
NAVAL FACILITIES ENGINEERING COMMAND
GUIDE PERFORMANCE WORK STATEMENT (GPWS)
FOR
WASTEWATER COLLECTION SYSTEMS AND TREATMENT FACILITIES
OPERATION AND MAINTENANCE

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AUGUST 1989

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USER'S GUIDE
GUIDE PERFORMANCE WORK STATEMENT FOR
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I. INTRODUCTION

A. Purpose. This NAVFAC Guide Performance Work Statement (GPWS) has been written to provide assistance in preparing facilities support contracts to procure wastewater collection systems and treatment facilities operation and maintenance services. Contracts for these services may be a continuing contracting effort or conversion of such services from in-house to contract performance under the Commercial Activities (CA) program. This NAVFAC GPWS may be used in either application. This GPWS Package consists of a User's Guide, guide contract sections B, C, and J in the Uniform Contract Format, and a Quality Assurance (QA) Guide.

1. NAVFAC manual MO-327, *Service Contracts: Specifications and Surveillance*, provides extensive information on the preparation of NAVFAC facilities support contracts, from guidance on making the initial decision to contract a given function through the entire PWS and surveillance program development process. This User's Guide is designed to supplement and to be used in conjunction with the MO-327 in developing a PWS for wastewater collection systems and treatment facilities operation and maintenance services. It provides specific guidance on developing and tailoring the GPWS, special items which must be considered if the specification is being written in conjunction with a CA program study, and general guidance on required pre-award actions. Additional guidance on implementing CA program requirements can be found in the Supplement to OMB Circular A-76 and in OPNAVINST 4860.7B.

2. Sections B, C, and J provide suggested formats for displaying contract line (bid) items, technical specifications which the user may tailor to site specific needs, and attachments which provide supplemental information, historical data, etc.

3. The QA guide is designed to provide the framework for development of a comprehensive contract surveillance program. The user should modify and expand upon the sample QA plans provided as the GPWS is tailored.

B. Function Definition. For purposes of this GPWS, the wastewater collection systems and treatment facilities operation and maintenance function is defined to include all labor, transportation, equipment, materials, supplies, management, coordination, and supervision required to operate, maintain, and repair wastewater collection systems, pumping stations, and treatment facilities. Note that maintenance of storm water collection systems is not included in this GPWS.

C. Responsibilities

1. Experience has shown that the best method of developing a facilities support contract specification is to involve a number of activity personnel, each having a portion of the knowledge and experience required to put the entire package together. A team of experienced activity personnel should be formed and a team leader appointed. At least one member of the team must be intimately familiar with each of the following areas:

- a. Must be familiar with and understand the applicable GPWS(s) and QA Guide(s).
- b. Must have a working knowledge of basic contracting procedures.
- c. Must have first hand knowledge of the services, and/or equipment/system operations, repairs, and maintenance to be provided by contract.
- d. Must be able to identify local needs/requirements that are different from the GPWS and apply specifically to the activity.

2. The following activity personnel are suggested as members of the specification development team.

- a. Specification Writer. The Wastewater Collection Systems and Treatment Facilities specification is most properly prepared by an engineer or engineering technician at the activity who has had at least some experience in writing facilities support contracts. The use of a planner and estimator (P&E) is also appropriate if one is experienced with writing contract specifications. The writer, regardless of who the person is, should have attended the Civil Engineer Corps Officers School (CECOS) course on Facilities Support Contracts. Assistance and guidance may be requested from the geographical NAVFACENCOM Engineering Field Division (EFD), Code 10. The EFD may offer courses on PWS development, quality assurance, and other related subjects that may benefit the specification writer.

- b. Functional Manager/Customer. The functional manager is the technical representative of the team who is most familiar with the function to be contracted. Early in the tailoring process the Utilities Division Director or other wastewater functional expert must determine the total scope of the services required, and the specific needs of the activity which may differ from this GPWS.

- c. Contract Specialist. The Contract Specialist provides overall contractual guidance in the preparation of the specification. This person will work with the writer in the preparation of sections B, C, and J, and will prepare the majority of the clauses in sections E, F, G, H, I, K, L, and M. Additionally, there are many pre-award and post-award contract actions to be initiated by the Contract Specialist.

- d. CA Program Manager. If the specification is being prepared under the CA program, the CA Program Manager provides overall guidance on the CA program, and will ensure that the specification is developed in conjunction with required most efficient organization and management studies.

3. The tailored specification should be reviewed by customer and functional manager representatives, the activity's Facilities Support Contract Manager (FSCM) and Quality Assurance Evaluators (QAEs), the Engineering Division Director, and Facilities Management Engineering Director. Consult appropriate EFD instructions to determine if EFD review/approval is required prior to solicitation.

II. GPWS DEVELOPMENT AND USER CONSIDERATIONS. This section of the User's Guide discusses certain assumptions which were made and special items that were considered during the development of the Wastewater Collection Systems and

Treatment Facilities Operation and Maintenance GPWS, and provides general information and considerations that the user should be aware of during the tailoring process.

A. Development of the GPWS. In developing this GPWS, a tree diagram, as described in NAVFAC MO-327, was used to identify each of the major subfunctions for wastewater collection systems and treatment facilities operation and maintenance. Each of these subfunctions was carefully reviewed to determine which could realistically be contracted for. Once a final list was developed, each subfunction was further subdivided to develop basic work requirements (performance indicators) and standards of performance. Once all of the basic work requirements were identified for each subfunction, a Performance Requirements Summary Table was developed and the requirements were put into narrative form.

TABLE 1

SUBFUNCTION ANALYSIS

- 0.0 Operation, Maintenance and Repair of Wastewater Collection Systems and Treatment Facilities
 - 1.0 Waste Collection System
 - 1.1 Operational Requirements
 - 1.1.1 Provide general collection services
 - 1.1.2 Provide temporary/emergency collection services
 - 1.1.3 Prepare/Submit reports and correspondence
 - 1.2 Inspection and Maintenance Requirements
 - 1.2.1 Establish and implement control inspection program
 - 1.2.2 Establish and implement preventive maintenance inspection (PMI) program
 - 1.2.3 Document inspection results and maintenance actions
 - 1.3 Repair Requirements
 - 1.3.1 Provide service call processing
 - 1.3.2 Perform services (routine, urgent, and emergency)
 - 1.3.3 Perform minor maintenance and repair
 - 2.0 Wastewater Treatment Facility
 - 2.1 Operational requirements
 - 2.1.1 Perform general plant operations
 - 2.1.2 Provide properly qualified personnel
 - 2.1.3 Coordinate waste disposal
 - 2.1.4 Perform sampling and lab analyses
 - 2.1.5 Prepare/submit reports and correspondence
 - 2.2 Inspection and Maintenance Requirements
 - 2.2.1 Establish and implement control inspection program
 - 2.2.2 Establish and implement PMI program
 - 2.2.3 Document inspection results and maintenance actions
 - 2.3 Repair Requirements
 - 2.3.1 Perform repairs (routine, urgent and emergency)

2.3.2 Document minor maintenance and repair

3.0 Miscellaneous Services/Duties

- 3.1 Assist and cooperate in system/facility inspections and studies
- 3.2 Maintain Quality Control analysis
- 3.3 Comply with applicable directives

B. GPWS User Considerations. The clauses and provisions of this GPWS are arranged in the uniform contract format as required by the Federal Acquisition Regulation (FAR). The sections to which they are assigned shall not be changed.

1. This GPWS contains sections B, C, and J only. These sections contain information and clauses peculiar to the technical services required, while Sections D, E, F, G, H, I, K, L, and M contain contract clauses and provisions more closely related to administrative and contractual requirements. Since the latter group will generally be the same in the majority of NAVFAC contracts, their inclusion in each GPWS would be unnecessary duplication. Therefore, this group, to be referred to as the standard facilities support contract clauses, shall be packaged at each geographical EFD and contracting office, and made available to specification writers as required.

2. FAR clauses and provisions may be added or deleted as required by the FAR for specific functions, dollar limitations, bonding, small businesses, etc. They may not be altered unless specifically authorized by the FAR. The clauses in sections I and L, other than those requiring tailoring (i.e. blanks to be completed), may be included by reference. All other FAR clauses and provisions shall be included in full text. Procurement offices shall make available to bidders the full text of all clauses incorporated by reference upon request.

3. The "SCHEDULE OF DEDUCTIONS", "ESTIMATING THE PRICE OF NONPERFORMED OR UNSATISFACTORY WORK", and "CONSEQUENCES OF CONTRACTOR'S FAILURE TO PERFORM REQUIRED SERVICES" clauses are NAVFAC, not FAR clauses, and shall not be altered without NAVFAC approval. All other non-FAR clauses and provisions in the standard facilities support contract clauses should be used substantially as shown or deleted if not applicable to the solicitation. Extensive deliverable performance requirements should not be added to these clauses, but should be included in Section C.

4. Technical Specification

a. Section C, which describes the services to be provided, should be a performance specification. That is, over defining the Contractor's responsibilities in terms of methods or procedures should be avoided in writing the technical specifications since we hope to purchase not only the Contractor's labor, but also his/her expertise in the services to be provided and management of those services. A performance oriented specification should minimize the use of words describing "how to" and emphasize the performance standards to which the Contractor must maintain and operate the wastewater collection systems and treatment facilities. Outputs must be described specifically and as explicitly as possible while leaving the Contractor latitude to manage his/her own work force and choose his/her own methods for accomplishing the work.

b. On the other hand, the specification must provide enough information to clearly and precisely define the magnitude (number of services we want to buy) and quality of each of the services to be provided, as well as the

scope or limit of each. This is accomplished in the GPWS by specifying, in addition to the desired outputs, schedules of accomplishment and/or specific time limitations in which all services must be completed; listing mandatory operating procedures or steps that the Contractor must follow for some services; and providing historical data on the magnitude of services provided under previous contracts or by in-house forces. Such information will only slightly restrict the Contractor's latitude in managing his/her workforce, but will help ensure all bidders clearly visualize the magnitude of effort which will be required to provide the clearly defined scope of work. Typically this will result in more accurate/realistic Contractor bids, make payment deductions for unsatisfactorily performed or non-performed work easier to calculate, and reduce the number of contract administration problems.

5. As you use this GPWS you will find in many instances there will be a "NOTE TO THE SPECIFICATION WRITER". These notes provide the user with additional information and/or advise the user to select the appropriate clause, provide additional information, or delete the clause in its entirety. If the final document is to be printed from the WANG diskette, it is not necessary to delete the notes as the equipment will print a justified copy without the notes. There are also many areas within the text of the GPWS where notes indicate that additional information must be provided; i.e. start times, dates, quantities, etc. These notes will always be enclosed by the symbol "!". All that is required is to replace the note with the required information.

III. TAILORING THE GPWS. NAVFAC GPWS for wastewater collection and treatment services is not intended to fit the requirements of a specific activity, but rather, is to serve as a model to be tailored by activities in preparing their specific PWS. The first step in tailoring a GPWS to a specific case is for the user to become intimately familiar with the GPWS and its User's Guide. The user must know what is, and is not, included in the GPWS and what was intended before any required modifications may be assessed. The PWS is the instrument that lays out the functional and technical requirements and ultimately becomes part of a contract. The User's Guide provides the user with information concerning the GPWS and provides instructions on tailoring. Users should not assume that the GPWS can be "plugged" into their application with little or no effort. A detailed analysis of the activity's requirements will be required.

A. Getting Started

1. The first step in tailoring this GPWS to a specific user activity must be to determine one of the following:

a. Requirements are currently contracted and this will be a continuation of the contracted services or the consolidation of several contracts. If this is the case, the GPWS may be tailored to accomplish any desired scope of work and level of performance.

b. Requirements to be included are subject to a CA cost comparison study under OMB Circular A-76. If this is the case, it is mandatory that the scope of work and level of performance specified be equivalent to the current in-house effort or to the level of effort that can be achieved by the Most Efficient Organization (MEO) if the function is retained in-house. Additional information on tailoring of the GPWS for a CA program study is included in paragraph IV of this User's Guide.

2. The next step should be a thorough review of Chapters 2, 3, and 4 of NAVFAC MO-327. These three chapters outline in some detail how to perform a job analysis to determine the specific subfunctions to be contracted (including specific performance indicators and standards of performance) and how to use the job analysis information and data collected to actually write the PWS. As the job analysis is being performed, the user should compare his/her unique activity requirements with GPWS requirements to determine if any major changes are required, or if some of the questions being identified in the job analysis have already been answered in the GPWS. If major changes are required, the user will need to re-write the affected GPWS section. A thorough job analysis will make the actual tailoring of the GPWS and re-writing of paragraphs relatively easy since all required data will be readily available and the subfunctions to be contracted will be well defined.

B. Contract Line Item (Section B) Requirements. A combination firm fixed-price and indefinite quantity contract is used in this GPWS. The contract line items shown in Section B are intended to encompass all of the services to be provided in the technical specifications. Of course they must be tailored to account for work items added or deleted during the functional analysis process and the projected start date of contract performance. The line items are made up of two types of work items: firm fixed-price items and fixed unit price (indefinite quantity) items. All new work items added by the user must fall into one of these two categories.

1. Fixed-Price Requirements. Firm fixed-price items are bid and payment is made for the total performance of a given work item over a given period of time (usually one month). These work items are either fixed in scope (time, location, frequency, quantity, etc. are known or can be accurately estimated) or adequate historical data is available to make a biddable estimate. Because the scope of work is known, the Contractor agrees to perform a given function for a total price, and in essence there is one work order. The Contractor performs the work as scheduled and invoices are submitted for the services provided.

a. Examples of firm fixed-price items in this GPWS are collection and treatment systems operation, service work, and preventive maintenance inspections. Some of these work items, such as service work, are limited in scope to specified labor and/or dollar amounts. Work beyond these limits will either not be required by the contract, or will be included in the indefinite quantity portion of the contract. The higher the labor/dollar limits specified, the more historical data that must be provided.

b. Fixed-price work items added by the user must either have clearly defined scopes, or additional historical data will have to be added to Attachment J-C7 of the PWS.

2. Indefinite Quantity Work Items. All items not included in the firm fixed-price portion of the contract are considered indefinite quantity work items. That is, the Contractor agrees to perform this work on an "as ordered" basis, and a fixed unit price to perform one occurrence or a given quantity of each type of work is bid. Payment for this type of work is based on the unit price bid per unit times the number of units performed. Because each Government order for indefinite quantity work is paid for separately, each and every work order must be inspected and accepted as being satisfactorily completed before payment may be made. Indefinite quantity work in this GPWS is divided into two separate categories, each with its own contract line item and set of subline items.

a. Unit Priced Tasks. Bid prices for unit priced tasks include all labor, materials, and equipment for performing a given quantity of work, such as replacing one foot of six inch polyvinyl chloride pipe. The unit prices bid are multiplied by a maximum quantity of units to be ordered during the contract term, but only for purposes of bid evaluation, since work will only be paid for as ordered and completed.

b. Engineered Performance Standards (EPS) Hour Labor. This type of indefinite quantity work, which is also referred to as "level of effort work", should be used only in connection with maintenance, repairs, and alterations to facilities and/or equipment, and then only when such work cannot be identified in advance in sufficient detail to be included in the firm fixed-price or indefinite quantity - unit priced portions of the contract. The unit prices bid for labor include all costs to provide one EPS estimated hour of labor. The Contractor is reimbursed for the cost of materials (except for pre-expended bin materials) and equipment, as specified in the "ESTIMATES" clause of Section C.

c. As many indefinite quantity work requirements as possible should be included as unit priced tasks vice as level of effort work since unit priced tasks are easier to understand, easier for Contractors to bid on, the work is easier to order and administer, and material and equipment costs are included in the unit prices bid. Regardless of which of the two types of indefinite quantity work are used, the quantities provided in the solicitation for bid evaluation must be realistic estimates of the anticipated maximum quantities to be ordered during the contract term.

3. Partial First Year of Performance

a. Because of funding restrictions, only four types of maintenance service contracts may be awarded for a 12-month period to begin at any time during the fiscal year. All other contracts, including those for wastewater collection and treatment services, must be funded using funds from the fiscal year in which the work will be performed. This means that only contracts with terms beginning on 1 October may be awarded for a full 12-month period. Contract terms beginning on any other date must be awarded for something less than 12 months and must end on or before 30 September. Normally, such contracts will not be awarded for less than three months. For example, a contract which begins on 1 April would have a six-month initial term, and then options to extend for up to 54 additional months. However, no single option period could be more than 12 months long, and the total term of contract could not exceed 60 months.

b. Section B of this GPWS assumes that the initial contract period will be less than 12 months. The user must also consider each of the following items in this situation.

(1) As illustrated in this GPWS, at least two sets of contract line items will be required in Section B. One set for the initial (base) period for performance of work from the specified contract start date through 30 September. The other set will be for performance during the first 12-month option period, if the Government exercises its option to extend the contract. In most cases, only the initial performance period and the first option period may be pre-priced unless the specification is being written for a CA program study. See paragraph IV.B of this User's Guide.

(2) Section C, the technical specifications, must clearly outline the scope of work for both the initial and first 12-month option periods since the work load can vary significantly from month to month. For example, the specification must state whether or not annual preventive maintenance inspections will be performed during the initial period.

(3) Two Schedules of Deductions, one for the initial period and one for the first option period, must be included. Of course the items of work and number of units in the Schedules of Deductions must agree with the firm fixed-price contract line items in Section B and the scopes of work defined in Section C. Paragraph III.D of this User's Guide provides more in depth information on the development of Schedules of Deductions.

(4) The "TERM OF THE CONTRACT" clause in Section F should read as follows:

"TERM OF CONTRACT. The initial contract term shall be for a !INSERT NUMBER!-month period commencing on !INSERT DATE! and ending on !INSERT DATE!; however, the Government reserves the right to award for the base period a number of months less than the !INSERT SAME NUMBER! months stated at the unit prices bid. The Government has the option to extend the term of the contract in accordance with the "OPTION TO EXTEND THE TERM OF THE CONTRACT-SERVICES" clause in Section I by giving written notice to the Contractor 10 calendar days prior to expiration of the contract. In the option periods, the Government will adjust the prices, as required, based on new Department of Labor Wage Rate Determinations."

(5) The "BASIS FOR AWARD" clause should read as follows:

"BASIS FOR AWARD. The low bidder for purposes of award shall be the conforming, responsive, responsible bidder offering the lowest total price for Contract Line Items 0001, 0002, 0003, 0004, 0005, and 0006. However, the initial award will include only contract line items 0001, 0002 and 0003. Bids are solicited on an "all or none" basis and provision 52.214-10 ("CONTRACT AWARD - SEALED BIDDING") in Section L is hereby modified. FAILURE TO SUBMIT BIDS FOR ALL ITEMS AND QUANTITIES LISTED SHALL BE CAUSE FOR REJECTION OF THE BID."

c. If the initial contract term will be projected to begin on 1 October, make the following changes to the GPWS contract line items, Section B:

(1) The dates shown in contract line items 0001, 0002, and 0003 should read "(1 October !INSERT YEAR! through 30 September !INSERT YEAR!)".

(2) Delete contract line items 0004, 0005, and 0006 in their entirety, unless the PWS is being written under the CA program (see paragraph IV.B of this User's Guide).

4. Specific clauses included in Section B differ from NAVFAC EFD to EFD. The user must contact the activity's geographical EFD to identify the specific clauses, if any, which may be required.

C. Technical Specifications (Section C). The following discussion should be of value in developing descriptions of the activity's collection and treatment facilities, wastewater characteristics, and other information as required in the "SCOPE OF WORK" clause, Section C.

1. Wastewater Collection and Pumping Systems. The collection system should be described to identify the different types of systems on the activity, e.g., the domestic sewage system, the industrial system, the ship's wastewater system, or any combination thereof. The subject systems' descriptions should include pipe material and size, the number of linear feet of each pipe size, the number and types of pumping stations, and locations of the systems. The pumping station descriptions should also include number, type, and capacity of the pumps in each pump station and other related equipment as considered appropriate, e.g. barscreen, comminutor, controls, type of electrical switching, emergency power, ventilation, etc.

2. Wastewater Treatment Facilities

a. The wastewater treatment plant should be described as to the type of plant and the disposal point of the effluent. The following are typical examples:

(1) The wastewater treatment plant is a high-rate trickling filter plant with outfall to the Mississippi River.

(2) The wastewater treatment plant is an activated sludge plant with outfall to the Atlantic Ocean.

(3) The wastewater treatment plant is an aerated lagoon system followed by land application effluent disposal.

b. After the plant description, a listing of the plant's components, structures, and equipment should be provided. Dimensions, size, number, and/or capacity of the components, structures, and equipment should also be provided as appropriate. The following provides a fairly comprehensive, but not all inclusive, list of various wastewater treatment plant components, structures, and equipment:

(1) PRETREATMENT

(a) Screening

Influent Channel

Racks

Bar Screens - Manually or Mechanically Cleaned

Fine Screens

(b) Shredding and Grinding

Barminutor

Comminutor

Macerator

(c) Flow Equalization

Surge Tanks

Surge Ponds

(d) Preaeration

(e) Prechlorination

(f) Grit Removal

Grit Channel - Manual or Chain and Flight Grit Collector

Aerated Grit Chamber
Pista Grit Chamber
Cyclone Grit Chamber
Cyclone Grit Separators
Grit Classifier
Grit Washer
Screw Conveyor
Grit Pump
Grit Storage - Hopper or Bin

(2) PRIMARY TREATMENT

- (a) Rectangular Primary Clarifier
Chain and Sludge Scraper Collector
Traveling Bridge Collector
- (b) Circular Primary Clarifier
Scum Skimmer and Sludge Blade and Scraper Collector
Sludge Rake Blade with Riser Suction Pipe Collector
- (c) Lamella Gravity Settler
- (d) Combined Sedimentation - Digestion Units
- (e) Imhoff Tank
- (f) Surge Tank
- (g) Pumps - Wastewater and Sludge

(3) SECONDARY TREATMENT

- (a) Trickling Filters and Packed Towers - Rotary Distributor or
Fixed Nozzle Media - Rock, Plastic, or Redwood Lath
- (b) Activated Sludge - Conventional, Step Aeration, Extended
Aeration, Complete Mix, or Contact Stabilization
Aeration Tanks - Mechanical or Diffused Aeration
Oxidation Ditch - Surface Type Aerator, e.g., Brush Rotor
- (c) Activated Biofilter Process - Redwood Racks
Aeration Tank - Surface Type Aerator
- (d) Rotating Biological Contactors
- (e) Lagoons/Ponds - Aerobic, Anaerobic, or Facultative
- (f) Secondary Clarifier - Rectangular or Circular
- (g) Pumps - Wastewater and Sludge

(4) DISINFECTION

- (a) Chlorination - Chlorine Contact Chamber
- (b) Ozonation - Ozone Contact Basin

(c) Ultraviolet Light

(d) Dechlorination

(5) FLOW MEASUREMENT

(a) Propeller Meter

(b) Magnetic Flow Meter

(c) Venturi Tube

(d) Positive Displacement Diaphragm Meter

(e) Weirs

(f) Flumes

(g) Dennison or Parabolic Nozzle

(h) Rotameter

(i) Float Type Meter

(j) Dipper Meter

(k) Ultrasonic Meter

(l) Bubble Type Meter

(6) SLUDGE HANDLING

(a) Thermal Treatment

(b) Gravity Thickeners

(c) Flotation Thickening

(d) Anaerobic Digestion

(e) Aerobic Digestion

(f) Centrifuge

(g) Vacuum Filtration

(h) Pressure Filtration

(i) Drying Bed

(j) Drying Lagoons

(k) Incineration

(7) OTHER TREATMENT PROCESSES

- (a) Filtration
- (b) Microscreening
- (c) Odor Control
- (d) Activated Carbon Absorption
- (e) Ammonia Stripping
- (f) Chemical Feeding and Conditioning
- (g) Rapid Mixing and Flocculation
- (h) Recarbonation
- (i) Polishing Ponds
- (j) Land Treatment of Wastewater and Sludge
- (k) Dechlorination

(8) EMERGENCY AND AUXILIARY POWER

- (a) Generators
- (b) Motor Driver Equipment - Diesel, Gas, etc.

3. Wastewater Characteristics. For each type of wastewater treatment plant, the raw wastewater characteristics should be described. This information is recorded on the Wastewater Treatment Plant Operating Record, NAVFAC Form 11340/1. Also, some of the raw wastewater characteristics are reported as required by the NPDES permit. The NPDES permit data and the Operating Record data should be reviewed and a range of the raw wastewater characteristics should be defined. The following provides a typical composition of a raw domestic wastewater:

<u>Constituent</u>	<u>Concentration (mg/l unless specified)</u>		
	<u>Weak</u>	<u>Medium</u>	<u>Strong</u>
Biochemical Oxygen Demand, 5 days @ 20°C	110	220	400
Chemical Oxygen Demand	250	500	1,000
Total Dissolved Solids	250	500	850
Suspended Solids	100	220	350
Settleable Solids	5	10	20

4. NPDES Permitted Subject Areas. The Environmental Protection Agency issues a NPDES permit to authorize the discharge of treated and sometimes untreated wastewater to a receiving water. In some states, a state permit may

replace or may be in addition to the NPDES permit. A copy of these permits should be obtained from the Utilities Division Director or Environmental Coordinator of the activity.

a. Some NPDES permits have other discharge requirements (usually identified under Part III) not relating to the wastewater collection system or treatment plant. These other discharge requirements should be excluded from the specifications. The permit normally specifies the following:

- (1) which facilities are authorized to discharge
- (2) the receiving waters
- (3) the effective and expiration dates
- (4) the effluent limitations and monitoring requirements
- (5) a schedule of compliance
- (6) monitoring and reporting requirements
- (7) management requirements
- (8) responsibilities

(9) and, sometimes, other requirements. These requirements should not be included in the specification as discussed in the previous paragraph.

b. After reviewing the permit(s), the following provides a typical example for effluent quality requirements of a wastewater treatment plant with the following flow: cubic meters/day (MGD) 7,570 (2.00).

PARAMETERS	DISCHARGE LIMITS			
	Kg/day (lbs/day)		Other Units	
	<u>Monthly Avg.</u>	<u>Weekly Avg.</u>	<u>Monthly Avg.</u>	<u>Weekly Avg.</u>
Biochemical Oxygen Demand, 5 days at 20°C (BOD-5)	227(5)	340(750)	30 mg/l	45 mg/l
Suspended Solids (SS)	227(5)	340(750)	30 mg/l	45 mg/l
Fecal Coliform Bacteria, Geometric Mean			200/100 ml	400/100 ml
Dissolved Oxygen			5.0 mg/l	

(1) pH shall not be less than 6.0 nor more than 9.0 standard units. There shall be no discharge of floating solids or visible foam in other than trace amounts.

(2) The effluent shall not cause a visible sheen on the receiving water.

(3) The monthly average effluent BOD-5 and SS concentrations shall not exceed 10 percent of the respective monthly average influent concentrations.

(4) Chlorine residual shall be maintained at 0.5 mg/l to 1.0 mg/l continuously in effluent from wastewater treatment plant.

(5) Chlorine residual in discharge to receiving body of water shall be ± 0.01 mg/l.

c. The following provides a typical example for effluent quality requirements of an industrial wastewater treatment plant. Depending on the type of plant, its components, and the receiving water, there may be greater or fewer parameters and they may be more or less stringent. Also, biomonitoring may also be required.

PARAMETERS	DISCHARGE LIMITS	
	Daily Average, kg/day (lbs/day)	Daily Maximum, Other Units
Chemical Oxygen Demand	946 (2085)	125 mg/l
Oil and Grease	113 (250)	15 mg/l
Cyanide	0.15 (0.33)	0.02 mg/l
Phenol	1.51 (3.34)	0.20 mg/l
Chromium (Total)	0.38 (0.83)	0.05 mg/l
Copper	3.78 (8.34)	0.50 mg/l
Zinc	7.6 (16.7)	1.0 mg/l
Iron	2.27 (5.00)	0.30 mg/l
Detergents	3.78 (8.34)	0.50 mg/l
Nickel	1.51 (3.34)	0.20 mg/l
Lead	0.38 (0.83)	0.05 mg/l
Total Dissolved Nitrogen	22.7 (50.0)	3.0 mg/l
Total Phosphorous	22.7 (50.0)	3.0 mg/l

d. The permit(s) prescribes the monitoring requirements (measurement frequency, sample type, and sampling point) for each parameter. These requirements will be the minimum monitoring requirements. The specification writer will also have to review the plant's operation and maintenance manual to specify the process control testing requirements prescribed in the manual to ensure adequate operation of the plant. Additionally, the monitoring requirements on NAVFAC Form 11340/1 (Rev. 7-81) (Wastewater Treatment Plant Operating Record) which apply to the plant should be included in the specification.

e. The permit indicates reporting procedures for the monitoring results. Usually the permit requires the results to be forwarded to the regulatory agencies on a quarterly basis. The Contractor should also be required to complete NAVFAC Form 11340/1 (Rev 7-81) and any other logs necessary to adequately record all required information, and submit monthly to the ACO. In many cases, submittal of NPDES information to the geographic NAVFAC EFD is also required.

f. The specification will generally require the Contractor to comply with all requirements and procedures of the permit. The specification may also place operation and management requirements and responsibilities upon the Contractor which may be similar to the permit requirements. The specification

writer must ensure there is no conflict between the permit and the specification, except that the specification may contain stricter requirements than the permit to meet the activity's requirements of having cost effective and environmentally acceptable operation and maintenance of the wastewater treatment plant.

g. Care should be taken in cases where the activity has experienced repeated problems in meeting regulatory permit requirements for plant operations due to design/equipment deficiencies or improper/excessive plant loadings (not to be confused with poor operational practices and operator errors). In such cases the Contractor cannot be required to meet permit restraints when the activity has not been able to meet the same regulatory restraints in the past. Therefore, when a plant exhibits a history of such poor performance, the specification writer and QAE should recognize that such instances of non-compliance are not necessarily indicative of poor Contractor performance and the usual actions of payment deductions and discrepancy reporting may not be appropriate.

5. Potential Problem Areas. It is recognized that an all-inclusive specification package cannot be offered to each individual activity through a general GPWS such as this. It is the intent, therefore, to provide a general model and to rely on the specification development team and the specification writer to prepare a specific document individualized to meet the activity's demands. The very nature of specification development and the subject matter involved allow the following potential problem areas to develop, thus necessitating special examination by the Specification Writer.

a. Inclusion of Unique Activity Functions. Those functions or services which are highly individualistic or unique to an activity should be denoted within the specification and not omitted for the Contractor to discover after contract award. Such omissions could cause low bid submittals and possibly the necessity for contract change orders. For example, if effluent land application is specified as a Contractor responsibility, then all associated major supportive functions such as pump/well maintenance, ground water monitoring, and supportive laboratory analyses should also be specified, if within contract scope.

b. In-Scope Versus Out-of-Scope Functions. Performance of some functions of a wastewater collection system and treatment facility are necessary on a multi-yearly basis and, therefore, are not always suitable for inclusion in a short term contract. Such functions should be carefully examined in order to aid in the decision to include the functions and frequency requirements in the wastewater specification or to have the functions accomplished by other means. For example, sludge accumulation in a waste oil tank may require a number of years before removal is necessary. Questions to ask include: Is this a recurring operation/maintenance task that is suitable for inclusion in a short term contract? Is this task better suited for accomplishment by a separate contract (possibly a one-time service contract) once critical sludge depth is reached? Or could this task best be accomplished through utilization of activity personnel? Other topics to question similarly include infiltration and inflow, and closed-circuit television surveying of below ground piping, which probably could be best accomplished through separate contracts.

c. Preventive Maintenance/Inspection (PMI) Program. The fact that the results of a neglected or incomplete PMI plan are seldom seen until a component malfunctions due to improper care, combined with the short term nature of this

contract, make PMI a service to be specified and enforced in an aggressive manner. Equipment and components for wastewater systems and treatment plants are costly items and appropriate PMI measures must be taken to guarantee service life longevity. For example, the Contractor may be more motivated to perform specified PMI requirements if he/she is liable for the total replacement cost (up to the \$2,000 Davis-Bacon limit) of equipment and components.

D. Schedule of Deductions. The Schedule of Deductions in Section E is one of the most important items that the specification writer must consider in tailoring of this GPWS since it directly affects the degree of difficulty required to make payment deductions for unsatisfactory performance or non-performance of work. The schedule, which is used in conjunction with the "CONSEQUENCES OF CONTRACTOR'S FAILURE TO PERFORM REQUIRED SERVICES" and "ESTIMATING THE PRICE OF NONPERFORMED OR UNSATISFACTORY WORK" clauses (Section E), require the successful bidder to break the firm fixed-price portion of the bid down for each of the fixed-price contract requirements in the PWS. The completed schedule must be provided by the Contractor within 15 days after award of the contract. The following "SCHEDULE OF DEDUCTIONS" clause must be inserted in the specification and the schedule(s) tailored for the activity's needs.

**SCHEDULE OF DEDUCTIONS (BASE PERIOD)
(DO NOT SUBMIT SCHEDULE OF DEDUCTIONS WITH BID)**

<u>CONTRACT REQUIREMENT</u>	<u>NUMBER OF UNITS</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
1. Operations				
a. Operate Waste Collection System and Treatment Facilities	!INSERT!	MONTH	\$_____	\$_____
b. Perform Sampling and Lab Analyses	!INSERT!	MONTH	\$_____	\$_____
c. Prepare Required Operating Reports	!INSERT!	MONTH	\$_____	\$_____
2. Perform Control Inspections	!INSERT!	EACH	\$_____	\$_____
3. PMI Program	!INSERT!	MONTH	\$_____	\$_____
4. Maintenance and Repair of Treatment and Collection Facilities				
a. Routine Service Calls	!INSERT!	MONTH	\$_____	\$_____
b. Emergency Service Calls	!INSERT!	MONTH	\$_____	\$_____
c. Urgent Service Calls	!INSERT!	MONTH	\$_____	\$_____
5. Waste Collection and Disposal				
a. Waste Collection/Transportation to Disposal Site	!INSERT!	EACH	\$_____	\$_____
b. Perform Associated Lab Analysis	!INSERT!	EACH	\$_____	\$_____

<u>CONTRACT REQUIREMENT</u>	<u>NUMBER OF UNITS</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
6. Other (Specify)	!INSERT!	!INSERT!	\$_____	\$_____
			TOTAL = \$_____	
			(Must equal amount bid for contract line item 0001.)	

**SCHEDULE OF DEDUCTIONS (FIRST OPTION PERIOD)
(DO NOT SUBMIT SCHEDULE OF DEDUCTIONS WITH BID.)**

<u>CONTRACT REQUIREMENT</u>	<u>NUMBER OF UNITS</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
1. Operations				
a. Operate Waste Collection System and Treatment Facilities	12	MONTH	\$_____	\$_____
b. Perform Sampling and Lab Analyses	12	MONTH	\$_____	\$_____
c. Prepare Required Operating Reports	12	MONTH	\$_____	\$_____
2. Perform Control Inspections	!INSERT!	EACH	\$_____	\$_____
3. PMI Program	12	MONTH	\$_____	\$_____
4. Maintenance and Repair of Treatment and Collection Facilities				
a. Routine Service Calls	12	MONTH	\$_____	\$_____
b. Emergency Service Calls	12	MONTH	\$_____	\$_____
c. Urgent Service Calls	!12	MONTH	\$_____	\$_____
5. Waste Collection and Disposal				
a. Waste Collection/Transportation to Disposal Site	!INSERT!	EACH	\$_____	\$_____
b. Perform Associated Lab Analysis	!INSERT!	EACH	\$_____	\$_____
6. Other (Specify)	!INSERT!	!INSERT!	\$_____	\$_____
			TOTAL = \$_____	
			(Must equal amount bid for contract line item 0004.)	

E. Davis-Bacon Considerations

1. A Contractor providing maintenance, repair and/or alteration services to Government facilities must pay his/her employees not less than the minimum wages and fringe benefits specified in the applicable Davis-Bacon wage determination, if the total cost (labor and materials) of the one-time work effort exceeds \$2,000. While any facilities support contract may contain Davis-Bacon wage provisions, only CA program contracts may contain options to extend the Davis-Bacon portion of the work. Therefore, Davis-Bacon wage provisions will not normally be included in non CA program contracts without prior NAVFAC approval.

2. In the case of the GPWS for wastewater collection and treatment services, the \$2,000 Davis-Bacon limit applies to any individual work order for maintenance or repair of the collection or treatment systems. Because most non CA program contracts do not contain Davis-Bacon provisions, no single work order may exceed \$2,000 in total cost. Work requirements greater than \$2,000 would be considered out of the scope of a non CA contract and would have to be procured by a separate contract or performed by in-house forces. Refer to paragraph IV.C of this User's Guide for additional Davis-Bacon considerations in CA program contracts.

F. Performance Requirements Summary. As the GPWS is being tailored a Performance Requirements Summary (PRS) Table should be prepared. This table will be used primarily in the preparation of QA plans (as discussed in the QA Guide to this GPWS), but it will also be of use to the Administrative Contracting Officer (ACO), FSCM, and customers to provide a convenient overview of services to be provided, standards of performance of those services, intended methods of surveillance, and MADRs. A sample PRS Table, which reflects the work requirements of this GPWS, is provided in the attached QA Guide. The user should modify this table to reflect the requirements of the tailored PWS. NAVFAC MO-327 provides guidance on the development of PRS tables.

IV. COMMERCIAL ACTIVITIES (CA) PROGRAM CONSIDERATIONS. This section of the User's Guide discusses some of the special items which must be considered when using this GPWS to prepare a PWS as part of a CA program study.

A. Scope of Work. The user must remember that the scope of work and standards of performance specified in the PWS must be equivalent to the projected capabilities of the MEO. This GPWS has been written with a somewhat limited scope in that single instances of maintenance and repair are limited to a total cost of \$2,000 or less. In CA program solicitations repairs costing more than \$2,000 (Davis-Bacon type work) will normally be included, and will require the user to make some modifications to the contract line items (Section B) and the technical specifications (Section C).

B. Pre-Priced Options to Extend. OMB Circular A-76 requires in-house and Contractor bids to be evaluated on at least a three year basis, unless contract funding limitations prevent the initial contract term from being a full 12 months in length. In this situation, pre-priced options must be included to cover at least two full fiscal years after the initial term. This means that Section B must contain contract line items for a base period and at least two, one-year, pre-priced option periods. For example:

1. If the contract term is projected to begin on 1 October, Section B would include contract line items for the base year (12 months) of performance

(items 0001, 0002, and 0003) and at least two, one-year, pre-priced option periods (items 0004, 0005, 0006, and 0007, 0008, and 0009).

2. If the contract term is projected to begin on 1 April, Section B would include contract line items for the initial six-month base period of performance through 30 September (items 0001, 0002, and 0003), and at least two, one-year, pre-priced option periods (items 0004, 0005, 0006, and 0007, 0008, and 0009).

3. In no case may the total contract term exceed 60 months.

C. Davis-Bacon Considerations. Since the in-house performance of wastewater collection and treatment facilities maintenance services normally includes single repairs and alterations costing in excess of \$2,000, such work will have to be included in the CA program PWS. This means that both Service Contract and Davis-Bacon wage determinations will be included in the contract and the Contractor will be required to pay the appropriate minimum wage, depending on the total cost of each work order. Service Contract wages apply to work orders costing less than \$2,000. Davis-Bacon wages apply to work orders costing more than \$2,000 (labor and materials). Since significant changes will be required to the contract line items (Section B) and other sections of the contract, the user should contact the activity's geographic EFD for guidance.

D. Continuity of Services. The PWS should address certain issues and requirements relative to the change-over from in-house to contracted performance of services. Therefore replace the "CONTINUITY OF SERVICES" clause in Section C with the following:

"At the time of the contract start date the Contractor shall be prepared to accept approximately !INSERT! delivery orders for backlogged minor work for which materials are already on hand. These proposed delivery orders shall be provided to the Contractor and a joint inventory by the Contractor and a Government Representative of all materials on hand shall be conducted within !INSERT! calendar days after the contract start date. The Contractor shall assume custody of these materials (which shall be used only for the work order for which specifically designated) upon completion of the inventory. The Contractor shall prepare an estimate for each of the backlogged delivery orders following the procedures outlined in the "ESTIMATES" clause of this Section. Completed estimates shall be provided to the ACO within !INSERT! calendar days after receipt of backlogged urgent minor work and within !INSERT! calendar days of receipt of other backlogged delivery orders. The Contractor's estimate will be evaluated to determine if: (1) the scope has been clearly and accurately identified, (2) the EPS standards (including work content comparison) have been accurately applied, (3) work which is not covered by EPS has been properly estimated with supporting data presented, (4) equipment and material estimates are reasonable and properly documented, and (5) unit priced work has been estimated using the unit prices that were bid. After the estimate has been reviewed and there are no mathematical, typographical, scope or estimating errors, the ACO will approve the estimate. Completion dates for each backlogged minor delivery order shall be negotiated."

E. Multi-Function CA Contracts. In many instances, CA program studies involve contracts containing more than one functional area or service. For example, the user may want to study wastewater collection and treatment services in conjunction with other utilities services, and issue a single solicitation.

Since most NAVFAC GPWSs are written in the same format, the technical requirements of Sections C and J of this guide may be easily combined with those of other GPWSs to produce a tailored multi-function PWS.

V. PRE-AWARD CONSIDERATIONS. Prior to award it is essential that the activity consider the following aspects of the operation and administration of a wastewater collection and treatment contract. Additionally, Chapter 7 of NAVFAC MO-327 discusses a number of items which must be considered by the activity prior to the award of a contract, including a pre-award survey of the apparent low, responsive, responsible bidder, and a review of the submitted quality control program.

A. Quality Assurance Evaluator Training. It is vitally important to have an adequate number of qualified QAEs on board prior to the contract start date. In fact NAVFAC EFD contract offices will not allow contracts to be advertised until the activity provides assurance that such resources will be provided. NAVFAC P-68 requires all individuals assigned to QAE duties to attend the QAE training course provided by each of the EFDs within six months of their assignment. If this training has not been received, the activity should take steps to have the QAE(s) attend the next available course and in the meantime should develop a local training program. EFD Code 10s (Facilities Division) should be contacted for QAE training scheduling or assistance. The QAE must also have a good working knowledge of operation and maintenance procedures and requirements for wastewater collection and treatment facilities. Prior to bid opening it is essential that the QAE become familiar with the wastewater collection and treatment GPWS.

B. Site Visits. The QAE or other Government representative should be prepared to conduct site visits with potential bidders after inviting bids. The purpose of these visits is to familiarize the Contractor with the location of contract requirements, not to provide additional information which should have been included in the PWS. QAEs must be briefed by the ACO or the Contract Specialist as to what can be said to potential bidders during site visits.

C. Government Furnished Property. Are Government furnished facilities, equipment, and materials, if any, ready for turnover?

END OF USER'S GUIDE

GUIDE PERFORMANCE WORK STATEMENT
FOR
WASTEWATER COLLECTION SYSTEMS AND TREATMENT FACILITIES
OPERATION AND MAINTENANCE

PART I - THE SCHEDULE

SECTION B: SUPPLIES OR SERVICES AND PRICES/COSTS

!*****
 NOTE TO SPECIFICATION WRITER: Some NAVFAC Engineering Field Divisions (EFDs) require additional clauses to be added to Section B. The user must contact the appropriate geographical EFD to identify additional clauses, if any, which may be required. The numbering system for contract line items and subline items shall follow the method prescribed in Subpart 4.71 of the DOD FAR Supplement. In the following example, contract line items 0001 and 0004 are prepared as single line items supported by Schedules of Deductions. An alternate method would be to eliminate the Schedules of Deductions from the contract and prepare detailed Schedules of Firm Fixed-Price Work, with detailed contract line items similar to those in the Schedules of Deductions.
 *****!

SCHEDULE

Item No.	Supplies/Services	Maximum Quantity	* Unit	Unit Price	Amount
0001	FIRM FIXED-PRICE WORK: Price for the BASE PERIOD for all work specified in the contract, except for work specifically identified as being included in the indefinite quantity portion of the contract.				
			!INSERT!	MONTH	\$ _____ \$ _____
	TOTAL PRICE FOR CONTRACT LINE ITEM 0001				\$ _____
0002	INDEFINITE QUANTITY WORK - UNIT PRICED TASKS: Price for the BASE PERIOD to perform the unit priced tasks listed in the Schedule of Indefinite Quantity Work below. The quantities shown are realistic estimates provided solely for the purpose of bid evaluation and establishing penal sums of bonds (if required). The price for this bid item is the total of the subline items listed in the Schedule of Indefinite Quantity Work - Unit Priced Tasks.				

SCHEDULE

Item		Maximum	*	Unit	
No.	Supplies/Services	Quantity	Unit	Price	Amount

SCHEDULE OF INDEFINITE QUANTITY WORK - UNIT PRICED TASKS

Replace Asbestos Cement Pipe
(per paragraph C.!INSERT!)

0002AA	6-Inch Line	!INSERT!	LF	\$ _____	\$ _____
0002AB	8-Inch Line	!INSERT!	LF	\$ _____	\$ _____

Replace Polyvinyl Chloride Pipe
(per paragraph C.!INSERT!)

0002AC	4-Inch Line	!INSERT!	LF	\$ _____	\$ _____
0002AD	6-Inch Line	!INSERT!	LF	\$ _____	\$ _____
0002AE	8-Inch Line	!INSERT!	LF	\$ _____	\$ _____

TOTAL PRICE FOR CONTRACT LINE ITEM 0002 \$ _____

0003 INDEFINITE QUANTITY WORK-EPS HOUR
LABOR: Price for labor in the BASE
PERIOD to perform maintenance and
repair work requirements that
cannot be identified in sufficient
detail to be included in Contract
Line Items 0001 and 0002. This
work is described in clauses C.14
and C.15. The quantities listed
below are realistic estimates
provided solely for the purpose of
bid evaluation and for establishing
penal sums of bonds (if required).
The price for this bid item is the
total of the subline items listed
in the Schedule of Indefinite
Quantity Work - EPS Hour Labor.

SCHEDULE OF INDEFINITE QUANTITY WORK - EPS HOUR LABOR

0003AA	Grounds/Surfaced Areas	!INSERT!	HR	\$ _____	\$ _____
0003AB	Electrical	!INSERT!	HR	\$ _____	\$ _____
0003AC	Painting	!INSERT!	HR	\$ _____	\$ _____
0003AD	Sheetmetal	!INSERT!	HR	\$ _____	\$ _____
0003AE	Mowing/Rigging	!INSERT!	HR	\$ _____	\$ _____
0003AF	Machine	!INSERT!	HR	\$ _____	\$ _____
0003AG	Plumbing/Pipefitting	!INSERT!	HR	\$ _____	\$ _____
0003AH	Equipment Operation	!INSERT!	HR	\$ _____	\$ _____

TOTAL PRICE FOR CONTRACT LINE ITEM 0003 \$ _____

SCHEDULE

Item No.	Supplies/Services	Maximum Quantity	* Unit	Unit Price	Amount
0004	FIRM FIXED-PRICE WORK: Price for the FIRST OPTION PERIOD for all work specified in the contract, except for work specifically identified as being included in the indefinite quantity portion of the contract.	12	MONTH	\$ _____	\$ _____
TOTAL PRICE FOR CONTRACT LINE ITEM 0004					\$ _____

0005 INDEFINITE QUANTITY WORK - UNIT PRICED TASKS: Price for the FIRST OPTION PERIOD to perform the unit priced tasks listed in the Schedule of Indefinite Quantity Work below. The quantities shown are realistic estimates provided solely for the purpose of bid evaluation and establishing penal sums of bonds (if required). The price for this bid item is the total of the subline items listed in the Schedule of Indefinite Quantity Work - Unit Priced Tasks.

SCHEDULE OF INDEFINITE QUANTITY WORK - UNIT PRICED TASKS

Replace Asbestos Cement Pipe
(per paragraph C.!INSERT!)

0005AA	6-Inch Line	!INSERT!	LF	\$ _____	\$ _____
0005AB	8-Inch Line	!INSERT!	LF	\$ _____	\$ _____

Replace Polyvinyl Chloride Pipe
(per paragraph C.!INSERT!)

0005AC	4-Inch Line	!INSERT!	LF	\$ _____	\$ _____
0005AD	6-Inch Line	!INSERT!	LF	\$ _____	\$ _____
0005AE	8-Inch Line	!INSERT!	LF	\$ _____	\$ _____

TOTAL PRICE FOR CONTRACT LINE ITEM 0005 \$ _____

SCHEDULE

Item No.	Supplies/Services	Maximum Quantity	* Unit	Unit Price	Amount
0006	INDEFINITE QUANTITY WORK-EPS HOUR LABOR: Price for labor in the FIRST OPTION PERIOD to perform maintenance and repair work requirements that cannot be identified in sufficient detail to be included in Contract Line Items 0004 and 0005. This work is described in clauses C.14 and C.15. The quantities listed below are realistic estimates provided solely for the purpose of bid evaluation and for establishing penal sums of bonds (if required). The price for this bid item is the total of the subline items listed in the Schedule of Indefinite Quantity Work - EPS Hour Labor.				

SCHEDULE OF INDEFINITE QUANTITY WORK - EPS HOUR LABOR

0006AA	Grounds/Surfaced Areas	!INSERT!	HR	\$ _____	\$ _____
0006AB	Electrical	!INSERT!	HR	\$ _____	\$ _____
0006AC	Painting	!INSERT!	HR	\$ _____	\$ _____
0006AD	Sheetmetal	!INSERT!	HR	\$ _____	\$ _____
0006AE	Mowing/Rigging	!INSERT!	HR	\$ _____	\$ _____
0006AF	Machine	!INSERT!	HR	\$ _____	\$ _____
0006AG	Plumbing/Pipefitting	!INSERT!	HR	\$ _____	\$ _____
0006AH	Equipment Operation	!INSERT!	HR	\$ _____	\$ _____
TOTAL PRICE FOR CONTRACT LINE ITEM 0006					\$ _____

* LF - Linear Foot

HR - EPS Estimated Labor Hour. See definitions in Section C.

END OF SECTION B

PART I - THE SCHEDULE

SECTION C: DESCRIPTION/SPECIFICATION/WORK STATEMENT

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PART I - THE SCHEDULE

SECTION C: DESCRIPTION/SPECIFICATION/WORK STATEMENT

!*****
NOTE TO SPECIFICATION WRITER: A "WORK EXCLUDED" clause in Section C is optional but should be used with extreme care in order to avoid giving bidders the impression that if work is not specifically excluded it is automatically included. A "WORK EXCLUDED" clause may be useful to clarify the scope of work if some operation and maintenance of wastewater treatment facilities and collection systems functions are already being performed by contract.
*****!

C.1 GENERAL INTENTION. The intention of this solicitation is to obtain operation, maintenance, and repair services for wastewater collection systems, pumping stations, and wastewater treatment facilities at !INSERT NAME OF ACTIVITY! by means of a combination firm fixed-price and indefinite quantity contract.

C.2 GENERAL REQUIREMENTS. The Contractor shall furnish all labor, supervision, tools, materials, equipment, incidental engineering, and transportation necessary for the operation, maintenance, and repair of the wastewater collection systems, pumping stations, and treatment facilities in accordance with the requirements herein. The work shall include collection and treatment of wastes, corrective and preventive maintenance, minor maintenance and repair, operation of wastewater treatment facilities, report preparation and other services as specified. Attachment J-C1 describes the facilities to be operated and maintained.

!*****
NOTE TO SPECIFICATION WRITER: Unique functional terms should be added to the following list of definitions. Definitions not required should be deleted.
*****!

C.3 DEFINITIONS - TECHNICAL. As used throughout this contract, the following terms shall have the meaning set forth below. Additional definitions are in the "DEFINITIONS" clause in Section I.

a. Where "as shown", "as indicated", "as detailed", or words of similar import are used, it shall be understood that reference is made to this specification and the drawings accompanying this specification unless stated otherwise.

b. Where "as directed", "as required", "as permitted", "approval", "acceptance", or words of similar import are used, it shall be understood that direction, requirement, permission, approval, or acceptance of the ACO is intended unless stated otherwise.

c. Administrative Contracting Officer (ACO). The individual designated by the Contracting Officer to administer the contract. Throughout this contract, the term ACO will be used to refer to the individual designated to administer the contract or his/her designated representative. See the "DEFINITIONS" clause, Section I.

d. Additional Material Handling. Time expended for loading materials from storage to truck, unloading materials to work area, moving materials to work

area, moving materials from storage to job site, removing debris, and handling of materials during the job that is not included in the craft time standard. The above definition is a summary of the definition of "Additional Material Handling" as used in development of Engineered Performance Standards.

e. Contractor. The term Contractor as used herein refers to both the prime Contractor and any subcontractors. The prime Contractor shall ensure that his/her subcontractors comply with the provisions of this contract.

f. Contractor Representative. A foreman or superintendent assigned in accordance with the "CONTRACTOR EMPLOYEES" clause, Section H.

g. Craft Phase. The numbered chronological sequence in which a specific craft performs a job phase. For example:

<u>Job Phase</u>	<u>Craft Phase</u>	<u>Craft</u>	<u>Description</u>
1	1	Carpenter	Fabricate and install frame for new wall
2	1	Electrician	Rough in electrical
3	2	Carpenter	Install sheet rock
4	2	Electrician	Trim out electrical
5	1	Painter	Paint new wall

h. Delay Allowances. Time expended for planning the work in the shop and at the job site; personal needs; balancing delays waiting for other craftsmen; unavoidable delays; partial day influence; waiting for tools or material that should have been at the job site. The above definition is a summary of the definition of "Delay Allowances" as used in development of Engineered Performance Standards.

i. Direct Material Costs. The actual vendor invoice charges for materials used for performance of work under this contract. Direct material costs shall include transportation charges when such charges are included on the invoice by the vendor, as well as any discounts allowed for prompt payment. When questions arise concerning the cost of materials, material costs shall be based on the lowest of quotes provided by the Contractor from at least three different commercial vendors for the direct material cost. The Government retains the right to obtain additional quotes in questionable situations. The lowest price will be used.

j. Engineered Performance Standards (EPS). A job estimating system developed for the Department of Defense. EPS is the average time necessary for a qualified craftsman working at a normal pace, following acceptable trade methods, receiving capable supervision, and experiencing normal delays to perform defined amounts of work of a specified quality. EPS manuals are published under the following numbers by each military branch:

Navy: NAVFAC P 700 Series
 Army: TB 420 Series
 Air Force: AFM 85 Series

k. Facility. An establishment, structure, or assembly of units of equipment designated for a specific function.

l. Frequency of Service

(1) Annual (A). Services performed once during each 12-month period of the contract.

(2) Semi-Annual (SA). Services performed twice during each 12-month period of the contract at intervals of 160 to 200 calendar days.

(3) Quarterly (Q). Services performed four times during each 12-month period of the contract at intervals of 80 to 100 calendar days.

(4) Monthly (M). Services performed 12 times during each 12-month period of the contract at intervals of 28 to 31 calendar days.

(5) Semi-Monthly (SM). Services performed 24 times during each 12-month period of the contract at intervals of 14 to 16 calendar days.

(6) Weekly (W). Services provided 52 times during each 12-month period of the contract at intervals of six to eight calendar days.

(7) Daily (D5). Services performed once each day, Monday through Friday, including holidays unless otherwise noted.

(8) Daily (D7). Services performed once each day, seven days per week, including weekends and holidays.

m. Government Representative. The person(s) whom the ACO will designate by name and/or position title to conduct liaison between the Contractor and the ACO on matters pertinent to this contract and be his/her authorized representative.

n. Job Phase. The numbered chronological sequence in which work is accomplished regardless of the craft(s) involved. (See Craft Phase above).

o. Job Preparation. All work and costs associated with receiving and considering a job assignment and instructions; planning equipment and material requirements; obtaining proper tools; laying out tools, material, and equipment; setting up ready to begin work; cleaning and storing tools and equipment; and cleanup of job site.

!*****
NOTE TO SPECIFICATION WRITER: The following definition assumes that no Government furnished facilities (which are located in EPS travel zone zero) are to be provided for the Contractor's use. If such facilities are to be provided the user should consider deleting the words "for travel" in the third sentence.
*****!

p. Labor Hour Unit Price. A labor hour unit price is the unit price bid by the Contractor to provide one EPS hour of work-in-place. The unit price bid includes all direct and indirect costs associated with performing an EPS hour of work. The unit price would typically include the Contractor's hourly craft wage, adjusted to allow for the bidder's workforce productivity (i.e. the Contractor's estimate of how his/her workforce will perform in relation to Engineered Performance Standards); and all costs for travel, pre-expended bin

materials and supplies, ordering and stockpiling job material, profit, tools, equipment, field and home office overhead, clerical support, supervision, inspection, fees, taxes, licenses, permits, insurance, etc. In short, all costs associated with providing a specific EPS hour of effort.

q. Latent Defects. Latent defects are defects that are present in a hidden or undeveloped state and are not visible or apparent at the time of inspection, but which become obvious or come into being at some future time.

r. Pre-expended bin materials and supplies. The minor materials and supplies, including those that are incidental to the job, for which the total direct cost of any one material line item shown on the material estimate is \$10.00 or less. Examples of pre-expended bin materials and supplies include, but are not limited to, solder, lead, flux, electrical connectors, electrical tape, fuses, nails, screws, bolts, nuts, washers, spacers, masking tape, sand paper, solvent, cleaners, lubricants, grease, oil, rags, mops, glue, epoxy, spackling compound, joint tape, gases, refrigerants, refrigeration fittings, plumbers tape and compound, clips, welding rods, heat sinks, electrical outlet, switches, cover plates, plumbing fixtures and fittings, touch up paint, and any other item for which the total line item adjusted cost is \$10.00 or less.

s. Quality Assurance (QA). A method used by the Government to provide some measure of control over the quality of purchased goods and services received.

t. Quality Assurance Evaluator (QAE). The Government employee responsible for the daily monitoring of Contractor performance.

u. Quality Control (QC). A method used by the Contractor to control the quality of goods and services produced.

v. Regular Working Hours. The Government's regular (normal) working hours are from !STARTING HOUR! to !ENDING HOUR!, Mondays through Fridays except (a) Federal Holidays and (b) other days specifically designated by the ACO.

w. Repair. Repair is the restoration of a piece of equipment, a system, or a facility to such condition that it may be effectively utilized for its designated purposes. Repair may be overhaul, reprocessing, or replacement of constituent parts or materials that have deteriorated by action of the elements or usage and have not been corrected through maintenance, or replacement of the entire unit or system if beyond economical repair.

x. Response Time. Response time is defined as the time allowed the Contractor after initial notification of a work requirement to be physically on the premises at the work site with appropriate tools, equipment, and materials, ready to perform the work required. Response times are designated in the appropriate technical clauses in Section C.

y. Travel Time. Time expended between shop and the job site; waiting for vehicle; getting in and out of vehicle; loading and carrying a tool box; vehicle travel; unloading, walking from vehicle to job site; opening and closing door; walking up and down stairs; using elevators; and access to secure or controlled areas.

z. Work Content Comparison. Work content comparison is a method of comparing a task that is not specifically defined in EPS Task Time Standards to a very similar task that is defined in the EPS Task Time Standards. This

definition is a summary of a more detailed definition which appears on page 29 of EPS Planner and Estimator's Deskguide (NAVFAC P-701.0).

C.4 GOVERNMENT FURNISHED PROPERTY AND SERVICES

!*****
NOTE TO SPECIFICATION WRITER: Government furnished property may include real property or personal property. The specification writer must clearly identify Government furnished facilities, Government furnished equipment (GFE), and Government furnished material (GFM). The following clauses should be modified as needed to fit the activity's specific situation and needs. If no facilities will be provided, subparagraph (2) should be used. Remember that if a CA program study is being conducted, decisions on whether or not to provide Government furnished facilities and equipment must be based on an economic analysis. Refer to OPNAVINST 4860.7B.
*****!

a. Government Furnished Facilities

!SELECT EITHER (1) OR (2)!

(1) The Government will furnish or make available to the Contractor the facilities described in Attachment J-C2. The Contractor shall assume responsibility and accountability of such facilities provided for his/her use and shall take adequate precautions to prevent fire hazards, odors, and vermin. Janitorial services for Government furnished facilities shall be the responsibility of the Contractor. The Contractor shall obtain written approval from the ACO prior to making any modifications or alterations to the facilities. Any such modifications or alterations approved by the Government will be made at the expense of the Contractor. At the completion of the contract, all facilities shall be returned to the Government in the same condition as received, except for reasonable wear and tear. The Contractor shall be held responsible for the cost of any repairs caused by negligence or abuse on his/her part, or on the part of his/her employees.

(2) The Government will not provide office space and operational facilities to the Contractor. The Contractor shall secure and maintain the necessary office space and other facilities required for the performance of this contract at his/her own expense.

!*****
NOTE TO SPECIFICATION WRITER: The specification writer must determine what equipment and material will be provided to the Contractor and select from the following paragraphs as appropriate. Equipment and material should normally not be provided to the Contractor unless economically justified under a CA program study. Extensive equipment and material listings should be placed in Attachments J-C2 and J-C3 respectively, including identification number, age, location, quantity, size or capacity, etc. Specific maintenance requirements beyond the general requirements of this clause should also be detailed in these Attachments. If items are located at other than Government furnished facilities, specify location and responsibility for transportation. If no equipment or material will be provided to the Contractor, subparagraph (2) should be used.
*****!

b. Government Furnished Equipment

!SELECT EITHER (1) OR (2)!

(1) The Government will provide the Contractor the use of existing and available Government owned tools and equipment in the performance of the contract. Such Government furnished tools and equipment are listed in Attachment J-C2.

(a) The Contractor shall provide periodic servicing, maintenance, and repair of the equipment listed at no cost to the Government, and the total or partial breakdown or failure of the Government furnished equipment shall not relieve the Contractor of the requirement to fully perform the work of the contract. Upon completion or termination of the contract, all Government owned equipment shall be returned to the Government in the same condition as received, except for normal wear and tear. Equipment which becomes worn out due to normal wear and tear shall be returned to the Government and its replacement shall be the responsibility of the Contractor at no cost to the Government. Equipment so acquired shall remain the property of the Contractor. The Contractor shall be responsible for the cost of any repairs or replacement caused by negligence or abuse by the Contractor or his/her employees.

(b) The Contractor and the Government Representative shall conduct a joint inventory before commencing work under this contract to determine the exact number and serviceability of Government furnished equipment. The Contractor shall then certify the findings of this inventory, assume accounting responsibility, and subsequently report inventory discrepancies to the Government Representative. Government furnished equipment shall not be removed from the military base unless approved by the ACO in writing.

(2) The Contractor shall furnish all tools and equipment required for the performance of this contract. The Government will not provide tools or equipment to the Contractor.

c. Government Furnished Material

!SELECT EITHER (1), (2), OR (3)!

(1) The Government will furnish the material described in Attachment J-C3 to the Contractor on a one time basis for use only in connection with this contract. The use of Government furnished material for any other purpose is prohibited. The Contractor and the Government Representative shall conduct a joint inventory before commencing work under this contract to determine the exact amount and serviceability of Government furnished materials. The Contractor shall then certify the findings of this inventory, assume accounting responsibility for all materials supplied, and shall provide documentation supporting issue/use of such material. Upon depletion of material provided to the Contractor by the Government, the Contractor shall furnish all material to perform the work of the contract, except as otherwise specified herein. Upon completion or termination of this contract a second joint inventory shall be conducted, if necessary, of all unused Government furnished materials. The Contractor shall be held liable for all materials which cannot be accounted for by issue/use documentation.

(2) The Government will not provide any materials to the Contractor.

(3) The Government will furnish the material described in Attachment J-C3 to the Contractor on a one time basis for use only in connection with this contract. The use of Government furnished material for any other purpose is prohibited. The Contractor and the Government Representative shall conduct a joint inventory before commencing work under this contract to determine the exact amount and serviceability of Government furnished materials. The Contractor shall then certify the findings of this inventory, assume accounting responsibility for all materials supplied, and shall provide documentation supporting issue/use of such material.

(a) Upon depletion of material provided to the Contractor by the Government, as listed in Part A of Attachment J-C3, the Contractor shall furnish all material to perform the work of the contract, except as otherwise specified herein. Upon completion or termination of this contract a second joint inventory shall be conducted, if necessary, of all unused Government furnished materials, as listed in Part A of Attachment J-C3. The Contractor shall be held liable for all materials missing which cannot be accounted for by issue/use documentation.

(b) Experience has shown that selected items of long lead time parts and materials must be stocked to insure repair of critical equipment in the event of failure. A list of these insurance items and minimum stocking levels are contained in Part B of Attachment J-C3. The Government will provide the Contractor an initial issue of all items in at least the minimum quantities listed in Part B of Attachment J-C3. The Contractor shall maintain at least the minimum quantity of all the items specified. These items will be used by the Contractor in the maintenance and repair of the facilities/systems only as follows:

1 Insurance items shall be used on the systems, facilities, or GFE with which they are associated.

2 A replacement insurance item shall be ordered within three working days after the use of any insurance item which causes the total quantity on hand to fall below the minimum specified level. The Contractor shall bear the cost of replacement of all insurance items.

3 Upon completion or termination of the contract, all insurance items shall be returned to the Government in the minimum specified quantities.

d. Availability of Utilities. The Government will furnish the following utility services at existing outlets, for use in those facilities provided by the Government and as may be required for the work to be performed under the contract: electricity, steam, natural gas, fresh water, sewage service, and refuse collection. Information concerning the location of existing outlets may be obtained from the Government Representative. The Contractor shall provide and maintain, at his/her expense, the necessary service lines from existing Government outlets to the site of work.

!SELECT EITHER (1) OR (2)!

(1) Utilities specified above will be furnished at no cost to the Contractor.

(2) The Contractor shall pay for utilities consumed and shall, at his/her expense, install meters as required by the ACO to measure consumption of

utilities provided by the Government. Rates for reimbursement to the Government of metered utilities will be: !LIST THE RATES OF REIMBURSEMENT PER TYPE OF SERVICE PROVIDED!

A restricted telephone line (USOC Class RS4) for on base calls will be provided by the Government at no cost to the Contractor. The Contractor shall install commercial telephone service, and all service and toll charges shall be paid for by the Contractor.

C.5 CONTRACTOR FURNISHED ITEMS. Except for the items listed in clause C.4, the Contractor shall provide all equipment, materials, and services to perform the requirements of this contract. The Contractor shall provide new or factory reconditioned parts and components when providing maintenance and repair services as described herein. All replacement units, parts, components, and materials to be used in the maintenance, repair, and alteration of facilities and equipment shall be compatible with that existing equipment on which it is to be used; shall be of equal or better quality as original equipment specifications; shall conform to the applicable specifications listed in Attachment J-C4 and the technical specifications, Section C; and used in accordance with original design and manufacturer intent. Items not listed in Attachment J-C4 or technical specifications shall be of acceptable industrial grade and quality. If the original manufacturer has updated the quality of parts for current production, parts supplied under this contract shall equal or exceed the updated quality. The Contractor shall retain the parts replaced for at least 10 days after completion of the job and make these parts readily available for inspection by the Government Representative upon request. When disputes arise concerning material, equipment, and components selected for work items already accomplished, the Contractor shall, at no cost to the Government, remove, replace, and/or rework material, equipment, and components so that compliance with the Government's requirements are satisfied. The resolution of formal disputes is addressed in the "DISPUTES" clause, Section I.

C.6 WORK OUTSIDE REGULAR HOURS. Except as may otherwise be specified, all work shall be performed during regular hours. If the Contractor desires to carry on work on Saturday, Sunday, holidays, or outside regular working hours, he/she must submit application to the ACO for approval.

C.7 MANAGEMENT. The Contractor shall manage the total work effort associated with the operations, maintenance, repair, and all other services required herein to assure fully adequate and timely completion of these services. Included in this function will be a full range of management duties including, but not limited to, planning, scheduling, cost accounting, report preparation, establishing and maintaining records, and quality control. The Contractor shall provide an adequate staff of personnel with the necessary management expertise to assure the performance of the work in accordance with sound and efficient management practices.

a. Work Control. The Contractor shall implement all necessary work control procedures to ensure timely accomplishment of work requirements, as well as to permit tracking of work in progress. The Contractor shall plan and schedule work to assure material, labor, and equipment are available to complete work requirements within the specified time limits and in conformance with the quality standards established herein. Verbal scheduling and status reports shall be provided when requested by the Government Representative. The status of any item of work must be provided within !INSERT! hours of the inquiry during normal working hours, and within !INSERT! hours after normal working hours.

b. Work Schedule. The Contractor shall schedule and arrange work so as to cause the least interference with the normal occurrence of Government business and mission. In those cases where some interference may be essentially unavoidable, the Contractor shall make every effort to minimize the impact of the interference, inconvenience, equipment downtime, interrupted service, customer discomfort, etc.

!*****
NOTE TO SPECIFICATION WRITER: Reports and information which the Government periodically needs from the Contractor, as well as any required cost accounting reports, should be listed in Attachment J-C5. Report formats, required information, etc. should be discussed in detail in this attachment. Generally, facility history files should be maintained by the Government, not the Contractor. Should that be the case, the writer should delete subparagraph (2) below.
*****!

c. Records and Reports

(1) The Contractor shall maintain management, operation, and maintenance records and prepare management, operation, and maintenance reports as set forth in Attachment J-C5, "LIST OF REQUIRED RECORDS AND REPORTS". This Attachment delineates which records and reports are the Contractor's responsibility and those for which the Contractor must provide data to be used by the Government Representative in preparation of Government reports. All records and copies of reports shall be turned over to the ACO within five calendar days after contract completion.

(2) A completed work file for each structure (identified by structure number) shall be maintained by the Contractor. Each file shall contain a listing of all equipment in the structure by nomenclature and manufacturer's model number, as well as all manufacturer's literature, brochures, and pamphlets; maintenance, operator's, and parts list manuals; warranty information; and a copy of all completed Emergency/Service Authorization Forms, minor job orders, preventive maintenance inspection reports, and other information pertaining to the facility and/or installed equipment and systems. The Government will have access to these files upon request. All documents shall be filed within 10 calendar days of the completed transaction. The entire file shall be turned over to the Government upon completion of the contract.

(3) Records shall be maintained on each item of equipment and system listed in Attachment J-C1 on which preventive maintenance inspection (PMI) is required and equipment which may be installed by the Contractor. PMI records shall reflect all periodic maintenance performed, including scheduled and accomplished dates, and any repairs made.

d. Cost Accounting Reports. The Contractor shall maintain and provide cost accounting information in compliance with the specific requirements set forth in Attachment J-C5. This report will be submitted with, and is considered part of, the monthly payment invoice.

e. Staffing. The Contractor shall continuously maintain an adequate staff with management expertise to assure work is scheduled and completed in accordance with these specifications. The Contractor shall maintain an adequate

craft workforce to complete work in accordance with the time and quality standards specified.

C.8 CONTINUITY OF SERVICES. To ensure continuity of essential services, the successful bidder shall be prepared to fully commence work on the start date of this contract, and should not assume that Government or previous Contractor employees will be available to guide, direct, or specifically orient each Contractor employee.

C.9 APPLICABLE PUBLICATIONS AND REFERENCES. The publications and references listed in Attachment J-C6 form a part of this specification to the extent indicated within the referencing paragraphs of this specification. Such referenced documents, or their subparts, are designated as either mandatory or advisory. Those publications and documents not directly referenced within this specification shall also form a part of this specification with the same designated mandatory and advisory action codings. The Contractor shall follow and abide by all references designated as mandatory. Those designated as advisory are provided for information and guidance purposes only and their usage is not obligatory. Navy publications shall be furnished at the start of contract; any supplements or amendments to mandatory Navy publications may be issued throughout the life of the contract and shall be considered effective immediately upon Contractor receipt. The Contractor shall ensure that all mandatory references are current. In the event of conflict between the contents of this specification and applicable federal, state, or local requirements, the Contractor shall abide by those federal, state, or local requirements.

C.10 SCOPE OF WORK

a. Description of Facilities

(1) Wastewater Collection and Pumping Systems. The wastewater collection and pumping systems serve the areas listed below and consist of the following elements. !SPECIFY SYSTEM SERVICE AREAS AND DESCRIPTIONS. SEE USER'S GUIDE PARAGRAPH III.C.1 FOR GUIDANCE!

(2) Wastewater Treatment Facilities. The wastewater treatment facilities consist of the following elements. !SPECIFY FACILITIES DESCRIPTIONS. SEE USER'S GUIDE PARAGRAPH III.C.2 FOR GUIDANCE!

b. Wastewater Characteristics. The wastewater characteristics subject to the treatment requirements of this specification are variable. However, for general purposes of this specification, the characteristics listed below may be expected. !SPECIFY WASTEWATER CHARACTERISTICS. SEE USER'S GUIDE PARAGRAPH III.C.3 FOR GUIDANCE!

c. Areas of Responsibility. The Contractor shall be responsible for the satisfaction of all applicable regulatory agency requirements, including those for effluent quality. In the event that a regulatory agency assesses a monetary fine against the Government for violations caused by Contractor negligence, the Contractor shall reimburse the Government for the amount of that fine. Also within the scope of Contractor responsibility are personnel qualifications, avoidance of nuisance conditions and complaints, and performance of all necessary and required wastewater collection, pumping, and treatment operations; operational maintenance and repair functions; and other required operations including acceptable disposal of screenings, grit, sludge, waste oil, and other waste materials.

(1) National Pollutant Discharge Elimination System (NPDES). The Contractor shall be responsible for compliance with all requirements of the NPDES permit, as imposed by the Environmental Protection Agency (and/or as imposed by the state or local government). Unless otherwise directed, the Contractor shall not communicate directly with federal, state, or local environmental agencies, but shall provide any necessary information, applications, or documentation to the ACO for submittal to such agencies. The NPDES permit restrictions on effluent quality for treatment wastewater are summarized below. !SPECIFY PERMIT RESTRICTIONS. SEE USER'S GUIDE PARAGRAPH III.C.4 FOR GUIDANCE!

(2) Process Control Testing. The Contractor shall perform, record, and report the process control tests specified below. !SPECIFY TESTS AND EXPECTED RANGES. SEE USER'S GUIDE, PARAGRAPH III.C.4.d.!

(3) Properly Qualified Personnel. The Contractor shall provide properly qualified personnel, with required state certification, to operate the wastewater treatment facilities. Individuals providing general supervision or who are in responsible charge of plant operations for any period of time shall possess a class !SPECIFY PROPER CLASSIFICATION! or higher operator certification issued by !SPECIFY APPROPRIATE AUTHORITY!. All certifications shall be maintained up to date and valid at all times. Certification records shall be maintained on file and readily available for ACO review upon request.

(4) Medical Directives. The Contractor shall comply with the instructions of the cognizant Navy Medical Department with respect to avoidance of conditions which create a nuisance or which may be hazardous to the health of military or civilian personnel.

(5) State and Local Regulations. The Contractor shall comply with all regulations of state and local regulatory agencies with regard to wastewater effluent quality which are not in conflict with the NPDES permit administered by the Environmental Protection Agency. !IF THE STATE HAS NPDES PRIMACY OR IMPOSES SEPARATE RESTRICTIONS ON EFFLUENT QUALITY MORE STRINGENT THAN DOES NPDES, SO NOTE AND SPECIFY RESTRICTIONS AS IN PARAGRAPH C.10.c(1).!

(6) Accommodation of Guests. The Contractor shall assist and cooperate as needed in routine facility inspections and studies, and shall provide for the general accommodation of all guests of the ACO at the treatment facilities. Such guests may include representatives of other Navy commands, local and state environmental agencies, and the Environmental Protection Agency. An activity representative will normally be appointed by the ACO to act as a liaison in the case of such visits.

C.11 SERVICES PROVIDED. The Contractor shall be required to provide the following specific services relating to the wastewater collection, wastewater treatment, wastewater pumping systems. A listing of required records and reports is provided in Attachment J-C5.

a. General Services. Wastewater collection, wastewater treatment, and wastewater pumping system operations shall be conducted in order to provide continuous, cost effective, and efficient conveyance of all activity-generated wastewater to the !SPECIFY TREATMENT FACILITY NAME! wastewater treatment facility. Flow shall be maintained so as to prevent the cause of nuisance odors and to prevent interruptions of service. Operations shall be in accordance with

applicable health and regulatory agency standards at all times. Systems shall be maintained to minimize unsatisfactory service conditions including flooding conditions, pump station failures, pipe blockages, and excessive infiltration and inflow conditions. Facilities shall be maintained clean and orderly with generated waste materials (such as waste oils, grit screenings, and other waste solids) to be routinely collected, as necessary, and removed to an appropriate disposal site. The location of the disposal site shall be subject to ACO approval. All transportation and disposal practices shall be in accordance with all applicable environmental regulations.

b. Temporary and Emergency Services. Temporary and emergency collection services may be necessary to accomplish certain repairs, maintenance efforts, and new service connections. Such temporary and emergency services shall be coordinated with the ACO and shall be accomplished using methods to avoid service interruptions, where possible, or to minimize system downtime where such interruptions of service are unavoidable. The ACO shall be notified of scheduled temporary service conditions at the time of job scheduling and shall be notified of all service interruptions as soon as possible, with notification time not to exceed one hour after Contractor identification for emergencies. For purposes of this specification, an emergency situation is defined as any condition that requires immediate action to eliminate life or serious injury hazards to personnel, prevent loss or damage to Government property, or restore essential services.

!*****
NOTE TO SPECIFICATION WRITER: If control inspections are to be performed by the Government, delete the following paragraph.
*****!

c. Control Inspection Program. A control inspection program shall be established and implemented by the Contractor in order to identify and project system deficiencies and to determine the physical condition of system components. Inspections shall be accomplished annually and inspectors shall possess at least a craftsman rating in their respective trades. The ACO reserves the right to have Government representatives present during Contractor inspections, or to make separate inspections in order to determine the accuracy and completeness of the Contractor's control inspections. Attention is invited to chapter 3 of NAVFAC Manual MO-322, Inspection of Shore Facilities for program formulation guidance. Strict adherence to this chapter is not required; however, a completed control inspection plan shall be submitted to the ACO for approval within 30 calendar days after the contract award date. Yearly deficiency listings and condition reports based upon inspection findings, shall be submitted annually to the ACO to support the Navy's Annual Inspection Summary report. In order to maintain continuity, the formats of these submittals shall conform to those as described in chapter 7 of NAVFAC MO-322. These deficiency listings and condition reports shall be submitted no later than !SPECIFY DATE! of each year. Records and files documenting the control inspection program shall be maintained up to date, accurate, and available for ACO review during all normal working hours.

!*****
NOTE TO SPECIFICATION WRITER: The following clause requires the Contractor to develop and submit a PMI program for approval. As an alternative, the user may provide PMI requirements in the specification, to include a PM schedule and/or list of checkpoints and services to be provided for each type of equipment.
*****!

d. Preventive Maintenance/Inspection (PMI) Program. A preventive maintenance/inspection program shall be implemented by the Contractor in order to help prevent and correct deficiencies with designated dynamic equipment items, thus minimizing breakdowns and service interruptions, extending component service life, and maximizing operating efficiency. PMI shall include inspections and services of lubrication, minor adjustment, and minor repair of components. Attention is invited to chapter 4 of NAVFAC MO-322 for program formulation guidance. Strict adherence to this document is not required; however, a completed PMI plan shall be submitted to the ACO for approval within 30 calendar days after the contract award date. The PMI program is to be established based upon manufacturers' recommendations, handbooks, operating/service manuals, Contractor expertise, and general engineering judgments. The submitted plan shall include components to be inspected and maintained, inspection and maintenance techniques, inspection and maintenance frequencies, and reporting methodology. The Contractor shall update schedules as necessary to reflect any changes in equipment inventory.

(1) Preventive Maintenance Work. Once approved by the ACO, the PMI program and schedule shall be closely adhered to by the Contractor to facilitate the Government's inspection of the work. Any proposed changes to approved schedules must be submitted to the ACO for approval not later than Wednesday of the week prior to scheduled work accomplishment. The Contractor shall correct all equipment deficiencies identified during PM inspections subject to the limits specified in the "CORRECTIVE MAINTENANCE REPAIR LIMITATION" clause, Section C. When possible, equipment deficiencies detected during PM inspections shall be corrected prior to departing the job site. All deficiencies, if within the scope of corrective maintenance, must be corrected within the time frames for an emergency, urgent, or routine service call, as appropriate. If the Contractor believes the cost of such repairs is beyond the scope of corrective maintenance, the procedures in paragraph C.12.c(5) shall apply.

(2) Preventive Maintenance Reports. Not later than noon on Monday of each week during the term of the contract, the Contractor shall submit to the ACO a summary of the PM inspections completed during the previous week, a list of those scheduled inspections which were not accomplished, and a description of any corrective maintenance performed or in need of being performed.

(3) Preventive Maintenance Records. The Contractor shall be responsible for maintaining PM records for each piece of equipment or system. These records shall reflect periodic maintenance performed, and the scheduled and completion dates. The Contractor shall update the PM records on a monthly basis within ten (10) days after the last day of the month. These records shall be made available to the ACO upon request. All PM records shall be turned over to the ACO within 15 days of contract termination.

C.12 CORRECTIVE MAINTENANCE. Corrective maintenance is maintenance and repair work that is required to return a system or component to proper operating condition. Corrective maintenance shall be required on a routine basis (operator maintenance), as a result of preventive maintenance inspections, or as a result of service calls. All corrective maintenance work is included in the firm fixed-price portion of the contract, and is limited in total cost to the Contractor, as specified in the "CORRECTIVE MAINTENANCE REPAIR LIMITATION" clause, Section C.

a. Corrective maintenance shall be performed as required during the course of routine operations.

b. Equipment deficiencies detected during PM inspections shall be corrected as specified in paragraph C.11.d

c. Service Calls. Service calls are defined as maintenance and repair requirements which are called into the Government operated work reception center or generated by authorized Government Representatives.

(1) Service Call Reception

(a) Normal Working Hours. The Government's work reception center will receive service call requests during normal working hours and classify each call in accordance with the definitions provided below. A description of the problem or requested work, date and time received, location, and other appropriate information will be placed on an Emergency/Service Work Authorization form and made available for pickup by the Contractor at the Government's work reception center. If the call is classified as emergency the Government's work receptionist will notify the Contractor by phone that a call has been received and that a work authorization form is available for pickup. Emergency calls shall be considered as received by the Contractor at the time and date that this telephone call is made.

(b) After Normal Working Hours. The Contractor shall receive and respond to emergency service call requests directly from authorized Government Representatives after normal working hours, on weekends, and holidays.

(2) Service Call Classification

(a) Emergency calls. Service calls will be classified as an emergency call when the work consists of correcting failures which constitute an immediate danger to personnel, threaten to damage property, or are required to restore essential services. The Contractor shall respond immediately and must be on the job site and working within 60 minutes after receipt of an emergency service call. The Contractor shall work continuously without interruption and shall arrest the emergency condition before departing the job site. If further labor and material is required to complete the repair, the work shall be completed within the time requirements of an urgent or routine service call, as appropriate. No more than !INSERT PERCENTAGE! of the service calls issued to the Contractor will be classified as emergency.

(b) Urgent calls. Urgent services, for purposes of this specification, include those services which do not immediately endanger personnel or threaten damage to property, but would soon inconvenience and affect the health or well-being of personnel. Urgent calls shall be considered as received by the Contractor at the time and date the work reception center makes the work authorization form available for pickup. Urgent service calls shall be accomplished during Government normal working hours, or on second or split shifts when within the capability of Contractor personnel, and shall be completed or arrested within two working days after receipt. No more than !INSERT PERCENTAGE! of the service calls issued to the Contractor will be classified as urgent.

(c) Routine calls. Service calls will be classified as routine when the work does not qualify as an emergency or urgent. Routine calls shall

be considered as received by the Contractor at the time and date the work reception center makes the work authorization form available for pickup. All routine calls must be completed within !INSERT! working days after receipt, and once begun, the work shall be prosecuted to completion. Routine calls shall normally be accomplished during normal work hours, Monday through Friday.

(3) The Contractor shall have adequate procedures for picking up service call work authorizations from the Government's work reception center during normal working hours, and for receiving and responding to emergency service calls 24 hours per day, including weekends and during holidays. A single local telephone number shall be provided by the Contractor for receiving emergency calls.

(4) Within one working day after completion of each service call the Contractor shall add the following information to the work authorization form and return one copy to the work reception center:

(a) Description of work actually completed (if different from original work description).

(b) Brief description of material and parts used, including quantities.

(c) Date and time work began.

(d) Date and time work was completed.

(e) Signature or initials of the Contractor's craftsman performing the work (or supervisor), indicating the work has been completed.

(5) If the Contractor responds to an urgent or routine service call and believes that the work required is beyond the scope of corrective maintenance, as defined in the "CORRECTIVE MAINTENANCE REPAIR LIMITATION" clause, the work authorization form shall be returned to the work control center not later than !INSERT TIME! the following workday. The Contractor shall attach a summary of the work needed and a detailed EPS estimate showing labor hour and material requirements. The ACO may waive the requirement to submit estimates in cases where the scope of work is clearly beyond that of a service call.

(a) If the ACO agrees that the work required is beyond the scope of corrective maintenance, the scope of the work will be reduced and a new service call work authorization issued by the Government, or the original work authorization will be canceled. If the original work authorization is cancelled, a minor job order will be issued to the Contractor, or the work will be accomplished by means other than this contract.

(b) If the ACO determines that the work falls within the scope of corrective maintenance, the original work authorization will be returned to the Contractor and the work shall be completed. Work on such calls must still be completed within !INSERT! working days from the original receipt date/time, plus the amount of time the work authorization was held by the ACO for determination

(6) Data on the number of service calls of each classification that have historically been performed is included in Attachment J-C7.

d. The Contractor shall maintain sufficient off-the-shelf materials and equipment on hand to support corrective maintenance requirements. Lack of availability of materials or equipment will not relieve the Contractor from the requirement to complete corrective maintenance within the time limits specified. Records shall be maintained by the Contractor on the status of all corrective maintenance and such status shall be provided upon request from authorized Government representatives within !INSERT NUMBER! hours during normal working hours and within !INSERT NUMBER! hours after normal working hours.

!*****
NOTE TO SPECIFICATION WRITER: The intent of the following paragraph is to set the maximum limit for corrective maintenance under the firm fixed-price portion of the contract. As it is impossible to predict the frequency and nature of major repairs that may be required during the contract period, it is unreasonable to place complete financial responsibility and risk on the Contractor. Also, remember that individual repairs in excess of \$2,000 require the Contractor to pay Davis-Bacon wage rates, which are normally not included in non-CA program maintenance service contract.
*****!

C.13 CORRECTIVE MAINTENANCE REPAIR LIMITATION. The Contractor's liability under the firm fixed-price portion of the contract for corrective maintenance and repair shall be limited to not more than !INSERT! estimated total labor hours for accomplishment and not more than \$!INSERT! in total direct material costs, to include parts or entire unit replacement. When questions arise concerning the labor hours required for a particular job, labor hour requirements will be based on EPS Manuals (NAVFAC P-700 Series) or, if not applicable, other estimating sources. When questions arise concerning the cost of materials, material costs will be based on the lowest of quotes provided by the Contractor from at least two different commercial vendors for the actual direct cost of the material. The Government retains the right to obtain additional quotes in questionable situations. The lowest price will be used. For maintenance and repair requirements above the limits specified above, see the "MINOR MAINTENANCE AND REPAIR" and "ESTIMATES" clauses, Section C.

!*****
NOTE TO SPECIFICATION WRITER: The \$2,000 limit specified in the following paragraph assumes that Davis-Bacon wage provisions have not been included in the contract. See the User's Guide for a more detailed discussion of the \$2,000 limit.
*****!

C.14 MINOR MAINTENANCE AND REPAIR. Minor work is defined as maintenance and repair work requirements which are beyond the scope of corrective maintenance and repair work (as defined in clauses C.12 and C.13). The cost of any single instance of minor maintenance or repair is limited to a total cost of (labor and material) \$2,000. All minor work is included in the indefinite quantity portion of the contract. The Contractor will be paid a negotiated fixed-price for each delivery order for minor work as specified in the following procedures. Labor, material, and equipment required for the unit priced tasks listed in the Schedule of Indefinite Quantity Work-Unit Priced Tasks is included in the bid prices. Material and equipment required for work based on the Schedule of Indefinite Quantity Work-EPS Hour Labor, will be reimbursed in accordance with the "ESTIMATES" clause below.

a. Urgent Minor Work. The Government will classify up to !INSERT!% of the delivery orders for minor work as urgent. The Contractor shall complete all urgent minor delivery orders within !INSERT! calendar days of receipt. Urgent minor work shall normally be performed only during normal working hours, except that after hours and/or weekend work may be authorized by the ACO if required to complete work within the time requirement specified above.

b. Routine Minor Work. All non urgent minor work will be classified as routine minor work. Routine minor work will be further classified by the Government as one of two different "Types". Delivery orders for Type I routine minor work shall be completed within !INSERT! calendar days of receipt and Type II delivery orders within !INSERT! calendar days of receipt. No more than !INSERT!% of the delivery orders for routine minor work will be classified as Type I.

c. Establishing Final Cost for Minor Maintenance and Repair Work. On receipt of a proposed delivery order from the ACO, the Contractor shall prepare an estimate following the procedures outlined in the "ESTIMATES" clause elsewhere in this Section. The Contractor's estimate will be evaluated to determine if: (1) the scope has been clearly and accurately identified, (2) the EPS standards (including work content comparison) have been accurately applied, (3) work which is not covered by EPS has been properly estimated with supporting data presented, (4) equipment and material estimates are reasonable and properly documented, and (5) unit price work has been estimated using the unit prices that were bid. After the estimate has been reviewed and there are no mathematical, typographical, scope or estimating errors, the ACO will approve the estimate. The approved estimate then shall be a fixed-price for the work described in the delivery order.

d. Ordering Minor Maintenance and Repair Work. The ACO will order minor maintenance and repair work by issuing to the Contractor a copy of the approved estimate and a delivery order for the work covered by the approved estimate in accordance with the "ORDERING OF WORK" clause in Section G.

e. Changes to Scope of Work in Delivery Orders. If during the course of work the Contractor encounters unforeseen conditions which impact the work and which could not be evaluated during the initial estimating procedures, the Contractor shall not proceed without ACO authorization. The ACO will direct the Contractor to (1) estimate the change of scope for the unforeseen condition only, or (2) prepare a new estimate for the total job as revised. The ACO will, after review and approval of the estimate, (1) issue a delivery order for the change of scope only, or (2) cancel the original delivery order and issue a new delivery order for the total job as revised.

C.15 ESTIMATES. Detailed estimates for proposed minor work orders shall be prepared when requested in writing by the ACO. Completed detailed estimates shall be provided to the Government's work control center within !INSERT! calendar days after receipt of the proposed work order for urgent minor work, and within !INSERT! calendar days after receipt for routine minor work. After approval by the ACO, the detailed estimate will form the basis of payment for the work. The cost of preparation of estimates is included in the firm fixed-price portion of the contract.

a. EPS Manuals. EPS manuals will be made available for examination at !INSERT LOCATION AT THE ACTIVITY WHERE THE WORK WILL BE PERFORMED AND THE CONTRACTS OFFICE AT WHICH THE BIDS WILL BE RECEIVED! and at Naval Facilities

Engineering Command Engineering Field Divisions during the bidding period of this contract. !INSERT! copies of the EPS manuals will be provided to the successful bidder upon award.

b. Travel Zone Maps. The Travel Zone map for !ACTIVITY! is provided as Attachment J-C8 and is to be used in conjunction with historical data to evaluate travel time impact.

c. Preparation of Estimates. The Government will provide the Contractor a detailed scope of work for which the Contractor shall prepare an independent estimate of the labor, equipment, and material required to complete the work ordered under the "MINOR MAINTENANCE AND REPAIR" clause. The detailed scope of work will be provided by the Government on DD Form 2167, Job Phase Calculation Sheet, and will identify the overall work scope for each craft phase and the specific task descriptions. The Contractor shall complete the total estimate by entering the EPS craft time for each task description and applying the EPS nomograph to arrive at the total EPS time for each job phase. If required, the Contractor shall identify on DD Form 2167 additional task descriptions that are necessary to satisfactorily accomplish the overall work scope for the particular craft phases and provide appropriate EPS task references and estimated EPS hours. Any portions of delivery orders that have been bid as unit priced tasks shall be priced using the unit prices bid instead of EPS. EPS does not cover every task that might be accomplished by specific crafts. For tasks not exactly identified in EPS manuals, work content comparison shall be performed prior to a determination that EPS does not apply to a job. Estimates and all supporting information, documentation, and calculations shall be submitted to the ACO.

!*****
NOTE TO SPECIFICATION WRITER: The following paragraph assumes that no Government furnished facilities (which are located in EPS travel zone zero) are to be provided for the Contractor's use. If such facilities are to be provided, the user should consider deleting the sentence "The standard allowance for travel...the EPS nomograph."
*****!

(1) Labor Estimates. Labor estimates shall be expressed in EPS hours. Craft time shall be taken from the EPS task time standards or the craft spread sheets either directly or by work content comparison, applicable additional task times (additional material handling, additional travel, and additional preparation) shall be added, and total craft time applied to the EPS nomograph to add standard allowances for job preparation, craft delays, and partial day influence. The standard allowance for travel time will not be added, and travel zone 0 (shop) will be used when applying total craft time to the EPS nomograph. No other allowances, mark-ups, or add-ons for work time associated with union agreements, overhead, profit, material markups, supervision, or clerical support shall be added to the labor hour estimate. The estimate shall include job phasing and craft phasing, and the task time standard(s) or spread sheet used in the estimate shall be identified. For multiple craft jobs, a phasing summary sheet shall be prepared. DD Form 2167 (1 Nov 78) shall be completed as required.

(a) Estimating Work Not Covered by EPS. The Contractor shall clearly identify work that cannot be estimated either directly from EPS or using EPS work content comparison procedures. Such conventional labor hour estimates shall be based on the total labor hours required for the specific task(s). The Contractor shall submit all back up sheets with the estimate including a listing

of all operations and supporting data for all estimates based on historical information. Estimates will be for labor hours only and shall not include any mark-ups, allowances, or add-ons for work time associated with union agreements, overhead, profit, material markups, supervision, or clerical support.

(b) Total Labor Cost Estimates. The total labor cost estimate will be determined by totaling the number of EPS estimated labor hours for each craft (trade) and then multiplying by the appropriate hourly unit price from the Schedule of Indefinite Quantity - EPS Hour Labor. This procedure shall be followed for each craft required to perform the job. The total for all crafts is the total labor cost estimate.

(2) Material Estimates. Material estimates shall include a detailed bill of materials establishing the size, quality, number of units, and unit prices. Material prices shall be the lowest price available considering the availability of materials and the time constraints of the job. The direct material price shall be reduced by all discounts and rebates for core value or salvage value that accrue to the Contractor. Pre-expended bin supplies and materials shall not be included in the material estimate unless the total cost of the pre-expended bin items exceeds \$!INSERT! per delivery order. Contractor administrative and handling costs for acquiring material, and any Contractor material markups should be included in the prices bid for an EPS estimated labor hour.

(3) Construction and Weight Handling Equipment Estimates. Estimates for construction and weight handling equipment may be added for an individual job if not included in other portions of the contract or not provided by the Government. Estimates shall include a detailed price list stating size, capacities, quality, number of units, and unit prices.

(a) Rental equipment shall be based on the lowest price available considering the availability and time constraints of the job.

(b) When the equipment to be used is owned by the Contractor, the cost shall be based on the U.S. Army Corps of Engineers Construction Equipment Ownership and Operating Expense Schedule EP 1110-1-8.

(c) Cost for equipment operators, when separate operators are required, shall be estimated on a EPS unit hour basis, unless operator cost is included in equipment rental price or operator has been provided by the Government. Any overhead expense associated with equipment usage shall be included in the Contractor's bid for the applicable EPS labor hour unit price.

C.16 HISTORICAL DATA. Attachment J-C7 contains historical data taken from the activity's records. This information is provided to indicate the types and approximate order of magnitude of the work to be accomplished under the contract. It is not, however, by itself, considered sufficiently accurate for bidding purposes.

C.17 GENERAL WASTE TREATMENT OPERATIONS. Wastewater treatment facility operations shall be conducted in order to provide continuous, cost effective, and efficient treatment of all wastewater delivered to the facility. Such operations shall include general operation of plant equipment, valves and piping, sampling and lab analyses, waste and effluent disposal, and other related services. All operations shall be accomplished in accordance with treatment facility operations manuals where applicable. !NOT ALL PLANTS HAVE

SUCH AN OPERATIONS MANUAL AND THEREFORE THE PREVIOUS SENTENCE SHOULD BE INCLUDED OR DELETED ACCORDINGLY! Treatment facility conditions shall be maintained clean and orderly at all times and adherence to applicable health and safety standards shall be maintained. Operations shall be accomplished with proper regard to equipment and components to insure operating efficiency and longevity of service life. Facility operations and effluent discharge practices shall comply with all applicable federal, state, and local regulatory standards, including the NPDES permit requirements. The preparation of all related correspondence and operating reports are also Contractor responsibilities, as discussed in the "NOTICE OF VIOLATIONS" and "OPERATING REPORTS" clauses of this section.

C.18 WASTE DISPOSAL. Waste disposal services shall be provided by the Contractor at a frequency sufficient to maintain clean and orderly collection sites with no overflow of waste material. Wastes (including sludges, grit, screenings, and other waste solids) shall be routinely collected and transported to a properly classified disposal site, with location subject to ACO approval. The Contractor shall provide all necessary laboratory services and maintain records of such laboratory analyses on file and available for ACO review. Wastes deemed hazardous shall be transported and disposed of in accordance with DOT and EPA requirements. All waste disposal practices shall be accomplished in accordance with all applicable environmental regulations. All records, receipts, manifests, and log entries shall be available for the ACO's review during normal working hours and shall be the property of the Government.

!*****
NOTE TO SPECIFICATION WRITER: Wastes from an industrial treatment plant should be considered hazardous unless proven otherwise. Therefore, the Resource Conservation and Recovery Act hazardous waste management requirements will apply. A review of plant records (i.e., annual reports, copies of manifests, waste analysis, etc.) should provide the necessary information required to determine the characteristics of wastes generated from the treatment operation. Refer to the NAVFAC GPWS for Hazardous Waste Management Services for extraction of appropriate paragraphs.
*****!

C.19 SAMPLING AND LABORATORY ANALYSIS. Sampling and laboratory analytical services shall be provided by the Contractor as necessary to support ACO and regulatory agency operating requirements. Such sampling and testing procedures shall be accomplished in accordance with applicable operating permit conditions and as directed by the ACO. Unless otherwise directed, all sampling and laboratory analyses shall be accomplished as described in 40 CFR 136 (Code of Federal Regulations). The Contractor is responsible for such analytical services as listed in Attachment J-C9 of this specification and at the frequencies indicated. A complete set of laboratory records shall be kept for all laboratory tests to include: date and time of sampling, type of sample, name of sample, location of sample, test performed, and test results. In addition, results of such laboratory analyses shall be assembled into reports to conform with the procedures and requirements of the NPDES permit (or other state and local permits if applicable) and shall be delivered to the ACO for signature and submittal to the EPA (or state and local agency). Copies of all testing records and associated correspondence shall be maintained on file and available for the ACO's review. The ACO reserves the right to collect wastewater samples and have tests performed to verify the Contractor's performance of work.

C.20 NOTICE OF VIOLATIONS. Notice of violations of any of the NPDES permitted parameters, of any lift station bypassing, and of any discharges of any other

type in violation of the NPDES permit shall be prepared by the Contractor and submitted to the ACO within 24 hours of the Contractor's identification of the noncompliance. The notice of violation shall be prepared in a manner suitable for ACO signature and submittal to the EPA. This 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 noncomplying discharge). Direct submittals of Contractor supplied notices of violation shall be the responsibility of the ACO. Any similar notice requirements of state and local agencies shall also be prepared by the Contractor and accomplished in a similar manner.

C.21 OPERATING REPORTS. In addition to the above required correspondence, the Contractor shall also prepare and submit to the ACO all required operating records and reports containing routine control analyses and flow readings, as described in the NPDES permit and in NAVFACINST 11300.35 (Operating Record Forms for Potable Water and Wastewater Treatment Plants). These reports shall be prepared and submitted to the ACO monthly to arrive by the fifth !OR SPECIFY OTHER APPROPRIATE DATE! of the month following the reporting period. A summary of required reports and submittals is contained in Attachment J-C5.

END OF SECTION C

PART III - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

SECTION J: LIST OF ATTACHMENTS

!*****!
NOTE TO SPECIFICATION WRITER: The numbering system used below is designed so that the number of the Attachment refers back to the Section that it supports. Attachment J-C1 supports Section C and is the first Attachment referenced in that Section. The user should include those Attachments marked by "**", as required.
*****!

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<u>ATTACHMENT</u> <u>NUMBER</u>	<u>TITLE</u>
J-1	Wage Determination !INSERT NUMBER!
J-C1	General Description of Facilities and Equipment to be Operated and Maintained
J-C2	Government Furnished Facilities and Equipment
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J-C4	Materials Provided by the Contractor
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J-H5*	Safety Requirements and Reports

ATTACHMENT J-1

WAGE DETERMINATION !INSERT NUMBER!

Attached is Wage Determination !INSERT NUMBER! which specifies the minimum wages and fringe benefits to be paid under this contract.

ATTACHMENT J-C1

GENERAL DESCRIPTION OF FACILITIES AND EQUIPMENT
TO BE OPERATED AND MAINTAINED

!*****
 NOTE TO SPECIFICATION WRITER: All wastewater collection systems, treatment facilities, and associated equipment that are on plant account (P/A) should be listed in this attachment. Fixed equipment should be identified on system maps and facility drawings, if available, by index number. See User's Guide paragraph III.C for additional information.
 *****!

The following wastewater collection systems and treatment facilities and equipment will be operated and maintained by the Contractor, as specified in Section C.

<u>Facility</u>	<u>Square Feet</u>	<u>Description</u>
-----------------	--------------------	--------------------

Major Facility #1

Building #1
 Building #2

Major Facility #2

Building #3
 Building #4

Drawings

Schematics

Building #1
 Building #2

As-built

Building #1
 Building #2

<u>Description</u>	<u>Quantity</u>	<u>Model Number</u>	<u>Manufacturer</u>	<u>P/A Number</u>	<u>Location</u>
Clarifier					
Pumps					
Motors					
Chlorinators					
Fans					
Valves					
Storage Reservoir					

ATTACHMENT J-C2

GOVERNMENT FURNISHED FACILITIES AND EQUIPMENT

!*****
 NOTE TO SPECIFICATION WRITER: List all facilities and equipment, other than those listed in Attachment J-C1, to be provided for the Contractor's use. Such facilities and equipment could include office space, storage areas, shop equipment, hand tools, etc. Provide descriptive characteristics and drawings for each facility provided showing Contractor areas, areas retained for use by the Government, etc.
 *****!

1. The following facilities will be made available for use by the Contractor for performance of work under this contract, as specified in the "GOVERNMENT FURNISHED PROPERTY AND SERVICES" clause, Section C.

<u>Location</u>	<u>Square Feet</u>	<u>Description</u>	
Building 5/ Naval Station	3,000	Office Space (1)	400 SF
		Rest Rooms (2)	200 SF
		Maintenance Shop (1)	1,500 SF
		Parts Room (1)	750 SF
		Hallway, Stairs, etc.	<u>150 SF</u>
			TOTAL = 3,000 SF
North of Building 5/ Naval Station	10,000 250	Equipment Storage Area Flammable Storage Locker	

!ETC.!

2. The following equipment will be made available for use by the Contractor for performance of work under this contract, as specified in the "GOVERNMENT FURNISHED PROPERTY AND SERVICES" clause, Section C.

<u>Item</u>	<u>Model Number</u>	<u>Brand Name</u>	<u>Age</u>	<u>Location</u>
10-Inch Grinder	011701	Schaver	15 years	Bldg. 5

ATTACHMENT J-C3

GOVERNMENT FURNISHED MATERIAL

!*****!
NOTE TO SPECIFICATION WRITER: List all material that is to be provided to the Contractor. Provide descriptive characteristics including generic name, federal or commercial specifications, and quantities of issue.
*****!

This attachment provides a listing of material that will be turned over to the Contractor for the performance of work under this contract, as specified in the "GOVERNMENT FURNISHED PROPERTY AND SERVICES" clause, Section C.

PART A - ONE TIME ISSUE

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Alum		
Chlorine		
Lube Grease		
	!ETC.!	

PART B - INSURANCE ITEMS

<u>Description</u>	<u>Minimum Quantity</u>	<u>Location</u>
Pump Motor		
	!ETC.!	

ATTACHMENT J-C4

MATERIALS PROVIDED BY THE CONTRACTOR

!*****
NOTE TO SPECIFICATION WRITER: Include only materials which must conform to
federal or commercial specifications. Cite specification. Materials not
specifically included in this attachment will be of acceptable industrial grade
and quality, as specified in clause C.5.
*****!

ATTACHMENT J-C5

LIST OF REQUIRED RECORDS AND REPORTS

REQUIRED RECORDS

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

REQUIRED REPORTS

<u>Report Title</u>	<u>When Submitted</u>
1.	
2.	
3.	
4.	

ATTACHMENT J-C6

LIST OF APPLICABLE PUBLICATIONS AND REFERENCES

!*****
 NOTE TO SPECIFICATION WRITER: List all directives, regulations, manuals, instructions, and specifications referred to herein and indicate which are advisory and which are mandatory. The following list is not all inclusive and must be tailored to fit the user's needs.
 *****!

Publications and directives listed here are classified either as advisory or mandatory. Those directives/references classified as advisory are identified to the Contractor to provide guidance concerning the standards of performance that the Government will use in evaluating the Contractor's overall work performance. Those publications and directives classified as mandatory must be complied with by the Contractor during the duration of the contract.

<u>Navy Regulations & Manuals</u>	<u>Mandatory</u>	<u>Advisory</u>
NAVFAC MO-212, Operation & Maintenance of Domestic & Industrial Wastewater Systems		All sections
NAVFAC MO-321, Maintenance Management of Shore Facilities		All sections
NAVFAC MO-322, Inspection of Shore Facilities		Volume 1 - all sections Volume 2 - Chapter 1; Chapter 2, pages 95-96
OPNAVINST 5909.1, Environmental Protection and Natural Resources Manual		Chapters 5 & 12, Part 1

<u>Federal, State, Local & Other</u>	<u>Mandatory</u>	<u>Advisory</u>
Code of Federal Regulations, Title 40, Protection of Environment	All sections	
Environmental Protection Agency Permit Number !INSERT PERMIT NUMBER!	All sections	
Wastewater Treatment Plant Operation & Maintenance Manuals !OR OTHER APPROPRIATE TITLE!	All sections	

!*****
 NOTE TO SPECIFICATION WRITER: Insert the following item only if state or local permitting is applicable.
 *****!

State of !INSERT STATE NAME & REGULATORY AGENCY TITLE! Permit Number !INSERT PERMIT NUMBER!	All sections	
---	--------------	--

ATTACHMENT J-C7

HISTORICAL DATA

The data in this attachment is taken from the activity's records and is provided to indicate the types and an approximate order of magnitude of the work to be accomplished under the contract. It is not, however, by itself, considered sufficiently accurate for bidding purposes.

SERVICE CALL DATA

NUMBER OF SERVICE CALLS 1988

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

!INSERT APPROPRIATE NUMBER OF CALLS FOR EACH MONTH!

% of calls received after normal working hours = !INSERT!%

The Government utilized the various trades listed below in performing the service calls shown in the chart above. The percentage of the total number of service calls shown in which each trade was involved are also shown below. For example, electricians were involved in approximately !INSERT!% of the calls shown above. Some calls involved more than one trade.

<u>Trade/Craft</u>	<u>Percent (%) Trade Involvement</u>
Electrical	!INSERT!
Plumbing/Pipefitting	!INSERT!
Moving/Rigging	!INSERT!
Sheet Metal	!INSERT!
Machinist	!INSERT!
Labor	!INSERT!

MINOR MAINTENANCE AND REPAIR DATA

<u>Craft</u>	<u>Number of Jobs¹</u>
Electrical	!INSERT!
Sheetmetal	!INSERT!
Machine	!INSERT!

¹ Craft involvement only; not total jobs.

	<u>TRAVEL ZONE</u>							
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>TOTAL</u>
# of jobs performed								
EPS hours								
	<u>Job Size (EPS hours)</u>							
	<u>(0-16)</u>	<u>(17-40)</u>	<u>(41-80)</u>	<u>(81-120)</u>	<u>(121-160)</u>			
No. of jobs, FY-87								
No. of jobs, FY-88								

ATTACHMENT J-C8

ACTIVITY TRAVEL ZONE MAP

!*****
NOTE TO SPECIFICATION WRITER: Attach a legible copy of the activity's EPS
travel zone map.
*****!

ATTACHMENT J-C9

LIST OF REQUIRED ANALYTICAL SERVICES

!*****
NOTE TO SPECIFICATION WRITER: List all laboratory tests and flow monitoring requirements in this Attachment. Include both local and permit requirements. Indicate corresponding frequencies required for each item.
*****!

ATTACHMENT J-E1

LIST OF ENGINEERED PERFORMANCE STANDARDS MANUALS

<u>Publication Number</u>	<u>Title</u>
P-700.0	EPS-Engineers Manual
P-701.0	EPS-General Handbook
P-702.0	EPS-Carpentry Handbook
P-703.0	EPS-Electrical Electronic Handbook
P-704.0	EPS-Heating, Cooling & Ventilation Handbook
P-705.0	EPS-Emergency/Service Handbook
P-706.0	Janitorial and Custodial Services Handbook
P-707.0	EPS-Machine Shop Machine Repairs Handbook
P-708.0	EPS-Masonry Handbook
P-709.0	Moving, Rigging Handbook
P-710.0	EPS-Paint Handbook
P-711.0	EPS-Pipefitting Plumbing Handbook
P-712.0	Roads, Grounds, Pest Control and Refuse Collection Handbook
P-713.0	EPS-Sheetmetal Structural Iron/Welding Handbook
P-714.0	Trackage Handbook
P-715.0	Wharfbuilding Handbook
P-716.0	Unit Price Standards (UPS) Handbook
P-717.0	Preventive/Recurring Maintenance Handbook

END OF SECTION J

QUALITY ASSURANCE GUIDE
FOR
WASTEWATER COLLECTION SYSTEMS AND TREATMENT FACILITIES
OPERATION AND MAINTENANCE

QUALITY ASSURANCE GUIDE FOR
WASTEWATER COLLECTION SYSTEMS AND TREATMENT FACILITIES
OPERATION AND MAINTENANCE

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QUALITY ASSURANCE GUIDE FOR
WASTEWATER COLLECTION SYSTEMS AND TREATMENT FACILITIES
OPERATION AND MAINTENANCE

I. INTRODUCTION. Quality assurance (QA) is a program undertaken by the Government to provide some measure of the quality of goods and services purchased from a Contractor. To accomplish this the Government, in this case the naval shore activity contracting for wastewater collection and treatment services, must develop and implement a system that will ensure that the quantity and quality of the goods and services received comply with the requirements of the contract. This QA Guide is designed to assist the Facilities Support Contract Manager (FSCM) or other user in setting up the activity's QA program. The user is advised to refer to the NAVFAC manual MO-327, *Service Contracts: Specifications and Surveillance* and the NAVFAC *Random Sampling for Extrapolated Deductions (RSED V3.2)* implementation guide for more detailed information on the development and implementation of a QA Program.

A. Overview. This Guide suggests specific methods for monitoring wastewater collection and treatment work efforts and provides sample QA plans. These sample plans must be tailored concurrently with the tailoring of the GPWS to develop a unique QA Program that fits the specific needs of the activity. This QA Guide is divided into five parts.

1. The Introduction presents an overview and gives information on Quality Assurance Evaluator (QAE) staffing and training.

2. QA Plan Development provides the user with special considerations that affect the way in which wastewater collection and treatment services may be monitored and suggests specific evaluation methods for different portions of the specification.

3. The third part, QA Plans, provides sample QA Plans with examples and suggested evaluation worksheets. The sample plans provided must be tailored by the QAE to conform with the tailored PWS.

4. Contractor's Overall Performance discusses how to use the QAE's inspection results to make an overall evaluation of Contractor performance, and provides a sample monthly summary report format.

5. The last part, Contractor Submissions, calls for the identification of all Contractor submissions, due dates, and specification references.

B. QAE Training. Personnel tasked with monitoring the wastewater Contractor's performance must be experienced in the operation and maintenance of wastewater collection and treatment facilities and equipment, and adequately trained in order to effectively implement the activity's QA program. NAVFAC P-68, *Contracting Manual*, requires all individuals assigned QAE duties to attend the QAE training course provided by each of the NAVFAC geographical Engineering Field Divisions (EFDs) within six months of their assignment. If this training has not been received, the activity should take steps to have the QAE(s) attend the next available course and in the meantime should develop a local training program. EFD Code 10s (Facilities Division) should be contacted for QAE training scheduling or assistance. Additional training may also be required to ensure that appropriate technical expertise is available to inspect contract maintenance and operational requirements.

C. QAE Staffing. Obviously the most well developed QA program will not be effective if QAE staffing is inadequate. Ideally QAE staffing should be based on a pre-determined number of contract inspections (QA plans) and related work requirements rather than the availability of QAEs. Once adequate QA plans have been developed, determining accurate QAE staffing levels to implement the plans is a relatively simple task involving an analysis of each plan's requirements. This analysis involves determining the average time needed to complete each of the inspections required (sample size or quantity of work) by each plan including travel time requirements, time required to prepare monthly reports and perform other administrative duties, time to perform any non-surveillance duties, etc. The NAVFAC EFDs have experience in conducting these staffing analyses and should be contacted if assistance is needed.

II. QUALITY ASSURANCE PLAN DEVELOPMENT. Ideally, QA plan development should be accomplished concurrently with development of the PWS, and viewed as a single process. The two are closely interrelated since one (the PWS) defines required work outputs and quality standards while the other defines how work outputs will be observed and measured. Many of the inspection problems which tend to turn up after contract award can be avoided by careful coordination between the specification and QA plan writers. Chapters 5 and 6 of NAVFAC MO-327 discuss methods of surveillance, inspection documentation, development of QAE schedules, and other issues related to the development of QA plans. The following discussion provides information relating specifically to surveillance of wastewater collection and treatment services.

A. Functional Considerations. Wastewater collection and treatment services pose some unique evaluation requirements to the QAE. The following considerations are offered for user information.

1. Location of Work. Unlike many other facilities support contracts, locations throughout the entire activity can constitute the wastewater collection service working area. QA plans must provide for the identification of times and locations for surveillance to insure properly maintained and operating collection systems.

2. Notification. The Contractor is notified of a deficiency by copy of the evaluation worksheet. If due to location constraints - i.e., the Contractor representative is not nearby - notification can be made by phone, but this is not generally recommended. The Contractor's representative will normally be accessible to the QAE and FSCM within a reasonable period of time (at the waste treatment facility). The QAE will most likely be performing contract surveillance during most of the day and cannot stop to call the Contractor every time he finds something wrong. Contractor notification of the discrepancies is not always feasible, and when feasible, may severely limit the QAE's available time. Certain discrepancies must be passed on to the Contractor at any time if they affect the health, safety, or efficient operation of the treatment plant or collection system. It is recommended that the QAE inform the Contractor immediately of health, safety, or service items which require immediate corrective action. All other deficiencies will be presented at the end of each working day.

B. Selection of Evaluation Methods. Selection of evaluation methods depends on several factors including the size of the contract, QAE resources, and characteristics of the service to be evaluated. These factors are discussed in NAVFAC MO-327. Consideration of these factors as they relate to wastewater

collection and treatment services results in the following recommended evaluation methods:

1. One Hundred Percent Inspection. The importance of compliance with federal, state, and local regulatory agency requirements for effluent discharge quality, waste disposal, etc., dictate that 100% inspection be considered as the primary method of surveillance for several Contractor provided wastewater services. It is suggested that 100% inspection be used for inspection of Contractor submitted sample analyses and associated reporting; waste collection and disposal; minor maintenance and repair work; and other Contractor submitted reports and submittals.

2. Planned Sampling. It is suggested that planned sampling be adopted as the primary surveillance method for collection system maintenance, repair, and alteration services; control inspection services; and preventive maintenance inspection services. Sampling should validate the Contractor's documentation of actual control inspections and PMI performance. Such documentation may take the form of logs, check lists, and other similar documentation tools. The actual performance of PMI must also be inspected, although in some cases it may be necessary to have a Government representative present during performance. Planned Sampling should also be used to validate reported lab results.

3. Unscheduled Inspections. Unscheduled inspections should not be used as a primary method of surveillance. This type of surveillance should be used as a supportive method, and as such, be subject to the QA plan of the primary method.

C. Performance Requirements. As discussed previously in the User's Guide (paragraph III.F), the PRS table is very useful in the preparation of QA plans since it summarizes the performance indicators, standards of performance, methods of surveillance, and maximum allowable defect rates (MADR) for each firm fixed-price contract requirement. A sample PRS table which reflects the contract requirements and performance indicators of this GPWS is provided on the following page (see Figure 1). NAVFAC MO-327 and the NAVFAC RSED (V3.1) implementation guide provide guidance on the development of PRS tables, and should be referred to by the user.

III. SAMPLE QUALITY ASSURANCE PLANS. There are eight sample QA plans provided in this GPWS. They are:

- QA Plan A - Treatment Plant Performance and Regulatory Compliance
- QA Plan B - Waste Removal and Disposal
- QA Plan C - Operation of Treatment and Collection Facilities
- QA Plan D - Control Inspection Program
- QA Plan E - Preventive Maintenance Inspection (PMI) Program
- QA Plan F - Corrective Maintenance
- QA Plan G - Minor Maintenance and Repair Work
- QA Plan H - Documentation and Correspondence

FIGURE 1

PERFORMANCE REQUIREMENTS SUMMARY TABLE

<u>Contract Requirement</u>	<u>Performance Standards</u>	<u>Surveillance Method</u>	<u>MADR (Example)</u>
1. Treatment Plant Performance and Regulatory Compliance	Effluent Restrictions Met	Planned Sampling & 100% Inspection	3%
	Certified Personnel	Unscheduled Inspections	3%
2. Waste Removal and Disposal	Collect and Dispose of Waste Material	100% Inspection	3%
3. Operation of Treatment and Collection Facilities	Operate Treatment and Collection Systems	Planned Sampling	5%
4. Control Inspection Program	Perform Inspections/ Submit Reports as Scheduled	Planned Sampling	10%
	Quality Reports		10%
5. Preventive Maintenance Inspection (PMI) Program	Timeliness	Planned Sampling	5%
	Quality Work		5%
	Reports		5%
6. Corrective Maintenance	Timeliness	100% Inspection if number per week is less than 20; otherwise use Planned Sampling. 100% Inspection for all emergency and urgent calls.	5%
	Quality Work		5%
	Documentation		5%
7. Minor Maintenance and Repair Work	Timely Completion	100% Inspection	5%
	Quality Work		5%
8. Documentation and Correspondence	Timely Submittals	100% Inspection	10%
	Quality Reports		10%

QA PLAN A
TREATMENT PLANT PERFORMANCE AND REGULATORY COMPLIANCE

1. Contract Requirement. This QA Plan provides for surveillance of contract requirements for compliance with effluent discharge quality and quantity restrictions, and other conditions imposed by regulatory agencies (federal, state, or local).

<u>Performance Indicators</u>	<u>Standards of Performance</u>
a. Effluent Restrictions Met	Paragraphs C.10, C.17, C.19
b. Certified Personnel	Paragraph C.10.c(2)

2. Primary Method of Surveillance. One hundred percent inspection of Contractor sample analyses and associated reportings. Planned sampling of effluent quality/quantity supported by unscheduled inspections. Unscheduled inspections for properly certified personnel.

3. Maximum Allowable Defect Rate (MADR)

a. Effluent Restrictions Met	3%
b. Certified Personnel	3%

4. Quantity of Work. The number of analyses performed by the Contractor.

5. Level of Surveillance. Not applicable.

6. Sample Size. For planned sampling, the QAE shall perform all the tests required in the contract once during each four-week evaluation period. If there is reason to suspect problems, the QAE will support planned sampling with unscheduled inspections.

7. Sample Selection Procedure. The QAE shall schedule the performance of each test at the beginning of each evaluation period. Consideration will not be given to any previously noted defects. Tests will be scheduled so as not to create an obvious pattern.

8. Evaluation Procedure. Compare specification requirements to each Contractor supplied operating report and analysis. QAE should have his/her own samples drawn and lab analysis performed based upon the schedule established in the sampling procedure to validate Contractor reportings. A separate analysis form should be generated by the QAE and should include: date sample drawn, date of test, type of test, location of sample, results, conclusion, and inspector's name. Defects shall be any non-compliance items pertaining to treatment plant effluent quality and quantity, or violations of personnel. NOTE: The Contractor shall not be considered at fault for contract discrepancies caused by circumstances beyond his/her control, provided that he has made reasonable efforts to abide by contract requirements. For example, a plating shop may release large dosages of highly toxic and concentrated chemical wastes without warning which ultimately cause a violation of specified parameters despite efforts to provide proper treatment. Also, the Contractor shall not be considered at fault for not complying with permit restraints in areas where repeated violations have been documented due to design/equipment deficiencies or improper/excessive plant loadings.

9. Analysis of Results. At the end of the month, the QAE will count the number of defective checkpoints (U's) noted during 100% inspection, and compute an Observed Defect Rate (ODR) for effluent restrictions. The ODR is the number of U's divided by the number of checkpoints verified.

$$\text{ODR} = \frac{(\text{Total \# U's})}{(\text{Total \# U's} + \text{S's})} \times 100$$

Conclusions that can be drawn based on the ODR are:

- a. If the ODR is less than the MADR, the evaluation indicates that performance has been satisfactory.
- b. When the ODR exceeds the MADR, performance is unsatisfactory. If this occurs, the QAE should recommend that a Contract Discrepancy Report (CDR) be issued to the Contractor.
- c. For all observed defects, the QAE will calculate the appropriate deductions at the end of the invoice period and provide the FSCM with a report which itemizes the amounts by which the Contractor's invoice should be reduced.

EVALUATION WORKSHEET FOR
TREATMENT PLANT PERFORMANCE AND REGULATORY COMPLIANCE

Date: _____

Method of Surveillance: 100% Inspection

<u>Specified Parameter or Condition</u>	<u>Contract Restraints</u>	<u>Actual Results</u>	<u>Defect</u>		<u>Remarks</u>
			<u>Yes</u>	<u>No</u>	
BOD-5	30/45 mg/l	29/43 mg/l		X	
pH	6-9	7.3		X	

!ETC.!

Total No. Observed Defects _____

Total No. Of Parameters Verified _____

QAE Signature _____

QA PLAN B
WASTE REMOVAL AND DISPOSAL

1. Contract Requirements. Contract is to provide all labor, materials, equipment, transportation, facilities, utilities, supervision and management required to obtain waste material collection and disposal service in compliance with all applicable federal and state statutes and regulations.

Performance Indicators

Standards of Performance

Collect and Dispose of Waste Material

Paragraph C.18

2. Primary Method of Surveillance. One hundred percent inspection.

3. Maximum Allowable Defect Rate (MADR). 3%.

4. Quantity of Work. Quantity performed will depend on the quantity of waste collected and number of disposals made during the month.

5. Level of Surveillance. Not applicable.

6. Sample Size. Not applicable.

7. Sample Selection Procedure. Not applicable.

8. Evaluation Procedure. Utilizing the attached evaluation worksheet, document the Contractor's performance. Record date, type of material to be collected and/or disposed of. Check all required forms and permits, and condition of Contractor's vehicles. Record observations each time surveillance is made and for final acceptance of work order.

9. Analysis of Results. At the end of the month, the QAE will count the number of checkpoints classified as unsatisfactory (U's), and compute an ODR for each performance indicator. The ODR is the number of U's divided by the sample size.

$$\text{ODR} = \frac{(\text{Total \# U's})}{(\text{Total \# U's} + \text{S's})} \times 100$$

Conclusions that can be drawn based on the ODR are:

a. If the ODR is less than the MADR, the evaluation indicates that performance has been satisfactory.

b. When the ODR exceeds the MADR, performance is unsatisfactory. If this occurs, the QAE should recommend that a Contract Discrepancy Report (CDR) be issued to the Contractor.

c. For all observed defects, the QAE will calculate the appropriate deductions at the end of the invoice period and provide the FSCM with a report which itemizes the amounts by which the Contractor's invoice should be reduced.

QA PLAN C
OPERATION OF TREATMENT AND COLLECTION FACILITIES

1. Contract Requirements. This QA plan provides for surveillance of contract requirements to provide services of wastewater treatment and collection system operation. Included areas are service interruptions, flooding conditions, nuisance odors, pipe blockages, pump station failures, and other required operator maintenance services.

Performance Indicators

Standards of Performance

Operate Treatment and Collection Systems

Paragraphs C.11.a and C.12.a

2. Primary Method of Surveillance. Planned sampling supported by unscheduled inspections for general operational requirements.

3. Maximum Allowable Defect Rate (MADR). 5%.

4. Quantity of Work. Continual operation of the collection system as specified in paragraphs C.11.a and C.12.a.

5. Level of Surveillance. Normal level of surveillance will be utilized for critical services at the beginning of the contract and continue until such time as the observed defect rate indicates that a different level is necessary. A reduced level of surveillance will be used when the Observed Defect Rate (ODR) has been less than the MADR for two consecutive months. Increased level of surveillance will be used if the ODR is greater than the MADR.

6. Sample Size

Normal Surveillance - 25% of specified work
Reduced Surveillance - 10% of specified work
Increased Surveillance - 50% of specified work

7. Sample Selection Procedure. The QAE shall prepare a schedule of the time and location to perform inspections based on the Contractor's submitted work schedule.

8. Evaluation Procedure. All deficiency information will be entered on evaluation worksheets including date, location, type of inspection, QAE's signature, and an explanation of all defects which were recorded. If rework is ordered, the QAE will document what action was taken by the Contractor and all other pertinent information.

9. Analysis of Results. At the end of the month, the QAE will count the number of defects (U's) and compute an ODR. The ODR is the number of U's divided by the sample size.

$$\text{ODR} = \frac{\text{(Total \# U's)}}{\text{(Total \# U's + S's)}} \times 100$$

Conclusions that can be drawn based on the ODR are:

a. If the ODR is less than the MADR, the evaluation indicates that performance has been satisfactory.

b. When the ODR exceeds the MADR, performance is unsatisfactory. If this occurs, the QAE should recommend that a Contract Discrepancy Report (CDR) be issued to the Contractor.

c. For all observed defects, the QAE will calculate the appropriate deductions at the end of the invoice period and provide the FSCM with a report which itemizes the amounts by which the Contractor's invoice should be reduced.

EVALUATION WORKSHEET FOR
OPERATION OF TREATMENT AND COLLECTION FACILITIES

Date: _____

<u>Item No.</u>	<u>Problem Area</u>	<u>Notification Time</u>	<u>Time Action Taken</u>	<u>Allowed Response Time</u>	<u>Defect Yes/No</u>	<u>Initials</u>
1						
2						
3						
!ETC.!						

Comments:

Total No. Observed Defects _____

Total No. Of Parameters Verified _____

QAE Signature _____

QA PLAN D
CONTROL INSPECTION PROGRAM

1. Contract Requirements. This QA Plan provides for surveillance of contract requirements to establish and implement collection system and treatment facility control inspections.

<u>Performance Indicators</u>	<u>Standards of Performance</u>
a. Perform Inspections/Submit Reports	Paragraph C.11.c
b. Quality Reports	Paragraph C.11.c

2. Primary Method of Surveillance. Planned sampling.

3. Maximum Allowable Defect Rate (MADR)

a. Perform Inspections/Submit Reports	10%
b. Quality Reports	10%

4. Quantity of Work. The number of items to be inspected during the month as specified in the Contractor's approved inspection plan.

5. Level of Surveillance. The normal level of surveillance will be used initially for the contract. Go to increased surveillance if the observed defect rate (ODR) exceeds the MADR during any given month. Go to reduced surveillance if the ODR is less than $\frac{1}{2}$ the MADR for two consecutive months.

6. Sample Size. The following sample sizes are established for each level of surveillance.

Normal Surveillance	- 25% of specified work
Reduced Surveillance	- 10% of specified work
Increased Surveillance	- 50% of specified work

7. Sample Selection Procedure. The appropriate number of samples will be selected by referring to the Contractor's approved inspection plan. Samples should be chosen arbitrarily, such as every fourth inspection if at normal surveillance.

8. Evaluation Procedure

a. Insure that a suitable plan has been submitted for ACO approval within 30 calendar days after contract award date.

b. Insure the plan is executed as written, accurately and completely. Also, that quality inspection reports are submitted by the date specified.

c. QAE has the option to have a representative present during Contractor inspections and to make his/her own inspection. QAE should inspect areas and verify that the reported deficiencies are accurate and complete.

9. Analysis of Results. At the end of the month, the QAE will count the number of checkpoints classified as unsatisfactory (U's), and compute an ODR for each performance indicator. The ODR is the number of U's divided by the sample size.

$$\text{ODR} = \frac{(\text{Total \# U's})}{(\text{Total \# U's} + \text{S's})} \times 100$$

Conclusions that can be drawn based on the ODR are:

a. If the ODR is less than the MADR for a given performance indicator, the evaluation indicates that performance has been satisfactory.

b. When the ODR exceeds the MADR for the given performance indicator, performance is unsatisfactory. If this occurs, the QAE should recommend that a Contract Discrepancy Report (CDR) be issued to the Contractor.

c. For all observed defects, the QAE will calculate the appropriate deductions at the end of the invoice period and provide the FSCM with a report which itemizes the amounts by which the Contractor's invoice should be reduced.

EVALUATION WORKSHEET FOR
CONTROL INSPECTION PROGRAM

<u>Date</u>	<u>Facility</u>	<u>Type</u> <u>Inspection</u>	<u>Timely Inspection/</u> <u>Submittal(S/U)</u>	<u>Quality</u> <u>Report (S/U)</u>
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Total No. Of Defects_____

QAE Signature_____

QA PLAN E
PREVENTIVE MAINTENANCE INSPECTION (PMI) PROGRAM

1. Contract Requirement. This QA Plan provides for the surveillance of the Contractor's PMI Program.

<u>Performance Indicators</u>	<u>Standards of Performance</u>
a. Timeliness	Paragraph C.11.d
b. Quality Work	Paragraph C.11.d
c. Reports	Paragraph C.11.d

2. Primary Method of Surveillance. Planned Sampling support by unplanned inspections.

3. Maximum Allowable Defect Rate (MADR)

a. Timeliness	5%
b. Quality Work	5%
c. Reports	5%

4. Quantity of Work. Based on specified requirements, as well as the Contractor's PM schedule, the QAE should know what pieces of equipment are supposed to be PM'd during each week of any given month. The number of pieces of equipment PM'd during any given month times the frequency of PM for each represents the total population size to be sampled for the month.

5. Level of Surveillance

a. Normal Surveillance (Level II). The normal level of surveillance will be used at the beginning of the contract and continue until such time as the ODR indicates a different level is necessary.

b. Reduced Surveillance (Level I). The reduced level of surveillance will be used when the ODR has been less than $\frac{1}{2}$ the MADR for two months under normal surveillance (Level II). The sample sizes will remain at this level as long as the ODR is less than the MADR.

c. Increased Surveillance (Level III). If at normal surveillance the ODR is greater than or equal to the MADR, then change the level of surveillance to increased (Level III). If at Level III the ODR is less than the MADR, return to Level II surveillance.

6. Sample Size

Normal Surveillance	- 20% of scheduled services
Reduced Surveillance	- 10% of scheduled services
Increased Surveillance	- 40% of scheduled services

7. Sampling Procedure. Each week the QAE will choose the appropriate number of samples for the given level of surveillance. The samples should be chosen on a rotating basis so that each location will be inspected at least once during a five-month period. The QAE will record the chosen sample locations on a weekly schedule sheet and, as necessary, update this schedule. Unscheduled inspections

may be used to observe work in progress in areas which have been problems in the past, or where PMI is difficult to inspect after the fact.

8. Evaluation Procedures. Some time during the week, the QAE will visit each of the chosen locations. These visits can be conducted on any day of the week and should be coordinated with other inspections which occur in the general area. Consideration must be given to timing of the inspections so that they occur soon after the scheduled service. Care must be given to avoid setting up a pattern of inspections which would allow the Contractor to predict the location or time of any inspection. Evaluation worksheets, such as that attached to this plan, are prepared by the QAE for each day that evaluations are scheduled for the coming month. On the day that work is to be evaluated, the QAE will visit the work site and evaluate performance of each work item listed. Work items that have been performed satisfactorily will have a "S" recorded, those that are unsatisfactory or non-performed will have a "U" entered. At the end of the day, the QAE will determine the total amount of unsatisfactory or non-performed work. At the end of the month, this information will be the basis for calculating overall performance and any payment deductions made.

9. Analysis of Results. At the end of the month, the QAE will count the number of checkpoints classified as unsatisfactory (U's), and compute an ODR for each performance indicator. The ODR is the number of U's divided by the sample size.

$$\text{ODR} = \frac{(\text{Total \# U's})}{(\text{Total \# U's} + \text{S's})} \times 100$$

Conclusions that can be drawn based on the ODR are:

a. If the ODR is less than the MADR for a given performance indicator, the evaluation indicates that performance has been satisfactory.

b. When the ODR exceeds the MADR for the given performance indicator, performance is unsatisfactory. If this occurs, the QAE should recommend that a Contract Discrepancy Report (CDR) be issued to the Contractor.

c. For all observed defects, the QAE will calculate the appropriate deductions and at the end of the invoice period and provide the FSCM with a report which itemizes the amounts by which the Contractor's invoice should be reduced.

QA PLAN F
CORRECTIVE MAINTENANCE

1. Contract Requirement. This QA Plan provides for surveillance of the Contractor's performance of corrective maintenance, including correction of deficiencies detected by the Contractor during PM inspections and service calls.

<u>Performance Indicators</u>	<u>Standards of Performance</u>
a. Timeliness	Paragraph C.12
b. Quality Work	Paragraph C.12
c. Documentation	Paragraph C.12

2. Primary Method of Surveillance. One hundred percent inspection if number per week is less than 20; otherwise, use planned sampling. Always use 100% inspection for emergency and urgent service calls.

3. Maximum Allowable Defect Rate (MADR)

a. Timeliness	5%
b. Quality Work	5%
c. Documentation	5%

4. Quantity of Work. The quantity of work will vary each month, and will be determined by the number of corrective maintenance work orders received and completed.

5. Level of Surveillance

- a. One Hundred Percent Inspection. Not applicable.
- b. Planned Sampling

(1) Normal Surveillance (Level II). The normal level of surveillance will be used at the beginning of the contract and continue until such time as the ODR indicates a different level is necessary.

(2) Reduced Surveillance (Level I). The reduced level of surveillance will be used when the ODR has been less than $\frac{1}{2}$ the MADR for two months under normal surveillance (Level II). The sample sizes will remain at this level as long as the ODR is less than the MADR.

(3) Increased Surveillance (Level III). If at normal surveillance the ODR is greater than or equal to the MADR, then change the level of surveillance to increased (Level III). If at Level III the ODR is less than the MADR, return to Level II surveillance.

6. Sample Size

- a. One Hundred Percent Inspection. Not applicable.
- b. Planned Sampling. The sample size for the month is determined from the number of corrective maintenance work orders issued, as follows:

Normal Surveillance - 20% of work orders

Reduced Surveillance - 10% of work orders
Increased Surveillance - 40% of scheduled work orders

7. Sampling Procedure. Each month the QAE will choose the appropriate number of samples based on the level of surveillance being utilized. Any corrective maintenance work order may be chosen, but the selection should be as arbitrary as possible. For example, choose every fifth work order when at normal surveillance.

8. Evaluation Procedure. Each corrective maintenance action will either be Contractor-generated or issued by the Government Representative. Each action inspected will be graded on each of the performance indicators, if applicable. The QAE should prepare an evaluation worksheet similar to the sample attached. This worksheet will be completed on-site and will be signed by the QAE. Any noted defects will be explained and, if rework is ordered, the action taken by the Contractor will be noted.

9. Analysis of Results. At the end of the month, the QAE will count the number of checkpoints classified as unsatisfactory (U's), and compute an ODR for each performance indicator. The ODR is the number of U's divided by the sample size.

$$\text{ODR} = \frac{(\text{Total \# U's})}{(\text{Total \# U's} + \text{S's})} \times 100$$

Conclusions that can be drawn based on the ODR are:

a. If the ODR is less than the MADR for a given performance indicator, the evaluation indicates that performance has been satisfactory.

b. When the ODR exceeds the MADR for the given performance indicator, performance is unsatisfactory. If this occurs, the QAE should recommend that a Contract Discrepancy Report (CDR) be issued to the Contractor.

c. For all observed defects, the QAE will calculate the appropriate deductions and at the end of the invoice period and provide the FSCM with a report which itemizes the amounts by which the Contractor's invoice should be reduced.

QA PLAN G
MINOR MAINTENANCE AND REPAIR WORK

1. Contract Requirement. Minor maintenance and repair work.

<u>Performance Indicators</u>	<u>Standards of Performance</u>
a. Timely Completion	Paragraph C.14
b. Quality Work	Section C quality standards

2. Primary Method of Surveillance. Since this work is ordered on a DD Form 1155, 100% inspection of the final product is required.

3. Maximum Allowable Defect Rate (MADR)

a. Timely Completion	5%
b. Quality Work	5%

4. Quantity of Work. The total number of completed delivery orders for the month.

5. Level of Surveillance. Not applicable.

6. Sample Size. Not applicable.

7. Sampling Procedure. Not applicable.

8. Evaluation Procedure. During the month, the QAE will visit the various job sites while the work is in progress. The visits will be coordinated with the Contractor to insure each key phase of the project is inspected before it is covered over, thus making inspection at a latter time impossible. A brief but complete description of any noted defects will be recorded on the attached evaluation worksheet for each defective work item. Assign overall grades of satisfactory or unsatisfactory for quality of work and timely completion.

a. Rework will normally be required. Record all appropriate rework information on the evaluation worksheet.

b. When determining the overall quality of work grade to be assigned for each delivery order, the QAE must carefully consider the total scope of work required and subjectively judge whether it has been substantially completed by the Contractor. Generally, the QAE should grade a work authorization satisfactory overall if there has been no willful departure from the contract, there is no omission of essential work, and essentially 95% or more of the total work has been completed. If work quality for a delivery order is considered unsatisfactory, timeliness must also be considered unsatisfactory. The QAE should discuss questionable grades with the FSCM prior to providing the Contractor with a copy of the evaluation worksheet.

9. Analysis of Results. At the end of the month, the QAE will summarize the number of unsatisfactory overall grades for timely completion and quality work and calculate ODRs for each using the following formula.

$$\text{ODR} = \frac{\text{Number of unsatisfactory grades}}{\text{Total number of delivery orders inspected}} \times 100$$

For example:

Number of unsatisfactory overall quality grades = 2

Number of delivery orders completed = 23

ODR for quality work = $2 \div 23 \times 100 = 8.7\%$

a. If the ODR for a performance indicator is less than its MADR, overall performance of that indicator is satisfactory for the month. If the observed defect rate is less than $\frac{1}{2}$ of the MADR, the QAE should recommend to the FSCM to notify the Contractor that performance is excellent and to keep up the good work.

b. If the ODR is greater than the MADR, overall performance is unsatisfactory and the QAE should recommend to the FSCM that a CDR be issued to the Contractor, or that stronger action be taken.

c. Payment deductions, if any, will be subtracted from each delivery order invoiced by the Contractor.

QA PLAN H
DOCUMENTATION AND CORRESPONDENCE

1. Contract Requirement. This QA Plan provides for surveillance of contract requirements to prepare correspondence and notices, to maintain files and logs, and to submit reports to the ACO, all as specified throughout Section C.

<u>Performance Indicators</u>	<u>Standards of Performance</u>
a. Timely Submittals	Paragraph C.21
b. Quality Reports	Paragraph C.21

2. Primary Method of Surveillance. One hundred percent inspection of reports, correspondence, and notices which are required to be submitted to the ACO; unscheduled inspection of logs and other items not normally subject to submittal.

3. Maximum Allowable Defect Rate (MADR)

a. Timely Submittals	10%
b. Quality Reports	10%

4. Quantity of Work. The number of required reports and records as outlined in the specification.

5. Level of Surveillance. Not applicable.

6. Sample Size. Not applicable.

7. Sample Selection Procedure. Not applicable.

8. Evaluation Procedure

a. Compare required submittal dates to actual submittal dates. Submittal dates of items of unacceptable quality will not be considered. If items must be resubmitted to the ACO due to unsuitable quality, it is the Contractor's responsibility to see that original deadline dates are still met.

b. Due to the nature of the service and the time limitation by which some reports and records have to be forwarded to state and federal agencies, the QAE will evaluate all reports. A check list will be used and it will list all types of reports to be reviewed and all defects will be noted. Each record or report will be examined for completeness, accuracy, and timeliness. If defects are observed, an explanation of the probable cause will be recorded. The Contractor will be notified of all defects in writing. The date and time the Contractor is notified will also be noted as will be any corrective actions taken.

c. Accomplish periodic unscheduled inspections of general operating logs to insure proper documentation practices.

9. Analysis of Results. At the end of the month, the QAE will count the number of checkpoints classified as unsatisfactory (U's), and compute a ODR for each performance indicator. The ODR is the number of U's divided by the sample size.

$$\text{ODR} = \frac{(\text{Total \# U's})}{(\text{Total \# U's} + \text{S's})} \times 100$$

Conclusions that can be drawn based on the ODR are:

a. If the ODR is less than the MADR for a given performance indicator, the evaluation indicates that performance has been satisfactory.

b. When the ODR exceeds the MADR for the given performance indicator, performance is unsatisfactory. If this occurs, the QAE should recommend that a Contract Discrepancy Report (CDR) be issued to the Contractor.

c. For all observed defects, the QAE will calculate the appropriate deductions and at the end of the invoice period provide the FSCM with a report which itemizes the amounts by which the Contractor's invoice should be reduced.

EVALUATION WORKSHEET FOR
DOCUMENTATION AND CORRESPONDENCE

Date: _____

Method of Surveillance: 100% Inspection

<u>Required</u> <u>Document</u>	<u>Required</u> <u>Submittal</u> <u>Date</u>	<u>Actual</u> <u>Submittal</u> <u>Date</u>	<u>Timely Submittal</u> <u>Defect</u> <u>Yes No</u>	<u>Quality Report</u> <u>Defect</u> <u>Yes No</u>	<u>Remarks</u>
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Total Number of Inspections _____

Total Number of Defects _____

QAE Signature _____

IV. CONTRACTOR'S OVERALL PERFORMANCE EVALUATION. The end result of a QA Program is the overall evaluation of the Contractor's performance for wastewater services. It is important to determine overall monthly performance to determine whether to increase, decrease, or maintain the same level of surveillance. If the overall performance has been unsatisfactory, a Contract Discrepancy Report (CDR) is needed (see the NAVFAC MO-327). Each and every contract discrepancy observed and documented should result in a deduction from the Contractor's monthly invoice. At the end of each month, the QAE will complete the Monthly Evaluation Report and submit it to the FSCM. A sample report is included on the following page as Figure 2. This report is based on sample QA Plans A through H.

V. CONTRACTOR SUBMISSIONS. The QAE should prepare a list of Contractor submissions from the completed solicitation package. The submissions should be listed chronologically by due date. The QAE should use this list to ensure that each submittal is turned in on schedule and is acceptable. An example "Contractor Submission" worksheet is included as Figure 3. The user should add or delete items, as required.

FIGURE 2

SAMPLE MONTHLY EVALUATION REPORT FOR WASTEWATER SERVICES

Report Period: _____

Contract Number: _____

	MADR	ODR	CDR Y/N	Payment Deductions	Rating S/U
QA PLAN A					
TREATMENT PLANT PERFORMANCE & REGULATORY COMPLIANCE					
Effluent Restrictions Met	3%				
Certified Personnel	3%				
QA PLAN B					
WASTE REMOVAL & DISPOSAL					
Collect and Dispose of Waste Material	3%				
QA PLAN C					
OPERATION OF TREATMENT AND COLLECTION FACILITIES					
Operate Treatment and Collection Systems	5%				
QA PLAN D					
CONTROL INSPECTION PROGRAM					
Perform Inspections/Submit Reports	10%				
Quality Reports	10%				
QA PLAN E					
PREVENTIVE MAINTENANCE INSPECTION (PMI) PROGRAM					
Timeliness	5%				
Quality Work	5%				
Reports	5%				
QA PLAN F					
CORRECTIVE MAINTENANCE					
Timeliness	5%				
Quality work	5%				
Documentation	5%				
QA PLAN G					
MINOR MAINTENANCE AND REPAIR WORK					
Timely Completion	5%				
Quality Work	5%				
QA PLAN H					
DOCUMENTATION AND CORRESPONDENCE					
Timely Submittals	10%				
Quality Work	10%				

Total Payment Deductions = \$ _____

Contractor's Overall Performance for the Month: Sat _____ Unsat _____

QAE Signature _____ Date _____

FIGURE 3

SAMPLE CONTRACTOR SUBMISSIONS WORKSHEET

<u>Description</u>	<u>Specification Reference</u>	<u>When Required</u>
1. Pre-Award Survey Data		Prior to award
2. Scheduled Inspection Plan	C.11.c	30 days after award
3. Preventive Maintenance Schedule	C.11.d	30 days after award
4. Quality Control Program		15 days after award
5. Schedule of Deductions		15 days after award
6. Certificate of Insurance		15 days after award
7. Pre-performance Conference		Prior to starting
8. Employee/Vehicle Pass/Badges		Prior to starting
9. Employee Proof of Citizenship		Prior to starting
10. Licenses and Permits		Prior to starting
11. Corrective Maintenance Work Orders		By next workday
12. Delivery Orders	C.12	With monthly invoice
13. Invoice		Monthly
14. Cost Account Report	C.7.d	With monthly invoice
15. Written Reply to a Contract Discrepancy Report		As needed
16. Accident Report		Within 24 hours
17. Damage to Government Property/Equipment		Within 24 hours
18. Application to Work Outside Regular Hours	C.6	As needed
19. Preventive Maintenance Inspection Report	C.11.d	By 12:00 noon each Monday of each week
20. Control Inspection Reports	C.11.c	In accordance with approved plan
21. Input to environmental Agencies	C.10.c	As needed

<u>Description</u>	<u>Specification Reference</u>	<u>When Required</u>
22. Utility Outage Request	C.11.b	As needed
23. Estimates	C.15	!INSERT! calendar days after receipt of proposal
24. Sampling/Lab Analysis	C.19	See Attachment J-C9
25. Notice of Violations	C.20	Within 24 hours of noncompliance identification
26. Operating Reports	C.21	By 5th of each month

END OF QA GUIDE