

Water quality indicators in the regionalized system in blocks in the state of Rio de Janeiro

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ABSTRACT : *This study, an exploratory and retrospective analysis of independent verifier reports from 2021 to 2024, aimed to evaluate the concessionaires' performance regarding water quality. The findings revealed significant irregularities: reports consistently lacked daily WQI data and information on responsible technicians and laboratories, which are requirements of the concession contracts. Despite these identified limitations and missing data, no action was taken by the verifier or the regulatory agency. The study also observed that concessionaires were not meeting WQI compliance targets, with some results falling below the required 98% standard. The conclusion highlights concerns about data transparency and accuracy, as the information is self-reported by the concessionaires, and confirms that the companies are not fulfilling their contractual obligations for water quality.*

KEYWORDS sanitation, water quality, water.

Date of Submission: 08-04-2026

Date of acceptance: 21-04-2026

I. INTRODUCTION

Following the approval of Law 14,026 in 2020, the Rio de Janeiro State Government (ERJ) carried out the concession project for the Rio de Janeiro State Water and Sewage Company (CEDAE), in accordance with the model developed by the BNDES, which divided the ERJ into four regional concession blocks.¹ This law resulted in major changes in the legal system relating to basic sanitation, especially in relation to ownership, contracts, concessions, universalization, solid waste, among other changes.²

In this process of regionalized concession of ERJ sanitation services, only economic and legal indicators were considered, in order to make the regional blocks economically attractive. Health indicators, which pointed to the regions most urgently in need of initiating the process of universal sanitation, the socio-environmentally vulnerable regions, were not prioritized in the modeling of concession contracts.³

Water supply and sewage services in Rio de Janeiro were concessioned in 49 municipalities on a regional basis, modeled by the BNDES, leaving slum areas out of the performance target indicators. The reports of the independent verifier in the evaluation of the concessionaires' performance indicators could assist in the social control of the contracts.³

The concession notice provided for an independent auditor of contracts relating to the provision of services by companies that "won the CEDAE concession" for water supply and sewage services in the municipalities of Blocks 1, 2, 3, and 4, to assist the sanitation regulatory agency. The independent verifier must produce mandatory monthly reports on certain performance indicators, such as the Water Quality Index (WQI), which are based on data provided by the concessionaires that provide sanitation services in RJ.⁴

In this sense, the objective of this study was to evaluate the reports provided by the independent verifier on sanitation services in the state of Rio de Janeiro (ERJ), considering water quality indicators.

II. METHODOLOGY

An exploratory and retrospective study was conducted based on secondary data from independent auditor reports available on the ERJ government's SEI website, which contains data provided by

cessionaires. These reports are used by the sanitation services regulatory agency to assess concessionaires' compliance with universalization and performance targets. Reports from the period 2021 to 2024 were considered, observing the water quality indices (WQI) of the four concession blocks and the data presented in the annexes provided, and recorded in a database with comparisons to the provisions of Annex III of the concession contracts. A study of the contracts was also carried out, with an emphasis on Annex III, which provides the parameters related to compliance with the performance targets required by the contracts.

III. RESULTS

The results evaluated made it possible to verify how concessionaires are performing in relation to the provision of water supply services, in relation to the quality of water supplied to the population of Rio de Janeiro, verifying compliance with the performance targets required in the contracts.

Annex III of the concession contracts establishes that concessionaires must perform daily measurements of IQA parameters at water treatment plants, as well as identify the technicians and laboratories responsible for the analyses. However, the independent verifier's monthly reports found that this data was missing, reporting a limitation in the recalculation of the IQA. Nevertheless, it was observed that no action was taken by the independent verifier or the regulatory agency. IQA values outside the compliance range were also observed.

It was observed that the reports lack daily WQI (water quality index) data, meaning that some of the concessionaires are not performing daily analyses of all WQI parameters, which is a requirement stipulated in the contract and therefore constitutes an irregularity. In addition, monthly reports do not describe information about the technicians responsible for the data provided, as well as information about the laboratories accredited to perform the analyses.

The concessionaires are failing to meet the targets of the block concession contracts, as they have IQA results in several FIPE reports below 98% compliance, outside the water quality standard. In the period from February 2024 to January 2025, in block 3, the municipality of Carapebus had an IQA below the targets in December 2024 and January 2025.

IV. CONCLUSION

The transparency of data related to the quality of water produced and distributed for consumption by the population is a cause for concern, given that the accuracy of this data is unknown, as it is provided by the sanitation service concessionaires in Rio de Janeiro themselves.

During the analysis of the monthly reports, irregularities in the provision of services were observed, i.e., the concessionaires are not meeting the targets set for the IQA performance indicator, as the reports show that there is a lack of daily analysis of the IQA parameters, in addition to presenting results that do not comply with the water quality standard.

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