

**Attachment I
DES-19-38003**

Chemicals delivered must be in strict conformance with the following specifications and all applicable standards. Chemicals will be ordered as needed in the following quantities:

Item	Description	Quantity per Delivery	Estimated Total per year
1	Non-Copper Based Algaecide	5,300 lbs	10,219 lbs
2	Glycerin	4,500 gallons	108,000 gallons

ITEM 1

Non-Copper Based Algaecide – The algaecide shall be a peroxide/ peroxyacetic acid based product with a peroxyacetic acid concentration of 5.3% and a hydrogen peroxide concentration of 23%. Algaecides containing copper shall not be acceptable. The algaecide shall have NSF 60 certification for drinking water application and shall be registered with the US EPA under FIFRA for use in reservoirs. The FIFRA-approved label, SDS sheet, US EPA registration number, and NSF certification must be submitted for each proposed algaecide product. The product shall be furnished in liquid or solid form in 250 gallon totes, 50 lb buckets, or 55 gallon drums. Recycling of totes is also preferred.”

References

In order to demonstrate performance history, supplier shall submit as Addendum X a list of at least 3 current municipal users of its product. Information shall include plant name, contact name, phone number and email address.

Delivery to the Water Treatment Plant, 816 Woodview Rd., Culpeper, VA

ITEM 2

Glycerin –70% Glycerin Product utilized as a carbon source. Must meet following specifications. Delivery should be made by 4,500 gallon tanker truckloads. The tanker trucks can be offloaded into a 9,000 gallon tank located onsite. Pricing based on price per gallon.

Parameter	Target Value	Acceptable Range	Method for Determination
Physical State	Liquid	N/A	N/A
Percent Glycerin	70%	69-71%	ASTM D7637-10
Specific Gravity @ 20C	1.22	1.210-1.230	Precision Hydrometer
Bulk Density (lbs/gal)	10.17	10.09-10.26	Calculation based on Specific Gravity @ 20C
pH	5.50	4.0-7.0	pH Meter with fitted glass electrode
Viscosity cPS @20C @10C @0C	<50 cPs <100 cPs <150 cPs	<50 cPs <100 cPs <150 cPs	Brookfield Viscometer
Solubility in water	≥99%	≥99%	
VOC Concentration	0%	0%	(EPA 8260B)
Freezing Point	Below Zero Fahrenheit	Below Zero Fahrenheit	Freezing point determination
Flash Point	None to Boil	None to Boil	(ASTM D93)
COD Value	1,040,000	1,000,000-1,100,000	EPA 410.3
Methanol Content	≤0.5%	0-0.7% w/w	AOCS Cg 5b-71 or equivalent Measured on crude glycerin
Fatty Acid Content	0.00-0.75% w/w	≤1.0%	AOCS Ca 5b-71 or equivalent Measured on crude glycerin
Insoluble/Nuisance Solids	None	Material cannot contain solids greater than 1000 micron	Sieve analysis

References

In order to demonstrate performance history, supplier shall submit as Addendum X a list of at least three (3) current municipal users of its product. Information shall include plant name, contact name, phone number and email address.

Product Quality

In order to demonstrate historical adherence to the above specifications, supplier shall submit as part of their bid response, COA’s for product delivered for each of the 3 current municipal users provided as References above. The COA’s shall be for the one year prior to the Bid date.

With each delivery provided under the contract, supplier must provide a Certificate of Analysis (COA) that includes, at minimum; point of origin, batch date, specific gravity, pH, COD value, and color and odor check.

Delivery to the Wastewater Treatment Plant, 15108 Service Lane, Culpeper, VA.