

1604000 – Wastewater	
Spec Item	Title
1	General Information
1.1	Concept of Operations
2	Management and Administration
2.1	Definitions and Acronyms
2.2	Personnel
2.2.1	Certification, Training and Licensing
2.2.2	Key Personnel
2.2.2.1	Wastewater Systems Manager
2.2.2.2	Wastewater Systems Supervisor
2.3	Special Requirements
2.3.1	Working Hours
2.3.2	Work Coordination
2.3.3	Federal and Local Authority
2.3.4	Cross-Connection Program
2.3.5	Fees, Fines, and Penalties
2.4	References and Technical Documents
2.5	Financial Requirements
3	Recurring Work
3.1	Operation
3.1.1	Wastewater Effluent Quality
3.1.1.1	Sampling and Analysis
3.1.1.2	Sample Collection and Analytical Services
3.1.1.3	Field Sample Collection and Analytical Services
3.1.2	Bilge and Oily Waste Treatment System (BOWTS)
3.1.3	Sludge Disposal
3.1.4	Minimum Operator Attendance
3.1.5	Operating Records, Logs, Reports and Procedures
3.1.6	Supervisory Control and Data Acquisition (SCADA)
3.2	Planned Maintenance (PM) Program
3.3	Other Recurring Services
3.3.1	Warranty Guarantee Certificate
3.3.2	Utility Consumption Data

1604000 – Wastewater		
Spec Item	Title	Description
1	General Information	The Contractor shall provide all labor, management, supervision, tools, material and equipment to continuously operate and maintain the Wastewater Treatment Plant, Wastewater Collection Systems, Bilge and Oily Wastewater Treatment System, and Bilge and Oily Wastewater Treatment Collection Systems located at Joint Region Marianas on the island of Guam.
1.1	Concept of Operations	The intent of 1604000 Wastewater is to specify the requirements to operate, maintain, monitor and analyze the wastewater treatment and collection systems and meet customer demands and the requirements of the NPDES discharge permit and applicable laws, regulations and standards, to maximize system availability, reliability and sustainability. Interface, inform, resolve and coordinate work with cognizant customer designees, other Contractors and Navy personnel. Interface and coordinate work with regulatory and other Government agencies through Naval Facilities Engineering Command Marianas (NFM), Utilities and Energy Management (UEM). Collect and provide meter readings to facilitate determination of wastewater discharge. Provide multi-discipline engineering and technical services to operate and maintain the wastewater, BOWTS and collection systems. Plan, prepare and perform emergency operations and measures. Continue to operate and maintain the wastewater systems during periods of contingencies and recovery operations. Coordinate operations with specific environmental compliance oversight, reporting and permit renewal requirements. Ensure that the Government is apprised of any situations of non-compliance. The Government will coordinate interface with regulatory agencies. Installation Support Memorandum of Agreement (MOA) for Joint Region Marianas, Annex W. ICC-Approved Common Output Level Standards, 23 January 2009 is applicable. Utility location of services are listed in Navy Facilities Asset Data (from iNFADS) J-0200000-02. Utility boundaries for services shall be in accordance with NAVFAC P-603 Utilities Infrastructure Management Manual.

1604000 – Wastewater		
Spec Item	Title	Description
2	Management and Administration	
2.1	Definitions and Acronyms	Definitions and Acronyms are listed in J-0200000-01.
2.2	Personnel	Personnel shall have qualifications, certifications, technical knowledge, experience and skills required to efficiently manage, operate, maintain, test and analyze the Wastewater Treatment Plant, Wastewater Collection System, Bilge and Oily Wastewater Treatment System (BOWTS) and BOWTS Collection Systems. Primary and alternate points of contact (POCs) shall be available 24/7 (24 hours per day/seven days per week). Welding on pressure piping, boilers and pressure vessels covered by American Society of Mechanical Engineers (ASME)/Uniform Facility Code (UFC) Boiler and Pressure Vessel Code requires specific procedures and welder qualifications. Welders and welding operators shall be properly qualified and certified. The certification shall state the type of welding, positions, code and procedure under which each is qualified and the firm and individual certifying the qualifications tests. Certifications shall be current. Cutting of asbestos pipe/asbestos cement pipe shall be completed by personnel with an asbestos certification per NAVFAC P-502 Asbestos Program Management.
2.2.1	Certification, Training and Licensing	The Contractor shall employ certified wastewater treatment plant operators, and Bilge and Oily Wastewater Treatment System (BOWTS) operators who are experienced in similar plants and systems to perform the requirements of this functional section. Wastewater facilities operators shall meet all Federal, state and local authorities' regulations, certifications and requirements. The Wastewater Treatment Plant Class III operator must be present on-site 24 hours per day/seven days per week per Guam Environmental Protection Agency (GEPA). Operator(s) shall be certified by the Administrator of GEPA in a classification corresponding to the classification of the system, currently Class III, or facilities to be operated. Each operator shall possess a current and valid operator's certificate issued or recognized by the Administrator of GEPA. Guam regulations require that certified operators have direct responsibility for both (1) active daily on-site technical direction and supervision, and (2) active daily on-site charge of an operating shift, or a major segment of a system or facility. Engineering and technical support provided shall be accomplished under the responsibility of a registered professional engineer licensed by a U.S. state or territory. The Contractor shall submit proof of all certification, training and licensing requirements per Annex 2. All required licenses and certifications will be kept current.
2.2.2	Key Personnel	

1604000 – Wastewater		
Spec Item	Title	Description
2.2.2.1	Wastewater Systems Manager	The Contractor shall provide a Wastewater Systems Manager who is a registered professional engineer licensed by a U.S. State or Territory with a minimum of five years' experience in the management, operations, and maintenance of wastewater systems similar in size and complexity of the systems specified herein; or has a Bachelor of Science degree in Engineering from a U.S. accredited college, university, or institution or an equivalent ABET-accredited college or university program with 10 years' minimum experience in wastewater systems management, operations and maintenance; or has a minimum of 15 years' experience in wastewater systems management, operations and maintenance. The Wastewater Systems Manager shall have the education and work experience required to obtain a GEPA Level 3 operator certification. The Wastewater Systems Manager shall have a valid Class III Wastewater System Operator's certificate issued or recognized by the Administrator of GEPA. The Wastewater Systems Manager cannot be the same person as the Wastewater Systems Supervisor. Wastewater Systems Manager manages the operations of a wastewater treatment plant and collection system to ensure compliance with regulatory procedures and reporting practices. Oversees sampling and testing systems, and the functionality of pumps, conveyors, blowers, and other equipment. May typically include worker supervision, enforcing plant procedures and policies, conducting performance reviews, and overseeing training programs.
2.2.2.2	Wastewater Systems Supervisor	Provide a Wastewater Systems Supervisor who possesses a current and valid operator's certificate issued or recognized by the Administrator of GEPA and has a minimum of five years' experience as a licensed wastewater systems operator. The wastewater systems shall be at all times under the supervision of a supervisor whose competency is certified by the Administrator of GEPA in a classification corresponding to the classification of the system (currently Class III) or facilities to be operated. Wastewater Systems Supervisor oversees all wastewater treatment and collections operations systems, assist in the preparation of treatment plant budgets, plan, assign and supervise the work of a crew operating and maintaining wastewater treatment plants, and to perform other duties as required.
2.3	Special Requirements	
2.3.1	Working Hours	As necessary to meet the performance objectives, established standards, and level of services, including, but not limited to, system emergencies. The wastewater treatment plant shall be staffed 24 hours per day, seven days per week.
2.3.2	Work Coordination	Coordinate and perform all work and outages in a manner that minimizes the disruption of wastewater treatment and collection systems, interference, inconvenience, equipment downtime, and interrupted service. Coordinate non-domestic discharges into the wastewater system to ensure that bypasses and upsets do not occur. Regulatory requirements for non-domestic discharges are specified in Annex 1601000.

1604000 – Wastewater		
Spec Item	Title	Description
2.3.3	Federal and Local Authority	Conform to all environmental regulations and requirements imposed by the Federal and local authorities.
2.3.4	Cross-Connection Program	The requirements for the cross-connection program are specified under Annex 1601000. The maintenance requirements for the backflow preventers under this annex are specified in Annex 1606000.
2.3.5	Fees, Fines, and Penalties	The Contractor shall be responsible for all fees, fines, and penalties assessed by regulatory agencies if permits are violated in the course of operations and maintenance. The Contractor shall reimburse the Government for the amount of the fees, fines, penalties and all associated cost including attorney fees.
2.4	References and Technical Documents	References and Technical Documents are listed in J-0200000-04.
2.5	Financial Requirements	The Contractor shall expend, track, and record costs in a manner that supports the NAVFACMAR Wastewater Commodity cost schedule. Costs shall be broken down by labor and material in the following manner: TREATMENT PLANT METERING - A/E Services - Chemicals - Operations - Maintenance - Preventive Maintenance (PM) - Repairs* - Sustainment (ST) - Restoration & Modernization (RM) COLLECTION SYSTEM - A/E Services - Operations - Maintenance - PM - Repairs* - ST - RM METERING - A/E Services - Reading - Maintenance - Calibration - Repairs* - ST - RM *Note: The Contractor shall submit the monthly public voucher with costs separated in accordance with the above categories.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
3	Recurring Work	The Contractor shall efficiently operate, monitor, analyze and maintain the Wastewater Treatment Plant, Wastewater Collection System, Bilge and Oily Wastewater Treatment System (BOWTS) and BOWTS Collection Systems to safely collect treat and dispose of wastewater and BOWTS. This includes, but is not limited to, total configuration management, engineering, efficiency analyses, and system analyses to maximize reliability, longevity (newly installed equipment only), and efficiency.	The Wastewater Treatment Plant, Wastewater Collection System, BOWTS and BOWTS Collection Systems Descriptions are provided in J-1604000-01. The MAXIMO Utilities Assets are provided in J-1601000-02. The Contractor shall staff, operate, maintain, and analyze the entire Wastewater Treatment Plant and Wastewater Collection Systems, to include future equipment, components, and appurtenances 24 hours per day, seven days per week. The Contractor shall operate and maintain the BOWTS Plant and Collection Systems eight hours per day, five days per week, and during times of special request. The Contractor shall provide proactive management and macro-outlook of the wastewater treatment and collection systems. Analyze unusual conditions, system/component conditions, operations and capabilities, wastewater treatment, discharge, and system inflow and infiltration to determine the wastewater treatment and collection systems' performance while improving system availability and effectiveness. The Contractor shall frequently evaluate the systems configuration and operations and make recommendations for improvements. Plant and Systems components shall be efficiently and safely operated per Navy, Local and Federal regulations governing the operation of the Wastewater Treatment Facilities.	Wastewater is continuously and safely collected, treated and disposed.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			The Contractor shall frequently monitor and inspect the systems and make appropriate adjustments to associated equipment to ensure proper operation of all equipment and processes. The Contractor shall frequently monitor and inspect the systems to identify any unusual flow conditions, such as unaccounted changes in volume or the presence of oil in wastewater, and assess their origins for corrective action. The Contractor shall analyze and measure system efficiency and capacity in order to ensure proper operation of the wastewater system. This includes review of maintenance records, wastewater quality analyses, meter readings, schedule of use, discharge pressure at various pumping rates, etc. to develop overall efficiency. The Contractor shall develop a Critical Wastewater Equipment Status Report, per Section F, and provide a System Performance Status Report, per Section F, including, but not limited to, management analyses and recommendations. The Contractor shall comply with applicable Federal, DoD, DoN, Coast Guard, Permits, and other references, instructions, and directives listed in Annex 2 for the operation of the wastewater treatment plant and BOWTS systems. The Contractor shall shut-down, restart, and perform operational checks on all equipment affected by both scheduled and unscheduled utility outages at no	

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			additional cost to the Government. The Contractor shall notify the KO and KO's designated representative of violations of any of the parameters and of any discharges of any type. The Contractor shall prepare and submit, per Section F, to the KO and KO's designated representative within 2 hours of the Contractor's Identification of Noncompliance. The notice shall include a description of the discharge, the cause of noncompliance, and the period of noncompliance, including exact dates and times (or if not corrected, the anticipated time the noncompliance is expected to continue) and steps being taken to reduce, eliminate, and prevent the recurrence of the non-complying discharge. Utilities connection/outages shall be in accordance with Annex 1601000. Informational Notes: Discharge of treated effluent to Tipalao Bay is covered under NPDES Permit Number GU0110019. Requirements for renewal of the permit and permit-related record keeping and reporting are specified in Annex 1601000.	
3.1	Operation	The Contractor shall operate the Wastewater Treatment Plant and Collection Systems to efficiently and safely collect, treat and dispose of wastewater such that the effluent complies with the regulatory discharge permit	The Contractor shall provide "watch-standing" or attendance type work by a sufficient staff of qualified persons during a specified time period to ensure safe, reliable, efficient collection, treatment and disposal of wastewater. Operation of Wastewater Treatment Plant and Collection System and BOWTS Plant and Collection System includes	Wastewater Plant and Systems equipment and components are efficiently, safely and continuously operated per industry standards to collect, treat and dispose of wastewater and effluent complies with the NPDES permit and all

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
		24 hours per day, seven days per week. The Contractor shall operate the BOWTS and Collection System to efficiently and safely collect, process and dispose of BOWTS during operating hours, throughout the contract period.	equipment and system components: a) Sewage holding tanks b) Lift stations c) Pumps d) Screens e) Filters f) Chemical treatment g) Used oil tanks h) Valves and automatic controls, etc. And tasks: a) Monitoring and regulation of equipment controls b) Maintaining operating records, logs, and reports c) Examination, lubrication and minor adjustment of equipment and system components. The Contractor shall develop, update, and post in clear view Standard Operating Procedures per UFGS, UFCs, local regulations, manufacturer's operation and maintenance manuals, manufacturer's recommendations, and industry standards. One hard copy of the current SOP, operating records, logs, reports, and procedures shall be available on site at all times. The Contractor shall ensure safe operation of all Wastewater Treatment Plant equipment by ensuring plants are staffed by qualified personnel at all times of operation. The KO and KO's designated representative shall be notified immediately if unsafe conditions are discovered. The Contractor shall ensure that all components of the Wastewater Treatment Plant and collection systems, are operational and integrated with minimal downtime.	Federal and local authorities, regulations, certifications, and requirements. BOWTS Plant and Systems equipment and components are efficiently, safely and continuously operated per specified operating criteria and applicable environmental regulations, to collect, process and dispose of BOWTS. Effluent complies with the regulatory discharge permit. Removal and/or treatment of domestic and industrial wastewater to meet discharge standards. Continuous wastewater service to all customers. No overflows or unscheduled bypasses. Equipment are operated and maintained to the manufacturer, industry, or Government standards. No instances of in-operable equipment due to insufficient maintenance of

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			The Contractor shall ensure the odor control system is functioning properly to minimize obnoxious odor conditions at the plant. The Contractor shall ensure that sludge treatment and dewatering efficiency is not hampered by excess sludge accumulation. The Contractor shall provide an alternative means of pumping or collecting sewage to prevent, or correct, overflow situations due to equipment breakdowns, or unscheduled power outages. The Contractor shall maintain a 90-calendar day (shelf-life permitting) supply of chemicals based on worst case scenario for inventory (on Guam) to sustain continuous process of wastewater, including through disasters. Chemicals shall be turned over to the Government upon completion or termination of the contract. The Contractor shall provide the following per Section F: a) Wastewater Treatment Chemical Stock Inventory. b) Equipment Breakdown Report. c) Sewer Line Break, Overflow, and/or Backup Report. d) Emergency Repair Status Report. Informational Note: 1) The average volume of wastewater processed is approximately 2.8 million gallons per day. 2) The Government has projects programmed to mitigate difficulties in meeting permit discharge limits for nickel, aluminum and copper. The	system components. Plant down time is no more than 48 hours at any given time except where superseded by timelines under Spec Item 3.2. Sludge meets the disposal criteria of the Navy's Sanitary Landfill, and all Federal and local authorities' regulations, certifications and requirements. Unscheduled interruptions are minimized such that collection demand and effluent quality requirements are met. Reports, data, records and documentation are provided on time, complete, accurate and legible. ZERO occurrences of chemical non-availability. 90-calendar day reserve of wastewater treatment chemicals maintained at all times. No instances of unusable CHT connections.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			Contractor is required to comply with all conditions of the NPDES permit number GU0110019 and to use best effort to minimize the quantities of nickel, aluminum and copper discharged, but is not expected to achieve the discharge limits for nickel, aluminum and copper until these projects have been completed. 3) Wastewater Workload Data is provided in J-1604000-02. 4) Wastewater historical information is provided in J-1604000-03.	Reports, data, records and documentation are provided on time, complete, accurate and legible.
3.1.1	Wastewater Effluent Quality	The Contractor shall produce treated wastewater effluent that complies with the regulatory discharge permit.	Wastewater effluent quality shall comply with all local, U.S. State or Territory and Federal regulations and discharge permit requirements. Minimum quantities and frequencies of on-site sampling and laboratory analyses of wastewater shall be performed per NPDES Permit Number GU0110019 requirements and plant O& M manuals. If wastewater chemistry is confirmed, through laboratory analyses or on site testing, to not be in compliance with permit discharge limits, the Contractor shall immediately notify the KO and KO's designated representative and shall make immediate adjustments to bring the wastewater back within permit compliance limits as soon as possible. Contractor shall identify problems and adjust treatment to insure wastewater effluent complies with the regulatory discharge permit.	Laboratory analyses confirm that wastewater effluent complies with the regulatory discharge permit.
3.1.1.1	Sampling and Analysis	The Contractor shall collect and analyze sample(s) to evaluate system performance and to	The Contractor shall ensure that sewage sludge meets acceptance criteria of the Navy's Sanitary Landfill. A paint filter test is required for each load of sludge	Environmental Compliance in accordance with legal and

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
		meet regulatory requirements.	to ensure that it may be disposed at the landfill. Historical information for sludge disposal is provided in J-1604000-03. Record sampling results in the paint filter test log maintained at the treatment plant. The Contractor shall provide sampling and analysis as necessary to assure the treatment and collection system is operating effectively. The Contractor shall utilize results of sampling and analysis for operational management and decision-making. The Contractor shall continuously coordinate with Annex 1601000 to determine the analytical frequencies and laboratory report submission time frames required to meet environmental compliance deadlines for submission to the Government and to make operational management decisions in a timely manner. Informational Note: Discharge monitoring reports, and annual and quarterly reports will be prepared under Annex 1601000.	regulatory requirements. Samples are collected and analyzed as specified in the NPDES permit. Laboratory results are accurate and representative of the media sample. Results of paint filter tests recorded meet the paint filter test log requirements. No consecutive readings (daily, hourly, or other specified frequency) with concentrations above the monthly average permit parameters or internal operational control concentrations. At no time shall the maximum daily discharge permit parameters be exceeded.
3.1.1.2	Sample Collection and Analytical Services	The Contractor shall provide sample collection and analytical services for compliance and operating functions to support the wastewater treatment system.	The laboratory to be used for the analytical services shall be operated in accordance with an approved Laboratory Quality Assurance Plan, per Annex 2 Quality Management Plan, and other applicable guidance and laboratory and sampling staff shall have required training, as specified in OPNAVINST 5090.1 and relevant references in J-0200000-04. The laboratory shall be accredited for testing required for Clean Water Act and NPDES	Environmental Compliance in accordance with legal and regulatory requirements. Sample collection and analytical services performed in accordance with 40 CFR 136, EPA Publication SW-846, NPDES permit, and all applicable Federal

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			compliance, as specified in OPNAVINST 5090.1 and relevant references in J-0200000-04. For NPDES and performance monitoring the laboratory shall demonstrate acceptable testing capability for each required analyte tested every year, in accordance with programs and protocol established by the U.S. Environmental Protection Agency (EPA). The Contractor shall provide Results of Performance Evaluation Analyses performed by the analytical laboratory as required in Annex 1601000. The Contractor shall ensure that laboratory data reports shall support the data, format, and schedule requirements for NPDES permit monitoring reports specified in Annex 1601000. Laboratory data reports shall include brief summaries of QA/QC parameters (including, but not limited to, condition of sample upon receipt by the laboratory, spike recovery and instrument calibration). The Contractor shall maintain raw data that could be used to re-create the laboratory results (including instrument printouts, and calibration curves). These documents shall be maintained in electronic format.	and Guam safety and environmental regulations. Accurate sample collection and analysis meets schedule requirements. All samples are analyzed within required holding times.
3.1.1.3	Field Sample Collection and Analytical Services	The Contractor shall provide plant process sample collection and analytical services, including, but not limited to, pH, dissolved oxygen,	The Contractor shall collect and analyze samples to manage daily plant operations.	Environmental Compliance in accordance with legal and regulatory requirements. Field analytical services are

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
		residual chlorine, and temperature.		provided within 24 hours of the time of receipt of requirement. Sample is collected within 15 minutes of scheduled time.
3.1.2	Bilge and Oily Waste Treatment System (BOWTS)	The Contractor shall process oily waste when required.	The Contractor shall operate and maintain BOWTS to process oily waste IAW manufacturer's Operations and Maintenance (O&M) Manuals. In addition to maintaining the BOWTS IAW the manufacturer's O&M Manuals, Polaris Point, Victor, Sierra, and X-Ray BOWTS will follow system set-up and preparation, operation and maintenance listed in J-1604000-04. The Contractor shall ensure safe operation of all BOWTS Plant equipment by ensuring plants are staffed by qualified personnel at all times of operation. The KO and KO's designated representative shall be notified immediately if unsafe conditions are discovered. The Contractor shall ensure that all components of the BOWTS and BOWTS collection systems are operational and integrated with minimal downtime. The Contractor is responsible for all BOWTS discharge approvals, review/approval of request, scheduling, coordination, and hook-ups. The Contractor shall secure all risers daily to prevent unauthorized discharges. The plant is also required to operate outside of normal working hours and will be scheduled as required. The Contractor shall dispose of oily waste IAW local and Federal regulations.	Validate customer evaluation of oily waste services is satisfactory or better. All BOWTS in operational condition during operation time. BOWTS is safely collected processed and disposed.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			The Contractor shall frequently evaluate the systems configuration and operations and make recommendations for improvements. The Contractor shall submit a monthly disposal summary sheet of all BOWTS Services as required per Section F. The Contractor shall operate and maintain BOWTS Plant and Collection System in accordance with 40 CFR, U.S. State or Territory, Federal Operating Permits, UFC, Manufacturer specification and recommendations, and commercially accepted practices.	
3.1.3	Sludge Disposal	The Contractor shall dispose of sludge from Wastewater Treatment Plant and BOWTS plant to ensure all sludge is disposed of in a safe and timely manner.	The Contractor shall submit an Annual Operations and Maintenance Plan of BOWTS for all BOWTS to reflect weekly, monthly and quarterly maintenance per Section F. The Contractor shall dispose of oily waste as directed by the Government. The Contractor shall perform testing for Toxicity Characteristic Leaching Process (TCLP), metals/VOCs/SVOCs, Flashpoint, percent Water (Karl Fisher Water Content), paint filter, pH, and percent of Solids. Prior to disposal of sludge, the Contractor shall submit test results to KO and KO's designated representative per Section F. The Contractor shall ensure that the sewage sludge complies with specifications required by the Navy's Sanitary Landfill prior to disposal.	Sludge disposed of as specified. Test results are provided to the KO and KO's designated representative.
3.1.4	Minimum Operator Attendance	The Contractor shall provide a sufficient number	The Contractor shall provide personnel per regulatory operating permit, approved	Minimum numbers and types of wastewater

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
		of wastewater treatment plant operators and support personnel per shift to ensure efficient and safe operations of equipment 24 hours per day, seven days per week.	Operations and Maintenance Manual or other technical reference that specifies minimum or recommended staffing levels. All plant operators, support personnel, and supervisory operators in direct responsible charge shall meet training and certification requirements as specified.	treatment plant operators and support personnel are provided as specified. All personnel operating the plant meet the training and certification standards.
3.1.5	Operating Records, Logs, Reports and Procedures	The Contractor shall prepare, submit and maintain operating records, logs and reports for in-process tracking of plant output characteristics to ensure records, logs, and reports are current and complete.	The Contractor shall record and provide the following daily operating records and logs for unit processes such as, primary treatment, secondary treatment, chemical content, pressure readings, chemical dosages, sludge processing, odor control, flow rates, and other laboratory records, maintenance records, corrosion tests, personnel records, emergency condition records, and operating costs. The Contractor shall develop and submit a Wastewater Treatment Plant Flow Reading Report as required per Section F. The Contractor shall develop and submit a Daily Operations Logbook Report as required by Section F. The Contractor shall develop and submit a Daily Operations Readings Report as required by Section F.	All required operating records, logs, reports and procedures are maintained current and complete and applicable copies provided to the KO and KO's designated representative within the specified times. Reports, data, records and documentation are provided on time, complete, accurate and legible.
3.1.6	Supervisory Control and Data Acquisition (SCADA)	The Contractor shall operate, maintain, and monitor equipment and chemical processes for wastewater collection, treatment, and disposal via SCADA system interfaces.	The Contractor shall comply with NAVFAC Marianas FRCS Cyber Security Requirements and perform Functional Administration requirements per Annex 2. Control, program and configure settings for programmable logic controller (PLC) devices and software. Provide maintenance on PLCs, remote terminal units (RTU), and field sensors	All SCADA and Functional Administration requirements are continually met.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			associated with SCADA equipment.	
3.2	Planned Maintenance (PM) Program	The Contractor shall develop and implement a PM Program for the Wastewater Treatment Plant, Wastewater Collection System, BOWTS Plant, and BOWTS Collection Systems to ensure all equipment and components are in a safe, fully functional and operational condition and to sustain maximum life. The Contractor shall inspect Wet Wells, collection pipelines, and manholes to ensure a complete assessment of condition in a timely manner. The Contractor shall perform cleaning of sewer pipelines in accordance with the NPDES standards to ensure proper operation, removal of all obstructions, and proper drainage.	The Contractor shall develop and submit a PM Plan per Section F. The Contractor shall accomplish the PM in a manner that does not impede on meeting the other objectives and requirements specified under this annex. The Contractor shall not use breakdown maintenance as part of the PM program The PM program shall provide an economical approach using manufactures' recommended procedures, OEM standards, and maintenance required to satisfy equipment warranties and keep the Wastewater Treatment Plant, Wastewater Collection System, Bilge Oily Waste Treatment System (BOWTS) Plant, and BOWTS Collection Systems in normal working condition. If the KO determines that the objective and standards are not met, the Contractor shall adjust or modify the Contractor's PM program. The Wastewater Treatment Plant, Wastewater Collection System, BOWTS Plant and BOWTS Collection Systems Descriptions are provided in J-1604000-01. Maximo Utility Assets is provided in J-1601000-02. The Contractor shall incorporate early detection methods to prevent equipment malfunction. The Contractor shall calibrate equipment, including gauges, controls, and meters in accordance with industry standards and manufacturer's	PM is completed as required by manufacturer's recommendations, generally accepted industry practices, or a locally agreed upon PM schedule. No unscheduled treatment plant outages or shutdowns. No instances of unscheduled by-passing of treatment processes. Scheduled outages coordinated with affected customers before outage; follow-on coordination conducted with customers affected by scheduled and unscheduled outages. No Contractor caused sewage overflow. No instances of retention of sludge due to equipment breakdown. All equipment, including gauges, controls, and meters calibrated in accordance with industry standards and manufacturer's recommendations, to ensure accurate readings.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			recommendations, to ensure accurate readings. The Contractor shall develop and submit a Maintenance Schedule, to include pipeline and manhole cleaning, per Section F. The Contractor shall document and maintain records of Maintenance and Repair History and submit per Section F. The Contractor shall flush one quarter of the wastewater piping each year to ensure all piping has been flushed within a four-year cycle. Flush piping for food service facilities and other areas with high potential for clogs at least once per month. Contractor shall provide a flushing schedule to the KO/ KO's designated representative for approval. The Contractor shall test the television inspection equipment immediately prior to performing work to verify the picture quality. Recorded footage shall be of good image quality such that all damage and defects to pipeline can be properly assessed. The Contractor shall take video frame snapshots of all defects, damage, and obstructions. The Contractor shall record video clips of continuous structural defects, such as longitudinal cracks, with a grade rating to show the magnitude of the defect, or of surface defects, such as infiltration, to show the degree of the defects. The Contractor shall document, report, and photograph all defects, and damage while performing manhole inspections.	Reports, data, records and documentation are provided on time, complete, accurate and legible. Validated customer evaluation of oily waste services is satisfactory or better. No instances of obstruction or in-operable equipment due to insufficient flushing of lines or cleaning of system components, such as all wet wells, basins, and pits. In overflow situation, alternative means of pumping and/or collection provided. Inspection performed, recorded, and reported in compliance with the latest standards and guidance. Cleaning is accomplished in accordance with the NPDES permit and work schedule. All pipelines are cleaned and free of obstruction. All debris and solids are captured, removed, sampled, and properly disposed.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			The Contractor shall submit Manhole Photographs and Reports, per Section F, providing recommendations for correction of any observed issues. Cleaning shall be performed to facilitate inspection and maintenance. The Contractor shall schedule cleaning to immediately precede inspection and maintenance activities whenever possible. Cleaning shall ensure that wastewater flow rates and system retention capacities are maintained. The Contractor shall furnish high velocity hydro-jetting and vacuum removal equipment as necessary to thoroughly clean system of sludge, dirt, soil, sand, rocks, roots, and other solid or semi-solid materials. Debris and solids shall be captured at the downstream manhole and removed for dewatering and disposal. The Contractor shall clean the wet wells annually or more frequently as needed to ensure proper operation of the wet well and associated equipment. The Contractor shall document, report, and photograph all defects, and damage while performing Wet Well inspections. The Contractor shall submit Wet Well Photographs and Reports, per Section F, providing recommendations for correction of any observed issues. The Contractor shall inspect each pump or lift station, and	Inspect each pump/lift station at least once every 24 hours or otherwise as specified. Sump pump operator maintenance program meets manufacturer's recommended procedures and OEM standards.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			complete Sewage Lift Station Check Lists per Section F. The Contractor shall provide an alternative means of pumping or collecting sewage to prevent, or correct, overflow situations due to equipment breakdowns, or unscheduled power outages. The Contractor shall ensure that sump pump operator maintenance will be performed in accordance with applicable Federal and local statutes and regulations, and with DoD policies, instructions and guidance. The Contractor shall alternate use of pumps/equipment to ensure equal usage at stages in treatment plant where alternation of pumps/equipment is appropriate. The Contractor shall attach identification tags or labels to all assets per NAVFAC P-603 Utilities Infrastructure Management Manual.	
3.3	Other Recurring Services	The Contractor shall perform other recurring services to the components of the wastewater treatment and collection systems.		Other recurring services are completed in a timely manner.
3.3.1	Warranty/ Guarantee Certificate	The Contractor shall create and manage a program that ensures all warranties/ guarantees in effect for existing or newly acquired equipment are reviewed periodically and utilized until their expiration.	The Contractor shall provide Warranty and Guarantee Certificate Status Report as required per Section F, on all equipment under warranty. Informational Note: Equipment includes, but is not limited to, pumps, motors, motor control centers, gas compressors, boiler, comminutor, flow recorders, centrifuge, sludge rakes, etc. Warranty and guarantee certificates apply to	All equipment under warranty are properly operated, tracked and maintained in accordance with manufacturer's recommendations. Maintenance records reflect that warranty requirements are met.

1604000 – Wastewater				
Spec Item	Title	Performance Objective	Related Information	Performance Standard
			equipment installed by the BOS Contractor or other entities.	
3.3.2	Utility Consumption Data	The Contractor shall collect and provide accurate, timely meter readings and supporting data using Government provided schedule to facilitate billing of customers.	The Contractor shall utilize meter readings for water consumption to determine wastewater collection quantities. Input ashore and afloat meter reading raw data, add ashore water consumption meter reading derivations, process all data to derive monthly wastewater collection quantities, analyze for accuracy and completeness. The Contractor shall provide Utilities Cost Analysis Report as required per Section F. The Contractor shall investigate areas of the wastewater collection system if unusual readings are perceived, and are requested by the Government.	Meter readings and supporting data are provided on time, complete, accurate and legible with no more than one error. Reports, data, records and documentation are provided on time, complete, accurate and legible.