



## *PUBLIC WORKS CONTRACT*

### **SHELBY COUNTY and \_\_\_\_\_**

THIS AGREEMENT, entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, between the SHELBY COUNTY COMMISSION (herein called the COUNTY) and \_\_\_\_\_ (herein called the CONTRACTOR). Agreement concerns the **Custom Reactivation or Virgin Replacement of Granular Activated Carbon (GAC) Media at Shelby County South Water Treatment Plant.** (herein called the PROJECT).

### **WITNESSETH THAT:**

WHEREAS, the COUNTY desires to engage the CONTRACTOR to render technical, professional and construction services, hereinafter described in connection with the PROJECT as requested by the COUNTY officials.

NOW, THEREFORE, the COUNTY and the CONTRACTOR do mutually agree as follows:

#### **Section 1. CONTRACTOR**

The COUNTY agrees to engage the CONTRACTOR and the CONTRACTOR hereby agrees to perform the operations and maintenance services hereinafter set forth, within this agreement and the accompanying plans for the COUNTY, in a proper manner as determined by the COUNTY. CONTRACTOR must supply to the COUNTY the documents listed below and any others as required by the State of Alabama Bid Law prior to commencing work:

- A) Performance and Payment bonds with penalty equal to 100% of contract price
- B) Certificate of Insurance (with unconditional cancellation clause)
- C) Section 84 Business License

#### **Section 2. Scope of Services**

The CONTRACTOR shall provide construction and other professional and technical services to the COUNTY to include, but not necessarily be limited to, being responsible for **Option A: removal, transportation, reactivation, and reinstallation of GAC media adding virgin makeup as needed for any two filters at the Shelby County South Water Treatment Plant and acid wash/neutralization** or **Option B: removal, disposal, and installation of all virgin GAC media for any two filters at the Shelby County South Water Treatment Plant** in compliance with county rules and regulations, industry standards and Attachment "A" hereby made part of this contract.

#### **Section 3. Time of Performance**

Services to be provided shall commence upon execution of this contract and will continue for a period of time not to exceed 60 calendar days from the receipt of notice to proceed unless extended upon written agreement by

and between COUNTY and CONTRACTOR.

#### **Section 4. General Provisions**

- (a) *Personnel.* The CONTRACTOR warrants that it has the professional personnel capable of performing the services, as called for herein, in a satisfactory and proper manner, or will secure the services of such personnel as may be required to perform such services.
- (b) *Office Space.* The CONTRACTOR agrees to provide and maintain the office space and facilities required to perform all services as called for under this Agreement, at no expense to the COUNTY.
- (c) *Subcontracts.* None of the work or services covered by this contract shall be subcontracted without the prior approval of the COUNTY. Any work or services subcontracted hereunder shall be specified by written contract or agreement and shall be subject to each provision of this contract.
- (d) *Access to Materials.* The COUNTY agrees to make available to the CONTRACTOR any maps, documents, and planning materials or any other information in its possession or otherwise readily available, which has a direct bearing on the PROJECT, at no expense to the CONTRACTOR.
- (e) *Communications.* The representatives of the COUNTY and the CONTRACTOR to whom communications regarding the PROJECT, which is the subject of this contract, should be directed as follows:

(1) COUNTY:                      Shelby County – Michael Cain, P.E.  
    200 West College Street, Room 145  
    Columbiana, AL 35051  
    Telephone: 205/670-6540

(2) CONTRACTOR:

#### **Section 5. Compensation and Method of Payment**

- (a) For services satisfactorily rendered under this Contract and approved by COUNTY, the COUNTY agrees to pay the CONTRACTOR for fulfillment of the terms and conditions of this Contract in the amount of \$\_\_\_\_\_ as specified in the specifications and bid documents. Such payment shall, if due, be made monthly at the end of each calendar month, but in no case later than forty-five (45) days after the acceptance by COUNTY that the estimate and terms of the contract providing for partial payment have been fulfilled. In preparing estimates, the material delivered on the site, materials suitably store, and insured off-site, and preparatory work done may be taken into consideration by COUNTY. If the amount due by COUNTY is not in dispute and the amount payable is not paid within the forty-five (45) day period, the CONTRACTOR shall be entitled to interest from COUNTY at the rate assessed for underpayment of taxes under Section 40-1-44(a), Code of Alabama 1975, on the unpaid balance due. Interest payments shall not be due on payments made after the forty-five (45) day period because of administrative or processing delays at the close of the fiscal year. In making the partial payments, there shall be retained not more than five percent (5%) of the estimated amount of work done and the value of materials stored on the site or suitably stored and insured off-site, and after fifty percent (50%) completion has been accomplished and approved by COUNTY, no further retainage shall be withheld. The retainage as set out herein shall be held until final completion and acceptance of all work covered by the contract. Retainage shall be held until all work has been completed to COUNTY's satisfaction. CONTRACTOR, upon completion and acceptance by COUNTY of the work, shall give notice of completion of PROJECT by advertising in the Shelby County Reporter or Birmingham News. The advertisement must run once per week for four (4) weeks. CONTRACTOR shall provide to COUNTY the affidavit from the newspaper publisher and a copy of the notice published. Upon presentation of these documents and COUNTY acceptance final settlement will be made.

(b) PROVISIONS OUTLINING THE SOURCE OF SUFFICIENT FUNDS TO BE UTILIZED BY COUNTY TO FULFILL COUNTY'S OBLIGATIONS UNDER THIS CONTRACT (indicate which applies by entering an appropriate mark opposite the following):

  X   The funds to be utilized by COUNTY to fulfill its obligation under this contract are funds which are held by COUNTY at the time of the execution of this contract or will become available at a date following the execution of the contract.

       The source of funds to be utilized by COUNTY in fulfilling its obligation under this contract is a grant, award, or direct reimbursement from the State, federal government, or other source which will not become available until after the execution of this contract, and the provision of this contract requiring prompt payment shall not apply until COUNTY is in receipt of the funds as provided in the contract. Upon receipt of such funds, the forty-five (45) day requirement specified in this contract shall commence and shall be enforceable as provided herein.

## **Section 6. Terms and Conditions**

(a) *Termination - General.* This Agreement may be terminated at any time for any reason by the CONTRACTOR or Shelby County. The party desiring to terminate this Agreement shall give written notice to the other party of its intent to terminate.

(b) *Termination of Contract for Cause/Breach of Contract.* If through any cause, the CONTRACTOR shall fail to fulfill in a timely and proper manner his obligations under this contract, or if the CONTRACTOR shall violate any of the covenants, agreements or stipulations of this contract, the COUNTY shall thereupon have the right to terminate this contract by giving written notice to the CONTRACTOR of such termination and specifying the effective date of such termination. In such event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports or other materials prepared by the CONTRACTOR under this contract shall, at the option of the COUNTY, become its property and the CONTRACTOR shall be entitled to receive just and equitable compensation for any work satisfactorily completed on such documents or materials.

Notwithstanding the above, the CONTRACTOR shall not be relieved of liability to the COUNTY for damages sustained by the COUNTY by virtue of any breach of the Contract by the CONTRACTOR, and the COUNTY may withhold any payments to the CONTRACTOR for the purpose of set-off until such time as the exact amount of damages due the COUNTY from the CONTRACTOR is determined.

(c) *Termination for Convenience of the COUNTY.* The COUNTY may terminate this contract at any time by giving written notice to the CONTRACTOR of such termination and specifying the effective date thereof, at least thirty (30) days prior to the effective date of such termination. In such event, all finished or unfinished documents and other materials as described in the above clause, shall, at the option of the COUNTY, become its property.

If the Contract is terminated by the COUNTY as provided herein, the CONTRACTOR shall be entitled to receive just and equitable compensation for any work satisfactorily completed on said project.

(d) *Changes.* The COUNTY may, from time to time, request changes of the CONTRACTOR in the scope of services to be performed hereunder. Such changes, to be administered in accordance with the contract documents, including any increase or decrease in the amount of the CONTRACTOR's compensation, which is mutually agreed upon by and between the COUNTY and the CONTRACTOR, shall be incorporated in written amendments to this contract. The contract can be extended under mutually agreed provisions, through a written amendment to this document.

(e) *Assignability.* The CONTRACTOR shall not assign any interest on this contract, and shall not transfer any

interest in the same whether by assignment or novation, without the prior written consent of the COUNTY provided, however, that claims for money by the CONTRACTOR from the COUNTY under this contract may be assigned to a bank, trust company, or other financial institution without such approval. Written notice of any such assignment or transfer shall be promptly furnished to the COUNTY.

This Agreement shall be binding upon and inure to the benefit of any successor to Shelby County and such successor shall be deemed substituted for Shelby County under the terms of this Agreement. As used in this Agreement, the term "successor" shall include any person, firm, employer or other business entity which at any time, whether by merger, purchase or otherwise, which assumes or is assigned responsibility of Shelby County for the covered project. This Agreement shall also be binding upon and inure to the benefit of the CONTRACTOR, his heirs, executors and administrators.

(f) *Reports and Information.* The CONTRACTOR, at such times and in such forms as the COUNTY may require, shall furnish to the COUNTY such periodic reports as it may request pertaining to the work or services undertaken pursuant to this contract, the costs and obligations incurred or to be incurred in connection therewith, and any other matters covered by this contract.

(g) *Findings Confidential.* All of the reports, information, data, etc., given to or prepared or assembled by the CONTRACTOR under this contract are confidential and the CONTRACTOR agrees that they shall not be made available to any individual or organization without the prior written approval of the COUNTY.

(h) *Waiver of Trial by Jury.* The parties to this Agreement desire to avoid the additional time and expense related to a jury trial of any disputes arising hereunder. Therefore, it is mutually agreed by and between the parties hereto, and for their successors and assigns, that they shall and hereby waive trial by jury of any claim, counterclaim, or third-party claim, including any and all claims of injury or damages, brought by either party against the other arising out of or in any way connected with this Agreement and the relationship which arises here from. The parties acknowledge and agree that this waiver is knowingly, freely and voluntarily given, is desired by both parties, and is in the best interest of both parties.

(i) *Compliance with Local Laws.* The CONTRACTOR shall comply with all applicable laws, ordinances and codes of the U.S. Government, the State of Alabama and the City of Columbiana and the COUNTY(s).

(j) *Interest of Members of the COUNTY and Other Local Public Officials.* No officer, member or employee of the COUNTY and no member of its governing body, and no other public official of the governing body of the locality of localities in which the project is situated or being carried out, who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of this project, shall participate in any decision relating to this contract which affects his personal interest or the interest of any corporation, partnership, or association in which he is directly or indirectly interested or has any personal or pecuniary interest, direct or indirect, in this contract or the proceeds thereof. The CONTRACTOR shall take appropriate steps to assure compliance.

(k) *Interest of the CONTRACTOR.* The CONTRACTOR covenants that he presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this contract. The CONTRACTOR further covenants that in the performance of this contract, no person having any such interest shall be employed.

(l) *Immigration.* By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

## **Section 7. Additional Services of CONTRACTOR**

If authorized in writing by the COUNTY the CONTRACTOR shall furnish additional services which are not considered as an integral part of the Scope of Services herein. Under this Agreement, all costs for additional services will be negotiated as to activities and compensation. Upon mutual agreement between the COUNTY and the CONTRACTOR, and written authorization from the COUNTY to proceed, the CONTRACTOR will provide the additional service.

#### **Section 8. Tax Responsibilities of CONTRACTOR**

The parties to this Agreement agree that the CONTRACTOR is an independent firm or person and that the relationship created by this agreement is that of an independent CONTRACTOR. Further, the parties agree that the CONTRACTOR is not an employee of Shelby County, and will not be treated as such for federal income tax purposes. In this regard the CONTRACTOR acknowledges and accepts all tax responsibilities imposed by federal income tax laws, and any applicable state income tax laws, on self-employed persons, including but not limited to the responsibility of withholding from income the required amounts for federal income taxes, Social Security taxes, federal unemployment tax and applicable state and local income taxes.

#### **Section 9. Independent CONTRACTOR Relationship**

In the performance of the work, duties and obligations evolving under this Agreement, it is mutually understood and agreed that the CONTRACTOR is at all times serving as an independent CONTRACTOR providing Shelby County with services as a contractor and or independent contractor. Amounts paid to the CONTRACTOR by Shelby County as compensation for providing said services are for services purchased, and amounts paid to the CONTRACTOR shall be deemed to be fees for services to an independent CONTRACTOR and shall not be subject to any withholding. It is expressly understood that Shelby County is interested only in the results to be achieved, and the conduct and control of the work will be the sole responsibility of the CONTRACTOR. CONTRACTOR is not considered to be an agent or employee of Shelby County for any purpose and the CONTRACTOR will not be eligible to participate in any benefits Shelby County provides for its own employees. It is further understood and agreed that Shelby County does not agree to use CONTRACTOR exclusively. It is further understood and agreed that, except as provided herein, CONTRACTOR is free to contract for similar services to be performed for others during the term of this Agreement.

#### **Section 10. Indemnification and Liability**

The COUNTY shall not be liable to or for any injury to the person or property of any person, firm or corporation, and Contractor assumes full and complete responsibility therefore. Contractor shall remain insured under terms of a public liability insurance policy as described in the "Certificate of Insurance" attached hereto as Attachment "A" during the entire term of this contract and the performance of all work herein provided for. Contractor shall further indemnify COUNTY and hold COUNTY safe and harmless from any and all liability, lawsuits, judgments, attorney fees and other costs incurred by COUNTY in defending any claim or lawsuit made against COUNTY by any person, firm or corporation arising directly or indirectly out of any work performed by Contractor pursuant hereto or any breach or alleged breach of duty or responsibility of Contractor related thereto.

IN WITNESS WHEREOF, the COUNTY and the CONTRACTOR have caused this agreement to be executed by their duly authorized officers on the day and year first above written.

SHELBY COUNTY COMMISSION

\_\_\_\_\_  
By: Chad Scroggins, County Manager

\_\_\_\_\_  
Date

ATTEST:

\_\_\_\_\_

\_\_\_\_\_  
Date

**CONTRACTOR**

\_\_\_\_\_

\_\_\_\_\_  
Date

By: (Print Name): \_\_\_\_\_

ATTEST:

\_\_\_\_\_

\_\_\_\_\_  
Date



ATTACHMENT "A"  
***Custom Reactivation or Virgin Replacement of GAC Media  
Shelby County South Water Treatment Plant***

- 1) Prior to start of the Work, provide insurance certificate indicating insurance coverage acceptable to Shelby County. Please request the additional insured to read: Shelby County, its officers, agents, and employees, successors or assigns.
- 2) The contractor, person, firm, or corporation undertaking or contracting to undertake the herein described public works project agrees to use in the execution of the contract materials, supplies, and products manufactured, mined, processed, or otherwise produced in the United States or its territories, if the same are available at reasonable and competitive prices and are not contrary to any sole source specification implemented under [subsection \(f\) of Section 39-2-2](#), Code of Alabama(1975), as amended. In the event the contractor breaches the agreement to use domestic products, and domestic products are not used, there shall be a downward adjustment in the contract price equal to any realized savings or benefits to the contractor.
- 3) Contractor agrees that it will fully comply with the Immigration Reform and Control Act of 1986, as amended by the Immigration Act of 1990, and the Beason-Hammon Alabama Taxpayer and Citizen Protection Act, which makes it unlawful for an employer in Alabama to knowingly hire or continue to employ an alien who is or has become unauthorized with respect to such employment or to fail to comply with the I-9 requirements or fails to use E-Verify to verify the eligibility to legally work in the United States for all of its new hires who are employed to work in the State of Alabama. Without limiting the foregoing, Contractor shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien, and shall have an officer or other managerial employee who is personally familiar with the Contractor's hiring practices to execute an affidavit to this effect on the form supplies by Shelby County and return the same to Shelby County. Contractor shall also enroll in the E-Verify Program prior to performing any work, or continuing to perform any ongoing work, and shall remain enrolled throughout the entire course of its performance hereunder, and shall attach to its affidavit the E-Verify Program for Employment Verification and Memorandum of Understanding and such other documentation as Shelby County may require to confirm Contractor's enrollment in the E-Verify Program. Contractor agrees not to knowingly allow any of its subcontractors, or any other party with whom it has a contract, to employ in the State of Alabama any illegal or undocumented aliens to perform any work in connection with the Project, and shall include in all of its contracts a provision substantially similar to the paragraph. If Contractor receives actual knowledge of the unauthorized status of one of its employees in the State of Alabama, it will remove that employee from the project, jobsite or premises of Shelby County and shall comply with the Immigration Reform and Control Act of 1986, as amended by the Immigration Act of 1990, and the Beason-Hammon Alabama Taxpayer and Citizen Protection Act. Contractor shall require each of its subcontractors, or other parties with whom it has a contract, to act in a similar fashion. If Contractor violates any term of this provision, this Agreement will be subject to immediate termination by Shelby County. To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless Shelby County from any and all losses, consequential damages, expenses included but not limited to, attorney's fees, claims, suits, liabilities, fines, penalties, and any other costs arising out of or in any way related to Contractor's failure to fulfill its obligations contained in this paragraph. Additionally, contractor shall

provide County proof that you are in compliance with the immigration law by including a notarized E-Verify Memorandum of Understanding and provide your subcontractors notice of their compliance obligations and obtain from each a notarized Affidavit of Immigration Law Compliance-Subcontractor.

- 4) PROJECT must be coordinated with the COUNTY and its Water Treatment Plant Operators.
- 5) Construction documents include Bid Announcement, Proposal Page, Specifications for Custom Reactivation and/or Virgin Granular Activated Carbon are included as part of this Contract.
- 6) CONTRACTOR must maintain work space clean and free of debris.
- 7) Shelby County South Water Treatment Plant is located at: 7935 Highway 61, Wilsonville, AL 35186.
- 8) Any and all testing of spent carbon required by manufacturer shall be included in the cost of the reactivation of the GAC
- 9) CONTRACTOR will be allowed to have 2 filters out during the reactivation process, but the reactivation process will have to be closely coordinated with plant operations. The reactivated media will have to be replaced no more than 3 weeks after the media is removed.
- 10) CONTRACTOR shall coordinate the backwashing and all rewashing of the new media with the plant personnel during the reinstallation process.
- 11) Certificate of Analysis shall be sent to COUNTY with the results of the reactivation process of spent media prior to the transportation back to Shelby County South Water Treatment Plant.
- 12) Virgin GAC makeup above 15%, if recommended by the CONTRACTOR, must be agreed upon with the COUNTY, in writing, prior to adding the material. Cost shall be based on unit price per pound submitted in Bid Proposal.
- 13) Debarment, Suspension and Other Responsibility Matters Form.
- 14) By signing this contract, \_\_\_\_\_, represents and agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.



### Debarment, Suspension and Other Responsibility Matters Form

As required by Executive Order 12549, Debarment and Suspensions, and implemented at 2 CFR Part 2867, for the prospective participants in primary covered transactions, as defined at 2 CFR Part 2867.20(a), the applicant certifies that it and its principals:

- A. Are not presently debarred, suspended, proposal for debarment, declared ineligible, sentenced to a denial of federal benefits by a state or federal court, or voluntarily excluded from covered transactions by any federal department or agency:
- B. Have not within a three year period preceding this covered transaction been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) or private agreement or transaction, violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion or receiving stolen property, making false claims, or obstruction of justice, or commission of any offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;
- C. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph B. of this certification; and
- D. Have not within a three year period preceding this transaction had one of more public transactions (federal, state or local) terminated for cause or default.

I/we hereby certify that I/we are in complete compliance with all of the provisions noted above as of this date \_\_\_\_\_, 20\_\_\_\_.

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CUSTOM REACTIVATED AND/OR  
VIRGIN GRANULAR ACTIVATED CARBON  
SPECIFICATIONS

**PART 1 GENERAL**

**1.1 SCOPE OF WORK**

- A. It is the intent of this solicitation to establish a service/supply contract for Granular Activated Carbon (GAC) as follows:
  - 1. 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.
  - 2. 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.

**1.2 SITE INSPECTION:**

- A. Each BIDDER is strongly encouraged to visit the site and inform himself of all existing conditions. BIDDERS must call and schedule any such site visit with Shelby County Water Services' personnel. Contact Michael Cain, P.E. at (205) 670-6540.
- B. Shelby County South Water Treatment Plant address is:  
7935 Highway 61  
Wilsonville, Alabama 35186

**1.3 BIDDER QUALIFICATIONS**

- A. Bids will only be accepted from manufacturers of bituminous coal based reagglomerated activated carbon or BIDDERS that use a US produced coal based reagglomerated and own the facility used for the reactivation process.
- B. BIDDERS shall have a minimum of 15 years experience manufacturing and shall submit proof via a Manufacturer's Certificate and/or an Affidavit of Compliance.

- C. The BIDDER shall certify that it is the owner and operator of a reactivation facility.
- D. BIDDER shall furnish evidence of comprehensive general liability insurance in the minimum amount of \$2,000,000 to provide protection from any and all claims that may arise from the supplier's supply, shipping, installation, removal and reactivation/disposal of the spent carbon.
- E. BIDDER shall be capable of providing both virgin manufacturing and custom reactivation services.
- F. BIDDER'S virgin and reactivation manufacturing processes shall be NSF 61 certified.
  - 1. Failure to comply will be considered non-responsive and bid will be rejected.

## **PART 2 PRODUCTS**

### **2.1 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 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.

<b>Product Specification: CMR820</b>	<b>Value</b>	<b>Test Method</b>
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

## 2.2 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 mined and manufactured in the United States of America.
  2. 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 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.
  3. The GAC shall comply with AWWA B604-Latest Edition.
  4. The GAC shall comply with NSF 61.

5. The GAC shall conform to Food Chemical Codex when tested under the conditions of the test outlined in the Food Chemical Codex, Latest Edition.
6. 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
7. The GAC shall be capable of removing turbidity, color, tastes, odors and other organic contamination from water previously pretreated by conventional water treatment processes.
8. Data showing successful application of the GAC in municipal water plants including turbidity and organic contamination shall be submitted with bid.
9. 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.
10. 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.
11. A Certificate of Analysis shall be submitted to the OWNER certifying 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.	2.0	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.

### 2.3 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 cf

## **PART 3 EXECUTION**

### 3.1 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.

### 3.2 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