



**Shelby County**  
**CUSTOM REACTIVATION OR VIRGIN REPLACEMENT OF GAC MEDIA AT**  
**SHELBY COUNTY SWTP**

BID #2023-3-11359

**ADDENDUM NO. 2**

Date: April 14, 2023

To: All Vendors of Record

RE: Revised Page #5

The time and location will remain April 18, 2023 at 2:30 PM.

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The following amendments have been made to the bid document:

1. Clarify that a Section 84 Business License is to be obtained and submitted within 20 calendar days after bid is awarded. It is NOT required to be submitted with the bid. (page 5, item D under Bidder Qualifications)

# **GENERAL CONDITIONS FOR CUSTOM REACTIVATION AND/OR VIRGIN REPLACEMENT OF GRANULAR ACTIVATED CARBON (GAC) MEDIA AT SHELBY COUNTY SOUTH WATER TREATMENT PLANT**

## **I. CONTRACT PERIOD**

The period of this contract will be for **ONE (1) Year** from the date the bid is awarded. This contract may be renewed for up to **THREE (3) Years** from the initial award date upon the agreement of both parties. The bid price will remain firm during the period of the contract. This contract will be based on either performing Option A (with or without Additive Alternate) and/or Option B (with or without Additive Alternate).

## **II. SCOPE OF WORK**

A. It is the intent of this solicitation to establish a service/supply contract for Granular Activated Carbon (GAC) as follows:

### **Option A:**

- a. Furnish all labor, materials, equipment, and supervision for the removal and transport of spent granular activated carbon (GAC) from the filters to a custom reactivation facility.
- b. Reactivation of the spent GAC to the parameters specified herein.
- c. Supply of sufficient makeup virgin GAC as required to ensure the reactivated GAC meets the minimum specified parameters.
- d. Furnish all labor, materials, equipment, and supervision for the transport and installation of reactivated GAC back into the filters.
- e. **Additive Alternate:** Provide acid wash and neutralization of reactivated carbon for the removal of manganese at reactivation facility prior to shipment and installation into filters.

### **Option B:**

- a. Alternately, furnish all labor, materials, equipment, and supervision for the removal, transport, and disposal of spent GAC from the filters, and supply and install virgin GAC into the filters.

B. Whenever a brand name is mentioned in the bid request, the naming of the item is intended to establish the type, function, performance, and quality required.

## **C. SITE INSPECTION**

Each BIDDER is strongly encouraged to visit the site and inform him/herself of all existing conditions. BIDDERS must call and schedule any site visit with Shelby County Water Services' personnel. Contact Phillip Crunk, P.E. at (205) 670-6540.

Site Location:

**SHELBY COUNTY SOUTH WATER TREATMENT PLANT  
7935 HIGHWAY 61  
WILSONVILLE, AL 35186**

**D. DELIVERY**

Where indicated on the Bid Sheet, the bidder shall provide the specific number of calendar days required to begin a specific part of the project or deliver the specified material ordered to the job site (lead time). Time is of the essence, and the Owner may consider the lead times provided by each bidder in determining the award of the project. Material lead times may be utilized to award the project to another bidder, other than the lowest bidder, if it is determined to be in the Owner's best interest.

All quoted prices shall include delivery charges (including, but not limited to, shipping charges and surcharges). Deliveries and work shall be made at the following address:

**Shelby County South Water Treatment Plant  
7935 Highway 61  
Wilsonville, AL 35186**

**E. BILLING**

Invoice payments shall be based solely on the work completed and the vendor's stated bid price. All prices shall include shipping/delivery charges. ***Shelby County Water Services does require a Purchase Order for all orders.*** Shelby County Water Services is tax-exempt (tax-exempt #63-6001694).

All invoices shall be billed to:

Shelby County Water Services  
200 West College Street, Room 145  
Columbiana, AL 35051  
[ap-water-landfill@shelbyal.com](mailto:ap-water-landfill@shelbyal.com) – Preferred method of delivery

**F. BID QUALIFICATIONS**

All BIDDERS must submit the requested information listed in the specifications below with their bid. Information to be submitted must show that the product proposed meets all the specifications listed below and list **ALL EXCEPTIONS** to the specifications in a separate document.

**QUOTATION SHEET:**  
**Custom Reactivation and/or Virgin Replacement of GAC Media at**  
**Shelby County South Water Treatment Plant**  
**March 2023**

**OPTION A: REACTIVATION WITH ACID WASH/NEUTRALIZATION**

Lump Sum for Removal, Transportation, Reactivation, and Installation of GAC Media in ONE (1) Filter at Shelby County South WTP	\$
Unit Price (per Pound) for Additional Virgin Material above 15% makeup.	\$ Per Pound
ADDITIVE ALTERNATE for acid wash for manganese removal and neutralization of media at Bidder's facility.	\$

**OPTION B: REMOVE, DISPOSE AND INSTALL ALL VIRGIN CARBON**

Lump Sum for Removal, Disposal, and Installation of Virgin GAC Media in Two (2) Filters at Shelby County South WTP	\$
ADDITIVE ALTERNATE for Removal, Disposal, and Installation of Virgin GAC Media in One (1) Filters at Shelby County South WTP.	\$

**MATERIAL DELIVERY LEAD TIMES**

Indicate the specific number of days required for each action to be initiated once the bid is awarded and the notice to proceed is provided by the Owner (lead time).

1. Begin removal of existing media for reactivation after notice to proceed  
\_\_\_\_\_ Calendar days
2. Begin installation of reactivated media after notice to proceed  
\_\_\_\_\_ Calendar days
3. Begin installation of virgin media after notice to proceed  
\_\_\_\_\_ Calendar days

**QUOTATION SHEET:**  
**Custom Reactivation and/or Virgin Replacement of GAC Media at**  
**Shelby County South Water Treatment Plant**  
**March 2023**

THE UNDERSIGNED OFFERS THESE PRICES, TERMS, AND DELIVERY AS PER BID SPECIFICATIONS:

NAME OF COMPANY: \_\_\_\_\_

BY: (Please Print): \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_

**BIDS SUBMITTED ARE FIRM AND NO CLAIMS FOR ERRORS WILL BE MADE**  
**AFTER BIDS ARE OPENED AND SUBSEQUENT THEREOF.**

Sworn to and subscribed before me this  
the \_\_\_\_\_ day of \_\_\_\_\_,  
\_\_\_\_\_, Notary Public  
My Commission Expires: \_\_\_\_\_

Quotation Sheet 2 of 2

## BID SPECIFICATIONS FOR GAC Media Replacement

### **BIDDER QUALIFICATIONS**

- A. BIDDERS shall have a minimum of 15 years of experience manufacturing and shall submit proof via a Manufacturer's Certificate and/or an Affidavit of Compliance.
- B. BIDDER will be required to provide evidence of a Certificate of Insurance, which provides Workman's Compensation for contractor's employees for the duration of the contract, and a minimum of \$1,000,000 (One Million Dollars) in General Liability insurance naming Shelby County as an additional insured. The above-noted insurance must be with an A or A+ company. Evidence of all insurance coverage must be submitted with the bid. Evidence of Workman's Compensation and general liability insurance shall be received within 20 calendar days after the bid is awarded.
- C. BIDDER'S virgin and reactivation manufacturing processes shall be NSF 61 certified.  
**Failure to comply will be considered a non-responsive and the bid will be rejected.**
- D. Valid Section 84 Business License must be obtained and submitted within 20 calendar days after the bid is awarded.

### **PRODUCTS**

#### **REACTIVATED GAC**

- A. **Materials**
  - 1. Materials shall comply with the requirements of the Safe Drinking Water Act, other federal requirements, and the Alabama Department of Environmental Management.
  - 2. The reactivated GAC shall comply with NSF 61.
  - 3. The reactivated GAC shall comply with AWWA B605 – Latest Edition
  - 4. Effective procedures will be in place and utilized to ensure segregation of any spent and reactivated carbon intended to be returned as a custom reactivated product.
- B. **Moisture**
  - 1. The moisture content of the reactivated GAC shall not exceed 8% by weight of the listed container contents as packed, or at the time it is shipped by the supplier, if shipped in bulk, unless otherwise agreed to by the supplier and the purchaser. The moisture content shall be determined in accordance with ANSI/AWWA B604, latest edition.
  - 2. Note: As the moisture content of reactivated GAC may increase during bulk shipment because of ambient conditions that may be beyond the control of the supplier, a moisture content exceeding 8% is permitted in the reference sample collected after the shipment is received.
- C. **Apparent Density**
  - 1. The apparent density of the reactivated GAC shall be not less than 0.20 g/cc, as determined in accordance with ANSI/AWWA B604, latest edition. Apparent density should be indexed to the virgin GAC value.

**D. Particle Size Distribution**

1. Particle size distribution shall be determined in accordance with ANSI/AWWA B604, latest edition. The particle size range of the reactivated GAC shall be as specified herein:
  - a. Mesh Size: 8 x 20
  - b. No more than 5.0% of the reactivated GAC shall be retained on the maximum-size sieve, and no more than 4.0% of the reactivated GAC shall pass the minimum-size sieve.

**E. Uniformity Coefficient**

1. The reactivated GAC shall have a uniformity coefficient not greater than 1.5.

**F. Abrasion**

1. The retention of average particle size of the reactivated GAC shall not be less than 70% as determined either by the stirring abrasion test or the Ro-Tap abrasion test, according to ANSI/AWWA B604, latest edition.

**G. Performance Criteria**

1. Adsorptive Capacity-Iodine Number
  - a. If the iodine number of the received spent GAC is >550, the reactivated GAC (on a blended basis of reactivated GAC plus up to 15% virgin make-up GAC) shall attain an iodine number at least 800 mg/g, as determined according to the ANSI/AWWA B604-05.
  - b. If the iodine number of the received spent GAC is <550, the reactivated GAC (on a blended basis of reactivated GAC plus up to 15% virgin make-up GAC) shall attain an iodine number at least 250 mg/g greater than the spent GAC, as determined according to the ANSI/AWWA B604, latest edition.
  - c. In no case shall the iodine number of the reactivated GAC (on a blended basis of reactivated GAC plus up to 15% virgin make-up GAC) be less than 500 mg/g carbon as determined according to the ANSI/AWWA B604, latest edition.

Product Specification: CMR820	Value	Test Method
Iodine Number (mg/g), min.	a) 800 if spent is >550 b) +250 if spent is <550 a&b include 15% make-up	TM-4, ASTM D4607
Moisture, weight %, max.	8% or as agreed to between supplier and purchaser	TM-1, ASTM D2867
Uniformity Coefficient, max.	1.5	TM-47, ASTM D2862
Abrasion No., min.	70	TM-9, AWWA B604
Screen Size (US Sieve), weight %		
* Larger than No. 8, max.	5.0	TM-8, ASTM D2862
* Smaller than No. 20, max.	4.0	TM-8, ASTM D2862
Apparent Density, g/cc, min	0.20	TM-7, ASTM D2854

**VIRGIN GAC**

- A. The BIDDER shall supply a virgin GAC, which shall either be used to make up losses of spent GAC via the reactivation process or as an alternate supply to the custom reactivated GAC. The virgin GAC shall meet the following specifications:
  1. The GAC shall be manufactured by a producer certified for ISO 9001:2000 quality standards and at the specific plant or site holding such certification. A copy of the valid certificate must be submitted with the bid. It is understood that ANSI/NSF assures the GAC against toxicological hazards only. ISO 9001:2000 Certification assures the GAC

of consistent conformance to stated product quality and standards listed in the specifications.

2. The GAC shall comply with AWWA B604-Latest Edition.
3. The GAC shall comply with NSF 61.
4. The GAC shall conform to Food Chemical Codex when tested under the conditions of the test outlined in the Food Chemical Codex, Latest Edition.
5. The GAC must be a 100% agglomerated bituminous coal-based product with petroleum and coal-based pitch binders sized to a granular form prior to baking and activation. The following materials shall not be accepted if submitted in lieu of the required product, nor may any amount of these materials be blended into a mix with the required agglomerated, bituminous coal-based product:
  - a. Broken pellets, regardless of base material
  - b. Direct activated GAC, regardless of base material
  - c. Lignite-based GAC
  - d. Peat-based GAC
  - e. Wood-based GAC
  - f. Coconut-based GAC
  - g. Sub-bituminous based GAC
  - h. Anthracite based GAC
6. The GAC shall be capable of removing turbidity, color, tastes, odors, and other organic contamination from water previously pretreated by conventional water treatment processes.
7. Data showing the successful application of the GAC in municipal water plants, including turbidity and organic contamination, shall be submitted with the bid.
8. BIDDER shall indicate the source of coal, carbon manufacturing location, the agglomeration/thermal process, and capacity of the manufacturing facility. The OWNER reserves the right to inspect the GAC manufacturing and thermal processing facility.
9. Quantity of virgin GAC required as make-up in order to compensate for reactivated material lost in transport and reactivation, as well as that needed to bring the final reactivated product up to acceptable quality, shall be determined by the OWNER and the BIDDER, and based upon the BIDDER'S experience reactivating similar carbons, and, if necessary, by sample testing.
10. A Certificate of Analysis shall be submitted to the OWNER certifying that the virgin GAC added as make-up or used as an alternative to the custom reactivation is in full compliance with these specifications.

<b>Product Specification: F820</b>	<b>Value</b>	<b>Test Method</b>
Iodine Number (mg/g), min.	900	TM-4, ASTM D4607
Moisture, weight %, max.	5.0	TM-1, ASTM D2867
Effective size, mm	1.0-1.2	TM-47, ASTM D2862
Uniformity Coefficient, max.	1.5	TM-47, ASTM D2862
Abrasion No., min.	75	TM-9, AWWA B604
Trace Capacity Number, (mg/cc), min.	9	TM-79, TM-85 (converted to TCN)
<b>Screen Size (US Sieve), weight %</b>		
* Larger than No. 8, max.	5.0	TM-8, ASTM D2862
* Smaller than No. 20, max.	4.0	TM-8, ASTM D2862
Apparent Density, g/cc	0.50	TM-7, ASTM D2854
<b>Typical Property</b>		
Ash	8%	TM-5, ASTM D2866
Water Soluble Ash	<1%	AWWA B604
Non-Wettable	<1%	AWWA B604



**B. Material and Manufacturer**

1. Filtrasorb 820 as manufactured by Calgon Carbon Corporation
2. Or Equal as approved by OWNER.
  - a. Certificate of Analysis for virgin material required with bid.

**FILTER DATA**

Filter/ Vessel Design	Dual Media Gravity Filters
Number of Filters	2
Filter Dimensions (LxWxD)	25' x 18'-6" x 90" (18" sand, 72" GAC)
Number of Cells/Filter	1
Cell Dimension (LxWxD)	25' x 18'-6" x 90" (18" sand, 72" GAC)
Backwash and Drain Volume (cu. Ft.)	3,547.4
Drain to Waste (dia.)	16" Filter to Waste, 24" Waste from Launder Trough
Total Existing GAC Volume (cu. Ft.)	2,775 cu. ft. per filter

**EXECUTION**

**TESTING REQUIREMENTS**

- A. BIDDER shall submit as part of the bid all testing requirements necessary for the reactivation process. A schedule shall also be included showing testing time requirements.
- B. BIDDER shall provide all necessary bottles for sample collection.
- C. BIDDER shall include as part of the bid any testing requirements for receiving and reactivating the spent GAC. All testing prices shall be included in base bid cost for reactivation.

**CARBON EXCHANGE PROCEDURES**

- A. BIDDER shall submit a detailed description for carbon exchange procedures.
- B. Prior to beginning the exchange process, the CONTRACTOR shall measure the depth of the GAC in each filter. This information will be used to determine the operational loss of the GAC.
- C. The GAC exchange shall be under the direct supervision of the GAC manufacturer's employee, having a minimum of 5 years' experience in performing carbon exchanges. Supervision by a third party or agent is not allowed.
- D. GAC shall be transported, delivered and placed in a careful manner to exclude all dust, dirt or deleterious material and to prevent physical damage to the particles.
- E. Prior to the return of the reactivated GAC, the BIDDER shall submit a certificated of analysis of the material demonstrating it meets the Performance Criteria set in Part 2 of this specification.
- F. All drainage shall be coordinated with plant personnel and any additional hose or attachments required will be the responsibility of the BIDDER to provide.

- G. The reactivated carbon shall not raise or lower the pH of the incoming water passing through the filter. CONTRACTOR shall be responsible for treating the carbon as needed to maintain the pH. Flushing water through the system is not an acceptable method of treatment.
- H. The actual exchange process will be coordinated with Shelby County Water Services to occur during the months of November-March. During this time, the pair of filters may be out of service while the media is reactivated.
- I. If Additive Alternate for Option A is selected by OWNER, the BIDDER shall acid wash GAC after reactivation to reduce leachable manganese from the material.
  - 1. Current testing performed by OWNER show total metals concentration of 1,420 mg/kg from the sample and TCLP value of 0.71 mg/L from the sample.
  - 2. Leachable manganese shall be reduced to 0.02 mg/L or less by acid washing. Leachable manganese testing shall be performed in accordance with Analytical Method EPA 6010, Preparation Method EPA 3010 and Leachate Method EPA 1311.
  - 3. Material's pH shall be neutralized so reactivated carbon does not raise or lower the pH of the incoming water passing through the filters. CONTRACTOR shall be responsible for treating the carbon as needed to maintain the pH. Flushing water through the system is not an acceptable method of treatment.
- J. Option B shall be for the removal, disposal, and installation of virgin carbon in accordance with AWWA B604-Latest Edition.

END OF SECTION