

APPENDIX 8

GENERAL OPERATIONS AND MAINTENANCE REQUIREMENTS

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8.1. PURPOSE

The purpose of this Appendix is to set forth certain general operations and maintenance requirements. The requirements set forth in this Appendix supplement the requirements for Operation and Maintenance set forth in the Service Contract.

8.2. OPERATION AND MANAGEMENT REQUIREMENTS

8.2.1 General Requirements

During the Operation Period, the Company shall be responsible for the following:

- Provide an attended, continuous, full-service, 24-hour-a-day seven-day-a-week operation and maintenance of the Project.
- Full biological treatment of all Influent. Blending of partially treated wastewater with fully treated Influent for discharge is not allowed.
- Hydraulically pass, with one unit in each unit process out of service, all flow that comes to the Facility during a 100-year flood event. Maintain 12 inches of freeboard in basins at peak flow. Maintain 3 inches minimum drop from weir crest to downstream water surface at maximum day flow.
- Proper handling and management of all Residuals and conveyance of thickened Sludge to the Ina Road WRF in accordance with the Residuals Management Guarantees.
- Provide Sludge thickening to a minimum of 1.5 percent solids. If addition of polymer for any purpose at the Facility is shown to cause negative impacts, such as foaming problems, in the anaerobic digesters at the Ina Road WRF, the Company shall implement changes in the operation of the Facility that eliminate the cause of the problem.
- Securing the Project in compliance with Applicable Law with respect to guarding against terrorist and security threats. Fences and other such security devices as determined to meet the objective of site security shall be maintained in accordance with Good Industry Practice.

- Operate the Project standby power system or alternate utility power feed transfer system under load according to manufacturer's recommendations and Good Industry Practice.
- Maintenance of the Project sanitary collection system, storm water collection system and water distribution system, reclaimed water system, electrical systems, and controls systems, free of any and all conditions which would render such systems inoperable.
- Response within two hours to any notice of an emergency to rectify conditions resulting from the emergency, to abate any inconvenience to the public relating to the Project and to maintain at all times a local toll-free, 24-hour telephone number with person-to-person service where emergencies can be reported.
- Timely notification to all applicable Governmental Bodies and the County in the case of any emergency, including Hazardous Material spills from or into the Project.
- Timely notification to the County, if, during the course of excavation work necessary to make repairs or improvements to the Project, any Regulated Site Condition is identified by the Company, and immediately notify such other governmental agencies as may be required by law and take such further actions to assist the County in protecting the health, safety and welfare of the public.
- Make any emergency repairs to protect employees, equipment, buildings and grounds, as required. Complete a monthly inspection of the Project and document any unsafe condition or acts. Company specialists shall perform a quarterly walk-through of all facilities. Any hazards identified as a result of these efforts – formal or informal – shall be mitigated immediately. Notify the County in any such event.
- Allow twenty-four-hour-a-day access for County personnel or designated representatives to the Project. All County personnel or designated representatives shall notify the Company upon arrival, unless such personnel are on a clearance list pre-authorized by the County and maintained by the Company. All County personnel shall comply with the Company's safety and such other policies and procedures implemented in accordance with this Service Contract.
- Calibration of all Project instrumentation and meters in accordance with the manufacturer's recommendations, as required, or more frequently as deemed appropriate by the Company management.

- Operation and maintenance of all PLCs at the Facility, continuous monitoring of communication links between all PLCs and facilities, and adoption of safe operating modes whenever a communication failure has occurred. Normal operation modes may resume when communications have been restored, depending on the process, safety issues, etc. Restart procedures following a communication or power failure shall be defined for each process during preliminary design.
- Displaying equipment status and selected operating modes on the SCADA system. Individual equipment runtime shall be accumulated, historically logged, and displayed by the SCADA system. An operator with the proper access rights shall be able to individually (or group) reset these values via SCADA. Alarm contacts for equipment interlocking, alarming and resetting shall be provided as direct inputs to the PLC. Alarms shall be annunciated via SCADA as well as at local HMIs and panels. Field PLCs, including package systems, shall be interfaced with the Facility SCADA system.
- Documentation of all operations and maintenance as needed to maintain and enforce equipment warranties and guarantees.
- Replacement, including major repairs, of the machinery, equipment, facilities, structures and improvements constituting the Project that are in need of repair or fail in accordance with the requirements of the Contract Standards; provided, however, that the Company's capital maintenance obligations with respect to the Sludge Transfer Pipeline shall be subject to the provisions of subsection 10.1(C) of the Service Contract.
- Remove graffiti from the Project as soon as possible, but in all events not more than seven calendar days after discovery.
- Perform preventive maintenance and repair on any active cathodic equipment in the Project.
- Any landscape irrigation shall be carried out with reclaimed water, including maximum use of captured stormwater runoff. Potable water may be used for irrigation only during the construction phase prior to the availability of reclaimed water to assist in establishing landscaping placed prior to Facility startup. All portions of the Project Sites landscaping must be regularly maintained.
- Test all major electrical equipment onsite using infrared thermography equipment at least every 9 months.

8.2.2 Sludge Transfer Pipeline

The Company shall be entirely responsible for maintenance and repair of the new thickened Sludge line that will be installed and connected to the existing Sludge Transfer Pipeline as part of the Facility construction. With respect to the existing Sludge Transfer Pipeline, the Company shall:

- Continuously monitor, create and maintain records (for a period of 1 year) of: Sludge flow rate and totalizer meter readings, operating pressure readings, and solids concentration density meter readings.
- Maintain the normal operating pressure and pump startup maximum pressure within the pressure limits specified in Appendix 3 of the Service Contract.
- Be responsible for pigging and flushing the pipeline as required to maintain the pumping pressures within the specified limits. Frequency of pigging and flushing operations shall not be less than once a week.
- Promptly repair or replace all portions of the existing Sludge Transfer Pipeline damaged as the result of Company actions or fault.
- Coordinate with the Ina Road WRF before and after pumping any Sludge.

The County shall be responsible for maintenance and repair of the existing Sludge Transfer Pipeline for causes beyond those stated here as the Company's responsibility.

8.2.3 Quality Assurance/Quality Control Program

The Company shall establish a Quality Assurance/Quality Control Program (QA/QC Program) for sampling, testing, and process control laboratory analysis. The Company shall establish standard operating procedures, analysis procedures, operating standards, and performance parameters to promote and maintain regulatory discharge requirements, operations quality and performance, data management, and sampling consistency. The program will include:

- Monitoring, sampling and reporting, as necessary for process control and all applicable Governmental Approvals, the AZPDES Discharge Monitoring Report, and in full compliance with the Contract Standards. In addition, the Company shall perform laboratory tests for process control.

- Laboratory analyses necessary for all applicable Governmental Approvals compliance shall be performed by the County Laboratory on samples collected by the County.

The Company shall perform periodic internal quality audits of the Facility with personnel not involved in the day-to-day operations of Facility. The frequency of the internal quality audits are to be in accordance with Company policy, but not less than once per year. A copy of the full internal quality audit reports shall be provided to the County, within 60 calendar days of the audit, less any information considered to be privileged under privacy acts or law.

8.2.4 Continuous Monitoring of Facility

The Company shall provide 24-hour process monitoring to confirm all critical components are functioning properly and to detect potential process failures early. Examples of critical field measurement activities include:

- Dissolved oxygen and pH monitoring at various points throughout the bioreactor
- Effluent chlorine residual concentrations monitoring
- Nitrogen species and nitrate concentrations monitoring
- Independent flow monitoring of treatment chemicals to warn of changes in feed rates
- Programmable logic controllers/SCADA system to record all instrument signals and control alarms

The Company shall promptly notify the County of any significant deteriorating Effluent quality and precursors of Effluent quality.

8.2.5 OSHA and ADA Compliance

The Company shall adhere to all federal OSHA, State safety and health requirements and ADA requirements. The Company shall prepare and implement a safety training plan and program for the Project in accordance with federal OSHA, State requirements, Good Industry Practice and the Company standard practices. The administration of the safety training plan and program shall be assigned to the Facility Manager or a Project safety coordinator who may also be assigned additional duties.

The Company shall develop a written chemical hygiene plan for the Facility process control laboratory in accordance with OSHA standards.

The Company shall hold monthly Project safety meetings with all staff to provide safety training and to review site-specific job and general safety requirements. Annual inspections by the Company's health and safety personnel shall determine how the health and safety program is progressing in conformance with the established plan. Should an accident occur, a written accident investigation procedure shall be followed to document the accident and prevent re-occurrences.

8.2.6 Project Appearance Standards

The Company shall maintain the Project in accordance with the Contract Standards, including any APP requirements, to sustain the plant's status as an important public asset. A Project Appearance Standards program that governs Project upkeep and appearance shall be developed, and shall include the following:

- Building and structures shall be kept clean, painted, and uncluttered, and all graffiti shall be timely addressed. Walkways and other access points shall also be maintained and repaired.
- Grounds and landscaping (mowing, planted beds) shall be maintained to be visually appealing.
- Equipment and vehicles shall be clean and well maintained.
- Staff shall conduct themselves in a professional manner and maintain customary standards of personal appearance.

8.2.7 Project Repair and Replacement Plan and Schedule

The Company shall prepare a repair and replacement plan in accordance with the Contract Standards. The approach in the plan shall meet or exceed Government Accounting Standards Board (GASB 34) guidelines for keeping asset records, maintaining system reliability, and achieving cost effective savings by providing effective repair and replacement.

8.2.8 Project Inspections By County Representatives

In response to any Project inspection by the County, the Company shall meet the following requirements:

- Perform any repairs or maintenance identified in writing by the County resulting from any County inspection which revealed a lack of repairs or necessary maintenance to the Project.
- Respond in writing within five business days with an explanation in the event of a misinterpretation of the data or condition during the Project inspection by the County.
- Perform all such repairs or maintenance on a schedule in accordance with Good Industry Practice and acceptable to the County.
- Disagreements arising from actions taken in this item shall be subject to the dispute resolution procedure in the Service Contract.

At any time, with or without notice, the facilities may be inspected by the County or its designated representative(s), in accordance with the clearance list pre-authorized by the County and maintained by the Company, to ensure all required work is being performed, including maintaining an acceptable level of cleanliness and appearance.

8.2.9 Communications Plan

The Company shall implement a Communications Plan to inform the County about their ongoing services and performance. In addition, the Company shall assist the County with media communications and meetings with the public and stakeholders. The Communications Plan shall include:

- Daily communications
- Weekly meetings
- Monthly and annual reports
- Regulatory reporting and liaison
- Emergency communications and response
- Construction coordination
- Media communication
- Special reports

Performance reports that summarize data to aid understanding, and explain trends and developments that may affect the County's fiscal and administrative planning shall be prepared. Communications with the County shall also include an O&M performance overview, a report of significant events, and a report on staffing or responsibility changes. The Company shall produce and share any plant information requested, including preventive maintenance schedules, regulatory and safety reports, and budgeting information that is not otherwise required under the Service Contract, but excluding information limited by state and Federal privacy laws pertaining to personnel information.

Media communications and other communications with the public and stakeholders regarding the Facility will be led by the County with support by the Company. The Company shall assist the County by preparing appropriate handout materials, visual presentation materials, boards, factsheets, schematics, drawings, figures and sketches necessary to address the issues and concerns of the public and stakeholders. The Company shall attend public or stakeholder meetings on or about the Facility, as requested by the County. The County shall take the lead in arranging the meetings with the public and stakeholders. Meeting spaces will be provided by the County.

The Company is restricted from providing press releases, or holding press conferences or public meetings or activities on or about the Facility without expressed written permission from the Director of the Pima County Regional Wastewater Reclamation Department.

8.2.10 Emergency Response Plan

The Company shall prepare an emergency response plan in accordance with federal and State regulations. The Company shall identify and describe specific actions to minimize the chance of an emergency relating to potential emergency situations that may result from natural disasters, health emergencies, terrorist activities, power failures, spills, release of contaminants exceeding permitted levels, hazardous substances spills entering the Project, and other such activities in accordance with Good Industry Practice.

The Company shall perform a failures mode or a vulnerability assessment, incorporate such recommendations into the emergency response plan, and implement measures to protect against such threats as determined in the assessment.

The Company shall develop written policies, preventive measures and response actions as necessary to comply with federal, State and local safety, health and environmental regulations. The Company shall address the actual response and notification requirements for each

anticipated emergency. The notification, depending on the situation, shall include the City of Tucson Fire and Police Departments, the County Sheriff, the County Office of Emergency Services, and the State Office of Emergency Services.

The Company shall implement the emergency response plan based on the following:

Project Operation and Maintenance Staff:

- Operators shall be trained in the use of equipment and in the implementation of the emergency response plan.
- Develop Project specific procedures for response to equipment failure.

City and County Emergency Responders:

- Annually offer to rehearse and, if such offer is accepted, rehearse emergency response procedures with appropriate City and County officials to ensure that response functions are properly executed in the event of an emergency.

Monitoring Equipment and Alarms:

- Provide Project monitoring equipment and alarms as necessary to provide early warning of a potential or pending emergency event.
- Monitor all critical process functions and when they exceed alarm set points, the early warning devices shall notify the on-duty and/or on-call operator.
- Immediately notify City, County, other local agencies, State and federal agencies as required by the emergency response plan of any activity, problem, or circumstance that threatens the safety, health or welfare of the Project staff or County residents.

In the event of damage or destruction of the Project or any emergency which, in the reasonable judgment of the Company, is likely to result in material loss or damage to the Project or constitute a material threat to human health or safety, the Company may suspend operation of the Project, but shall first seek County approval, as appropriate. Emergency repairs as are necessary to mitigate or reduce such loss, damage or threat to human health or safety shall be done in consultation with the County. Notification of emergency and noncompliance events within the Project shall be in accordance with permit requirements and the approved emergency response plan.

The Company shall respond to emergencies and unusual circumstances in accordance with the Emergency Response Plan, applicable regulations and requirements and with such personnel and equipment as necessary to maintain or restore the operations of the Project in a timely manner with the least possible disruption or inconvenience to the customers of the Project.

The Company shall keep a complete emergency equipment inventory, with an updated listing that includes all equipment, materials, and chemicals available. This inventory, emergency equipment and supplies shall be purchased and stockpiled to enable staff to be prepared for emergencies.

The emergency response plan shall also include a list of emergency contacts which shall be posted at all Project telephones and in all Company vehicles, and be provided to each employee in a wallet-sized version.

In the event of an actual emergency, the Company shall establish an emergency response center that shall be in direct communication with designated resources from the City and County and all appropriate agencies.

The Company shall complete the emergency response plan, approved by the County, prior to the Acceptance Date. The Company shall maintain an up to date bound copy of the emergency response plan at the Project.

8.2.11 Records and Reports

8.2.11.1. Generally

The Company shall prepare all reports required in this Section and as required by Applicable Law, as well as provide monthly and annual reports to the County as described herein. The Company shall meet at least once per month with County representatives to review the Company's performance. The Company shall meet with the County representatives on an annual basis to present and review the annual data. The County and its designated representative(s) shall have full access to reports and data at all times.

Those reports required by Applicable Law shall be in the format specified by Applicable Law. Those reports required by the County shall be in a format acceptable to the County, acting reasonably. Annual reports prepared for budget or operational purposes shall be prepared by March 1 of each year unless noted or agreed upon otherwise.

The Company shall prepare monthly Project performance reports with analysis of compliance with the Contract Standards for Effluent, Residuals, Sludge production, Sludge thickening and odor. The analysis shall include complete performance data analysis, summary of statistical parameters, comparison with permit limits and Performance Guarantee levels, and trend analysis. Project performance reports shall include both graphical presentation of performance data and narrative descriptions of the analysis and findings. The reports shall also include the Company's corrective action plan and response to operation outside of Performance Guarantee requirements. Such reports will be prepared to include all data available including the compliance testing data generated by the County. The County will provide the data in a form generated from its database in a timely manner.

8.2.11.2. Governmental Body Reports

The Company shall prepare all Governmental Body reports by the required deadlines, send the reports to the County in a timely manner, maintain records as required by the appropriate agency, and make these records accessible to the County upon request. The County shall sign and submit such reports.

8.2.11.3. County Reports

The Company shall provide the following reports to the County:

Immediate Reports:

- Immediate reporting to the County's Contract Representative is required during business hours for any major injuries, or other major incidents
- Immediate reporting to the County's Contract Representative is required during all hours for releases of raw sewage, overflows offsite, spills of chemicals, fatalities or permit violations

Monthly Report:

- Shall be provided within 15 days after the end of each month
- Identify any failures to comply with Governmental Approvals, including any AZPDES permit exceedences
- Summarize Project performance with respect to permit parameters

- Show any major expenditures
- Describe any operations problems experienced
- Detail the quantity of Residuals transported for disposal
- Describe the performance of Sludge thickening, including quantities of Sludge delivered to the Ina Road wastewater treatment plant
- Usage of electric power, natural gas, and potable water
- Detail chemical usage
- Describe the status of preventive and corrective maintenance activities
- Contain copies of correspondence with all Governmental Bodies
- Detail any accidents or injuries
- Summarize training of operations and maintenance staff
- Describe any damage to County property
- Usage of reclaimed water and process water

A Monthly Complaint Log:

- Shall be provided within 15 days after the end of each month
- Contain all citizen complaints, a description of the complaint, and the complaint response

Quarterly Maintenance, Repair, and Replacement Report:

- Shall be provided within 15 days of the end of each calendar quarter
- Show Project performance trends, including performance analysis of compliance with the Contract Standards for Effluent and Residuals and the Performance Guarantee
- Outline planned process improvements
- Summarize the results of previously planned process improvements

- Summarize maintenance problems and progress in correcting those problems
- Review costs of budgeted repair tasks
- Outline capital expense activities and show status of planned capital maintenance elements
- Compare repair and replacement work in the quarter versus the planned work
- Present a repair and replacement (R&R) work plan and schedule for the next quarter

Annual Operations and Maintenance Summary Report:

- Shall be submitted within 90 days after the end of each calendar year
- Summarize the past year's operation and maintenance activities
- Summaries of Project cost, Project details, Sludge production, maintenance and repair, staffing, and any other Project-related information
- Recommendations to improve O&M and cost effectiveness
- Present planned major activities for the present year
- Summarize monthly Company statements including invoicing, payments received and adjustments made
- Meet with the County to review the report
- Record changes in inventory of all assets

8.3. OPERATIONS AND MAINTENANCE MANUAL

8.3.1 Generally

The Company shall prepare a web-based Operations and Maintenance (O&M) Manual and provide a draft version to the County for review in accordance with Section 8.4 of the Service Contract. The Company shall review and consider any County comments and then shall prepare a final O&M Manual for the Project. The O&M manual shall be comprehensive and

complete and similar to other manuals prepared for a facility of similar size and complexity to the Project.

The O&M manual shall be suitable for use as an operational tool and to facilitate operator training. The O&M manual shall be produced in an electronic format that is consistent with the PCRWRD's computer system.

The O&M Manual shall meet the requirements of the Arizona Department of Environmental Quality (ADEQ) Engineering Bulletin No. 11, "Minimum Requirements for Design, Submission of Plans and Specifications of Sewage Works" and all other applicable requirements. The Company shall obtain any applicable Governmental Approvals of the O&M Manual prior to commissioning.

8.3.2 Requirements

The O&M Manual shall include the following:

- Plant Layout and Flow Pattern
- Principal Design Criteria
- Detailed Operation and Control Procedures, including:
 - Descriptions of units or system and component parts, their function, operating characteristics, and limiting conditions
 - Complete maintenance instructions, parts lists, controls, and other information describing the construction, operation, control and maintenance of the equipment furnished
 - Descriptions and procedures for performing preventative, predictive and corrective maintenance tasks and frequencies
 - Compiled standard operating procedures (SOPs), including:
 - Security Plan
 - Emergency Response Plan including: communications procedures for cooperating with local emergency assistance agencies such as fire, rescue and police

- Process Control Plan
- Risk Management Plan
- Process Safety Management Plan
- Hazardous Material Management Plan
- Chemical Hygiene Plan
- Spill Control and Response Plan
- Response to Loss of Power
- Pre-Defined Fire Notification Plan
- Company-wide and Site-Specific Worker Safety Plans
- High Flow Management Plan
- Project Asset and Materials Inventory and Inventory Control
- Laboratory Quality Assurance (QA) Plan and CH2M HILL Laboratory Manual
- Training and Development Plan including: Succession Planning, Communications Plan, Chemicals Management Plan, Odor Control Plan, Odor Response Plan, and Exit Test Plan
- Compiled Unit Process Control Procedures (UPCPs), including:
 - Preliminary treatment
 - Primary DAF treatment
 - Secondary treatment
 - Tertiary treatment
 - Disinfection
 - Solids handling

- Detailed operation instructions for all unit processes to include process control descriptions, target values for all process related control parameters, emergency process control provisions and process recovery procedures during unit process upsets or abnormal conditions
- Description of proper handling, loading, transportation, and use of all chemicals
- Laboratory Controls
- Records
- Maintenance
- Troubleshooting
- Safety
- Emergency Operating Procedures
- Utilities
- Manufacturer's Equipment Data
- Security Plan
- Company wide and Site-Specific Safety Plan
- Laboratory Quality Assurance Plan and Laboratory Manual
- Operator and management responsibilities

The Company shall update the O&M Manual as necessary to reflect all modifications and revisions to equipment, Effluent requirements, process control strategies, operations and maintenance practices, and standard operating procedures. The database of the O&M Manual is to be compliant with open database connectivity (ODBC) protocols and standards, or otherwise have the ability to export to an open format for conversion to another system, if requested by the County.

8.4. PROCESS CONTROL MANAGEMENT PLAN

The Company shall implement a treatment process control management plan that describes process control activities and compliance monitoring and establishes goals for efficient Project operation. The Company shall submit five (5) copies of the plan to the County for review and comment no later than 180 days prior to the Acceptance Date. The Company shall prepare the final plan within 30 days following receipt of County comments and obtain approval of the final plan from ADEQ prior to commissioning. The plan shall address the following topics:

- Process control strategies
- Process control procedures and standard operating procedures (SOPs)
- Spill Control and Response Plan
- Response to Loss of Power
- Pre-Fire Notification Plan
- High Flow Management Plan
- Chemicals Management Plan
- Process control software

The plan shall identify persons and their responsibilities for process control management, analysis, QA/QC, reporting, communication and other tasks. The plan shall describe training, including process training, vital to achieve the high level of treatment performance. The plan shall describe the type and frequency of process monitoring reports. The plan shall describe laboratory management and procedures such as sample gathering, handling, analysis, and data reporting onsite. The plan shall describe the required communication plan and records and reports, as discussed further within this Appendix.

8.5. PROJECT COMPUTER SYSTEMS AND DATABASE

The Company shall use software compatible with the County's data management software to simplify operations and reduce staff time necessary for data management. The software used by the Company shall include:

- Allmax Operator 10 for data storage and retrieval, plant performance tracking, process adjustment and trouble shooting, permitting, and regulatory reporting customized by the Company for the County's laboratory and process data analysis.
- OptNet to network with other plant operations to identify "best in class" tools and procedures used elsewhere to achieve cost savings and efficiencies through operational improvements and to provide an internal benchmarking system.
- Pro2D as a whole plant simulator to assist in operational decisions where different operational changes can be "previewed" before operational changes are made.

The Company shall train O&M staff in the use and application of the software with training staff available for ongoing support.

8.5.1 Project Information Management System (PIM)

The Company shall provide an overall Project Information Management (PIM) system which shall allow users connected to the Project's local area network to easily find Project information. A system of cascading menus shall also be linked to provide easy access to process areas, drawings, etc. These cascading menus shall also include submenus to facilitate easy access to all detailed data, including text and graphic files, for each Project element. The navigation system shall remain on screen at all times, giving the user instant access to any information within the PIM system. When the user selects a process area, these folders shall display the titles of documents, drawings, vendor manuals, and other files specifically linked to that area. A database to store and manage the various content files shall be created with a customized structure and hierarchy for the Project. The application shall provide operators with the capability of adding new content to the system within a dynamic menu system that displays the newly added content without the need for programming of any type. The PIM system shall include the O&M Manual, Project standard operating procedures, Project unit process control procedures, plant drawings, digital photographs, video training clips, meeting and permit compliance calendars, reference information and related resources.

Once the system is installed the Company shall conduct an 8-hour training class for County personnel on the proper use of the PIM system and 24-hour training class for system administrator-level staff.

8.5.2 Computerized Maintenance Management System (CMMS) General Requirements

The Company shall administer Project equipment maintenance using a computerized maintenance management system (CMMS). The Company shall utilize the Maximo CMMS software, which will be consistent with the system to be implemented by the County. A CMMS shall be implemented within 90 days following the Acceptance Date. The Company shall furnish, install, configure and implement a CMMS capable of creating or managing the following:

- Preventive, predictive, and corrective maintenance tasks and their frequencies and their costs
- Equipment maintenance histories
- Scheduling and control of preventive, predictive and corrective maintenance tasks
- Issuance of work orders
- A spare parts inventory
- Tracking equipment performance, service history, repair warranties, repair costs, installation dates, replacement values, and all data needed to prepare Government Accounting Standards Board Article 34-compliant financial reports.
- Issuing reports and information that includes equipment status and repair reports; lifecycle asset costs; asset maintenance frequencies and histories; status reports on predictive, preventive, and corrective maintenance activities; job completion reports; work order status and inventory control levels of spare parts and availability for optimization

In addition the Company shall update the CMMS as necessary for new equipment and provide County access to the CMMS upon request. The CMMS database shall be compliant with open database connectivity (ODBC) protocols and standards, or otherwise have the ability to export to an open format for conversion to another system. County or designated representative shall have access to the CMMS and data at any point in time with read-only access, as defined in the Service Contract, via Internet connection

8.5.3 CMMS Inventory Control System Requirements

As an integral part of the CMMS, the Company shall establish an inventory control system to perform the following tasks:

- Account for the Consumables and spare parts supplied with the Project construction
- Optimize the stocking of materials and parts
- Calculate the costs of materials and parts used for work orders
- Control the ordering of Consumables and spare parts
- Record assets, including Project Equipment, Project Structures, fixtures, piping, and other appurtenances, that are related to value of the Project
- Record complete inventory of all assets at the time of Acceptance (Baseline Project Record)

The inventory control system shall be capable of tracking specific equipment, budgets and project costs using the following information:

- Inventory identification and description
- Location identification and description
- Manufacturer name
- Manufacturer's part number
- Quantity on hand
- Unit and unit cost
- Main supplier and alternative supplier
- Order level
- Order quantity
- Equipment item for which it is a spare part

The inventory control system shall also be consistent with the asset identification requirements set forth in the County's "Addition of New Assets for Major Construction Projects", dated February 2009, which is a Reference Document to the Service Contract.

The Company shall tailor the CMMS preventive maintenance program to the specific requirements of the Project equipment based on the equipment maintenance manuals. The CMMS shall include Project appearance maintenance activities for buildings and structures, grounds and vehicles.

The CMMS software shall have the capability of retaining historical data and information for at least 10 years. Historical data and information shall not be discarded without County approval. Information to be retained after 10 years shall be archived by the County.

Twice per year the Company shall update the baseline project record to reflect all changes in equipment and Project assets. The Company shall make the updated Baseline Project Record available for County inspection at any time.

8.6. STAFFING

8.6.1 Generally

The Company shall provide a staff of qualified, certified and experienced employees in accordance with the Facility Staffing Plan. The Company shall provide third-party support as necessary to meet the requirements of the Service Contract. The Company shall at all times maintain the necessary employees, staff and third-party contractors to operate, maintain and manage the Project in accordance with the Service Contract, to adequately maintain the Project in good repair, to adequately operate the Project to provide quality service to the customers, and to meet the Contract Standards in order to protect the health, welfare and safety of the citizens of the County.

The Company shall provide the following:

- Qualified management, supervisory, technical, laboratory, and operating personnel, licensed or certified as required by the ADEQ for operation and maintenance of the Project
- Facility Manager for day-to-day supervision

- Specialists either on-site or as part of a technical support group as necessary in wastewater treatment, process control, instrumentation, trouble-shooting, maintenance and emergency management
- Office and clerical support staff as necessary
- Provide and maintain and update as necessary, an organizational chart that lists job classification, the number of staff required and the name of the person filling the position

8.7. ODOR CONTROL STANDARDS

The Company shall be responsible for controlling odors through the proper operation and maintenance of the Project. The Company shall be responsible for operating and maintaining each odor control system so that it performs to its designed capacity and capability. The Company shall capture and treat all objectionable odors and follow best management practices for the prevention of objectionable odors. The Company shall respond to odor complaints, investigate their causes, and take actions to eliminate odors.

8.7.1 Odor Control Plan

The Company shall develop an Odor Control Plan that includes an odor response plan and odor control practices reporting procedures. The Odor Control Plan shall be developed and submitted to the County no later than 90 days prior to Acceptance. The final plan shall be prepared within 30 days following receipt of County comments.

The Odor Control Plan shall address, at a minimum, the following:

- Implementation of a daily Project Sites fenceline survey by the Facility Manager or his or her designee at the beginning of each day shift, prior to entering the Facility, to conduct an observation for odor intensity and characteristic and the potential on-site or off-site source of an observed odor along the perimeter of the Site. Such information shall be recorded in a permanent log.
- Installation of odor detection devices in accordance with Appendix 3 (Technical Specifications) at strategic locations to monitor and record the air quality and that are set up to trigger an alarm when levels exceeding pre-set limits are sensed.

- Installation of a weather station at the Facility to continuously monitor and record weather conditions, including wind direction and speed, air temperature, barometric pressure, humidity and precipitation.
- Implementation of odor control operating, maintenance and housekeeping procedures at the Project to eliminate odors.
- Development and implementation of operating checklist or log forms to record the status of odor control system equipment for each odor control system. The information to be recorded for each odor control treatment unit includes airflow and pressure drop across the unit.
- Standard operating procedures to optimize the performance of all odor control systems, including chemical addition measures, checking for breakthrough of odors from odor control systems, etc. The procedures shall identify what parameters shall be monitored and the procedures to be followed to maintain the target operating range for each odor control system and determine when replacement of odor control materials, such as activated carbon, is necessary to maintain effective odor control.
- Maintenance schedule and procedures for all odor control systems. Such schedules and procedures will be documented in the CMMS with these documents being acceptable for documentation purposes.
- Procedures to address odor control when an odor control system is out of service for preventative or corrective maintenance.
- Procedures to confirm that air is being properly collected from individual process units through pressure monitoring and smoke testing.
- Meet all applicable Governmental Approval requirements.

8.7.2 Odor Response Plan

The Company shall establish an Odor Response Plan to investigate all odor complaints related to the Project. The County shall be notified of an odor complaint within a reasonable period but in no event later than 24 hours after the Company's receipt of the complaint. The site of the alleged odor shall be visited as soon as possible but no later than one hour after receipt of the complaint. The Company shall obtain H₂S and other appropriate measurements using a portable meter and make other qualitative odor observations of odor intensity and character to

establish the presence of H₂S and other odorous compounds at the site of the alleged odor. The Company shall concurrently, with the dispatching of a Company representative to the location of the detected odor, conduct an immediate review of the Project to attempt to identify the source of the odor.

When the source of the alleged odor is found, and if such alleged odor is coming from the Project, the Company shall determine the cause and take the appropriate action to eliminate the source of the odor. In the event of a major equipment failure, the Company shall implement a contingency plan to minimize odor emissions until the equipment problem can be rectified. If the source of the odor is found to be due to the occurrence of an Uncontrollable Circumstance, the County shall be responsible for associated costs to remedy the odor in accordance with the Service Contract.

The Company shall maintain a record of every odor complaint and shall document the complaints using an odor complaint registration/response form (and questionnaire). The odor complaint registration/response form shall include the following information:

- Nature and location of the complaint
- Date and time the complaint was received
- Name of Company staff receiving the complaint
- Complainant contact information (name, street, mailing and e-mail address, telephone and fax number)
- Other complaints registered by the complainant or specific to the property in question
- Manner in which complaint filed: indirect (through County or another party), anonymously or identified in person by telephone, fax, e-mail or writing
- Project operating condition at the time the odor was detected, including odor control systems (e.g. normal operations, certain processes “in trouble”, unusual influent conditions, equipment off-line for maintenance, variance in normal operations, etc.)
- Weather conditions at time odor was noticed, including wind speed and direction, temperature, barometric pressure and relative humidity as recorded at the Project
- Date and time of response and name of employee responding to the complaint

- Operator and complainant observations at the site where the odor was noticed
- Description of remedial/mitigation action taken by the Company in response to the complaint and its effectiveness
- Description of the follow up with the complainant: in person verbally, follow up telephone call, e-mail or by letter
- Attitude of the person registering the complaint (i.e. satisfied/dissatisfied with the response, cooperative and understanding, impatient, confrontational, or other)
- Day and time the County's representative received verbal notice of the complaint and day and time the County received the complaint form and follow-up and response information

If the results of the odor monitoring and other investigations establish the continued presence of odorous compounds generated from the Project, then the Company shall undertake the following additional investigations to determine the nature and source of odors:

- A comprehensive review of odor sources at the Project operated by the Company. The review shall include all unit processes and emission points such as points of turbulence in channels, discharges from pipes and over weirs
- An evaluation of the performance of all odor control units
- Air sampling for H₂S, odor strength (D/T), odor intensity and any other applicable regulatory criteria
- Effluent and Residuals sampling of the odor sources including wastewater sulfides, sulfates, dissolved oxygen, pH, and ORP
- Smoke testing to observe air flow patterns in ventilated areas

Based on the results of the investigation into the continued presence of odors generated from the Project, the Company shall identify and implement the measures necessary to remedy the condition. If the source of the odor is found to be due to the occurrence of an Uncontrollable Circumstance, the County shall be responsible for associated costs to remedy the odor in accordance with Service Contract.

8.7.3 Odor Control Practices Report

The Company shall prepare and submit to the County, on a monthly basis, an Odor Control Practices Report. The report shall include the following:

- Listing of all odor complaints received during the month. Such log shall be an Excel-based odor complaint log that details the name and address of complainant; time of complaint; nature, characteristics and intensity of the complaint; and the meteorological conditions at the time of the complaint
- Results of measurements of the odor indicators at the Project Sites, including daily fenceline monitoring
- Description of all investigations conducted and the action or mitigation steps taken or planned in response to each complaint
- Date that the complainant was contacted to explain the results
- Evidence showing compliance with the odor control operating practices required by this Services Contract and as set forth in this Appendix and Appendix 9
- Quantity of odor control chemicals used during the month
- A summary of maintenance activities that resulted in abnormal odor conditions and mitigation that was taken
- Summary of disruptions to the operation of all odor control facilities
- Major maintenance activities planned for the coming month if the activities could lead to odor events and mitigation measures that shall be taken
- Residuals management activities
- Copies of all notifications to the Company given in the reporting period
- Description of all AZPDES permit required monitoring, maintenance, and reporting.
- Such other information pertaining to odor control as the County may reasonably require from time to time

8.8. NOISE CONTROL

The Company shall minimize noise impacts in accordance with Good Industry Practice, all applicable permits and Company standard programs. The Company shall train employees and Subcontractors, address applicable limits of local noise ordinances, identify and monitor for disallowed activities, and use portable noise barriers and other techniques for reducing noise.