shall apply to healthcare facilities that are not connected to a public sewerage system, are connected to a sewer without a terminal Sewage Treatment Plant (STP), are required to operate their own STP or Effluent Treatment Plant (ETP) under Rajasthan State Pollution Control Board (RSPCB) conditions, or are specifically required to comply with these limits under their applicable environmental consent conditions.

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Parameter	Permissible limit	Sampling/interpretation
pH	6.5–9.0	Measure at final treated-water outlet.
Total suspended solids (TSS)	100 mg/L maximum	Laboratory analysis of final effluent.
Oil and grease	10 mg/L maximum	Laboratory analysis; grease traps do not replace final testing.
Biochemical oxygen demand (BOD)	30 mg/L maximum	Use the legally specified BOD test method.
Chemical oxygen demand (COD)	250 mg/L maximum	Laboratory analysis of final effluent.
Bio-assay	90% fish survival after 96 hours in 100% effluent	Where applicable and required by the regulator/consent.

Public sewer with operating terminal STP

These standards shall apply only where wastewater is discharged into a public sewer connected to an operational terminal Sewage Treatment Plant (STP) and all applicable conditions prescribed by the Rajasthan State Pollution Control Board (RSPCB) are fulfilled. Documentary evidence confirming the sewer connection and the operational status of the terminal STP shall be maintained by the University for verification and regulatory compliance.

Parameter	Standard for discharge to public sewer
Total suspended solids (TSS)	600 mg/L maximum
pH	5.5–9.0
Oil and grease	20 mg/L maximum
Biochemical oxygen demand (BOD; 3 days at 27°C)	350 mg/L maximum
Chemical oxygen demand (COD)	Not specified in the cited public-sewer table; follow consent conditions
Bio-assay	90% fish survival after 96 hours in 100% effluent

Additional Internal Acceptance Requirements

- Absence of Visible Contaminants: The final discharge outlet shall be free from visible floating matter, food residues, scum, oil films, sludge, and other objectionable solid materials.

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- Prohibition of Untreated Discharge: Untreated or partially treated wastewater shall not be discharged into open drains, storm water drainage systems, onto land or farmland, into groundwater recharge structures, or into surface-water bodies.
- Control of Colour and Odour: Treated wastewater shall be managed to control colour and odour in accordance with the applicable consent conditions and the requirements of its intended reuse or discharge pathway.
- Compliance with Stricter Requirements: Any facility-specific condition imposed by the Rajasthan State Pollution Control Board (RSPCB), applicable sector-specific standard, or subsequent regulatory amendment that prescribes stricter requirements shall take precedence and be implemented accordingly.

Operational guidelines

Prevention and segregation

1. Map all wastewater sources and label drains so that sanitary sewage, laboratory effluent, kitchen wastewater and storm water remain identifiable and, where required, separate.
2. Do not pour oils, fats, food waste, solvents, reagents, disinfectant concentrates, pharmaceuticals, paints, pesticides, heavy-metal solutions or unused chemicals into sinks, toilets or surface drains.
3. Collect concentrated chemical liquid waste and unused or expired liquid chemicals separately for authorised recovery or disposal. Only a suitably pre-treated stream may enter the ETP.
4. Provide spill kits and written response instructions in laboratories, chemical stores, kitchens, workshops and healthcare areas.

Source-specific pre-treatment

Source	Minimum control
Hospitals and clinical areas	Provide scientifically designed disinfection before discharge to sewer or on-site reuse, as applicable. Infectious liquid waste shall be disinfected before disposal.
Laboratories	Segregate chemical liquid waste at source. Apply recovery, neutralisation, precipitation and/or disinfection appropriate to the contaminant before the stream enters the ETP.
Microbiology/highly infectious areas	Pre-treat relevant liquid waste in accordance with the Bio-Medical Waste Management Rules and approved procedures.
Kitchens and canteens	Install and maintain screens, food-particle traps and grease traps. Collect used cooking oil separately; do not discharge it into drains.
Vehicle/workshop/utility areas	Prevent fuel, lubricants, coolant, paint and wash residues from entering drains; use an approved collection and disposal route.

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Treatment, reuse and final discharge

- Operate the STP/ETP continuously when wastewater is received, within its design hydraulic and pollution load.
- Do not bypass treatment units except during a controlled emergency authorised by the competent University officer and reported to the regulator where required.
- Keep storm water out of the STP/ETP and do not dilute effluent to meet concentration limits.
- Reuse treated water only for approved non-potable purposes and prevent cross-connections with potable-water systems. Display "Treated Water — Not for Drinking" signage at reuse points.
- Route STP/ETP sludge from healthcare facilities to an authorised common bio-medical waste treatment facility for incineration or to an authorised hazardous-waste treatment, storage and disposal facility, as applicable.

Monitoring and sampling protocol

Monitoring item	Minimum frequency	Location/record
Flow or quantity of wastewater treated	Daily where a meter is installed; otherwise as required by consent	STP/ETP inlet and/or outlet logbook
pH and visible condition	At least weekly and whenever operational upset is suspected	Final treated-water outlet; operating log
TSS, oil and grease, BOD and COD	At least quarterly, and at any higher frequency stated in the consent	Final outlet; report from the University laboratory or a laboratory recognised for the purpose
Bio-assay and any additional consent parameters	At the frequency required by the regulator/consent	Final outlet; authorised laboratory report
Grease traps, screens and disinfection system	Monthly inspection and cleaning as operationally required	Inspection/maintenance checklist
Corrective re-test	After any exceedance and before resuming the affected discharge/reuse route	Final outlet; corrective-action record

Sampling quality requirements

- Use a clearly identified final sampling point after all treatment and before discharge or reuse.
- Record date, time, sample type, sampler, weather/operating conditions, treatment status and chain of custody.

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- Use approved sampling containers, preservation, holding times and test methods applicable to each parameter.
- Retain laboratory reports, operating logs, maintenance records, calibration records and corrective-action evidence for at least five years or for the longer period required by law or consent.

Records and evidence checklist

Required evidence	Minimum content
Regulatory permissions	Current CTE/CTO, authorisation and any sewer/terminal-STP certificate applicable to the facility.
Treatment-system profile	Location, capacity, process flow, design basis, outlet and reuse/discharge route for each STP/ETP.
Testing evidence	Quarterly laboratory reports covering applicable parameters and final sampling point.
Operational evidence	Daily/weekly logbooks, chemical consumption, electricity/flow records, sludge-disposal manifests and preventive-maintenance records.
Source-control evidence	Laboratory liquid-waste procedures, grease-trap logs, vendor instructions, drain signage and spill records.
Corrective-action evidence	Exceedance report, root-cause analysis, action taken and compliant re-test.
Awareness evidence	Training records, student learning visits and water-quality research/innovation evidence.

Quick compliance checklist

- All wastewater sources and discharge points are mapped and labelled.
- No untreated wastewater enters open drains, land, storm-water systems or water bodies.
- Laboratory chemicals, infectious liquids, oils and food waste are segregated at source.
- Grease traps, disinfection units, STP/ETP and final sampling points are functional.
- The correct discharge table has been selected based on the destination and current consent.
- Quarterly test reports are available and all applicable results meet the limit.
- Any exceedance has a documented corrective action and compliant re-test.
- Reuse points are approved, isolated from potable systems and labelled.
- Sludge and concentrated waste are transferred through an authorised route.

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