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## 3.0 Explosives Management Plan

### 3.1 General

This plan has been prepared in accordance with the basic contract, local, and federal laws and regulations, including ATFP 5400.7 (2000), DoD regulation 6055.9-STD, applicable Department of Transportation regulations, and Puerto Rico laws and regulations.

### 3.2 Licenses and Permits

3.2.01 Compliance will be met for all of the requirements of CERCLA, Section 104, and the National Contingency Plan, Sections 300.120(d) and 300.400(e). Puerto Rico requires a permit to import, store, transport, and use explosives in Puerto Rico. The Puerto Rico National Police controls permits but has elected to authorize the shipment, use, and storage of explosives using the same ruling that was used during the EE/CA. An authorization letter will be issued to EEG that will be used instead of a permit. A copy of the Puerto Rico police authorization letter will be posted and available for inspection in the Culebra Island field office. In case the Puerto Rico police do not provide this letter, EEG will obtain the necessary permits and license(s).

3.2.02 Local authorities (i.e., fire department and police) will be notified of the presence and location of storage magazines.

3.2.03 EEG will maintain copies of the following documents on site:

- ATF User of High Explosives license (license number 1-FL-001-20-7B-00603, expiration date: February 1, 2007) (see **Figure 3-1**)
- Letter signed by an authorized official of EEG designating on-site personnel who are authorized to purchase, receive, access, and use explosives
- Puerto Rico explosives permit or letter of authorization

Figure 3-1. ATF License

DEPARTMENT OF THE TREASURY - BUREAU OF ALCOHOL, TOBACCO AND FIREARMS  
**LICENSE/PERMIT (18 U.S.C. CHAPTER 40, EXPLOSIVES)**  
In accordance with the provisions of Title XI, Organized Crime Control Act of 1970, and the regulations issued thereunder (27 CFR Part 55), you may engage in the activity specified in this license/permit within the limitations of Chapter 40, Title 18, United States Code and the regulations issued thereunder, until the expiration date shown. See "WARNING" and "NOTICES" on back.

DIRECT ATF CORRESPONDENCE TO: CHIEF, NATIONAL LICENSING CENTER  
ATF  
2500 CENTURY PARKWAY, SUITE 400  
Atlanta, GA 30345

ISSUE PERMIT NUMBER: 1 FL-001-20-73-00603  
EXPIRATION DATE: February 1, 2007

NAME: ELLIS ENVIRONMENTAL GROUP LC  
Address: 414 SW 140TH TERRACE  
NEWBERRY, FL 32669-

TYPE OF LICENSE OR PERMIT: 20-MANUFACTURER OF HIGH EXPLOSIVES

CHIEF, NATIONAL LICENSING CENTER: *Peter M. Sarnack*

PURCHASING CERTIFICATION: I certify that this is a true copy of a license/permit issued to me to engage in the activity specified.

LICENSEE OR PERMITEE MAILING ADDRESS: ELLIS ENVIRONMENTAL GROUP LC  
414 SW 140TH TERRACE  
NEWBERRY, FL 32669-

(SIGNATURE OF LICENSEE/PERMITEE)

The licensee/permittee named herein shall use a reproduction of this license/permit to assist a transferor of explosives to verify the identity and status of the licensee/permittee as provided in 27 CFR Part 55. The signature on each reproduction must be an ORIGINAL signature.

ATF F 5400.14/5400.15, Part 1 (8/89)

### 3.3 Acquisition

#### 3.3.1 Description and Estimated Quantity of Explosives

3.3.1.01 Explosives used for demolition operations will be placed in a 4-foot-square explosives magazine with an attached 18-inch-square cap box, both with ATF-approved locks and hasps. The magazine will be located in the proposed explosives complex (see Map B-2 in Appendix B). The magazine will hold the fuse lighter, fuse, detonating cord, binary explosives, and jet perforators. The cap box will contain the blasting caps. Replacement explosives will be supplied based upon rate of use.

3.3.1.02 The type, amount, class, and NEW of explosive materials that will be stored in the explosives storage area are listed in **Table 3-1**.

**Table 3-1. Initial Demolition Explosives**

Description	Class / Division	Quantity	Net Explosive Weight	Storage Compatibility Group
Electric blasting caps	1.1	1 case @ 100 per case	Less than 1 pound	B
Jet perforators (shaped charge)	1.4	3 cases @ 40 per case	9.52 pounds	D
Detonating cord (80 grains per foot)	1.1	2,000 feet	22.9 pounds	D
Boosters	1.1	60 each	60 pounds	D

3.3.1.03 Work on the cays will require non-electrical detonation means. EEG will acquire non-electric caps, fuse, and fuse lighters for the cays due to safety distance constraints and size of the cays (see **Table 3-2**).

**Table 3-2. Additional Explosives Supply Requirements for the Cays**

Description	Class / Division	Quantity	Net Explosive Weight	Storage Compatibility Group
Non-electric blasting caps	1.1	50 each	Less than 1 pound	B
Binary explosives*	3.0 liquid	75 units per case	NA	J
	5.1 solid		NA	
Time fuse	1.4	2,952 feet	44.0 pounds	S
Fuse lighters	1.4	60 each	Less than 1 pound	S
*Due to the difficulty in destroying 20 mm projectiles, EEG will use binary explosives in the consolidated shot for demolition (primarily on Isla Culebrita). Explosive gel (Class 1.1D and Storage Compatibility Group D) may be used as a substitute for binary explosives, as it is readily available on the main island of Culebra. NA = Not applicable prior to mixing of binary components				

### 3.3.2 Acquisition Source

Explosives for this project will be purchased from commercial vendors.

## 3.4 Initial Receipt

### 3.4.1 Procedures for Receipt of Explosives

3.4.1.01 Only the individuals named on EEG's Explosives Authorization Form (see Appendix F) may sign for explosives from the shipper. To ensure that the quantity shipped is the

same as the quantity listed on the shipping documents, two EEG personnel will inventory the shipment before signing for it.

3.4.1.02 Upon initial receipt of a shipment of explosives, each container of explosives will be inspected and inventoried by the UXOQC/SO and/or the SUXOS. The contents will be verified to be the quantity and type of explosives ordered and shipped by the manufacturer or supplier, as indicated on the invoice, shipping documents, or bills of lading.

3.4.1.03 All original receipts, shipping documents, or invoices will be retained on site as part of the site's records. Copies of the documentation will be sent to EEG's home office in Newberry, Florida, within three working days upon receipt of the explosive materials. At the completion of the project, the original documents will be put into archive storage and maintained for five years.

3.4.1.04 An Explosives Accountability Record (magazine data card) (included in Appendix F) will be completed for each type of explosives placed in each magazine. The Explosives Accountability Record will be maintained in the explosives magazine and used to indicate the actual quantity on hand of each type of explosives. This information will be appended during weekly inspections and when explosives are removed from or placed into each magazine.

### 3.4.2 Reconciling Discrepancies

Discrepancies will immediately be reported to the supplier or shipper. If the packages have not been opened and appear to be in their original condition, the discrepancies will be reconciled by immediately contacting the manufacturer or supplier to verify the quantity shipped. In case of a disagreement with the supplier, or if the packages appear to have been tampered with, EEG will immediately notify ATF and complete the forms to report the missing explosives.

## 3.5 Storage

Explosives used for demolition operations will be placed into an ATF Type 2 portable box magazine. The magazine will be 4 feet square with an attached 18-inch-square cap box. Both the magazine and cap box will have ATF specified locks and hasps. To inhibit access to the magazine, EEG will construct a fence 10 feet high topped with barbed wire around the magazine and will secure the fence and the magazine with high-security locks. The door of the magazine will be equipped with two locks, each having at least five tumblers or five blades and a case-hardened shackle at least 3/8 inch in diameter.

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### 3.5.1 Safety Precautions

3.5.1.01 Smoking, matches, open flames, spark-producing devices, and firearms will not be permitted inside or within 50 feet of the magazine. The land surrounding the magazine will be kept clear of all combustible materials for a distance of at least 25 feet. Combustible materials will not be stored within 50 feet of the magazine.

3.5.1.02 Lightning protection is not required. The magazine does not require dual grounding, in accordance with AR 385-64 (United States Army Explosives Safety Program), Table 6-2. Each magazine will meet the requirements specified in NFPA 780 (Standard for the Installation of Lightning Protection Systems) and will have a grounding rod driven 5 feet into the ground 3 feet from the magazine, and will be connected to the magazine with at least a No .6 ground strap. EEG will install a 10-foot-tall galvanized fence around the magazine with bared wire across the top. The fence will be located at least 6.5 feet from the magazine on all sides and therefore will not require additional grounding.

### 3.5.2 Key Control

Each magazine will have two sets of keys. The SUXOS and the UXOQC/SO will maintain custody of the keys; however, prior to inspections and demolition operations, the SUXOS may temporarily relinquish his keys to the demolition supervisor.

## 3.6 Transportation

### 3.6.1 Transport from Storage Facility

On-site transportation of explosives from the magazines to the demolition location(s) will be accomplished by designated vehicle, following the requirements set forth in 49 CFR and DoD 6055.9 STD. Only UXO-qualified personnel may transport explosives. These individuals must have valid state driver's licenses and will be instructed on transporting explosives, inspecting and operating vehicles, and emergency response. EQB will be notified of the explosives transportation routes.

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### 3.6.2 Vehicle Requirements

3.6.2.01 Vehicles transporting explosives will be designated and inspected (as follows) to determine that they are suitable and properly equipped for movement of explosives, and inspections and findings will be recorded on the Vehicle Inspection Form (Appendix F):

- Exhaust system is maintained in good mechanical condition and is not exposed to accumulations of oil, grease, or gasoline, and ample clearance is provided from fuel lines and other combustible materials.
- Electrical system is in working order and in good repair.
- Brakes, steering, and other mechanical systems are working and in good condition.
- Fuel tank and piping are secure and not leaking.

3.6.2.02 EEG will properly placard transport vehicles to warn personnel and furnish specific guidance to firefighters and other personnel who may be responding to an emergency involving the vehicle. Transportation on public roads will be in accordance with applicable federal and state regulations, including driver testing and licensing.

3.6.2.03 Other materials or supplies will not be placed on or in the vehicle cargo space containing explosives, detonating cord, or detonators, except for safety fuse and properly secured non-sparking equipment used expressly in the handling of such explosives or detonating cord.

3.6.2.04 Explosives and blasting caps will be transported in separate vehicles.

3.6.2.05 Explosives and blasting caps will be promptly transported without delays in transit.

3.6.2.06 Explosives and blasting caps will be transported at times and over routes that limit exposure to a minimum number of people.

3.6.2.07 Only the necessary attendants will ride on or in vehicles containing explosives or blasting caps.

3.6.2.08 When a vehicle containing explosives or detonators is parked, the brakes will be set, the motor will be shut off, and the vehicle's tires will be blocked securely against rolling. After the vehicle is secured, the blasting cap box and the containers with the explosives will be removed from the cargo area of the vehicle and placed on the ground before any explosives or blasting caps are removed from the containers.

3.6.2.09 The motor vehicle used for transporting explosives will have the following minimum safety equipment:

- Fire extinguishers (two 10A:60B:C dry chemical extinguishers)
- Flame-retardant cover, or metal containers such as IME boxes or other suitable metal containers with latching lids and appropriate padding
- Non-metallic bed-liner such as sand bags, dunnage, or wooden box

3.6.2.010 Operators of transport vehicles will be EEG employees who have been carefully selected and trained and informed of the explosive hazards involved with the cargo. Prior to movement of explosives-laden vehicles, the cargo will be checked to ensure that containers are loaded, blocked, braced, tied down, or otherwise secured to the vehicle body to prevent movement. Care will be used to select the method to prevent damage to the containers or explosives.

3.6.2.011 The following general safety precautions will be observed during transport operations.

- No person will ride on or in the cargo compartment of a motor vehicle or vessel transporting MEC.
- MEC will not be transported in the passenger compartment of a vehicle or vessel.
- MEC-laden vehicles or vessels will not be left unattended.
- Smoking in vehicles or vessels transporting MEC is prohibited.
- Vehicles or vessels will not be refueled when MEC is on the vehicle or vessel.
- If a trailer is used to transport MEC, safety chains will be fastened between the tow vehicle and trailer.
- MEC will be shipped as close to the center line of a vessel as possible.

### 3.6.3 Vessel Requirements

Transport of explosives to the cays will require transport by boat or vessel. The same general placard and safety requirements that apply to vehicles will be followed, with the following additions.

- Explosives will be transported as close to the center line of the vessel as possible.
- The blasting caps and other explosives will be separated by at least 25 feet or transported on separate vessels.

- Only the boat captain and two UXO technicians may travel with the explosives on the boat or vessel.

### 3.6.4 Unplanned Explosions at Sea

The potential of an unplanned explosion at sea is remote, as EEG will follow proper USCG and Department of Transportation precautions for shipping and transport of explosives. If an unplanned detonation does occur, a thorough investigation will be conducted.

## 3.7 Receipt Documentation

### 3.7.1 Accountability

3.7.1.01 The UXOQC/SO or the SUXOS will observe all demolition setups and shots to verify that all of the explosives issued were in fact used and consumed. An Explosives Consumption Certificate will be initiated by the SUXOS and presented to the demolition supervisor selected by the SUXOS. The demolition supervisor will issue explosives to members of the demolition team in accordance with the Explosives Consumption Certificate. These forms will be maintained at the EEG field office. As explosive materials are expended, the demolition supervisor will confirm their use on the Explosives Consumption Certificate and annotate the appropriate Explosives Accountability Record (magazine data card) to reflect the quantity used and the quantity remaining.

3.7.1.02 EEG, as the end user of the site explosives, will provide a letter to the contracting officer at the end of the project certifying that the explosives were used for their intended purpose. This document will also be made a part of the final report.

### 3.7.2 Authorized Personnel

3.7.2.01 An authorizing official of EEG (i.e., chief executive officer, corporate president, or vice president) will sign a letter designating those personnel who are authorized to purchase, receive, access, and use explosives; a copy of this letter will be maintained on site. Authorized personnel are the SUXOS, the UXOQC/SO, the site manager, the project manager, and the team leaders.

3.7.2.02 The Explosives Consumption Certificate (included in Appendix F) certifies that the explosives were expended, as intended, in the MEC disposal process. The demolition team

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member receiving the explosives from the demolition supervisor will conduct a 100 percent inventory of the material. The quantities annotated on the Explosives Consumption Certificate should match the quantities reflected in the inventory. If these quantities do not match, the demolition supervisor will bring this to the attention of the SUXOS. The demolition supervisor will sign only for the actual quantity of material received, as reflected by the inventory. Receipt documentation will be changed to reflect the proper quantities. This procedure will be conducted for each receipt of explosives materials.

3.7.2.03 The SUXOS will review all explosives tracking forms and maintain the completed forms on a weekly basis to reconcile the quantity of explosives used, and will include these forms as part of the weekly report submitted to the project manager by the site manager.

### **3.8 Inventory**

#### **3.8.1 Physical Inventory Procedures**

3.8.1.01 A weekly inventory will be conducted, normally on the last work day of the week. The SUXOS and/or the demolition supervisor will be responsible for performing and documenting the inventory. Each explosive item will be counted. Unbroken cases do not require opening unless there is evidence that the original packaging was disturbed.

3.8.1.02 The Explosives Accountability Record (magazine data card) (see Appendix F) will be completed. Issue and receipt forms and magazine inventories will be reconciled weekly when the magazine contents are inventoried. The SUXOS will indicate in the daily journal that an inventory was conducted that day and will record the results of the inventory.

#### **3.8.2 Reconciliation of Discrepancies**

If the Explosives Accountability Record quantities do not match the actual inventory quantities, the UXOQC/SO will perform a second inventory. If the quantities still are not equivalent, the SUXOS and the UXOQC/SO will interview team members to try to identify the discrepancy. If the quantities are still unaccounted for, the SUXOS will follow the procedure in Subchapter 3.9.

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### **3.9 Lost, Stolen, or Unauthorized Use of Explosives**

3.9.01 Loss or theft of explosives will be reported as required in 27 CFR Part 55, Subpart C, paragraph 55.30. ATF Form 5400.5 will be completed within 24 hours and forwarded to ATF. A copy of this form is located in Appendix F.

3.9.02 Upon discovering lost, stolen, or unauthorized use of explosives, the demolition supervisor will report the circumstances to the SUXOS. The SUXOS will notify:

- On-site CEHNC representative immediately upon discovery
- Puerto Rico police via telephone at (787) 742-3501 within 24 hours
- ATF, Atlanta area office, via telephone at (404) 769-5130 within 24 hours
- Appropriate local law enforcement authorities in writing within 24 hours
- EEG program manager and project manager via telephone at (352) 332-3888 within one hour of discovery

3.9.03 The EEG project or program manager will notify:

- Contracting officer via telephone at (256) 895-1150 within one hour of discovery
- Contracting officer in writing within 24 hours
- The EQB representative via telephone within 24 hours

### **3.10 Procedures for Return to Storage**

Unused “daily issued” explosives will be returned to the magazine. Explosives will be returned in their original container. The quantities will be indicated on the Explosives Accountability Record (magazine data card), and the Explosives Consumption Certificate will be annotated to indicate the type and quantity of explosives returned to storage.

### **3.11 Procedures for Disposing of Remaining Explosives**

If quantities of explosive materials remain at the end of the project, their disposition will be so noted on the Explosives Accountability Record (magazine data card). If explosives are to be disposed of by detonation, the SUXOS and the UXOQC/SO will inventory all material. The SUXOS and the UXOQC/SO will witness the destruction of the material. A memorandum for the record, signed by the SUXOS and the UXOQC/SO, will document the inventory and destruction of the explosives. This document will become a part of the official site record and will be included in the final report.

### **3.12 Economic Analysis of Alternatives**

3.12.01 At the end of site activities, EEG will perform an economic analysis to determine the most cost-effective method to manage the remaining explosives. This information will be forwarded to the program manager and the CEHNC project manager for authorization. The available alternatives include:

- Returning unopened containers to the commercial distributor or manufacturer for credit
- Transferring stocks to another CEHNC project
- Destroying explosives on site

3.12.02 Experience of previous operations indicates on-site demolition to be the best alternative, as the cost of transporting the explosives is generally greater than the cost of the explosives themselves.