

AlexRenew
1800 Limerick Street
Alexandria, VA 22314
alexrenew.com

Board of Directors
John Hill, Chair
James Beall, Vice Chair
Rebecca Hammer, Sec'y-Treas
Mark Jinks
Moussa Wone
Chief Executive Officer
Justin Carl, PE
General Counsel
Amanda Waters



Request for Proposals for:

Biosolids Thermal Dryer System

RFP-26-011

March 10, 2026

Proposals shall only be submitted electronically via e-mail to Igor Scherbakov, Procurement Manager, at dryer-26-011@alexrenew.com on or before 2:00 PM ET, April 14, 2026. Paper copies will not be accepted. AlexRenew will conduct a non-mandatory Preproposal Meeting for this solicitation on March 17, 2026 from 1:00 PM to 2:00 PM ET virtually via Microsoft Teams and at AlexRenew's Environmental Center (1800 Limerick St., Alexandria, VA 22314), Conference Room 605.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

1 INTRODUCTION 1

2 BACKGROUND INFORMATION 2

3 PROPOSAL CONTENTS..... 7

4 EVALUATION OF PROPOSALS 12

5 PROPOSAL SUBMITTAL REQUIREMENTS 13

6 QUESTIONS AND ADDENDA 15

7 RIGHTS AND RESERVATIONS 16

8 MISCELLANEOUS 18

LIST OF ATTACHMENTS

- ATTACHMENT A. ALEXRENEW’S GENERAL TERMS AND CONDITIONS
- ATTACHMENT B. TECHNICAL REQUIREMENTS
- ATTACHMENT C. RFP-26-011 CHECKLIST
- ATTACHMENT D. SCC REGISTRATION FORM

THIS PAGE INTENTIONALLY LEFT BLANK

1 INTRODUCTION

The City of Alexandria, Virginia Sanitation Authority d/b/a AlexRenew submits this Request for Proposals (RFP) to solicit Proposals from biosolids thermal dryer system manufacturers (Respondents) interested in providing technical proposals to AlexRenew. The biosolids thermal dryer system is part of a larger project to upgrade AlexRenew's solids handling and treatment systems, called the Biosolids Diversification Project.

It is anticipated that AlexRenew will preselect the equipment based on Respondent Proposals through this Procurement and the selected Respondent will enter into a contract (Contract) directly with AlexRenew. It is then anticipated that the equipment will be installed by a contractor through an existing Construction Manager at-Risk (CMAR) contract. This solicitation is being conducted as a competitive negotiation for goods and non-professional services, in accordance with Virginia Code § 2.2-4302.2.

A Respondent's Proposal must meet all requirements established by this RFP. Requirements of this RFP generally will use the words "shall", "will", or "must" (or equivalent terms) to identify a required item that must be submitted with a Respondent's Proposal. Failure to meet any RFP requirement may render a Respondent's Proposal non-responsive. The extent to which a Respondent meets or exceeds evaluation factors will be rated by AlexRenew and be reflective of AlexRenew's scoring (in its sole discretion) of a Respondent's Proposal.

1.1 Definitions

General and specific terms of reference used in this RFP include, but are not limited to:

- A. **Biosolids Diversification Project:** AlexRenew's project to upgrade its solids handling and treatment systems, also known as the Solids Upgrade Program.
- B. **Business Day:** Any day on which the Owner is open for business.
- C. **CMAR:** Construction Manager at-Risk responsible for installation and commissioning the biosolids thermal dryer system.
- D. **Contract:** The contract resulting from this solicitation.
- E. **Engineer:** The Owner's Engineer of Record for the Solids Upgrade Program.
- F. **Successful Respondent:** The Respondent selected to perform the services associated with this solicitation.
- G. **Procurement:** The process for selecting the Respondent to provide services.
- H. **Proposal:** The document submitted by a Respondent in response to this RFP, including any completed forms, attachments, appendices, and exhibits.
- I. **Respondent:** The entity that submits a Proposal in response to this RFP.
- J. **Request for Proposals (RFP):** This Procurement document.

2 BACKGROUND INFORMATION

2.1 Overview of AlexRenew

Established in 1952 by the Alexandria City Council, AlexRenew's mission is to clean wastewater to protect public health and Alexandria's waterways. AlexRenew is governed by an Alexandria City Council-appointed five-member citizen Board of Directors and is a political subdivision of the Commonwealth of Virginia created under the Virginia Water and Waste Authorities Act. AlexRenew is an independent, special-purpose government unit with administrative and fiscal independence from the City of Alexandria. AlexRenew serves more than 300,000 people in the City of Alexandria and parts of Fairfax County, Virginia. It currently maintains capital assets valued at approximately \$1.2 billion and treats approximately 38 MGD (up to 116 MGD during wet weather) of wastewater at its water resource recovery facility (WRRF), located in Alexandria, Virginia.

The WRRF treats wastewater through preliminary, primary, and secondary treatment processes followed by chemical addition for phosphorus removal, sedimentation, filtration, ultraviolet (UV) disinfection, and post aeration. Solids processing includes gravity thickening of primary and tertiary sludge, mechanical thickening of waste-activated sludge, centrifuge dewatering, lime addition, and landfill disposal.

2.2 Overview of AlexRenew's Biosolids Diversification Project

In July 2022, AlexRenew entered into an agreement with the Engineer (Stantec) to develop a long-term plan (Plan) to upgrade and build resilience into its solids processing infrastructure. The Plan evaluated the reliability and functionality of AlexRenew's solids infrastructure and identified adaptations necessary to meet future regulatory requirements.

The Plan identified short-term upgrades to improve reliability of aging equipment and maintain permit compliance; medium-term solutions to reduce biosolids volume, diversify end-use options, and minimize regulatory risk; and long-term concepts to adapt future solids management scenarios. This roadmap provides a structured approach to achieving a sustainable and resilient solids management program at AlexRenew.

The short-term upgrades focus on upgrading or replacing equipment and processes at the end of their useful life. Dewatering centrifuges, thickening centrifuges, and digester sludge heat exchangers are being replaced in-kind, while the gravity thickeners and digester gas mixing systems are being upgraded to improve process efficiency, operations, and maintenance. In addition, the pre-pasteurization system is being decommissioned to improve process efficiency and increase available space for future improvements.

The medium-term upgrades involve the addition of a thermal dryer, which will be a significant change to how biosolids are processed daily. Digested sludge will be mechanically dewatered with centrifuges and conveyed to a thermal dryer cake feed bin, which then feeds the rotary drum dryer system. Pellets of uniform size will be formed during the thermal drying process. The pellets will be transferred to two product silos and hauled offsite for land application or other use as deemed by AlexRenew as a Class A biosolids product. Biogas generated in the digesters can be beneficially utilized in dryers and low-pressure steam boilers. The drum dryers will be dual fuel with natural gas as secondary fuel.

In May 2024, AlexRenew entered into an agreement with the CMAR (PC Construction) to construct the short-term and medium-term upgrades.

2.3 General Contract Terms and Conditions

AlexRenew’s general terms and conditions are provided as Attachment A.

2.4 Technical Requirements

The proposed solution shall comply with the Technical Requirements summarized in this section and detailed in Attachment B. Respondents are solely responsible for reviewing Attachment B in totality. If a Respondent cannot meet a technical requirement, it must provide a written explanation in the exclusions section of its Proposal. Minimum system requirements are outlined in Attachment B, however, proposed solutions are not limited to the equipment specifically listed in Attachment B. Each Respondent may include in its Proposal any additional or alternative components necessary to ensure complete system functionality, performance, reliability, and safety.

Table 2.1. Dewatered Sludge Feedstock Design Criteria

| Parameter | Specification/Value |
|---|---|
| Feed sludge type | Municipal, dewatered cake, anaerobically digested, screened, amended with ferric chloride |
| Feed cake total solids content (minimum/ maximum) | 20% TS/ 27% TS |
| Dry product total solids content (minimum/ maximum) | 92% TS/ 95% TS |

Table 2.2 Biosolids Thermal Dryer Design Criteria

| Parameter | Specification/Value |
|---|--|
| Dryer type | Rotary drum |
| Number of dryer trains (duty/ standby) | 2 total (1 duty/ 1 standby) |
| Required runtime | 24 hours/ day; 7 days/week |
| Minimum turndown | 30% of design capacity |
| Design evaporative capacity per dryer train | 13,228 lbs H2O/hr |
| Fuel type | Dual fuel (natural gas and digester gas) |
| Emissions | Facility is located in an area of ozone-non-attainment. Air pollution controls for VOCs and ultra-low NOx will potentially be required |

Table 2.3. Maximum Allowable Footprint and Dimensions

| Parameter | Specification/Value |
|--------------------------------------|---------------------------|
| Dryer Train No. 1 | Indoors |
| Allocated Building Footprint – L X W | 105 ft x 65 ft |
| Maximum Building Height | 80 ft |
| Required Clearances | 15 ft |
| Dryer Train No. 2 | Indoors |
| Allocated Building Footprint – L X W | 105 ft x 65 ft |
| Maximum Building Height | 80 ft |
| Required Clearances | 15 ft |
| Final Product Storage and Offloading | Outdoors |
| Allocated Footprint - L x W | 80 ft x 24 ft |
| Maximum System Height | 55 ft |
| Required Clearances | 15 ft |
| Regenerative Thermal Oxidizers | Outdoors |
| Allocated Footprint - L x W | 115 ft x 20 ft |
| Maximum System Height | 55 ft from finished floor |
| Required Clearances | 10 ft |

The scope of supply for the biosolids thermal drying system generally includes, but is not limited to, the following (see Specification Section 42 31 00 Gas Dryers in Attachment B):

1. Two (2) wet material bins with live bottom screws, each with two (2) cake pumps (total of four cake pumps)
2. Two (2) complete drum drying and pelletization systems with emissions controls
3. Two (2) pneumatic product transport systems
4. Two (2) dry product storage silos
5. One (1) nitrogen storage tank and vaporizer system

2.5 Proposed Scope of Services

AlexRenew intends to use this process to select a qualified Respondent to furnish a fully integrated and automated biosolids thermal drying system. The scope includes all ancillary equipment necessary to deliver a fully functional and operable system, and field services to support successful installation, commissioning, start-up, and turnover.

Services under this Contract are expected to occur in the three following phases:

- **Phase 1: Design Services.** Preparation and submission of shop drawings, design calculations, control narratives, equipment data, and other engineering documentation required for review and coordination with the project design. Refer to Article 1.04 Submittals in Specification Section 42 31 00 Gas Dryers (Attachment B) for the complete list of submittals.
- **Phase 2: Fabrication and Delivery.** Manufacture, factory testing, and delivery of the biosolids thermal drying system and associated equipment as outlined in Attachment B.

- Phase 3: Field Services and Commissioning.** Provide technical field support for installation, testing, commissioning, start-up, and training. Field support services are specified in Article 1.08 Installation Supervision, Commissioning and Training in Specification Section 42 31 00 Gas Dryers (Attachment B).

It is anticipated that most of the new dryer system will be located within the footprint of an existing facility containing other wastewater treatment equipment and below grade rooms. A draft layout is provided in Attachment B.

Following evaluation, selection, and successful negotiation AlexRenew will enter into a Contract with a Respondent to perform the negotiated scope of services. Upon completion of Phase 1, the contract will be assigned to the CMAR such that the Successful Respondent’s contract obligations for Phases 2 and 3 will be directly with the CMAR. AlexRenew intends to operate and maintain the biosolids thermal drying system with its own staff. However, a short-term (e.g., 1 year) operations contract may be requested during negotiations.

2.6 Procurement and Project Schedule

AlexRenew anticipates conducting the Procurement and executing the Project in accordance with the list of milestones outlined in Tables 2.4 and 2.5, respectively. These milestones are subject to revision, and AlexRenew, at their sole discretion, reserves the right to modify the milestones as it finds necessary.

AlexRenew will conduct a non-mandatory Preproposal Meeting virtually and at AlexRenew’s Environmental Center (1800 Limerick St., Alexandria, VA 22314) in Conference Room 605 at the date and time indicated in Table 2.4. The virtual meeting can be accessed at the following link: [join the March 17, 2026 Preproposal Conference virtually via Microsoft Teams](#). The Proposal Meeting will include a site tour for in-person attendees. Anyone wishing to participate in the site tour shall bring their own personal protective equipment including a hard hat, safety vest, and closed-toe shoes.

Table 2.4. Procurement Schedule

| Date | Activity |
|----------------|---|
| March 10, 2026 | Issue RFP |
| March 17, 2026 | Preproposal Meeting 1:00 PM to 2:00 PM Local Time |
| March 31, 2026 | Last Date to Submit Questions Regarding RFP; 2:00 PM Local Time |
| April 7, 2026 | Last Day for AlexRenew to Issue Addenda |
| April 14, 2026 | Proposals Due; 2:00 PM Local Time |
| May 28, 2026 | Notifications to Respondents of Shortlist |
| July 2026 | Contract Approval by AlexRenew Board |
| August 2026 | Anticipated Contract Award and Notice to Proceed |

Table 2.5. Anticipated Project Schedule

| Approximate Date | Activity |
|-------------------------|---|
| Summer 2026 | Notice to Proceed with Phase 1 |
| Winter 2026-2027 | Contract Assignment to CMAR for Phase 2 |
| Winter 2026-2027 | Approved Shop Drawings/Release for Fabrication |
| Summer 2029 | Delivery of Biosolids Thermal Dryer System Equipment |
| Winter 2029-2030 | Commissioning of Biosolids Thermal Dryer System Equipment |

The schedule dates are approximate and are non-binding. They are provided for Respondents information only. However, similar dates and durations as well as milestones may be included in the Contract between AlexRenew and Successful Respondent. For the required design submittal schedule see Attachment B (Specification Section 42 31 00 Gas Dryers, Article 1.04 Submittals).

2.7 Point of Contact

The sole AlexRenew point of contact (POC) for matters related to Procurement shall be:

Igor Scherbakov
Procurement Manager
dryer-26-011@alexrenew.com

The POC is the only individual authorized to discuss this Procurement with any interested parties, including Respondents. All communications outside of the Preproposal Meeting and with the POC about this Procurement shall be in writing, as required by applicable provisions of this RFP.

Prior to the award of the Contract resulting from this solicitation, Respondents are prohibited from contacting AlexRenew’s staff other than the POC identified above. Respondents are also prohibited from contacting any member of AlexRenew’s Board and any other staff or entities contributing to the development of the Procurement. Any such contact may result in disqualification from participating in this Procurement.

AlexRenew disclaims the accuracy of information derived from any source other than the POC, and the use of any such information is at the sole risk of the Respondent.

3 PROPOSAL CONTENTS

Respondents are advised that the Proposal shall include specific information that will demonstrate the qualifications and experience required by this RFP. The Proposal shall consist of all information required under this Section 3, in the order and format specified in Section 5.

Respondents are advised that AlexRenew reserves the right to conduct an independent investigation of any information, including prior experience and performance, identified in the Proposal by contacting project references, accessing public information, contacting independent parties, or any other means. AlexRenew further reserves the right to request additional information from a Respondent during the evaluation of that Respondent's Proposal. If the Respondent has concerns about information included in its Proposal that may be deemed confidential, the Respondent shall adhere to the requirements set forth by Section 8.6.

3.1 Cover Page

Include a cover page that contains the following title "Proposal for Contract 26-011: Biosolids Thermal Dryer System". The cover shall also include the name of the Respondent. The cover may contain other items (photos, logos, etc.) at the discretion of the Respondent.

3.2 Table of Contents

Include a Table of Contents outlining the contents of the Proposal that allows for at least three (3) levels of content to address the level of detail provided in the document.

3.3 Submittal Letter

Each Respondent shall provide a Submittal Letter on the Respondent's letterhead that formally conveys the Proposal. The letter must be signed by the Respondent's authorized representative who is empowered to sign such material and to commit the Respondent to the representations and obligations contained in the Proposal. If the Respondent is a corporation, an authorized officer shall sign his/her name and indicate his/her title beneath the full corporate name.

3.4 Overview of Respondent and Respondent's Support Capabilities

The Respondent shall provide sufficient information to enable AlexRenew to understand and evaluate the Respondent and its Support Capabilities. The Respondent shall provide:

- A. A brief overview of the Respondent's corporate organization, including number of staff and office locations.
- B. A summary of anticipated personnel the Respondent that will be involved in the scope of this Project, including:
 1. An organization chart of the anticipated structure for the Project. Indicate the key point of contact for AlexRenew who will be involved in the scope of this Project.
 2. Summary of the experience of the 3-5 anticipated key personnel with specific projects listed and role performed on the project. For two projects, provide a project reference and contact information that includes the Reference's name, title, phone number, and e-mail address.

3. Full resumes (up to two (2) pages maximum each) for the 3-5 anticipated key personnel in Appendix A of the proposal. The resumes should highlight experience in the proposed or similar role.
- C. Information on the Respondent's support capabilities:
1. Identify, in table format, the number of design staff with technical capabilities to support this project, including years of relevant experience with municipal dryer systems and staff location.
 2. Identify, in table format, the number of services and maintenance staff with capabilities to support this project, including years of relevant experience with municipal dryer systems, and staff location.
 3. Description of Respondent remote service system support capabilities.
 4. Description of step-by-step process for providing technical support in response to different inquiries (e.g. service call for failed equipment, service call for control issues, etc.) from AlexRenew.
 5. Guaranteed response time to a service call. A response is considered a phone call, email, or in-person meeting to respond to an inquiry.

3.5 Technical and Operational Performance

The Respondent shall provide sufficient information to enable AlexRenew to understand and evaluate the Respondent's Technical and Operational Performance. The Respondent shall provide:

- A. Completed proposed scope of supply (i.e., dryers, auxiliary equipment, motors, valves, instrumentations, control panels, MCCs, field support services, etc.)
- B. As Appendix B, a confirmation checklist of the Technical Specification (Attachment B) indicating if the Respondent's proposal meets each requirement. Use a "check mark" to indicate compliance. Use an "X" to indicate non-compliance. Provide written justification on a separate page for each exception.
- C. Layout drawings confirming that the proposed equipment fits in the allocated space specified in Section 2.4.
- D. As Appendix C, a preliminary equipment list, motor list and load list. Clearly indicate in the equipment list which components are manufactured by your company and which are manufactured by another original equipment manufacturer (OEM). Include a list of the locations of the factories.
- D. Recommended spare parts list for dryer system, including all auxiliary components.
- E. Can you provide a one-year operations contract with sufficient coverage for 24/7 dryer operation with AlexRenew staff performing an observatory role?
- F. Provide a brief description of your company's typical start-up and commissioning plan for a system of this size and complexity. What is the expected duration for all testing and commissioning (i.e., loop testing, dry/ functional testing, successful performance testing, etc.)? Include number of field staff, number of trips and number of days onsite you typically require (not including training).

- G. As Appendix D, the Respondent's draft warranty certification that meets the requirements of Attachment B.

3.6 Demonstrated Experience

The Respondent shall provide sufficient information to enable AlexRenew to understand and evaluate the Respondent's historical experience providing similar scope of services and supply of biosolids thermal dryer systems.

The Respondent shall provide six (6) example projects that demonstrate experience in the manufacture, installation, and commissioning of biosolids thermal drum dryer systems in municipal wastewater facilities in the United States. The projects shall have been commissioned in the last ten (10) years and have one (1) year of successful performance. For each project, complete Table 3.1.

Provide a complete installation list of biosolids drum dryer systems in United States in Appendix E. The list should include the year the system was commissioned, model number, number of units, evaporative capacity, location, owner name and sludge type.

Table 3.1. Related Project Experience Summary

| | | | |
|---|--|-------------------------------|--|
| Project Name: | | | |
| Location: | | | |
| Project Description | | Total Contract Value | |
| | | Notice to Proceed Date | |
| | | Actual Completion Date | |
| | | Owner/Client Reference | |
| | | Organization | |
| | | Name | |
| | | Role | |
| | | Phone | |
| | | E-mail | |
| Evaporative Capacity and Number of Dryer Trains | | | |
| Type of Sludge Dried | | | |
| Model Number | | | |

3.7 Other Forms and Required Documents

- A. **RFP-26-011 Checklist.** Respondents shall complete the RFP-26-011 Checklist provided as Attachment C and include it in the Proposal as Appendix F. The purpose of the RFP Checklist is to aid the Respondent in ensuring all submittal requirements have been included and to provide a page reference indicating the location of each submittal requirement in the Respondent’s Proposal. The RFP Checklist is provided to assist the Respondent in preparing its Proposal as a guide only – it does not absolve the Respondent from meeting all requirements of the RFP.

- B. **SCC Registration.** Any Respondent organized as a stock or non-stock corporation, limited liability company, business trust, or limited partnership or registered as a limited liability partnership shall be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law. The proper and full legal name of the firm or entity and the identification number issued to the Respondent by the Virginia State Corporation Commission must be written in the space provided on the State Corporation Commission (SCC) Form provided as Attachment G. Any Respondent that is not required to be authorized to transact business in the Commonwealth shall include in its proposal a statement describing why the Respondent is not required to be authorized.

Execute and return the SCC Registration Form for each Respondent business entity. Provide the name, registration number, type of corporation, and status.

4 EVALUATION OF PROPOSALS

AlexRenew will review the Proposals for responsiveness to the requirements of this RFP and evaluate all responsive Proposals according to factors and weightings outlined in Table 4.1.

Table 4.1. Evaluation Factors and Weighting

| Evaluation Factor | Weighting (percentage) |
|---------------------------------------|-------------------------------|
| Manufacturer and Support Capabilities | 20 |
| Technical and Operational Performance | 40 |
| Demonstrated Experience | 40 |

Each evaluation factor has an assigned maximum weight as indicated above. The Submittal Letter and all additional requirements and submittals from Section 3.7 are considered pass/fail submissions.

AlexRenew may identify two (2) or more proposals deemed fully qualified, responsible, and suitable. These Respondents may be invited to individual discussions to demonstrate their ability to provide the services required under this Contract. Respondents selected for individual discussions will be encouraged to elaborate on their approach, Key Personnel, experience, and qualifications. Details will be provided when individual discussions are scheduled.

At the conclusion of the individual discussions, AlexRenew may enter into negotiations with two or more of the highest ranked Respondents. The parties may negotiate changes in the Proposal if deemed in the best interest of AlexRenew. Negotiations may include, but are not limited to:

- A. Contract Terms
- B. Contract start dates and durations
- C. Contract scope of work and deliverables
- D. Staffing levels and hours
- E. Proposed personnel
- F. Contract pricing

The selected Respondent(s) will provide contract pricing for all services listed under Section 2.5, including but not limited to design submittals, fabrication, delivery and field services. All terms and conditions will be negotiated and included in the Contract. Following the completion of Phase 1 services, the Contract will be assigned to the CMAR. As such, the CMAR may participate in contract negotiations with AlexRenew and the selected Respondent(s).

Should AlexRenew determine, at its sole discretion, that only one Respondent is fully qualified, or that one Respondent is clearly more highly qualified and suitable than the others under consideration following receipt and evaluations of proposals, a contract may be negotiated and awarded to that Respondent without creating a Shortlist or having further individual discussions.

When AlexRenew has decided to award the Contract and successfully completed negotiation of the Contract with such Respondent, the result of such decision will be posted on the AlexRenew website.

5 PROPOSAL SUBMITTAL REQUIREMENTS

5.1 Format

This Section describes the submittal and format requirements that all Respondents must satisfy in submitting a Proposal. Failure of any Respondent to submit its Proposal in accordance with this RFP may result in rejection.

Proposals shall be organized as outlined in Table 5.1.

Table 5.1. Proposal Outline

| Proposal Section | Contents | Page Limit |
|-------------------------|--|--------------------|
| -- | Cover Page | N/A |
| -- | Table of Contents | N/A |
| 1 | Submittal Letter | 1 |
| 2 | Overview of Respondent and Respondent's Support Capabilities | 5 |
| 3 | Technical and Operational Performance | 15 |
| 4 | Demonstrated Experience | 5 |
| Appendix A | Anticipated Personnel Resumes | 2 pages per resume |
| Appendix B | Confirmation Checklist of the Technical Specification | N/A |
| Appendix C | Preliminary Equipment, Motor, and Load List | N/A |
| Appendix D | Respondent's Draft Warranty Certification | N/A |
| Appendix E | USA Installation List | N/A |
| Appendix F | RFP 26-011 Checklist | N/A |
| Appendix G | SCC Registration Form | N/A |

Pages shall be 8.5-inch by 11-inch with minimum of 0.5-inch margins. Minimum font size shall be 11 point. Figures and tables may use a minimum font size of 9 point. All content shall be in English.

Any 11-inch by 17-inch pages will count as two (2) page-equivalents and shall be formatted to print single-sided.

Unnecessarily elaborate materials beyond that sufficient to present a complete and effective Proposal are not desired.

5.2 Submission

Proposals must be delivered electronically VIA EMAIL ONLY to the contact listed in section 2.7, marked with the Respondent's name no later than the time and date deadline specified in this RFP, with the following E-Mail Subject: "Proposal Submission: RFP 26-011 [RESPONDENT'S NAME]"

Proposals received after the submission date and time prescribed herein will not be considered and will be returned to the Respondent. If confirmation of Proposal receipt is needed, please use the "Request Delivery Receipt" or similar email option when submitting the Proposal. Paper copies of Proposals will not be accepted.

6 QUESTIONS AND ADDENDA

6.1 Questions and Clarifications

All questions and requests for clarification regarding this Procurement shall be submitted to the POC via e-mail only. No requests for additional information, clarification, or any other communication should be directed to any other individual. NO ORAL REQUESTS FOR INFORMATION WILL RECEIVE A RESPONSE.

All e-mail communications from Respondents shall specifically reference the correspondence as being associated with “Biosolids Thermal Dryer System RFP- 26-011.”

All questions or requests for clarification must be submitted by the due date and time set forth in Section 2.6. Questions or clarifications requested after such date and time will not be answered, unless AlexRenew elects, in their sole discretion, to do so.

6.2 Addenda

Changes to the Procurement, in the form of addenda, may be issued between the release and submission dates. Receipt and incorporation of all addenda into the Proposal must be acknowledged in the RFP-26-011 Checklist. Notice of addenda will be posted on eVA at <http://www.eva.virginia.gov> and the AlexRenew website <http://alexrenew.com>. All potential Respondents are encouraged to monitor these web pages for the most current addenda.

7 RIGHTS AND RESERVATIONS

In connection with this Procurement, AlexRenew reserves all rights (which rights shall be exercisable by the AlexRenew at their sole discretion) available to it under applicable law, including without limitation, the following, with or without cause and with or without notice:

- A. The right to cancel, withdraw, postpone, or extend this RFP in whole or in part at any time prior to the execution by AlexRenew of a contract, without incurring any obligations or liabilities.
- B. The right to issue a new RFP.
- C. The right to reject any and all submittals, responses, and Proposals received at any time.
- D. The right to modify any or all dates set or projected in this RFP.
- E. The right to terminate evaluations of responses received at any time.
- F. The right to suspend and terminate the Procurement process for this Contract, at any time.
- G. The right to revise and modify, at any time prior to the Proposal submittal date, factors it will consider in evaluating responses to this RFP and to otherwise revise its evaluation methodology. Should any modifications occur, Respondents will be notified.
- H. The right to waive or permit corrections to data submitted with any response to this RFP until such time as AlexRenew declares in writing that a particular stage or phase of its review of the responses to this RFP has been completed and closed.
- I. The right to issue addenda, supplements, and modifications to this RFP, including but not limited to modifications of evaluation factors or methodology and weighting of evaluation factors.
- J. The right to permit submittal of addenda and supplements to data previously provided with any response to this RFP until such time AlexRenew declares in writing that a particular stage or phase of its review of the responses to this RFP has been completed and closed.
- K. The right to hold meetings and conduct discussions and correspondence with one or more of the Respondents responding to this RFP to seek an improved understanding and evaluation of the responses to this RFP.
- L. The right to seek or obtain data from any source that has the potential to improve the understanding and evaluation of the responses to the RFP, including the right to seek clarifications from Respondents.
- M. The right to permit Respondents to add or delete entities and/or Key Personnel until such time as AlexRenew declares in writing that a particular stage or phase of its review has been completed and closed.
- N. The right to add or delete Respondent responsibilities from the information contained in this RFP.
- O. The right to appoint and change appointees of any members of AlexRenew's evaluation team.
- P. The right to use assistance of technical and legal experts and consultants in the evaluation process.
- Q. The right to waive deficiencies, informalities and irregularities in a Proposal, accept and review a non-conforming Proposal, or seek clarifications or supplements to a Proposal.

- R. The right to disqualify any Respondent that changes its submittal without AlexRenew approval.
- S. The right to respond to all, some, or none of the inquiries, questions and/or requests for clarification received relative to the RFP.

8 MISCELLANEOUS

8.1 Remedies

Respondents may refer to Sections 2.2-4357 through 2.2-4366 of the Code of Virginia to determine their remedies concerning this competitive process.

8.2 No Obligations for Proposal Costs

AlexRenew assumes no obligations, responsibilities, nor liabilities, fiscal or otherwise, to reimburse all or part of the costs incurred or alleged to have been incurred by parties considering a response to and/or responding to this Procurement. All such costs shall be borne solely by each Respondent.

8.3 Obligation to Keep the Team Intact

The team proposed by Respondent, including but not limited to the Respondent's organizational structure and other individuals identified pursuant to Sections 3.4 and 3.5, shall remain intact for the duration of the Procurement and, if the Respondent is awarded the Contract, the duration of the Contract. The Respondent shall not change or substitute any Key Personnel except due to voluntary or involuntary termination of employment, retirement, death, disability, incapacity, or as otherwise approved by AlexRenew. Any proposed change of Key Personnel must be submitted in writing to the POC, who, in his/her sole discretion, will determine whether to authorize a change. Unauthorized changes to the Respondent's organizational structure and/or Key Personnel at any time during Procurement may result in the elimination of the Respondent from further consideration. Job duties and responsibilities of Key Personnel shall not be delegated to others for the duration of the Contract.

8.4 Conflict of Interest

Each Respondent shall require its proposed team members to identify potential conflicts of interest or a real or perceived competitive advantage relative to this Procurement. Respondents are notified that prior or existing contractual obligations between a company and a federal or state agency relative to the Project may present a conflict of interest or a competitive advantage. If a potential conflict of interest or competitive advantage is identified, the Respondent shall provide the pertinent information in a separate letter addressed to the POC along with its Proposal.

AlexRenew, in its sole discretion, will make a determination relative to potential organizational conflicts of interest or a real or perceived competitive advantage, and its ability to mitigate such a conflict. An organization determined to have a conflict of interest or competitive advantage relative to this Procurement that cannot be mitigated, shall not be allowed to participate in this Procurement. Failure to abide by AlexRenew's determination in this matter may result in a Proposal being declared non-responsive.

8.5 Ethics in Public Contracting Act

AlexRenew may, in its sole discretion, disqualify the Respondent from further consideration for the award of the Contract if it is found after due notice and examination by AlexRenew that there is a violation of the Ethics in Public Contracting Act, § 2.2-4367 et seq. of the Virginia Code, or any similar statute involving the Respondent in the procurement of the Contract.

8.6 Virginia Freedom of Information Act

All Proposals submitted to AlexRenew become the property of AlexRenew and are subject to the disclosure requirements of § 2.2-4342 of the Virginia Public Procurement Act and the Virginia Freedom of Information Act (FOIA) (§ 2.2–3700 et seq. of the Code of Virginia). Respondents are advised to familiarize themselves with the provisions of each Act referenced herein to ensure that documents identified as confidential will not be subject to disclosure under FOIA. In no event shall AlexRenew be liable to a Respondent for the disclosure of all or a portion of a Proposal submitted pursuant to this request not properly identified as confidential.

If a Respondent has special concerns about information which it desires to make available to AlexRenew but which it believes constitutes a trade secret, proprietary information, or other confidential information exempted from disclosure, such Respondent should specifically and conspicuously designate that information as such in its Proposal and state in writing why protection of that information is needed. The Respondent should make a written request to AlexRenew's POC. The written request shall:

- A. Invoke such exemption upon the submission of the materials for which protection is sought;
- B. Identify the specific data or other materials for which the protection is sought;
- C. State the reasons why the protection is necessary; and
- D. Failure to take such precautions prior to submission of a Proposal may subject confidential information to disclosure under the Virginia FOIA.

Respondents shall not designate as trade secrets or proprietary information (a) the Respondent's entire Proposal OR (B) any portion of the Proposal that does not contain trade secrets or proprietary information.

Nothing contained in this provision shall modify or amend requirements and obligations imposed on AlexRenew by applicable law, and the applicable law(s) shall control in the event of a conflict between the procedures described above and any applicable law(s).

In the event AlexRenew receives a request for public disclosure of all or any portion of a Proposal identified as confidential, AlexRenew will attempt to notify the Respondent of the request, providing an opportunity for such Respondent to assert, in writing, claimed exemptions under the FOIA or other Virginia law. AlexRenew will come to its own determination whether or not the requested materials are exempt from disclosure. In the event AlexRenew elects to disclose the requested materials, it will provide the Respondent with advance notice of its intent.

8.7 Compliance with the Law in Virginia

Failure to comply with the law regarding those legal requirements in Virginia (whether federal or state) about a Respondent's ability to lawfully offer and perform any services proposed or related to the Project may result in AlexRenew determining that the Respondent is non-responsible, and/or that the Respondent should be disqualified from participation in the Procurement.

8.8 Debarment and Other Adverse Contract Actions

If any Respondent entity or individual serving as an officer, director, owner, project manager, procurement manager or chief financial officer of the Respondent entity has experienced one or more of the following incidences over the past five (5) years, the Respondent shall provide a narrative (3 pages or less) to describe and/or explain the circumstances associated with such incidence:

- A. Any contract has been terminated due to its default.
- B. Any criminal conviction, and any violation of any federal, state, or local statute or regulation, or of any court order addressing or governing antitrust, public contracting, employment discrimination, false claims, or prevailing wages.
- C. Any debarment, or any consideration for debarment, on public contracts by any federal, state, or local government, or by any agency of such government.

8.9 Non-Discrimination

AlexRenew does not discriminate against faith-based organizations in accordance with the Code of Virginia, § 2.2-4343.1 or against a Respondent because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment in the performance of its procurement activity.

THIS PAGE INTENTIONALLY LEFT BLANK

ATTACHMENT A

AlexRenew General Terms and Conditions

THIS PAGE INTENTIONALLY LEFT BLANK

ALEXRENEW TERMS AND CONDITIONS

| | |
|------------------|--|
| ARTICLE 1 | THE PROJECT – <i>Contract-specific</i> |
| ARTICLE 2 | SERVICES OF CONTRACTOR – <i>Contract-specific</i> |
| ARTICLE 3 | CONTRACT DOCUMENTS – <i>Contract-specific</i> |
| ARTICLE 4 | CONTRACT TERM – <i>Contract-specific</i> |
| ARTICLE 5 | PAYMENT – <i>Contract-specific</i> |
| ARTICLE 6 | CONTRACT PRICE ADJUSTMENTS – <i>Contract-specific</i> |
| ARTICLE 7 | INVOICING |

- A. The Contractor shall submit invoices to Owner on a monthly basis by the 15th day of each month. Invoices are due and payable within 30 days of receipt of a correct and complete invoice, which includes at a minimum all applicable information described in this Contract.
- B. Owner shall not be required to make any payment to Contractor until Contractor has provided Owner with its federal employer identification number.
- C. Invoices shall be submitted via email to invoicing@alexrenew.com. The Contractor shall submit invoices and supporting documents in form and substance satisfactory to the Owner that provide, but are not limited to the following:
 - 1. Dates/periods the invoice covers, contract number and relevant purchase order number;
 - 2. Summary of scope performed by each employee including the employee's name, hourly rate, and hours worked; and
 - 3. Documentation of expenses.
- D. If Owner disputes an invoice, either as to amount or entitlement, then Owner shall advise Contractor in writing of the specific basis for doing so within 15 days after receipt of such invoice. The Owner may withhold only that portion so disputed; and must pay the undisputed portion. After a disputed item has been resolved, the Contractor shall submit a new invoice with the agreed upon amount.
- E. Any terms included on Contractor's invoice shall have no force or effect and will in no way bind Owner.

ARTICLE 8 TRANSITION OF SERVICES

- A. Prior to or upon expiration or termination of this Contract and at the request of Owner, the Contractor shall provide all assistance as Owner may reasonably require to transition the Contractor's contractual obligations, or any portion thereof, as requested by Owner. This obligation may extend beyond expiration or termination of the Contract for a period of time (i.e., three (3) months, six (6) months, twelve (12) months or as required and mutually agreed-upon by Owner and the Contractor (herein referred to as "Transition Period").
- B. The Contractor shall provide all reasonable transition assistance requested by Owner to allow for the expired or terminated portion of the Work to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Work to Owner. Such transition assistance will be deemed by the parties to be governed by the terms and conditions of this Contract, except for those terms or conditions that do not reasonably apply to such transition assistance. Owner may request a transition of records upon written notice to Contractor.
- C. If transition services extend beyond the expiration or termination of the Contract, scope and budget shall be agreed to via an Amendment to the Contract prior to the start of services.

ARTICLE 9 CONTRACT KICK-OFF MEETING

- D. Within seven (7) days of Contract award, the Contractor may be required to attend a contract

orientation meeting, along with Owner Contract Manager and any other significant stakeholders who have a part in the successful performance of this Contract. The purpose of this meeting will be to review all contractual obligations for both parties, all administrative and reporting requirements, and to discuss any other relationship, responsibility, communication and performance criteria set forth in the Contract. The time and location of this meeting will be coordinated with the Contractor and other meeting participants by the Procurement Manager.

ARTICLE 10 TERMINATION

- A. Owner may terminate this Contract at any time as follows: (1) for cause, if, as determined by Owner, the Contractor is in breach or default or has failed to perform the Work satisfactorily; or (2) for the convenience of Owner.
- B. Upon receipt of a notice of termination and except as otherwise directed, the Contractor shall stop all work on the date of receipt of the notice of termination or other date specified in the notice; place no further orders or subcontract for materials, services, or facilities except as are necessary for the completion of such portions of not terminated; immediately transfer all documentation and paperwork for the terminated work to Owner; and terminate all subcontracts and settle outstanding liabilities and claims.
- C. In the event any termination for cause, default, or breach shall be found to be improper or invalid by any court of competent jurisdiction then such termination shall be deemed to have been a termination for convenience.
- D. Any purchases that the Contractor make after the notice of termination will be the sole responsibility of the Contractor, unless Owner has approved the purchases in writing as necessary for completion of any portion of the Work that Owner did not terminate.

1. Termination for Cause, Including Breach and Default; Cure:

- a. Termination for Unsatisfactory Performance: If Owner determines that the Contractor has failed to perform satisfactorily, then Owner will give the Contractor written Notice of such failure/s and opportunity to cure such failure/s at least fifteen (15) days before termination of the Contract takes effect ("Cure Period"). If the Contractor fails to cure within the Cure Period or as otherwise specified in the Notice, the Contract is terminated for the Contractor's failure to provide satisfactory contract performance. Upon such termination, the Contractor may apply for compensation for Contract services satisfactorily performed by the Contractor and allocable to the Contract and accepted by Owner prior to such termination unless otherwise barred by the Contract ("Termination Costs"). Such request for Termination Costs, with supporting documentation, must be submitted to Owner within fifteen (15) days after the expiration of the Cure period. Owner may accept, or reject, in whole or in part, the application for Termination Costs and notify the Contractor of same within reasonable time thereafter.

In the event of termination by Owner for failure to perform satisfactorily, the Contractor must continue to provide its services as previously scheduled through the termination date, Owner will continue to pay all fees and charges incurred through the termination date.

- b. Termination for Breach or Defaults: If Owner terminates the Contract for default or breach of any Contract provision or condition, then the termination shall be immediate after Notice from Owner to the Contractor (unless Owner in its discretion provides for an opportunity to cure) and the Contractor shall not be permitted to seek Termination Costs.

Upon any termination pursuant to this section, the Contractor shall be liable to Owner for all cost incurred by Owner after the effective date of termination including costs required to be expended by Owner to complete the Work covered by the Contract, including costs

of delay in completing the Project or the cost of repairing or correcting any unsatisfactory or noncompliant work. Such costs shall be either subtracted from any amount due to the Contractor or shall be promptly paid by the Contractor to Owner upon demand by Owner. Additionally, and notwithstanding any provision in this Contract to the contrary, the Contractor is liable to Owner (and Owner shall be entitled to recover) all damages to which Owner is entitled by this Contract or by law, including and without limitation, direct damage, consequential damages, delay damages, replacement costs, refund of all sums paid by Owner to the contractor under the contract and all attorney fees and costs incurred by Owner to enforce the provision of this Contract.

Except as otherwise directed by Owner, the Contractor shall stop Work on the date of receipt of Notice of the termination or other date specified in the Notice, place no further orders or subcontracts for materials, services, or facilities except as are necessary for the completion of such portion of the Work not terminated, and terminate all Contractors and subcontracts and settle all outstanding liabilities and claims.

2. Termination for Convenience: Owner may terminate this Contract in whole or in part whenever the Procurement Manager determines that termination is in Owner's best interest. Owner will give the Contractor at least fifteen (15) days' notice in writing. The notice must specify the extent to which the Contract is terminated and the effective termination date. The Contractor will be entitled to Termination Costs, as defined above, plus any other reasonable amounts that the parties might negotiate; but no amount will be allowed for the anticipatory profits.

Except as otherwise directed by Owner, the Contractor must stop work on the date of receipt of the notice of the termination.

ARTICLE 11 FORCE MAJEURE

- A. Neither party will be held responsible for failure to perform the duties and responsibilities imposed by this Contract if such failure is due to a fire, riot, rebellion, natural disaster, war, acts of terrorism or acts of God that is beyond the control of the party and that makes performance impossible or illegal, unless otherwise specified in the Contract.

ARTICLE 12 ESTIMATED QUANTITIES/NON-EXCLUSIVITY OF CONTRACTOR

- A. This Contract does not obligate Owner to purchase specific quantity of items or services during the Contract Term. Any quantities that are included in the Contract Documents are the present expectations of Owner for the Contract Term; and Owner is not under any obligation to buy that or any amount as result of having provided this estimate or having had any normal or otherwise measurable requirements in the past. Owner may require more goods and services than the estimated annual quantities, and any such additional quantities will not give rise to any claim for compensation other than at the unit prices and or rates in the Contract.
- B. Owner does not guarantee that the Contractor will be the exclusive provider of the goods or services covered by the resulting Contract. The items or services covered by this Contract may become available under other Owner Contract(s), and Owner may determine that it is in its best interest to procure the items or services through those contract(s).

ARTICLE 13 UNAVAILABILITY OF FUNDS

- A. The obligation of Owner to pay compensation due the Contractor under the Contract or any other payment obligations under any contract awarded pursuant to this Contract is subject to appropriations by Owner's Board of Directors to satisfy payment of such obligations. Owner's obligations to make payments during subsequent fiscal years are dependent upon the same action. If such an appropriation is not made for any fiscal year, the Contract shall terminate effective at the end of the fiscal year for which funds were appropriated and Owner will not be

obligated to make any payments under the Contract beyond the amount appropriated for payment obligations under the Contract. Owner will provide the Contractor with written notice of non-appropriation of funds within thirty (30) calendar days after action is completed by Owner's Board of Directors. However, Owner's failure to provide such notice will not extend the Contract into a fiscal year in which sufficient funds have not been appropriated.

ARTICLE 14 PAYMENT OF SUBCONTRACTORS

- A. The Contractor is obligated to take one of the two following actions within seven (7) days after receipt of amounts paid to the Contractor by the Owner for the Work performed by any subcontractor under this Contract:
 - 1. Pay the subcontractor for the proportionate share of the total payment received from Owner attributable to the Work performed by the subcontractor under this Contract; or
 - 2. Notify Owner and the subcontractor, in writing of the Contractor's intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.
- B. The Contractor is obligated to pay interest to the subcontractor on all amounts owed by the Contractor that remain unpaid after seven (7) days following receipt by the Contractor of payment from Owner for Work performed by the subcontractor under this Contract, except for amounts withheld as allowed in b., above. Unless otherwise provided under the terms of this Contract, interest shall accrue at the rate of one percent (1%) per month.
- C. The Contractor shall include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.
- D. The Contractor's obligation to pay an interest charge to a subcontractor pursuant to the above provisions may not be construed to be an obligation of Owner. A Contract modification may not include any amount for reimbursement for such interest charge.

ARTICLE 15 INDEMNIFICATION

- A. The Contractor covenants to save, defend, hold harmless and indemnify Owner and its directors, and all its elected and appointed officers, and current and former employees, agents, departments and divisions (collectively, "Owner " for the purpose of this section) from and against any and all claims made by third parties or by Owner for any and all losses, damages, injuries, fines, penalties, costs (including court cost and causes of action and expenses (including reasonable attorney's fees) suffered or incurred by Owner Indemnitees arising out of, or in connection with: (a) any act or omission of the Contractor, its employees, officers, directors, agents, contractors or sub-contractors; (b) Contractor's failure to produce any item it provides to Owner in accordance with any specifications provided by Owner; (c) failure of any product or service to perform in accordance with Contractor's published specifications; or (d) Contractor's failure to provide complete and accurate information regarding any product. The Contractor's duties under this provision will include the duty to obtain the approval of Owner as to the legal counsel selected to defend Owner and to confer with Owner concerning the defense.

ARTICLE 16 ETHICS IN PUBLIC CONTRACTING

- A. This Contract incorporates by reference Owner's Procurement Manual, as well as all state and federal laws related to ethics, conflicts of interest or bribery, including the State and Local Government Conflict of Interests Act (Code of Virginia §2.2-3100 et seq.), the Virginia Governmental Frauds Act (Code of Virginia §18.2-4938 et seq.), and the Virginia Public Procurement Act (Code of Virginia §2.2-4300 et seq.). The Contractor certifies that its proposal was made without collusion or fraud; that it has not offered or received any kickbacks or inducements from any other respondent, contractor, manufacturer or subcontractor; and that it

has not conferred on any public employee having official responsibility for this procurement any payment, loan, subscription, advance, deposit of money, services, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

ARTICLE 17 OWNER EMPLOYEES

- A. No Owner employees may share in any part of this Contract or receive any benefits from the Contract that is not available to the general public.

ARTICLE 18 RELATION TO OWNER

- A. The Contractor is an independent contractor, and neither the Contractor nor its employees or subcontractors will be considered employees, servants or agents of Owner. Owner will not be responsible for any negligence or other wrongdoing by the Contractor or its employees, servants or agents. Owner will not withhold payments to the Contractor for any federal or state unemployment taxes, federal or state Income taxes or Social Security tax or for any other benefits. Owner will not provide to the Contractor any Insurance coverage or other benefits, including workers' compensation.

ARTICLE 19 ANTITRUST

- A. The Contractor conveys, sells, assigns and transfers to Owner all rights, title and interest in and to all causes of action under state or federal antitrust laws that the Contractor may have relating to this Contract.

ARTICLE 20 INTELLECTUAL PROPERTY INDEMNIFICATION

- A. The Contractor warrants and guarantees that in providing services under this Contract neither the Contractor nor any subcontractor is infringing on the intellectual property rights (including, but not limited to, copyright, patent, mask and trademark) of third parties.
- B. If the Contractor or any of its employees or subcontractors uses any design, device, work or material that is covered by patent or copyright, it is understood that the yearly not-to-exceed amount includes all royalties, licensing fees, and any other costs arising from such use in connection with the Work under this Contract.
- C. The Contractor covenants for itself, its employees and its subcontractors to save, defend, hold harmless, and indemnify Owner Indemnitees, as defined above, from and against any and all claims, losses, damages, injuries, fines, penalties, costs (including court costs and attorneys' fees), charges, liability or exposure for infringement of or on account of any trademark, copyright, patented or unpatented Invention, process or article manufactured or used In the performance of this Contract. This duty to save, defend, hold harmless and indemnify will survive the termination of this Contract. If the Contractor fails or refuses to fulfill its obligations contained in this section, the Contractor must reimburse Owner for any and all resulting payments and expenses, including reasonable attorneys' fees. The Contractor must pay such expenses upon demand by Owner, and failure to do so may result in Owner withholding such amounts from any payments to the Contractor under this Contract.

ARTICLE 21 COPYRIGHT

- A. By this Contract, the Contractor irrevocably transfers, assigns, sets over and conveys to Owner rights, title and interest, including the sole exclusive and complete copyright interest, in any and all copyrightable works created pursuant to this Contract. The Contractor will execute any documents that Owner requests to formalize such transfer or assignment. Additionally, any reports, studies, photographs, negatives, or other documents prepared by the Contractor in the performance of its obligations under this Contract shall be the exclusive property of the Owner, and all such materials shall be remitted, without restriction, to the Owner by the Contractor upon

completion, termination or cancellation of the Contract. Contractor shall not use, willingly allow, or cause to have such materials used for any purpose other than performance of the Contractor's obligations under this Contract without the prior written consent of the Owner.

- B. The rights granted to Owner by this section are irrevocable and may not be rescinded or modified, including in connection with or as a result of the termination of or a dispute concerning this Contract.
- C. The Contractor may not use subcontractors or third parties to develop or provide input into any copyrightable materials produced pursuant to this Contract without Owner's advance written approval and unless the Contractor includes this copyright provision in any contract or agreement with such subcontractors or third parties related to this Contract.

ARTICLE 22 DATA SECURITY AND PROTECTION

- A. The Contractor shall hold Owner information in the strictest confidence and will comply with all applicable Owner security and network resources policies, as well as all local, state, and federal laws and regulatory requirements concerning data privacy and security. The Contractor shall develop, implement, maintain, continually monitor and use appropriate administrative, technical, and physical security measures to control access to and to preserve the confidentiality, privacy, integrity and availability of all electronically maintained or transmitted information received from or created or maintained on behalf of Owner.
- B. The Contractor must notify Owner's Chief Information Officer and Procurement Manager within twenty-four (24) hours of discovery of any unintended access or disclosure of Owner information.

ARTICLE 23 RIGHT TO AUDIT

- A. Owner reserves the right to audit those Contractor records that relate to the Contract or any Amendments issued thereunder.
- B. The Contractor shall preserve and maintain adequate copies of books, records, and vouchers in a such manner that they may be audited in progress and upon three (3) years following completion of the contract.

ARTICLE 24 SAFETY

- A. The Contractor must ensure that it and its employees and subcontractors comply with all applicable local, state, and federal policies, regulations, and standards relating to safety and health, including the standards of the Virginia Occupational Safety and Health program of the Department of Labor and Industry for general industry and for the construction industry and the applicable Federal Environmental Protection Agency and Virginia Department of Environmental Quality standards.

ARTICLE 25 CONTRACTUAL DISPUTES

- A. The Contractor shall submit any dispute concerning a question of fact as a result of a Contract with Owner in accordance with Virginia Public Procurement Act ("VPPA") §2.2-4363 et seq. to the Procurement Manager, who shall reduce his or her decision in writing within ninety (90) days following receipt of notification of such dispute. Contractor's notice shall be given in writing within ten (10) days after the occurrence or beginning of the dispute. Contractor's failure to timely submit such claim shall mean that Contractor has waived the claim and has no further right to pursue a remedy for such dispute. If Contractor disagrees with the Procurement Manager's written decision or if the Procurement Manager fails to issue a written decision within the specified ninety (90) days, the Contractor may submit an appeal to the Owner's Chief Executive Officer within ten (10) days of the decision being issued or due if not issued. The Chief Executive Officer shall render a final decision in writing on such claim within sixty (60) days of receipt of the claim. If the Contractor disagrees with the Chief Executive Officer's written decision or if the Chief Executive Officer fails

to issue a written decision within the specified ninety (90) days, then the Contractor shall request, in writing and within ten (10) days after the Chief Executive Officer's final decision (or time when the final decision should have been issued, as applicable), that the Owner agree to participate in voluntary, non-binding mediation of the dispute. If so agreed, Owner and Contractor agree to participate in the mediation process in good faith. The process will be conducted on a confidential basis and must be completed within 120 days. Each party shall bear its own costs of mediation and the parties shall split equally the costs and fees charged by the mutually agreeable mediator selected by the parties to conduct the mediation. If the parties fail to resolve the dispute through these processes, then the Contractor may institute legal action as provided in Section 2.2-4364 of the Code of Virginia in the court specified in Article 27, to be heard BY A JUDGE SITTING WITHOUT A JURY, THE PARTIES HEREBY WAIVING THEIR RIGHTS TO A JURY TRIAL.

ARTICLE 26 APPLICABLE LAW; FORUM, VENUE AND JURISDICTION

- A. This Contract is governed in all respects by the laws of the Commonwealth of Virginia; and the jurisdiction, forum and venue for any litigation concerning the Contract or the Work is in the Circuit Court for City of Alexandria, Virginia, and in no other court.

ARTICLE 27 ASSIGNMENT

- A. This Contract shall be binding upon and shall inure to the benefit of the permitted successors and assigns of Owner and the Contractor. The Contractor may not assign, subcontract, delegate or otherwise convey this Contract or any of its rights and obligations hereunder, to any entity without the prior written consent of Owner, and any such attempted assignment or subcontracting without consent shall be void. Owner may assign this Contract to any entity, so long as the assignee agrees in writing to be bound by the all the terms and conditions of this Contract. If any law limits the right of Owner or the Contractor to prohibit assignment or nonconsensual assignments, the effective date of the assignment shall be thirty (30) days after the Contractor gives Owner prompt written notice of the assignment, signed by authorized representatives of both the Contractor and the assignee. Any payments made prior to receipt of such notification shall not be covered by this assignment.

ARTICLE 28 INSURANCE REQUIREMENTS – To be issued via addendum.

ARTICLE 29 AUTHORITY AND VALIDITY OF SIGNATURES

- A. Each party executing the Contract on behalf of such entity represents that he or she is duly authorized to execute and deliver this Contract on the entity's behalf, including the entity's Board of Directors or Chief Executive Officer. This Contract shall not be effective or binding unless countersigned by the Owner's Chief Executive Officer, or authorized designee, as evidenced by their signature as set forth in this Contract.
- B. This Contract may be executed in one or more counterparts, each of which will be considered an original, but all of which together will constitute one and the same instrument. The parties agree that this Contract, its amendments, and ancillary Contracts to be entered into in connection with this Contract will be considered signed when the signature of a party is delivered by email transmission. Such emailed signature must be treated in all respects as having the same effect as an original signature.

ARTICLE 30 MISCELLANEOUS PROVISIONS

- A. Employment Discrimination by Contractor Prohibited-During the performance of its Work pursuant to this Contract:
 - 1. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor.

The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

2. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation will be deemed sufficient for meeting the requirements of this section.
3. The Contractor will state in all solicitations or advertisements for employees that it places or causes to be placed that such Contractor is an Equal Opportunity Employer.
4. The Contractor will comply with the provisions of the American with Disabilities Act of 1990 (“ADA”), which prohibits discrimination against individuals with disabilities in employment and mandates that disabled individuals be provided access to publicly and privately provided services and activities.

The Contractor must include the provisions of the foregoing paragraphs in every subcontract or purchase order of more than \$10,000 relating to this Contract so that the provisions will be binding upon each subcontractor or Contractor.

- B. Notices—Any notice required under this Contract will be in writing and delivered: in person (by commercial courier or otherwise); by registered or certified mail; or by e-mail to the recipient, with the words “Formal Notice” or similar in the e-mail’s subject line. All such notices are effective upon the date of receipt.
- C. Survival—Subject to applicable Laws or Regulations, all express representations, waivers, indemnifications, and limitations of liability included in this Contract will survive its completion or termination for any reason.
- D. Severability—Any provision or part of the Contract held to be void or unenforceable under any Laws or Regulations will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor.
- E. No Waiver—A party’s non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.
- F. Key Personnel—All Key Personnel identified in Exhibit A are committed to this Contract for the duration of the Contract, for so long as they remain employed by Contractor. Likewise, if a Key Personnel is identified in an amendment, such individual shall be committed for the remainder of the duration of the Contract, for so long as they remain employed by Contractor. If extraordinary circumstances require a proposed change in Key Personnel under this Contract, it must be submitted in writing to Owner’s designated representative. In circumstances where the change is based on a Key Personnel leaving the employ of Contractor, qualifications information shall be provided on one or more proposed substitutes, and Owner’s designated representative, at his/her reasonable discretion, will determine who will become the substitute and remain a Key Personnel going forward, and an amendment shall be executed to reflect the approved change. In circumstances where the change concerns a Key Personnel who will remain in the employ of Contractor, information about the basis for the change request and qualifications information for one or more proposed substitutes will be provided and Owner’s designated representative, at his/her reasonable discretion, will determine whether to authorize the proposed removal and, if approved, who shall become the substitute and remain a Key Personnel going forward and an amendment shall be executed to reflect the approved change.
- G. Non-Discrimination against Faith-Based Organizations—Owner does not discriminate against faith-based organizations and Contractor agrees not to discriminate against faith-based organizations.
- H. Federal Immigration Law—Contractor, any subconsultants, and any others it may employ do not, and will not during the term of this Contract, knowingly employ an unauthorized alien as defined in the Federal Immigration and Reform and Control Act of 1986.

- I. Drug-Free Workplace—Throughout the term of this Contract, Contractor agrees to:
1. provide a drug-free workplace for Contractor's employees;
 2. post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;
 3. state in all solicitations or advertisements for employees placed by or on behalf of Contractor that Contractor maintains a drug-free workplace; and
 4. include the provisions of the foregoing clauses in every subcontract or purchase order equal to or greater than \$10,000 in value, so that the provisions will be binding upon each subconsultant.

For the purposes of this provision, "drug-free workplace" means any site for the performance of services in connection with this Contract, where the employees of Contractor are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana.

- J. Authorization to Conduct Business in the Commonwealth of Virginia—Contractor must, pursuant to Code of Virginia §2.2-4311.2, be and remain authorized to transact business in the Commonwealth of Virginia during the entire term of the Contract, otherwise, the Contract is voidable at the sole option of and no expense to Owner.
- K. Owner's Procurement Manual and Owner's Policies—Nothing in this Contract waives any provision of the Owner's Procurement Manual, which is incorporated herein by reference, or any applicable Owner's policy.
- L. Advertising and Use of Proprietary Marks—The Contractor shall not use the name of Owner or refer to Owner, directly or indirectly, in any press release or formal advertisement without receiving prior written consent of Owner. In no event may the Contractor use a proprietary mark of Owner without receiving the prior written consent of Owner.
- M. Headings—The section headings in this Contract are inserted only for convenience and do not affect the substance of the Contract or limit the sections' scope.
- N. Ambiguities—The parties and their counsel have participated fully in the drafting of this Contract; and any rule that ambiguities are to be resolved against the drafting party does not apply. The language in this Contract is to be interpreted as to its plain meaning and not strictly for or against any party.
- O. Amendments—This Contract may not be modified except by written amendment executed by persons duly authorized to bind the Contractor and Owner.
- P. Arbitration—No claim arising under or related to this Contract may be subject to arbitration.
- Q. No Exclusivity of Remedies—All remedies available to Owner under this Contract are cumulative, and no remedy will be exclusive of any other at law or in equity.
- R. Liens—Owner's interest, whether in fee simple or easement, in any site at which the work or services under this Agreement is to be provided, cannot be subjected to a mechanic's lien because mechanics liens cannot be placed on publicly-owned property rights in the Commonwealth of Virginia.
- S. No Forced or Indentured Child Labor—The use of forced or indentured child labor in performance of this Contract is prohibited. For the purposes of this Contract, "forced or indentured child labor"

shall mean all work or service (i) exacted from any person younger than 18 years of age under the menace of any penalty for the nonperformance of such work or service and for which such person does not offer himself voluntarily or (ii) performed by any person younger than 18 years of age pursuant to a contract the enforcement of which can be accomplished by process or penalties. If the Contractor enters any subcontracts or purchase orders valued at more than \$10,000, the Contractor must include this prohibition in such subcontract(s) or purchase order(s).

- T. Information and Communication Technology (ICT) Accessibility—Pursuant to the Code of Virginia § 2.2-3503, the Contractor shall certify that any information and communications technology (ICT) product or service provided under this Contract conforms to the Web Content Accessibility Guidelines (WCAG) 2.1, Level A and AA, or applicable accessibility standards required by federal or state law. If the Contractor cannot certify full conformance, the Contractor shall:
1. Submit a current, Contractor-paid Accessibility Conformance Report (ACR) or Voluntary Accessibility Template (VPAT), completed using the current version of the ITI VPAT format
 2. Provide a Contractor-paid and completed Accessibility Roadmap identifying:
 - a. All areas of partial or nonconformance
 - b. A proposed timeline for each area's correction or remediation
 3. Acknowledge that failure to demonstrate substantial progress toward conformance may result in enforcement actions, Contract termination, or disqualification from future solicitations.

Where full accessibility is not technically feasible, the Contractor shall ensure that individuals with disabilities are not denied access to any program, service, or activity supported by the product or service provided.

This clause shall apply to all ICT delivered or maintained under this Contract, including software, websites, web applications, electronic documents, hardware, digital platforms, and associated services.

ATTACHMENT B

Technical Requirements and Specifications

THIS PAGE INTENTIONALLY LEFT BLANK

**SECTION 42 31 00
GAS DRYERS****PART 1 GENERAL****1.01 DESCRIPTION**

- A. SYSTEM SUPPLIER shall furnish, supervise installation and test all the equipment necessary to provide two(2) (duty/standby) complete sludge pelletization and drying systems including all ancillary equipment as defined below, capable of producing a pelletized and dried product from a partially dewatered, wastewater sludge.
- B. The work included under this Specification shall be the design, supply of materials, fabrication, testing, loading for shipment and delivery for assembly in OWNER's plant, **of two** sludge drying, pelletization and storage/truck loading systems with accessories as required for complete and operable units for the capacities as herein specified. Also included is installation supervision assistance, commissioning services and performance testing.
- C. Assembly of the dryer equipment shall be by the CONTRACTOR as described in the specifications.
- D. The general layout of the drying systems is shown on the drawings.
- E. Each system must be designed such that major changes to the designed building are not required. If any such changes are required, the SYSTEM SUPPLIER shall pay for all costs associated with required changes, including but not limited to engineering fees, construction costs, etc.
- F. SYSTEM SUPPLIER shall demonstrate previous experience in direct heat rotary sludge drying and pelletization and shall have in operation at least six (6) process systems that produce a pelletized product from a municipal sludge residue at a design evaporation rate of at least 13,228 pounds/hour (6,000 kg/hour). The SYSTEM SUPPLIER shall have supplied similar equipment using direct dryer technology for sludge drying and pelletization in systems that have at least ten (10) years of continuous operating history.
- G. After selection, System Supplier must undertake sludge testing (providing the sludge exists) in order to bid and offer performance guarantees. **All testing shall be at no cost to the owner.**
- H. Dryer shall be direct fired only; units incorporating heat exchangers; indirect steam or thermal oil heating will not be acceptable and will be rejected.
- I. It is the intent of this Specification to describe the process and mechanical components comprising the sludge pelletization and drying system and to establish minimum quality standards for materials and process performance.
- J. SYSTEM SUPPLIER shall minimize fugitive odor and dust emissions by proper design and ventilation of the equipment as required by this specification.

- K. It is the intent of this Specification to obtain two(2) systems complete, including but not limited to anchor bolts, fasteners, and interconnecting equipment, including all interconnecting ductwork and chutes, whether or not shown on the Contract Drawings or called for in the Contract Specifications. Any omission of required equipment from this Specification shall not relieve the SYSTEM SUPPLIER of his responsibility for the satisfactory operation of the sludge drying system specified. Consequently, the SYSTEM SUPPLIER shall be responsible for the various details and any special construction which may not be specifically detailed or called for, but is necessary to properly install and place into successful and continuous operation the sludge drying and pelletization system specified herein.
- L. The SYSTEM SUPPLIER shall furnish a complete Instrumentation and Control systems for the sludge drying and pelletization systems. The system includes all materials and documentation required to install, test and place in operation a complete and operable instrumentation and control system as specified. The system shall include all measuring elements, control devices, signal converters, transmitters, local control panels, motor control centers, digital hardware and software, operation workstations, and communication networks to provide the functions indicated.
- M. Each system shall include a regenerative thermal oxidizer (RTO).
- N. Items to be provided in each system shall include, but not be limited to the following:
1. Conveying, mixing and storage equipment to mix dewatered sludge cake and previously dried and crushed sludge (recycle) to form a uniformly coated (dry solids interior/wet solids exterior) pellet for introduction into the dryer. Includes wet material bin, recycle bin, metering screw conveyors, and mixer.
 2. A direct-fired furnace capable of being fired with natural gas or digester gas. Flame safety panels shall be included with the furnace.
 3. Direct-heat, concurrent triple pass rotary drum dryer to produce dried sludge pellets (1-4mm diameter) within the dryer drum such that no ancillary pelletization equipment is required.
 4. Solids separation equipment for removing the dried sludge from the process gas stream.. **Baghouses will not be allowed.**
 5. Solids handling, conveying, and classifying equipment for separating solids into product, undersize (fines), oversize and trash fractions.
 6. Solids processing equipment for generating, storing and conveying recycled solids, including crusher, recycle storage and conveying equipment.
 7. Product cooler.
 8. Pneumatic conveying equipment for transporting product to storage silos, including the air compressor.
 9. Product storage silo.
 10. Dust controlled truck loading spouts for product loading into trucks.
 11. Saturator (tray tower scrubber) for removal of moisture from the gas stream and a venturi scrubber for control of particulates and gaseous emissions.

12. Fans required for the conveyance of air through the process units, including the main process induced draft fan, the venturi induced draft fan and the combustion air fan.
13. Exhaust stack.
14. Two (2) fugitive dust systems. One (1) servicing process components located in the sludge drying and pelletization facility building; and one (1) servicing the storage silo and the truck loading system area.
15. Explosion venting system and explosion prevention systems by internal ventilation of process equipment as required.
16. Electrical system components to include motors, motor control centers, electrical power panels and variable frequency drives.
17. Access provisions including platforms, catwalks, ladders, handrails and stairways.
18. Complete Instrumentation and Controls package including all control panels, PLC, MCC, and field instruments required for a complete system, including I/O ports for remote monitoring as specified.
19. Equipment not appearing in the above list, but necessary for the complete system are not eliminated by reason of such omission and shall be provided by the SYSTEM SUPPLIER unless specifically noted as being supplied by others.

1.02 WORK BY OTHERS AND SYSTEM INTERFACES

- A. The sludge drying and pelletization systems, specified herein, shall be installed by the CONTRACTOR within a new solids processing building. The SYSTEM SUPPLIER shall supervise the installation of the sludge drying and pelletization equipment.
- B. The equipment shall be unloaded at the plant site by the CONTRACTOR.
- C. The sludge drying and pelletization system shall be fed with dewatered cake from dewatering equipment through a conveyor system or cake receiving facilities provided by the CONTRACTOR. The dewatered sludge cake will be delivered to wet sludge receiving bins supplied by the SYSTEM SUPPLIER. The SYSTEM SUPPLIER shall provide process equipment downstream of the wet sludge receiving bin's inlet chutes.
- D. No component of the sludge drying and pelletization system shall be supported from the building roof or walls. The loads from the sludge drying and pelletization system shall be transferred to the floor slab only.
- E. The SYSTEM SUPPLIER shall design and furnish to the CONTRACTOR all components necessary for installation of the electrical systems that are an integral part of the sludge drying and pelletization system, including motors, motor control centers, and variable frequency drives. The ENGINEER shall coordinate with the SYSTEM SUPPLIER the manufacturer of the motor control centers, variable frequency drives, and other electrical room components such that equipment provided by the CONTRACTOR are of the same manufacturer as those supplied by the SYSTEM SUPPLIER. The SYSTEM SUPPLIER shall assist the CONTRACTOR with the size, location, and routing of all power conduits, raceways, cable trays, and other necessary items. Conduits, raceways, wire ways, and other appurtenances shall be routed in neat, organized groupings next to structural

components. Routing shall not impede bridge crane access. The CONTRACTOR shall provide conduits, raceways, wire and other appurtenances not provided by the SYSTEM SUPPLIER. The CONTRACTOR shall provide grounding and bonding of all equipment and electronic controls.

- F. The SYSTEM SUPPLIER shall size piping systems that are an integral part of the sludge drying and pelletization system. The SYSTEM SUPPLIER shall also size piping necessary for connection to other utilities; such as, potable water, non-potable water, natural gas, and fuel oil. Interface for utility connections shall be located at the interior wall of the sludge drying building, or at the utility penetration through the roof or floor slab. Piping and related piping system components shall be routed in neat, organized groupings next to structural components. Routing shall not impede bridge crane access, floor hatches, or other access areas. **The CONTRACTOR shall provide all piping and supports.** Piping systems sized by SYSTEM SUPPLIER are limited to those required for the sludge drying and pelletization system.
- G. The CONTRACTOR shall provide the sludge drying building and equipment foundations. The SYSTEM SUPPLIER shall coordinate the location of utility connections and penetrations with the CONTRACTOR.
- H. The sludge dryer and pelletization system digital control system shall interface with the treatment plant control system over an Ethernet TCP/IP local area network data link. The two control systems shall exchange data such as equipment status, flow rates, alarms etc. The sludge dryer and pelletization system; however, shall only be controlled from the sludge dryer and pelletization system digital control system, but the system sludge dryer and pelletization system status screens may be monitored from other computers located throughout the plant. The SYSTEM SUPPLIER shall coordinate graphic screen development with the OWNER and ENGINEER preparing graphic interface screens for other portions of the treatment plant. The SYSTEM SUPPLIER will attend a minimum of two coordination meetings with the ENGINEER and OWNER to develop software configuration standards for the sludge dryer and pelletization system digital control system.
- I. The SYSTEM SUPPLIER's pricing does not include the following:
 - 1. Solids Processing Building
 - 2. Conveyors supplying dewatered cake to the sludge cake bins.
 - 3. Concrete work
 - 4. Drains and drain piping
 - 5. Supply and/or installation of any utility piping and supports, including but not limited to:
 - a. Potable water;
 - b. Non-potable water;
 - c. Compressed air, including control air;
 - d. Natural Gas or Fuel Oil supply piping;
 - 6. All field wiring, including conduit, electrical service to the motor control center, connection to all instruments and motors, installation of instruments and motors, local disconnects and emergency stops, connection of instruments to PLC cabinet, wiring between panels, etc.;
 - 7. Lateral supports for the bucket elevators

8. Overhead building crane
 9. State, Local and Federal taxes.
 10. Ground bonding jumpers.
 11. Building service utilities including area lighting, HVAC, utility stations, convenience power, etc.
- J. Clarifications to the SYSTEM SUPPLIERS's Scope of Supply;
1. The storage silos will be provided in bolted sections and will require field assembly by the CONTRACTOR. Arrangements can be made for manufacturer of the silos to assemble on site but is not included in the SYSTEM SUPPLIER's Scope of Supply.
 2. The pneumatic conveyor piping requires 3 lines and supports by the CONTRACTOR for each dryer train. The Product line is supplied by SYSTEM SUPPLIER and installed by the CONTRACTOR.
 3. All support pads by CONTRACTOR.
 4. Some components require some assembly on-site. SYSTEM SUPPLIER will work closely with the CONTRACTOR during assembly of these components.
 5. SYSTEM SUPPLIER will provide an erection supervisor per the specification herein. The erection supervisor will be at the site for a maximum of thirty (30) days to assist the CONTRACTOR in the work.
 6. In addition to the coordination of the erection, the SYSTEM SUPPLIER will provide services to field test, start-up and train plant personnel in the operation of the plant.
 7. CONTRACTOR shall be prepared to provide mechanical and electrical support personnel for the "shakeout" period expected to run for 3-4 weeks per drying train.

1.03 PERFORMANCE REQUIREMENTS

- A. All performance guarantees specified herewith apply to operation of the sludge drying and pelletization facility under conditions specified in Article 2.02- OPERATING AND DESIGN CONDITIONS.
- B. Each sludge drying and pelletization train evaporation capacity shall be at least 13,228 pounds (6,000 kilograms) of water evaporated per hour.
- C. Thermal efficiency of the sludge drying and pelletization system, as determined by the heat required to evaporate one pound of water from the solids, shall not exceed 1,650 BTU LHV per pound of water evaporated. Heat accounted for in thermal efficiency calculation includes only heat provided by combustion of the primary fuels (natural gas) and does not include electric energy consumed by the sludge drying and pelletization system.
- D. Explosion prevention measures in accordance with NFPA 68 and 69 shall be provided for all system sludge dryer and pelletization system components.
- E. Final screened pellets shall be classified such that 95 percent (by weight) of the final product shall pass a 4-mm sieve and be retained on a 1-mm sieve.
- F. Minimum pellet dryness shall be 92% solids content by weight.

- G. Dried pellet bulk density shall be 30 to 55 pounds per cubic foot.
- H. Maximum pellet temperature following cooling shall be 100°F
- I. Time required for complete start-up of the sludge dryer and pelletization system shall be sixty minutes maximum, including the pre-start safety checks per the procedures in the O&M manual. Mechanical start-up shall not exceed thirty (30) minutes.
- J. Time required for complete shutdown of the sludge drying and pelletization system shall be not greater than sixty (60) minutes.
- K. A calculated estimate of the total heat rejection by the sludge drying and pelletization system into the solids processing building shall be provided by the system supplier. This shall be demonstrated through submitted calculations with estimated surface temperatures verified during system start-up.
- L. The facility is located in an area of ozone non-attainment. Air pollution controls for VOC and ultra-low NOx emissions may be required. Supplier shall support regulatory air permitting efforts during the engineering design phase for the dryer system and shall make required modifications to the air pollution control equipment to comply with final emissions limits.
- M. The sludge dryer and pelletization system shall be designed with safety provisions to minimize the danger of explosions and fires. Oxygen content within the rotary dryer, solids separation equipment, saturator, and connecting ductwork shall not exceed 10% (by volume) during normal system operation

1.04 SUBMITTALS

- A. Initial Design Submittals: The system supplier shall submit Initial Design Submittals within 40 working days after NTP for design. Address comments and resubmit initial design submittals – Within 20 working days after receipt of Owner comments These submittals include:
 - 1. Process and instrument diagrams
 - a. Equipment list
 - b. Process Flow and Mass Balance
 - c. Utility requirements
 - d. Motor List
 - e. Detailed P&ID sheets
 - f. System Architecture
 - 2. Dryer equipment general arrangements
 - 3. Dryer equipment floor loads
 - 4. Dryer equipment electric load requirements (EP-600's)
 - 5. Dryer equipment Emissions Estimate
- B. Final Design Submittals: Provided 40 working days after return of approved Address comments and resubmit initial design submittals 20 working days after receipt of Owner comments. These submittals include:
 - 1. Process and Instrument Diagrams

- a. Equipment List
- b. Process Flow and Mass Balance
- c. Utility Requirements
- d. Motor List
- e. Detailed P&ID Sheets
- f. System Architecture
- 2. Dryer Equipment General Arrangements
- 3. Dryer Equipment Floor Loads
- 4. Dryer Equipment Electric Load Requirements (EP-600's)
- 5. Dryer equipment Emissions Estimate
- 6. Instrument List
- 7. Cable List
- 8. Instrument Location Plans
- 9. Instrument Loop Drawings
- 10. Panel Drawings
- 11. Electrical Schematics

- C. Commissioning Plan: Preliminary Plan provided during initial design assistance phase. Final Plan submitted 200 working days after NTP for Construction

- D. Performance Test Protocol:
 - 1. Preliminary draft During initial design assistance phase.
 - 2. Final protocol must be finalized 30 calendar days prior to commissioning with sludge.

1.05 ACRONYMS FOR COMMON CODES AND STANDARDS

A. Acronyms used in this section:

| | |
|------|---|
| IRI | Industrial Risk Insurers. |
| NFPA | National Fire Protection Association. |
| NEC | National Electrical Code. |
| NEMA | Standards of National Electric Manufacturers Association. |
| OSHA | Occupational Safety and Health Act. |
| AISC | Manual of Steel Construction. |
| ASME | Standards of American Society of Mechanical Engineers |
| AGMA | American Gear Manufacturers Association |
| ANSI | American National Standards Institute |
| ASTM | American Society of Testing and Materials |
| AWS | American Welding Society |
| CEMA | Conveyor Equipment Manufacturers Association |
| FM | Factory Mutual |
| IEEE | Institute of Electrical and Electronics Engineers |
| ISA | International Society of Automation |
| AHJ | Authority Having Jurisdiction |

1.06 OPERATIONS AND MAINTENANCE MANUALS

- A. Provide Operations and Maintenance Manuals 30 calendar days prior to Performance Testing

- B. Operation and maintenance (O&M) manuals will be provided as an electronic file.
- C. The manual (Adobe PDF files) will be arranged in a folder structure. O&M will be fully indexed with table of contents and book marked. Information will be stored in the form of ADOBE portable document files.
- D. Manual will include all operating instructions, troubleshooting guides, recommended spare parts and all equipment specifications and as-built drawings.
- E. Preliminary/For Approval manuals will also be submitted electronically.
- F. Operating Information is intended to assist in the operation and adjustment of the equipment. The O&M manual will include:
 - 1. Index and Table of Contents
 - 2. "Safety Cautions and Warnings" to insure proper protection of personnel and equipment
 - 3. Process Description
 - 4. Mechanical Drawings including:
 - a. Process and Instrument Drawings
 - b. General Arrangement Drawings
 - 5. System Operations:
 - a. Operating Sequence
 - b. Actionable Control Limits
 - 6. Troubleshooting Guide to aid in Drying Drum System troubleshooting guide.
 - 7. Maintenance Summary Forms covering general servicing and maintenance of the equipment. Lubrication and greasing instructions (listing type and frequency of lubrication), and oil filter changes or flushing information.
 - 8. Mechanical Equipment Section:
 - a. Operations and Maintenance Manuals for mechanical equipment
 - 9. Electrical Drawings:
 - a. Panel Drawings
 - b. Electrical Schematics
 - c. Loop Drawings
 - 10. Instrumentation Documentation

1.07 QUALITY ASSURANCE

- A. Equipment Standard of Quality.
 - 1. Products that are specified by manufacturer, trade name or catalog number establish a standard of quality.
 - 2. All equipment and materials will be new and the products of reputable recognized suppliers having adequate experience in the manufacturing of these items. Generally, only one manufacturer will be used for each type of product. All equipment will be of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection and during continuous or intermittent operation.

1.08 INSTALLATION SUPERVISION, COMMISSIONING, AND TRAINING

- A. The services of SYSTEM SUPPLIER Technical Representative.
 - 1. The services of qualified SYSTEM SUPPLIER technical representatives will be provided. The technical representatives will provide advice on the installation and conduct final testing of all equipment, components and accessories furnished under this Contract. SYSTEM SUPPLIER' technical representatives will instruct the operating personnel in all biosolids drying system maintenance and operation procedures.
 - 2. Installation Advisor to guide General Contractor through installation. SYSTEM SUPPLIER to base bid on one hundred and twenty (120) workdays onsite installation advice. CONTRACTOR may schedule supervision in two (2) week increments.
- B. Once installation is complete, the system will be turned over to SYSTEM SUPPLIER for field testing, commissioning, and performance testing. SYSTEM SUPPLIER will provide reasonable access for OWNER Operating personnel to accompany and observe all field and performance testing operations.
- C. SYSTEM SUPPLIER will provide the following training for OWNER personnel:
 - 1. Commissioning of the biosolids dryer and pelletization system:
 - a. Provide an initial five (5) consecutive days of 8-hour training. The training will include training on all components of the biosolids dryer and pelletization system, including all auxiliary systems (dust collection systems, air compressor, pneumatic conveyance systems, truck loading systems, etc.). The training will include instructions on start-up and shutdown, normal operating procedures, safety precautions, emergency conditions and procedures, maintenance procedures and schedules, and operation and usage of the dryer digital control system.
 - b. Provide a follow-up two(2) days of 8-hour training one month after Commissioning.
 - 2. All training specified herein will take place at the project location.
 - 3. The approved Operation and Maintenance (O&M) Manual will be used during all training sessions

1.09 TOOLS, SUPPLIES AND SPARE PARTS

- A. Spare and wear parts are excluded.

1.10 PREPARATION FOR SHIPMENT

- A. All surfaces of equipment, both interior and exterior, will be cleaned of grease, chips, dirt, and other foreign material. Threaded connections will be inspected, and irregularities corrected. Threads will be given a rust preventative coating and will be protected from damage. Openings will be closed with substantial covers for shipment. Machined surfaces such as flange faces, shafting, etc., will be coated with a suitable rust preventative material which can be readily removed but which will withstand weather elements in shipment. Exposed machined surfaces will be protected by wood blocks, wood covers, or other means to

prevent damage in transit and handling. Special handling instructions will be conspicuously placed on all equipment requiring unusual handling or shipping care.

1.11 EQUIPMENT DELIVERY

- A. SYSTEM SUPPLIER will be responsible for delivery of all material to project jobsite. Equipment will be shipped in sections, broken down, which are as large as practical to minimize field assembly.
- B. SYSTEM SUPPLIER will clearly identify all contents of all boxes, crates, and packages.
- C. CONTRACTOR is responsible for safe off-loading, inventory, security, and proper storage of equipment.

1.12 TAGGING

- A. Each item, or part of an item shipped separately, will be identified with suitable markings or tags to identify items. All tagging will follow SYSTEM SUPPLIER standard.

1.13 IDENTIFICATION

- A. SYSTEM SUPPLIER will provide identification tags for each unit of equipment with equipment item numbers per the SYSTEM SUPPLIER Equipment and Instrument Lists. Tags will be engraved plastic.

1.14 LUBRICANTS

- A. SYSTEM SUPPLIER will provide one (1) year supply of lubricants for all supplied equipment.

PART 2 PRODUCTS

2.01 GENERAL

- A. The biosolids drying system will be complete with all required and necessary equipment, access provisions, safety guards, controls and instrumentation, control panels, motor control centers, sensors, interconnecting ducting, and valves required for an operable system as specified herein.
- B. Materials and details of construction will be SYSTEM SUPPLIER's standard for service conditions and performance requirements.
- C. Sampling ports are provided for sampling solid and air streams within the process units.

2.02 OPERATING AND DESIGN CONDITIONS

- A. The Dryer and Pelletization System shall be designed to operate under the following conditions:

| | |
|---------------------------------------|--|
| Dryer and Pelletization System | |
| Number of Dryer Trains | 2 |
| Evaporation Requirement | 13,228 lb/hr |
| Dried Pellet Moisture Content | 8% |
| Dewatered Cake Feed Rate | 14,379 wet lb/hr |
| Dewatered Cake Solids | 20-23% |
| Feedstock Characterization | |
| Type of WWTP | Municipal |
| Type of Sludge | Screened, Anaerobically Digested, amended with ferric chloride |
| Fuel Source | |
| Digester Gas | Primary |
| Natural Gas | Secondary |

- B. The sludge dryer and pelletization system area classifications shall be as identified in NFPA 499.
- C. General Design Criteria

DESIGN IN ACCORDANCE WITH THE 2021 EDITION OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (USBC) WHICH IS BASED ON THE 2021 EDITION OF THE INTERNATIONAL BUILDING CODE, EXCEPT WHERE LOCAL COUNTY AMENDMENTS, OTHER APPLICABLE CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE.

FLOOR LIVE LOADS:

PLATFORMS: ----- 100 PSF
 HANDRAILS AND GUARDS ----- 50 PLF OR 200 LB CONCENTRATED
 INTERMEDIATE RAIL ----- 50 LB
 SLABS SUBJECT TO VEHICULAR TRAFFIC: ----- HS20
 STAIRS AND EXITS: ----- 100 PSF
 ELECTRICAL ROOMS ----- 300 PSF
 OFFICES: ----- 50 PSF
 OTHER LIVE LOADS ----- PER ASCE 7-16 TABLE 4-1

SEISMIC LOADS:

MAPPED SPECTRAL RESPONSE COEFFICIENT (0.2 SEC) (Ss). ----- 0.134
 MAPPED SPECTRAL RESPONSE COEFFICIENT (1 SEC) (SI): ----- 0.043 SITE
 CLASS: ----- D
 DESIGN SPECTRAL RESPONSE COEFFICIENT (Sds): ----- 0.142
 DESIGN SPECTRAL RESPONSE COEFFICIENT (S01): ----- 0.069
 SEISMIC DESIGN CATEGORY:----- B

WIND LOADS:

BASIC WIND SPEED (V, MPH) ----- 120
 ALLOWABLE STRESS DESIGN WIND SPEED (V_{asd}, MPH)----- 93
 RISK CATEGORY: ----- III
 EXPOSURE CATEGORY: ----- C
 INTERNAL PRESSURE COEFFICIENT: ----- +/- 0.18

D. UTILITIES

The following utilities shall be available to the sludge drying and pelletization facility (for each train):

1. Non-Potable Filtered Plant Effluent Water (NPW)
 - a. Temperature: 85 °F (maximum)
 - b. Pressure at Dryer Tie-in Points: 60 psig (minimum)
 - c. Quantity at Dryer Tie-in Points: 1,200 gpm @ 85 °F
2. Natural Gas (NG)
 - a. Nominal Heat Value: 1,000 BTU/standard cubic foot
 - b. Pressure at Burner and RTO Train: 5 psig (minimum)
 - c. Quantity at Burner Train (each): 24,000 standard cubic ft/hr (max.)
3. Digester Gas (DG)
 - a. Nominal Heat Value: 600 BTU/standard cubic feet(max)
 - b. Sulfur Content: ≤ 0.5%
 - c. Pressure at Burner Train: 5 psig. (minimum)
 - d. Quantity at Burner Train: 31,200 standard cubic feet/hr (maximum)
4. Potable Water (PW)
 - a. Temperature: 85 °F (maximum)
 - b. Pressure at Dryer Tie-in: 70 psig (minimum)
 - c. Quantity at Dryer Tie-In Train: 1,200 gpm @ 85 °F
5. Electric Power (EP)
 - a. Service Conditions: 480 Volt, 60 Hz, 3-phase, 3-wire
 - b. Feeder Capacity: 1,500 Amps

E. Dryer design shall be such to minimize the danger of explosions or fires. Atmosphere within the dryer shall be controlled to less than 10% oxygen content (volume %).

1. Feed is immediately stopped if the oxygen content value is exceeded during normal operating conditions. Start-up conditions excluded.
2. Dryer drum shall be equipped with temperature sensors interlocked with non-potable water spray extinguishing system to flood the dryer drum during high temperature situations.
3. Systems that cannot meet this requirement must furnish as part of their supply an explosion suppression system.

2.03 FURNACE WITH DUAL FUEL BURNER

A. The drying train will be equipped with an insulated direct, horizontal end fired furnace. The furnace will be equipped with dual fuel trains for 100% natural gas

fuel train and a digester gas fuel train. Digester gas to be used as a thermal energy source and commissioning is included in this scope.

- B. The rotary drum will be coupled to the furnace with a rotating seal.
- C. The dual fuel burner will be controlled via remote I/O to dryer system PLC and from the local I/O panel with hardwired flame safety components.
- D. The furnace will be equipped with a combustion air fan and burner.
- E. Burner trains will meet or exceed NFPA standards. NEMA 4X stainless steel enclosures will be provided with burner controls.
- F. A local flame safety panel will be provided near the burner.
- G. Fuel consumption will be measured and continuously recorded by PLC using instrumentation. Cumulative total cubic feet of natural gas and digester gas will be displayed on HMI. Separate instruments will be provided for each fuel.
- H. The dryer furnace will provide heat input into the drying system by discharging flue gas from the burner into the furnace and mixing it with recirculating process gas before entering the dryer drum. The recirculating process gas enters the furnace via the annular space between the double wall construction which allows the process gas to be preheated.
- I. Safety controls will include flame failure detection, main and combustion air blower pressure detection, high outlet temperature detection, high and low fuel pressure.
- J. A bolted and hinged door is provided for cleaning and inspection of furnace head (adjacent to dryer/furnace seal).

2.04 DRYING DRUM

- A. The drying drum will be a triple pass direct heat rotary drum with a horizontal concurrent residuals and gas stream flow pattern.
- B. The rotary drum will be designed to meet evaporation rates specified herein while maintaining a drum outlet temperature of 210°F or less. The dried solids emerging from the drum will consist primarily of spherical pellets.
- C. C. Drying Drum will be of a triple-pass design.
- D. The triple-pass drum will consist of three concentric cylinders that will be supported from the heads on either end in a manner that allows them to expand at different rates relative to each other. As minimum, the innermost cylinder of the drum will be constructed of stainless steel. Intermediate and outer drum sections will be built of carbon steel, except that the discharge end of the outer drum will be manufactured from duplex steel.
- E. Bolted doors will be provided at the ends of the dryer for visual inspection and cleanout of each of the dryer passes.

- F. Each concentric cylinder of the triple-pass drum will be equipped with heavy duty flights, 1/8 inch (3 mm) minimum thickness, for raising the material and showering it through the drying gas stream.
- G. The inner cylinder shell will have a minimum thickness of 3/16" inch (5mm). Multiple rows of flights will be welded to the inner and/or outer surfaces of the cylinder shell walls. The intermediate cylinder shell will have a minimum thickness of 3/16 inch (5mm). Multiple rows of flights will be welded to the inner surfaces of the cylinder shell walls.
- H. The outer shell of the drying drum will have a minimum thickness of 1/4 inch (6mm)
- I. The triple-pass drum will be equipped with three (3) temperature sensors at the drum outlet. One of the temperature sensors will be interlocked with the burner controls.
- J. A drum inlet water spray extinguishing system will also be interlocked with the outlet temperature sensors. A high exit gas stream temperature will activate the inlet water spray extinguishing system. The drum inlet water injection system will be in the stationary throat piece connecting the furnace to the triple-pass drum.
- K. The drum inlet will also be equipped with temperature sensor. The inlet will also be interlocked with the control system to shut down the burner if the inlet temperature exceeds the high limit.
- L. The drum inlet will be equipped with a seal for the running fit between the furnace transition and the drum.
- M. The drum outlet will be equipped with a seal for the running fit between the drum and outlet duct.
- N. The drum will be belt driven, with a gear motor coupled to the drive shaft and pulley with intermediate support pillow block bearings.
- O. Motor will be suitable for continuous 24-hour operation and will be of sufficient horsepower, exclusive of the service factor, to operate the equipment over its full operating range, including start-up loads, without overloading. Motor lubrication may be grease or oil type.
- P. The gear motor and bearing support will be mounted as a sub-assembly on slide rails with jacking bolts to allow proper belt tension to be maintained.
- Q. The outer shell will be externally insulated. The insulation and jacketing to be furnished and installed by CONTRACTOR after installation is complete prior to commissioning.

2.05 SOLIDS SEPARATION SYSTEM

- A. Solids shall be removed from the process gas stream in the preseparator will be removed by a high efficiency Polyclone system.

March 3, 2026

- B. The polycyclones will be constructed of ductile iron with cast iron with inlet vanes.
- C. The polycyclone will be equipped with a common collection hopper. The cyclone collection hopper will be constructed of minimum of 3/16 inch (5mm) AR400 plate. The outlet of the common hopper will be equipped with a screw conveyor and a rotary airlock valve.
- D. The Polycyclone inlet will be flanged. The interior of flange will be field welded after assembly by CONTRACTOR to provide an air tight seal
 - 1. The Polycyclone outlet will be flanged and connections to the process gas stream system ductwork will be bolted and gasketed in a manner suitable to the negative pressure and temperature of the cyclone operation at design conditions.
 - 2. The exterior surface of the polycyclone will be insulated. All insulation to be installed and furnished by CONTRACTOR. Insulation thickness shall be a minimum of 3 inches and shall cover external reinforcements by at least 1 inch. Insulation shall be covered with stainless or Aluminum jacket, e minimum thickness 28-gauge stainless steel or aluminum jacket. Access doors shall be insulated with removable blankets.

2.06 MAIN PROCESS ID FAN

- A. The main process fan will be a heavy-duty industrial, direct drive, radial blade induced draft fan.
- B. The fan will be a single width, single inlet arrangement.
- C. The fan drive motor, base plates, and other ancillary equipment will be shop assembled for fit up.
- D. Fan shall be rated in accordance with ANSI/AMCA 210 or ASME Power Test Code 11
- E. The blower wheel, shaft will be constructed of carbon steel. Casing will be constructed of stainless steel. Higher material grades may be used, if necessitated due to stress level. All process exposed parts shall be suitable for gas temperatures up to 300 °F.
- F. The fan housing will be all welded construction and will not be less than 3/8 inch thick. The fan housing will be adequately reinforced and split for wheel and shaft removal.
- G. The shaft bearings will be heavy-duty grease lubricated spherical roller bearings.
- H. The fan drive guards will meet OSHA requirements.
- I. The fan will be equipped with a shaft seal, 2-inch housing drain connection, bolted inspection door, and expansion joints at inlet and outlet connections.
- J. The fan drive motor will be premium efficiency and suitable for use with a variable frequency drive (VFD). A VFD will be supplied for the fan drive motor.

- K. The fan will be furnished with a vibration sensor and surface-mounted bearing temperature sensor RTDs.
- L. Noise level produced by the operating fan system shall be determined in accordance with the applicable OSHA requirements. The goal is noise generation below 85dBA. If the predicted noise is anticipated to be greater than 85 dBA or as called out in the technical specification, sound attenuation options will be proposed to reduce noise to the specified limits
- M. The fan shall be manufactured by Robinson Industries or similar supply.

2.07 ROTARY AIRLOCKS

- A. Airlocks will be sized for nominal 50% volumetric efficiency.
- B. All rotary airlock bodies and end plates will be constructed of carbon steel or cast iron.
- C. All rotor shafts will be sealed using packed gland stuffing box welded arrangement.
- D. Geared motors will be direct coupled.
- E. Rotary airlocks will have zero speed switches
- F. Provide access ports for bearing lubrication.

2.08 VIBRATING SCREEN

- A. A vibrating screen will classify the dried residuals pellets according to size.
- B. The vibrating screen will be equipped with three screening decks for the removal of trash, oversized pellets, and product-sized pellets. Fines (undersized pellets) will pass through the product sized screen. Screen openings will be the following sizes:
 - 1. Trash (Top) 10 mm
 - 2. Oversize (Middle) 4 mm
 - 3. Product (Bottom) 1.0 mm
- C. The vibrating screen product contact areas will be constructed of minimum 304L stainless steel material.
- D. Screen material will be minimum 304L stainless steel.
- E. Casing Material will be minimum 304L stainless steel or painted carbon steel.
- F. Resilient ball cleaning system for each screen deck will be provided to prevent screen blinding.

- G. The top screen will be furnished with a cover assembly with suitable sized feed inlet, gasket, clamps, inspection ports and aspiration vents. The vibrating screen will be dust tight.
- H. Suitable sized flexible connecting sleeves will be connected to the vibrating screen discharge ports.
- I. Motor will be suitable for continuous 24-hour operation and will be of sufficient horsepower, exclusive of the service factor, to operate the screen over its full operating range, including start-up.
- J. Auto Lubrication device shall be provided for bearings.

2.09 BUCKET ELEVATORS (012 & 019)

- A. All bucket elevators will be belt type centrifugal discharge. Designed to be dust-tight and weather tight.
- B. Casings: Elevator casings will be designed to meet the service conditions indicated. Intermediate casing sections will be standard lengths, fabricated of minimum 1/4 inch thick 304 stainless-steel and suitably reinforced. Sections will be flanged, bolted and gasketed with neoprene or silicone gaskets.
- C. All bucket elevators will be provided with deflagration suppression and isolation. Isolation will be provided at the inlet and outlet by means of rotary valves or chemical isolation.
- D. Buckets: Buckets will be nylon and will be identical where possible to minimize spare part requirements.
- E. Bucket Carriers: Belts will be furnished with mounting hardware.
- F. Loading Boots: Boot section will be 1/4 inch 304 stainless-steel complete with flanged inlet and gasket. Bottom plates will be provided with clean-outs and designed to minimize accumulation of inactive material.
- G. Head Sections: The head sections will be 1/4 inch 304 stainless-steel made in the length necessary to complete the casing. The head section will be split for access to the head machinery and have a flanged discharge chute with all connections flanged and gasketed. A vent connection will be provided on the top of each elevator.
- H. Includes required applicable NFPA equipment such as two-step speed switch, belt tracking, and bearing temperature monitoring.
- I. Take-ups: Bottom adjustable type with adjustable dust seals.
- J. Elevator Supports: Elevators are self-supporting.

2.10 PELLET COOLER

- A. Provide single stage vertical water-cooled plate cooler for pellet cooling downstream from the vibrating screen for the product sized pellets only.
- B. The pellet cooler shall consist of a vertical bank of 316L stainless steel water-cooled plates that cool the pellets by direct contact under mass flow conditions. The plate bank shall be housed in a stainless-steel casing with an access door that provides access to the plate bank.
- C. Structural parts may be fabricated from ASTM A36 carbon steel.
- D. The top feed hopper shall be a closed-top design, equipped with a solid inlet connection, inspection doors, vent connection, level probe nozzle and thermocouple nozzle.
- E. The discharge hopper shall consist of a mass flow-vibrating feeder with constant speed drive to regulate solids flowrate through the cooler.
- F. Level control shall be provided by a capacitance type level probe and transmitter.
- G. Cooling water (NPW) shall be supplied to the pellet cooler at a maximum temperature of 85 °F, minimum pressure of 30 psig, and chloride content of maximum 150 ppm. H. Pellets to be cooled to 100F prior to transport to storage.

2.11 CRUSHER

- A. The crusher will crush oversized dried material for recycle.
- B. The crusher will be a double roll design of rugged, durable construction suitable for use on dried residuals. The crusher housing will be of heavy fabricated steel.
- C. Each roller will be constructed of solid, chilled iron rolls grooved per SYSTEM SUPPLIER standard. Iron rolls will have a minimum Rockwell C hardness of 48-52. Rollers will be mounted on tapered, heavy-duty outboard journal bearings with grease lubrication and dust seals. Rollers will be removable for servicing or replacement.
- D. Roller spacing will be adjustable and will be initially set during commissioning.
- E. The crusher will be equipped with a zero-speed sensor switches for the main rolls and feeder.
- F. The rolls will be equipped with a rapid release mechanism to protect the rolls from damage due to foreign materials and be able to quickly separate the rolls without losing the adjustable settings. Total separating force will be adjustable and pre-set at the factory. G. A removable inspection door will be provided on the front of the machine.
- G. For crusher with rolls longer than 12-inch, a roll-type feeder with independent motor drive will be provided to assure a uniform product feed flow across the

entire length of the rolls. The feeder will have a feed gate and a hand screw adjustment for setting the open and close feed gate positions.

- H. The crusher will be V-belt driven by a motor operating at not more than 1800 rpm. The crusher motor will be of constant drive speed. Motor will be suitable for continuous 24hour operation and will be of sufficient horsepower, exclusive of the service factor, to operate the crusher over its full operating range, including start-up, without overloading. Motor lubrication may be grease-type.
- I. The crusher motor will be premium efficiency and suitable for use with a variable frequency drive (VFD). A VFD will be supplied for the crusher motor.

2.12 DRY MATERIAL SCREW CONVEYORS

- A. Screw conveyors will be designed such that they are approximately 30 percent loaded at maximum design product flow utilizing CEMA 350 standards. Feed screws will be designed for 100% loading.
- B. Conveyor screw will be sectional flight, blanked from ASTM A514 steel plate with a minimum Brinell hardness of 235. Screw flight thickness will be minimum 1/4-inch thickness continuously welded on one side, intermittent weld on other.
- C. Trough and trough ends will be fabricated from 304 stainless steel. Saddles and supporting feet will be formed from 304 stainless steel. Conveyor inlets and discharges will be made of 304 stainless-steel, flanged and fully gasketed. All conveyors will have replaceable UHMW wear liners.
- D. All conveyors to be enclosed. Covers to be 10 gage thick 304 stainless steel.
- E. Accessible lubrication points will be furnished for all conveyors.
- F. Screw conveyor drive will be suitable for AGMA Class II operation, by Nord, SEW or equal. Motors will be constant or adjustable speed type selected in conformance with process requirements. Screw conveyor drives to be sized to start in a fully loaded condition.
- G. All conveyors will have zero speed switches.
- H. Dry material screw conveyors shall be shaftless manufactured by Thomas Conveyor or Martin Conveyor or similar supply.

2.13 RECYCLE BIN

- A. The recycle bin will store dried residuals pellets and will have suitable storage capacity to enable startup and shutdown of the dryer.
- B. The recycle bin process contact areas will be constructed of welded 304L stainless-steel.
- C. The recycle bin will be round and have a bin activator.

- D. The recycle bin will also include the following:
1. An access hatch on top of the bin.
 2. Platform is access to top of bin. Access to platform via ladder.
 3. A bin activator to ensure flow of recycled material through the bin to the recycle dosing screw.
 4. A manual maintenance valve for bin activator for maintenance.
 5. Stainless Steel flex connector between maintenance valve and isolation slide gate valve
 6. Thermocouple rope with eight (8) thermocouples for monitoring pellet temperature within the recycle bin.
 7. CO and O2 monitoring sensor.
 8. Nozzles for nitrogen purging of recycle bin.
 9. A continuous level sensor.
 10. Sweep air inlet and outlet nozzles.

2.14 RECYCLE PRODUCT METERING SCREW CONVEYOR

- A. The recycle screw conveyor will be located below the recycle bin.
- B. The recycle screw conveyor feeds recycle material to the mixer.
- C. The recycle screw conveyor speed will be controlled by a variable frequency drive.
- D. The recycle screw conveyor will provide ability to empty the recycle bin by reversing screw.
- E. The recycle screw conveyor shall be equipped with water spray nozzle for use when emptying the recycle bin.

2.15 WET MATERIAL BIN AND LIVE BOTTOM SCREWS

- A. The wet material bin will be constructed of welded carbon steel plate with ASTM A36 carbon steel reinforcement
1. The bin will have a minimum wet capacity based on two hours of operation at design rate.
 2. 24 -inch access hatch located on top.
 3. All parts that come in contact with wet material will be coated with a fusion-bonded epoxy paint system.
 4. The bin walls will be designed to resist the maximum applied loads.
 5. The wet material bin will include a sealed top. Handrails will be mounted around the wet material bin top to allow safe access.
 6. The wet material bin will be equipped with 2 ultrasonic continuous level sensors. The level sensors will transmit a continuous level signal to the main control system.
 7. A 4-inch diameter stub connection will be provided in the wet material storage bin to allow for connection to an odor control system
- B. Multiple live bottom screw assembly is used to feed the cake pumps. The screw assembly has the following features:

1. Shaftless carbon steel ribbon screws with UHMW liners.
2. 304 Stainless Steel troughs with cap drain.
3. Zero speed switches
4. Drive assembly including motor and reducer.
5. Variable Frequency Drive to control speeds.
6. Provide a minimum 2-inch diameter drain connection in each of the live bottom screw conveyor troughs.
7. Capable of reversing to control stacking level in bin.

2.16 DEWATERED CAKE PUMPS

- A. Progressive cavity pumps (one duty, one standby) will be used to feed the mixer.
- B. Progressive cavity pumps designed to pump design dewatered cake from live bottom screws to the mixer.
 1. Four stage pump design with maximum pressure of 175 PSI
 2. Hopper
 3. Auger feed screw
 4. Run dry protection via temperature probe.
 5. Gear Motor with Variable Frequency Drive
- C. Manual Inlet isolation valve with valve position indication
- D. Pneumatic outlet isolation valve with valve position indication
- E. Discharge Pressure Instrumentation, pressure switch and thermistor for run-dry protection shall be provided.
- F. For over pressure protection, the pump should be supplied with a silicone-filled isolation ring with a dual mounted gauge and single point pressure switch.
- G. Lubrication pump injection system using potable or acceptable reclaim water.
- H. Dewatered Cake Pumps shall be manufactured by Moyno 2000HS or Wangen or similar supplySYSTEM SUPPLIER scope includes the design specification of the wet cake piping between the PC pump discharge and the inlet of the dryer Mixer. CONTRACTOR will use the SYSTEM SUPPLIER design specification to procure, furnish and install the wet cake piping.
- I. All sludge cake feed piping and associated fittings, valves, and supports are by CONTRACTOR.

2.17 MIXER

- A. The mixer will be of a horizontal, continuous flow unit designed to combine dewatered cake from the wet material bin with dried biosolids from the recycle bin.
- B. The one-piece solid shaft enclosed plow-share mixer will be constructed of carbon steel.

- C. The mixer plows are constructed of carbon steel. Plow faces will be lined with ceramic tiles. Plows will be capable of being replaced without replacing entire shaft.
- D. The single, coupled, main shaft is mounted on outboard, anti-friction, tapered roller bearings. Mixer shaft will be packing gland seals with grease port.
- E. Mixer housing will have two heavy duty hinged and safety interlocked clean-out doors.
- F. Discharge shall be isolated by a gate valve.
- G. Sampling device
- H. Zero speed switch
- I. The mixer will be direct driven by motor with reducer controlled with a variable frequency drive. Motor will be suitable for continuous 24-hour operation and will be of sufficient horsepower, exclusive of the service factor, to operate the mixer over its full operating range, including start-up, without overloading. The variable frequency drive will be located in the electric room.

2.18 CONDENSER

- A. The condenser uses non-potable water (NPW) to condense the water vapor present in the process gas stream that was evaporated from the biosolids. The condenser also captures a portion of the particulate matter carried by the process gas stream from the polyclone.
- B. The shell of the condenser will be minimum 304L stainless-steel.
- C. The condenser will be equipped with a stainless-steel spray header and multiple minimum 304L stainless-steel trays to provide cooling of the air stream.
- D. The condenser will be equipped with a mist eliminator for removal of entrained water droplets from the gas stream before it exits the condenser. The mist eliminator will be a minimum 304L stainless-steel construction and be an integral part of the condenser. The mist eliminator will be designed in sections to allow removal for cleaning. Lifting devices to remove the sections are by CONTRACTOR.
- E. Spray Lances and nozzles will be provided for cleaning of trays and mist eliminator.
 - 1. If gravity drainage is not possible, the bottom of the condenser will act as a sump from which the suction side of the Condenser pump (by CONTRACTOR) will receive water.
 - 2. The condenser will have a drain plug to allow water to drain from the sump by gravity. The sump floor is flat.

3. The condenser will be equipped with a drain with internal to discharge condensate and prevent overflowing.
4. The condenser will be equipped with a stainless-steel bolted access door to allow access to all trays and the mist eliminator during repair or maintenance of the unit. Access between trays will be through access panels in the trays that can be unbolted and removed.
5. The condenser will be designed to withstand the full shutoff negative pressure of the fan. Access doors and inlet and outlet ductwork connections will be bolted and gasketed in a manner suitable to the pressure and temperature of the condenser.
6. A ladder and handrail will be provided for access to the top of the condenser.

2.19 VENTURI

- A. A venturi will be provided to clean exhaust gas leaving the dryer. The venturi will treat the exhaust air from the dryer prior to entering the acid scrubber. The venturi will remove fine particles.
- B. The venturi throat section will be constructed of duplex stainless steel.
- C. The throat section knife gate will be constructed of 316L stainless-steel.
- D. The venturi knife gate position will be controlled by a pneumatic actuator.
- E. Venturi pump will pump adequate water to venturi throat for treatment of exhaust air.

2.20 ACID SCRUBBER

- A. The acid scrubber treats exhaust air using sieve trays and water contact. If needed, acid can be used to lower pH and assist in removing ammonia to reduce NOx emissions.
- B. The scrubber body will be constructed of fiberglass reinforced plastic.
- C. Multiple sieve trays constructed of duplex stainless steel.
- D. Demister section of packing will be provided to assist in the removing acidic water droplets.
- E. Mist eliminator using chevrons to eliminate moisture prior to exiting the scrubber.
- F. Spray lances for under tray spray and mist eliminator cleaning
- G. Recirculation pump for circulating scrubber water onto trays.
- H. Nozzle for pH probe overflow drain pump suction access to manways for sump, trays, packing and mist eliminator platforms for access to elevated manways.

2.21 EXHAUST GAS FAN

- A. A Dryer Exhaust Fan will be provided to control drum inlet pressure and remove exhaust gas from the drying system and send to the RTO.
- B. The exhaust fan will be a heavy-duty industrial, direct drive, radial blade induced draft fan.
- C. The fan will be a single width, single inlet arrangement.
- D. The fan drive motor, base plates, and other ancillary equipment will be shop assembled for fit up.
- E. The blower wheel and casing will be constructed of 316L stainless steel. Motor base constructed of A36.
- F. The fan housing will be all welded construction and will not be less than 3/8 inch thick.
- G. The fan will be equipped with a shaft seal, 2-inch housing drain connection, bolted inspection door, and expansion joints at the inlet and outlet connections.
- H. The fan drive motor will be premium efficiency. A variable frequency drive (VFD) will be supplied for the fan drive motor.
- I. The fan will be furnished with a vibration sensor.

2.22 REGENERATIVE THERMAL OXIDIZER (RTO)

- A. The regenerative thermal oxidizer (RTO) will be a three-chamber ceramic bed type which will oxidize volatile organic compounds (VOC) and odor-causing constituents in the gas stream to non-odorous products of combustion.
- B. The RTO will be designed for a minimum of 95% thermal efficiency (mass corrected, clean media).
- C. The thermal oxidizer will be designed to operate at a minimum volatile organic compound destruction removal efficiency (DRE) of 98% or less than 20 ppm as methane, measured using EPA Method 25A.
- D. The thermal oxidizer will have a minimum incineration temperature of 1500°F.
- E. The thermal oxidizer will be designed so that the gases entering the unit will have a minimum residence time of no less than 0.5 seconds at 1500°F.
- F. The thermal oxidizer will have a continuous temperature monitor. The sensor will be installed within the combustion chamber, and it will be properly shielded from direct contact with the flame.
- G. Inlet, outlet, and purge manifolds will be fully welded minimum 10-gauge minimum 304L stainless steel with bolted connection flanges.

- H. Exhaust and purge air manifold will be insulated and jacketed with 28-gauge minimum stainless-steel jacket by CONTRACTOR.
- I. Inlet and outlet manifold will be provided with a drain leg and trap piped to a plant drain to facilitate removal of condensed moisture. J. Fresh Air Inlet:
 - 1. The inlet manifold will be equipped with a fresh air inlet to allow the system to be started up and run using ambient air.
 - 2. The fresh air inlet will be provided with a screen to prevent the entry of foreign objects through the fresh air inlet.
- J. Burner Chamber
 - 1. Burner chamber will be a ceramic fiber insulated and/or refractory lined housing fabricated from minimum 1/4-inch (6 mm) thick carbon steel, designed for a temperature of 1800° F (980° C).
 - 2. Ceramic fiber insulation and/or refractory lining will be installed at the factory.
- K. Heat Recovery Chambers (HRCs)
 - 1. The HRCs will be sized to accommodate fouling.
 - 2. Three HRCs will be provided.
 - 3. HRCs will be a ceramic fiber insulated and/or refractory lined housing fabricated from minimum 1/4-inch (6 mm) thick carbon steel.
 - 4. HRC media will be ceramic saddles.
 - 5. Cold face media supports will be 304 stainless steel grating.
 - 6. Ceramic fiber insulation and/or refractory lining will be installed at the factory
- L. Burner and Fuel Train
 - 1. Fuel will be Natural Gas with supply pressure of 5 psig minimum.
 - 2. The burner will be the nozzle mix, sealed in, excess air type. NOx emissions from the burner when fueled with 100% natural gas (NG) will not exceed 0.1 lb. per million BTU (as NO2, tested on fresh air).
 - 3. Burner controls and fuel train will comply with the requirements of NFPA.
 - 4. The burner control panel enclosure will be NEMA 4X.
 - 5. Burner will be provided with a sight port and ultraviolet selfchecking scanner with an unobstructed, clear view of the main flame.
 - 6. A platform and ladder will be provided to access the burners, fuel trains, and flame monitors.
 - 7. Fuel train shall ship pre-assembled onto skid.
- M. RTO Combustion Air Fan
 - 1. The RTO combustion air fan will be a dedicated constant speed direct drive fan to provide combustion air to the RTO burner. Fan will be designed to operate at the volume required by the burner.
 - 2. RTO combustion air fan will be equipped with an inlet filter and silencer. Filter will be removable for cleaning.

3. Fan shall be designed such that the sound measured 3-feet away shall not exceed 85 dBA.

N. RTO Induced Draft Fan

1. The RTO fan will be a heavy-duty industrial, direct drive, backward curved induced draft fan.
2. The fan will be a single width, single inlet arrangement.
3. The fan drive motor, base plates, and other ancillary equipment will be shop assembled for fit up.
4. The blower wheel, shaft, and blades will be constructed of carbon or alloy steel, casing of 304 stainless steel, all suitable for gas temperatures up to 600° F. Base and pedestal shall be carbon steel.
5. The fan housing will be all welded construction.
6. The shaft bearings will be heavy-duty grease lubricated spherical roller bearings.
7. The fan drive guards will meet OSHA requirements.
8. The fan will be equipped with a shaft seal, 2-inch housing drain connection, bolted inspection door, and expansion joints at the blower inlet and outlet connections.
9. The fan drive motor will be premium efficiency. A variable frequency drive (VFD) will be supplied for the fan drive motor.
10. The fan will be furnished with a vibration sensor and bearing temperature sensors.
11. Fan shall be designed such that the sound measured 3-feet away shall not exceed 85 dBA.

O. Access:

1. Access hatches (three top, two side) will be provided for the burner chamber.
2. Access hatches for access to the inlet and outlet manifold ductwork will be provided.
3. Ladder will be provided to access three top hatches. OSHA required fall protection will be provided for ladder and top hatches.
4. A platform and ladder will be provided to access the burners, fuel trains, and flame monitors.

- P. The control system will be provided and consist of remote I/O to Dryer System PLC and include hardwired safety components. Control system will perform automatic start-up, shutdown, ramping of burner chamber temperature, monitoring of safety interlocks, and fault annunciation.

Q. Power Actuation System

1. Damper actuation will be either a self-contained hydraulic system or a pneumatic actuation system supplied by the RTO manufacturer.
2. Actuation system will be pre-piped as practically possible and installed on the common support skid at factory.
3. Damper material of construction: 304

- R. Includes RTO bypass duct to send dryer exhaust gas direct to the exhaust stack (RTO indoors) or auxiliary stack (RTO outdoors).

2.23 STACK

- A. Stack will be constructed of corrosion resistant series 316L stainless steel in areas of contact with exhaust gas. Base of stack will be painted carbon steel. Stack will be a minimum thickness of 1/8 inch.
- B. Stack inside diameter will be as required to meet process requirements.
- C. Stack will include two sampling ports on diameter 90 degrees apart. The stack port locations and construction will comply with the requirements of 40 CFR, Part 60, Appendix A.
- D. Sampling ports will be a minimum 4-inch nominal diameter, standard industrial flanged pipe. Ports will be installed flush with interior stack wall and will extend outward from exterior stack wall no less than three inches and no more than eight inches.
- E. Stack to be installed inside the building line and to extend to an elevation ten (10) feet above roof line. Additional height, if required, will be by change order

2.24 PROCESS GAS DUCTWORK

- A. The process gas stream system will include the air distribution equipment and materials, ductwork, flexible duct connections.
- B. Ductwork will be reinforced to prevent sagging, flexing, and drumming. Ductwork pressure class will be for a minimum of negative 30 inches W.G. (water gage), or greater dependent upon operating conditions.
- C. All ductworks will be corrosion resistant ductwork. The type, pressure rating and location of this ductwork will be fabricated in accordance with SMACNA Class 4 Standards.
- D. All duct sections and reinforcements (except the drum to solids separation system duct) will be fabricated of 304L stainless steel.
- E. All duct supports (except drum to solids separation system) will be fabricated of 304L stainless steel.
- F. The ductwork from the drum to the solids separation system will be carbon steel internally coated with ceramic lining. Support for lined duct to be galvanized carbon steel.
- G. Duct curves, bends, offsets and transitions, and transformation pieces will be gradual, to minimize air turbulence. In general, duct transformations changing air velocity will be designed for minimum loss in total pressure.
- H. The center line radius of curved elbows will be at least 1.5 times the duct diameter.

- I. Instrument test holes will be provided in the ducts and plenums at appropriate locations for the insertion of 3/4-inch pitot tubes and similar air measuring instruments. Such openings will be equipped with removable, tight-fitting caps or covers suitable for the intended service.
- J. All stainless-steel duct welding in accordance with AWS D1.6 for stainless steel.
- K. All process gas stream ducts will be externally insulated. Ductwork insulation to be furnished and installed by CONTRACTOR and will be jacketed with 28-gauge stainless steel.

2.25 FINAL PRODUCT STORAGE SILOS

- A. The product storage system shall include the silos, bin activators, isolation gates, load-out chutes, nozzles, nitrogen inerting, and instrumentation and other accessories.
- B. The final product storage silos shall:
 - 1. Each final product storage silo shall be of circular conical shape with a bottom hopper with a minimum 60° slope. Product storage capacity shall be based on a 25° angle of repose for stored pellets.
 - 2. Product silo shall be of “mass flow” design
 - 3. The product storage silo shall be constructed of structurally reinforced ASTM A36 steel and plate. Design and construction shall comply with the latest revisions of AISC and AWS. Silo interior shall be smooth with no protruding flanges, instrumentation, or structural members impeding material flow. The silos shall accommodate flow by the utilization of the bin activator.
 - 4. Provide silo structural steel supports transmitting the silo load to the concrete support pier allowing truck drive through under the silo discharge chute adequately designed for rated loads and conditions. Supports shall allow a minimum vertical clearance of 14-feet between the truck load-out chute and the finished floor. The supports shall allow for a minimum horizontal clearance of 15-feet between the support members for drive under truck clearance.
 - 5. A suitably sized bin activator shall be provided for each silo. All bin activator components in contact with silo contents shall be rated for a maximum temperature of 250° F.
 - 6. The silo roof shall be designed to allow mounting of all necessary hardware. Connection nozzles through the silo roof shall be arranged in a manner to allow convenient access for repair and maintenance.
 - 7. The silos shall be of sufficient structural strength with bracing and stiffeners as required to support the weight of the stored material, expected maximum pressure and vacuum conditions, and the live and dead loads of all equipment and operator on the roof of the silo. The silos shall have a pressure rating coordinated with the pressure rating of the explosion venting system.
 - 8. Provide venting through the silo roof. The entire silo roof shall be designed to relieve explosions. Provide cables to attach silo roof to silo.
 - 9. A 24-inch diameter inspection manway with gasketed and bolted cover shall be provided.

10. Nozzle opening and connections shall be provided for all required piping, equipment, and instrumentation.
 11. Each silo shall be dust-tight and ventilated. A dust system duct shall be provided for connection to the silo dust system. A pressure and vacuum relief valve shall be provided to allow supply air into the bin for dust collection.
 12. Each silo shall have eight (4) suitably located thermocouples to allow monitoring of pellet temperatures during storage.
 13. Each silo shall have one (1) carbon monoxide sensor mounted to determine gas levels in the silo headspace.
 14. Factory applied coatings shall be provided on silo panels
 - a. Surface Preparation - Power wash and rinse silo panels to remove grease, oil and foreign matter. Oven dry and grit blast to a near white finish (SSPC-SP10) with a nominal 2-mil surface profile.
 - b. Curing and Shipping - Baking oven shall be used after each coat, bake at metal temperatures of 375 °F (190 °C). Inspect all parts prior to shipment. Place silo panels in handling racks to facilitate transporting to the jobsite and to minimize coating damage. Include touch-up paint for application in the field.
 - c. Interior Coatings - Interior coatings shall be Trico Bond EP finish. Coating system shall have 5 mils minimum DFT. Coating system shall have a minimum continuous heat resistance to 250 °F.
 - d. Exterior Coatings - Exterior coatings shall be Trico Bond EP primer with Performance Urethane enamel finish coat. Primer shall be 5 mils minimum DFT primer plus 1.5-2.0 mils minimum DFT finish coat. Exposed surfaces underneath the cone hopper shall be coated as exterior surfaces
- C. A motorized truck load-out chute shall be furnished with each storage silo and shall act as an extension of the silo discharge hopper. The load-out chute shall be designed to minimize emissions of fugitive dust particles during pellet discharge from the silo.
1. The truck load-out chute shall be constructed of conical AR 225 steel sections suspended on stainless steel wire rope and surrounded by a vinyl coated polyester sleeve. The dried pellet product shall flow through an inner chute, while dust created during unloading is captured from the annular section between the outer sleeve and the inner chute.
 2. Each truck load-out chute shall be connected to the storage silo fugitive dust system. A damper that closes and opens at the beginning and end of load-out operations shall be provided.
 3. Extension and retraction of the load-out chute shall be controlled through a cable hoisting system powered by an electric motor.
 4. One (1) isolation gate and one (1) bin activator shall be provided for each storage silo truck load-out chute. The isolation slide gates shall be pneumatically operated. The control valves shall fail closed on power failure.
- D. Access platforms shall be provided allowing access to the silos at the truck load-out level. Both silos shall be connected by a platform at the discharge chute level.

- E. Structural steel supports for each silo shall be furnished primed and ready for finish painting.
- F. Finish painting shall be by SYSTEM SUPPLIER. CONTRACTOR shall provide touch-up painting.

2.26 DENSE PHASE PNEUMATIC PRODUCT TRANSPORTER SYSTEM

- A. Dense phase pneumatic product conveyance system with boosters to deliver cooled, dried product size pellets into the storage area and back to recycle bin as required. The conveyance system will be sized to deliver dried pellets over the required distance at design loading conditions.
- B. The pneumatic conveyor will include transport pipeline, air boosters with electric solenoid valves, instrumentation, and controls. The pneumatic conveyor will be pre-assembled, wired and tested at the factory and then broken down for transport. Power supply and air control lines by CONTRACTOR.
- C. The transport conveyance piping will be of carbon-steel galvanized construction for the required operating conditions.
- D. The transport vessel inlet, discharge, and vent will have pneumatic actuated butterfly valves with limit switches.

2.27 AIR COMPRESSOR PACKAGE

- A. Air compressor air system is sized and furnished to supply sufficient air volume of moisture, lubricant and dust free air at pressures required by the biosolids drying and pelletization system.
- B. The air compressor system will include air dryer and complete control package. It will be capable of remote start. Air compressor and dryer will produce -40 °F dew point compressed air.
- C. Air Compressor:
 - 1. Air compressor will be commercially available packaged unit oil-cooled, single stage, rotary screw type with a variable speed motor.
 - 2. Air inlet filter with replaceable elements and a service indicator.
 - 3. Air cooled after cooler and automatic moisture drain.
 - 4. Enclosed to provide a sound power level rating of no more than 85dBA.
- D. Air Dryer:
 - 1. Desiccant Dryers to provide -40F pressure dew point.
 - 2. Includes prefilters and after-filters, digital controller and switching valves.
- E. Air receivers:
 - 1. Air receiver(s) will be vertical construction, fabricated to ASME Section VIII, Division 1, rated for 150-psig pressure.
 - 2. Air receiver(s) shall be provided with an ASME rated pressure relief valve.

3. Pressure gauge and automatic condensate drain

F. Air compressors will be Ingersoll Rand, Atlas-Copco, or similar supply.

2.28 DUST COLLECTION WET SCRUBBER SYSTEMS (DS)

A. SYSTEM SUPPLIER will provide dust collection system for dryer and one for storage area. Systems operate independently. Each will include the following items: suction ducting, wet scrubber with exhaust fan (Monroe, or similar), manifold for duct connections. Discharge ducting by CONTRACTOR.

B. Wet Scrubbers will use venturi principle for particle removal.

C. Each wet scrubber will include inlet and outlet flanges, exhaust fan with motor, water connections, hopper with outlet flanges, support legs, water control solenoids and hinged access door.

D. Material of construction 304L stainless steel.

E. HDPE Mist Eliminators

F. Inspection door to access hopper.

G. Fan Noise attenuator

1. A dust collection system fan will be furnished for each DS wet scrubber to create the required vacuum in the DS.
2. The DS fan will be a heavy-duty design featuring a backward-inclined wheel, direct drive constant speed motor all on one integral steel frame. All parts in contact with the air flow will be made of stainless-steel.
3. Fan will be provided with a sound enclosure.

H. Dryer Plant DS

1. The plant DS will be designed to operate whenever biosolids are in the Biosolids Drying System. The system will be capable of allowing manual operation.
2. The dryer dust collection wet scrubber system will be installed to remove dust from the materials handling system including the vibrating screen, crusher, bucket elevators, screw conveyors, pellet cooler, and recycle solids bin by ventilation of each piece of equipment.
3. The system will include commercial standard 304L blast gates at each inlet to balance the system.
4. This system will consist of type 16 gage minimum, 4-inch O.D. 304L stainless steel ducting that connects the above referenced items to a central wet scrubber located.
5. Dust duct couplings are galvanized steel body, rubber gasketed with stainless steel gasket protector and grounding strip.
6. Dust collected at the storage area DS wet scrubber will be discharged into plant drains.

I. Storage area DS

1. The storage area DS wet scrubber will be installed to control dust from the storage area equipment.
2. The dense phase pneumatic conveyor, receiving vessel, pellet oiling mixer conveyor and dustless loadout discharge spout will utilize a DS unit designed to operate whenever biosolids are in transit. The DS system will be capable of allowing manual operation.
3. This system will consist of type 304 stainless steel ducting that connects the above referenced items to a wet scrubber located at the base of the storage area. The wet scrubber will discharge to a plant floor drain.
4. The system will include isolation at each inlet to balance the system.
5. Dust collected at the storage area DS wet scrubber will be discharged into plant drains.
6. Storage area wet scrubber will be suitable for outdoor installation.

2.29 ACCESS PLATFORMS, WALKS AND STAIRWAYS

- A. Furnish access provisions consisting of access platforms, catwalks, ladders, handrails, stairways, as shown on the drawings.
- B. Access to major equipment platforms will be by stairs or ladders.
- C. Structural steel members will be free standing and will be supported from the floor slab only.
- D. Structural steel finish will be Hot Dipped Galvanized (HDG)
- E. Provide handrails around all areas requiring personnel access. All handrails provided will be two rails with toe board, extruded aluminum. Rails and posts nominal 1-1/2-inch diameter. Post spacing maximum 5-feet. Handrails will be by Thompson Fabricating, Holländer or approved equal.
- F. All metal grating provided will be HDG bar type grating, designed for foot traffic, 100 pounds per square foot minimum uniform service load, maximum deflection 1/4-inch.
- G. Ladders will be aluminum or galvanized steel sized for concentrated load of 250 pounds plus 30 percent impact on the rungs. Maximum rung deflection will be L/360. Rungs will be non-slip grip surface.
- H. Structural steel members will be fabricated in accordance with AISC specifications. Rolled plates, shapes, and bars will be ASTM A36 or ASTM A992. Structural steel pipe will be ASTM A501 or ASTM A53, Type E or S, Grade B. Structural tubing will be ASTM A500, Grade B. Welding materials will be AWS D1.1. Field repairs to use cold galvanizing.
- I. Access will conform to the extent reasonable, to the project requirements.

2.30 DEFLAGRATION VENTING, SUPPRESSION, AND ISOLATION SYSTEMS

- A. SYSTEM SUPPLIER will furnish deflagration chemical suppression or venting, and chemical or mechanical isolation systems to control deflagration events within

the dryer process units. Design and size the systems in accordance with NFPA 68 and NFPA 69.

- B. Deflagration protection measures will be provided by suppression or venting and isolation.
- C. Deflagration safety - chemical isolation or suppression bottles will be provided for the pre-separator / polycyclone, crusher, recycle bin, and bucket elevators. The safety system will be sized to safely suppress, isolate, or relieve any deflagration pressures that may develop within this equipment in accordance with guidelines in NFPA 68 and all applicable codes and standards
- D. Pressures developed in the venting system will not exceed the pressure rating of the protected vessel.
- E. Approved vendor for the deflagration venting systems will be CV Technologies, Fike, Inc, Rembe, or equal.
- F. Isolation - Deflagration isolation will be provided by either chemical or mechanical means.
- G. Spark Detection - Spark detection is used to prevent deflagrations by detecting, isolating, removing, and cooling hot material before it is exposed to suspended dust. Spark detectors will be used at two locations on the system – one at the outlet of the solids separation system. The system will consist of a spark detector, diverter valve, and water quench. When hot material (a spark) is detected, a diverter is activated to discharge the material into container and at the same time a water spray is activated to quench the material.

2.31 ANCHOR BOLTS

- A. SYSTEM SUPPLIER will furnish all anchor bolts required for anchoring equipment components, accessories, and structural steel members to their concrete supports and foundation.
- B. Anchor bolts will be of 316 stainless-steel.
- C. Anchor bolts will be properly sized to match loads associated with anchored equipment.
- D. SYSTEM SUPPLIER will provide recommended epoxy specification.
- E. SYSTEM SUPPLIER will provide drawings showing arrangement and location of anchor bolts in concrete supports and foundations.
- F. The CONTRACTOR will be responsible for installation of the anchor bolts.

2.32 SOUND PROOFING

- A. No process unit will have a sound pressure rating level in excess of 85 dBA within 5-feet of any direction of the unit.

- B. Soundproofing or thermal insulation to be furnished by CONTRACTOR

2.33 PAINTING

- A. Unless specified otherwise, factory surface prepare, prime, and finish exposed exterior ferrous metal surfaces for all equipment and accessories of the biosolids drying and pelletization system.
- B. Standard Coating - For equipment with surface temperatures below 250°F a standard coating system will be provided. Prepare surface to receive coating by abrasive blasting or centrifugal wheel blast. Prime with one coat of 2.5 minimum DFT epoxy primer. Finish with one coat of 3.0 minimum DFT polyurethane enamel.
- C. Thermal Coating #1 - For equipment with surface temperatures between 250°F and 450°F a thermal coating system will be provided. Prepare surface to receive coating by abrasive blasting or centrifugal wheel blast. Prime with one coat of 2.5 minimum DFT inorganic zinc primer. Finish with two coats of 2.0 minimum DFT silicone acrylic.
- D. Thermal Coating #2 - For equipment with surface temperatures between 450°F and 700°F a thermal coating system will be provided. Prepare surface to receive coating by abrasive blasting or centrifugal wheel blast. Prime with one coat of 2.5 minimum DFT inorganic zinc primer. Finish with one coat of 2.0 minimum DFT silicone.
- E. Surfaces not requiring painting include non-ferrous and corrosion-resistant alloys, such as copper, bronze, Monel, aluminum, chromium plate, and stainless steel.

2.34 THERMAL INSULATION - EXCLUDED FROM SYSTEM SUPPLIER SCOPE

- A. All insulation material and field labor to install insulation is furnished by CONTRACTOR.
- B. SYSTEM SUPPLIER will supply the specification for insulation of the dryer equipment.
- C. The exterior surface of all hot system components, unless otherwise specified, will be insulated. The insulation will be covered with a minimum thickness 28-ga stainless steel or aluminum jacket.
- D. The insulation will be chemically and thermally stable mineral wool with a maximum K factor of 0.90 at 600°F.
- E. As a minimum, thermal insulation will be provided for the following equipment suitable for installation in areas of furnace, drying drum, solids separation equipment, main fan, RTO exhaust manifold, and process gas stream ductwork.

2.35 ELECTRICAL

- A. General Electrical Provisions

1. Motor circuit protector breakers will be provided for all motors.
2. SYSTEM SUPPLIER will provide HAND/OFF/AUTOMATIC control switches for all motors in each bucket of the MCC's. In the "HAND" position, the equipment will run without interlocks or PLC control. In the "OFF" position, the equipment will not run. In the "AUTOMATIC" position, the PLC will control the equipment.

B. Motors

1. All motors will be TEFC rated.
2. Motors will have a 1.15 service factor at rated ambient temperature.
3. Motors will have Class F insulation.
4. Motors below 1/4 horsepower will be single phase 120V.
5. Motors 1/4 horsepower and larger will be three phase 480V.
6. Electrical system frequency will be 60 hertz.

C. Motor Control Centers

1. Provide complete Rockwell Automation (Allen Bradley) motor control center (MCC) with all necessary accessories to control all motors. Unless specifically noted otherwise, all motor control center equipment will be housed in the motor control center.
2. MCC to include the following features:
 - a. Combination starters with magnetic trip only circuit breakers.
 - b. Individual 120V control power transformers with two primary fuses for each starter.
 - c. Green "ON", Red "OFF", Amber "FAULT" status lights on front of each starter.
 - d. Feeder only units to use molded case circuit breakers. • Tin plated copper horizontal and vertical power buses.
 - e. Three phase connections, three wire MCC (no neutral bus).
 - f. Copper ground bus entire width of MCC.
 - g. Rated for 65 kA interrupting capacity.
 - h. 600V rating.
 - i. NEMA 250, Type 1, gasketed enclosure.
 - j. Motor buckets to have Smart Ethernet connection for control and monitoring.

D. Variable Frequency Drives

1. Variable frequency drives (VFDs) less than or equal to 300 HP will be provided as an integral portion of the MCC. Variable frequency drives (VFDs) greater than 300 HP will be provided as standalone with active front end VFDs fed from the MCC.
2. VFDs will be rated based on the actual motor full load nameplate current rating.
3. Rated continuous operating capacity will be not less than 1.15 times the full load current rating of the driven motor as indicated on the motor nameplate, and suitable for continuous operation at any continuous overload which may be imposed on the motor by driven equipment operating over specified speed range.
- 4.

5. 3% incoming line reactors provided for greater than or equal to 75 HP up to 300 HP VFDs to minimize harmonic distortion.

2.36 CONTROL SYSTEM

- A. The control system will be designed to automate biosolids drying system with minimal operator input. A centralized control location is required from which the entire system can be started, stopped, and operated under normal conditions.
- B. The control system will be a Rockwell Automation (Allen Bradley) PLC based system utilizing Zenon HMI software as an operator interface for input to system operation.
- C. Dryer burner control system is integrated fully as a remote I/O subsystem of the dryer PLC.
- D. RTO control system is integrated fully as a remote I/O subsystem of the dryer PLC.
- E. Built using tested and proven SYSTEM SUPPLIER standard function blocks, including I/O centric function block, system sequencer, and latched fault handler.
- F. From the HMI system the operator will be able to initiate start and stop sequences for the system biosolids Drying System. The operator required actions will be to select maximum feed rate and to adjust wet dry mix ratio. A local control station (Truck Load out Panel) with HMI will be provided for truck loading which will serve as the primary control location for this function.
- G. The biosolids drying system's data acquisition and control activities will be performed by a PLC based control system. Operator interface will be through personal computer with a widescreen LCD monitor.
- H. SYSTEM SUPPLIER will furnish a fully programmed control and display system including PLC logic, system pictorial graphic displays with real-time data, alarm monitoring and logging software, operator interfaced software, and all other services required for the operation and monitoring of this plant.
- I. The biosolids drying system's control system will include the following components:
 1. Programmable Logic Controller (PLC) subsystem including processor, remote I/O panels, power supplies, racks, I/O modules, and all required accessories.
 2. Two (2) PC based operator control station will be provided in the main control room. This computer will operate the Human Machine Interface (HMI) software for the biosolids dryer system.
 3. For the RTO Workstation, One (1) PC based local control operator station will be provided housed in a NEMA 4X enclosure with touchscreen monitor will be provided adjacent to each biosolids dryer in the operating area and will be functionally identical to the main unit in the control room. The local control operator station will be mounted in a NEMA 4X stainless steel enclosure.

4. Un-interruptible Power Supply (UPS) subsystem will be provided to power the PLC and HMI computers and all instruments for a minimum duration of 30 minutes following a power outage.
5. Truck Load-Out Panel subsystem will be provided in a NEMA 4X stainless steel enclosure with remote I/O racks in the panel as required. Will include one (1) PC based local control operation workstation with touchscreen monitor.
6. Integrated firewall and VPN appliance, to facilitate remote support.

J. PLC System Equipment

1. General

- a. The PLC will be of a modular expandable design.
- b. The PLC CPU and I/O will be mounted and pre-wired in the same or contiguous front access cabinets. This equipment will be located in the control or MCC room.
- c. The PLC cabinets will be furnished complete with all the power supplied necessary for PLC and I/O operation, including sensing power for 2-wire transmitters and contact inputs.
- d. Field wiring will not terminate directly on the I/O cards. The PLC cabinet with exception to the storage vessel Thermocouple Temperature Ropes
- e. will be equipped with terminal strips for this purpose. I/O cards will be protected via circuit breakers.
- f. The CPU will be sized with sufficient capacity such that 85% CPU loading will not be exceeded under normal operating conditions. The CPU will be fully capable of executing ladder logic, analog signal conversion, PID control, alarm generation and all other activities associated with the operation of the plant.
- g. The PLC will be equipped with bi-directional communication capability with the personal computer-based operator station. Communications will be based on TCP/IP Ethernet protocol.
- h. The processor will be Allen Bradley, Control Logix.

2. Input/Output Subsystems (I/O)

- a. The system will be supplied with a minimum of 25% spare active I/O points and will have space for at least one additional card of each type of I/O required for this plant.
- b. Discrete input I/O will be optically isolated.
- c. Discrete outputs will be the triac type with a minimum continuous contact rating of 0.5 Amp at 24 VDC. For loads greater than 0.5 amp interposing relays will be provided.
- d. Analog input I/O will be a 4-20 mA DC from both externally powered and loop powered type transmitters.
- e. Analog output I/O will be PLC sourced 4-20 mA DC.
- f. Thermocouple input I/O will be 2 wire type T or Type K
- g. The I/O system will be Allen Bradley, ControlLogix, or Allen Bradley Flex IO.

K. Operator Interface Terminals

1. The operator terminals will be an HP or equal personal computer and will include hardware to satisfy software and operational requirements.

2. Remote HMI interface screens will meet area classifications.

L. Software

1. The operator terminal will be supported by commercially available Windows based process control and monitoring software. The software will support the following activities:
 - a. Operator interface to the PLC.
 - b. Dynamic pictorial process graphic displays.
 - c. Loop tag displays.
 - d. Alarm and events monitoring.
 - e. Trending and logging

2.37 MISCELLANEOUS

- A. All processing equipment to have zero speed switches mounted on the nondriver drive shaft end and used for interlock logic in PLC programs.
- B. All equipment, vessels, piping and ductwork in drying system handling dry material will be bonded and grounded per NFPA. Metal to metal bolted connections will be considered bonded. will install bonding jumpers.
- C. Minimum service factor of 1.5 for 24-hour continuous service based on motor horsepower will be used for sizing gear drives.

PART 3 EXECUTION

3.01 GENERAL VERIFICATION OF CONDITIONS

- A. SYSTEM SUPPLIER will sample and test the biosolids to ensure it meets the design criteria.
- B. All fuel and water utilities required for the testing will be supplied by CONTRACTOR at the rate, quality, and in the quantities per Final Design Utility Requirements

3.02 INSTALLATION

- A. CONTRACTOR will erect the equipment in accordance with approved SYSTEM SUPPLIER drawings.
- B. CONTRACTOR is responsible to ensure equipment will be rigidly and accurately anchored into position and carefully coordinated with all connecting pieces of equipment.
- C. CONTRACTOR is responsible to ensure alignment of rotating equipment is completed per manufacturer requirements.

3.03 FIELD TESTING – GENERAL

- A. Field testing will consist of Mechanical Tests, Control System Tests, Integrated Systems Tests and Performance Tests.
- B. Air Emission Tests by CONTRACTOR.
- C. CONTRACTOR will have available to SYSTEM SUPPLIER, sufficient personnel of relevant trades to assist with the mechanical tests and integrated systems tests.
- D. CONTRACTOR will have available to SYSTEM SUPPLIER sufficient personnel of relevant trades to perform corrective installation punch list items.
- E. SYSTEM SUPPLIER will provide sufficient staff of skilled operators to conduct the field, mechanical, control system, integrated system and process performance tests. SYSTEM SUPPLIER will provide access for a reasonable complement of CONTRACTOR staff to accompany and observe SYSTEM SUPPLIER' staff throughout these tests.
- F. SYSTEM SUPPLIER will remedy corrective punch list items for the supplied equipment and/or operating controls will be corrected at no additional cost to CONTRACTOR.

3.04 MECHANICAL TESTS

- A. Conduct a mechanical test of each installed piece of equipment. The mechanical tests will demonstrate that each unit:
 - 1. Has not been damaged by transportation or installation.
 - 2. Has been properly installed.
 - 3. Has no mechanical defect.
 - 4. Is free of overheating of any parts.
 - 5. Is free of all objectionable vibration.
 - 6. Is free of overloading of any parts.
 - 7. Is free of excessive noise.
- B. No handling or processing of either dewatered biosolids cake or recycle material by any equipment and/or system will take place during the mechanical test.
- C. SYSTEM SUPPLIER will mechanically test all major pieces of equipment and systems.
- D. SYSTEM SUPPLIER and CONTRACTOR will review and remedy their respective corrective punch list items for the supplied equipment and field installation.

3.05 CONTROL SYSTEM TESTS

- A. The complete control system will be tested to confirm that the system meets the design requirements.
 - 1. Signal verification (check or correct voltages, current polarity, contact “sensor”, etc.).

2. Database verification (check for correct range).
 3. HMI Human machine interface.
 4. Operator input to the controls system.
 5. Verification of HMI application software
- B. All field instrumentation and controls that are an integral part of the equipment being testing will also be tested.
- C. SYSTEM SUPPLIER and CONTRACTOR will review and remedy their respective corrective punch list items for the Control System Test and field installation.

3.06 COMMISSIONING

- A. Upon successful completion of the Mechanical and Control System Tests, the system will be commissioned in preparation of an integrated system test.
- B. Process and control functions will be tested for each process group
1. Control algorithms
 2. Fault Handlers
 3. Interlocks
- C. During commissioning, functional groups of field equipment will be commissioned.
- D. Commissioning will consist of the following:
1. Sub-System functionality without Biosolids
 2. System functionality without Biosolids
 3. System functionality with Biosolids
- E. Burners will be tuned for low and high fire using natural gas and alternate fuels as appropriate.
- F. Process will be tuned and adjusted to obtain design performance.
- G. During the commissioning, the Heat Drying and Pelletization System will process dewatered biosolids. CONTRACTOR will be responsible for supplying dewatered biosolids.
- H. SYSTEM SUPPLIER will notify CONTRACTOR at least 48 hours prior to the commissioning with biosolids so that CONTRACTOR can arrange for supplying dewatered biosolids to the system during the commissioning period.
- I. SYSTEM SUPPLIER and CONTRACTOR will review and remedy their respective corrective punch list items from Commissioning and field installation.

3.07 INTEGRATED SYSTEM TESTS

- A. The integrated systems test will demonstrate successful functioning of the Biosolids Drying and Pelletization System and all its elements and software capabilities with simulated and actual system on-line operating conditions.

- B. During the integrated system test, the Heat Drying and Pelletization System will process dewatered biosolids and demonstrate that the System can function and produce a pelletized product. CONTRACTOR will be responsible for supplying dewatered biosolids.
- C. SYSTEM SUPPLIER will notify CONTRACTOR at least 48 hours prior to the integrated systems test so that CONTRACTOR can arrange for supplying dewatered biosolids to the system during the test period.
- D. All completed tests, malfunctions, corrective measures, and downtime will be chronologically logged.
- E. The integrated system test will be completed before SYSTEM SUPPLIER conducts the Process Performance Test as specified in Paragraph 3.7 of this Section.
- F. During the integrated system test, SYSTEM SUPPLIER will provide all personnel to operate the system to perform the test and analyze samples.
- G. The Integrated System Test will consist of three (3) consecutive days using natural gas (NG).

3.08 PROCESS PERFORMANCE TEST

- A. The Performance Test shall be conducted to demonstrate that the biosolids drying system is operating properly and capable of meeting the specified performance and design requirements.

3.09 PERFORMANCE TEST PROTOCOL

- A. SYSTEM SUPPLIER will submit to CONTRACTOR a detailed Performance Test Plan no later than 90 days prior to the initiation of the test. The test plan shall include the following:
 - 1. Performance test requirements
 - 2. Test prerequisites
 - 3. Pre-test activities
 - 4. Testing procedures, including sample locations
 - 5. How data will be analyzed, including equations
 - 6. Personnel and testing responsibilities.
 - 7. Quality control procedures
 - 8. The testing protocol will be jointly reviewed and agreed upon by CONTRACTOR and SYSTEM SUPPLIER before the test.

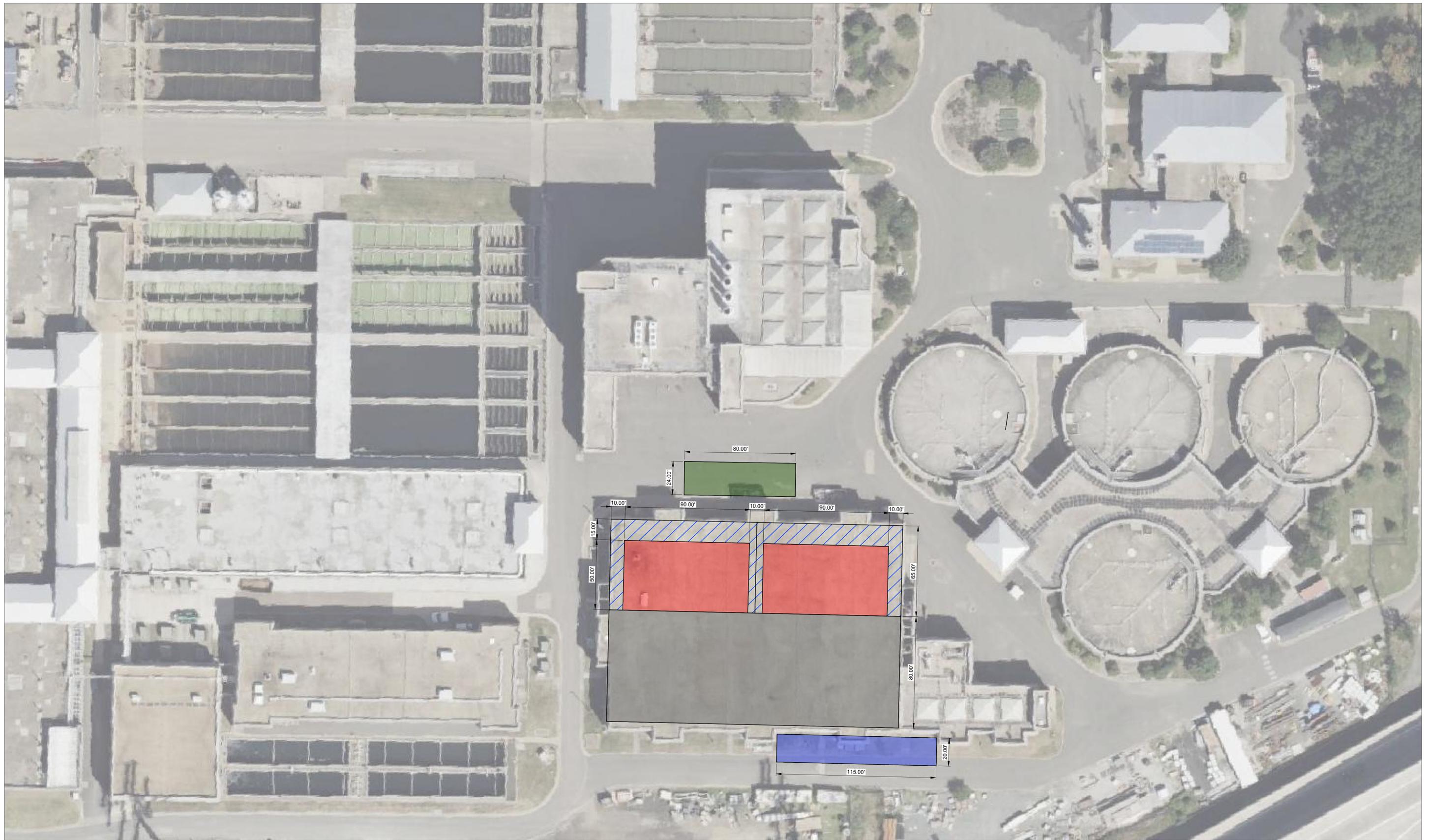
3.10 PERFORMANCE TEST REPORT

- A. Within 30 days after completion of the performance tests and submittal of data from the analytical laboratory, electronic copies of report will be submitted with the following information:
 - 1. The date and time of the performance test for the dryer.
 - 2. A description of all samples collection and measurement techniques.
 - 3. Raw data and original copies of all laboratory reports for all parameters.

4. Descriptions of operations problems, unusual conditions, equipment failures or malfunctions, and other factors adversely affecting performance of the biosolids drying and pelletization system

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK



- LEGEND:
- DRYER SYSTEM
 - CLEARANCE AISLES
 - PELLET SILOS
 - RTOs
 - EXISTING GT AREA

PARTIAL SITE PLAN
 DRYER SYSTEM AREAS
 1" = 30'-0"



THIS PAGE INTENTIONALLY LEFT BLANK

ATTACHMENT C
RFP-26-011 Checklist

THIS PAGE INTENTIONALLY LEFT BLANK

RFP-26-011 Checklist

Respondent Name: _____

The purpose of the RFP Checklist is to aid the Respondent to ensure all submittal requirements have been included in the Respondent's Proposal and to provide a page reference indicating the location of each submittal requirement in the Proposal.

| Contents | Checklist | Proposal Page Reference |
|--|--------------------------|-------------------------|
| Cover Page | <input type="checkbox"/> | |
| This Checklist | <input type="checkbox"/> | |
| Table of Contents | <input type="checkbox"/> | |
| Submittal Letter | <input type="checkbox"/> | |
| Overview of Respondent and Respondent's Support Capabilities | <input type="checkbox"/> | |
| Technical and Operational Performance | <input type="checkbox"/> | |
| Demonstrated Experience | <input type="checkbox"/> | |
| Anticipated Personnel Resumes | <input type="checkbox"/> | |
| Confirmation Checklist of the Technical Specification | <input type="checkbox"/> | |
| Preliminary Equipment, Motor, and Load List | <input type="checkbox"/> | |
| Respondent's Draft Warranty Certification | <input type="checkbox"/> | |
| RFP-26-011 Checklist | <input type="checkbox"/> | |
| SCC Registration Form | <input type="checkbox"/> | |

ADDENDA ACKNOWLEDGEMENT. Your signature below serves as your acknowledgment that all addenda have been received and incorporated into the Proposal submission. Check all that apply.

- Addendum No. 1
 Addendum No. 2
 Addendum No. 3
 Addendum No. 4
 Addendum No. 5
 Addendum No. 6
 Addendum No. 7
 Addendum No. 8

 Name and Title (Respondent's authorized representative)

 Authorized Signature

 Date

RETURN THIS FORM WITH YOUR PROPOSAL

THIS PAGE INTENTIONALLY LEFT BLANK

Attachment D
SCC Registration Form

THIS PAGE INTENTIONALLY LEFT BLANK

Compliance with Virginia Law for Transacting Business in Virginia

The undersigned hereby agrees that, if AlexRenew accepts your Proposal for services in conjunction with this RFP, you meet the requirements of Virginia Code § 2.2-4311.2.

Please complete the following by checking the appropriate line that applies and providing the requested information:

- A. Respondent is a Virginia business entity organized and authorized to transact business in Virginia by the SCC and such Respondent's Identification Number issued to it by the SCC is [Click or tap here to enter text](#). (The SCC number is NOT your federal ID number).
- B. Respondent is an out-of-state (foreign) business entity that is authorized to transact business in Virginia by the SCC and such Respondent's Identification Number issued to it by the SCC is [Click or tap here to enter text](#).
- C. Respondent does not have an Identification Number issued to it by the SCC and such Respondent does not require authorization to transact business in Virginia by the SCC for the following reason or reasons. (Please add additional pages if necessary).

Legal Name of Company (as listed on W-9)

Name and Title (Respondent's authorized representative)

Authorized Signature

Date

RETURN THIS FORM WITH YOUR PROPOSAL

THIS PAGE INTENTIONALLY LEFT BLANK