

US ARMY CORPS OF ENGINEERS TECHNICAL REPORT

WETLAND MANUAL

Corps of Engineers Wetlands Delineation
Manual Technical Report Y-87-1

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.4 Project Pesticide Coordinator

The Project Pesticide Coordinator (PPC) is an individual that resides at a Civil Works Project office and that is responsible for oversight of pesticide application on Project grounds.

1.2.5 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.6 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.7 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.8 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.9 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.10 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in

the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; GA, [_____]

The environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
- d. Description of the Contractor's environmental protection personnel training program.
- e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.
- f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.
- g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.
- h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.
- i. Drawing showing the location of borrow areas.
- j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1 [and the [____]]. This plan shall include as a minimum:
1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and [the local Fire Department] [Facility Fire Department] [Facility Response Personnel] [Facility Environmental Office] in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.
 2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.
 3. Training requirements for Contractor's personnel and methods of accomplishing the training.
 4. A list of materials and equipment to be immediately available

at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic meters yards or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the

pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

q. A pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation Project Office specific requirements. The Contractor shall follow [AR 200-5 Pest Management, Chapter 2, Section III "Pest Management Records and Reports" for data required to be reported to the Installation] [AFI 32-1053 Sections 3.4.13 and 3.4.14 for data required to be reported to the Installation].

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with the special environmental requirements listed here [_____] and included at the end of this section.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

1.12 HTRW PERIMETER AIR MONITORING

For the protection of public health, the Contractor shall monitor and control contaminant emissions to the air from HTRW remedial action area sources to minimize short term risks that might be posed to the community during implementation of the remedial alternative in accordance with Section 01450 CHEMICAL DATA QUALITY CONTROL and the following.

1.12.1 Perimeter Air Contaminant of Concern

[_____].

1.12.2 Time Averaged Perimeter Action Levels

[_____].

- a. Concentration [_____].
- b. Time [_____].

1.12.3 Perimeter Sampling/Monitoring Location[s]

[_____].

1.12.4 Monitoring Instruments/Sampling and Analysis Methods

[_____].

1.12.5 Staffing

[_____].

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

[This paragraph supplements the Contractor's responsibility under the contract clause "PERMITS AND RESPONSIBILITIES" to the extent that the Government has obtained the [_____]. The Contractor shall comply with the terms and conditions of the attached [_____] at the end of this section.]

[The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.]

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a

minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) [as indicated on the drawings] [as specified in Section 01356 STORM WATER POLLUTION PREVENTION MEASURES]. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. [The Contractor's best management practices shall also be in accordance with the [_____] National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP) which may be reviewed at the [_____] Environmental Office.] Any temporary measures shall be removed after the area has been stabilized.

3.2.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3.1 Cofferdams, Diversions, and Dewatering Operations

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body. The Contractor shall comply with [the State of [_____] water quality standards and anti-degradation provisions] [and] [the Clean Water Act Section 404, Nation Wide Permit No. [_____]].

3.3.2 Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments. [Construction of stream crossing structures shall be in compliance with Clean Water Act Section 404, Nation Wide Permit No. [_____] .]

3.3.3 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands[.] [except as authorized herein. The Contractor shall be responsible for the protection of wetlands shown on the drawings in accordance with paragraph ENVIRONMENTAL PERMITS, REVIEWS, AND APPROVALS. Authorization to enter specific wetlands identified shall not

relieve the Contractor from any obligation to protect other wetlands within, adjacent to, or in the vicinity of the construction site and associated boundaries.]

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of [_____] rules.

3.4.4 Burning

[Burning shall be prohibited on the Government premises.] [Burning will not be allowed on the project site unless specified in other sections of the specifications or authorized in writing by the Contracting Officer. The specific time, location, and manner of burning shall be subject to approval.] [Fires shall be confined to a closed vessel, guarded at all times, and shall be under constant surveillance until contents have burned out or have been extinguished.] [Burning shall completely reduce the materials to ashes.]

3.5 HTRW AIR EMISSION CONTROL

The Contractor shall implement the following control(s) to meet or exceed performance levels identified in HTRW PERIMETER AIR MONITORING.

3.5.1 Air Emission Control to Meet Action Levels

[_____].

3.5.2 Excavation/Production/Processing Rate Reduction

[_____].

3.5.3 Exposed Surface Area Reduction

[_____].

3.6 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.6.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. [The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.] [Waste materials shall be hauled to the Government landfill site [shown on the drawings] [designated by the Contracting Officer].] [The Contractor shall comply with [site procedures] [Federal, State, and local laws and regulations] pertaining to the use of landfill areas.]

3.6.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 150 mm 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.6.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 [and shall manage and store hazardous waste in accordance with the [Installation] [Project Office] hazardous waste management plan]. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The

Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations.

The Contractor shall transport Contractor generated hazardous waste off Government property within [60] [_____] days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer [and the Facility Environmental Office]. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. [The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.] [The Contractor shall coordinate the disposition of hazardous waste with the [Facility's] [Project Office's] Hazardous Waste Manager and the Contracting Officer.]

3.6.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. [There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.] [Storage of fuel on the project site shall be accordance with all Federal, State, and local laws and regulations.]

3.6.5 Waste Water

Disposal of waste water shall be as specified below.

- a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water [off-Government property in accordance with all Federal, State, Regional and Local laws and regulations.] [or by collecting and placing it in a retention pond where suspended material can be settled out and/or the water can evaporate to separate pollutants from the water. The site for the retention pond shall be coordinated and approved with the Contracting Officer. The residue left in the pond prior to completion of the project shall be removed, tested, and disposed off-Government property in accordance with Federal, State, and local laws and regulations. The area shall be backfilled to the original grade, top-soiled and seeded/sodded. [The water in the retention pond shall be tested for [_____] and the results reviewed and approved by the Contracting Officer, prior to being discharged or disposed off-Government property].]
- b. For discharge of ground water, the Contractor shall [obtain a State or Federal permit specific for pumping and discharging ground water prior to surface discharging.] [surface discharge in accordance with all Federal, State, and local laws and regulations.] [surface discharge in accordance with the

requirements of the NPDES or State STORM WATER DISCHARGES FROM CONSTRUCTION SITES permit.] [land apply on the project site. Land application shall be in accordance with all Federal, State, Regional, and/or Local laws and regulations for pumping and land applying ground water.]

- c. Water generated from the flushing of lines after [disinfection or disinfection in conjunction with hydrostatic testing] [hydrostatic testing] shall be [land applied in accordance with all Federal, State, and local laws and regulations for land application] [discharged into the sanitary sewer with prior approval and/or notification to the Waste Water Treatment Plant's Operator].

3.7 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. [The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.] [The Contractor shall participate in the following recycling and waste minimization activities to divert non-hazardous solid waste: [____]].

3.8 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report to [____] through the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has been generated. The following shall be included in the report:

- a. Construction and Demolition (C&D) Debris Disposed = [____] in cubic meters, cubic yards or tons, as appropriate.
- b. Construction and Demolition (C&D) Debris Recycled = [____] in cubic meters, cubic yards or tons, as appropriate.
- c. Total C&D Debris Generated = [____] in cubic meters, cubic yards or tons, as appropriate.
- d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = [____] in cubic meters, cubic yards or tons, as appropriate.

3.9 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

[Existing historical, archaeological, and cultural resources within the Contractor's work area are shown on the drawings. The Contractor shall protect these resources and shall be responsible for their preservation during the life of the Contract.]If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their

significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.10 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.10.1 Fish and Wildlife

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations.

(A) Wild Life Encounters During Construction:

It is not anticipated that there will be an abundance of wild life encounters at the project site. However, should the Contractor discover animals living within the construction boundaries, operation shall be suspended at the site of discovery and continued in other areas. The Contractor shall notify the Contracting Officer and Biological Monitor immediately of the finding. Included with the notification shall be a brief statement to the Contracting Officer and Biological Monitor of the location and the findings. How to identify sensitive animals that may be discovered will be provided at the Preconstruction Conference.

(B) Desert Tortoise:

Contractor employees shall not touch, harm, harass, or kill desert tortoises. The Biological Monitor shall be notified immediately of all desert tortoise sightings. The Biological Monitor will be responsible for removing desert tortoises out of immediate dangers. Should construction activities threaten the survival of any desert tortoises, those activities will immediately cease until the Biological Monitor safely removes the tortoise(s). The Biological Monitor shall perform clearance surveys in all areas of planned disturbance. The Biological Monitor will be available to accompany construction crews during period of tortoise activity to provide protection of these animals and their burrows.

(1) The Contractor shall implement an employees environmental awareness program which will be provided to construction and operation employees with information to encourage awareness and preservation of the desert ecosystem and the resources found in the Western Mojave Desert. This information shall be distributed to and discussed with all employees during employee orientation sessions. This information shall also be provided to all visitors and subcontractors that will be on-site. The Contractor shall have all persons participating in the environmental awareness program sign and affidavit declaring that the individual understands and will adhere to the guidelines set forth in the program material.

(2) The Contractor shall develop a strict trash and litter control program. A litter control program shall consist of supplying an adequate number of covered trash and litter receptacles in all appropriate locations.

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations.

(C) Protection of Fish and Wildlife Resources:

(1) Kit Fox:

The Contractor shall do a pre-activity survey for Kit Fox presence that shall be conducted by a certified Kit Fox Biologist within 60 days physically starting construction of the project site. The survey shall cover all off road areas which will be impacted from ground disturbing activities associated with projects. The survey shall define a project zone for construction activities and exclusion zones shall be established around dens found within the project area. No ground disturbance or vehicle traffic is allowed within the exclusion zones. If an established roadway falls within an exclusion zone, vehicle traffic will be allowed only if critical need exists and alternate routes are not available. Foot traffic will be allowed for transit only when necessary and when alternate routes are not available. Exclusion zones will be based on the following criteria:

- a. Potential den, 15 m (50 feet) radius
- b. Known den, 30 m (100 feet) radius
- c. Known natal or pupping den, 45 m (150 feet) radius

(2) Dens

Potential dens are defined as dens (ground holes) having entrances of sufficient size to allow use by San Joaquin kit fox, and that occur in habitat suitable for kit fox. Known dens are those known to be currently inhabited by kit fox, or where kit fox have been observed in the past. Known natal or pupping dens are those dens where pregnant females or females with pups have been observed. The exclusion radius is measured from the center of a single den, or from the center of a group of dens.

(3) Zones

Exclusion zones shall be clearly staked, encircled with cord or tape, and flagged. Establishment of exclusion zones shall be done by a qualified wildlife biologist listed in submittal section.

(4) Vehicle Traffic

Construction activities shall be designed to minimize off road vehicle traffic. The contractor shall make use of existing roads, trails, and previously disturbed areas wherever possible. Parking and staging areas shall be clearly delineated to prevent unnecessary disturbance to the adjacent areas. All vehicle traffic shall be limited to 20 miles per hour, except where otherwise posted.

(5) Construction Activities

Construction activities shall be limited to the smallest possible area(s) of disturbance and night time construction activities are prohibited.

(6) Accidental Entrapment Measures

The following measures shall be implemented to avoid accidental entrapment of animals:

a. All steep-sided excavations greater than three (3) feet deep shall be covered or filled at the end of each working day or shall be equipped with earth or plank escape ramps. Escape ramps shall be placed at a 45 degree angle, 12 inches wide and continuous from the bottom of the excavation to the top.

b. All excavations shall be thoroughly inspected for animals prior to sealing or refilling to avoid accidental burial. Permanent and semi-permanent structures installed in ground or underground shall be constructed so that animals will not become trapped within.

c. Any pipe, culvert, or similar material with an inside diameter of four (4) inches or more shall be thoroughly inspected for animals prior to sealing or reconnecting. If animals are found inside the materials, the material shall not be used until the animal vacates or is conducted out of the area. Pipelines temporarily left open in place shall be covered or blocked until work is completed.

(7) Destruction of Dens

Planned, intentional destruction of dens may be allowed, but should be avoided except where absolutely necessary. Planned destruction of any den(s) shall require notification to the government representative who will provide written notification to the U. S. Fish and Wildlife Service, and shall require their concurrence. Intentional den destruction shall occur only under the direct supervision of a certified kit fox biologist.

(8) Restoration of Areas

Contour and restoration of disturbed areas shall be performed following the conclusion of a project or activity. All temporary excavations shall be filled in, contoured, and vegetated to restore as closely as possible the existing condition of the site(s). Construction shall be blended into the surrounding landscape and vegetated. Local or California native plant species shall be used. All trash, especially food-related items, shall be deposited in closed containers or bags and removed from the site daily.

(9) Toxic Chemicals

Use of toxic chemicals such as rodenticide and herbicides shall be in strict accordance with Federal, State, local, and Army regulations. Government approval is required for any pesticide use by the contractor or any of his subcontractors.

(10) Project Briefing

Project or activity supervisors will be briefed on environmental and

conservation procedures prior to commencement. The briefing will include information on endangered species and other environmental concerns and conservation measures. Supervisors will then be responsible for dissemination of this information to the project or activity personnel, and implantation of the procedures discussed.

(11) Encounters

Anyone encountering dead, injured, or trapped animal shall immediately notify their supervisor. The supervisor shall in turn notify the appropriate government representative. The following guidelines shall be observed:

a. Trapped animals: Cease activity in the immediate vicinity. Provide a ramp or other means of escape if practicable. ADO NOT attempt to grasp or hold a wild animal.

b. Injured animals): DO NOT ATTEMPT TO HANDLE THE ANIMAL! Note the type and severity of injury if possible, the location and the time the animal was found. Notify SATCOM personnel at (805) 238-8675.

c. Dead animals: DO not touch or move the carcass, and avoid disturbing the area around the carcass. Mark the location and notify SATCOM personnel at (805) 238-8675.

(12) Additional Requirements

a. No pets will be allowed on Camp Roberts or the SATCOM facility at any time.

b. Firearms are prohibited.

c. The contractor supervisors shall attend a one hour workshop on environmental and conservation procedures by the Government. The briefing shall include information on endangered species and other environment concerns and conservation measures. Supervisors shall then be responsible for dissemination of this information to the project tor activity personnel, and implementation of the procedures discussed.

d. Contractor shall use a wildlife biologist approved by the U.S. Fish and Wildlife Service and follow all requirements for the following: U.S. Fish and Wildlife Service, 1989, standardized recommendation for protection of the San Joaquin Kit Fox, April 1989; endangered Species Office, Sacramento, CA.

3.10.2 Protection of Endangered Trees:

(A) Endangered Trees within Project Site:

Due to the limited vegetation in the area, removal or relocation of plants shall be minimized. The Contractor shall obtain approval from the Contracting Officer before removing or relocating any endangered plants within the construction boundaries. One such plant is the Joshua Tree which is an endangered species. How to identify this tree and procedures for relocating those within the project site, are described as follows:

(B) Joshua Trees:

Only trees under 5 feet tall shall be moved using hand tools. Mark

North side of the tree and plant in same orientation. Using shovel, dig down to get main root mass (generally within 2 feet of surface). Try to get tap root and a fibrous water storage structure that it leads to. Take some of the soil to put in new hole. Roots should be dusted with sulfur to prevent rot. A small amount of manure can be mixed in with soil when replanting. Soil should be tamped down and a small berm placed around plant 5-foot diameter. Water with several gallons. Stake in 2 directions to prevent wind from knocking down. If not transplanted right away, "heel in" the plant (lay them on their side and cover roots with soil). Very large Joshua Trees (10-20 feet tall) shall not be moved but be detoured around by the utilities. If plants need relocation areas, they can be used in landscaping around the base.

3.11 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the Installation Pest Management Coordinator (IPMC) Project Pesticide Coordinator (PPC) at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the [IPMC] [PPC] and receive concurrence from the [IPMC] [PPC] through the COR prior to the application of any pesticide associated with these specifications. Installation Project Office Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. [For termiticide requirements see Section 02364 TERMITICIDE TREATMENT MEASURES FOR SUBTERRANEAN TERMITE CONTROL.] The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.11.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.11.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.11.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the clothing and personal protective equipment specified on the labeling for use during all phases of the application. Material Safety Data Sheets (MSDS) shall be available for all pesticide products.

3.11.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified Applicator shall wear clothing and personal protective equipment as specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor

shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

3.12 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.13 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.14 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.15 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.16 CONTAMINATED MEDIA MANAGEMENT

Contaminated environmental media consisting of, but not limited to, ground water, soils, and sediments shall be managed in accordance with Section [_____].

3.17 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --