ENVIRONMENTAL QUALITY

1982

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

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ABOUT THE COVER . . . . Camp Lejeune has approximately twelve miles of beaches. Although essential to amphibious training the beaches, associated duneland and marshes have sensitive environmental protection requirements.

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ACTIVITY DESCRIPTION

MISSION

Marine Corps Base, Camp Lejeune, the world's most complete Amphibious Training Base, is situated on the southeast coast of North Carolina with a twelve-mile ocean front extending from Bear Inlet to New River Inlet and encompasses approximately 170 square miles of land and water.

Established in 1941 and named in honor of Lieutenant General John A. Lejeune, the base houses four Marine Corps Commands and two Navy Commands; Marine Corps Base; 2d Marine Division, FMF; 2d Force Service Support Group (Rein), FMFLant; Marine Corps Air Station, (Helicopter), New River; Naval Regional Medical Center; and Naval Regional Dental Center.

The mission of Marine Corps Base, Camp Lejeune, is as follows:

a. Provide housing, training facilities, logistic support and certain administrative support for Fleet Marine Force units and other units as assigned.

b. Conduct specialized schools and other training as directed.

c. Receive and process personnel as assigned and conduct individual combat training as directed.

The present military population of Camp Lejeune is approximately 36,700 military personnel, augmented by approximately 4,000 civilian employees. Military dependents are in excess of 23,100 on and off base.

History - Prior to 1941, the land of Camp Lejeune was private-owned. Tracts ranged in size from less than an acre to several thousand acres. There were approximately 6,000 acres of cleared land with most of the woodland having been cut over and denuded of timber. There was little or no fire protection, and the wildlife habitat generally was poor. After government ownership in 1941, with the implementation of multiple-use management programs, environmental conditions for flora and fauna and man have improved steadily.

Topography - The topography of the base is typical coastal plain ranging in elevation from sea level to 70 feet above. Surface relief ranges from flat, savannah-like to gentle rolling. Deep wooded forests characterize the better upland sites while most of the branches and watercourses are headed by inaccessible swamps and pocosins. The principle watershed drainage areas are New River,

Soils - There are 25 different soil series of varying structures ranging from sandy loam to fine sand and muck, but the soil type generally is classified as sandy loam. Some of the soil is low in organic matter and fertility, but most of the land produces abundant crops of timber and forage for wildlife. In 1965 the Soil Conservation Service conducted a low-intensity soil suitability survey of woodlands on the reservation. This survey was updated in 1974 and 1981. Soils were also rated as to their game potential. This makes it possible to compare present timber stands with appropriate soil suitability map to determine optimum management. This data is valuable in establishing vegetative cover programs and improved drainage as it relates to requirements for improved forestry and fish and wildlife programs.

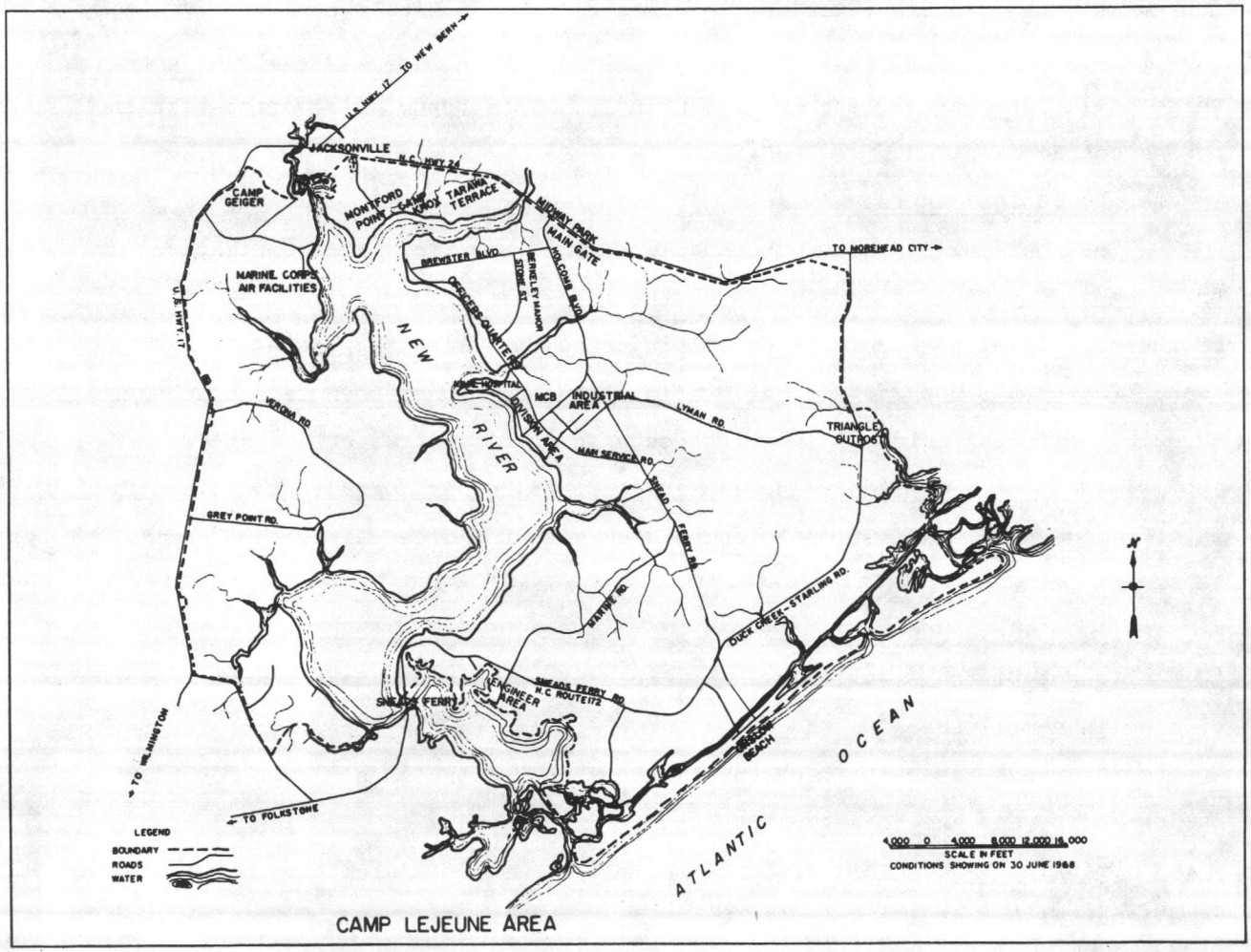
Climate - Located just below the 35th parallel of latitude, Camp Lejeune has a mild climate. Summers are from mild to hot and humid. Winters are fairly mild with the temperature frequently dropping below freezing. Snow is the exception rather than the rule. Average annual precipitation averages 52 inches while the average temperature is 61 degrees. There is a long growing season, approximately 230 days.

Vegetation - Vegetation on the base is typical of the southeastern coastal plain. Extensive tracts of both pure pine and pine-hardwood mixtures dominate the landscape. Pines consist of loblolly and longleaf, while the hardwoods are represented by southern red oak, white oak, turkey oak, willow oak, red gum, typelo gum, hickory, etc. The upland swamps, commonly referred to as pocosins, are overgrown with fetter bush, cyrilla, pond pine and greenbrier.

LAND UTILIZATION (ACRES)

Marine Corps Base			83,047
Improved Grounds		6,730	
Semi-Improved Grounds		5,014	
Unimproved Grounds		71,303	
Woodland	58,077		
Roadside Zones & Streams	2,523		
Tidal Marsh	3,326		
Coastal Beach	1,645		
Wildlife Food Plots	285		
Impact Areas	5,447		
Marine Corps Air Station, New River			2,672
Improved Grounds		1,535	
Unimproved Grounds		1,137	

Helicopter Outlying Landing Field, Oak Grove		976
Improved Grounds	331	
Unimproved Grounds	645	
Total Land Area		86,695
Water		25,764
GRAND TOTAL		112,459



SUMMARY OF ENVIRONMENTAL ACCOMPLISHMENTS DURING 1980-82

GENERAL

Oil pollution abatement and hazardous waste disposals were the most active areas of environmental protection effort during 1980-82. Implementation of a project to construct over $8 million of water pollution abatement facilities has been a major step forward. Implementation of Environmental Protection Agency (EPA) and North Carolina hazardous waste regulations promulgated under the the Resource Conservation and Recovery Act has required a large amount of time and effort. Traditional programs of environmental protection such as solid waste disposal, noise pollution control, etc. were continued. This report will cross-section base accomplishments during 1980-82.

Air Pollution Control

Open burning has been suspended with the exception of fire fighting training and prescribed burning under the forest management plan. Development of the capability to burn coal or oil in compliance with the Clean Air Act has been effected at the Base Central Heating Plant. This has been accomplished through the installation of the electrostatic precipitators at a cost of approximately $1.8 million. The 2d Marine Division has upgraded the classified materials disposal facilities in compliance with the Clean Air Act. Permits have been obtained for all #6 oil-fired and coal-fired boilers.

Water Pollution Control

Sewage Disposal - All seven of the base sewage treatment plants are operating in compliance with the Clean Water Act and required permits. The Sewage Treatment Branch has a staff of 45 operators and supervisors. Over 2.5 billion gallons of sewage are treated annually.

Drinking Water - All eight of the potable water systems are opertated in compliance with the Safe Drinking Water Act. Monitoring requirements are met. The Water Treatment Branch has a staff of 46 operators and supervisors. Over 2.5 billion gallons of water are producted annually. The Water Quality Control Laboratory was recertified in February 1981, by the State of North Carolina for membrane filter analysis of coliform bacteria in drinking water. In August 1981, the certification was expanded to include the most probable number analysis of coliform bacteria. Facilities have been provided to connect pollution sources identified in the National Pollutant Discharge Elimination System (NPDES) permit

and a related compliance agreement between the Environmental Protection Agency and the Base to the sanitation sewer. Pollution abatement facilities are maintained by Base Maintenance Division. Over 100,000 gallons per year of waste oil are collected for recycling.

Soil Erosion and Sedimentation - Each year approximately $100 thousand is identified in the Base Maintenance budget to correct existing and new erosion problems. Priorities for projects were established in the Natural Resource Management Plan developed in 1974 by the Base in cooperation with the Soil Conservation Service under a cooperative agreement with the Onslow Soil and Water Conservation District. Proposed sediment basins and use of leaves/pine straw for erosion and sediment control at landfills have been implemented.

Noise Pollution Control - The Occupational and Preventive Medicine Service of the Naval Regional Medical Center is responsible for establishing and maintaining a hearing conservation program. In the past three years, 60,000 hearing tests were conducted. Base Training officials continue to carry out a program to reduce adverse impact of noise from live-firing on the surrounding civilian community.

Radiation Pollution Control - Monitoring and response to radiation emergencies or problems is carried out by the Industrial Health Service, Naval Regional Medical Center in cooperation with the Base Safety Officer. Base Safety personnel have received additional training in radiation safety.

Solid Waste Management - Non-recyclable waste is placed in the sanitary landfill and covered daily as required by state regulations. Compaction equipment has been installed at key locations aboard the installation. This equipment reduces the need for dumpsters, aids handling and provides better utilization of the landfill. Modern compactors are used at the landfill to spread and compact the refuse and garbage as it is emptied. The Onslow County sheltered workshop's "Coastal Opportunities Resource Recovery Plant" located on-board base celebrated it's sixth anniversary on 10 September 1982. Required site approval and operating plans for Base sanitary landfill were obtained from the State of North Carolina.

TOXIC AND HAZARDOUS MATERIAL MANAGEMENT

The use of pesticides aboard base is controlled in accordance with the Federal Insecticide, Fungicide and Rodenticide Act. Pesticides are applied only

by properly trained and certified personnel. Hazardous material and waste are managed in accordance with the requirements of the federal and related state regulations. Clean Water Act, Toxic Substances Control Act and the Resource Conservation and Recovery Act. Long-term storage facilities for hazardous waste awaiting disposal were constructed. Base instructions were developed and a GS-9 Ecologist billet established to implement the program.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT PROGRAMS

Wildlife specialists from North Carolina State University are currently conducting plant population studies in the Quail Management Area.

ENVIRONMENTAL ENHANCEMENT

Camp Lejeune's goals and objectives are to do more than meet the minimum requirements of environmental laws and programs. Constant attention is given to landscaping and beautification. Energy conservation and new technology, for example solar heating, are an important part of project and program development. The base forestry and wildlife programs are the main mechanisms for environmental enhancement on non-improved grounds. A major effort was made during the 1980-82 period to incorporate environmental protection into military training exercises.

ENVIRONMENTAL EDUCATION

Implementation of environmental programs has been accomplished through publishing Base Orders which provide background information and establish responsibilities and procedures for achieving objectives of and compliance with local, state and federal requirements. Appendixes (A) through (I) contain current Base Orders which are crucial to local implementation in an orderly manner. Additionally, base environmental personnel provide both group and one-on-one guidance to military and civilian personnel within all commands located at Camp Lejeune.

SPECIFIC PROJECTS AND ACHIEVEMENTS FOR 1982

1. Staffed a new ecologist (GS-9) billet in Natural Resources to implement hazardous material/waste management/disposal and oil pollution abatement programs.
2. Established a new environmental engineer (GS-12) billet at Assistant Chief of Staff, Facilities to serve as staff advisor on environmental engineering, energy conservation, environmental impact assessment, and regional land use planning.

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3. Published Base Order 6240.5 (Appendix A) establishing central disposal system for hazardous material/waste procedures and responsibilities to be followed in implementation of the Resource Conservation and Recovery Act requirements.

4. Published Base Order 11090.3 which assigns responsibilities for operating, maintaining and repairing oil pollution abatement facilities located throughout the installation.

5. Completed construction required to upgrade existing facilities and to provide new storage facilities for hazardous waste/material awaiting disposal per the Resource Conservation and Recovery Act.

6. Accomplished disposal of several hundred polychoriated biphenyls (PCB) and PCB contaminated transformers at an EPA approved disposal site.

7. Completed a base-wide survey of past hazardous waste disposal and spill sites under the Navy Assessment and Control of Installation Pollutants (NACIP) Program.

8. Obtained operating permit from the State of North Carolina for the base sanitary landfill.

9. Conducted hazardous material certification training for 18 individual employees of base and base tenant commands.

10. Completed construction at 114 locations which provided a total of 147 oil/water separators; sewer connections for wastewater collection from existing wash/lube racks; new wash racks; waste oil storage tanks; Oil Spill Prevention Control and Countermeasures (SPCC) structures; sewer connections for wastewater from blowdown at heating plants and backwashes at water plants and pool, etc.

11. Completed installation of two access ramps for amphibious vehicles on New River for the purpose of controlling erosion and sedimentation.

12. Completed design of a project to prevent and reduce sedimentation pollution associated with stream crossings for tracked vehicles.

13. The following testing program of base drinking water supplies was completed as required by the Safe Drinking Water Act during 1982:

a. Trihalomethane (TTHM) content in all eight water systems.

b. Inorganic contaminants, including ph, lead, and manganese, in all eight water systems.

c. Sodium and corrosivity in all eight systems.

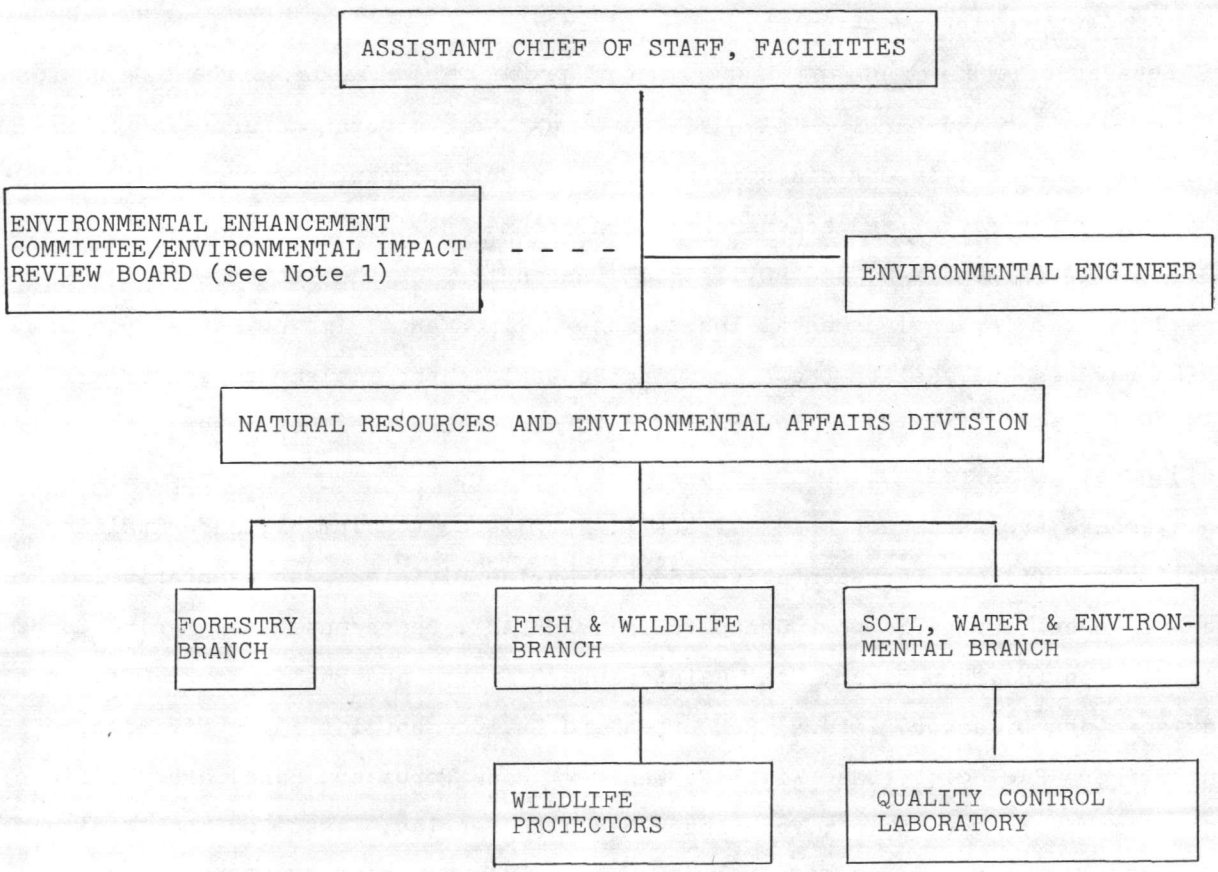
d. In addition, weekly and daily monitoring requirements by the Act are being carried out.

14. Completed an in-house inventory of forest land which provides current age, forest types, and management classification of timber stands for use during natural resource and environmental management and planning.

ORGANIZATION

The Assistant Chief of Staff, Facilities exercises staff cognizance over all matters pertaining to environmental protection and responsibility for management of environmental affairs. Implementation of environmental protection programs is accomplished primarily through the Natural Resources and Environmental Affairs Division. However, other Base organizations provide significant contributions. The Natural Resources and Environmental Affairs Division was organized in October 1972 as the lead organization on environmental affairs.

Current organizational structure is shown below:



Note 1: This committee consists of officers and staff specialists from base, base tenant commands, Marine Corps Air Station (H), New River and Naval Regional Medical Center, Camp Lejeune. (See Appendix C).

NATIONAL ENVIRONMENTAL POLICY ACT IMPLEMENTATION

Significant progress was made during the 1980-82 period in clarification of local responsibilities for implementation of requirements of the National Environmental Policy Act (NEPA). NEPA requires federal agencies to use all practicable means and measures to protect the environment as the agencies endeavor to carry out their assigned missions. The spirit of NEPA is to ensure that environmental impact is considered along with other factors in planning and decision making processes. When an action by a federal agency significantly affects the environment, the responsible official must describe the impact in the form of a written statement.

Because of the extent and dispersion of protected wetlands, streams, endangered species habitat and barrier islands, there must be a constant awareness by base training and facility officials on the environmental impact of proposed actions. Procedures for review and assessment of environmental impact are outlined in BO 11000.1A (Appendix B) and BO 11015.2G (Appendix C). The latter establishes the Committee for Environmental Enhancement/Environmental Impact Review Board which advises and assists the Commanding General in the implementation of NEPA and the conservation and management of natural resources. The membership of this panel is as follows:

Members are Assistant Chief of Staff, Facilities (Chairman); Base Training Facilities Officer; Representative, Second Marine Division; Representative, Second Force Service Support Group (REIN), FMFLANT; Representative, Marine Corps Air Station (H), New River; Base Maintenance Officer; and Public Works Officer. Advisors are Director, Natural Resources and Environmental Affairs Division; Supervisory Ecologist; Base Wildlife Manager; Base Forester; Base Safety Officer; Base Game Protector; Chief, Veterinary Medicine Service, Naval Regional Medical Center; Representative, Staff Judge Advocate; Defense Property Disposal Officer and the Environmental Engineer.

PROTECTION OF ENVIRONMENTAL ASSETS AND NATURAL RESOURCES DURING TRAINING IS A NEVER ENDING PROCESS. BECUASE OF FREQUENT TURNOVER OF MILITARY PERSONNEL, ENVIRONMENTAL EDUCATION IS AN ESSENTIAL PART OF ACHIEVING COMPLIANCE WITH GOALS AND OBJECTIVES OF THE MARINE CORPS ENVIRONMENTAL PROTECTION PROGRAM.

AIR POLLUTION CONTROL

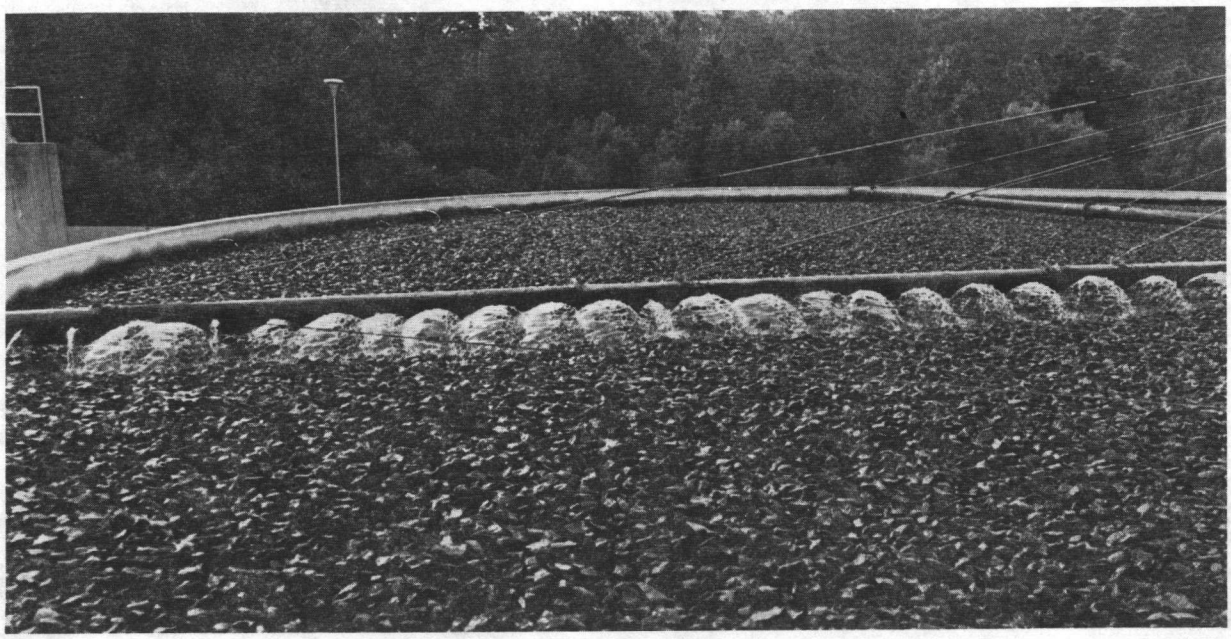
Although air pollution in Camp Lejeune is not considered to be a serious problem, as the area is rural with few industrial sources of air pollution, the base program objectives are to operate all facilities in compliance with air pollution control regulations. Over 200 sources have been listed with the State Environmental Management Commission and EPA. Air quality considerations are evaluated during assessment of proposed new facilities. All heating plants in operation aboard base utilize low sulfur fuel as an air pollution prevention measure. State permits required under the Clean Air Act have been obtained for all #6 fuel oil or coal-fired boilers at base heating plants.

WATER POLLUTION CONTROL

BACKGROUND

Water pollution control at Camp Lejeune was the major focal point of the environmental program during the 1980-82 time period. With over 100 miles of streams and 3,000 acres of tidal marsh dispersed widely about the base, discharges of water-borne pollutants are an immediate threat to highly sensitive wetland acquatic ecosystems. Wetland ecoystems on Camp Lejeune can be separated into five habitat types: (1) Pond Pine/Pocosin; (2) Sweetgum/Water Oak, Cypress and Tupelo; (3) Sweetbay/Swamp Black Gum and Red Maple; (4) Tidal Marshes and (5) Coastal Beaches. Acquatic ecosystems vary from the saltwater ocean to brackish tidal affected areas to freshwater streams and ponds. For the most part, development at Camp Lejeune is located on better drained soils found in close proximity to New River (and its tributaries) and the Intra-coastal Waterway. Sewage treatment plants by design discharge treated effluent directly into New River and the Intra-coastal Waterway.

SEVERAL THOUSAND ACRES OF SENSITIVE ESTUARINE AREAS ARE LOCATED ABOARD CAMP LEJEUNE. PROTECTING THESE FROM WATER POLLUTION IS A MAJOR OBJECTIVE OF THE BASE ENVIRONMENTAL PROGRAM.



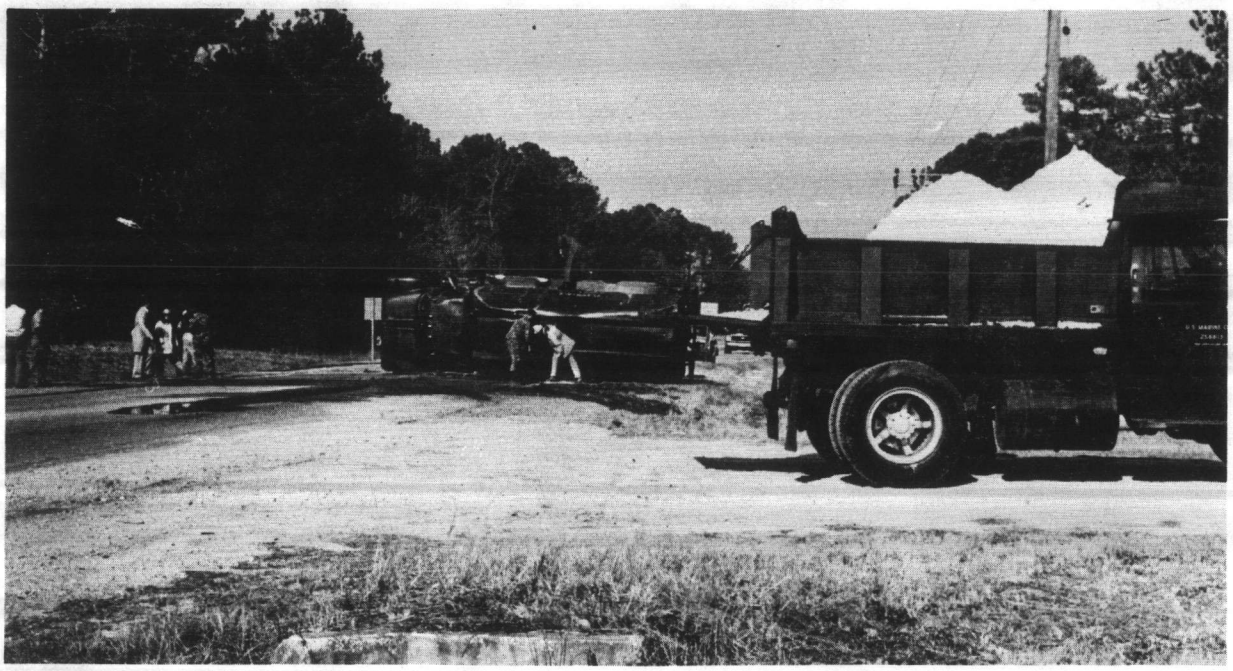
SIGNS SUCH AS THIS ARE ONE OF THE TOOLS USED TO EDUCATE PERSONNEL OF CURRENT ENVIRONMENTAL REGULATIONS. ULTIMATE RESPONSIBILITY FOR PREVENTING HAZARDOUS WASTE AND OTHER POLLUTANTS FROM BEING DISCHARGED INTO THE ENVIRONMENT LIES WITH WORKING LEVEL EMPLOYEES.

BIOLOGICAL ACTION OF ALGAE GROWING ON THE SURFACES OF THE ROCKS IN TRICKLING FILTERS AT BASE SEWAGE TREATMENT PLANTS ARE ESSENTIAL TO REMOVAL OF POLLUTANTS. PROTECTING THESE FILTERS FROM DAMAGE OF OIL AND OTHER HAZARDOUS SUBSTANCES IS AN IMPORTANT OBJECTIVE OF THE ENVIRONMENTAL PROGRAM.

In addition to surface waters, ground water tables require protection from contamination by petroleum products and other substances. With a water table aquifer near the surface and the lack of any continuous impermeable layers to prevent downward migration of pollutants, significant potential for pollutants groundwater exists. Groundwater is the primary source of drinking water at Camp Lejeune and the surrounding civilian community.

TYPES AND SOURCES OF WATER POLLUTION

Camp Lejeune environmental program traditionally focused on the following five sources or types of pollution: sewage treatment plant; backwashes and blowdown from pools, water treatment plants, and heating plants; POL's and other hazardous materials discharged from equipment and vehicle maintenance shops and associated washracks; erosion and sedimentation from construction, dirt roads and other land disturbing activities and oil and other hazardous material spills. Another new concern is the potential for water pollution from areas aboard base which were used to dispose of hazardous material or substances during the 1940-1970 time periods. This issue will be discussed later under "Toxic and Hazardous Material Management" section.



BASE FIREMEN RESPONDING TO THIS 1981 SPILL QUICKLY CONTAINED THE 3,000-GALLON SPILL WITH HAND SHOVELS. NONE REACHED A STREAM. A BASE MAINTENANCE TRUCK LOADED WITH ABSORBANT MATERIAL FOR SPILL CLEANUP IS SHOWN IN THE FOREGROUND.

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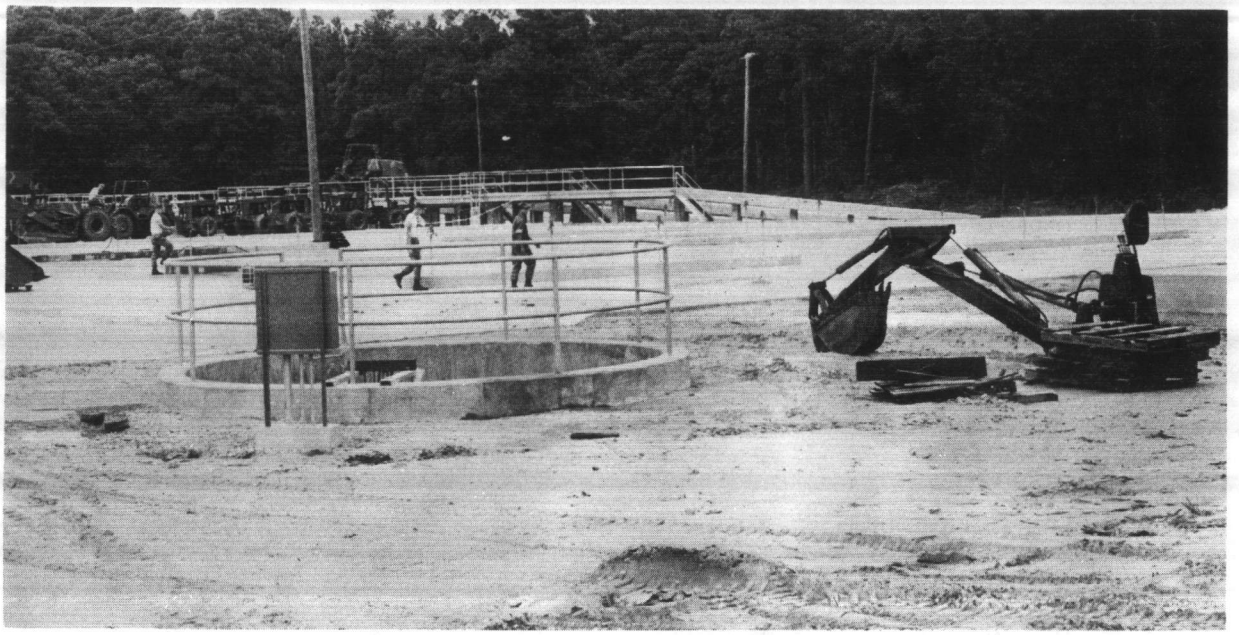
WASTE COLLECTION, PRETREATMENT, TREATMENT AND DISPOSAL

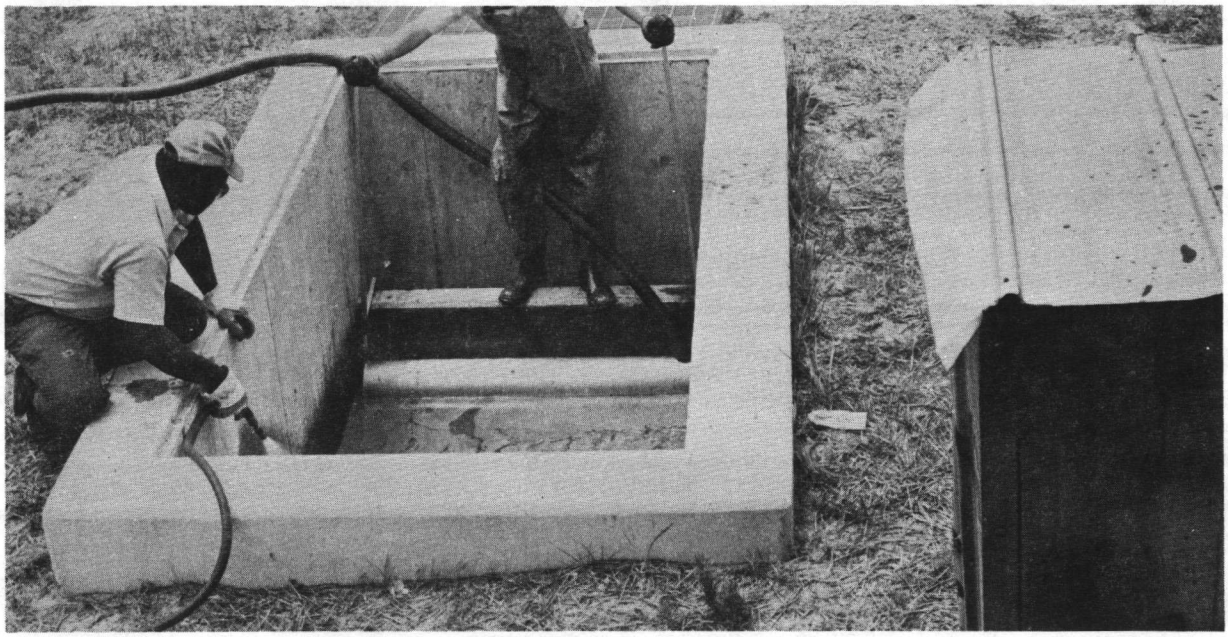
A minimum of secondary treatment is accomplished at all the seven sewage treatment plants at Camp Lejeune. Rotating trickling filters at each facility have provided the capability to process waste at a high state of purity, obtaining an efficiency of 90% for biochemical oxygen demand and suspended solids removal. This discharge of approximately seven million gallons of wastewater daily from the sewage treatment system without degradation of the water quality of New River. To help improve the qualifications of sewage treatment plant operators, all recently employed personnel are engaged in a two year on-the-job training program. The final step of the training requires the employee to pass the Wastewater Treatment Operator Examination (Grade II) administered by the State of North Carolina. Thirty-seven of the forty-five Sewage Treatment Section employees have passed examinations for certification with grades ranging from I to IV.

A computerized utility control system monitors sump high level and power failure at 24 major sewage lift stations at Camp Lejeune. Lift stations and sewage plants are equipped with emergency power in case of commercial power outages. Continuous attention and control at these sewage plants by qualified personnel assure that effluents meet requirements of EPA and the State of North Carolina requirements contained in the Base National Pollutant Discharge Elimination System (NPDES) permit. In an effort to reduce possible oil and grease contamination of New River, oil/pollution abatement facilities have been installed throughout the Base. Generally the effluents from these facilities have been connected to the sewage system. Treating this waste to operating and maintaining the pollution abatement facilities has been a major undertaking. Appendix H outlines the efforts which have been expended to ensure that the trickling filters and other biological sewage treatment processes are not damaged by excessive discharges of waste.

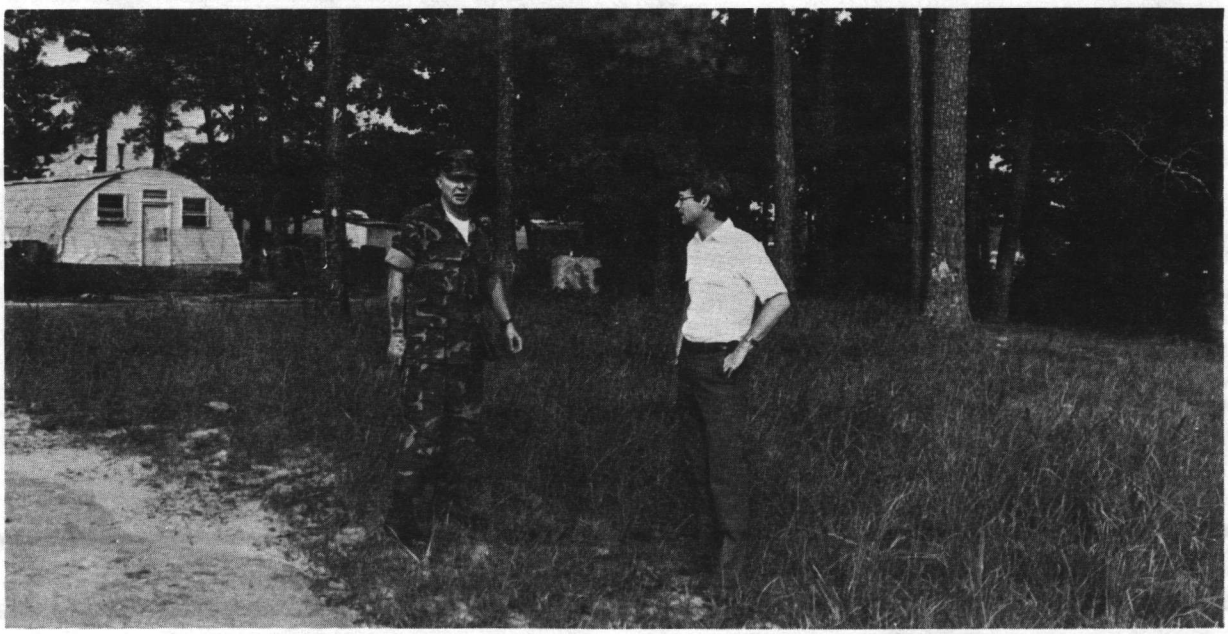


COMPLETION OF THE ABOVE CONSTRUCTION HAS PROVIDED A MODERN WASHING FACILITY AND LUBE RACKS FOR HEAVY TACTICAL EQUIPMENT. THE STORAGE TANK IN THE FOREGROUND COLLECTS WASTEWATER CONTAINING OIL AND SUSPENDED SOLIDS.

WASTEWATER IS BEING COLLECTED BY A SEDIMENT BASIN. THE BASIN COLLECTS GRIT, SAND, ETC. AND DISCHARGES WATER TO SANITARY SEWER THROUGH STORM WATER STORAGE TANK. THESE CONSOLIDATED FACILITIES ARE ENHANCING MAINTENANCE OF EQUIPMENT IN ADDITION TO PREVENTING WATER POLLUTION.



SKIMMING WASTE OIL FROM NEWLY CONSTRUCTED OIL WATER SEPARATORS AND CLEANING OF ASSOCIATED GRIT CHAMBERS HAS BEEN A MAJOR NEW ADDITION TO THE BASE MAINTENANCE WORK LOAD. MAINTAINING NEW POLLUTION ABATEMENT FACILITIES IS ONE OF THE MOST SIGNIFICANT ACCOMPLISHMENTS DURING 1980-1982.



BASE ENVIRONMENTAL PERSONNEL ROUTINELY PROVIDE COURTESY VISITS TO MILITARY FACILITIES TO EXPLAIN REGULATIONS AND TO ASSIST OFFICERS-IN-CHARGE TO IDENTIFY DISCREPANCIES.

Recent completion of a MILCON project which constructed industrial waste collection and treatment facilities at 147 sites has led to substantially reduced discharges of lubricating, hydraulic fluid and fuel oils into the environment from existing facilities at Camp Lejeune. Control of oil pollution is accomplished by the installation of fuel containment devices and oil/water separators at fuel unloading depots and vehicle/aircraft maintenance facilities around the Camp Lejeune - Marine Corps Air Station (H), New River, complex. The oil/water separators pretreat routine wastewater discharges that are routed to sewage treatment plants. Although some oily waste can be treated at the sewage treatment plant, the oil/water separators protect the sewage treatment process by removing free oils which in quantity could reduce the effectiveness of the plant. Fuel containment devices simply corral pollutants that are accidentally released and would otherwise create a "spill" condition.

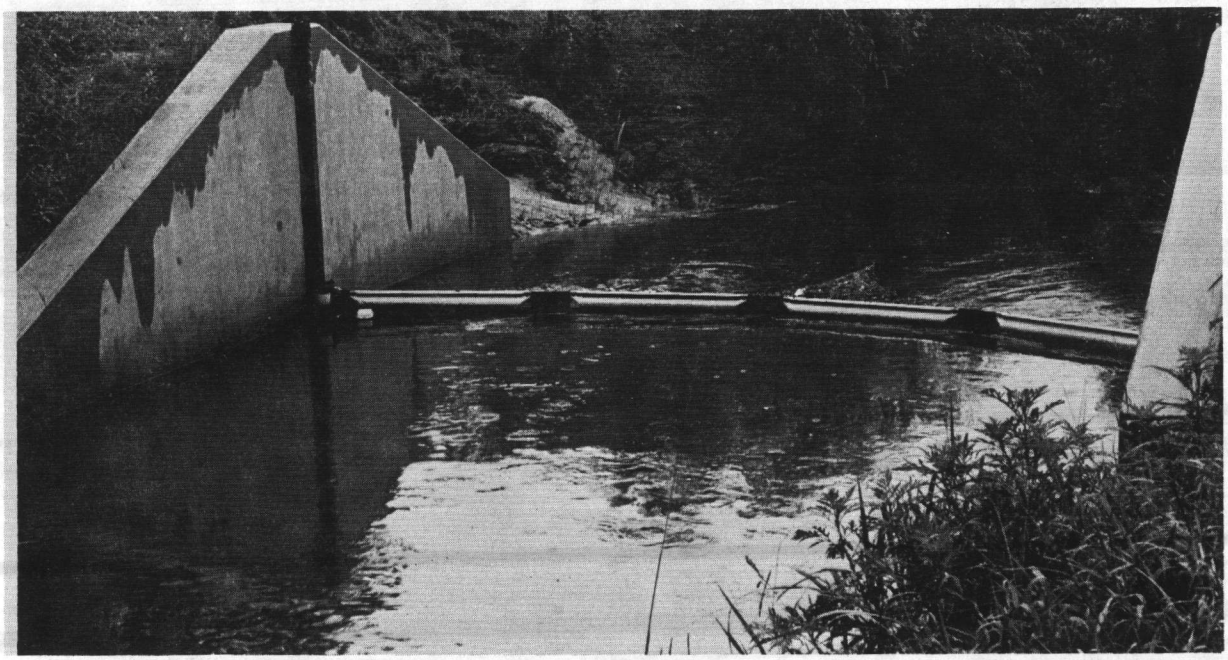
Other pollution abatement facilities include non-corrosive storage containers for waste oil and used battery acid. Sanitary sewer connection for wastewater from swimming pools and water treatment plants having unacceptable levels of pH or suspended solids.

OPERATION AND MAINTENANCE OF OIL POLLUTION ABATEMENT FACILITIES

Military Construction Project (P-996), industrial waste collection and treatment facilities, alone involves the expenditure of an excess of $8 million. New maintenance shops will include additional facilities. Mobilization to maintain these new facilities was a significant accomplishment during 1982. Failure to keep trash and debris out of pollution abatement devices can lead to pipe blockage that results in wastewater bypasses to the environment. Also, excessive accumulation of oil in these devices can result in release to the sewage treatment plant or to the environment. Inspections must be performed frequently to check the operation of pollution abatement devices and to remove trash, debris, oils and other foreign materials. Responsibilities for the operation and maintenance of pollution abatement devices have been established by BO 11090.3 (See Appendix H). New equipment has been either purchased or fabricated for use by Base Maintenance Division personnel who routinely service waste oil tanks, grit chambers, oil/water separators and associated structures.

OIL AND HAZARDOUS MATERIAL SPILL PREVENTION

The transportation and use of fuel oils, lubricants and other hazardous material is an inherent part of military organizations. While the risk of serious environmental consequences can be for the most part eliminated at permanent storage facilities and shops, spills will continue to occur. Appendix F outlines the base program to prevent spills and to respond to those that occur. As previously discussed, most storage facilities and fuel dispensing areas have been equipped with fuel containment structures. Additionally, routine maintenance of oil pollution abatement facilities is improving expertise of working level personnel to tasks routinely carried out during cleanup of spills. Many, possibly a majority, of small spills are not contained within pollution abatement devices. Through increased awareness, spills are promptly reported, responded to, contained and cleaned up. Close working relationships with personnel of the United States Coast Guard and the North Carolina Department of Natural Resources and Community Development are maintained. While the possibility of large spills during bulk fuel transport and ship-to-shop unloading exercises cannot be eliminated, the adverse environmental impact can be minimized.



RECENTLY CONSTRUCTED OIL SKIMMER BOOM PROVIDES PERMANENT, 24-HOUR PROTECTION TO SOUTHWEST CREEK FOR POSSIBLE SPILLS OCCURRING AT MARINE CORPS AIR STATION (H), NEW RIVER.

USE OF PINE STRAW AND LEAVES COLLECTED IN INDUSTRIAL AND HOUSING AREAS HAS PROVEN TO BE A VERY ECONOMICAL AND EFFECTIVE WAY TO ACCOMPLISH TEMPORARY EROSION CONTROL AT THE BASE LANDFILL.

WASTE OIL RECYCLING

During 1982, approximately $150 thousand in proceeds from the sale of 156,000 gallons of waste by the Defense Property Disposal Office was returned to Base for use on environmental protection projects. A portion of the fund was utilized for the purchase of a new waste oil collection truck. Approximately 75 waste oil collection tanks are located throughout Camp Lejeune and Marine Corps Air Station (H), New River. Waste oil collected in pollution abatement devices is skimmed off and collected for safe disposal as waste oil. Prior to disposal, the waste oil is tested by a commercial laboratory to determine what contaminants are present and management considerations relative to requirements of current hazardous waste regulations.

OIL POLLUTION ABATEMENT TRAINING

Federal legislation and the promulgation of regulations by the Environmental Protection Agency and state and local regulatory agencies pose an increasingly complex maze of base environmental guidelines for officers in charge of

maintenance shops. Field personnel are not generally familiar with the specific types of pollution abatement equipment recently installed as discussed previously. As a result, in 1982, a permanent ecologist position was staffed for the purpose of promoting environmentally sound management and disposal of petroleum products and other hazardous materials. The primary function would be to provide technical assistance and conduct monitoring of shops routinely handling hazardous material. During 1982, approximately 60 shops were visited at least once. On an average, two supervisory level personnel at each shop were involved along with appropriate working level personnel. The purpose of the on-site monitoring visit is as follows:

1. Provide educational training and written materials (i.e., Base Orders) to supervisory personnel at work sites and identify actions needed to achieve compliance with environmental regulations.

AN EROSION PROBLEM CAUSED BY TRACKED VEHICLES IS BEING INSPECTED BY A PLANNER AND ESTIMATOR TO DETERMINE NEEDED CORRECTIVE WORK. BECAUSE OF INCREASED TRAINING ACTIVITY, MAINTENANCE OF DIRT TRAILS AND GROUNDS IN MILITARY TRAINING AREAS HAS BECOME A MAJOR ASPECT OF THE BASE ENVIRONMENTAL PROTECTION PROGRAM.

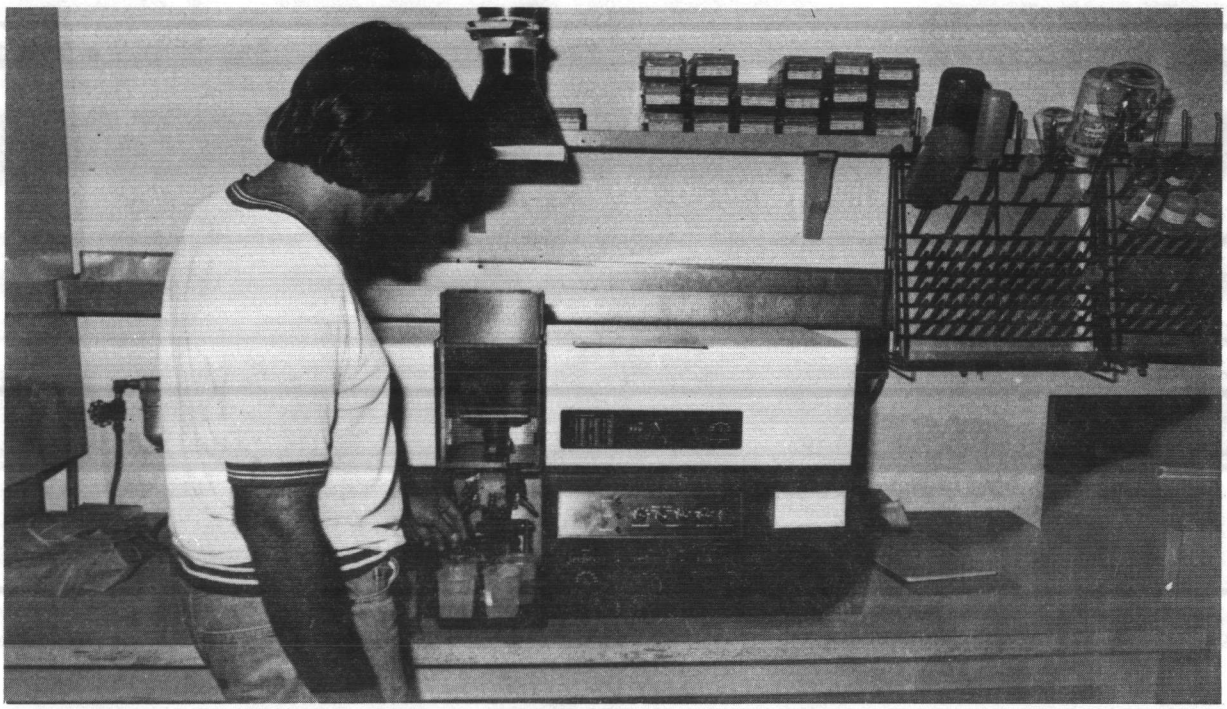
2. Determine locations where hazardous materials are routinely used and document the need for upgraded or additional facilities to properly store/dispose of such items.

3. Identify materials requiring specialized disposal according to the Resource Conservation and Recovery Act.

4. Provide guidance for the operation and pollution abatement facilities.

5. Provide guidance for the reporting and response procedures for oil/hazardous material spills.

6. Provide upchannel reporting about environmental deficiencies related to existing pollution abatement devices or the need for additional facilities. Written records of the monitoring visits are provided to the shop supervisor and to the organization's Hazardous Material Disposal Coordinator. Responses of maintenance supervisors have been positive and the two-way communication channels established between base and tenant commands are having encouraging results for environmental quality at Camp Lejeune.



DETERMINING THE PRESENCE OF POLLUTANTS IN DRINKING WATER, GROUND WATER AND SURFACE WATER OFTEN REQUIRES THE USE OF SOPHISTICATED MACHINERY AND TECHNIQUES. THE BASE LAB IS CAPABLE OF RUNNING ROUTINE ANALYSIS. THIS CAPABILITY ENABLES PROPER AND TIMELY ADJUSTMENTS WITHIN THE DAILY OPERATION OF BOTH DRINKING WATER TREATMENT AND SEWAGE TREATMENT PLANTS.

5

SOIL EROSION

The forces of nature (wind, tide and wave action) cause some erosion at Onslow Beach and certain points along the banks of New River. Stone, concrete and masonry rubble from demolished buildings have been used to eliminate part of the New River bank erosion problem. This work has been approved by the District Officer, U. S. Army Corps of Engineers, Wilmington, North Carolina.

It has been recognized that some damage or wear and tear occurs to inland areas due to the nature of military training. For example, natural vegetation is damaged and soil disturbed, resulting in a potential soil erosion problem. To avoid unnecessary damage incidental to field training, tracked vehicles have been restricted to designated training areas and access trails. The Soil Conservation Service, through a cooperative agreement between Marine Corps Base and the Onslow Soil and Water Conservation District, made a survey of all soil conservation problem areas during the summer of 1974. Prescriptions were made for 230 different sites and information was incorporated into the Long Range Multiple-Use Natural Resource Management Plan. Base Maintenance has completed a portion of the work; however, experience has shown that much of the work will require use of special projects. For example, a project designed by the Public Works Department provided two amphibious vehicle landing ramps. Also Base Maintenance and Public Works personnel developed a $750 thousand project to correct pollution problems associated with use of tracked vehicles for which design has been completed. A similar type project for the 1800 area of Hadnot Point was identified during 1982. Efforts to develop a dirt road maintenance plan to solve the numerous minor erosion problems on dirt roads has been initiated.

DRINKING WATER AND GROUNDWATER QUALITY

The drinking water monitoring program aboard the Camp Lejeune complex expands beyond the Safe Drinking Water Act requirements. Groundwater quality is checked regularly. Test wells are located around the closed and active landfills. Samples are regularly pulled from these wells and analyzed for possible chemical leaking from the landfills. The quantity of bacteria in the drinking water is checked weekly, with the monthly total of samples examined exceeding requirements of the state which has primacy for implementing the Safe Drinking Water

Act. Base maintains a contract with a certified commercial laboratory for TTHM analysis. This year the TTHM surveilance has been expanded to include all eight water systems. Three water plants serving the residential areas of the Base add fluoride to the water to help reduce dental cavities. The fluoride content is monitored daily and results are forwarded to Utilities Branch, Base Maintenance Division and the Naval Regional Dental Center.

With emphasis on improving quality of service, all recently employed water treatment plant personnel are engaged in an intensive two-year on-the-job training. The final phase of the program requires the employee to obtain at least a grade C-Well Water Treatment Operator's Certificate. Certifications of the Water Treatment Section employees range from Grades C-Well to A, with 31 of the 37 employees certified.

NOISE POLLUTION CONTROL

Sources of noise pollution are many and varied on the base. In the industrial areas such as carpenter shops, metalworking shops, sand blasting, compressed air, heavy equipment, aircraft maintenance areas, and steam plants, all are sources of noise pollution. Areas and conditions under which military personnel in the field are subject to noise pollution are: all types of gunfire, rockets, explosives, aircraft, tanks, heavy equipment and motor vehicles. The Occupational and Preventive Medicine Service of the Naval Regional Medical Center is charged with the responsibility of establishing and maintaining a hearing conservation program in cooperation with the Base Safety Office. This responsibility is established in Base Order 6260.2A.

The Occupational and Preventive Medicine Service manages the Quad-Command Hearing Conservation Program, and is responsible for monitoring noise hazardous areas and providing audiometric examinations (hearing tests) for all military and civilian personnel covered by the program. The Hearing Conservation Centers located in Building 36 and various Branch Clinics conduct approximately 20,000 hearing tests annually. A recent addition to this program is the Mobile Hearing Conservation Audiometric Testing Center (MOHCAT) which began operation in March 1980. The MOHCAT is a mobile hearing test trailer which can travel to all base units and will increase the number of audiograms by 10,000 annually.

MILITARY TRAINING

Managing or controlling the noise associated with gunfire, rockets, explosives, etc. is a continuing consideration during training. During the early 1970's, a locally developed system (referred to as "Blast Forecast") was developed to eliminate and reduce disturbance of excessive shock waves and noise from these weapons and explosives. The forecast is computed by Marine Corps Air Station (Helicopter), New River based on local weather, existing and predicted The method predicts the atmosphere refraction conditions and explosive limit (in pounds) which should not exceed the annoyance level for the surrounding community. The information is provided to Base Range Control for use in advising air/artillery units of the maximum size projectiles or bombs (or combination thereof) allowable for that period. Use of this system, while not perfect, is a positive effort to reduce adverse impact of military training on the community.

RADIATION POLLUTION CONTROL

At the request of the Naval Regional Dental Center, a radiological survey of dental x-ray units at Building 15 was conducted. The Naval Regional Medical Center Inspector conducted the survey and based on their findings recommended lead-lining of the x-ray room of 22nd Dental Company. A work request was submitted, and lead-lined walls and windows were installed in May 1976. The subject area now meets applicable standards.

SOLID WASTE MANAGEMENT

Solid waste management is a rapidly changing technology nationwide. In 1977 a solid waste management study was conducted at Camp Lejeune which focused on the recovery of natural resources (both energy and raw materials) from solid waste. This study, a result of the Navy R^4 Program (Recovery and Reuse of Refuse Resources) generated a published master plan for Camp Lejeune. The plan focuses on alternatives for resource recovery. In addition to developing approaches to resource recovery, the refuse collection and disposal aspects of solid waste management were evaluated. Recommendations for improved efficiency and the adequate protection of the environment were made. Finally, several complete

alternatives to solid waste management were developed for the base. These incorporated the improvements to collection and disposal as well as various combinations of approaches to resource recovery (both material and energy). As a result of the study, the base implemented a program designed to extract useful materials from the solid waste generated at Camp Lejeune.

Solid waste collection and disposal is a laborious and expensive operation as approximately 750,000 cubic yards of garbage, trash and other waste must be disposed of at Camp Lejeune each year. Waste of all kinds, excluding that considered dangerous, hazardous or recyclable, are transported to the sanitary landfill for disposal. The sanitary landfill is located on a 100-acre site on Sneads Ferry Road. Regulation of solid waste generated, stored, transported or disposed of within North Carolina is primarily carried out by the Solid and Hazardous Waste Branch, Division of Health Services, North Carolina Department of Human Resources (DHR). Base Order 11350.2 (Appendix I) establishes the base refuse disposal program. The base program requires all solid waste, except that which can be recycled or reutilized, to be disposed of at the Base Sanitary Landfill. In 1982, an operational plan for the landfill was submitted to DHR for approval as required per DHR regulations. The plan was approved and is the current standard by which the landfill is operated. The plan requires establishing and operating four groundwater monitoring wells.

Twenty-one compaction devices with a 10-to-1 compaction ratio have been installed in the base messhalls. Eight additional compaction devices with a 4-to-1 compaction ratio and a 45 cubic yard container have been installed at selected points aboard the base to compress cardboard boxes. Each compacter holds approximately 5 1/2 tons of cardboard.

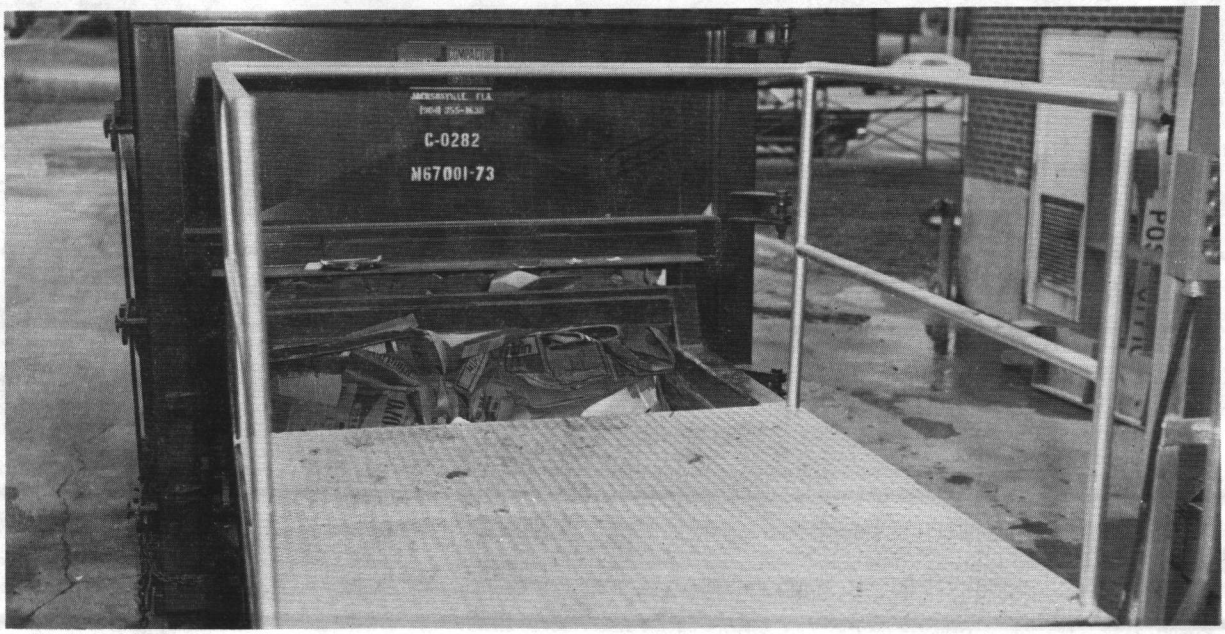
There are 126 "pitch-in" containers installed along roadsides and areas of heavy pedestrian traffic board the base. These containers have helped keep Camp Lejeune's roads and walkways clean by providing a place for the deposit of litter generated by motorist and pedestrian. The volume of trash being removed from these containers indicates heavy utilization.

Base Order 11014.8A was revised on 6 July 1978. The Order prohibits anyone from willfully placing, depositing or leaving any litter, trash, refuse, garbage,

debris or waste material of any kind anywhere aboard base other than in a receptacle for that purpose in a place specifically designated and authorized for that purpose.

A rather large volume of scrap wood is generated at Camp Lejeune which includes used lumber or boxes not required for the foreseeable needs of the generating activity, or in such condition as to be unacceptable for further use. This material will be turned in and disposed of according to procedures set forth in Base Order 4570.1C of 13 January 1978.

The Resource Recovery Program is set forth in Base Order 4100.8. This Order covers the recycling of cardboard, newspaper, computer paper and tab cards. The Onslow County Workshop of Coastal Opportunities, a local non-profit sheltered workshop for mentally and/or physically handicapped individuals, operated the recycling plant under contract. The workshop employs a varying number of handicapped persons at this facility in the last phase of a program of training prior to receiving employment in the outside community.



CONTAINERS FOR THE COLLECTION AND DISPOSAL OF GARBAGE AND REFUSE IS AN INTEGRAL PART OF KEEPING THE BASE CLEAN AND LIVABLE. SHOWN HERE IS A TRASH COMPACTOR WHICH REDUCES VOLUMES OF MATERIAL TO BE HANDLED. MUCH OF THE CARDBOARD WHICH WOULD NORMALLY GO INTO THE LANDFILL IS RECYCLED.

EQUIPMENT UTILIZED TO COLLECT REFUSE IS MODERN AND EFFICIENT. THE TRUCK SHOWN HERE ENABLES SAFE, EFFICIENT COLLECTION OF REFUSE TO BE CARRIED OUT WITH A MINIMUM OF PERSONNEL.

TOXIC AND HAZARDOUS MATERIALS MANAGEMENT

HAZARDOUS WASTE DISPOSAL

Hazardous materials management at Camp Lejeune requires a coordinated effort among all commands. Base Order 6240.5 (See Appendix A) was promulgated in 1982 to outline responsibilities for implementing the cradle-to-the-grave system disposal procedures established by the EPA under the Resource Conservation and Recovery Act of 1980. Dissemination of regulatory information and guidelines is accomplished primarily by cooperative efforts between base environmental advisors and Hazardous Material Disposal Coordinators (HMDC) who have been appointed within each major command. This cooperative effort has resulted in routine surveys of maintenance shops and provides a forum for communication between facilities officers, maintenance shop supervisors and base environmental personnel. It is strongly believed that these efforts are resulting in a positive effort towards pollution abatement.

THE LARGE VOLUME OF WASTE COLLECTED DAILY MUST BE THOROUGHLY COMPACTED AT THE LANDFILL. OTHERWISE, AN EXCESSIVELY LARGE LAND AREA WOULD BE USED UP EACH YEAR. THE MODERN COMPACTOR SHOWN HERE CAN BOTH SPREAD AND PACK THE MATERIAL.

THE BASE SANITARY LANDFILL OPERATES UNDER A PERMIT ISSUED BY THE NORTH CAROLINA DIVISION OF HEALTH SERVICES. SHOWN HERE ARE REGIONAL AND STATE INSPECTORS CONDUCTING A ROUTINE INSPECTION OF THE LANDFILL.

HAZARDOUS WASTE STORAGE

Lack of proper facilities for storage of hazardous materials and wastes awaiting disposal greatly impedes disposal. During 1982, existing Base facilities were upgraded. The 8th Engineers Battalion of 2d Force Service Support Group provided the manpower and equipment required to install curbing and other required spill prevention and containment measures in the existing facilities. In addition, 8th Engineers erected an additional storage building and unloading pad. The solid concrete floor of this building incorporated curbing, fencing, spill containment basins and other features required to contain any spills and to prevent the mixing of the compatible hazardous materials. Ensuring that incompatible hazardous materials do not become mixed resulting in fires, chemical reactions, etc., is a major problem with any effort to store hazardous materials. Base Maintenance installed ventilization, safety showers, security fencing, and explosive-proof electrical service/lighting in the facility. Upgrading this facility was the last major step in full implementation of the base hazardous material disposal program.

TRANSFORMER DISPOSAL

During 1982, several hundred used transformers contaminated by polychlorinated Biphenyls (PCB's) were disposed of by the Defense Property Disposal Service. Base storage facilities have been upgraded and essential containment curbing and required labeling effected. All used transformers are analyzed when taken out of service. This analysis determines how the transformer will be stored awaiting safe disposal.

HERBICIDE AND PESTICIDE SAFETY PRECAUTIONS

The base has made several changes in utilization of herbicides, insecticides and other pesticides in order to protect the environment and comply with current regulations. A vigorous training and certification program is carried out on a continuing basis for all personnel involved in application of pesticides. All pesticides are stored in locked facilities at the Insect Vector Shop which has been upgraded to meet all requirements of the Federal Insecticide, Fungicide and Rodenticide Act.

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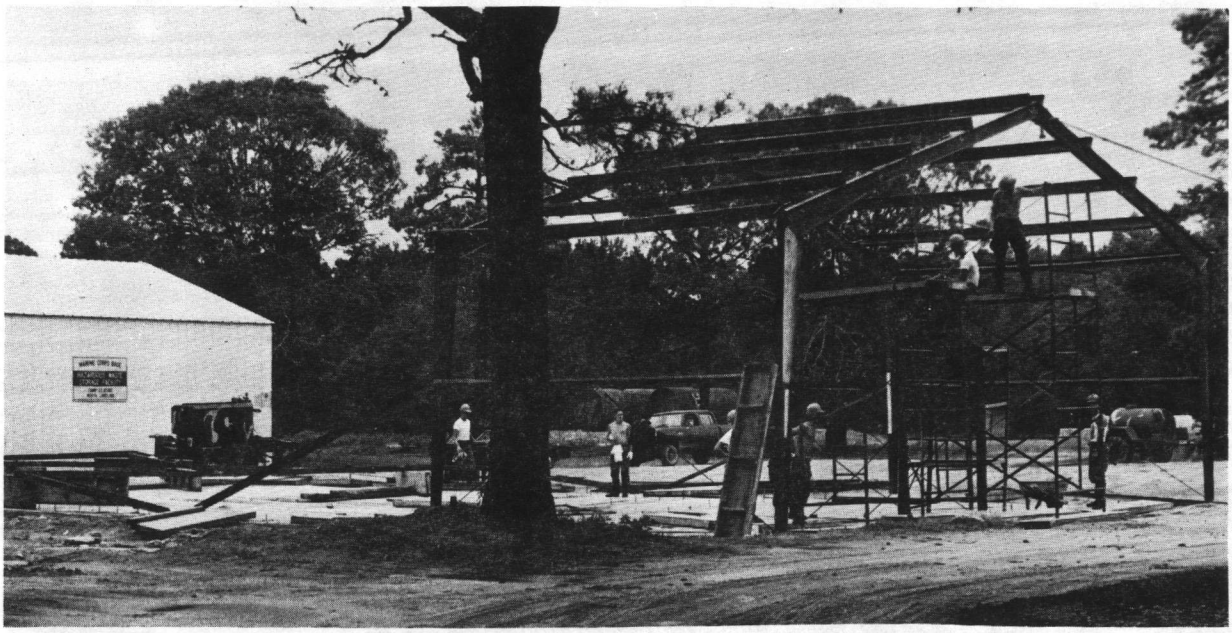
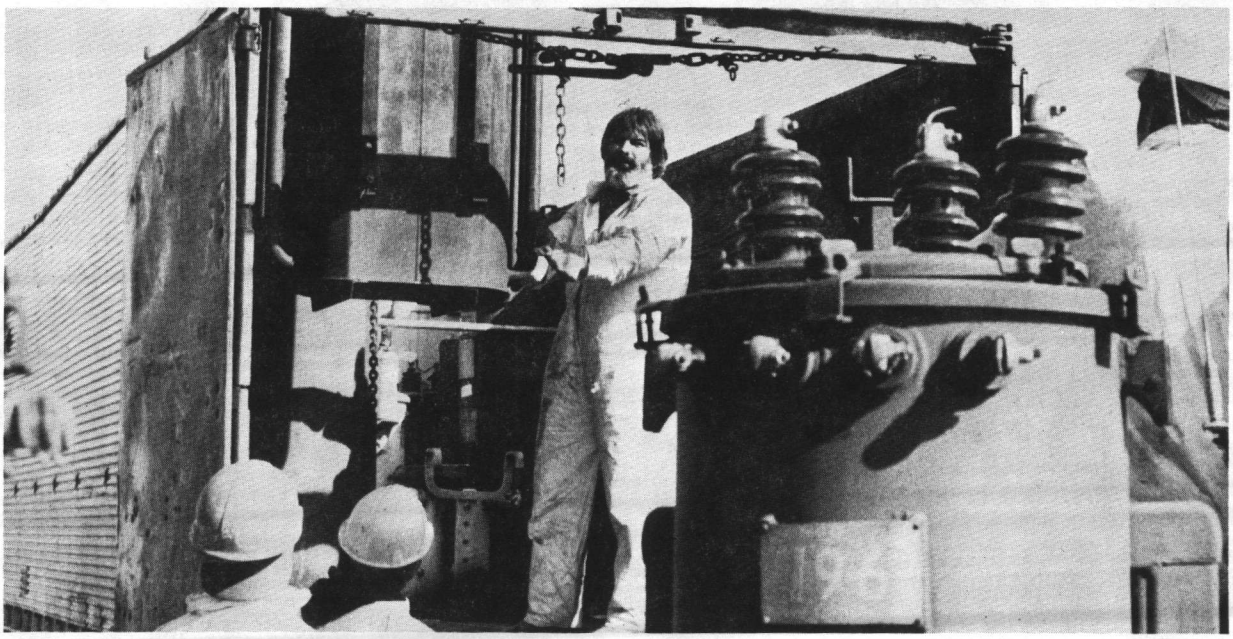


SHOWN HERE ARE PERSONNEL FROM EIGHTH ENGINEER BATTALION, 2d FORCE SERVICE SUPPORT GROUP, ERECTING ADDITIONAL STORAGE BUILDING FOR HAZARDOUS WASTE



EMPLOYEES OF A PRIVATE CONTRACTOR ARE SHOWN LOADING PCB CONTAMINATED TRANSFORMERS FOR DISPOSAL AT AN EPA APPROVED SITE. THE DISPOSAL WAS ACCOMPLISHED BY THE DEFENSE PROPERTY DISPOSAL SERVICE IN ACCORDANCE WITH STRICT ENVIRONMENTAL MEASURES.

ALTHOUGH ESSENTIAL TO THE HEALTH AND WELFARE OF BASE RESIDENTS AND PERSONNEL, PESTICIDES SHOWN HERE REQUIRE STORAGE IN ACCORDANCE WITH STRICT STANDARDS.

ENVIRONMENTAL ENHANCEMENT

GENERAL

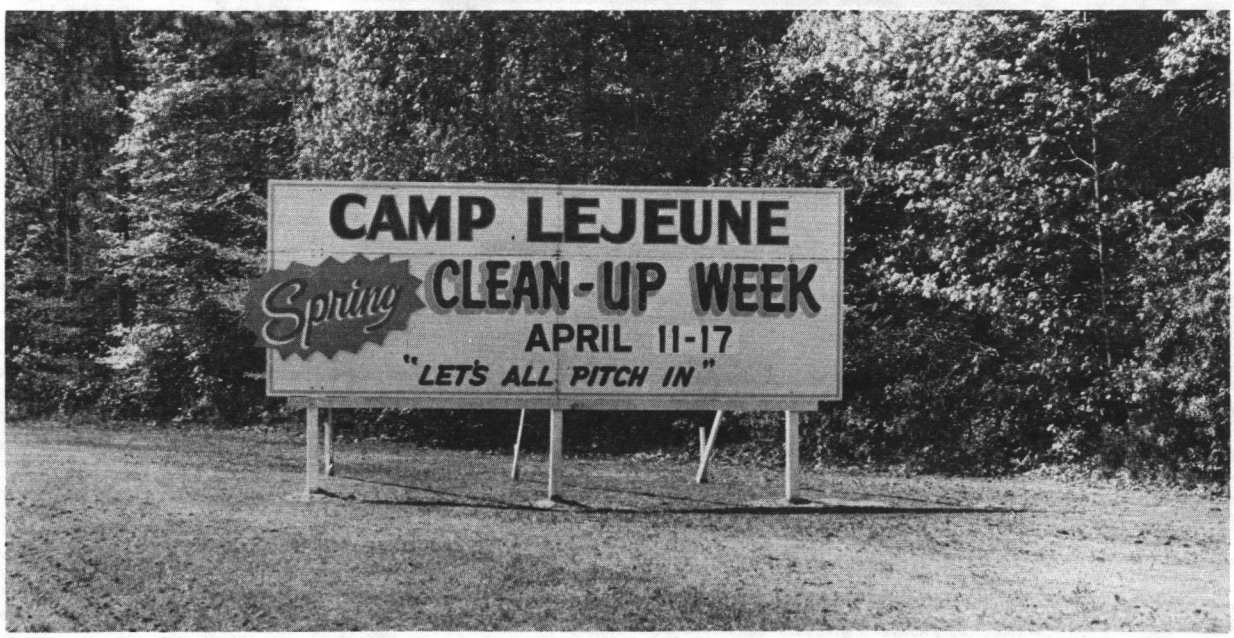
This command is not satisfied with merely meeting the minimum requirements of environmental regulations. Within the constraints of available funds and overall priorities, substantial effort is made to maximize the enhancement and utilization of environmental values and natural resources. Three broad categories are involved:

(1) Aesthetics

(2) Forest Management

(3) Wildlife Management

With proper planning and improvement, base hunting, fishing, boating, horseback riding, bicycling and many other types of outdoor recreation are greatly enhanced.



THE INSTALLATION TAKES PRIDE IN MAINTAINING AN ATTRACTIVE FACILITY. THE EFFORTS OF ALL EMPLOYEES AND RESIDENTS OF THE BASE ARE REQUIRED. SPECIAL EFFORT IS TAKEN TO HIGHLIGHT BEAUTIFICATION.

AESTHETICS

Camp Lejeune, with its natural beauty, has long been noted as one of the most attractive bases in the United States. Maintaining this attractiveness requires constant endeavor by the various military units and the Groundskeeping Section, Base Maintenance Division. The groundskeeping crew constantly perform pruning, spraying, weeding, fertilization and planting required to maintain the appearance and health of over ten thousand landscape plants. Continuous command attention at all levels is promoted to ensure the base is kept clean. Pitch-in receptacles have been located throughout the base to provide a ready means for trash collection as part of a cooperative effort with Onslow County to promote a county-wide beautification program.

THE YELLOW FRINGED-ORCHID IS ONLY ONE OF MANY NATURE FLOWERS CONTRIBUTING TO THE NATURAL BEAUTY OF CAMP LEJEUNE.

FOREST MANAGEMENT

The forested acreage at Camp Lejeune is comprised of approximately 69,100 gross acres. The net or production land base is established at 54,935 acres; a difference of approximately 14,165 acres. Ranges, impact areas, etc., make up the difference in gross and net acreage.

It is the obligation of the Forestry Branch to manage these acres, for sustained yield and multiple-use. The military mission, timber production, wildlife, outdoor recreation, aesthetics, and other uses each receive consideration in management decisions. In order to facilitate management, the forest acres are divided into 62 compartments. Each compartment is then divided into timber types or stands. A more accurate forest type survey was completed in 1982 which involved more than two man years of work. The forest type survey will be used in preparation of a map which should greatly enhance forest management in the years ahead. Compartments are the basic management unit used in forest management. A professional forester enters a compartment before any cultural work begins and gathers data in each stand to determine the indicated silvicultural needs. This information is then formulated into a draft prescription for review by the Division Director and his staff. All aspects of multiple-use management are discussed during the review process. Additional field examinations are made by the Director or member of his staff.

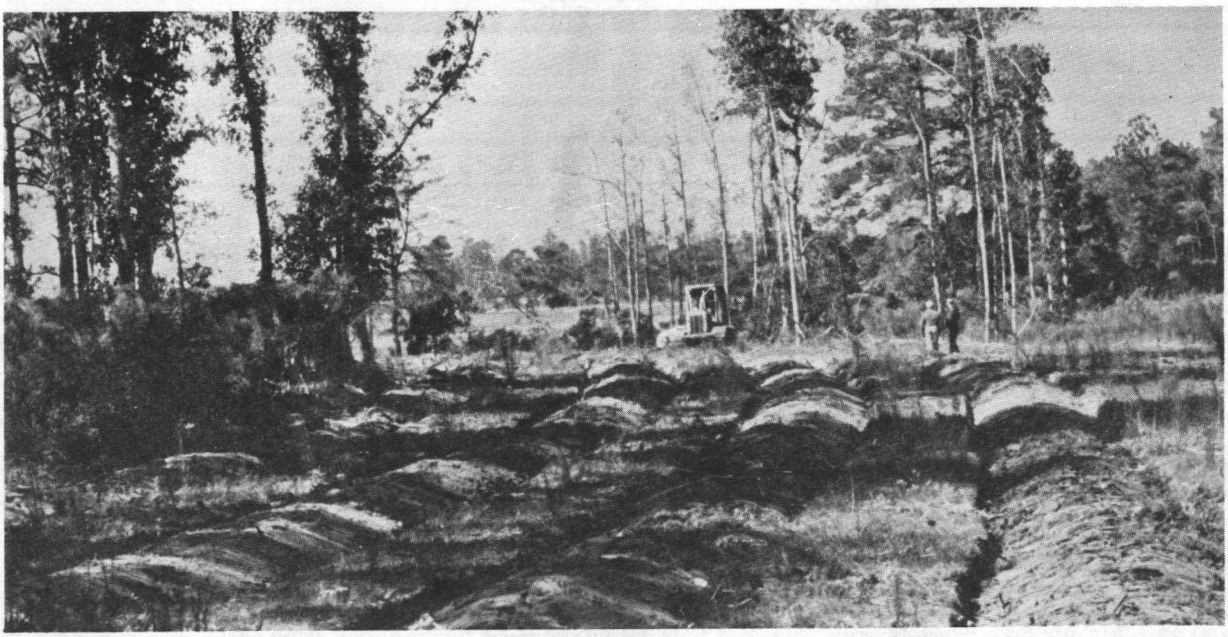
TIMBER IS MARKED AND TALLIED ACCORDING TO AN APPROVED PRESCRIPTION THAT HAS BEEN TAILORED TO FIT THE NEEDS OF A GIVEN AREA FOR MULTIPLE-USE MANAGEMENT OF THE OVERALL BASE NATURAL RESOURCES.

Artificial regeneration is being done in stands having an insufficient number of genetically sound trees, beetle salvage, burned timber and other situations where natural regeneration methods are not considered adequate. Planting during the past three years has been accomplished by machine planting on 7' x 14' spacing. Some use of temporary employees has also been used to plant seedlings on rough terrain. Use of a bedding harrow has been employed which increases the survival rate and growth rate of seedlings particularly on the poorly drained sites.

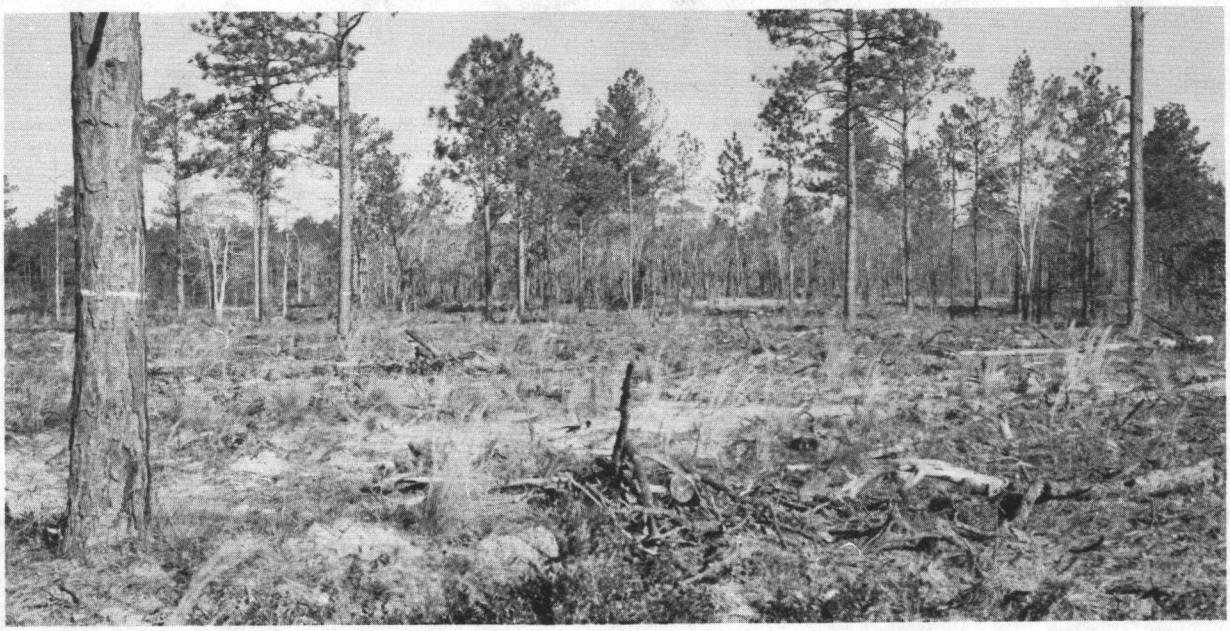
Prescribed burning is one of the most useful and economical tools which we have at our disposal. Each year approximately 12,000 acres are prescribe burned. Areas which are more beneficial to wildlife and could be damaged by fire, such as transition zones, hardwood types and key areas, are plowed out and not burned. Prescribed burning is accomplished during the winter months when most vegetation is dormant and as little damage as possible will be done. Prescribed burning serves several key functions such as rough reduction, improvement of wildlife habitat, control of undersirable vegetation and the improvement of training areas. The Branch is also involved in a smoke management program with the State of North Carolina, Department of Natural and Economic Resources.

In 1978, a 2,352-acre tract of timberland was designated as a quail management area and all forestry management practices will be modified to produce optimum quail habitat. Timber, which is primarily longleaf pine, has been thinned to basal areas most beneficial for quail. Prescribed burning is being done annually during middle or late winter to aid in the production of desirable vegetation and enhance quail habitat.

The quail management area was also set up as a work project for the Youth Conservation Corps (YCC). The YCC, in their first year at Camp Lejeune, trimmed small unmerchantable stems along the roads which greatly increased the aesthetic value of the area.



SPECIALIZED EQUIPMENT BEING USED TO PREPARE BEDS FOR PLANTING TREE SEEDLINGS IN THE HIGH WATER TABLE SITUATION FOUND IN MANY SOILS ABOARD CAMP LEJEUNE.



A COMPLETED SEED TREE REGENERATION CUT. THE SEED TREES WERE LEFT TO PROVIDE SEED FROM WHICH THE NEW FOREST WOULD GROW. THE SEED TREES WILL BE SOLD AND REMOVED WHEN AN ADEQUATE STAND OF YOUNG TREES IS ESTABLISHED.

All aspects of multiple-use management are discussed during the review process. Additional field examinations are made by the Director or members of his staff, if deemed necessary. Any changes or revisions will be incorporated into the final compartment prescription before actual field work begins. A careful monitoring of field work is done to insure that specifications of the prescribed treatments are being carried out as planned.

1980-81-82 PROCEEDS FROM TIMBER SALES

1980	VOLUMES		PROCEEDS
Pine Sawtimber	4,728.616	MBF	$810,865
Pine Pulpwood	4,043	Cds	47,067
Hardwood Sawtimber	1.45	MBF	51
Hardwood Pulpwood	58	Cds	115
Penalty Payments & Other Products	310,884	Ft^3	39,412
			$897,510
1981			
Pine Sawtimber	5,412.700	MBF	817,244
Pine Pulpwood	5,362	Cds	72,878
Hardwood Sawtimber	75.91	MBF	4,797
Hardwood Pulpwood	299	Cds	1,447
Penalty Payment & Other Products	87,750	Ft^3	10,025
			$906,392
1982			
Pine Sawtimber	3,899.990	MBF	499,195
Pine Pulpwood	6,541	Cds	53,042
Hardwood Sawtimber			
Hardwood Pulpwood	97	Cds	321
Penalty Payments & Bullet Damage Refund			(-) 8,587
			$543,971

The timber harvests shown above came from approximately one-half of the acres

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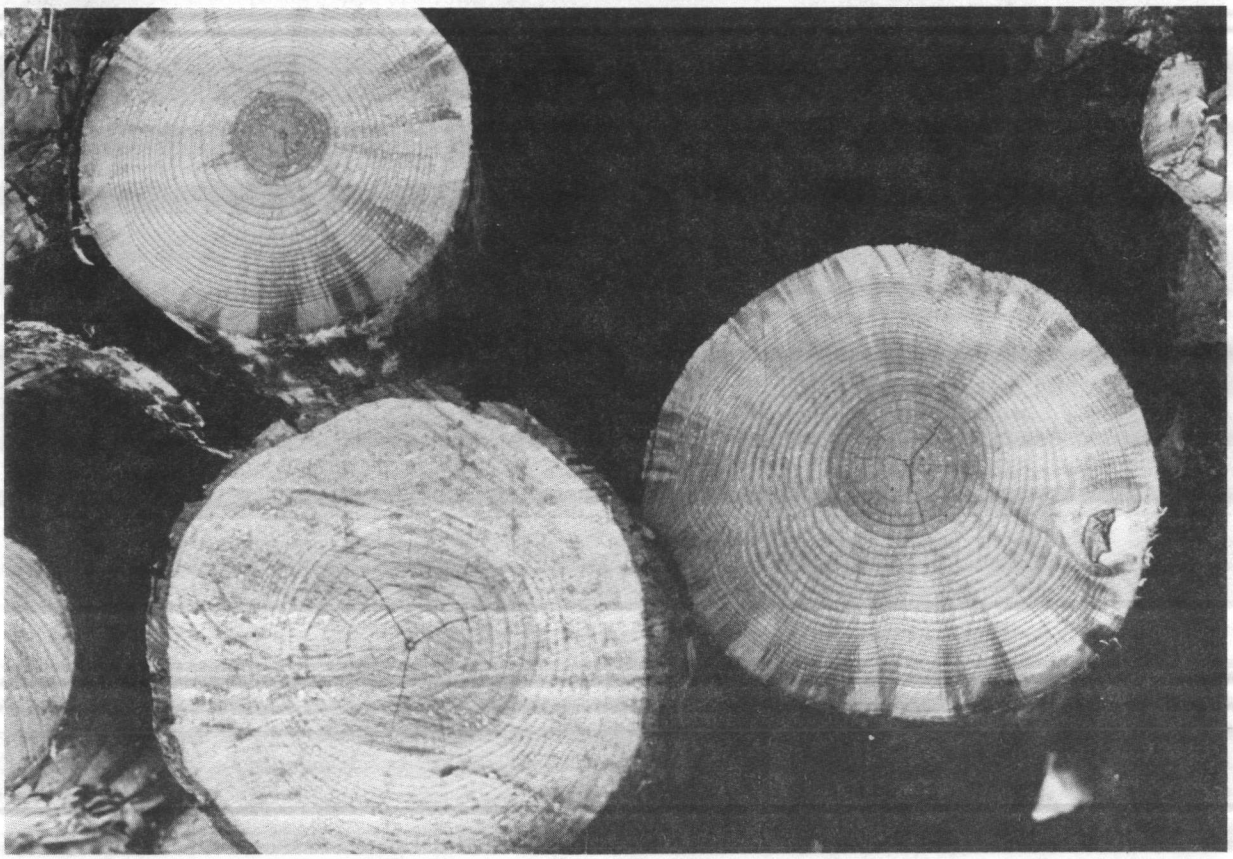
available for harvest each year. It was determined that the available assets in both personnel and equipment were not adequate to support a further increase. Therefore, a request for an expanded forestry program was initiated in October 1980.

The initial stages of the expanded program have been completed. An additional professional forester and three forestry technicians have been employed. The purchase of two heavy hauling units and two tractors (bulldozers) with assorted attachments to perform site preparation and other cultural work generated by increased timber harvest has been consumated. The expanded program will generate additional goods and services, aid in the sustained yield, multiple-use management of resources that would otherwise be lost through poor growth, loss from insects and disease and wildfires in the forested areas. Fiscal year (FY) 83 will probably be the first year that the allowable number of compartments will be offered for sale. The base forests were plagued with a southern pine beetle infestion in 1980. However, early discovery coupled with a rapid aggressive control program kept the spread of beetle and loss of resources to a minimum. The U. S. Forest Service Insect and Disease Management personnel were called in to help evaluate the infestation; prepare an environmental assessment, develop a project control plan and provide aid in funding the control effort. Funding in the amount of $28,448 was received during FY-80 for control effort. The number of new beetle spot attacks subsided in 1981. However, another evaluation, environmental assessment and project control plan was prepared, with a request for funding beetle control work in FY-81. A careful watch on the beetle situation continued during 1982. Detection flights were made periodically with little activity noted. However, if the beetle becomes active again another rapid, aggressive attack will be launched to control beetle spread and minimize resource loss.



DISEASE OR INSECT INFESTATIONS CAN DISRUPT THE HEALTHY GROWTH OF THE TREE. LIKEWISE, STRESSED OR UNHEALTHY STANDS OF TREES ARE MORE SUSCEPTIBLE TO DISEASE AND INSECT PESTS. FOR EXAMPLE, THE DISCOLORATION ON THE FACE OF THE LOGS SHOWN ABOVE WAS CAUSED BY THE BLUE STAIN FUNGUS CARRIED BY THE SOUTHERN PINE BEETLE. THE FUNGUS CLOGS UP CELLS AND DISRUPTS WATER MOVEMENT.

Reforestation is accomplished by both artificial and natural means, with the latter being used more often during the past three years. Natural regeneration requires less soil disturbance for site preparation and permits a saving of fossil fuel with less heavy equipment use required. Other advantages of well planned natural regeneration methods permit the forester to accomplish silvicultural treatments throughout the life of the stand that are more beneficial to a variety of wildlife species as well as maintaining vigorous tree growth. Continued use of a drum chopper has made it possible to make precommercial thinnings in overstocked stands to lessen competition, reduce fuels, create deer browse, permit prescribed burning at an earlier age and reduce the possibility of southern pine beetle attack by maintaining healthier trees.

SEVERAL THOUSAND ACRES OF PINE FORESTLAND ARE PRESCRIBED BURNED EACH WINTER. THE CONTROLLED FIRE REDUCES LITTER AND UNDERSTORY WHICH REDUCES FIRE DANGER AND IMPROVES WILDLIFE HABITAT FOR MANY SPECIES. FIRE HAS BEEN AN IMPORTANT PART OF THE ECOLOGICAL HISTORY OF SOUTHERN FORESTS.

WILDLIFE MANAGEMENT

Camp Lejeune's wildlife management program is designed to provide optimum environmental conditions for all present wildlife species. Balanced ecological conditions through multiple land use operations is the long range goal which the wildlife program is striving to attain. Wildlife management practices are programmed to interpret population levels, habitat requirements in the faunal complex and to gauge the way the population will respond to habitat changes.

The forest at Camp Lejeune is divided into 15 wildlife units where particular wildlife species is featured. Basically, wild turkey, squirrel, deer and quail are the four principal species which are featured in that order. All other game, nongame and endangered species receive due consideration within each wildlife unit. These wildlife units contain 62 forest compartments which are divided into separate stands of trees.

Wildlife management here is directed towards managing forest dwelling species. The management of forest dwelling species is mainly involved with the benefit derived through proper diversity within the plant community. It is essential that there be a compatible program when managing forest and wildlife resources.

THE BOBCAT AND ALL OTHER WILDLIFE SPECIES ARE MANAGED UNDER A LONG RANGE PROGRAM AT CAMP LEJEUNE

The base wildlife manager and base forester coordinate their management practices to harmonize the resource program for which they are responsible. Timber prescriptions, reforestation, prescribed burning, key wildlife areas and general habiat improvement receive maximum consideration through their coordinated efforts. Working together, they are meeting established program goals and guidelines compatible with their respective programs.

ONE OF THE COORDINATED EFFORTS BETWEEN FOREST AND WILDLIFE MANAGEMENT IS TO PREVENT FIRE FROM ENTERING HARDWOOD STANDS DEPICTED ON THE RIGHT WHEN PINE STANDS ARE PRESCRIBED BURNED. THE FIRELANE IN THE CENTER ENSURES PROTECTION OF HARDWOOD STANDS.

A cooperative management agreement for the conservation of fish and wildlife resources has been executed by the Commanding General, Marine Corps Base; Executive Director, North Carolina Wildlife Resources Commission and Regional Director, Department of the Interior.

Working within this agreement, a meeting was conducted during May 1980 to evaluate the existing Forest-Wildlife Management Program. Modification of present management plans have been implemented since the evaluation process. Basically, increased emphasis is being placed on the protection of hardwood stands and mixed pine-hardwood stands. Forestry and wildlife personnel are working together closely in the field to implement the management recommendations provided during the evaluation.

THE NORTH CAROLINA WILD TURKEY RESTORATION PROJECT LEADER AND BASE WILDLIFE MANAGER MEET TO DISCUSS MANAGEMENT TECHNIQUES FOR THE SPECIES AT CAMP LEJEUNE.

One hundred and seventy-two wildlife openings totaling 560 acres have been established for suitable plants in the woodland edge for wildlife species. These openings provide supplements to the natural food supply and enhance cover conditions along the woodland edge. Perennial grasses, grains and legumes are established in these openings.

Perennial strips of bicolor lespedeza are established along the borders of many wildlife openings to provide late winter and early spring feeding for Bobwhite quail. The strips also provide escape coverage where hunters can more successfully have the opportunity to harvest some birds.

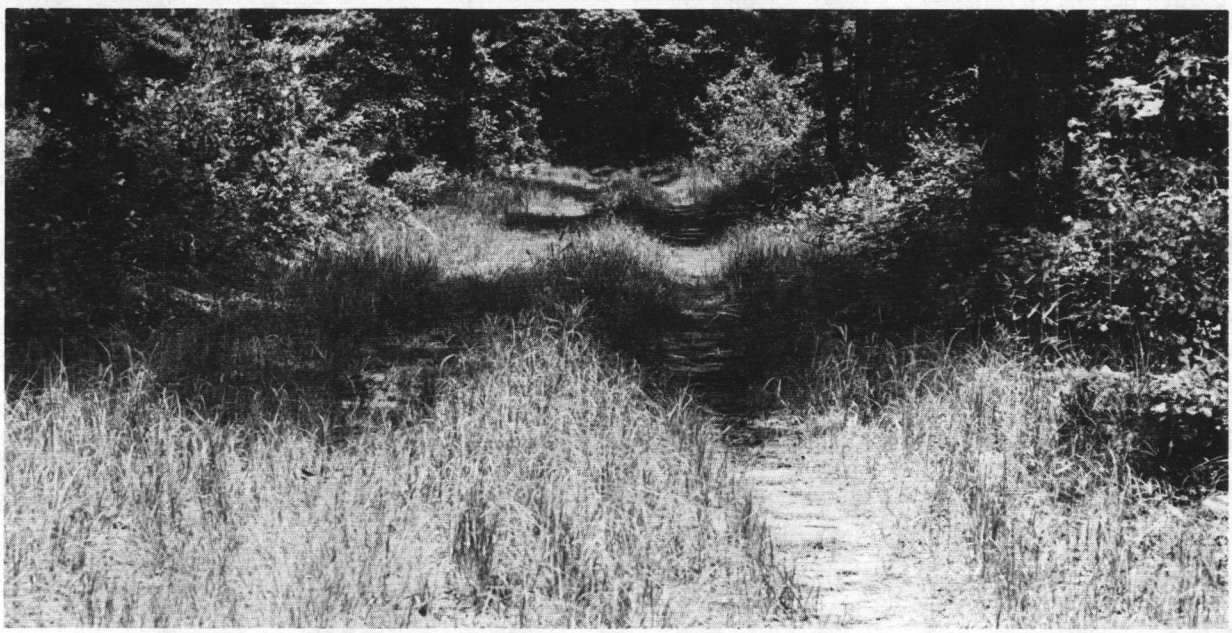
BICOLOR LESPEDEZA, A PERENNIAL SHRUB ALONG THE BORDERS OF WILDLIFE OPENINGS ARE HEAVILY USED BY BOBWHITE QUAIL

Approximately eighty-five wildlife openings are planted each fall to annual winter rye or wheat. These openings are heavily utilized by wild turkey, white-tailed deer and many other species in later winter and early sping. This type opening also provides nesting cover through the summer months for quail, rabbit, wild turkey and other species. Young turkey poults are commonly observed stripping seed heads from the wheat during the summer.

WHEAT AND RYE PLANTINGS ARE HEAVILY USED BY A VARIETY OF WILDLIFE THROUGHOUT THE YEAR

Forty-eight miles of forest access roads have been seeded to perennial grasses to stabilize the soil, reduce road maintenance, provide food for wildlife and improve the aesthetics of the woodlands.

Forest access road plantings are funded from forest management appropriations and established by personnel in the Wildlife Section.



A FOREST ACCESS ROAD SEEDED TO PERENNIAL PENSACOLA BAHIA FOR WILDLIFE, EROSION CONTROL AND IMPROVED ACCESS

Approximately sixty plantings of annual proso millet have been established for dove and wildlife turkey. Each planting is two-three acres in size and provides excellent early fall dove hunting opportunities. Wild turkey poults heavily utilize these plantings in late summer and early fall.

Bobwhite quail find excellent nesting cover in proso millet plantings and feed on the seeds after seed-drop.

THIS WILDLIFE OPENING WAS ESTABLISHED TO PROSO MILLET
FOR MOURNING DOVE, WILD TURKEY AND BOBWHITE QUAIL

Management for bobwhite quail has been intensified in the 2,352-acre tract managed primarily for this species. New 1/4 acre strips of bicolor lespendeza have been established in reaching the goal of one strip per twenty acres. Nesting cover is being enhanced by discing transition bands around these areas left for protection from annual prescribed burning. These protected areas are located near bicolor strips and occur at the rate of one per twenty acres. This practice, along with annual prescribed burning and thinning of longleaf timber, is expected to provide quality quail hunting in the future. The Camp Lejeune Rod and Gun Club hand planted over 6,000 lespendeza bicolor seedings in the Quail Management in a cooperative project with wildlife personnel. A cooperative program for monitoring the plant community and censuring the quail population has been established with North Carolina State University. Initial sampling of plant species and populations has been accomplished and is continuing on an annual basis. Data is collected for the quail management area as well as for a controlled area for comparison purposes.

WILDLIFE TECHNICIAN EXAMINES AUTUMN OLIVE PLANTING FOR PRODUCTIVITY

Permanent plantings of Autumn Olive are established in the center of wildlife openings to provide food, cover and nesting area for wildlife species. Nongame birds, turkey, quail, deer and black bear are some of the species that relish the productive berries of the Autumn Olive. Over 5,000 Autumn Olive seedlings were planted during late winter at twenty-five locations. The seedlings were planted by 15 Base Scouts under the leadership of one scout working for his Eagle Merit Badge. Autumn Olive are fruiting ornamentals which require very little maintenance and provide consistent crops of berries on a permanent basis.

THERE ARE APPROXIMATELY 3,326 ACRES OF SALTMARSH AT CAMP LEJEUNE. THE MARSH AREA IS A UNIQUE AND INVALUABLE ECOSYSTEM UPON WHICH MOST MARINE SPECIES ARE DIRECTLY OR INDIRECTLY DEPENDENT.

HARDWOOD BOTTOMLAND AND SWAMPS ALONG FRESHWATER STREAMS ARE SOME OF THE MOST PRODUCTIVE WILDLIFE HABITAT IN THE REGION. MANY OF THESE WETLANDS TRANSECT THE TRAINING AREAS ABOARD CAMP LEJEUNE.

Freshwater swamps, marshes, ponds and pocosins are managed primarily for wildlife resources. Many of the areas are inaccessible and management is simply protection. Some other areas have been diked to provide green-tree waterfront impoundments which are flooded in the fall and de-flooded in the spring. Over 250 wood duck nesting boxes have been erected in wetland areas to enhance wood duck nesting.

WOOD DUCK NESTING BOX ERECTED IN A WETLAND AREA CONTAINING A STAND OF TUPELO GUM TREES

A graduate student has completed a research project on habitat preference, breeding success and population status of the Eastern bluebird at Camp Lejeune. Two hundred nesting boxes were established in selected habitat types for enhancing the bluebird population and providing nesting facilities necessary for this study. Over 50% of these boxes were used for nesting during the past nesting season. Three hundred additional nesting boxes were constructed recently and have been erected for nesting by Eastern bluebirds.

AN EASTERN BLUEBIRD IN THE PROCESS OF FEEDING HER BROOD IN ONE OF 500 ARTIFICIAL NESTING BOXES LOCATED ON BASE.

Fifty-one wild turkeys have been trapped during 1980-1982 through a cooperation restoration project with the North Carolina Wildlife Resources Commission. The birds were trapped by Base/State personnel using drug treated grain and released in good condition within several days of capture. The birds were relocated to release sites in Pender, Hoke and Hyde Counties. Birds relocated to Hoke County were released on the boundaries of the Fort Bragg Army Base and Hoffman Game Lands areas. Three broods were recently observed there indicating the success of that release.

Relocations in Pender and Hyde Counties were on private lands where the landowner and North Carolina Wildlife Resources Commission have a viable agreement relative to management practice. A primary objective is to establish populations at those release sites to restock other private lands in Eastern North Carolina. The population at the Pender sites is very successful and relocation from that area was initiated in 1982. A brood was recently observed at the Hyde County release site and therefore population is expected to expand. Relocation of turkey from Camp Lejeune is well known throughout the Southeastern Region as one of our most successful cooperative projects by persons interested in conservation of these notable game birds.

THESE WILD TURKEY ARE FEEDING ON DRUG TREATED GRAIN AND WILL BE RELOCATED FOR RESTORATION IN NORTH CAROLINA.

Protection of endangered species is in accordance with the National Environmental Policy Act of 1969 and the Endangered Species Act of 1973. Principle threatened and endangered species on the national list which are found here are the Red-Cockaded Woodpecker, Atlantic Loggerhead Sea Turtle, Green Sea Turtle, Eastern Brown Pelican and the American Alligator. All known woodpecker sites have been mapped and marked for protection. Population censuses are being conducted to determine the status of woodpeckers, sea turtles and alligators.

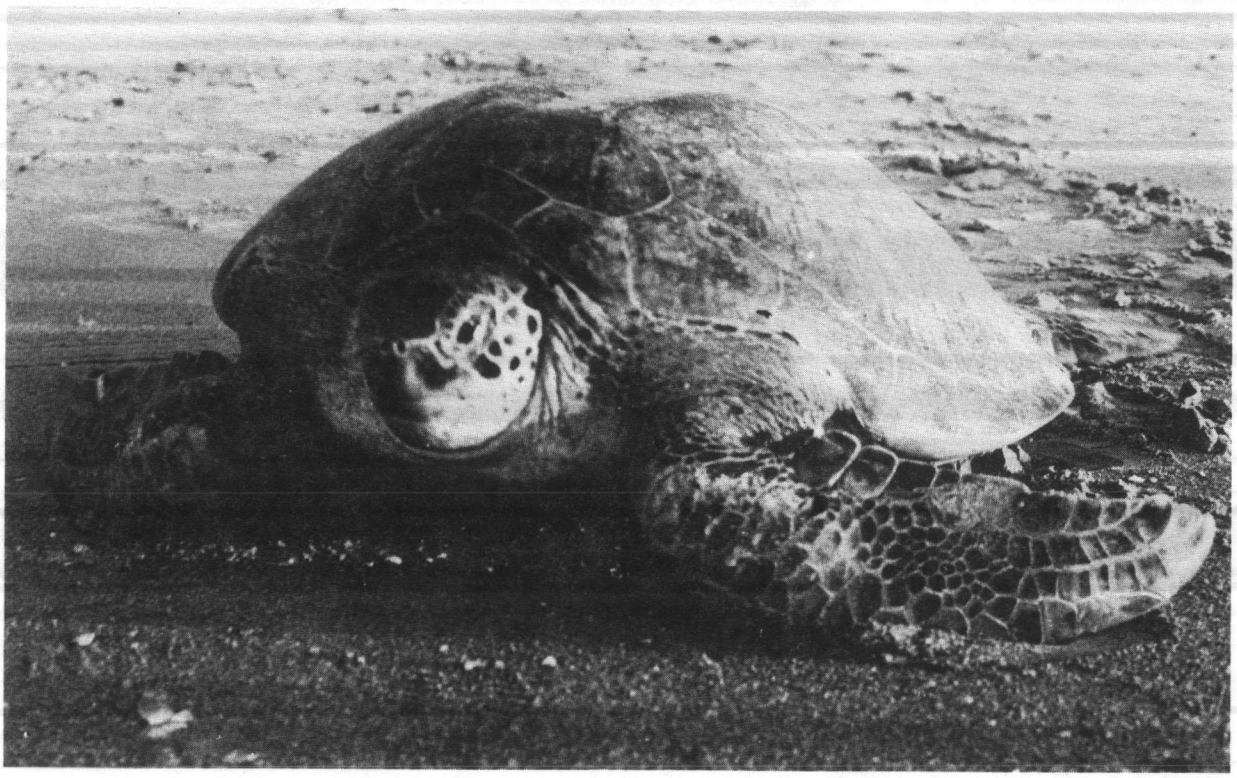
117 ENDANGERED RED-COCKADED WOODPECKERS WERE COUNTED DURING AUGUST 1982 AT 28 ACTIVE COLONY SITES.

PROTECTING CAVITY TREES, WOODPECKER HABITAT AND PRESCRIBED BURNING IS IN ACCORDANCE WITH THE BIOLOGICAL OPINION FOR THE SPECIES.

A TYPICALLY MARKED AND POSTED WOODPECKER COLONY SITE

There were five nestings by the Green Sea Turtle at Onslow Beach during 1980. Four of the nestings by the Green Sea Turtle were identified through tag returns as being the same turtle on each occasion. Both the Atlantic Loggerhead and the Green Sea Turtles have recently been placed on the national list of threatened species. During the reporting periods there have been 202 Loggerhead nests and five nests of the Green Sea Turtle located on Onslow Beach.

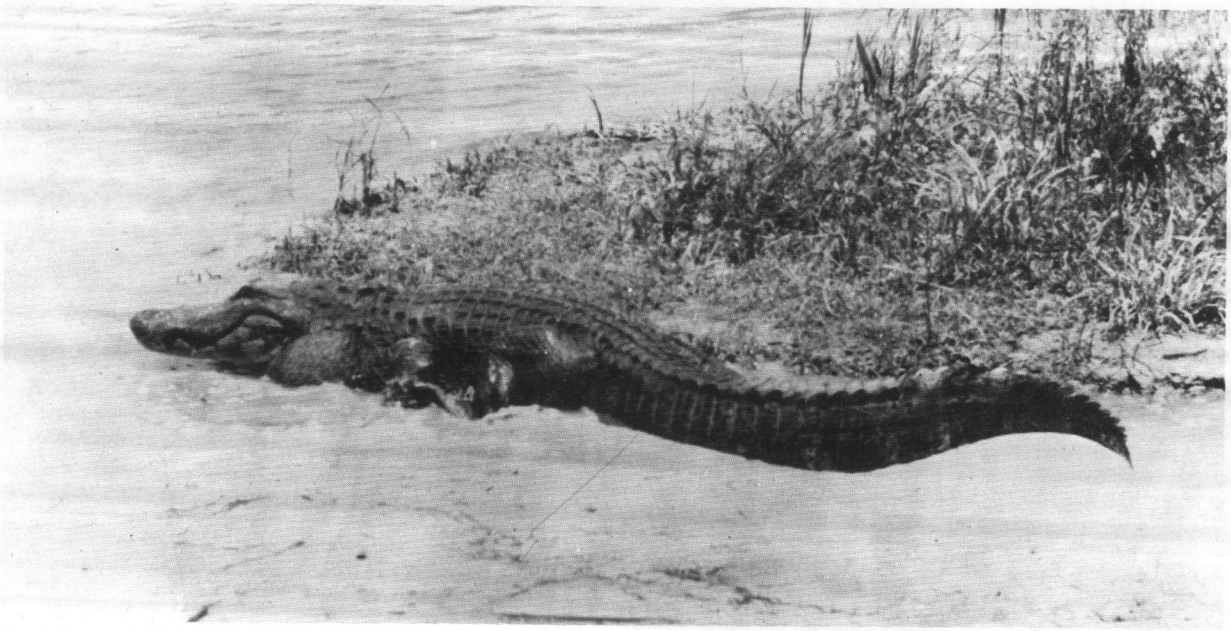
Two wildlife technicians were temporarily employed during the summer nesting period to work with the Sea Turtle Program. They conducted nesting surveys during peak nesting periods at night along the beach. Nests were protected from predators by placing wire cages over the nests with the mesh size large enough for hatchlings to move through. Turtles are tagged, physical data taken of each nesting and surveys by helicopter were run to coincide with the night surveys.



THE THREATENED GREEN TURTLE NESTED FIVE TIMES IN 1980 AND LAID 819 EGGS. THIS WAS THE FIRST KNOWN NESTING OF THE SPECIES NORTH OF GEORGIA.

WIRE CAGES ARE PLACED OVER EACH NEST TO PREVENT EGG PREDATION UNTIL THE TURTLES HATCH IN ABOUT 60 DAYS. HATCHLINGS EMERGE FROM NEST AND SCURRY ACROSS THE TIDAL ZONE TO THE WATER. AT THE END OF NORMAL INCUBATION PERIODS, TECHNICIANS CHECK NEST TO DETERMINE PERCENT HATCHED.

THE THREE INCH LOGGERHEAD HATCLINGS WHICH MAY SOMEDAY WEIGH THREE TO FOUR HUNDRED POUNDS ENTERS THE ATLANTIC FOR THE FIRST TIME.



SIXTEEN ENDANGERED ALLIGATORS FROM TWO TO TEN FEET IN LENGTH WERE COUNTED ON SIX TIDAL STREAM SURVEYS DURING AUGUST OF 1982.

THE ENDANGERED EASTERN BROWN PELICAN USES LAND AND WATER AREAS OF THE BASE THROUGHOUT THE YEAR.

A survey of archaeological and historic research under Public Works contract was conducted at Marine Corps Base, Camp Lejeune; Marine Corps Air Station (Helicopter), New River and Helicopter Outlying Landing Field, Oak Grove. A pre-final draft of the report has been accepted by Marine Corps Base and the final draft is forthcoming. Archaeological and historic sites identified in the pre-final draft which appear qualified for nomination to the National Registry are being protected.

An Indian Ossuary was located near one such site in 1981 near Jarretts Point. State authorities were notified and immediate procedures were worked out by base authorities to fully protect the site until it could be inspected by a professional archaeologist. The remains were removed by an archaeologist from the University of North Carolina at Chapel Hill, North Carolina under a federal permit. These remains which are Marine Corps property are being categorized and prepared for preservation at the laboratory. Archaeology and Anthropology, University of North Carolina at Chapel Hill. Preliminary findings by the archaeologists indicate the remains represent from 15-25 individuals and that the ossuary is approximately 800-1,000 years old.

ARCHAEOLOGISTS INVOLVED IN REMOVING HUMAN REMAINS UNDER A FEDERAL PERMIT FROM AN INDIAN OSSUARY NEAR JARRETTS POINT.

FISH MANAGEMENT

The fishery management program is designed to produce sustained annual crop of fish for recreational purposes. Thirteen freshwater ponds are currently under management, totaling approximately 38 acres. Eight of these are natural and five are man-made; all of which are stocked with warm water species. Management techniques consist of fertilization to promote plankton and other microscopic plant growth, lime to control ph factor and use of aquatic herbicide for weed control. Stocking is done on as-necessary basis.

A wide variety of both freshwater and saltwater species inhabit the ponds, streams, bays and the Atlantic Ocean on or near the base. The saltwaters provide commercial fishing along the lower bays, Intracoastal Waterway and in the Atlantic Ocean, extensive saltwater areas also produce bountiful supplies of shellfish for public use.

HENDERSON POND IS A FAVORITE POND FOR RECREATIONAL FISHING WHICH IS STOCKED WITH LARGE-MOUTH BASS, BLUEGILL AND CHANNEL CATFISH

SPORT FISHING, COMMERCIAL FISHING AND BOATING ARE JUST A FEW OF THE PUBLIC USAGE OF CAMP LEJEUNE'S ESTUARINE AREAS

WILDLIFE LAW ENFORCEMENT

Active duty personnel assigned to the Base Game Warden Unit are responsible for enforcing local, state and federal laws regulating the taking of wildlife resources. Four permanent billets are established for the unit, which is augmented by three temporary billets from Second Marine Division, and three temporary billets from Second Force Service Support Group. The unit is responsible for enforcing regulations issuing permits for hunting, fishing, trapping and gathering firewood, collecting firewood, collecting public funds for permit sales, assigning hunting areas to individuals and organized hunters, checking game kills and assisting in wildlife management work projects.

GAME WARDEN PERSONNEL PLANNING WORK OPERATIONS
RELATIVE TO ENFORCEMENT OF HUNTING, FISHING,
TRAPPING AND FIREWOOD REGULATIONS

DEER HUNTERS HARVESTED EIGHT HUNDRED AND TWENTY-SIX
ANIMALS DURING THE 1981-1982 HUNTING SEASON

10

FUNDING FISH AND WILDLIFE PROJECTS

Funding for fish and wildlife projects prior to 1973 was generated from the sale of hunting, fishing and trapping permits. These funds were augmented by Special Services appropriations beginning in 1973 and continuing to the second quarter of fiscal year 1980. These funds derived from permit sales were all expended for the management of game species.

Through special congressional funding under the Sikes Act, the base began to receive additional support for the wildlife conservation program in 1979. These funds were used primarily for the management of non-game species and to further augment the management of game species as well, and continued until 1981 when Sikes Act appropriations were discontinued.

FISH AND WILDLIFE FUNDING FOR CALENDAR YEARS 1978-1980

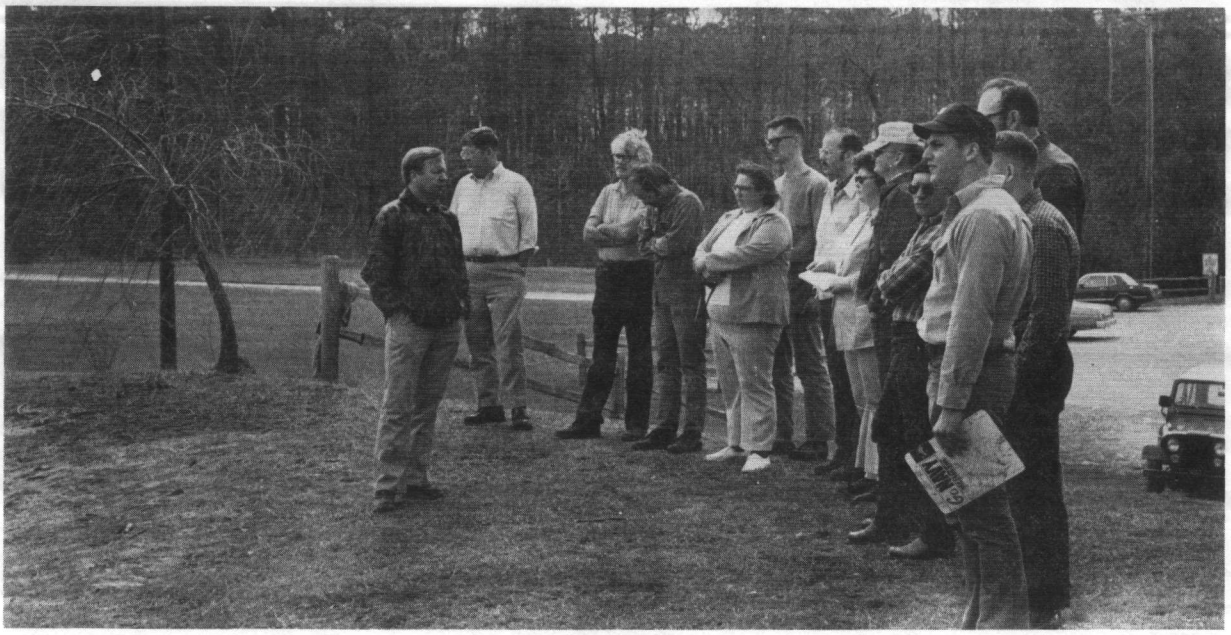
1980	Fishing, Hunting and Trapping Permits	$ 11,897.43
	Special Services	2,318.59
	Sikes Act	30,000.00
1981	Fishing, Hunting and Trapping Permits	16,755.00
	Appropriated Authorization for Fish & Wildlife	56,050.00
	GRAND TOTAL	$158,721.02

APPROPRIATED FUND (ARCHEOLOGICAL AND HISTORICAL SURVEY)

Authorization for Marine Corps Base	$ 54,016.00
Requested increase for MCAS and HOLF	6,190.00
	$ 60,206.00

ENVIRONMENTAL EDUCATION

Environmental personnel within limits of available manpower present programs and tours to schools, colleges, civic groups and other organizations; in 1981, the North Carolina Division of Health Services held a regional training school for groundwater water system operators and managers utilizing base facilities. Base environmental personnel (*i.e., Supervisory Chemist) assisted in the water bacteriological section of the school. Base Maintenance Utilities personnel were among the participants. As shown by the following illustrations, tne environmental education program is well rounded and contributes greatly to successful implementation of the goals and objectives of the United States Marine Corps environmental protection program.



WILDLIFE MANAGER AND NATURAL RESOURCES ENVIRONMENTAL AFFAIRS DIRECTOR HOSTING A GROUP FROM COASTAL OPPORTUNITIES ON A FIELD TRIP

COMMANDERS OF TANK MECHANICAL TRAINING UNITS RECEIVE BRIEFING FROM WILDLIFE RESOURCES PERSONNEL. SLIDE PRESENTATION AND FIELD TRIPS WERE PRESENTED TO COMMANDERS OF ALL MECHANIZED TRAINING UNITS FROM 2D MARINE DIVISION RELATING TO PROTECTING NESTING HABITAT OF THE RED-COCKADED WOODPECKER. THE PRESENTATION INCLUDES BACKGROUND INFORMATION ON THE STATUS, LIFE HISTORY AND ECOLOGY OF THE WOODPECKER. FIELD TRIPS TO WOODPECKER COLONY SITES WERE CONDUCTED AND ON-SITE BRIEFINGS WERE PRESENTED RELATIVE TO BASE REGULATIONS DESIGNED TO PROTECT WOODPECKER HABITAT.

APPENDIX A

BASE ORDER 6240.5

HAZARDOUS MATERIAL DISPOSAL PROGRAM

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

BO 6240.5
MAIN/DDS/th
22 Jun 1982

BASE ORDER 6240.5

From: Commanding General
To: Distribution List

Subj: Hazardous Material Disposal Program

Ref: (a) Resource Conservation and Recovery Act (Pub No. 94-580) (42 USC 6901-6987) (NOTAL)
(b) Environmental Protection Agency Regulations contained in Code of Federal Regulations, Title: 40 Parts 260-265 (NOTAL)
(c) Dept of Transportation Regulations contained in Code of Federal Regulations, Title: 49 Parts 100-179 (NOTAL)
(d) MCO 4570.24A (NOTAL)
(e) MCO P11000.8A
(f) BO 11090.1B
(g) BO 11350.2
(h) MCO 5100.25
(i) BO 11320.1G
(j) AS(H)O 6280.1 (NOTAL)

Encl: (1) Hazardous Waste Labeling Instructions
(2) Hazardous Material Disposal Procedures

1. Purpose. To publish responsibilities for disposal of hazardous material and hazardous waste regulated by references (a), (b) and (c) and to establish uniform disposal procedures as outlined in enclosures (1) and (2).

2. Policy. It is the policy of the Commanding General that compliance with hazardous material and hazardous waste disposal regulations will be accomplished through a centralized program committed to maximizing re-utilization and recycling so as to minimize impact on the environment. Final disposal (i.e., burial, incineration, etc.) and long term storage (i.e. for over 90 days) of hazardous waste are prohibited aboard Camp Lejeune and Marine Corps Air Station (Helicopter), New River, except with the specific written permission of the Commanding General, Marine Corps Base.

3. Background

a. On 19 November 1980, comprehensive federal legislation (reference (a)), which was implemented by reference (b), placed stringent legal requirements on the management of hazardous material and hazardous waste. Civilian and military personnel failing to follow established procedures may be subject to both civil and criminal penalties. Violations of these procedures may consist of acts of commission, such as mishandling hazardous material as well as acts of omission, such as failing to report to proper authorities observed mishandling of hazardous material or other violations of reference (a). Strict adherence to the procedures contained in this Order is necessary to avoid imposition of civil and/or criminal penalties.

b. Subpart D of Part 261 of reference (b) lists specific items which generally must be disposed of as hazardous waste. Enclosure (1) identifies types of waste commonly generated aboard military installations which are listed in Subpart D of reference (b).

c. Department of Defense (DOD) and Marine Corps policy related to the subject program is outlined in references (d) and (e). Reference (f) provides installation policy and guidelines for hazardous substance spill prevention, containment, reporting and cleanup. Reference (g) identifies the types of solid waste which can be disposed of in the base refuse collection and disposal system. Reference (h) outlines DOD and Marine Corps policy on the collection and dissemination of health and safety information related to the procurement, receipt, storage, handling, issue, transportation, use and disposal of hazardous materials. Reference (i) provides information relative to local fire prevention and protection requirements applicable to hazardous material storage and handling. Reference (j) established procedures for hazardous waste management applicable to Commands located at Marine Corps Air Station (Helicopter) (MCAS(H)), New River.

4. Responsibilities

a. Organizational Commanders will:

(1) Implement procedures and guidelines established by this Order for hazardous material and waste disposal and related handling, labeling, packaging, storage and transportation.

(2) Maintain copies of this Order and reference (f) at work sites where hazardous material and waste are routinely handled, stored or generated and ensure that personnel are familiar with the contents thereof.

(3) Inform newly assigned personnel of the characteristics and special handling requirements of hazardous material and waste used or generated at the work site.

(4) Report all hazardous material and hazardous waste spills to the Base Fire Department at telephone 451-3333. Commands at MCAS(H), New River will additionally report all spills at Station S-4 Office, telephone 455-6506/6068. Reference (f) pertains.

(5) Provide weekly inspections of all areas used to store hazardous waste and take action required to prevent and correct leaks, spills and other discrepancies. Maintain a log of these inspections showing the following:

(a) Date and time of the inspection

(b) Name(s) of the inspector(s)

(c) Notation of discrepancies observed

(d) Date and nature of corrective action taken.

Note: Reference (b) requires inspection records to be retained for three years.

b. Officer in Charge of Preservation, Packaging and Packing (PP&P) will:

(1) Upon request from Hazardous Material Disposal Coordinators inspect hazardous material and/or waste requiring disposal and provide such technical assistance and material support as required to package material and waste for disposal.

(2) Make appropriate transportation certifications as required by the Department of Transportation and the Environmental Protection Agency.

c. Defense Property Disposal Officer (DPDO), Camp Lejeune will:

(1) Accomplish disposal and related long-term storage of hazardous material and waste in accordance with reference (b) and applicable DOD regulations.

(2) Determine which items generated aboard this installation will be disposed of as hazardous waste (either on a case-by-case basis or by publishing listings of specific items).

(3) Publish DPDO procedural and administrative requirements for turn-in of hazardous material and hazardous waste.

(4) Notify cognizant officers of changes in DPDO policy which would affect implementation of the subject program.

(5) Maintain records of DPDO hazardous material and waste disposal activity in accordance with reference (b).

(6) Inspect hazardous material and waste for which DPDO has accepted accountability and take action required to correct deficiencies as required for compliance with reference (b).

d. Assistant Chief of Staff, Manpower will: Develop and implement a program to provide training and related recordkeeping required by reference (b).

e. Base Safety Officer will:

(1) Provide technical assistance on matters dealing with personnel safety related to hazardous material and waste management.

(2) Include hazardous material and waste disposal considerations in routine safety inspection programs.

f. Assistant Chief of Staff, Logistics will:

(1) Develop and implement a hazardous waste manifesting system and related recordkeeping system required by references (b) and (c).

(2) Prepare the following reports for Marine Corps Base, Camp Lejeune, for submission to the appropriate regulatory agency(ies)

(a) Hazardous Waste Generator's Annual Report and Exception Report as required by Section 262.4 of reference (b).

(b) Facility Annual Report and Unmanifested Waste Reports required by Section 264.7 of reference (b).

(3) Serve as point of contact between Marine Corps Base and DPDO on matters dealing with hazardous material and waste disposal and related storage and handling.

(4) Negotiate necessary agreements between Marine Corps Base and DPDO on matters dealing with hazardous material and waste disposal and related storage and handling.

(5) Provide properly equipped vehicles and trained operators for transportation of hazardous waste (when private contractor is utilized, ensure that the transporter is properly registered with the Environmental Protection Agency).

(6) Assume overall responsibility for operating long-term hazardous waste storage facility at Building TP-451 in accordance with standards contained in Part 265 of reference (b) until such time as the DPDO assumes this responsibility.

(7) Provide a hazardous material disposal coordinator to perform duties outlined in paragraph 4K of this Order with respect to disposal of hazardous material/waste by Marine Corps Base organizations.

g. Assistant Chief of Staff, Facilities will:

(1) Inform cognizant officers of federal, state and military environmental regulations and policies applicable to the subject program.

(2) Provide environmental monitoring and related followup of existing and past hazardous waste storage or disposal sites as required by reference (b).

(3) Initiate projects to provide required hazardous material spill prevention, control and countermeasures facilities.

h. Public Works Officer will:

(1) Provide engineering support and related technical assistance pertaining to hazardous material and hazardous waste storage and handling facilities.

(2) Include hazardous material and waste disposal and related management considerations in contracts as required to effect compliance with references (a) through (d).

(3) Enter pollution abatement deficiencies into the Naval Environmental Protection Support Service (NEPSS) information system and develop appropriate pollution abatement projects in accordance with reference (e).

i. Base Fire Chief will:

(1) Provide routine inspection of hazardous material and waste storage areas as required to identify spill and fire hazards.

(2) Provide initial response to hazardous material spills in accordance with reference (f).

j. Base Maintenance Officer will:

(1) Monitor ongoing activities as required to identify, evaluate and provide up-channel reporting of environmental deficiencies related to the subject program.

(2) Provide laboratory support required for identification of hazardous material and waste.

(3) Provide point of contact with federal and state regulatory agencies on environmental matters pertaining to the subject program.

(4) Upon request, provide on-site technical assistance as required to enable Organizational Commanders to evaluate compliance with this Order and applicable environmental regulations.

k. Hazardous Material Disposal Coordinator (HMDC) will:

(1) Ensure Command compliance with the procedures in enclosure (2).

(2) Inform organizations within the HMDC's cognizance of changes in hazardous material/waste storage handling and disposal procedures.

(3) Identify training requirements for personnel within the HMDC's cognizance routinely handling hazardous material or waste.

5. Action

a. Major Commands (i.e., MCAS(H), New River; 2d Marine Division, Naval Regional Medical Center, Naval Regional Dental Center and 2d Force Service Support Group) will:

(1) Designate a Hazardous Material Disposal Coordinator to serve as point of contact on matters related to implementation of this Order.

(2) Monitor all aspects of this disposal program internal to their Command to ensure compliance with this Order.

b. Battalion/Aircraft Group/Separate Company Commanders 2d Marine Division, 2d Force Service Support Group and Marine Corps Air Station (H), New River will:

(1) Ensure that organizations within their cognizance comply with requirements of paragraph 4a(1)-(5) of this Order

(2) Implement inspection and recordkeeping requirements of paragraph 4a(5) of this Order for organizations within their cognizance.

c. Commanders procurring hazardous material outside the Federaly Supply System will: require the manufacturer/ distributor to provide the information shown on enclosure (2) of reference (h) and will furnish a copy of the information to the Base Safety Officer and Air Station Safety Manager.

6. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF; 2d Force Service Support Group, (Rein), FMFLANT; 2d Marine Aircraft Wing, FMF, Atlantic and the Commanding Officers of the Marine Corps Air Station (Helicopter), New River and tenant units; Naval Regional Medical Center and Naval Regional Dental Center, this Order is applicable to those Commands.

J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A
BMAINO (100)

11

BO 6240.5
22 Jun 1982

HAZARDOUS WASTE LABELING INSTRUCTIONS

(See Note #1)

HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE BASE FIRE DEPARTMENT AT 451-3333,
OR THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY,
OR THE US ENVIRONMENTAL PROTECTION AGENCY

PROPER D.O.T. SHIPPING NAME See Note #2 UN OR NA# _____

GENERATOR INFORMATION: NAME: **MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542.** EPA ID NO. **NC6170022580**

NAME OF SUBUNIT GENERATING WASTE: _____

EPA WASTE NO. (Leave Blank)

ACCUMULATION START DATE See Note #3

MANIFEST DOCUMENT NO. (Leave Blank)

HANDLE WITH CARE!

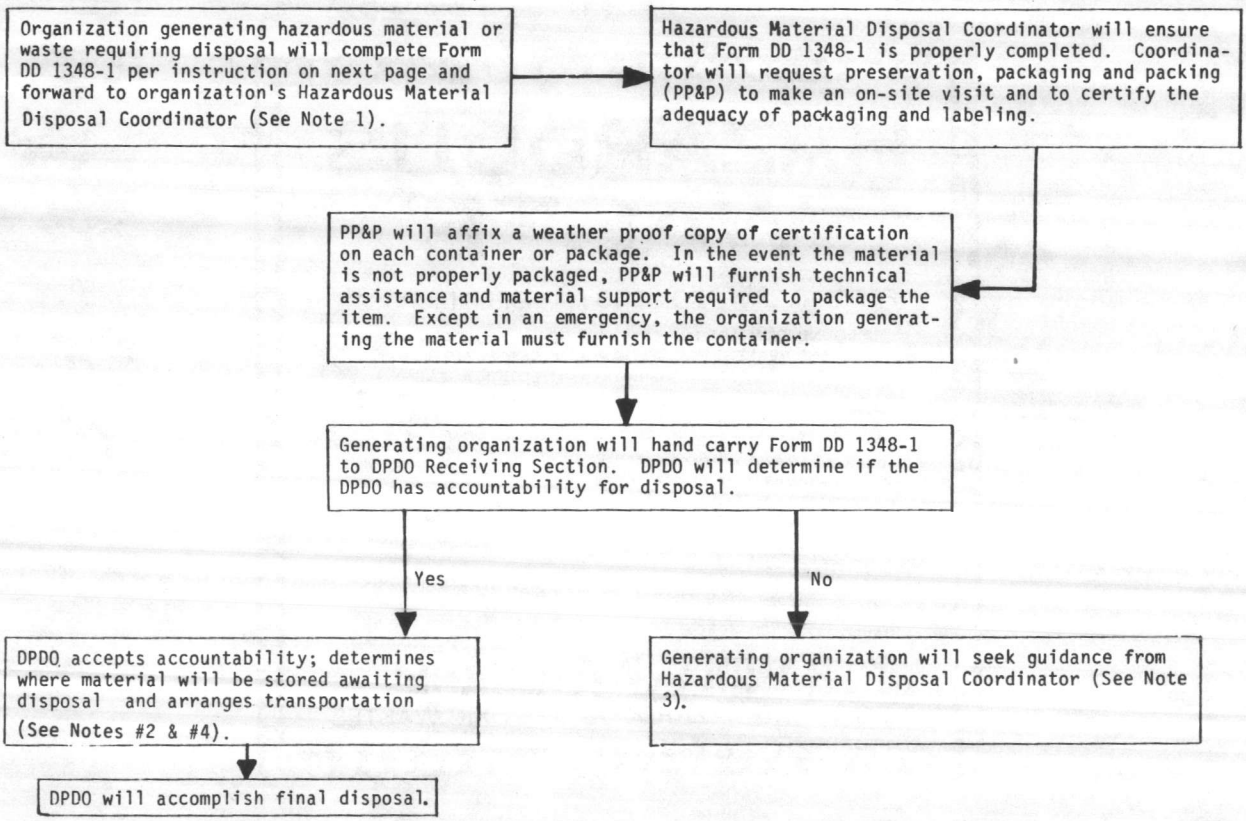
CONTAINS HAZARDOUS OR TOXIC WASTES

Note #1: The depicted label shall be put on all hazardous waste storage containers used on board Marine Corps Base. Organizations on board MCAS(H), New River will use labels provided by Air Station S-4 Office. See next page for examples of hazardous wastes.

Note #2: If known, insert name and UN or NA# listed in 49CFR Part 172, otherwise enter NSN and common/trade name used locally to identify item.

Note #3: Insert the date that filling of container begins. This date must be entered prior to use of container.

HAZARDOUS MATERIAL DISPOSAL PROCEDURES



Note 1: Organization having physical custody of material awaiting disposal will conduct weekly inspections in accordance with paragraph 4(a)(5) of this Order, if the item is hazardous waste.

Note 2: If an item to be transported is a hazardous waste subject to RCRA, the Traffic Management Officer will transport. A North Carolina Hazardous Waste Shipping Manifest prepared prior to transporting, will be attached to DD-1348-1 and will be carried by driver of vehicle used to transport waste.

Note 3: These items will be disposed of on a case by case basis utilizing procedures developed in accordance with applicable regulations. Assistant Chief of Staff, Facilities, Marine Corps Base, will coordinate development of appropriate procedures.

Note 4: The material will not be moved without prior concurrence of DPDO unless required by an emergency, in which case, DPDO will be informed as soon as possible.

List of Pre-Determined Hazardous Waste (See Notes #1 and #3)

1. The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1, 1, 1-trichloroethane, carbon tetrachloride and chlorinated fluorocarbons.

2. The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1, 1-trichloroethane, chlorobenzene, 1, 1, 2-trichloro-1, 2, 2-trifluoroethane, ortho-dicholorobenzene and trichlorofluoromethane.

3. The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohezanone and methanol.

4. The following spent non-halogenated solvents: cresols and cresylic acid and nitrobenzene.

5. The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol and pyridine.

6. Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions. See Note #2).

7. Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions. See Note #2).

8. Spent cyanide bath solutions from mineral metals recovery operations.

Note #1: This is a partial listing and is subject to change. Discarding these items into waste oil collection tanks is prohibited.

Note #2: These solutions and sludges are turned in for processing under the Precious Metals Recovery Program and should be turned in as HM.

Note #3: Waste contained in this listing is limited to those items specifically identified in subpart D of part 261 of reference (b). The local Defense Property Disposal Officer is responsible for identifying items which although not specifically identified by reference (b), must be disposed of as hazardous waste.

INSTRUCTIONS FOR COMPLETING DD FORM 1348-1 BY
MARINE CORPS BASE AND MARINE CORPS BASE TENANTS (SEE NOTE 1)

The following modifications/changes are to be incorporated into all disposal turn-in documents for hazardous materials or hazardous waste.

Block A - Name of Organization (telephone number) - NC 61700 22580

Block B - MCB, Camp Lejeune, NC (451-1634) - NC 61700 22580

Block C - Mark for (normally left blank): Insert HM (if turn-in is hazardous material) or HW (if turn-in is hazardous waste). See enclosure (1) for listing of HW commonly generated aboard military installations.

Block U - Freight Classification nomenclature: Add characters (two alpha, four numeric) identification number as shown in 49 CFR, Part 172. If unable to identify material or waste leave this block blank (See Note 2).

Block Y - Use this block (in lieu of Blocks AA through EE) for the Deposit Account Number.

Block AA and BB: MCB, Camp Lejeune, NC - NC 6170022580

Block CC: Have transporter (identified in Blocks AA and BB) sign and date for shipment received)

Blocks DD, EE, FF and GG: Insert the following statement in these blocks (Note: Rubber stamp, typewritten or machine produced copy required): "This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of DOT and EPA." (See Note 3).

_____ (Signature) _____ (Date)

Note 1: Marine Corps Air Station (H), New River and tenants shall complete DD Form 1348-1 in accordance with Air Station Order 6280.1.

Note 2: Hazardous Material Disposal Coordinator will request Base Maintenance Officer representative (telephone 5977) to accomplish sampling and analysis of item(s), as required, to complete Block U.

Note 3: Certification will be signed by authorized representative of generating organization. It is recommended that person signing have first hand knowledge of or supervisory responsibility for items being disposed of.

APPENDIX B

BASE ORDER 11000.1A

ENVIRONMENTAL CONSIDERATIONS IN MARINE CORPS ACTIONS, CAMP LEJEUNE

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

BO 11000.1A
MAIN/DDS/th
06 MAY 1981

BASE ORDER 11000.1A

From: Commanding General
To: Distribution List

Subj: Environmental Considerations in Marine Corps Actions; Camp Lejeune

Ref: (a) MCO P11000.8A (NOTAL)
(b) Pub. L. 91-190, 42 USC 4321-4347, 1 Jan 1970, as amended by Pub. L. 94-52, 3 Jul 1975, and Pub L. 94-83, 9 Aug 1975 (NOTAL)
(c) US Fish and Wildlife Service ltr of 19 March 1980 (NOTAL)
(d) BO 11015.2F
(e) OPNAVINST 6240.3E; Chap 4 (As revised on 5 Nov 1979) (NOTAL)

Encl: (1) Preparation of Preliminary Environmental Assessments
(2) Environmental Assessments, Necessity and Preparation

1. Purpose. To implement the President's Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) as provided by references (a), (b), (c), (d) and (e).

2. Cancellation. BO 11000.1.

3. Policy. It is the continuing policy of the Commanding General that:

a. All actions shall be planned, programmed and carried out in a manner that minimizes adverse impact on the environment. At the earliest feasible planning stage, action sponsors will assess all actions to determine the potential impact on the environment.

b. All practicable means and measures required for the prevention or mitigation of potential adverse environmental impact will be incorporated into all actions.

4. Background. The National Environmental Policy Act (NEPA) requires federal agencies to use all practicable means to conduct their respective missions in concert with the environment. Section 102 of NEPA requires each federal agency to document the environmental considerations utilized in the agencies decision making process. This documentation is known as the "Environmental Impact Statement" and is a public record. The volume of information and the degree of evaluation necessary to satisfy NEPA requirements are directly related to the significance of the potential impact on the environment. Enclosures (1) and (2) contain guidance for preparation of NEPA documentation.

5. Definitions. For the purpose of this Order, the following definitions are provided:

a. Action - includes, but is not limited to the establishment, modification or continuation of policies, regulations, projects, training and other acts not otherwise excluded, enclosure (2).

b. Camp Lejeune complex includes Marine Corps Base, Camp Lejeune; Marine Corps Air Station (Helicopter), New River, and Marine Corps Helicopter Outlying Landing Field, Oak Grove.

c. Environmental Impact Review Board - A board organized in accordance with reference (d) and consisting of representatives from Marine Corps Base, Camp Lejeune, Marine Corps Base Tenants and Marine Corps Air Station (H), New River.

d. Environmental Impact Assessment - The process of identifying probable effects upon the environment which would occur during the implementation of an action. Reference (e) breaks this process down into four phases, one or more of which would be required while assessing the proposed action. Each of these phases requires the preparation of a public document. The nomenclature for these documents is also used to identify the planning and decision making process utilized during each phase. The name and description of these documents and respective phases of environmental assessment are as follows:

(1) Preliminary Environmental Assessment (PEA) - is a document prepared by the action sponsor which provides sufficient information for determining if the action has the potential for environmental impact or controversy and for determining if an action should be subjected to further environmental review.

(2) Environmental Assessment (EA) - is a document which the action sponsor is responsible for preparing when the review of a PEA indicates potentially significant adverse impact on the environment, or when the review of a PEA indicates that the proposed action may cause significant public controversy. An EA is an in-depth study of the action and its environmental impact. The EA is utilized by CMC to determine if further environmental impact assessment is required by NEPA regulations. Enclosure (2) outlines environmental considerations to be addressed by the EA.

(3) Draft Environmental Statement (DES) - A document prepared for all actions having significant impact on

the quality of the human environment. The DES is filed with the Environmental Protection Agency (EPA) and is subjected to public review and comment. The decision to file a DES will originate at Headquarters Marine Corps. Specific instructions will be provided to action sponsors on a case by case basis.

(4) Final Environmental Statement (FES) - a completed statement, normally a separate and additional document from the DES, which incorporates all pertinent comments and information made as a result of review of the DES. The FES is also filed with the EPA and must contain a written response to each agency's comments on the DES.

e. Finding of No Significant Impact (FNSI) - a determination by the Headquarters Marine Corps Environmental Impact Review Board, after review of an EA, that a proposed action will neither have a significant effect on the human environment nor involve public controversy and that a DES will not be prepared.

6. Responsibilities

a. Action Sponsors will:

(1) Ensure that NEPA requirements have been satisfied prior to the implementation of any new action, not otherwise excluded, or any action which significantly modifies ongoing actions.

(2) Modify proposed or ongoing actions as required to incorporate means and measures required to minimize or mitigate potential adverse environmental impact.

(3) Prepare the preliminary environmental assessment for all actions and forward it to the Commanding General, Marine Corps Base.

(4) Effect the preparation of environmental assessments for review by Headquarters Marine Corps, when required.

(5) Coordinate the preparation of both draft and final environmental statements, when required.

(6) Maintain cost records directly related to the preparation of NEPA documentation as directed by reference (a).

(7) Retain all documents developed during environmental impact assessment as public documents.

b. Assistant Chief of Staff, Training, Marine Corps Base, has the following overall responsibilities:

(1) Implementation of NEPA requirements for all training actions aboard Camp Lejeune complex.

(2) Ensuring all practicable means and measures to prevent or mitigate adverse environmental impact are incorporated into training plans, procedures and training exercises.

c. Assistant Chief of Staff, Facilities, Marine Corps Base, has the following responsibilities:

(1) Ensuring that NEPA requirements are satisfied during the planning, programming and construction phases of actions initiated to provide or maintain facilities aboard the Camp Lejeune complex.

(2) Overall monitoring of all base programs to identify environmental deficiencies aboard the Camp Lejeune complex.

(3) Initiation of pollution abatement projects and related record keeping as outlined in reference (a).

d. Base Maintenance Officer will:

(1) Provide and coordinate surveys, as required, to identify pollution abatement deficiencies and to determine activity compliance with federal, state,and local environmental regulations and standards.

(2) Review pollution abatement reports reproduced by the Naval Environmental Protection Support Service (NEPSS) and make necessary changes.

e. Director, Natural Resources and Environmental Affairs Division, Base Maintenance Department will:

(1) Provide available information to action sponsors (such as soils maps, wetlands, endangered species and applicable environmental rules and regulations) required for environmental impact assessment and environmental protection.

(2) Serve as the point of contact with federal/state and local environmental regulatory agencies.

f. Public Works Officer/Resident Officer in Charge of Construction will:

(1) Maintain a pollution abatement report file on active projects.

(2) Initiate action to correct pollution abatement deficiencies by preparing necessary documentation of needed abatement projects for submission to CMC as outlined in reference (a).

(3) Monitor compliance of private contractors with all applicable environmental rules and regulations. Report discrepancies to the Assistant Chief of Staff, Facilities and Director, Natural Resources and Environmental Affairs Division, Base Maintenance Department.

g. Chairman, Environmental Impact Review Board - will review all Environmental Impact Statements prepared by Marine Corps Base, tenant commands and Marine Corps Air Station (Helicopter), New River and determine adequacy of compliance with NEPA and other environmental laws and regulations.

7. Applicability. Having received the concurrences of the Commanding Generals, 2d Marine Division, FMF; 2d Force Service Support Group (Rein), Atlantic; 2d Marine Aircraft Wing, FMF, Atlantic (for those subordinate units located at Marine Corps Air Station, New River) and the Commanding Officers of Naval Regional Medical Center; Naval Regional Dental Center and Marine Corps Air Station (Helicopter), New River, this Order is applicable to those Commands.

J. R. FRIDELL
Chief of Staff

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PREPARATION OF PRELIMINARY ENVIRONMENTAL ASSESSMENTS

1. General

a. The most important step in preparing a Preliminary Environmental Assessment (PEA) is the selection of the person(s) to conduct the assessment and prepare the documentation. In addition to the person having knowledge of environmental considerations, it is important that the person understand the purpose for the action and have practical knowledge of what is required to implement the action. The latter is required to properly project the impact upon the environment; the applicability of federal, state and local laws and regulations; and the means and measures required to minimize or mitigate adverse effects on the environment were the action implemented.

b. The action sponsor may determine early in the assessment process that an Environmental Assessment (EA) will be required. However, since the information included in a PEA is also needed for preparing an EA, the action sponsor is encouraged to carefully complete the PEA. The information contained in a properly prepared PEA is needed to incorporate environmental considerations into the preparation of EA's and/or the design of projects.

2. PEA Content. The following outline should be followed in reviewing the action and preparing the assessment documentation.

a. Action/Project Description

(1) Describe purpose and objective of action in terms of benefits to the installation's mission. List specific Marine Corps, Navy and other requirements affecting the sponsor's decision to propose the action.

(2) Describe the effects on the installation's mission were the proposed action not implemented.

(3) List permanent facilities (roads, buildings, culverts, ranges, fuel tanks, etc.) required.

(4) Describe site requirements (good drainage, vegetation height, area, potable water, sewage disposal, location, impact zone, etc.) needed to implement action.

(5) Describe ongoing activities (such as tank maneuvers, field firing, incinerator use, bivouacking, vehicle refueling, insect vector control, etc.) which may affect the environment.

b. Consideration of Alternatives and Site Selection

(1) List and briefly describe the alternatives and/or sites potentially suitable for accomplishing the objectives of the proposed action.

(2) List the alternative and/or site selected and briefly state why it was chosen over the remaining alternatives and/or sites. These reasons will include economic or management considerations as well as environmental constraints.

c. Compliance with federal, state and local environmental regulations and guidelines.

(1) Determine and briefly summarize the applicability of the following considerations to the alternative and/or site listed in b(2) above. Describe the proposed means and measures to control, prevent or mitigate adverse environmental effects.

(a) Endangered Species Act

(b) Clean Water Act

(c) Clean Air Act

(d) Coastal Zone Management Act

(e) Archaeological and Historic Preservation Act

(f) North Carolina Erosion and Sedimentation Regulations

(g) Hazardous Materials and Hazardous Waste Disposal, Spill Prevention and Spill Containment and Cleanup (Includes petroleum products and wastes)

(h) Protection of Wetlands, Executive Order 11990

(2) Discuss how sanitary waste and refuse disposal will be accomplished.

(3) Discuss other regulations applicable to the proposed action.

(4) List permit requirements of local, state and federal regulatory agencies.

(5) Prepare a site map showing the natural features of the project site; location of existing and planned roads, buildings, and other structures; location of environmental values to be addressed; planned means and measures to prevent, correct, or mitigate adverse effects of the proposed action upon the environment, etc.

d. How does the proposed action impact on other base functions and missions?

(1) Describe effects of proposed action on other activities. Are these activities aware of the proposed action and its impact on their programs?

(2) Is the proposed action consistent with existing master plans for the Camp Lejeune complex? Discuss how this determination was made.

SAMPLE PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT

1. Action/Project Description

a. Project Description. The G-4A Range is assigned to the Explosive Ordnance Disposal Platoon for routine and emergency disposal of Class V(W)(A) material and improvised explosive devices. Range G-4A is located within Grid Square 9333 of the Camp Lejeune Special Map and was approved and designated by the Naval Sea System Command as a Class "B" Disposal Site in 1974.

b. A recent inspection by the Naval Sea System Command revealed that it no longer met criteria established by current regulations for conduct of disposal operations. To meet the requirements, the following modifications must be accomplished:

(1) Survey to determine range perimeter and quantity-distance arc.

(2) Clear disposal area of trees and vegetation for a radius of 500 feet from detonation point.

(3) Fill existing craters to obtain flat, level detonation site.

(4) Fortify existing personnel protective shelter.

c. Once established, the cleared area must be burned or graded annually, as required, to prevent revegetation of the area. Approximately 18-20 acres of land are involved. The exploding ordnance would impact on the cleared area. Noise levels are expected to continue at current rates.

2. Consideration of Alternatives and Site Selection. In that the G-4A Range was an existing facility located on a suitable site for accomplishing the Explosive Ordnance Disposal (EOD) mission, the most desirable alternative is to utilize the present location. The proposed site is immediately adjacent to the G-10 Impact Zone and consequently, well located in terms of land use. On 19 March 1971, EOD personnel reviewed the site with personnel from the Natural Resources and Environmental Affairs Division (NREAD), Base Maintenance Department. The purpose of the review was to determine if any significant environmental constraints were present which would indicate a need to consider relocation of the site. None were identified, consequently, no alternatives were evaluated.

3. Compliance with Federal, State and Local Environmental Regulations and Guidelines

a. Endangered Species. Use of the cleared area by endangered species of animals (primarily the alligator and red-cockaded woodpecker) appears to be insignificant. The project has no apparent beneficial or adverse impact on any endangered or threatened species.

b. Clean Water Act. The level terrain and sandy soils result in a condition of low erosion potential. A 100-foot (plus) buffer zone of natural vegetation will be left around natural ponds in the area. There are no known residues of potential pollutants from the ordnance. Routine use of the area is of short duration and sanitary facilities have not been required. In the event of extended period of use, a porta-jon from Range Maintenance would be utilized. Sanitary facilities are also available at the Engineer Stockade located at map coordinates 920327.

c. Clean Air Act. Not applicable. No significant discharge of air pollutants.

d. Coastal Zone Management Act (CZMA). There is no direct or indirect impact on tidal marshes, beaches or other protected areas other than noise resulting from explosions. Due to approved use of the entire area for firing of large weapons and bombing (of which state officials are aware of), it is determined that CZMA is not applicable.

e. Archaeolgoical and Historic Preservation Act. There are no structures in the immediate area which have been identified on state or national registers of historic sites. There are no visible remnant structures of homesites, artifacts, etc. which indicate that the site is covered by this Act. The area has been subject to previous disturbance from explosions.

f. North Carolina Erosion and Sedimentation Regulations. As discussed in 3(b) above, there is no significant potential for sediment leaving the site. Therefore these regulations are not applicable.

g. Hazardous Materials and Hazardous Waste Disposal. The residues remaining after demolition are non-hazardous metals. The area was formerly designated as a restricted EOD area on appropriate base maps. Access to the area is restricted by signs and other procedures. At this time, the current state and federal regulations regarding hazardous waste disposal do not appear applicable.

h. Protection of Wetlands, Executive Order 11990. Two small freshwater ponds are the only wetlands which the proposed action has the potential for impacting. There will be a 100-foot (plus) barrier left around these areas. The ponds are adequately protected, as required by the Executive Order.

i. Sanitary Waste and Refuse Disposal. See item 3(b) above for sanitary waste disposal. Refuse (i.e., cans, papers, etc.) will be collected by using personnel and disposed of at an approved refuse container at the sanitary landfill. Minimum volumes are expected.

j. Discuss Other Regulations Applicable. The proposed action do not involve any environmental regulations other than those discussed above.

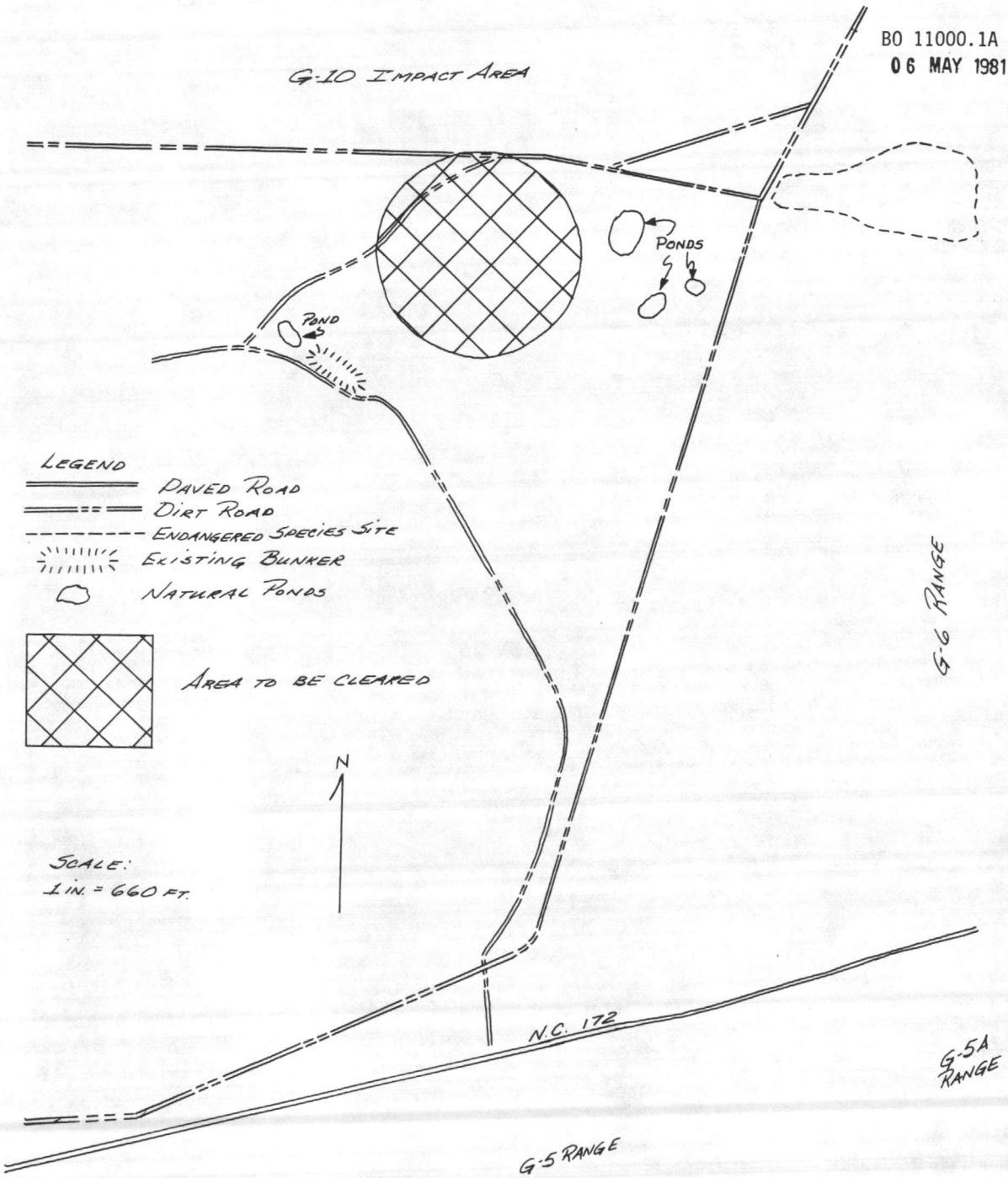
k. Permit Requirements. None

l. Site Map. See Appendix A to Enclosure (2).

4. How does the Proposed Action Impact on Other Base Functions and Missions?

a. The G-4A Range, EOD Range, is properly identified on base training maps and instructions. The proposed modification will not alter the existing restricted areas. However, the disposal site is immediately adjacent to the outer limits on the firing fan on the G-6 Range which is currently being re-activated. Depending on the circumstances involved, firing on the G-6 Range may have to be suspended during use of the G-4A Range.

b. Consistency with Base Master Plan. This matter was discussed with Design Director, Public Works Department. The Director advised that the modification of the G-4A Range was consistent with the existing Master Plan and projected use of the surrounding area.



SITE MAP FOR G-4A RANGE MODIFICATION PROJECT

DRAWN BY: _____

DATE: _____

ENVIRONMENTAL ASSESSMENTS, NECESSITY AND PREPARATION

1. Discussion. As a general rule, an Environmental Assessment (EA) is prepared when the Commanding General has determined that an action will significantly affect the environment or be controversial with respect to environmental effects. An EA of an action shall be made by the action sponsor, unless it has been determined by the Commanding General, Marine Corps Base, that the action falls within the scope of one or more categorical exclusions.

2. Guidelines and Standards

a. Categorical Exclusions. A categorically excluded action is one which, based on the following criteria and past experience, does not normally significantly impact on the quality of the human environment. Categorical exclusions are granted for those kinds of actions, which, among other factors, minimally effect the quality of the human environment; do not result in any significant change, from the conditions existing at the site of their impact; and those whose effect is primarily economic or social. The following are examples of actions, which, under normal conditions, are categorically excluded from the necessity for an environmental assessment or statement:

(1) An action, the effects of which, are included in a previously written assessment, or draft or final environmental statement. A new evaluation of the effects of such an action is not required unless the environmental effects will be markedly different from those predicted in the original assessment or statement.

(2) Emergency activities (e.g. riot control or search and rescue (SAR) activities) do not require environmental assessments or statements. Emergency situations generating a response by Navy or Marine Corps authorities which result in significant harm to the environment shall be reported to the Commandant of the Marine Corps.

(3) Routine movement of mobile sources

(4) Routine maintenance and repair

(5) Reductions in force (RIFs)

(6) Continuing actions if there is no substantial, adverse change from previously existing conditions

(7) Minor training exercises on military property

(8) Land and facility transfers to another federal agency wherein the General Services Administration (GSA) is the action agency

(9) Regulations which do not significantly affect the quality of the human environment in their implementation

(10) Routine procurements

(11) Mission realignment wherein no substantive change to operations is proposed.

b. Required Assessments (EA's). Assessments will be made for those actions which normally have the potential for violation of environmental laws or could result in a degree of degradation of environmental quality. The following are examples of actions which, under normal conditions, would require preparation of an EA.

(1) Training exercises on non-military property

(2) Major training exercises on military property

(3) Dredging projects that increase water depth over previously dredged or natural depths, and/or require new spoil area designations except where prior negotiations with the Corps of Engineers indicate no EA required for the purposes of permit authorization.

(4) Proposed utilization of tidelands and freshwater wetlands.

(5) Real estate acquisitions or outleases of land, excluding agriculture or grazing lands, involving:

(a) New ingrants/outgrants only, i.e., not renewals or continuances wherein land usage remains the same.

(b) Fifty acres or more (when acreage exceeds 50 by slight amount consult the Commandant of the Marine Corps).

(c) Notwithstanding (5)(a) or (b), any acquisition of any size or ingrants/outgrants which may be considered environmentally controversial, regardless of the appropriation or intended utilization.

(6) Major (greater than 50 units with the same caveat as with 5(b)) family housing projects, noting the increment being addressed against the deficiency at the time of submission.

(7) New target ranges or range mission changes which would increase environmental impact.

(8) Exercises conducted at the request of States (as ship sinkings for artificial reefs) wherein environmental impact might be expected (negotiation of responsibilities for EA preparation would be in order).

(9) Low altitude aircraft training routes and/or special use airspace and warning areas wherein overflights impact persons, wildlife (particularly endangered species) or property.

(10) Sale of substantial quantities of natural resources, When the Navy or Marine Corps is the contracting agency.

(11) Disposal of biological or chemical munitions, pesticides, herbicides, or other hazardous materials other than in the manner in which they are authorized for use or disposal.

(12) Mission changes, base or station closures/relocations/consolidations and deployments which would cause major long term population increases or decreases in affected areas.

(13) Any activity proposed in a designated or recommended "critical" habitat of an endangered species, except where prior negotiations with the Fish and Wildlife Service/National Fisheries indicates no EA required for the purposes of continued operations and compliance with the Endangered Species Act. (Note: Associated but separate need for a "biological assessment" and consultation in compliance with the Endangered Species Act may be required, reference (c).

(14) Any activity proposed which would adversely affect historical or cultural sites whether now cited on the National Register of Historical Places or deemed eligible for inclusion on the National Register.

(15) Closure or limitation of access to any areas that were open previously to public use, such as roads or recreational areas.

(16) Construction or any other action affecting an EPA designated acquifer or recharge zone (as specified by Section 1424(e) of the Safe Drinking Water Act, Pub. L. 93-523).

(17) Irreversible conversion of "prime or unique farmland" to other uses unless "other national interests override the importance of preservation or otherwise outweigh the environmental benefits derived from their protection." (Note: To ascertain if lands involved are appropriately classified, initial contact should be made with the U. S. Department of Agriculture (USDA) Land Use Committee in the affected State. This committee may be located by contacting either the chairman of the USDA rural development committee in the State or the State Soil Conservation Services (SCS) office).

(18) Transportation of hazardous substances, conventional munitions or other wastes for intentional disposal into the oceans.

(19) New, revised or established regulations, directives or policy guidance concerning activities that are likely to have significant environmental effects.

(20) Any action, the environmental effect of which is likely to become the subject of controversy by people who will be affected by the action.

3. Preparation of Environmental Assessments

a. To properly assess the environmental impact of an action, a variety of factors must be reviewed. In cases where adequate information is lacking to enable a definite environmental evaluation, it may be necessary to make provisions to obtain actual environmental data, especially since the current CEQ guidelines require that a statement:

> " . . . should also succinctly describe the environment of the area affected as it exists prior to the proposed action."

b. It goes without saying that the better the assessment, the closer the installation will be achieving the goal as outlined in the CEQ guidelines for environmental impact statements.

c. The Environmental Assessment Outline, Appendix A to enclosure (2), lists factors which should be considered in determining whether an action has an environmental impact, or could become environmentally controversial. The listings should aid in evaluating the nature and degree of the impact, as well as in identifying other agencies which have an interest in the action. Since the listings should not be considered to be complete, those persons assessing actions and preparing or reviewing environmental statements will have to use a great deal of imagination in order to objectively consider the wide range of beneficial and detrimental environmental aspects. Appendix A should be used as a guide in setting up format of an EA.

ENVIRONMENTAL ASSESSMENT OUTLINE

I. ACTION SUMMARY STATEMENT - Brief statement describing what the action is and why it has to be accomplished.

II. ACTION SCHEDULE - Time schedule for the action and for those events preceding the action, which may have an environmental impact.

a. Date of initiating request for approval

b. Anticipated date of action approval

c. Action design or planning phase

d. Begin construction phase (or similar preparatory actions)

e. End construction phase (e.g., complete engine test cell)

f. Anticipated date of activity initiation (e.g., begin engine testing)

g. Anticipated date of activity completion

III. ECONOMIC AND SOCIAL CHARACTERISTICS OF PROJECT SITE - Various factors of background information about the local area where the action is to take place.

a. Demographic Factors

(1) Installation population (identifying numbers that live on board)

(a) Military

(b) Dependents

(c) Civilian Employees

(2) Area Population

(a) Total Population

(b) Growth Trends

(c) Seasonal Variations

(d) Comparable Density Estimates

(e) Estimate of Affected Population

b. Governmental Organizations

(1) Local

(2) County

(3) Council of Governments

(4) Regional Planning Commissions

(5) State Government, i.e.,

(a) Utilities Commissions

(b) Natural Resources Board

(c) State Land Commission

(d) Department of Pollution Control

(e) State Transportation Department

(f) State Agricultural Department

(g) Water Resources Control Board

(h) State Planning Officer

(i) Consumer Services

(j) Water Management Districts

(k) Air Quality Control Commission

(l) Water Quality Control Commission

(m) Public Health Department

(n) State Highway Department

(o) State Recreation and Parks Department

(p) Fish and Game Department

(q) Historical Commission

(r) Legal Affairs (Attorney General)

(6) Regional and Interstate Authorities

(7) Regional and Local Offices of Federal Agencies with Jurisdiction and/or Special Expertise

(8) International Implications

c. Socio-Economic and Cultural Factors

(1) Population Socio-Economic Characteristics

(a) Rural

(b) Urban

(2) Project Area Economic Base

(a) Principal Area Resources

(b) Navy and Marine Corps role in Area Economics

(c) Median Income levels: Military and civilian personnel associated with the Navy in the Area - Civilian Population

(d) Area Tax Revenue Resources

(e) Federal Aid to the Area - Sources

(3) Aesthetic Aspects

(a) Area Landscaping Effort

(b) Architectural Features and Styles

(c) Existence of Signs, Blighted Areas and Congestion in Action Area

(4) Historical and Archeological Sites

(5) Special Interest Groups Associated with the Action Site

(6) Area Housing and Medical Situation

(7) Area Educational Institutions

(8) Area Transportation Network

(9) Utilization of Area Parks, Woodlands and Recreation Facilities

IV. NATURAL ENVIRONMENT AND LAND USE OF PROJECT SITE

a. Physical Characteristics

(1) Geography

(a) General Project Setting

(b) Geographic Extent of Project Effect: Boundaries of Military Property Critical Locations that lie Outside Military Property but Within Effects Zone

(2) Topography

(a) General Characteristics, Slope, Covering, Etc.

(b) Details on Critical Features that have Project Implications

(3) Geology

(a) Soil Characteristics: Texture, in place density and depth; Particle, size distribution and stratification; Porosity, permeability and capillarity; Plasticity and cohesion; Chemical and Radioactive Material Constituents; Erosion Characteristics

(b) Geologic Formations: Bedding sequence and characteristics; Mineral resources; Permeability and ground Water Resources; Pertinent Water Quality Aspects

(c) Seismology

(d) Silt/Silting

(4) Meteorology and Climatology

(a) Precipitation: Minimum, maximum, mean, median-daily, seasonally and yearly; Variability

(b) Relative Humidity

(c) Air Temperature: Daily and monthly - minimum, maximum, and mean; Variability, spatially and temporarily

(d) Wind Speed and Direction

(e) Excessive Condition Possibilities

(f) Solar Radiation; Inversion Frequency and Elevation

(g) Visibility

(h) Airborne Particulate and Gaseous Pollutants: CO, CO_2, NO_x, SO_x, O_3; photo chemical oxidants, hydrocarbons, particulate: soot, asbestos, oxides of beryllium and lead, etc.

(5) Hydrology

(a) Stream Discharge: minimum, maximum, mean and median-daily, seasonal and annual; variability

(b) Stream velocity: minimum, maximum, mean and median-daily, seasonal and annual; variability; stream profile - vertical, longitudinal and x-section

(c) Base Flow

(d) Flood Flows: Return frequency; damage potential

(e) Stream channel characteristics; bottom materials, sedimentation

(6) Oceanography

(a) Estuaries: Volume of tidal flows; velocity profiles; type of tide; salinity and temperature - variations; tidal heights - minimum, maximum and mean; contributing sources; mixing characteristics; tidal prism in cubic feet at high, low and mean

(b) Harbor Areas: Tidal heights, minimum, maximum, mean, seasonal variations; wave heights - return frequency; oscillatory velocity currents; turbulence; mixing characteristics; storm damage return frequency analysis

(c) Beach stability and characteristics

(d) Water quality and characteristics

(e) Bottom Characteristics

(7) Radioactivity (Refer to Nuclear Power Directorate (NAVSEA 08) for information and clearance)

(a) Background levels and source discharge potential

b. Land and Water Use

(1) Project Site Land-Use

(a) Present Land use and Land Quality

(b) Zoning Ordinance and Official Land-Use Designation

(c) Comprehensive Long-Range Plan

(2) Area Water and Land-Use (Military and Civilian)

(a) Commercial and Industrial: Navigation-water and airways; shell fish; commercial fisheries; cooling-water dilution; industrial processing; extractive operations

(b) Transportation and Utilities

(c) Residential

(d) Agricultural

(e) Vacant, Sanitary Landfill

(f) Municipal

(g) Recreational: Water sports and fishing; boating; waterfowl and wildlife habitat; refuges; wilderness areas, parks, wild-river zones; camping, cabins, hiking; field sports and playgrounds

(h) Historical and Archeological Sites

(3) Water Quality

(a) Minimum, maximum and mean concentrations - daily annual: Concentration of critical constituents; temperature profile - vertical, longitudinal and cross section; sediment load - bed load, suspended solids; floating solids, oils and grease; color and turbidity; taste and odor; phosphate, nitrate and trace-minerals content; CO_2, O_2, N_2, H_2S; detergents, organic content; specific conductance, total dissolved solids; background radioactivity; pesticides; soluble organics; toxic materials; pH.

c. Area Biosystems of Interest

(1) Identification of Pertinent Ecosystems and Habitat Associations

(2) Population Dynamics Endemic Species, Number, Variation, etc.

(3) Quality of Wildlife

(4) Endangered Species

(5) Food Chain and Life Cycle; Seasonal Variations

(6) Critical Inputs and Toxicity Levels, if any

V. ACTION FACTORS TO BE CONSIDERED, PROBABLE IMPACT - Factors which should be considered in assessing potential impact of various actions on environmental quality

a. Transportation of Hazardous Materials

(1) Type of Danger Involved

(a) Explosive

(b) Flammable

(c) Radioactive

(d) Toxicity: Liquid - Gaseous

(e) Communicable Diseases

(2) Safeguards and Precautions

(a) Safety Precautions

(b) Route Selection, Convoy

(c) Monitoring

(d) Backup Systems

(3) Likelihood of an Incident

(a) Previous History

(b) Sequence or Combination of Events that will Lead to an Incident

(c) Potential Damage and Mortality Associated with an incident: Military personnel; military employees; civilian population, plant and animal life; real property damage

(4) Emergency Procedures

(5) Alternatives

(6) Compliance with Local, State and Federal Regulations

(7) Controversy

b. Resources Depletion

(1) Relative Magnitude - Amounts to be Used

(2) Resource Being Depleted

(a) Groundwater; limited surface flows

(b) Mineral Utilization

(c) Sand and Gravel Deposits

(d) Oil and Petroleum Products; Natural Gas, Geothermal Sources, and Coal

(e) Archeological and Historic Sites

(f) Fish and Game Habitat

(g) Waterfowl Habitat

(h) Wetlands

(i) Beach lands

(3) Cost-Benefit Analysis

(4) Long-Term vs Short-Term Implications

(5) Alternatives

(6) Applicable State and Federal Regulations

(7) Possibility of Recycling or Restoration

(8) Controversy

c. Emissions, Effluents, Solid Wastes, Noise

(1) Airborne Emissions

(a) Sources at Project Site: Automobiles, trucks, and buses; open burning; incinerators; power generation; conventional and nuclear; heating; road-mix plants; solvent use; cooling towers; aircraft engine testing; aircraft operations; weapons training operations; firefighting school; construction; shipboard lagging of insulation; propellant combustion

(b) Parameters measured - minimum, maximum, mean, and variability: SO_x, NO_x, CO, CO_2, O_2, and O_3; hydrocarbons and photochemicals; visible emissions; color, odor, etc.; particulate matter

(2) Waterborne Effluents

(a) Sources at Project Site: Domestic wastewater; cooling water and cooling tower blowdown; industrial wastewater; oils; processing fluids; irrigation return - flow; recreation return - flow; runoff; seepage from waste disposal operations; accidental spills; silt/silting

(b) Treatment provided prior to Discharge: Chemical - precipitation, chlorination; sedimentation, gravity separation; filtration; aeration; aerobic bacterial treatment; anaerobic bacterial treatment; long-term holding; heat treatment; sonic treatment; radioactive treatment

(c) Physical and chemical characteristics - minimum, maximum, mean, variability: Volume-hourly, daily, seasonal, annual; color, odor, taste, turbidity; temperature and pH; oxygen demand-chemical and biological; total suspended solids; total dissolved solids, conductivity; volatile solids; CO_2, O_2, H_2S; pathological organisms; phosphates, nitrates, trace nutrients; toxic materials; pesticides; floating solids, oils, grease; detergents; radioactivity; heavy metals

(d) Point of Effluent Discharge: Characteristics of receiving water; distribution and diffusion; mixing vertical and longitudinal; reactivity potential; chemical and biological; possibility of serious damage due to accidental release; other discharges-nature and quantities

(3) Solid Wastes

(a) Sources at Project Site: Domestic sources; commercial and industrial; weapons packaging materials, disposal of; hospital; mineral wastes; agricultural wastes; incinerator wastes

(b) Characteristics of Wastes - Minimum, maximum, mean, and variability: Pathogenic; organic content-combustibles, NH_3 volatile fractions; moisture content; oils and greases; density; volume-daily, weekly, seasonal, annual; recycle and salvage potential; radioactive materials and contaminated equipment; explosive materials

(c) Point of Discharge: Physical state; collection procedure and state; method of transportation; intended site for disposal; characteristics of disposal site; possibility of serious damage or health hazard being created by accidental release

(4) Noise Emissions

(a) Sources at Project Site: Construction equipment; drilling and blasting; motor vehicles; aircraft operation and testing; watercraft operations; weapons testing; industrial processing

(b) Noise levels - maximum, mean, variability: At the project site; closest non-military personnel; duration of project; duration of noise at each level indicated; CNR designation

(5) Alternatives to Uncontrolled Emissions, etc.

(6) Compliance with Local, State and Federal Standards and Regulations

d. Pesticides

(1) Purchase and Procurement

(a) Selection

(b) Effect on non-target organisms

(2) Storage and Transport

(a) Effect on humans

(b) Precautions and security

(3) Operations Effects

(a) Application methods

(b) Fumigation

(c) Wood preservation and treatment

(d) Aerial dispersal

(e) Soil treatment

(f) Disposal

e. Radiation

(1) Sources

(a) Power generation: Reactor operation; fuel cell reprocessing; radioactive waste handling

(b) Weapons testing

(c) Occupational exposure in laboratories and training facilities

(2) Source Characteristics

(a) State: Solid, liquid, gaseous; radioactive particle; energy emission

(b) Half-life

(c) Activity level

(d) By-products - secondary effects

(3) Likelihood of an Incident

(a) Previous history

(b) Sequence or combination of events that will lead to an incident

(c) Possible property damage

(d) Possible exposure of military personnel and employees

(e) Possible exposure of civilian population

f. Water and Land Use Implications

(1) Uses with Potential Adverse Implications

(a) Storage of hazardous materials

(b) Disposal of hazardous materials

(c) Operations near residential areas, safety zones

(d) Operations that restrict or preclude recreational use of public lands, beaches and waterways

(e) Construction of new facilities: Added traffic congestion in the area; significant population density changes; reduction of park and recreation facilities; radical changes in architectural norm

(f) Industrial processing normally associated with noise, air pollution and water pollution

(g) Creation of blighted and slum areas by abandonment of facilities and installations

(2) Compliance with Local Code

(a) Housing and Building

(b) Subdivision

(c) Zoning

(3) Agreement with Long-Term Regional Master Plans

(4) Alternatives

(5) Long-Term Versus Short-Term Implications

VI. UNAVOIDABLE ENVIRONMENTAL IMPACT - Various categories of environmental impact which may occur as a result of specific actions or sequence of actions.

a. Noise Pollution

(1) Health and Welfare Significance

(a) Exposure of station/ship personnel to potentially hazardous noise levels

(b) Exposure of civilian communities to annoying noise levels resulting from: Aircraft operations; aircraft maintenance; industrial noise; vehicular noise resulting from changes in traffic density

(c) Anxiety of civilian community over aircraft safety manifested by noise compliants

(2) Economic Significance

(a) Changes in land values resulting from (1)(b)

(b) Direct and indirect costs associated with the following: Litigation; public relations; noise surveys (one-time and continuing); noise control and abatement "fixes"; relocations of equipment, personnel and/or facilities to take advantage of natural sound barriers; changes in job performance due to changes in noise levels

b. Water Pollution

(1) Health Significance

(a) Transmission of pathogenic disease: Potable water supply; shellfish; bathing and recreation waters; vegetables and irrigated crops

(b) Taste and odor in potable supply

(c) Toxic materials in potable supply: Pesticides and herbicides; heavy metals; arsenic, cyanides, sulfides; nitrates; fluorides

(2) Effects on Aquatic Life

(a) Direct Effects: Growth stimulated by addition of nutrients such as phosphates, nitrates, CO_2 and trace elements; elimination or growth impeded by limiting factors such as minimum oxygen tension, maximum temperature, color, pH range, NH_3, NO_2 and turbidity; toxicity of materials such as heavy metals (copper, zinc, silver, lead, mercury), detergents, chlorinated hydrocarbons, and oils and volatile petroleum based materials; interference with aquatic life by suspended solids, turbidity and color; disruption of the life cycle of aquatic life; silt/silting

(b) Indirect Effects: Food chain interruption; inhibition or stress during some phase of the life cycle; habitat destruction; change in competitor relationship; change in predator relationship

(3) Aesthetics

(a) Loss of sense of well-being

(b) Loss of confidence in society to cope with problems

(c) Lending credit to a feeling of ugliness that prevails in large urban areas

(4) Economic

(a) Loss to commercial fisheries

(b) Cost of water treatment before use

(c) Cost of developing alternate water supplies

(d) Lower agricultural productivity due to build-up of dissolved solids in irrigation water; shift to salt tolerant crops

(e) Loss of reservoir capacity due to sediment deposition

(f) Loss of use of a natural resource

(5) Recreation

(a) Pleasure of boating and water skiing is diminished due to floating solids, gas bubbles, odors and algae blooms

(b) Closing of public beaches and swimming areas because of potential disease transmission

(c) Loss to sport fishers due to fish kills and reduction in the population of quality fish by pollution, with more resistant trash fish replacing them

(d) Smaller wildlife and waterfowl populations

c. Air Pollution

(1) Health Significance

(a) **Increased death and illness rates:** SO_x, NO_x, and particulates with relative levels of each important overall health effect; linked with high mortality rates due to cancer and arteriosclerotic heart disease

(b) **Increased incidence of chronic disease:** Emphysema; Brochitis; other respiratory ailments compounded by lung tissue damage; allergies; hay fever

(c) Eye irritation, nose irritation

(d) Reduce visual and mental acuity

(e) Toxic materials: Carbon monoxide-O_2 replacement in blood; beryllium - lung lesions; asbestos - lung scarring and lung cancer

(f) Increased susceptibility to disease

(g) Loss of sense of well-being

(h) Nuisance problems created-odor, visibility loss

(2) Economic Significance

(a) Corrosion and material deterioration: Paint darkening and peeling; metal corrosion; rubber cracking; erosion of building faces and statuary; color deterioration

(b) Soiling of food, clothes, automobiles and structures: Cleaning costs; dyeing costs; loss of prepared and canned foods; time, utilization and replacement costs

(c) Vegetation and animal life: Tree and orchard blight; crop losses (particularly for leafy vegetables); chronic plant injury and chronic animal diseases; loss of incoming radiation needed for plant growth

(d) Increased accident costs

(3) Aesthetic Loss

(a) Visibility loss

(b) Generation of smog and haze

(c) Scenic beauty and skyline obscured

(4) Climatic Changes

d. Release of Toxic Materials

(1) Health Significance

(a) Exposure of humans to toxic levels due to accidental release

(b) Chronic effects due to concentration of materials in the human body

(c) Potential increased incidence of birth defects, genetic mutation and cancer

(d) Concentration to toxic levels via the food chains

(e) Fear of certain food because of possible contamination

(2) Biological

(a) Elimination of some species because of toxic effects

(b) Elimination of some species because of introduction of stress or weakening of the species during some phase of the life cycle

(c) Changes in variety and population in the ecosystem

(d) Selective breeding of resistance species

(e) Change of predatory and parasite relationships

(f) Severe leveling of population numbers

(3) Aesthetic and Recreational

(a) Loss of recreational opportunities: Elimination of certain species; over-production of certain species

(b) Development of large populations of nuisance organisms: Taste and odors; color; suspended biomass

e. Adverse Land and Water Use

(1) Sociological

(a) Urban congestion: Loss of some of the amenities of life; loss of diversity and opportunity for individualism; development of high crime rate areas

(b) Failure to include social costs could lead to ineffective projects that do not operate as intended, breakdown of public sector functions

(c) Loss of sense of "home" to the urban dweller in certain types of housing developments

(d) Loss of open areas and recreational facilities

(e) Lack of adequate low cost housing in certain urban areas

(f) Development of low tolerance to changes in lifestyles and inceased impatience with interfering agents

(2) Health Significance

(a) Increased need for sanitation facilities

(b) Increased generation of solid wastes

(c) Increased need for sector control

(d) Tensions due to increased tempo of life and increased stress

(e) Creation of anxiety

(3) Aesthetic

(a) Loss of sense of well-being in the community

(b) Creation of an atmosphere of ugliness

(c) Depreciation of the quality of life

(4) Economic

(a) Tax burden shifts: Loss of property as a revenue source; increase in obligations to provide community services

VII. NATURAL RESOURCE DEPLETION

a. Irreversible Processes

(1) Lake Eutrophication

(2) Loss of Certain Species of Biolife

(3) Soil Erosion

(4) Loss of Wet-Land Areas, Free-Flowing Streams and Canyons

(5) Loss of Cold Regions Tundra

(6) Permanent Modifications of Weather and Climate

(7) Loss of Open Lands and Vista

(8) Groundwater Pollution

b. Slow Regeneration Processes

(1) Timber Harvesting

(2) Overgrazing of Land

(3) Overproduction of Groundwater in Excess of Recharge

(4) Temporary Change in the Ecosystem to Favor Certain Species

c. Economic

(1) Cost of Developing Alternate Resource Due to the Depletion of Certain Resources

(2) Long-Term Versus Short-Term Economic Considerations Where Viewed from Position of Long-Range National Goals Versus More Restricted Objectives

APPENDIX C

BASE ORDER 11015.2G

COMMITTEE FOR ENVIRONMENTAL ENHANCEMENT/ENVIRONMENTAL IMPACT REVIEW BOARD, MARINE CORPS BASE

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

BO 11015.2G
MAIN/DDS/th
09 JUN 1981

BASE ORDER 11015.2G

From: Commanding General
To: Distribution List

Subj: Committee for Environmental Enhancement/Environmental Impact Review Board, Marine Corps Base, Camp Lejeune, North Carolina

Ref: (a) MCO P11000.8A (NOTAL)

1. Purpose. To establish a Committee for Environmental Enhancement/Environmental Impact Review Board to advise and assist the Commanding General in the implementation of the provisions of reference (a) with respect to conservation and management of natural resources and the processing of environmental assessments/statements.

2. Cancellation. BO 11015.2F.

3. Policy. It is the continuing policy of the Commanding General to restore, improve and preserve the natural resources and the environmental quality of the land and waters of this base to the maximum extent possible in the public, as well as the military interest; to encourage and give incentive to natural resource activities of the base; and to provide, within manageable quotas, for controlled public access to the fish and wildlife resources of the base on a first-come, first-served basis, when such can be accomplished without impairment of the military mission. For the purpose of this Order, the term "base" includes Marine Corps Air Station (Helicopter), New River.

4. Membership. The Committee for Environmental Enhancement/Environmental Impact Review Board shall be composed of the following:

a. Members

Chairman (As appointed by the Commanding General, MCB)
Base Training Facilities Officer
Representative, 2d Marine Division, FMF
Representative, 2d Force Service Support Group (Rein), FMFLANT
Representative, Marine Corps Air Station (H), New River
Base Maintenance Officer
Public Works Officer

b. Advisors

Director, Natural Resources and Environmental Affairs Division
Supervisory Ecologist
Base Wildlife Manager
Base Forester
Base Safety Officer
Base Game Protector
Chief, Veterinary Medicine Service, Naval Regional Medical Center
Chief, Occupational and Preventive Medicine Service, Naval Regional Medical Center
Representative, Staff Judge Advocate
Defense Property Disposal Officer

5. Organization and Meetings

a. The Committee/Board will meet as desired by the Chairman.

b. Only the seven members of the Committee/Board need attend regular meetings; however, advisors to the Committee/Board may be requested by the Chairman to attend specific meetings when the agenda indicates a requirement for their expertise on a particular subject.

c. Advisors are invited and urged to attend any meetings whether or not specifically invited.

d. Sub-committees may be established by the Chairman utilizing members and/or advisors, as required.

6. Responsibilities

a. The Committee in General

(1) Assumes responsibility for planning and the balanced application of the natural resources program.

(2) Promotes and fosters the Presidential objectives for environmental enhancement on base and in cooperation with local communities.

(3) Informs the Commanding General of the broad environmental guidance and responsibilities prescribed by the National Environmental Policy Act.

(4) Receives and reviews environmental assessments and determines if the potential for environmental damage or controversy exists. If adverse environmental impact or controversy exists, makes appropriate recommendation for additional action to the Commanding General, Marine Corps Base.

b. Chairman

(1) Recommends policies and programs pertaining to natural resources and environmental quality to the Commanding General.

(2) Ensures the integration of the philosophies, principles and policies of reference (a).

(3) Ensures that the base natural resources conservation and environmental programs are conducted in such a manner that they compete on an equal basis with other similar military installations for the Secretary of Defense Conservation Award and Environmental Quality Award.

(4) Provides command liaison with and establishes procedures for scheduling and conducting frequent meetings between representatives of federal, state and county fish and wildlife agencies and officially chartered conservation organizations. Takes the initiative to seek assistance from and work effectively and in harmony with state and federal agencies and/or organizations.

(5) Ensures, when feasible, that local sportsmen groups are invited to sit in meetings of the Committee for Environmental Enhancement as guests. The importance of establishing, maintaining and improving base-community relations cannot be overemphasized.

(6) Continues to monitor the current Marine Corps Base, North Carolina State and Federal Cooperative Plan in accordance with paragraph 2006.2b of reference (a).

(7) Reviews recommendations regarding organized deer hunts and makes appropriate recommendations to the Commanding General.

(8) Reviews minutes of both Camp Lejeune and the New River Rod and Gun Clubs.

(9) Ensures the records, minutes, files and other pertinent documents of the Committee/Board are properly maintained.

(10) Provides a recording secretary at Committee meetings, prepares minutes, and maintains an office of records for Committee correspondence.

c. Director, Natural Resources and Environmental Affairs Division, Base Maintenance Department

(1) Advises and assists the Chairman of the Committee for Environmental Enhancement/Environmental Impact Review Board in the administration of the Committee.

(2) Assists the Chairman in the coordination, monitoring and supervision of the overall conservation effort.

d. Command Representatives. Represent their parent organization in the Committee's deliberations and programs.

e. Presidents, Rod and Gun Clubs

(1) Coordinates Rod and Gun Club activities with interested members of the Committee/Board.

(2) Provides the Chairman with a copy of the minutes of all meetings held by the Rod and Gun Club.

f. All Members and Advisors. All members and advisors on the Committee/Board will coordinate and provide assistance to the Chairman and the Committee/Board as appropriate on matters in their specific areas of interest, to include but not necessarily limited to:

(1) Attendance at meetings upon call of the Chairman.

(2) Assemble and submit materials (news media articles, pictures, documentation, etc.) and provide other assistance as required in preparation of the Annual Conservation Nomination Award and Environmental Quality Award.

(3) Development of conservation programs, procedures and policy to improve the overall environmental enhancement effort at Camp Lejeune.

(4) Other duties on request of the Chairman.

7. Reports. A report (minutes) of all Committee meetings will be submitted to the Commanding General.

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8. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF; 2d Force Service Support Group (Rein), FMFLANT; and the Commanding Officers of the Marine Corps Air Station (Helicopter), New River; Naval Regional Dental Center; and Naval Regional Medical Center, this Order is applicable to those Commands.

J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A

APPENDIX D

BASE ORDER 11015.3A

ENDANGERED SPECIES PROTECTION PROGRAM

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

BO 11015.3A
MAIN/CDP/mp
10 FEB 1981

BASE ORDER 11015.3A

From: Commanding General
To: Distribution List

Subj: Endangered Species Protection Program

Ref: (a) MCO 11015.4B
(b) Pub Law 93-205E Endangered Species Act of 1973 as amended in 1978
(c) MCO P11000.8A
(d) Natural Resources Management Plan, Camp Lejeune, North Carolina
(e) BO 11015.6
(f) BO 11015.7
(g) BO 11000.1

Encl: (1) List of Endangered and Threatened Species Present at Camp Lejeune

1. Purpose. To set forth regulations that will ensure the protection of endangered and threatened species hereafter referred to as listed species in accordance with applicable local, state and federal laws.

2. Cancellation. BO 11015.3.

3. Background

a. Marine Corps Base, because of the protective and security nature of its lands, has provided vital sanctuaries for listed species in the past. Enactment of new legislation in the National interest is the basis for affirmative programs that ensure protection of listed species and their habitats.

b. Reference (a) promulgates Marine Corps policy for the protection of listed species in compliance with reference (b). Long range planning for the management of listed species is contained in references (c) and (d). Specific guidelines for training use of the habitats of several listed species are contained in references (e) and (f). Reference (g) contains guidelines for assessing environmental considerations and factors involving listed species.

c. Enclosure (1) contains identified listed species presently occurring on these lands pursuant to reference (b).

4. Policy. It is the continuing policy of this Command to actively participate in planning and programming actions which will ensure the protection of listed species on Marine Corps Base lands.

5. Responsibility. The overall responsibilities for carrying out environmental monitoring of listed species and their habitat is charged to the Base Maintenance Officer. Natural Resources and Environmental Affairs Branch Director is responsible to the Base Maintenance Officer for staff reporting of events which may have favorable or unfavorable impact on endangered species and their habitat.

6. Program Guidelines. Marine Corps Base will actively carry out a program to protect and enhance all current listed species. Cognizant personnel in this command shall:

a. Identify to the extent feasible, areas of habitat controlled by the activity which may be regarded as critical, as defined in enclosure (4), page 874, paragraph 402.02 of reference (b).

b. Delineate the boundaries of the habitat areas on maps to be included in the activity master plan and natural resources management plan, and provide one copy of each to the Commandant of the Marine Corps (Code LFF).

c. Make every effort to provide the information obtained on the identified habitat areas to the Fish and Wildlife Service and National Marine Fisheries Service within the timeframe cited in enclosure (3) of reference (b), for their use in determining whether or not the areas should be classified as critical pursuant to reference (b). Extension of the timeframe, if needed, shall be coordinated with the Regional Director, Fish and Wildlife Service.

d. Provide the Commandant of the Marine Corps (Code LFF) with two copies of the information submitted to the Fish and Wildlife Service, as required by paragraph 6c, preceding.

e. Protect the habitat areas identified in accordance with paragraphs 6a and 6b, preceding, and consult with the representatives of the Fish and Wildlife Service and National Marine Fisheries Service prior to modifying these areas.

f. Develop a positive program for the protection and enhancement of activity areas designated by the Fish and Wildlife Service and National Marine Fisheries Service as critical habitat, and determine authorized and unauthorized use of such habitat.

g. Initiate consultation with the Fish and Wildlife Service and National Marine Fisheries Service in accordance with the procedures outlined in enclosure (4) of reference (a) when a planned activity or program has been identified that may affect (favorably or unfavorably) listed species or their habitat. (See definition of "Activities or programs", in enclosure (4), paragraph 402.02 of reference (a)).

h. Environmental assessments shall be in accordance with reference (g) for any action which may affect listed species or their habitats and shall be prepared by the action sponsor. The documents shall contain the final biological opinion of the Fish and Wildlife Service and/or the National Marine Fisheries Service obtained through the consultation process.

i. The Director, Natural Resources and Environmental Affairs Branch, is designated as command representative to maintain liaison with the Naval Facilities Engineering Command, natural resource managers, federal, state and local government agencies and organizations having interest in listed species. Initial contacts shall include the Regional Office of the Fish and Wildlife Service and the North Carolina Wildlife Resources Commission. Liaison will also include contact with listed species recovery teams, private organizations and individuals, as applicable, to assist with identification of listed species and their critical habitats.

j. Should it be determined that training is being degraded to the extent that it is affecting combat readiness, documentation to support this assessment should be forwarded to this headquarters (Attention: Assistant Chief of Staff, Training). An examination of assimilated data will then be conducted to determine if a request for a National Security Exemption to the Endangered Species Act is warranted.

7. Action. Unit Commanders and Officers-in-Charge will ensure that personnel under their command make every effort to prevent adverse impact to listed species and their habitats. Personnel throughout the command are expected to fully cooperate in the program at all levels. With the enactment of this subject legislation, a basis now exists for court action, which enables courts to slow, stop or cancel projects, if further action could destroy the critical habitat of a listed species as established by reference (b).

8. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF, and 2d Force Service Support Group (Rein), FMF, Atlantic, and the Commanding Officers of the Marine Corps Air Station (Helicopter), New River, Naval Regional Dental Center and the Naval Regional Medical Center, this Order is applicable to those Commands.

M Fridell
J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A

BO 11015.3A
10 FEB 1981

LIST OF ENDANGERED AND THREATENED SPECIES PRESENT AT CAMP LEJEUNE

SPECIES	PREFERRED HABITAT	PROJECTS INVOLVED	STATUS
Caretta caretta Atlantic Loggerhead	Warm ocean water. Frequent nesting along Onslow Beach.	Marking, protecting nest sites from predation. Inventory and tagging.	Threatened
Chelonia mydas Atlantic Green Turtle	Shoal waters with submarine vegetation.	Nesting in 1980	Threatened
Lepidochelys kempi Atlantic Ridley	Shallow coastal waters, observed in Intracoastal Waterway.	Tagged juvenile	Endangered
Dermochelys coriacea Atlantic Leatherback	Open sea waters along the coast.	Awaiting nesting activity on beach.	Endangered
Eretomochelys imbricata Atlantic Hawksbill	Reefs and shallow coastal waters		Endangered
Alligator mississippiensis - American Alligator	Salt marshes, tidal streams and estuaries	Inventory, protection of marshlands.	Endangered
Dendrocopus boreais Red-Cockaded Woodpecker	Primary in longleaf timber types	Inventory and marking nest sites. Prescribed burning.	Endangered
Pelecanus occidentalis Brown Pelican	Coastal fringe along beach and inlets. Summer migrant.	Photography	Endangered
Dionaea muscipula Venus' Fly Trap	Wet margins of open savannahs		Threatened*
Sarracenia flava Yellow Pitcher Plant	Wet bogs, ditches and savannahs		Threatened*
Sarracenia rubra Sweet Pitcher Plant	Shrub bogs and savannahs		Threatened*
Sarracenia minor Hooded Pitcher Plant	Wet bogs, ditches and savannahs		Threatened*
Sarracenia purpurea Pitcher Plant; Fly-trap	Wet bogs and savannahs		Threatened*

*Species on the North Carolina List of Endangered Plants (Chapter 41 NC General Statues)

ENCLOSURE (1)

APPENDIX E

BASE ORDER 11017.1A

USE OF OFF-ROAD RECREATIONAL VEHICLES

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

BO 11017.1A
MAIN/JIW/th
06 MAY 1981

BASE ORDER 11017.1A

From: Commanding General
To: Distribution List

Subj: Use of Off-Road Recreational Vehicles (ORRV's)

Ref: (a) MCO 11017.3B

Encl: (1) Off-Road Recreational Vehicle Use Map

1. Purpose. To establish policy, procedures and criteria for controlling ORRV's and to prescribe operating conditions on Marine Corps Base, Camp Lejeune, North Carolina.

2. Cancellation. BO 11017.1.

3. Background. The demand for use of ORRV's on public lands is increasing. Marine Corps Base is subjected to this increasing demand for access and use of ORRV's. This particular form of recreational land use may conflict with military land use requirements, wise resource management, environmental values and/or other recreational activities. This Order implements reference (a) which establishes the Marine Corps' official policy with regard to ORRV use.

4. Definitions. For the purpose of this Order, the following definitions apply.

a. Off-Road Recreational Vehicle (ORRV) - Any motorized vehicle in a non-paved area of the base for the purpose of recreation except that such term excludes:

(1) Any registered motorboat.

(2) Any military, fire, ambulance or law enforcement vehicle when used for emergency purposes and any combat support vehicle when used for national defense purposes.

(3) Any vehicle authorized by the Commanding General for official use under permit, lease, license or contract.

b. Official Use - Use by an employee, agent or designated representative of the Marine Corps or one of its contractors in the course of his/her employment.

c. ORRV Site - Any land area designated and authorized by the Commanding General for recreational use by ORRV's.

5. Policy. It is the policy of this Command to provide for such land recreational use to the maximum extent feasible and practicable consistent with National goals and Marine Corps policy. The recreational use of ORRV's frequently conflict with military land use requirements, wise land use and resource management practices, environmental values and other recreational activities. It must be understood this policy is both in the National interest and interest of individuals. Accordingly, the ORRV program is limited to existing ORRV areas only as authorized in enclosure (1).

6. Registration and Operator Licensing Requirements. All ORRV's not intended for on-road use and that do not meet registration criteria or do not have base registration, must be transported by an authorized carrier on a vehicle to and from established ORRV operating areas. ORRV's intended for on and off-road use must meet all base and state registration requirements.

7. Safety Requirements. All on-off road type ORRV's must meet the safety requirements outlined in BO P5560.2H. When operating in ORRV areas and on immediate access roads into such areas, operating criteria is as follows:

a. ORRV's shall not be operated:

(1) In a reckless, careless, or negligent manner.

(2) In excess of established speed limits for unpaved roads which is 25 miles per hour.

(3) While the operator is under the influence of alcohol or drugs.

(4) In a manner likely to cause excessive damage or disturbance of the land, wildlife, or vegetative resources.

b. All ORRV's must conform to applicable state laws, including those with respect to pollutant emissions and registration requirements.

8. Authorized Use Areas (ORRV Sites) and Criteria Governing Use. All non-paved areas of the base are hereby closed with the following exceptions:

a. Unregistered motorcycles only may be used on established motorcycle courses.

b. Fishermen are authorized to use ORRV's to reach streams, ponds and the Intracoastal Waterway for recreational fishing.

c. Saltwater fishermen may use ORRV's on the beach strand from the water's edge to the seaward side of the sand dunes from Riseley Pier to New River Inlet except during sea turtle nesting season. Onslow Beach is closed to ORRV travel from sunset to sunrise for protection of sea turtles from June through October. The main access road from the North Tower to the South Tower is open for use by fishermen during the nesting season and throughout the year. Riseley Pier and South Tower are the only two egress routes used to gain access to the beach strand. ORRV's are not permitted at any time to be on any portion of Onslow Beach north of Riseley Pier.

d. Hunters are permitted to travel by ORRV to authorized hunting areas assigned by the Base Game Warden.

e. Personnel authorized to gather firewood are also authorized to travel access roads to designated firewood areas by ORRV.

9. Action

a. The Base Training Facilities Officer will provide daily range assignments and maneuver areas to the Base Game Warden.

b. The Base Maintenance Officer through the Base Game Warden will administer and enforce aspects of this Order pertaining to restriction of ORRV travel on secondary roads and trails.

c. The Provost Marshal will enforce requirements of this Order in and immediately adjacent to Quarters and Housing and on primary roads.

d. The Provost Marshal will enforce other requirements of this Order pertaining to licensing, operation, registration and safety.

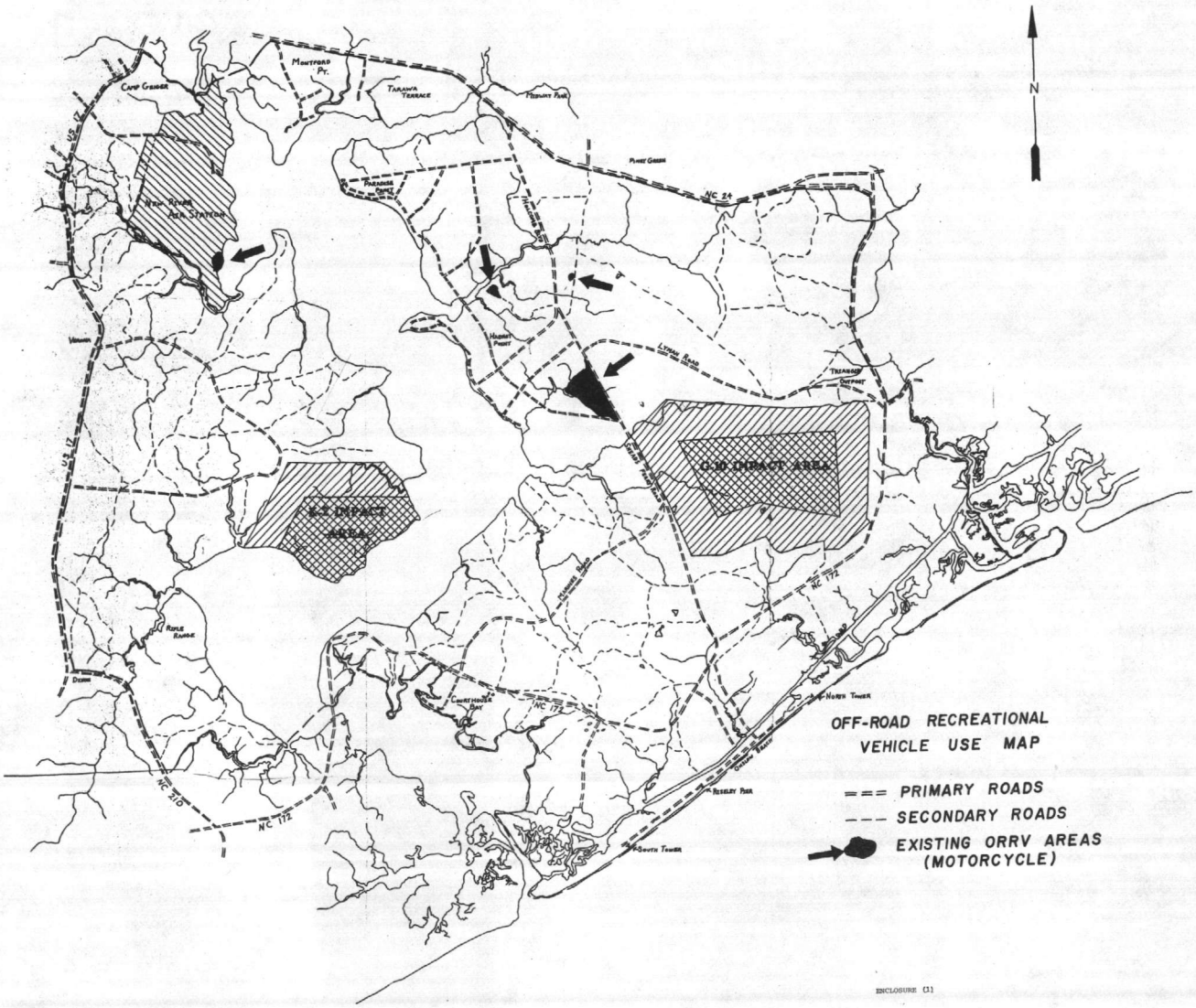
e. The Base Inspector will process violations of this Order in an appropriate manner.

10. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF, and 2d Force Service Support Group (Rein), FMF, Atlantic and the Commanding Officers of the Naval Regional Dental Center and the Naval Regional Medical Center, this Order is applicable to those Commands. ORRV regulations at Marine Corps Air Station (Helicopter), New River are subject to Air Station regulations.

J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A

BO 11017.1A
6 May 1981



ENCLOSURE (1)

APPENDIX F

BASE ORDER 11090.1B

OIL POLLUTION PREVENTION AND ABATEMENT AND OIL AND OTHER HAZARDOUS SUBSTANCES SPILL CONTINGENCY PLAN

17

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

BO 11090.1B
MAIN/DDS/th
28 May 1981

BASE ORDER 11090.1B

From: Commanding General
To: Distribution List

Subj: Oil Pollution Prevention and Abatement and Oil and Other Hazardous Substances Spill Contingency Plan

Ref: (a) MCO P11000.8A
(b) Resource Conservation and Recovery Act (RCRA) of 1976 (NOTAL)
(c) Clean Water Act (NOTAL)
(d) Oil Spill Prevention Control and Countermeasure Plan of 10 June 1978, Camp Lejeune, NC (NOTAL)

Encl: (1) Oil and Hazardous Material Spill Prevention, Containment, Cleanup and Disposal Guidelines
(2) Oil and Other Hazardous Material Spill Contingency Plan

1. Purpose. To revise existing oil and other hazardous material related pollution abatement and prevention procedures for Marine Corps Base, Camp Lejeune and Marine Corps Air Station (Helicopter) (MCAS(H)), New River and to assist the Commanding General in the implementation of reference (a) with respect to pollution abatement.

2. Cancellation. BO 11090.1A.

3. Policy. It is the continuing policy of the Commanding General to actively participate in environmental pollution abatement, to take positive planning and programming action to abate and correct oil and other hazardous materials, related pollution problems and to incorporate appropriate pollution control and prevention facilities in all new construction aboard this installation. The intent of this policy is to carry out the applicable measures of references (a), (b), (c) and (d) and to prohibit the discharge of oil, oily mixtures and other hazardous substances except in designated areas by authorized personnel.

4. Responsibilities

a. Base Maintenance Officer has overall responsibility for:

(1) Maintenance of water pollution abatement facilities and the central storage and related collection and transportation of waste petroleum products.

(2) Providing personnel required for routine monitoring, surveillance, upchannel reporting and enforcement of unauthorized discharges of oil and other hazardous materials and related significant environmental problems of an ongoing nature involving the handling and disposal of petroleum products and other hazardous materials regulated by references (a), (b) and (c).

b. Commanding Officers/Area Commanders are charged with the responsibility of preventing spillage and other unauthorized discharge of oil and other hazardous materials within their own areas and will develop and implement plans and procedures which are consistent with applicable regulations and enclosures (1) and (2) for preventing, reporting, containing and cleaning up such spillage or unauthorized discharge.

c. Director, Natural Resources and Environmental Affairs Division, Base Maintenance Department or his representative will assume responsibility of On-Scene Coordinator (OSC) upon arrival at the scene of an oil or other hazardous material spill in accordance with procedures outlined in references (a) and (b) and enclosure (2).

d. Base Fire Chief or his senior representative will provide initial response and other assistance with any spill of oil or other hazardous material as outlined in enclosure (2), until a verification is made that the reported spill has occurred in an aircraft operating area aboard MCAS(H), New River. If the latter situation exists, the Base Fire Chief will provide a standby crew to assist, if the crash crew MCAS(H), New River is unable to contain the spill within the aircraft operating area.

e. Crash Crew, MCAS(H), New River will develop and implement a written procedure for the initial response to and containment and cleanup of oil and other hazardous materials spills in aircraft operating areas aboard MCAS(H), New River. Procedures will be consistent with applicable regulations and enclosure (2).

5. Action. Discharge of oils or other hazardous materials on or into the grounds and streams of this installation is prohibited. Cognizant officers will take necessary action to assure compliance. Commanding Officers/Area Commanders shall conform to the standards and criteria set forth in enclosures (1) and (2).

6. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF; 2d Force Service Support Group, (Rein), FMFLANT; and the Commanding Officers of the Marine Corps Air Station (Helicopter), New River and tenant units; Naval Regional Medical Center; and Naval Regional Dental Center, this Order is applicable to those Commands.

J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A
BMAINO (100)

OIL AND HAZARDOUS MATERIAL SPILL PREVENTION, CONTAINMENT, CLEANUP, AND DISPOSAL GUIDELINES

1. The prevention of oil and hazardous-material spills and the resultant environmental damage is the responsibility of all Commanders.

2. All Commanders and Department Heads will publish and prominently post directives setting forth detailed policies and procedures for the control and prevention of oil and hazardous-substance pollution specifically applicable to their organization.

3. All Commanders and Department Heads will take the following actions:

a. Take positive measures to prevent spills of oil and hazardous substances to include a review of the Command's maintenance and operational procedures.

b. Conduct frequent inspections of areas and facilities assigned to ensure compliance with published procedures.

c. Establish immediate action procedures for the amelioration of pollution which may result from oil and hazardous-substance spills, to include the stocking of materials required to carry out the procedures.

d. Ensure that all personnel within their Command are thoroughly indoctrinated regarding the environmental impact of oil and hazardous substance spills and proper disposition of oil and hazardous substances.

e. Encourage maximum reuse of technically contaminated fuels by multifuel-engine powered tactical vehicles.

4. The following guidelines are generally applicable to garrison operations:

a. Contaminated fuels which cannot be burned in tactical vehicles and other used petroleum products, except gasoline, will be collected in a tank of at least 250-gallon capacity equipped with a funnel, strainer and cover to prevent entrance into the tank of trash, water and other foreign matter. When the container requires emptying, the Officer in Charge (OIC) will notify the Base Maintenance Department (Telephone 5909). The Base Maintenance Department will dispatch a vehicle to remove the waste oil. In the event of an emergency 55-gallon drums may be used as a temporary expedient storage container for waste oil.

b. Waste lubrication grease will be collected, stored in suitable containers and disposed of in accordance with instructions provided by Base Maintenance Department representative. Send request via Chain of Command to the Base Maintenance Officer.

c. Oil-saturated soil in the vicinity of oil and petroleum storage areas should be removed to the sanitary landfill and replaced with fresh earth.

d. To dispose of contaminated gasoline contact the Base Fire Department (Telephone 3004).

e. Disposal of hazardous waste and other hazardous substances such as acids, poisons and solvents through any drainage system to include sinks, wash racks, storm drains and natural drainage systems is specifically prohibited. These products will be segregated and stored in suitable containers and will be disposed of in accordance with instructions provided by Commanding General, Marine Corps Base, Camp Lejeune.

f. Petroleum products containers will be disposed of at the sanitary landfill, or recycled, if appropriate, with the exception of 55-gallon drums and durable metal containers which will be disposed of through the Defense Property Disposal Officer, Building 906.

g. Personnel changing private owned vehicle (POV) oil on Base will use established Base Special Service facilities and deposit waste oil in one of the authorized collection tanks on Base and the Air Station.

h. Oil and gasoline storage containers larger than 550-gallon capacity will be diked to include a drainage line and valve which will be locked. The latter will be operated only by personnel authorized by the Unit Commander.

5. Field operations will comply with the guidance enumerated in the following subparagraphs:

a. All tactical refueling systems installed on Base must first be approved by the Base Maintenance Officer.

b. Fuel stored in tactical refueling systems will be properly diked, as required by current regulations. As a general rule, the dike must be capable of containing at least the volume of the container stored within it.

c. When using fuel tanker vehicles:

(1) Hoses, nozzles and connections will be checked frequently for serviceability to avoid leakage of fuel.

(2) Refueler operators will stay with the vehicle during refueling operations.

(3) Tanker vehicles containing fuel will be parked in such a manner as to avoid the possibility of spilled fuel entering natural or man-made drainage systems.

(4) During recirculation operations, nozzles will be secured to the vehicle.

(5) All waste petroleum products generated during field exercises will be stored (55-gallon drums, etc.) and disposal instructions obtained from the Director, Natural Resources Division, Base Maintenance Department (451-5003).

BO 11090.1B
28 MAY 1981

OIL AND OTHER HAZARDOUS MATERIAL SPILL CONTINGENCY PLAN

FOR

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA
MARINE CORPS AIR STATION (HELICOPTER), NEW RIVER, JACKSONVILLE, NORTH CAROLINA
MARINE CORPS HELICOPTER OUTLYING FIELD, OAK GROVE, JONES COUNTY, NORTH CAROLINA

PREPARED

OCTOBER 1980

ENCLOSURE (2)

1. Reporting Spills of Oil and Other Hazardous Substances

a. Materials Classification - The following products are examples of oil compounds or hazardous substances which must be reported if spilled on the ground or water in any amount:

Lube Oils	JP-4 & JP-5 Fuels	Paint Thinner	No. 6 Fuel Oil
Gasoline	Hydraulic Fluid	Organic Solvents	
Kerosene	Acids	Cleaning Solutions	
Lube Grease	No. 2 Fuel Oil	Poisonous Chemicals	

b. Reporting Procedures - All spills of oil or hazardous materials shall be reported immediately to the Base Fire Department Phone 3333 (on base) or 451-3333 (off base). The report shall include location (Building Number) of spill, substance spilled and the approximate amount. All spills occurring at Marine Corps Air Station (Helicopter), New River will also be reported to the Station S-4 (455-6068 - 455-6518) during normal working hours and to the Station Officer of the Day after normal working hours (455-6111).

c. Posting of Oil Spill Procedure - Signs shall be posted in every building, tank location and field service location where oil or hazardous materials are used. The sign shall have a yellow background with black lettering indicating the following information:

IN CASE OF AN OIL OR HAZARDOUS MATERIAL SPILL
CALL BASE FIRE DEPARTMENT
ON BASE 3333/OFF BASE 451-3333
NOTIFY YOUR COMMANDER/SUPERVISOR IMMEDIATELY

d. Initial Containment Procedure - Remain in area - - - Do Not Wash Down With Water - - - Keep Personnel Out of the Area - - - Block Runoff with Earth Materials to Prevent Spreading, when possible.

2. Response to Spill

a. Fire Department - Fire Department shall dispatch a regular fire fighting unit to the scene of a reported spill. The Base Fire Chief or his senior representative shall report to the scene as soon as possible. Dispatcher will immediately notify the Base Fire Chief or his senior representative who will perform the following duties:

(1) Assume the role of On-Scene Coordinator (OSC).

(2) Take all necessary immediate steps to contain the spill, eliminate any fire hazards and protect all personnel from exposure and request the assistance of the Base Safety Officer, if required (See page 4, Enclosure (2)).

(3) Notify the Natural Resources and Environmental Affairs Director (Telephone 5003) of the spill location and the nature and quantity of spilled materials.

(4) Evaluate the spill situation and request necessary logistical support from the Base Maintenance Officer to contain the spill and facilitate the cleanup and recovery of the spilled materials.

(5) OSC duties shall transfer to the Director, Natural Resources and Environmental Affairs upon his arrival at the scene. (See page 4, Enclosure (2) for Personnel and Public Safety Coordination).

b. Base Maintenance Officer

(1) Base Maintenance Officer shall maintain the inventory of materials and equipment as established in Appendix A of enclosure (2).

(2) Base Maintenance personnel shall respond immediately to the request of the OSC with men and equipment requested.

(a) Direct supervision shall be from the OSC.

(b) Maintenance personnel shall remain at the spill scene until authorized to depart by the OSC.

c. Natural Resources and Environmental Affairs Division

(1) The Director or his authorized representative shall proceed to the scene and assume the duties of the OSC. The duties shall include the following categories:

(a) Direct all containment and cleanup activities.

(b) Report oil spills that discharge into the inland waters or coastal waters to the following: Base Maintenance Officer; Assistant Chief of Staff, Facilities, Marine Corps Base; Marine Safety Officer, U. S. Coast Guard, Wilmington, North Carolina and the Environmental Regulatory Agencies, as required.

(c) Request U. S. Coast Guard assistance for spills into waters that cannot be contained promptly by joint efforts of the Fire Department and Base Maintenance crews.

(2) The Natural Resources and Environmental Affairs Division Director or his representative shall remain at the scene of the spill until all contaminant is properly contained and the danger of oil contamination of waterways is eliminated.

(3) At the conclusion of all cleanup operations, the official report submitted to the Environmental Protection Agency (EPA), Region IV, shall be prepared in accordance with requirements of Federal Water Pollution Control Act and EPA regulations in effect at the time. The report shall be transmitted to EPA through the directives of the Commanding General.

3. Spill Containment and Cleanup

a. Small Spills (less than one gallon)

(1) Cause: Gasoline or fuel oil spills at fueling locations occur by overfilling or blow back from the tank receiving the fuel.

(2) Reporting: This type of spill requires reporting to the Office of Natural Resources and Environmental Affairs (Phone 1-919-451-5003). The fuel spill must be promptly cleaned up by the person at the scene.

(3) Containment Procedures:

(a) DO NOT FLUSH INTO STORM SEWER OR DRAINAGE DITCH.

(b) Cover entire spill with sand or absorbent material from storage bin or container. Add material as liquid appears in the surface of the sand or absorbent material.

(c) Cleanup contaminated sand or absorbent material with broom and shovel placing it in a container (metal) for disposal or possible reuse. The container shall be labeled "Waste Oil Refuse".

(d) If storage bin of sand or absorbent material is less than one-half full after using, call Base Maintenance Department (3001) to inform them of the location needing additional material.

(e) Reapply a second coat of sand or absorbent material in a very light layer to assure all gasoline or fuel oils have been blotted up. Brush material back and forth over the area and then sweep up completely. This material can be replaced in the fresh storage bin rather than depositing it in the "Waste Oil Refuse" container.

b. Spills on Concrete Aprons (more than one gallon)

(1) Reporting: Call Base Fire Department

(2) Containment Procedures:

(a) DO NOT FLUSH INTO STORM SEWER OR DRAINAGE DITCH.

(b) The person on-site shall erect a two-to-three inch high sand or earth dam on the concrete or at the edge of the concrete below (downstream) the direction that the spill is flowing. This is the first step in containment.

(c) Apply sand or absorbent materials that are available around the perimeter of the spill until the Fire Department arrives. Keep other personnel away from the area.

(d) Fire Department shall continue abatement methods using equipment available until the Director of Natural Resources and Environmental Affairs Division or his representative arrives to determine further containment and cleanup requirements.

(e) Base Maintenance personnel shall install dams, straw barriers, pumping equipment and other abatement or cleanup equipment as directed by the OSC.

c. Spills on Ground (more than one gallon)

(1) Reporting: Call Base Fire Department

(2) Containment Procedures:

(a) DO NOT FLUSH INTO STORM SEWER OR DRAINAGE DITCH.

(b) The person on-site shall erect a minimum three-inch high sand or earth dam below (downstream) the direction that the spill is flowing. The dam should be made higher if the liquid pool behind the temporary dam rises to within two inches of the top. A trench or sump may be used in lieu of a dam. This is the first step in containment that must be taken promptly to prevent spreading into surface waters.

(c) Apply sand or absorbent materials that are available around the perimeter of the spill until the Fire Department arrives. Keep other personnel away from the area.

(d) Fire Department shall continue abatement methods using equipment available until the Director of Natural Resources and Environmental Affairs Division or his representative arrives to determine further containment and cleanup requirements.

(e) Base Maintenance personnel shall install dams, straw barriers, absorbents, pumping equipment and other abatement or cleanup equipment as directed by the OSC.

d. Spills Entering Storm Drainage System

(1) Reporting: Call Base Fire Department and emphasize that the liquid has entered a catch basin, manhole, drainage ditch, or any structure (pit) below ground.

(2) Containment Procedures:

(a) DO NOT ADD WATER TO FLUSH OUT STORM SEWER OR STRUCTURE.

(b) The person on-site shall attempt to erect a sand or earth dam around or cover with polyethylene or other plastic materials the manhole or catch basin to prevent further entrance of liquid into the structure. This is the first step in containment that must be taken promptly to minimize the quantity of liquid that will be discharged into surface waters.

(c) The person on-site shall apply sand or absorbent materials that may be available around the perimeter of the spill and at the manhole or catch basin until the Fire Department arrives.

(d) Base Maintenance personnel shall place oil booms across storm drains to prevent further discharge. Public Works Department will develop maps of drainage systems required for siting booms. After spill is contained, cleanup will be initiated. Action may include the following:

1 Inspect downstream manholes for evidence of oil progression toward discharge. If storm system has a very low flow, install straw barrier or absorption dam inside manhole.

2 Where practical, install plug in upstream side of manhole, to contain in the pipe system.

3 If the drainage system has an open ditch, install straw bale dams or aborption dam to collect spilled materials.

4 Isolate streets with contaminated manhole to prevent fires or explosions.

(e) The Director, Natural Resources and Environmental Affairs Division, or his representative shall determine further containment and cleanup requirements after arriving on the scene.

(f) Base Maintenance personnel shall install dams, straw barriers, aborbents, pumping equipment and other abatement and cleanup equipment as directed by the OSC.

e. Spills Entering Surface Waters

(1) Reporting: Call Base Fire Department and emphasize that the liquid was discharged directly into the surface waters.

(2) Containment Procedure:

(a) Person at the site should check the source of discharge to be assured that no further discharge can occur. Close valves, remove hose, or isolate the source from causing any further release of materials.

(b) Do not allow boats or equipment to enter the surface waters where the spill has occurred. If surface type oil absorbents are available, begin spreading this material wherever an oil skim is observed. Do not enter the water to apply this material until the Fire Department arrives.

(c) Fire Department shall continue abatement methods using equipment available until the Director of Natural Resources and Environmental Affairs Division, or his representative arrives to determine further containment and cleanup requirements.

(d) Base Maintenance personnel shall install booms, skimmers, pumps and other abatement or cleanup equipment as directed by the OSC.

4. Responsibilities for Ensuring Personnel and Public Safety

a. Overall responsibility for ensuring the safety of personnel involved in the containment and cleanup of hazardous material spill is assigned to the Base Fire Chief or his senior representative. The Base Fire Chief representative shall continue to monitor the situation and will provide required standby personnel and equipment. The Base Fire Chief representative will request the assistance of the Base Safety Officer as needed. The Base Fire Chief representative shall keep the OSC informed of any safety considerations affecting the containment and cleanup of the spill. In the event of imminent hazard to personnel involved in the spill cleanup or to the public, Base Fire Chief representative shall take appropriate action. The OSC shall assist the Base Fire Chief representative implement safety procedures required.

b. Base Safety shall dispatch a safety representative to the spill scene upon request from the Base Fire Chief representative. The Base Safety representative will remain at the scene until advised by the Base Fire Chief representative that assistance is no longer required. Base Safety representative will monitor all activity at or near the spill and make appropriate recommendations to the Base Fire Chief representative.

MATERIALS AND EQUIPMENT FOR OIL SPILL CONTAINMENT AND COUNTERMEASURE

Item No.	Description	Quantity
1.	Gasoline engine driven (portable) trailer mounted diaphragm pump with sectional suction and discharge hose - minimum capacity 25 gallons per minute.	2
2.	Sectional aluminum oil boom	
3.	Inflatable oil barrier, Whittaker Expandi self-inflating	300 L. F.
4.	Collapsible bag for field filling of collected oil-250 gallon capacity	2
5.	Oil skimmer (portable)type for water floating oil pick-up	1
6.	Baled hay or straw with wire or nylon baling (located at strategic areas)	200 Bales
7.	Steel fence stakes (6 feet long)	50 each
8.	Woven wire mesh (chicken wire) 3ft. width 4ft. width	200 L.F. 100 L.F.
9.	Sledge hammer - 10 lb. 5 lb. 2½ lb.	3 5 5
10.	Shovels - Long handle round point Long handle flat blade Short handle round point Short handle flat point	5 5 5 5
11.	Oil Absorbent Compound - for water spill clean up	2000 lbs.
12.	Oil Absorbent Compound for ground spill clean up - Randustrial P-218 Oil Absorbent (55-gallon drum)	25 drums
13.	Nylon rope - ¼" diameter ½" diameter 3/4" diameter	200 L.F. 400 L.F. 400 L.F.
14.	Oil Sorbent Material - 3M, Conwed or Grefco	500 lb.

APPENDIX G

BASE ORDER 11090.2B

AIR POLLUTION EMERGENCIES

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO:
BO 11090.2B
MAIN/JIW/th
5 JAN 1979

BASE ORDER 11090.2B

From: Commanding General
To: Distribution List

Subj: Air Pollution Emergencies

Ref: (a) MCO P11000.8A
(b) Article 21 of Chapter 143, General Statutes of North Carolina-Rules and Regulations Governing the Control of Air Pollution

Encl: (1) Definitions
(2) Episode Criteria and Action to be Taken

1. Purpose. To publish regulations to prevent the excessive buildup of air contaminants during air pollution episodes, thereby preventing the occurrence of an emergency due to the effects of these contaminants on the public health, in accordance with the instructions contained in references (a) and (b).

2. Cancellation. BO 11090.2A.

3. Policy. It is the continuing policy of the Commanding General to actively participate in environmental pollution abatement and to take positive planning and programming action to prevent air pollution.

4. Responsibility. The Assistant Chief of Staff, Facilities is charged with the overall responsibility of coordinating the various measures of this Order, and will take necessary action to ensure Base compliance with State air regulations after being notified of an ambient air emergency situation by the Director, Division of Environmental Management, North Carolina Department of Natural Resources and Community Development, Raleigh, North Carolina.

5. Action. Cognizant officers will take the necessary action to ensure compliance with this Order.

6. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF and 2d Force Service Support Group (Rein), FMFLant, and the Commanding Officers of Naval Regional Medical Center, Naval Regional Dental Center and Marine Corps Air Station (H), New River, this Order is applicable to those Commands.

J. R. FRIDELL
Chief of Staff
Acting

DISTRIBUTION: A

DEFINITIONS

The North Carolina Water and Air Resources Board, under authority of Article 21 of Chapter 143 of the General Statutes of North Carolina, as amended, has adopted a regulation relating to air pollution emergencies. Some of the terms within this Act are provided as general information:

1. Ambient Air: Means that portion of the atmosphere outside of buildings and other enclosures, stacks, or ducts, and which surrounds human, animal or plant life, or property.

2. Combustible Material: Means any substance which, when ignited, will burn in air.

3. Dustfall: Means particulate matter which settles out of the air and is expressed in units of grams per square meter per 30-day period.

4. Garbage: Means any animal and vegetatble waste resulting from the handling, preparation, cooking and serving of food.

5. Incinerator: Means a device designed and engineered to burn solid, liquid, or gaseous waste material.

6. Opacity: Means that property of a substance tending to obscure vision and is measured in terms of percent obscuration.

7. Open Burning: Means any fire wherein the products of combustion are emitted directly into the outdoor atmosphere and are not directed thereto through a stack or chimney, approved incinerator, or other similar device.

8. Particulate Matter: Means any material, except uncombined water, that exists in a finely divided form as a liquid or a solid at standard conditions.

9. Refuse: Means any garbage, rubbish and trade waste.

10. Rubbish: Means solid or liquid wastes from residences and dwellings, commercial establishments and institutions.

11. Rural Area: Means any area which is primarily devoted to, but not necessarily limited to, the following uses: agriculture, recreation, wildlife management, state park, or any area of natural cover.

12. Smoke: Means small gas-borne particles resulting from incomplete combustion, consiting predominantly of carbon, ash and other burned or unburned residue of combustible materials that form a visible plume.

ENCLOSURE (1)

EPISODE CRITERIA AND ACTION TO BE TAKEN

1. Conditions justifying the proclamation of an air pollution alert, air pollution warning, or air pollution emergency shall be deemed to exist whenever the accumulation of air contaminants in any place is attaining, or has attained, levels which could, if such levels are sustained or exceeded, lead to a threat to the health of the public. "The Director, Division of Environmental Management, North Carolina Department of Natural Resources and Community Development will inform the base as to such episodes." "Normally, ASA conditions will occur during the summer and fall, if at all, in this area."

2. The four levels of an episode are:

a. Air Stagnation Advisory - This is a statement issued by the National Weather Service indicating that meteorological conditions are conducive to the build-up of air pollution. The state will then continuously monitor the air to determine if pollutant levels warrant the issuance of an alert, warning or emergency statement.

b. Air Pollution Alert - Pollutant levels have reached a point where specific actions are required to reduce man-made pollution emissions.

c. Air Pollution Warning - Pollutant levels are continuing to degrade to such a point that stronger pollution control measures are required.

d. Air Pollution Emergency - A severe health hazard now exists requiring the strongest control measures possible.

3. At such time as an atmospheric stagnation advisory is announced, the cognizant officers shall take such action as follows:

a. Atmospheric Stagnation Advisory (ASA)

(1) Announce to base personnel to reduce motor vehicle use where possible.

(2) Curtail open burning where possible.

b. Air Pollution Alert. The alert level is that concentration of pollutant at which first stage control actions are to be taken.

(1) There shall be no open burning of waste, vegetation, refuse or debris in any form.

(2) The use of incinerators for the disposal of any form of solid waste shall be limited to the hours between 1200 and 1600.

ENCLOSURE (2)

(3) All unnecessary operations of motor vehicles shall be curtailed.

(4) Coal or oil-fired process steam generating facilities shall:

(a) Make maximum use of mid-day (1200-1600) atmospheric turbulence for boiler lancing and soot blowing.

(b) Substantially reduce steam load demands consistent with continuing plant operations.

c. Air Pollution Warning. The warning level indicates that air quality is continuing to degrade and that additional abatement actions are necessary. If announced first, carry out the instructions under Air Pollution Alert, and then the following:

(1) Persons operating motor vehicles shall minimize such use through car pools.

(2) All diesel burning vehicles shall cease to be operated; i.e., only nontactical vehicles burning gasoline will be operated.

(3) All firing of weapons shall cease, to include the Rifle Range operations, and such field firing exercises that may be in progress.

(4) Base Maintenance will prepare to close all steam valves except those providing steam to dining facilities; i.e., reducing steam plant operations to minimum requirements.

d. Air Pollution Emergency. The emergency level indicates that air quality is continuing to degrade to a level that should never be reached and that the most stringent control actions are necessary. If announced first, carry out those provisions of Air Pollution Alert/Warning, in addition to the following:

(1) The use of motor vehicles is prohibited, except in emergencies with the approval of the Commanding General, Marine Corps Base; the Commanding General, 2d Marine Division, FMF; the Commanding General, 2d Force Service Support Group (Rein), FMFLant; the Commanding Officer, Marine Corps Air Station (H), New River; and the Commanding Officers, Naval Regional Medical Center and Naval Regional Dental Center.

(2) Coal or oil-fired process steam generation facilities will be reduced to absolute necessities consistent with preventing equipment damage, maintaining steam to dining facilities only.

(3) All construction work involving grading or other operations which generate dust shall cease.

(4) All Commissary, Marine Corps Exchange and Special Services facilities will be closed.

(5) All dependent elementary, secondary, high and service schools shall close.

(6) Complete elimination of the use of incinerators.

d. Termination. Once declared, any status reached by application of the above criteria will remain in effect until the criteria for that level is no longer met. At such time, the next lower status will be assumed.

APPENDIX H

BASE ORDER 11090.3

OPERATION AND MAINTENANCE OF OIL POLLUTION ABATEMENT FACILITIES

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

BO 11090.3
MAIN/DDS/th
18 May 1982

BASE ORDER 11090.3

From: Commanding General
To: Distribution List

Subj: Operation and Maintenance of Oil Pollution Abatement Facilities

Ref: (a) NPDES Permit No. NC0003239, Marine Corps Base, Camp Lejeune (NOTAL)
(b) CLean Water Act (NOTAL)
(c) BO 11090.1B

1. Purpose. To publish responsibilities for the operation and maintenance of pollution abatement facilities required to be in compliance with federal and state water quality standards established under references (a) and (b).

2. Background

a. Reference (c) established policy and procedures regarding the prevention and abatement of pollution resulting from accidental spills or unauthorized discharge of petroleum oil and lubricants (POLs) (e.g., diesel fuel, kerosene, lube oil, etc.) and other hazardous material or waste (e.g., mogas, paint, solvents, acid, etc.). Addressees should be aware that a major part of the oil related pollutants being discharged into storm drains and streams comes from washrack runoff and from maintenance shops where leaks and spills of POLs during routine maintenance operations are not adequately controlled and cleaned up.

b. Facilities are being constructed at Camp Lejeune and Marine Corps Air Station (Helicopter), New River to provide compliance with references (a) and (b). These facilities connect oil contaminated wastewater drainage lines to the sanitary sewer. Oil/water separators, grit chambers, storm-water storage tanks and related devices are provided to reduce the amount of POLs in the wastewater and to prevent relatively small oil spills from entering and damaging the sanitary sewer and sewage treatment plants. Maintenance shops and other facilities constructed in the future must be equipped with pollution abatement devices in order to comply with reference (a).

c. Explosions, gases, fumes, etc. resulting from discharge of gasoline and other flammable or hazardous material into the sanitary sewer present a serious threat to personnel safety and may result in severe damage to facilities and equipment. Further, excessive quantity of POLs entering the sanitary sewer will have a significant impact on effective sewage treatment thus causing a violation of environmental standards. Such discharges (spills) are regulated by reference (c) and must be reported to the Base Fire Department (451-3333), immediately.

d. Washracks and related pollution abatement structures for tactical and tracked vehicles present ongoing maintenance problems due to the amount of soil washed from vehicles. Drainlines on all devices are relatively small in order to control rate of storm-water entering sewer. Keeping these drains open and flowing will require proper operation and routine maintenance.

3. Responsibilities. Operation, maintenance and repair of pollution abatement facilities:

a. Using organization will:

(1) Train personnel to operate pollution abatement facilities located at the work site.

(2) Ensure that cans, oil filters, rags, brushes, litter or other foreign objects are not discarded on washracks or into oil/water separators, grit chambers, storm-water bypass chambers, storm-water storage tanks, etc.

(3) Ensure that used oil is disposed of into properly marked waste oil containers and not on the ground or into oil/water separators, grit chambers, storm-water bypass chambers, etc.

(4) Ensure that neither gasoline nor hazardous waste (e.g., solvents, degreasers, paint, etc.) are disposed of into waste oil tanks/collection systems.

(5) Clean up oil contaminated soil at the work site (contact Base Maintenance Division 451-2083/1690 for disposal instructions).

(6) Notify Base Maintenance Division (451-3001) of required maintenance and repair. Marine Corps Air Station (Helicopter), New River commands will notify the Station S-4 Officer of any required maintenance and repair.

(7) Notify Base Maintenance Division (451-5909) of waste oil containers that require emptying.

b. Base Maintenance Officer will:

(1) Provide periodic inspection of maintenance and operation of pollution abatement facilities and initiate action to correct maintenance discrepancies. Report operational deficiencies to the using organizational commanding officer. Close the facility when it is apparent that continued operation will immediately jeopardize the capability of the sewage treatment facility.

(2) Service used (waste) oil collection facilities to include pumping out oil storage tanks at regular intervals and initiating action required to maintain and repair tanks and related signs, funnels, gauges and drainlines.

(3) Service oil/water separators, grit chambers, storm-water bypass chambers and storm-water storage tanks to include removing oily waste and solids, unclogging drainlines and initiating action to make needed repairs.

(4) Operate, maintain and repair wastewater lift stations and related mechanical equipment.

(5) Operate, maintain and repair pollution abatement facilities associated with swimming pools, heating plants and water treatment plants.

c. Public Works Officer will:

(1) Incorporate appropriate pollution abatement devices and structures in facilities constructed aboard Camp Lejeune, as required to provide compliance with the requirements of references (a), (b) and (c).

(2) Review planned pollution abatement devices and structures with appropriate representatives of the Base Maintenance Officer in order to ensure compatibility with existing sewage collection and treatment facilities and maintenance programs.

4. Action. Commanding Officers/area commanders will take action required to assure that organizations and personnel assigned to shops and other facilities equipped with washracks, waste oil collection systems, oil/water separators and related pollution abatement structures are aware of the requirements of this Order. Commanding officers will investigate cases of unauthorized discharge (spills) of POLs or other hazardous material/waste by individuals or organizations within their cognizance and take action required to avoid recurrence of the discharge.

5. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF; 2d Force Service Support Group, (Rein), FMFLANT; and the Commanding Officers of the Marine Corps Air Station (Helicopter), New River and tenant units; Naval Regional Medical Center; and Naval Regional Dental Center, this Order is applicable to those Commands.

J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A
BMAINO (100)

APPENDIX I

BASE ORDER 11350.2

REFUSE DISPOSAL PROCEDURES

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542

BO 11350.2
MAIN/LDS/ece
21 JUL 1980

BASE ORDER 11350.2

From: Commanding General
To: Distribution List

Subj: Refuse Disposal Procedures

Ref: (a) BO P11101.32F
(b) BO 4570.1C
(c) BO 4100.8
(d) BO P10110.10A
(e) BO 11014.8A

1. Purpose. To publish instructions relative to separation, collection and disposal of garbage and trash, and the care and cleaning of receptacles other than family housing areas, which are covered in reference (a).

2. Definitions

a. Dempster Dumpsters - A waste storage container which is removed, emptied and returned by Dumpster trucks.

b. Dumpmaster Containers - Containers vary in size from three to eight cubic yards capacity and are emptied at their location into Dumpmaster trucks. (Containers are not taken from the area except for necessary repair/replacement.)

c. Trash Receptacles - Containers such as G.I. cans and 55 gallon trash drums with or without special lids. Responsible subordinates in whose areas receptacles are placed will ensure area commanders/commanding officers empty and maintain as required. All trash receptacles are to be emptied into Dempster Dumpsters or Dumpmaster containers by the using units.

d. Dining Facility G.I. Cans - Food garbage, classified as edible waste and bones from dining facilities and butcher shops, will be placed in G.I. cans and collected by a private contractor.

e. Recyclable Materials - Wastes such as aluminum cans and other scrap metals; unusable scrap lumber (defined in reference (b)); cardboard and newspapers (defined in reference (c)); and other materials for which a system for recovery has been established throughout the Base.

f. Sanitary Landfill - Refers to the Base Sanitary Landfill which is located two miles south of Holcomb Boulevard on Sneads Ferry Road.

g. Hazardous Wastes - Materials which have been prohibited by the Environmental Protection Agency, the State of North Carolina, DOD, Navy or Marine Corps from being placed into the type of Sanitary Landfill operated at Camp Lejeune, because of potential danger or harm to public health or environment.

3. Receptacle Locations

a. Collection stations for trash are designated by the Base Maintenance Officer. Additional stations will be established as justifications arise, upon written request from using units.

b. Collection stations for edible waste, grease and bones are established by a contract administered by the Defense Property Disposal Office, Building 906, Hadnot Point, extension 5613.

4. Responsibilities

a. All area commanders and commanding officers designated to operate enlisted dining facilities, in accordance with reference (d), and officers in charge of food preparation activities, which include service clubs, cafeterias, snack bars, and similar operations are responsible for the following:

(1) Proper separation of trash, inedible and edible waste.

(2) Proper cleaning of all containers and G.I. cans (excluding Dempster Dumpsters and Dumpmaster Containers) after they are emptied. Washing or scrubbing down of these containers will be done only at locations which have proper drains for the disposal of water and food particles. Galvanized G.I. cans will not be painted.

(3) Maintaining cleanliness of all types of Dumpster refuse containers will be the responsibility of Base Maintenance Sanitation Section and the using units. Do not place wet refuse or waste in containers unless it is first put into waterproof bags which have been sealed at the top. Plastic bags for the consolidated mess system and other activities may be purchased from the Self-Service Center, Building 1606. The use of these waterproof bags will greatly reduce the amount of cleaning required by the Sanitation Section. The Base Maintenance Sanitation Section (extension 2636) will provide a steam cleaning service as required to maintain a satisfactory sanitary condition on site. In cases of fire or vandalism, immediate steps shall be taken to restore these containers to their original condition by notifying the Base Maintenance Sanitation Section. Care shall be taken to restore the Plant Account Number assigned each container for property control purposes.

(4) Ensure proper utilization of compactors located in dining facilities.

b. All area commanders, commanding officers, and supervisory personnel shall prevent the placing of hazardous wastes into any trash receptacle container or the Base Sanitary Landfill without express written approval of the Base Maintenance Officer.

c. Organizational commanders and supervisory personnel at all levels are responsible for the proper segregation and conservation of recyclable materials, which are readily identifiable. Questions concerning the proper disposition of such material should be directed to the Defense Property Disposal Office. Recyclable material will be segregated at the point of origin, e.g., heavy iron, light sheetmetal, aluminum, cast iron, batteries, etc., and free of trash and debris to expedite turn-in. Special containers have been located in designated locations around the Base and can be identified by their color-coding as follows:

(1) Green with yellow marking - corrugated cardboard.

(2) Red, white and blue - newspapers.

(3) Orange with black marking - aluminum

(4) Silver with black marking (also identifiable by its compact size) - scrap iron.

5. Area Police. Responsibility for policing areas around collection stations rests entirely with the users.

6. Schedules. Collections are made daily at dining facilities. Other collections are made two or three times per week. Justifiable irregular collections may be made by calling extension 2636. Irregular collections of edible waste, grease and bones may be arranged by calling extension 5613, Defense Property Disposal Office.

7. General

a. Crush and flatten all cardboard boxes before placing them in any container.

b. Do not over-fill containers.

c. Do not place grass, leaves, pine straw, lumber, metal, pallets, dirt, or other weighty materials in the containers. These materials will be removed by the using units. Wooden boxes and scrap wood will be disposed of in accordance with reference (b). All other trash will be taken to the Sanitary Landfill.

d. Do not place any type of explosives or ammunition in the containers.

e. Do not place fire, matches, or hot ashes in these containers.

f. Do not park in front of the containers.

g. Do not run water into containers in an attempt to pack down the trash.

h. Do not place wet garbage, such as waste meats and food stuffs, in the containers unless it is first securely wrapped or placed in plastic bags.

i. Do not break glass bottles, jars, etc., when placing them in containers.

j. Do not wash inside of containers with excessive amounts of water; this creates rusting and erosion problems.

k. Do not leave top or side doors open.

l. Anticipated heavy refuse-producing situations (such as the moving out of a unit) should be reported, as far in advance as possible, to the Base Sanitation Section, extension 2636.

m. Vehicles used to transport refuse to the landfill must comply with reference (e). Violators will be subject to the penalties listed therein.

n. Loose paper/cards will be containerized prior to being placed in containers to prevent scattering.

o. Disposing of refuse of any type on roads, road shoulders, in wooded areas, or any other place except the Sanitary Landfill is prohibited.

8. Base Sanitary Landfill

a. Hours of operation for the Base Sanitary Landfill are 0800 to 1600, Monday through Friday. In cases of emergency on weekends, access for disposal can be obtained by calling extension 3001 in building 1202.

b. Personnel delivering refuse will contact the landfill operator prior to unloading.

c. Scavenging within the landfill area is prohibited

10. Applicability. Having received the concurrence of the Commanding Generals of 2d Marine Division, Fleet Marine Force and 2d Force Service Support Group (Reinforced), Fleet Marine Force Atlantic, and the Commanding Officer, Marine Corps Air Station (Helicopter), New River, Naval Regional Medical Center, and Naval Regional Dental Center, this order is applicable to those commands.

J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A