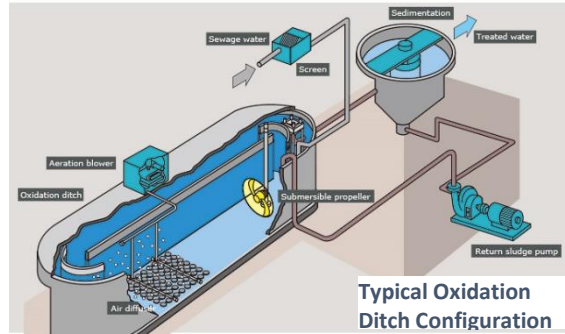


WASTE WATER TREATMENT

Waste Water Treatment Plant Upgrade Project, Willcox, Arizona

Project Summary

This project assurance review was sponsored by the Border Environment Cooperation Commission (BECC) and its sister institution, the North American Development Bank (NADB). The project, under a consent order, would upgrade the existing plant configuration, constructed in the late 1940s as a single 5-acre facultative lagoon, using an activated sludge process with oxidation ditches while maintaining the plant capacity (0.6 MGD). The original project design concept had a capital cost of \$9,553,000 accompanied with \$9,413,000 in O&M costs (20-year NPV).

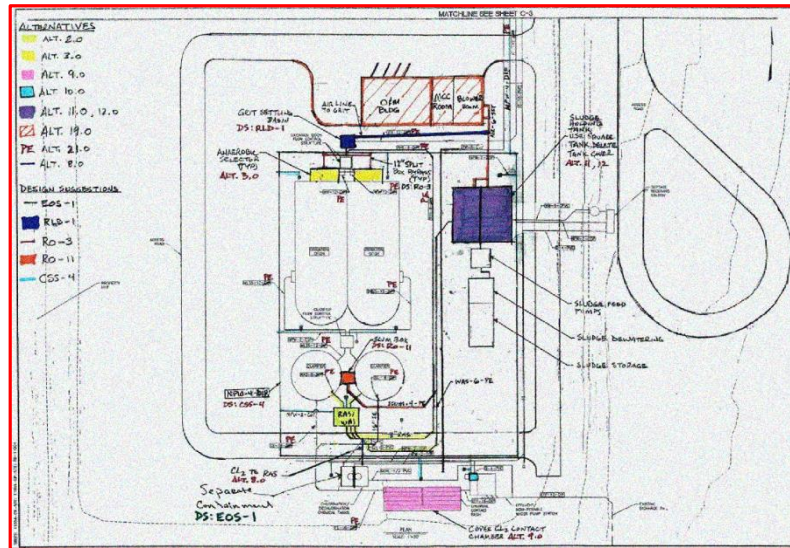


Project Assurance Review Focus

The project review reviewed the original project design concept concentrating on: reducing residents and business impacts, reducing project complexity, capital and O&M costs, durations and risks. The key performance drivers were *Operational Costs, Regulatory Compliance, and Plant Operations*. From a project performance perspective – a keen focus was on *maximizing the effluent quality*.

Project Assurance Review Findings

The project review team developed a new design concept generated by implementing 24 alternatives that generated large reductions in capital and O&M costs. The O&M savings were generated by improving various plant processes; especially cost-effective were those focused on biosolids transportation and WWTP electrical consumption. The *New Design Concept Summary* – shown below – provides the benefit of the project assurance review in terms of performance, cost & schedule.



New Project Concept Alternatives

New Design Concept Summary

Strategy Description	Initial Cost Savings	LLC Savings	Schedule Savings	Performance	Value Increase
Alternatives 1,3; 2,0; 3,0; 4,0; 5,0; 6,0; 7,0; 8,0; 9,0; 10,0; 11,0; 12,0; 13,0; 14,0; 15,0; 16,0; 17,0; 18,0; 19,0; 21,0	\$1,072,600 (11%)	\$4,061,000 (43%)	2 months	+29%	+44%