

**COUNTY OF BRUNSWICK
PUBLIC UTILITIES DEPARTMENT**

POLYALUMINUM CHLORIDE (>12% - ≤20%), liquid, 17%

Supplier shall be capable of delivering this product into existing storage facility for polyaluminum chloride with a truck equipped with pressure deliveries or an independent pump and a one-piece twenty (20) foot approved hose without modification to water treatment plant or bulk storage tank facilities at the plant. Existing storage facility includes three (3) – eighteen thousand (18,000) gallon storage tanks at the Northwest WTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Proposed product shall meet or exceed current product efficiency as related to treatment of turbidity, color, TOC, iron, manganese, taste, and odor removal. Alkalinity demand nor dosage rates shall exceed current product. Product must remain in suspension or supplier is liable for all clean-up costs.

Product specification as follows:

Total Al ₂ O ₃	>12% - ≤20%
pH	≥0.9 (+/- 0.3)
Basicity	≥40%
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

Site Visits and Testing:

Supplier shall conduct on-site testing to ensure continued chemical compatibility with other treatment processes within the facility. Testing shall include, but is not limited to, monthly jar testing, pilot testing, and through-plant trials.

A typical metals analysis shall be provided with each bid.

Cost analysis will be executed based on wet cost per pound carried to the nearest cent divided by the % of Al₂O₃. All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

Example	Cost/lb.	%Al ₂ O ₃	Equivalent Cost/lb.	
A	0.13	0.16	0.81	Product A is the low bid.
B	0.15	0.17	0.88	
C	0.12	0.14	0.86	

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CHLORINE (Cl₂), liquid

Supplier shall be capable of delivering this product with a boom truck to Northwest WTP and 211 WTP. Personnel delivering product should be qualified to respond to emergency situations (i.e., leaks, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or have immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel. In addition, all cylinders are to be provided with rebuilt or new valves and stems with each delivery and be marked with some form of certification sticker.

Product specification as follows:

Composition	Liquid, 99.9%
Container	One (1) ton cylinders
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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CORROSION INHIBITOR, phosphate, liquid - orthophosphate

Supplier must be capable of providing routine field lab services and corrosion control expertise to include, but not limited to, process chemistry studies and "*system modeling*" for existing treatment practices. The supplier must provide the County with in-stream evidence that their product is providing the level of corrosion control in the County's system as required by the County, at no additional expense to the County.

Supplier shall be capable of delivering this product into existing storage facility for corrosion inhibitor with a truck equipped with pressure deliveries or an independent pump and a one-piece, twenty (20) foot approved hose without modification to water treatment plant or bulk storage tank facilities at the plant. Existing storage facility includes one (1) – ten thousand (10,000) gallon storage tank at the Northwest WTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Clear liquid
Ortho/Poly Ratio	Straight Orthophosphate
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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CORROSION INHIBITOR, ortho/polyphosphate blend

Liquid, blended ortho-polyphosphate with properly balanced *ortho* to *poly* ratio achieve optimum corrosion control in the County's water distribution system. Supplier must be capable of providing routine field lab services and corrosion control expertise to include, but not limited to, process chemistry studies and "*system modeling*" for existing treatment practices. The supplier must provide the County with in-stream evidence that their product is providing the level of corrosion control in the County's system as required by the County, at no additional expense to the County.

Supplier shall be capable of delivering this product into existing storage facility for corrosion inhibitor with a truck equipped with pressure deliveries or an independent pump and a one-piece, twenty (20) foot approved hose without modification to water treatment plant or bulk storage tank facilities at the plant. Existing storage facility one (1) – three thousand (3,000) gallon storage tank at the 211 WTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Clear liquid
Ortho/Poly Ratio	50/50 @ 211 WTP
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

**COUNTY OF BRUNSWICK
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SODIUM HYDROXIDE (CAUSTIC SODA), 50%, liquid

Supplier shall be capable of delivering this product into existing storage facilities for sodium hydroxide (caustic) with a truck equipped with pressure deliveries or an independent pump and a one-piece, twenty (20) foot approved hose without modification to water/wastewater treatment plant or bulk storage tank facilities at the plant. Existing storage facilities include one (1) ten thousand (10,000) gallon storage tank at the Northwest WTP, two (2) – two hundred fifty (250) gallon storage tanks at the Ocean Isle Beach (OIB) Wastewater Treatment Plant, one (1) – one thousand five hundred (1,500) gallon storage tank and one (1) – five hundred (500) gallon storage tank at the West Brunswick WWTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and properly or has immediate access to emergency response personnel. The supplier shall employ personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Liquid
Specific Gravity	1.5
Total NaOH	50%
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

A typical metals analysis shall be provided with each bid.

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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SODIUM HYPOCHLORITE SOLUTION

(12 - 15% Concentration)

Supplier shall be capable of delivering this product into existing storage facility for Sodium Hypochlorite with a truck equipped with pressure deliveries or an independent pump and a one-piece twenty (20) foot approved hose without modification to the bulk storage tank facility. Existing storage facility includes two (2) – thirty-five hundred gallon (3,500) storage tanks at the West Brunswick Regional WWTP. The Drip Site has two (2) – two hundred (200) gallon storage tanks located at the Pump Station at the Storage Pond, and is highly recommended to be delivered in a truck capable of delivering on a diked area. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped to make necessary repairs safely and promptly or have immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Proposed product shall meet or exceed current product efficiency as related to treatment of disinfection of Wastewater.

Product specification as follows:

Sodium Hypochlorite, 10-16% by weight

Available Chlorine w/v % value 15.00 + - 0.6

Available Chlorine wt % 12.40

Certified to NSF/ANSI 60 Maximum Use for Potable Water (84 mg/l)

Volumes to be delivered are three thousand (3,000) gallons and three hundred thirty (330) gallons

Delivery lead time Seventy-two (72) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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MAGNESIUM HYDROXIDE SOLUTION

(60%) Concentration

Supplier shall be capable of delivering this product into existing storage facility for Magnesium Hydroxide with a truck equipped with pressure deliveries or an independent pump and a one-piece twenty (20) foot approved hose without modification to the bulk storage tank facility. Existing storage facility includes one (1) – 5,000 gallon (5,000) storage tank at the West Brunswick Regional WWTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped to make necessary repairs safely and promptly or have immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Proposed product shall meet or exceed current product efficiency as related to treatment of Wastewater.

Product specification as follows:

Magnesium Hydroxide, pH (10% aqueous slurry)	10-11
Specific Gravity (g/cc)	1.45
Volumes to be delivered are three thousand (3,000) gallons	
Delivery lead time	Seventy-two (72) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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ALUMINUM SULFATE SOLUTION

(48.5%)

Supplier shall be capable of delivering this product into existing storage facility for Aluminum Sulfate with a truck equipped equipped with pressure deliveries or an independent pump and a one-piece twenty (20) foot approved hose without modification to the bulk storage tank facility. Existing storage facility includes two (2) – three thousand gallon (3,000) storage storage tanks at the West Brunswick Regional WWTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped to make necessary repairs safely and promptly or have or have immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Proposed product shall meet or exceed current product efficiency as related to treatment of Wastewater.

Product specification as follows:

Aluminum Sulfate	48.50%
Specific Gravity	1.33
Volumes to be delivered are three – four thousand (3,000-4,000) gallons	
Delivery lead time	Ninety-six (96) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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HYDROFLUOSILICIC ACID (HFS), liquid

Supplier shall be capable of delivering this product into existing storage facilities for hydrofluosilicic acid (HSF) with a truck equipped with pressure deliveries or an independent pump and a one-piece, twenty (20) foot approved hose without modification to water treatment plant or bulk storage tank facilities. Existing storage facility includes one (1) – one thousand (1,000) gallon storage tank at the 211 WTP. Personnel delivering this product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Liquid
Specific Gravity	1.2
H ₂ SiF ₆	23% to 25%
pH (10% sol.)	1.5 to 2.0
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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CALCIUM HYDROXIDE (HIGH CALCIUM HYDRATED LIME), powder

Supplier shall be capable of delivering this product into existing storage facility for calcium hydroxide (lime) with a truck equipped with pressure deliveries or an independent pump and a one-piece, twenty (20) foot approved hose without modification to water treatment plant or bulk storage tank facilities at the plant. Existing storage facility includes one (1) – two thousand three hundred (2,300) cubic foot storage silo at the 211 WTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Powder
Appearance	White or gray powder, odorless
Solubility in Water	Slightly
pH	12.4 @ 25°C
Ca(OH) ₂	>90%
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery Quantity	17.5 tons
Delivery lead time	Twenty-four (24) hours

A typical metals analysis shall be provided with each bid.

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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SULFURIC ACID (H₂SO₄), liquid, 93% to 99.9%, 60° - 66° Baume

Supplier shall be capable of delivering this product into existing storage facility for sulfuric acid with a truck equipped with pressure deliveries or an independent pump and a one-piece, twenty (20) foot approved hose without modification to water treatment plant or bulk storage tank facilities at the plant. Existing storage facility includes one (1) – one thousand (1,000) gallon storage tank at the 211 WTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents and delivery personnel.

Product specification as follows:

Composition	Liquid
Specific Gravity	1.85 @ 60°F
pH (0.5% sol.)	1.2
Baume	60° to 66°
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

A typical metals analysis shall be provided with each bid.

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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POWDERED ACTIVATED CARBON (PAC) - Fine Grind

Supplier shall be capable of delivering this product into an existing carbon storage silo located at the Northwest Water Treatment Plant with a truck equipped with equipment designed for pressure into the carbon silo. Personnel delivering the product shall be qualified to deliver the product safely and respond to emergency situations. The supplier shall be equipped with all appropriate equipment to make necessary repairs safely and promptly. The Powdered Activated Carbon shall be a wood-based, bituminous, or a blended material that is heat activated using steam. The supplier must supply a copy of a valid certification prior to award of the contract.

Product specification as follows:

Composition	Powder	
Appearance	Black	
Iodine Number (mg/g)	800	min
Tannin Value (mg/l)	200	min
Moisture (%)	8.0	max
Apparent Density	0.21-0.37	
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)	
Delivery lead time	Twenty-four (24) hours	
Typical Delivery	10-15 Tons	Bulk-Truck

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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AMMONIA, anhydrous

Supplier shall be capable of delivering this product with a pressurized tanker truck to Northwest WTP and 211 WTP. Personnel delivering product should be qualified to respond to emergency situations (i.e., leaks, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or have immediate access to emergency response personnel. The supplier will employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Liquid, 100%
Container	Pressurized tank (Provided by supplier)
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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POLYMER (cationic), POLY DADMAC 20%

Polymer blended to achieve optimum coagulation in the County's groundwater softening process. Supplier must be capable of providing routine lab services and coagulation expertise to include, but not limited to, process chemistry studies for existing treatment practices. The supplier must provide the County in-stream evidence that their product is providing the level of coagulation in the County's groundwater softening system as required by the County, at no additional cost to the County. If supplier is unable to provide the level of treatment the County requires, the County reserves the right to select another supplier, as required.

Supplier shall be capable of delivering this product into existing storage facilities for polymer (poly dadmac) with a truck equipped with pressure deliveries or an independent pump and a one-piece, twenty (20) foot approved hose without modification to water treatment plant or bulk storage tank facilities. Existing storage facility includes one (1) – three thousand (3,000) gallon storage tank at the 211 WTP. Personnel delivering this product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Liquid
Appearance	Transparent
Color	Colorless to Pale Amber
Specific Gravity	1.03 - 1.05
pH	5 - 7
Solubility in Water	Complete
Viscosity @ 25°C	1600 - 3200 cps
% Total Solids	20%
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

Product shall be pilot tested and approved for use in the County's treatment process by County staff. The supplier, at no expense to the County, shall furnish material for pilot testing to the County. Supplier shall provide routine monthly and on-call service for upsets to include, but not limited to, jar testing and dosage adjustments, to meet or exceed all State and Federal water quality standards.

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.

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SODIUM SILICOFLUORIDE (SSF), powder

Supplier shall be capable of delivering this product in forty (40) to fifty (50) pound containers to the Northwest WTP. Personnel delivering the product should be qualified to respond to emergency situations (i.e., spills, etc.) and should be equipped with all appropriate equipment to make necessary repairs safely and promptly or has immediate access to emergency response personnel. The supplier shall employ the best available safety handling practices to prevent injury to the plant personnel, the plant facilities, surrounding residents, and delivery personnel.

Product specification as follows:

Composition	Free-flowing powder
Density	Seventy-two (72) pounds per cubic foot (ft. ³)
pH (1.0% sol.)	5.3
Solubility (1.0% in water)	0.652 @ 17°C
Approval	UL, NSF, USDA, EPA, AWWA (Approved for potable water treatment)
Delivery lead time	Twenty-four (24) hours

All prices shall be quoted FOB County's facility; terms are thirty (30) days net.