

Shamrock Transport and Treatment of Baxter Wastewaters



Design flow of the onsite treatment plant is 1.2 MGD at approximately 850 mg/L BOD

Major waste streams:

- Process wastewater from CIP operation during manufacturing of saline solutions
- Off spec product
- Utility waters from boilers and cooling towers
- Reject from production of water for injection (RO and distillation)



- ♦ **Primary constituents**
 - ♦ *Sodium chloride*
 - ♦ *Glucose*
 - ♦ *Utility chemicals for corrosion resistance and microbial inhibition*
 - ♦ **Treatment process**
 - ♦ *Equalization*
 - ♦ *Screening*
 - ♦ *pH adjustment*
 - ♦ *Nutrient Addition – nitrogen and phosphorus*
 - ♦ *Biological treatment using a membrane biological reactor (MBR)*
 - ♦ *UV Disinfection*
-



Baxter has a NPDES permit for discharge into the North Fork Catawba River, a designated Trout Stream

WWTP constructed in the special flood hazard zone, so design required substantial fill to place WWTP 1' above the 500-yr storm event flood elevation



Timeline and Coordination with City of Greensboro

- ♦ Project with Baxter via CCI was discussed
- ♦ Profiles completed, samples tested and trial loads delivered Oct. 8
- ♦ **Request for temporary increase in discharge through City of Greensboro**
- ♦ Met in person to discuss Baxter's needs, their waste streams, anticipated volumes and length of project
- ♦ Temporary increase in discharge granted Oct. 12??
- ♦ Ramped up loads delivered by Shamrock, CCI and subcontractors
- ♦ **Temporary increase in discharge extended through the end of 2024**
- ♦ **Possibility of other large projects from Western NC and continued need from Baxter**
- ♦ **No other large projects came to fruition, but both Shamrock and City of Greensboro were aware and ready had that occurred**

Profiling & Waste Streams

Two waste streams profiled for Baxter:

- ♦ Process wastewater (C-stream) containing their primary constituents from saline and glucose production
- ♦ Passivation wastewater (A-stream) of stainless-steel lines containing 99% DI water
- ♦ Passivation wastewater was comingled with other A/B-streams and treated through Phys-Chem and filtration treatment systems
- ♦ Process wastewater was equalized with other organic wastewaters

CLEAR FORM		Material Name: _____	
SHAMROCK ENVIRONMENTAL CORPORATION		For Assistance Contact Customer Service: 1-800-881-1038	
☐ NEW PROFILE		☐ RECERT	
AQUACLEAN A SHAMROCK COMPANY			
Material Characterization Profile		Profile No: _____ (for office use)	
Section 1: Generator Information			
Generator Name: _____		Billing Contact: _____	
Generator EPA ID: _____		Billing Name: _____	
Pickup Address: _____		Billing Address: _____	
Technical Contact: _____		Billing Email: _____	
Email: _____		Billing Phone: _____	
Phone: _____ Fax: _____		Billing Fax: _____	
Mailing Address: _____			
Section 2: Designated Shamrock Facility (Issued approvals are facility specific. Check all potential destinations desired for evaluation.)			
☐ Shamrock Corporate Park Drive Browns Summit, NC		☐ Shamrock/Aqua Clean Environmental Lakeland, FL	
☐ Shamrock Richmond VA		☐ Third Party Site (list if known/designated): _____	
Note: Materials managed directly or subsequently at third party sites may require additional analytical testing and/or profile documentation.			
Section 3: Material Description & Characteristics			
Name of Material: _____			
Industrial Process Generating Material: _____		Metal Finishing Waste? ☐ Yes ☐ No If yes, Complete Metal Finishing Checklist	
Site Activity Generating Material: _____			
Shipping Information: Quantity _____ Units: ☐ Gallons ☐ Cubic Yards ☐ Tons ☐ Totes ☐ Drums			
Container Type/Shipping Frequency: ☐ Bulk ☐ IBC/Tote ☐ Drum ☐ Other _____ Frequency: ☐ Once ☐ Daily ☐ Monthly ☐ Yearly			
Is the material off-specification or discarded commercial product? ☐ Yes ☐ No If yes, is an SDS available? ☐ Yes ☐ No ☐ SDS attached.			
Is the material a fuel, fuel component or fuel mixture? ☐ Yes ☐ No List fuel(s): _____		Does the fuel mixture contain levels of hazardous constituents above those found in the source of the fuel? ☐ Yes ☐ No ☐ NA	
Does the fuel, contain ethanol? ☐ Yes ☐ No ☐ NA Estimated Ethanol Conc: _____			
Is the material ignitable? ☐ Yes ☐ No Is the material corrosive? ☐ Yes ☐ No Is the material reactive? ☐ Yes ☐ No			
Is the material a hazardous waste as defined in RCRA (40 CFR §261)? ☐ Yes ☐ No ☐ Excluded/Exempt If yes, list waste codes: _____			
Is the material/wastewater subject to a CWA Categorical Pretreatment Standard (40 CFR §400-471)? ☐ NA ☐ Yes ☐ No List: _____			
Are any biotoxic components present in the material such as cyanide, chlorine, ethylene glycol, etc.? ☐ Yes ☐ No List: _____			
Are there any known UV Transmittance issues with the wastewater? ☐ NA ☐ Yes ☐ No Provide UVT% Value: _____			
Source of data/information used to support this profile (check all applicable): ☐ Analytical Data ☐ Generator Knowledge ☐ Technical Data			
Composition (key compounds, soil, water, PPE, debris, etc.):		Used Oil (40 CFR §279) & WTE Management Parameters: ☐ NA	
_____ to _____ %		Halogens/TOX: _____	
_____ to _____ %		BTU Value: _____	
_____ to _____ %		Sulfur: _____	
_____ to _____ %		Moisture: _____	
_____ to _____ %		Ash (%): _____	
_____ to _____ %		Viscosity (sus): _____	
Is material derived from Horizontal Directional Drilling (HDD)? ☐ Yes ☐ No			
Description: Color: _____ Odor: _____ Viscosity: _____			
Physical State @ 70°F: (check all that apply) ☐ Free Liquid _____ % ☐ Sludge _____ % ☐ Solid _____ % ☐ Pumpable _____ % ☐ Pourable _____ %		pH: _____ ☐ ≤ 2 ☐ 9 to <12.5 ☐ 2 to 5 ☐ ≥ 12.5 ☐ 5 to 9 ☐ _____	
Specific Gravity: _____ ☐ ≤ 0.8 ☐ 0.8 - 1.2 ☐ > 1.2 ☐ _____		Flash Point: _____ ☐ < 130°F ☐ < 140°F ☐ 140 - 200°F ☐ > 200°F ☐ _____	
Oil & Grease: _____ ☐ None ☐ > 100 ppm ☐ > 5% ☐ BOD ₅ _____ ☐ COD: _____ ☐ -NA- ☐ < 200 ppm ☐ 200 to 2,000 ppm ☐ 2,000 to 10,000 ppm ☐ _____ ppm		Nitrogen: _____ - Ammonia: _____ ppm - Total N: _____ ppm - TKN: _____ ppm Phosphorus: _____ ppm Phenols: _____ ppm	
Cyanides: _____ ☐ None ☐ < 0.02 ppm ☐ < 0.1 ppm ☐ < 5 ppm ☐ ≥ 5 ppm Sulfides: _____ ppm		Contains Chelating Agents?: ☐ Yes ☐ No If yes, list: _____	
Does the material contain phthalates?: ☐ Yes ☐ No If yes, Identify: _____, Conc: _____ ppm		TDS/Conductivity: TDS (range) _____ to _____ ppm Conductivity (range): _____ to _____ ☐ μmhos/cm ☐ μs/cm ☐ Chlorides _____ ppm	
Does the material contain 1,4-Dioxane, PFAS/PFOS or bromides?: ☐ Yes ☐ No If yes, Identify: _____, Conc: _____ ppm		TSCA/PCBs?: ☐ Yes ☐ No Conc.: _____ Dioxins?: ☐ Yes ☐ No Radioactive?: ☐ Yes ☐ No	

Baxter Wastewater Treated at Shamrock

October 8, 2024 – EOM: 1.38 M gallons

October – December 2024: 3.74 M gallons





Sustainability in Action

Q & A