

PROJECT PROFILE

Drinking Water Treatment



Bringing water to life

SiC | Newton County, GA 2.0 MGD

EMERGENCY 2 MGD PACKAGE PLANT

NEWTON COUNTY, GA

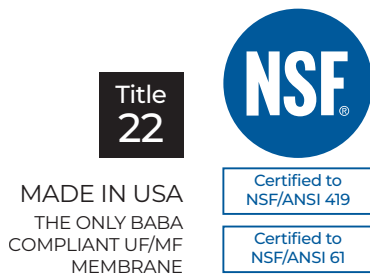


NEWTON COUNTY IS UPGRADING AND EXPANDING THE CORNISH CREEK WATER TREATMENT PLANT TO SUPPORT RESIDENTIAL, COMMERCIAL AND INDUSTRIAL GROWTH.

THE UPGRADE AND EXPANSION OF CORNISH CREEK WTP WITH SILICON CARBIDE ULTRAFILTRATION (SiC-UF) WILL PRODUCE WATER AT A LOWER COST, BY REDUCING POWER CONSUMPTION AND LOWERING MAINTENANCE COSTS ULTIMATELY CONSERVING FINANCIAL RESOURCES THAT WOULD BE REQUIRED TO OPERATE TWO PLANTS.

The project components include addition and expansion of the following systems:

- Ozone and contactor
- Rapid mix/flocculation basins
- Silicon Carbide (SiC) Ultrafiltration basins
- Clear Well, pumping stations
- Chemical addition systems
- PAC system
- Control building
- Various site improvements.



THE CHALLENGE

To address the failing clarifier at the existing Cornish Creek plant WTP, a 2 MGD SiC-UF WTP package plant was procured to supplement the existing plant, while the approval, design and construction steps were underway for the 40 MGD upgrade and expansion of the permanent plant.

Ovivo's fabrication, delivery and commissioning of the 2 MGD SiC-UF package plant was performed in a record time of 15 weeks from order.

THE SOLUTION



The design solution was to utilize prefabricated stainless steel tanks to house membrane equipment for the emergency plant upgrade. Due to the compact nature of Silicon Carbide Ultrafiltration, the prefabricated package plant approach proved economical as the size of the tanks were kept to a minimum. Coupled with the ability of SiC to handle challenging surface water sources while producing permeate that is free of bacteria, metals and turbidity. SiC-UF membranes provided a comprehensive solution for the aging conventional water treatment plant.

The Ovivo team developed a solution for the customer consisting of two prefabricated stainless steel tanks to bypass the failing clarifier. The package solution, also included pumps, valves, and other equipment which simplified both design and project execution.

RESULTS AND BENEFITS

SiC is in a class of its own when it comes to water. The reality is that membranes are one of many subsystems that go into any water or wastewater treatment plant. While the membranes are often the workhorse of a treatment system, they can only be successful if the rest of the system is designed properly.

THE OVIVO DIFFERENCE

With rapidly aging infrastructure, Silicon Carbide (SiC-UF) Ultrafiltration systems are perfectly suited for upgrading/retrofitting conventional gravity filter plants to meet current drinking water demands. SiC-UF ensures our water is safe and that we never have to compromise our health. SiC-UF protects us from today's most toxic pollutants by creating new treatment approaches and solutions for drinking water applications.



FLOW	
Parameter	Value
PERMEATE FLOW	2.0 MGD
FEED FLOW	2.1 MGD

INFLUENT				
TURBIDITY	NTU	1.4	8.6	99.2
TOTAL ORGANIC CARBON	mg/l	2.0	3.1	5.4
ALKALINITY	mg/l	9.3	24.4	156
pH (raw water)	su	6.3	6.9	7.3
TEMPERATURE	C	7.8	19.3	32.0
TOTAL FE	mg/l	0.03	0.42	2.15
DISSOLVED FE	mg/l	--	--	--
TOTAL MN	mg/l	0.0	0.16	1.25
DISSOLVED MN	mg/l	0.0	0.16	1.25

TREATED WATER QUALITY		
Parameter	Unit	Value
TURBIDITY	mg/l	< 0.15
TSS	mg/l	< 1.0

SiC-UF DESIGN		
Parameter	Unit	Value
STACKS SIZE	--	M12
TOTAL STACKS	#	20
TOTAL SURFACE AREA	ft ²	17,760
INSTANTANEOUS FLUX N	gfd	127
INSTANTANEOUS FLUX N	gfd	169



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