CASE STUDY:

PARKDALE SANITARY DISTRICT

62,000 GPD MEMPAC™ - M
Parkdale, OR

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DESIGN PARAMETERS

MODEL SUPPLIED: MEMPAC-M

INFLUENT PARAMETERS

AVERAGE DAILY FLOW	62,000 GPD
BIOCHEMICAL OXYGEN DEMAND	300 MG/L AVERAGE
TOTAL SUSPENDED SOLIDS	400 MG/L AVERAGE
INFLUENT TYPE	DOMESTIC COMMUNITY

EFFLUENT QUALITY

BIOCHEMICAL OXYGEN DEMAND	< 10 MG/L
TOTAL SUSPENDED SOLIDS	< 10 MG/L

PROJECT TEAM

USDA - Rural Development
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Murraysmith Engineers
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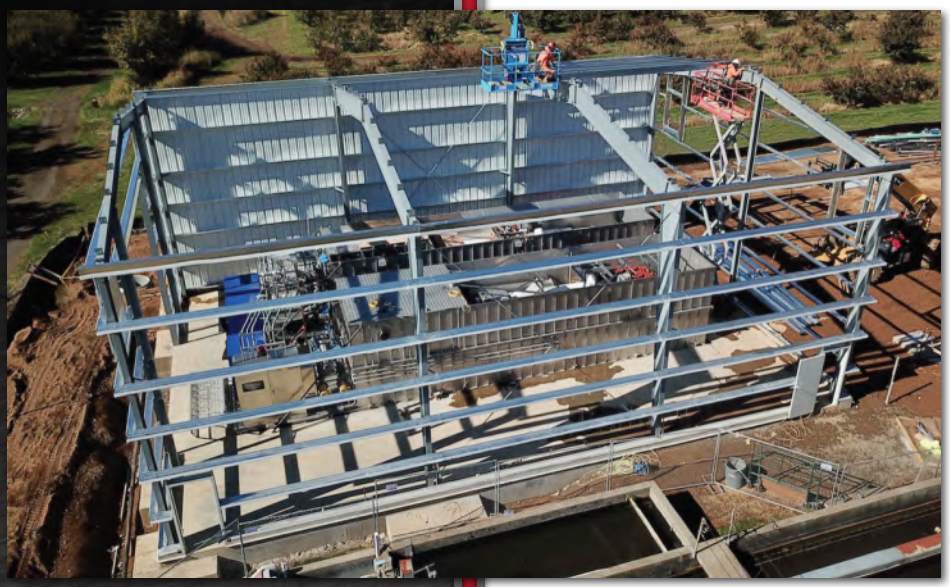
PROJECT DETAILS

> "CLOACINA IS AN EMERGING, FAMILY-OWNED BUSINESS THAT REALLY STRIVES FOR TOP NOTCH QUALITY AND GOOD CUSTOMER SERVICE. OVERALL, THE EXPERIENCE OF WORKING THROUGH DESIGN, CONSTRUCTION AND START-UP OF THE FACILITY HAS BEEN VERY POSITIVE. WE WOULD RECOMMEND CLOACINA TO OTHERS BECAUSE THEY HAVE THE EXPERTISE REQUIRED TO DO THE JOB RIGHT AND A GOOD TEAM-FIRST ATTITUDE."
>
> *- Justin Ford, Civil Engineer, Murraysmith Engineers*

For project videos, additional photos and more information, visit cloacina.com/parkdale



USDA FUNDING

Rural Development's Water and Waste Disposal Program provides financing for the acquisition, construction or improvement of drinking water, sewage and solid waste disposal and storm water drainage systems. Most state and local government entities, private nonprofits and federally recognized tribes are eligible to apply. The project must serve a rural area with a population of 10,000 or less. Applications are accepted year-round.

For more information about USDA grants and loans, visit the following sites:

- FIND A SPECIFIC RURAL DEVELOPMENT OFFICE
- WATER AND WASTE DISPOSAL LOAN AND GRANT PROGRAM
- WATER AND WASTE DISPOSAL LOAN GUARANTEE PROGRAM
- RELATED USDA PROGRAMS

OVERVIEW

Cloacina recently manufactured and installed a MEMPAC-M membrane bioreactor (MBR) wastewater treatment plant for the Parkdale Sanitary District in Parkdale, Oregon that was funded by grants and loans from the United States Department of Agriculture (USDA). The treatment plant is capable of treating up to 195,000 gallons per day for short periods and a maximum continuous flow of 117,000 gallons per day.

The wastewater treatment plant serving the rural town of Parkdale was built in the 1960s and could no longer meet the community's needs or comply with the latest National Pollutant Discharge Elimination System (NPDES) permit requirements. The District also wanted a higher quality effluent than the existing equipment could produce.

In 2017, Murraysmith, the consulting engineer, recommended installing a new membrane bioreactor system instead and the Rural Development engineer agreed that the change in project scope would be beneficial for the District. This change resulted in increased project costs, so Parkdale Sanitary District submitted a subsequent application to Rural Development and was awarded an additional $203,000 loan and a $202,600 grant in 2018. In total, the Parkdale Sanitary District was awarded $1,716,000 in loans and $1,377,545 in grants through USDA Rural Development's Water and Waste Disposal Program.

Murraysmith provided financing assistance, planning, design and construction services for the District throughout the project. Justin Ford, Civil Engineer noted:

> *"The MEMPAC-M membrane bioreactor that Cloacina manufactured for this project is very exciting for the District. The Cloacina Design Team worked with us to create an operator-friendly facility. The craftsmanship and attention to detail of the final product is very evident and should serve the District's treatment needs for many decades to come. Additionally, the level of technology and automation built into the facility is a major upgrade from the plant that the District has been operating for 50+ years."*

The stainless steel MEMPAC-M system designed and manufactured for the Parkdale Sanitary District provides tertiary treatment and UV disinfection for discharge to a surface waterway per their NPDES permit. Special features of this system include: equipment and process redundancy, the process is warmed by heat reclaimed from the blowers, the anoxic chambers are covered and fan-vented and the Biological Nutrient Removal (BNR) has alkalinity supplementation.

CLOACINA SUPPLIED THE FOLLOWING FOR THIS PROJECT:

EQUIPMENT: *MEMPAC-M membrane bioreactor*

LIFT STATION: *Flygt pump station controlled by Cloacina's Motor Control Center (MCC)*

INTEGRATION: *Converted equalization basin integrated into Cloacina's controls system*

HEADWORKS: *Integrated 2mm perforated mechanical screen with automated auger with washer/compactor*

SECONDARY TREATMENT/ACTIVATED SLUDGE: *Anoxic process designed for low temperature influent including Oxidation-Reduction Potential (ORP) monitor and mixers. Aeration process includes dissolved oxygen sensor, aeration blowers with Variable-Frequency Drives (VFD), fine bubble diffusers and on-line Mixed Liquor Suspended Solids (MLSS) sensor.*

CLARIFICATION: *Submerged flat sheet membrane cassettes with VFD driven FAS pumps. Fully automated Clean-in-Place (CIP) system. Level transducers, permeate pumps, recirculation pumps with VFD's and flow monitoring.*

CONTROLS: *All sensory equipment is manufactured by Endress and Hauser. All sensory equipment inside the tank is mounted on the Cloacina Slide Rail System.*

SLUDGE HANDLING: *Waste sludge pump, waste sludge flow meter and automated Cloacina wasting program with streaming MLSS probe*

UV DISINFECTION: *Evoqua ETS-UV SX-225-8, units parallel, 10 kW total*