
大庆市日处理 50000t/d 的污水处理厂

摘 要

本设计为大庆市日处理 50000t/d 的污水处理厂。本污水厂进水水质为：COD=400mg/L， $BOD_5=260\text{mg/L}$ ，SS=120mg/L，TP=6mg/L，TN =70mg/L，由此可见，氮磷含量较高，所以采用的工艺为 CAST+机械絮凝池，经过处理出水 COD=50mg/L， $BOD_5=9.36\text{mg/L}$ ，SS=5.4mg/L，TP=6mg/L，TN =70mg/L，水质已经可以排放市政管道。

最后出水应满足污水处理厂排放标准 GB18918—2002 一级 A 排放标准（COD $\leq 50\text{mg/L}$ ， $BOD \leq 10\text{mg/L}$ ，SS $\leq 10\text{mg/L}$ ）。

同时，本设计还对平面高程布置及经济分析进行了估算。

关键词 大庆市；污水处理厂；CAST；高程布置

Abstract

This design is a 50,000 t/d sewage treatment plant in Daqing city. the pollutants in the sewage are nitrogen, phosphorus and BOD₅, but the treated effluent can be discharged into municipal pipelines. In this design, CAST process+mechanical flocculation tank was selected because of high nitrogen and phosphorus content. The influent quality of this sewage plant is: COD=400mg/L, BOD₅=260mg/L, SS=120mg/L, TP=6mg/L, TN = 70 mg/l. The final effluent shall meet the discharge standard of the sewage treatment plant (GB18918—2002, Grade A) (COD ≤ 50mg/L, BOD ≤ 10mg/L, SS ≤ 10mg/L).

The specific flow and size of this design are as follows: 1. regulating tank (24m × 24m × 5m); 2. Medium grid (5.7m × 4.6m × 8.4m); 3. Sewage lift pump; 4. Fine grid (7.2m × 6.4m × 3.9m), 5. Sedimentation pool (20m × 2.5m × 4.3m); 6. Water inlet collection and distribution wells; 7. CAST pool (55m × 30m × 7.0m); 8. Disinfection pool (54m × 5m × 2.5m); 9. Concentration tank (r = 4.0m); 10. Inclined plate sedimentation tank (22m × 11.2m × 3.7m); 11. Sludge storage tank (11m × 11m × 7.7m); 12. Sludge dewatering room.

CAST operation period is 6 hours, flocculation time of flocculation tank is 20 minutes, sedimentation tank is divided into 2 groups, each group has 18 cells, sedimentation time is 40 minutes, 3 corridors disinfection tank, disinfection time is 30 minutes. At the same time, this design also estimates the plane elevation layout and economic analysis.

Keywords Daqing city; Sewage treatment plant; CAST; Elevation

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