UNITED STATES DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
Gulf of Mexico OCS Region
New Orleans, Louisiana

FINAL
SITE-SPECIFIC ENVIRONMENTAL ASSESSMENT
ENDANGERED SPECIES/STRUCTURE REMOVAL
No. ES/SR 94-007, 008, and 009

Assessment of the Environmental Impacts of the Proposed Removal of Platform F in Ship Shoal Area, Block 198, Platform A in Eugene Island Block 305, and Caisson No. 7 in Ship Shoal Block 176 (Leases OCS-G 12355, OCS-G 2108, and OCS-0589)

By Pennzoil Petroleum Company

Date Submitted: November 24, 1993
Commencement Date: Upon Approval
Prepared by Ted Stechmann
FINDING OF NO SIGNIFICANT IMPACT

I have considered the proposal by Pennzoil Petroleum Company to remove Platform F, Ship Shoal Area, Block 198 (Lease OCS-G 12355), Platform A, Eugene Island Area, Block 305 (Lease OCS-G 2108), and Caisson No. 7, Ship Shoal Area, Block 176 (Lease OCS 0589), SEA No. ES/SR 94-007, 008, and 009. Based on the environmental analysis and mitigative measures contained in the site-specific environmental assessment, there is no evidence to indicate that the proposed action(s) will significantly (40 CFR 1508.27) affect the quality of the human environment if the permit/application is approved subject to all of the mitigative measures. Preparation of an environmental impact statement is not required.

[Signature]
Author
1/22/94
Date

[Signature]
Chief, Environmental Operations Leasing and Environment
1/26/94
Date

[Signature]
Acting Regional Supervisor Leasing and Environment Gulf of Mexico OCS Region
1/21/94
Date
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TABLE 1 - EXPLOSIVES PROPOSED BY THE OPERATOR FOR THE STRUCTURE REMOVALS IN SHIP SHOAL AREA BLOCKS 198 AND 176, AND EUGENE ISLAND AREA, BLOCK 305
INTRODUCTION AND BACKGROUND

The purpose of this Site-Specific Environmental Assessment (SEA) is to assess the specific impacts associated with proposed structure-removal activities. The SEA is based on a Programmatic Environmental Assessment (PEA) (USDOI, MMS, 1987) which evaluates a broader spectrum of potential impacts resulting from the removal of structures, e.g., platforms/caissons across the Central and Western Planning Areas of the Gulf of Mexico (GOM) Outer Continental Shelf. The PEA/SEA process is designed to simplify and reduce the size of environmental assessment documents by eliminating repetitive discussions of the same issues. This SEA conforms to the MMS and other appropriate guidelines for preparing environmental assessments by utilizing data presented in the PEA to complete the assessment. It presents site-specific data regarding the proposed structure removal and evaluates the removal’s potential impacts. Preparation of this SEA has allowed the determination of whether a Finding of No Significant Impact (FONSI) is appropriate or whether further assessment of the proposal is necessary.

I. DESCRIPTION OF THE PROPOSAL AND NEED FOR THE PROPOSAL

A. DESCRIPTION OF THE PROPOSED ACTION WITH MITIGATION

Pennzoil Petroleum Company has submitted a proposal to remove Platform F in Ship Shoal Area, Block 198, Platform A in Eugene Island Area, Block 305, and Caisson No. 7 in Ship Shoal Area, Block 176, (Leases OCS-G 12355, OCS-G 2108, and OCS-0589). The structures are located in water depths of 100, 221, and 96 feet respectively, approximately 55, 78, and 52 miles, respectively, south of Terrebonne and Saint Mary Parishes, Louisiana. The operator plans to utilize bulk and F.O.E.C.U.S Composition B charges of 50 lbs. or less to sever each of the well casings and piles of the three structures. The structures will be severed 20 feet below the mud line.

Refer to Appendix A and Table 1 for structure specifications, additional data on removal techniques, types and quantities of explosives to be used, and sequence of events.

MITIGATION

Refer to the operator’s proposal (Appendix A) for mitigative measures proposed to reduce the likelihood of death or injury to sea turtles and marine mammals.

B. NEED FOR THE PROPOSED ACTION

A discussion of the legal and regulatory mandates to remove abandoned oil and gas structures from Federal waters can be found in the PEA referenced in the Introduction. The operator has
stated that the structures are no longer productive, and are currently inactive.

II. ALTERNATIVES TO THE PROPOSED ACTION

A. NON-REMOVAL OF THE STRUCTURE(S)

An alternative to the proposed structure removal as originally submitted is non-removal. Non-removal of the structure would represent a conflict with Federal legal and regulatory requirements, which mandate the timely removal of obsolete or abandoned structures within a period of one year after termination of the lease, or upon termination of a right of use or easement. Therefore, non-removal does not appear to be a valid alternative.

B. REMOVAL OF THE STRUCTURE(S) BY ALTERNATIVE NON-EXPLOSIVE METHODS

The MMS has discussed various structure-removal techniques in the Final Environmental Impact Statement (FEIS) for proposed Oil and Gas Lease Sales 139 and 141, (USDOI, MMS, 1991) and the PEA referenced in the Introduction. It was concluded that the most effective methods of structure removal are the use of explosives, either bulk or shaped charges, and underwater arc cutting. Other methods appear promising, but require additional development to solve the operational and logistical problems associated with these techniques. Primarily for this reason it does not appear to be a feasible alternative for the subject structure(s).

Refer to the FEIS (USDOI, MMS, 1991) and PEA referenced in the Introduction for detailed information concerning alternative methods of structure removal.

C. REMOVAL OF THE STRUCTURE(S) AS PROPOSED WITH ADDED MITIGATION

It has been determined that the proposed operations fall within the category of activities covered by the National Marine Fisheries Service (NMFS) Biological Opinion of July 25, 1988, which addresses "standard" explosive structure removals in the COM.

Refer to the terms and conditions of the "generic" Incidental Take Statement (Appendix B), and any mitigation identified by this SEA necessary to reduce the likelihood of death or injury to sea turtles and marine mammals.

Our analysis of the proposal indicated that there are existing pipelines within 500 meters (490 feet) of the proposed activities. The existing pipelines may pose a hazard to the
proposed operations. Precautions in accordance with NTL 83-3, Section IV.b., will be taken prior to performing the proposed operation.

III. ENVIRONMENTAL EFFECTS, SOCIOECONOMIC CONCERNS, AND OTHER CONSIDERATIONS

A. PHYSICAL ENVIRONMENT

1. Environmental Geology and Geologic Hazards

A discussion of environmental geology and geologic hazards can be found in the PEA referenced in the Introduction. The proposed structure-removal activities are not in an area of sediment instability (mud flows, slumps, or slides). Therefore, geologic conditions are not expected to have an impact on the proposed structure-removal activities.

2. Meteorological Conditions

No impacts are expected as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

3. Physical and Chemical Oceanography

a. Physical Oceanography

No impacts are expected as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

b. Chemical Oceanography

Impacts are expected to be very low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

4. Water Quality

Impacts are expected to be low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

5. Air Quality

Impacts are expected to be very low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.
B. BIOLOGICAL ENVIRONMENT

1. Coastal Habitats

The operator has indicated that they propose to use Intracoastal City, Louisiana as shorebase to support the proposed activities. No impacts are expected as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

2. Protected, Endangered, and/or Threatened Species

a. Birds

The operator has indicated that they propose to use Intracoastal City, Louisiana as shorebase to support the proposed structure-removal activities. The PEA referenced in the Introduction delineates sensitive areas along the Texas coastline where whooping cranes and brown pelicans could be adversely impacted by structure-removal support activities. The proposed work is not expected to impact protected birds or their habitat.

b. Marine Mammals

A discussion of marine mammals occurring across the GOM and an assessment of the potential impacts of structure-removal activities on marine mammals can be found in the PEA referenced in the Introduction. Fritts et al. (1983) conducted aerial surveys across a 9,514 square mile area of waters lying in the central GOM. Results of these surveys indicate that the bottlenose dolphin is by far the most likely marine mammal to be encountered at the proposed structure removal. The MMS observers may be utilized to look for marine mammals prior to detonation of the primary charge at the removal site. If marine mammals are detected at the structure-removal site, detonation of the primary charge would be delayed until the animals are removed from the area. In spite of these precautions, a low probability exists that marine mammals could enter the blast area undetected and could be injured or killed by the underwater, subsurface detonations. Such an occurrence is considered highly unlikely and with the indicated protective mitigation measures, the proposed structure-removal activities are expected to have only a low impact on marine mammals.

c. Sea Turtles

A discussion of sea turtles occurring across the central and western GOM and an assessment of the potential impacts of structure-removal activities on sea turtles can be found in the PEA referenced in the Introduction. Studies by Fritts et al. (1983) and Fuller and Tappan (1986) as well as stranding data from the Sea Turtle Stranding and Salvage Network (Teas, 1992)
indicate that sea turtles occur in the vicinity of the proposed activities. Definitive information on the probability of encountering sea turtles at the removal site during removal operations is scarce. The NMFS and/or MMS observers may be utilized to look for sea turtles prior to detonation of the primary charges. If sea turtles are detected at the structure-removal site, detonation of the primary charges will be delayed until the animals are removed from the area. As in the case of marine mammals, the possibility exists that sea turtles could enter the blast area undetected, and could be injured or killed by the underwater, subsurface detonations. This occurrence is considered highly unlikely, and with the indicated protective mitigation measures, the proposed structure-removal activities are expected to have only a low impact on sea turtles. A cumulative incidental take has been authorized by the NMFS for actions in this category, but with all the precautions to be taken as mitigating measure(s), it is unlikely that any sea turtles will be affected by these proposed operations.

3. Birds

Impacts are expected to be very low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

4. Sensitive Marine Habitats

A discussion of sensitive marine habitats occurring in the central and western GOM and an assessment of the potential impacts of structure-removal activities on these areas can be found in the PEA referenced in the Introduction. The proposed activities are not near any sensitive marine habitats. Therefore, the subject structure removal will not impact any sensitive marine habitats or their resident biota.

5. Offshore Habitats and Biota

Impacts are expected to be low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

C. SOCIOECONOMIC CONCERNS

1. Employment

Impacts are expected to be very low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.
2. Economics

Impacts are expected to be very low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

3. Onshore Support Facilities, Land Use, and Coastal Communities and Services

The operator has indicated that they propose to use Intracoastal City, Louisiana as shorebase to support the proposed structure-removal activities. No impacts are expected as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

D. OTHER CONSIDERATIONS

1. Commercial and Recreational Fisheries

   a. Commercial Fisheries

For analysis information, see the PEA referenced in the Introduction. Since the PEA was originally written, new concerns have emerged concerning the impacts of explosive structure removals on reef fish populations. On May 9, 1991 the GOM Fishery Management Council expressed concern over the declining stocks of reef fish, especially red snapper. They referred to the antidotal accounts of finfish kills associated with explosive removals of offshore structures in order to link these activities with their concerns about declining populations of reef fish. They further suggested that the MMS should hold all explosive structure removals in abeyance until more information becomes available on the effects of these activities on fish stocks. See the PEA (Section on Offshore Habitats and Biota) for a discussion of fish kills in association with explosive structure removals.

The MMS has declined to hold all explosive structure removals in abeyance citing the regulatory mandates for structure removals and problems with current non-explosive structure removal methods. The MMS has stated a commitment to carry out studies to assess the impacts of oil and gas structure removals on Gulf fisheries resources and the results of these studies will be used to determine future policies with respect to these activities.

The MMS continues to consider the overall impacts of structure removals on commercial fishing to be low. The MMS policy of encouraging an active rigs-to-reefs program will help to offset cumulative structure-removal impacts to fisheries resources.
The MMS has been notified through the Fisherman's Contingency Fund of the following hang sites within Ship Shoal Block 176:

\[
\begin{align*}
X &= 2,009,368. \\
Y &= 17,343. \\
X &= 2,388,382. \\
Y &= 81,215.
\end{align*}
\]

b. Recreational Fisheries

Impacts are expected to be low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction. See the preceding section for a discussion of fish kills in association with explosive structure removals.

2. Archaeological Resources

Impacts are expected to be low as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

3. Military Use/Warning Areas and Explosive Dumping Areas

The proposed structure-removal activities will not take place in a military use/warning area or in an explosive dumping area. In addition, the shorebase location chosen by the operator and/or his contractor(s) will not require support vessels or aircraft to traverse any of these areas. A description of these areas, their locations and potential impacts of structure-removal activities on these areas can be found in the PEA referenced in the Introduction. The proposed activities will not impact or be impacted by any military use/warning areas or explosives dumping areas.

4. Navigation and Shipping

The proposed structure-removal activities are not located in a vessel fairway or anchorage area. Structures located nearshore may serve as "landmarks" to vessels or helicopters operating in the area on a regular basis. The overall impacts of the proposed work on navigation and shipping is expected to be very low. More information on the impacts of structure removal on navigation and shipping can be found in the PEA referenced in the Introduction.

5. Pipelines and Cables

The PEA referenced in the Introduction contains a description of the impacts of structure removal on pipelines and cables. The proposed work will take place in the vicinity of existing pipelines. Since the operator must adhere to existing laws and regulations for abandonment of structures (including
procedures required by Notice to Lessees and Operators 83-3), the proposed work should not pose a hazard to pipelines or cables in the area.

6. Other Mineral Resources

No impacts are expected as a result of the proposed activities. For analysis information, see the PEA referenced in the Introduction.

7. Human Health and Safety

The PEA referenced in the Introduction describes the hazardous conditions for workers during structure-removal activities. The operator has proposed the use of explosive methods to remove the subject structures. Existing legal and regulatory safety requirements will keep the impacts of the proposed work on human health and safety at a very low level.

E. UNAVOIDABLE ADVERSE IMPACTS

A discussion of unavoidable adverse impacts can be found in the PEA referenced in the Introduction. Two areas of ongoing concern have been the potential impact to protected, threatened, and/or endangered species and potential loss of habitat to the marine environment. Both topics are discussed in the PEA and previously in this document. A more recent issue of concern has surfaced regarding the impacts of explosive structure removals on reef fish stocks. This issue has been previously discussed in this document. Although the impacts to commercial and recreational fisheries is considered to be low, further studies information about this issue should be available in the future. Other unavoidable adverse impacts are considered to be minor.

IV. PUBLIC OPINION

A discussion of public concerns regarding structure removals can be found in the PEA referenced in the Introduction.

In May 1991, the GOM Fishery Management Council requested that the MMS place a moratorium over the explosive removal of offshore structures with three or more supports. Non-removal of these structures would conflict with current Federal legal and regulatory requirements which mandate the timely removal of abandoned or obsolete structures within a period of one year after termination of the lease, or upon termination of a right-of-use or easement.

The MMS believes that current data on the effects of explosive removals on fish mortality is insufficient to draw any conclusions, and a moratorium on all but single pile caissons at this time is unjustified. In order to quantify explosive
effects, the MMS initiated an interagency study with the NMFS to
determine fish mortalities from platform removal operations. In
addition to the above study, the MMS supports an active rigs-to-
reef program and encourages industry to search for method that
will minimize effects on fish from platform removal operations.

V. CONSULTATION AND COORDINATION

In accordance with the provisions of Section 7 of the
Endangered Species Act, the proposed structure-removal operations
are covered by the Biological Opinion issued by the NMFS on
July 25, 1988, which established a category of "standard"
explosive structure-removal operations. Their comments are
included in Appendix B. The NMFS concluded that this category of
structure-removal activities will not likely jeopardize the
continued existence of any threatened or endangered species under
their purview. Additionally, they concluded that this type of
"standard" structure-removal activity may result in injury or
mortality of loggerhead, Kemp's ridley, green, hawksbill, or
leatherback turtles. Therefore, they established a cumulative
level of incidental take and discussed various measures necessary
to monitor and minimize this impact (see Appendix B).

The NMFS noted that no incidental taking of marine mammals
was authorized under Section 101(a)(5) of the Marine Mammal
Protection Act of 1972, in connection with this category of
structure-removal activities. Therefore taking of marine mammals
by the operator would be prohibited unless they successfully
apply for and obtain a waiver or permit to do so from the NMFS.
VI. BIBLIOGRAPHY AND SPECIAL REFERENCES


Table 1

Explosives Proposed by Pennzoil Petroleum Company for the Removal of Platform F in Ship Shoal Area, Block 198 (Lease OCS-G 12355), Platform A in Eugene Island Area, Block 305 (Lease OCS-G 2108), and Caisson No. 7 in Ship Shoal Area, Block 176 (Lease OCS-0589)

**Type of Explosives:**

Composition B

**Number and Size of Charges:**

Platform F:
Six 50-lb. charges for the piles, and ten 50-lb. charges for the well casings (bulk).

Platform A:
Two 5-lb. and two 45-lb. charges for the piles (F.O.E.C.U.S.), and five 30-lb. charges for the conductors (bulk or F.O.E.C.U.S.)

Caisson No. 7:
Single 50-lb. charge for well casing (bulk). The single pile will be cut by divers.

**Deployment of Charges:**

Inside, 20 feet below the mud line.

**Sequencing of Detonations:**

Shots will utilize a 0.9 second delay between each detonation of a severing charge with no more than eight (8) detonations per any one sequence, as well as allowing a four (4) minute delay between any two (2) sequences.
VII. PREPARERS

Author:
Ted Stechmann - Biologist

Typist:
Sandy Pavlas - Office Automation Clerk
To: Environmental Operations Section (LE-5)

From: Office of Structural and Technical Support, Field Operations, Gulf of Mexico OCS Region (OSTS)

Subject: Platform Removal

OPERATOR: Pennzoil

Control No: ES/SR 94-007, 008, 009

Platform
--- Platform A
--- Caisson No. 7

Area/Block
--- SS198
--- G1305
--- SS176

Lease
--- OCS-G12355 - 007
--- OCS-G2108 - 008
--- OCS-0589 - 009

Shore Base: Interstate City, LA

The attached application is forwarded to your office so that the Finding of No Significant Impact can be prepared. We believe this proposed activity meets the requirements of the generic Endangered Species Act Section 7 Consultation Document. There are existing pipeline(s) within 500 feet of the proposed removal location.

[Signature]
Arvind Shah (OSTS)
Extension 2894

Enclosure

cc:

AShah: LEXITTE:Disk 5
November 9, 1993

Mr. D. J. Bourgeois  
U. S. Department of the Interior  
Minerals Management Service  
1201 Elmwood Park Boulevard  
New Orleans, LA  70123-2394

Re: Ship Shoal Block 198 "F"  
OCS G-12355

Dear Mr. Bourgeois:

In accordance with the requirements of 30 CFR 250.143, this is to advise that Pennzoil Petroleum Company plans to remove the Ship Shoal 198 "F" structure.

Attached in triplicate for your review and consideration are the following:

a. Proposed OCS platform/structure removal form.  
   Sheets 1 through 3

b. Photograph of structure

c. Plan view of platform OS 154

In accordance with NTL 92-02 Paragraph 2.a, we propose to verify this site clearance by using a trawling vessel that meets the requirements of Paragraph 2.a Nos. 2 and 3.

We are waiting approval of these plans and are available to provide any additional information that may be required.
VIII. APPENDICES

A. PENNZOIL PETROLEUM COMPANY CORRESPONDENCE

B. NMFS CORRESPONDENCE
APPENDIX A

PENNZOIL PETROLEUM COMPANY CORRESPONDENCE
If additional information is required, please contact Mr. Dean Whitaker at 318/269-4371.

Yours very truly,

[Signature]

J. C. Gilmore
Construction Engineer Advisor
Offshore Division - Production

JCG:AD:fb

Attachments
I. **Responsible Party**

A. Lease Operator Name: PENNZOIL PRODUCTION CO.

B. Address: P.O. BOX 51843
   LAFAYETTE, LA 70505-1843

C. Contact and Telephone Number: JERRY GILMORE
   (318)269-4003
   DEAN WHITAKER
   (318)269-4371

II. **Identification of Structure to be Removed**

A. Platform Name: SHIP SHOAL 198 "F"

B. Location Coordinates:
   lat: 28.34.58.3435
   long: 91.16.30.8979
   X = 2018647.00
   Y = 30469.00

C. Date Installed: 06/15/65

D. Proposed Date of Removal: JANUARY 1994

E. Water Depth: 100'

III. **Description of Structure to be Removed**

A. Configuration: SEE ATTACHED DIAGRAM

B. Size: DECK SECTION 70' X 110'
   JACKET 68' X 108'

C. Number of Legs/Casings/Piles: LEGS/PILING (6) SIX
   CASING (10) TEN

D. Diameter and Wall Thickness of
   Legs/Casings/Pilings: LEGS 39" X .500"
   PILE 36" X 1.250"
   CASING 16"X10 3/4"X7 5/8"

E. Are piles grouted?: UNKNOWN

F. Brief description of soil composition and condition:
   VERY SOFT TO FIRM HIGHLY PLASTIC OLIVE GRAY CLAY WITH
   A LAYER OF SILT. SEE ATTACHED REPORT.

IV. **Purpose**

A. Brief discussion of the reason for removing the structure:
   PLATFORM ON LONGER PRODUCES, INACTIVE.
V. Removal Method

A. Brief description of the method to be used:
THE STRUCTURE WILL BE REMOVED BY DERRICK BARGE
AFTER SEVERING PILES AND CONDUCTORS WITH EXPLOSIVE
CHARGES.

B. If Explosives are to be used, provide the following:

1. Kind of Explosives: Composition B

2. Number and Size of Charges:

   Piles: (6) SIX X BULK 50#

   Well Casings: (10) TEN X BULK 50#

   a. Single Shot or Multiple Shots?
      MULTIPLE

   b. If multiple, sequence and timing of detonations:
      SHOTS WILL UTILIZE A 0.9 SECOND DELAY BETWEEN
      EACH DETONATION OF A SEVERING CHARGE WITH NO
      MORE THAN (8) EIGHT DETONATIONS PER ANY ONE
      SEQUENCE AS WELL AS ALLOWING A (4) MINUTE DELAY
      BETWEEN ANY (2) TWO SEQUENCES.

3. Bulk of Shaped Charge? BULK

   a. Depth of Detonation Below Mud Line:
      (20) TWENTY FEET BML

   b. Inside or Outside Piling?
      INSIDE

C. Pre-Removal Monitoring Techniques

1. Is the use of scare charges or acoustic devices
   proposed? NO

   If yes, provide the following:

   a. Number and Kind:

   b. Size of Charges:

   c. Brief description of how, where, and when scare
      charges or acoustic devices will be used:

2. Will divers or acoustic devices be used to conduct a
   pre-removal survey to detect presence of turtles and
   marine mammals?

   AS REQUIRED BY NMFS, IN CONJUNCTION WITH NORMAL
   DERRICK BARGE REMOVAL OPERATIONS.
If yes, briefly describe the proposed detection method:

Divers working with the derrick barge will perform visual survey in conjunction with normal operations

D. Post-Removal Monitoring Techniques

1. Will transducers be used to measure the pressure and impulse of the detonations? No.

2. Will divers be used to survey the area after removal to determine any effects on marine life? Only in conjunction with normal operations of derrick barge.

VII. Biological Information

A. If available, provide the results of any recent biological surveys conducted in the vicinity of the structure. If available, describe any recent observations of turtles or marine mammals at the structure site:
NOTE:

1) MAP PROJECTION BASED UPON LOUISIANA (LAMBERT) PLANE COORDINATE SYSTEM, SOUTH ZONE (GRID UNITS IN FEET)
GEODETIC DATUM: NAD 1927; CLARKE SPHEROID 1866.
SUMMARY

An investigation has been made of soil and foundation conditions at Tenneco's site in Block 198, Ship Shoal Area off the Louisiana coast in approximately 99 ft of water. The principal findings and conclusions from our engineering analyses of data secured from the foundation boring drilled to 411.0-ft penetration and from tests conducted on samples taken from the boring may be summarized as follows:

(1) Foundation conditions at the site are defined by the major soil strata tabulated below:

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Penetration, ft</th>
<th>Description</th>
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<tbody>
<tr>
<td>I</td>
<td>0</td>
<td>Very soft to firm clay</td>
</tr>
<tr>
<td>II</td>
<td>106</td>
<td>Silty fine sand</td>
</tr>
<tr>
<td>III</td>
<td>127</td>
<td>Stiff clay</td>
</tr>
<tr>
<td>IV</td>
<td>140.5</td>
<td>Silty fine sand</td>
</tr>
<tr>
<td>V</td>
<td>168</td>
<td>Stiff clay</td>
</tr>
<tr>
<td>VI</td>
<td>217.5</td>
<td>Laminated stiff clay and silty fine sand</td>
</tr>
<tr>
<td>VII</td>
<td>245</td>
<td>Silty fine sand</td>
</tr>
<tr>
<td>VIII</td>
<td>271</td>
<td>Stiff to very stiff clay</td>
</tr>
<tr>
<td>IX</td>
<td>340</td>
<td>Firm to stiff silty clay</td>
</tr>
<tr>
<td>X</td>
<td>360</td>
<td>Very stiff clay</td>
</tr>
<tr>
<td></td>
<td>411+</td>
<td></td>
</tr>
</tbody>
</table>

(2) Ultimate tensile and compressive axial capacity curves are presented for 48-in.-diameter driven pipe piles. These curves were developed using the API RP 2A (January 1980) and λ-Methods. For design purposes, appropriate factors of safety should be applied to these curves.

(3) Soil resistance-pile deflection (p-y) data have been developed for 48-in.-diameter piles.

(4) In order to achieve an ultimate compression load of 6000 kips, a 48-in. dia. pile should be driven to about 370-ft penetration according to both API criteria and λ-Method analysis.

(5) If there are no long time delays in driving, a hammer having a rated energy of about 300,000 ft-lbs may be capable of driving 48-in.-diameter piles to approximately 370-ft penetration into the very stiff clay of Stratum X. Pile-wall thicknesses
A brief chronological summary of the field operations is given on Plate 3.

Field and Laboratory Tests

The field and laboratory testing programs were designed to evaluate the pertinent physical properties of the foundation soils. Strength tests were performed in the field concurrently with drilling operations. Undisturbed shear strengths of cohesive samples were determined with a motorized miniature vane device while the samples were in the sample tube. Unconfined compression tests were performed in the field on selected cohesive samples and estimates of shear strength were also made using the Torvane. All other tests together with additional miniature vane and unconfined compression tests were conducted in the laboratory. The types and number of strength tests performed are given in Appendix A on Plate A-1.

Water content and unit dry weight determinations were made for all specimens subjected to unconfined and triaxial compression tests. Water contents were determined on specimens tested with the miniature vane.

Most of the test results are tabulated on Plate A-2 in Appendix A and are presented in graphical form on the boring log. Grain-size distribution curves are given on Plate A-3 and stress-strain curves for selected compression tests are shown on Plate A-4.

GENERAL SOIL CONDITIONS

A generalized summary of the major soil strata at the site, based on the boring log is given in the following tabulation:

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Penetration, ft</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From</td>
<td>To</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
<td>106</td>
</tr>
<tr>
<td>II</td>
<td>106</td>
<td>127</td>
</tr>
<tr>
<td>III</td>
<td>127</td>
<td>140.5</td>
</tr>
<tr>
<td>IV</td>
<td>140.5</td>
<td>168</td>
</tr>
<tr>
<td>V</td>
<td>168</td>
<td>217.5</td>
</tr>
</tbody>
</table>
*See Plate 5 for description of strata.

DESIGN SHEAR STRENGTH PROFILE

BLOCK 198, SHIP SHOAL AREA
BORING 3
Submerged unit weight, kips per cu ft

Penetration below seafloor in feet

See Plate 5 for description of strata.

SUBMERGED UNIT WEIGHT PROFILE

BLOCK 198, SHIP SHOAL AREA
BORING 3
November 9, 1993

Mr. D. J. Bourgeois
U. S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Re: Eugene Island Block 305 "A"
OCS G-2108

Dear Mr. Bourgeois:

In accordance with the requirements of 30 CFR 250.143, this is to advise that Pennzoil Petroleum Company plans to remove the Eugene Island 305 "A" structure.

Attached in triplicate for your review and consideration are the following:

   a. Proposed OCS platform/structure removal form.
      Sheets 1 through 3

   b. Photograph of structure

   c. Plan view of platform OS 154

In accordance with NTL 92-02 Paragraph 2.a, we propose to verify this site clearance by using a trawling vessel that meets the requirements of Paragraph 2.a Nos. 2 and 3.

We are waiting approval of these plans and are available to provide any additional information that may be required.
If additional information is required, please contact Mr. Dean Whitaker at 318/269-4371.

Yours very truly,

J. C. Gilmore
Construction Engineer Advisor
Offshore Division - Production

JCG:AD:fb

Attachments
I. Responsible Party
   A: Lease Operator Name: PENNZOIL PRODUCTION CO.
   B: Address: P.O. BOX 51843
       LAFAYETE, LA. 70505-1843
   C: Contact and Telephone Number:
      JERRY GILMORE
      (318)269-4330
      DEAN WHITAKER
      (318)269-4371

II. Identification of Structure to be Removed
   A. Platform Name: EUGENE ISLAND 305 "A"
   B. Location Coordinates:
      lat: 28.19.49.8211
      long: 91.32.07.3349
      X = 1934977.00
      Y = -122201.00
   C. Date Installed: 11/23/73
   D. Proposed Date of Removal: JANUARY 1994
   E. Water Depth: 221'

III. Description of Structure to be Removed
   A. Configuration: SEE ATTACHED DIAGRAM
   B. Size: DECK SECTION 94' X 117'
         JACKET 87' X 100'
   C. Number of Legs/Casings/Piles: (4) FOUR PILE
   D. Diameter and Wall Thickness of
      Legs/Casings/Pilings:
      ROW A LEGS  74" X .875"
      ROW B LEGS  54" X 1.500"
      ROW A PILES 68" X 1.250"
      ROW B PILES 48" X 1.250"
      CONDUCTORS 20"X 13 5/8"X 9 5/8"X 7"
   E. Are piles grouted?: UNKNOWN
   F. Brief description of soil composition and condition:

IV. Purpose
   A. Brief discussion of the reason for removing the structure:
      PLATFORM ON LONGER PRODUCES, INACTIVE.
V. Removal Method

A. Brief description of the method to be used:
THE STRUCTURE WILL BE REMOVED BY DERRICK BARGE AFTER SEVERING PILES AND CONDUCTORS WITH EXPLOSIVE CHARGES.

B. If Explosives are to be used, provide the following:

1. Kind of Explosives: Composition B

2. Number and Size of Charges:

Piles: (2) TWO 68" X 100# BULK / 50# FOECUS
(2) two 48" x 70# BULK / 45# FOECUS
Well Casings: (5)20" CONDUCTORS X 30#

a. Single Shot or Multiple Shots? MULTIPLE

b. If multiple, sequence and timing of detonations:
SHOTS WILL UTILIZE A 0.9 SECOND DELAY BETWEEN EACH DETONATION OF A SEVERING CHARGE WITH NO MORE THAN (8) EIGHT DETONATIONS PER ANY ONE SEQUENCE AS WELL AS ALLOWING A (4) MINUTE DELAY BETWEEN ANY (2) TWO SEQUENCES.

3. Bulk of Shaped Charge? BULK AND/OR FOECUS

a. Depth of Detonation Below Mud Line:
(20) TWENTY FEET BML

b. Inside or Outside Piling?
INSIDE

C. Pre-Removal Monitoring Techniques

1. Is the use of scare charges or acoustic devices proposed? NO

If yes, provide the following:

a. Number and Kind:

b. Size of Charges:

c. Brief description of how, where, and when scare charges or acoustic devices will be used:

2. Will divers or acoustic devices be used to conduct a pre-removal survey to detect presence of turtles and marine mammals?

AS REQUIRED BY NMFS, IN CONJUNCTION WITH NORMAL DERRICK BARGE REMOVAL OPERATIONS.

If yes, briefly describe the proposed detection method:

Divers working with the derrick barge will perform visual survey in conjunction with normal operations
D. Post-Removal Monitoring Techniques

1. Will transducers be used to measure the pressure and impulse of the detonations? No.

2. Will divers be used to survey the area after removal to determine any effects on marine life? Only in conjunction with normal operations of derrick barge.

VII. Biological Information

A. If available, provide the results of any recent biological surveys conducted in the vicinity of the structure. If available, describe any recent observations of turtles or marine mammals at the structure site.
NOTE:

1) MAP PROJECTION BASED UPON LOUISIANA (LAMBERT) PLANE COORDINATE SYSTEM, SOUTH ZONE (GRID UNITS IN FEET)
GEOD: DATUM: NAV 1927; CLARKE SPHEROID 1866.
November 9, 1993

Mr. D. J. Bourgeois
U. S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Re: Ship Shoal Block 176 No. 7
OCS G-0589

Dear Mr. Bourgeois:

In accordance with the requirements of 30 CFR 250.143, this is to advise that Pennzoil Petroleum Company plans to remove the Ship Shoal 176 No. 7 structure.

Attached in triplicate for your review and consideration are the following:

   a. Proposed OCS platform/structure removal form.
      Sheets 1 through 3

   b. Photograph of structure

   c. Plan view of platform OS 154

In accordance with NTL 92-02 Paragraph 2.a, we propose to verify this site clearance by using a trawling vessel that meets the requirements of Paragraph 2.a Nos. 2 and 3.

We are waiting approval of these plans and are available to provide any additional information that may be required.
If additional information is required, please contact Mr. Dean Whitaker at 318/269-4371.

Yours very truly,

J. C. Gilmore
Construction Engineer Advisor
Offshore Division - Production

JCG:AD:fb

Attachments
I. **Responsible Party**
   A: Lease Operator Name: PENNZOIL PRODUCTION CO.
   B: Address: P.O. BOX 51843
       LAFAYETTE, LA. 70505-1843
   C: Contact and Telephone Number: JERRY GILMORE
       (318)269-4330
       DEAN WHITAKER
       (318)269-4371

II. **Identification of Structure to be Removed**
   A. Platform Name: SHIP SHOAL 176 #7
   B. Location Coordinates: 
      lat: 28.37.11.9234
      long: 91.18.13.0044
      X = 20009538.00
      Y = -16078.00
   C. Date Installed: 02/17/90
   D. Proposed Date of Removal: JANUARY 1994
   E. Water Depth: 96'

III. **Description of Structure to be Removed**
   A. Configuration: SEE ATTACHED DIAGRAM
   B. Size: DECK SECTION 16' X 19'
       CAISON 8' X 12' TAPERED
   C. Number of Legs/Casings/Piles: (1) CAISSON
      (1) CONDUCTOR
   D. Diameter and Wall Thickness of
      Legs/Casings/Pilings: CAISSON 12' X 1.500''
      CONDUCTOR 26'' X 1.0''
   E. Are piles grouted?: NO
   F. Brief description of soil composition and condition:
      VERY SOFT-TO-STIFF GRAY CLAT OF HIGH PLASTICITY.
      SEE ATTACHED REPORTS.

IV. **Purpose**
   A. Brief discussion of the reason for removing the structure:
      PLATFORM ON LONGER PRODUCES, INACTIVE.
V. **Removal Method**

A. Brief description of the method to be used:

THE STRUCTURE WILL BE REMOVED BY DERRICK BARGE
AFTER SEVERING CONDUCTORS WITH EXPLOSIVE
CHARGES AND DIVERS BURNING CAISSON.

B. If Explosives are to be used, provide the following:

1. **Kind of Explosives:** Composition B

   Number and size of Charges: (1) ONE X 50#

   Piles: CUT BY DIVERS

   Well Casings: (1) ONE X BULK 50#

   a. Single Shot or Multiple Shots?

      SINGLE

   b. If multiple, sequence and timing of detonations:

      SHOTS WILL UTILIZE A 0.9 SECOND DELAY BETWEEN
      EACH DETONATION OF A SEVERING CHARGE WITH NO
      MORE THAN (8) EIGHT DETONATIONS PER ANY ONE
      SEQUENCE AS WELL AS ALLOWING A (4) MINUTE DELAY
      BETWEEN ANY (2) TWO SEQUENCES.

3. **Bulk of Shaped Charge?** BULK

   a. Depth of Detonation Below Mud Line:

      (20) TWENTY FEET BML

   b. Inside or Outside Piling?

      INSIDE

C. **Pre-Removal Monitoring Techniques**

1. Is the use of scare charges or acoustic devices proposed? NO

   If yes, provide the following:

   a. Number and Kind:
   b. Size of Charges:
   c. Brief description of how, where, and when scare
      charges or acoustic devices will be used:

2. Will divers or acoustic devices be used to conduct a
   pre-removal survey to detect presence of turtles and
   marine mammals?

   AS REQUIRED BY NMFS, IN CONJUNCTION WITH NORMAL
   DERRICK BARGE REMOVAL OPERATIONS.

   If yes, briefly describe the proposed detection
   method:
Divers working with the derrick barge will perform visual survey in conjunction with normal operations.

D. Post-Removal Monitoring Techniques

1. Will transducers be used to measure the pressure and impulse of the detonations? No.

2. Will divers be used to survey the area after removal to determine any effects on marine life? Only in conjunction with normal operations of derrick barge.

VII. Biological Information

A. If available, provide the results of any recent biological surveys conducted in the vicinity of the structure. If available, describe any recent observations of turtles or marine mammals at the structure site:
TO BE REMOVED
WELL #7 STRUCTURE
X = 2,003.538'
Y = -16,378'
Lat. 28° 37' 11.923"N
Lon. 91° 18' 13.004"W

NOTES:
1) MAP PROJECTION BASED UPON LOUISIANA (LAMBERT) PLANE
   COORDINATE SYSTEM, SOUTH ZONE (GRID UNITS IN FEET)
   GEODETIC DATUM: NAD 1927; CLARKE SPHEROID 1866.
Laboratory Investigation

Our laboratory testing program was designed to classify the foundation soils and determine their strength characteristics. Several types of strength tests were performed in the mobile field laboratory concurrent with drilling operations. Shear strength measurements on undisturbed cohesive samples were made with a motorized miniature vane shear device while the samples were still in the sampling tubes. Shear strength estimates were also made using both a Torvane and a pocket penetrometer. Additional shear strength and classification tests were conducted in our Houston laboratory. All tests were performed in accord with ASTM specifications. A summary of the test results is presented in Appendix A. Also included in Appendix A are stress-strain curves and grain size distribution curves for selected samples.

SOIL CONDITIONS

The data resulting from tests on the samples obtained in the test boring indicate that the soil conditions at this site are described by the major strata presented below.

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Penetration-feet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From</td>
<td>To</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>II</td>
<td>125</td>
<td>145</td>
</tr>
<tr>
<td>III</td>
<td>145</td>
<td>229</td>
</tr>
<tr>
<td>IV</td>
<td>229</td>
<td>300+</td>
</tr>
</tbody>
</table>

Localized variations of texture and color occur within the above strata. Detailed descriptions of the soils encountered are presented on the Log of Boring and Test Results, Figures 1 and 2.
Design Shear Strength, ksf

INTERPRETATION OF DATA
DESIGN SHEAR STRENGTH

CHEVRON U.S.A. INC.
WELL No 7
BLOCK 176, SHIP SHOAL AREA
GULF OF MEXICO

Figure 5
Submerged Unit Weight, kcf

INTERPRETATION OF DATA
SUBMERGED UNIT WEIGHT

CHEVRON U.S.A. INC.
WELL NO 7
BLOCK 176, SHIP SHOAL AREA
GULF OF MEXICO

Figure 6
Mr. William D. Bettenberg  
Director  
Minerals Management Service  
U.S. Department of the Interior  
Washington, D.C. 20240

Dear Mr. Bettenberg:

Enclosed is the Biological Opinion prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) concerning potential impacts on endangered and threatened species associated with removal of certain oil and gas platforms and related structures in the Gulf of Mexico (GOM) using explosives.

This "standard" consultation covers only those removal operations that meet specified criteria pertaining to the size of explosive charge used, detonation depth, and number of blasts per structural grouping. Consultation must be initiated on a case-by-case basis for all dismantling operations requiring the use of explosives that do not meet the established criteria.

NMFS concludes that structure removals in the GOM that fall within the established criteria are not likely to jeopardize the continued existence of listed species under the jurisdiction of NMFS. However, it is our opinion that the proposed activities may result in the injury or mortality of endangered and threatened sea turtles. Therefore, pursuant to Section 7(b)(4) of the ESA, we have established a low level of incidental take, which is cumulative for all removals covered by this consultation, and terms and conditions necessary to minimize and monitor any impacts, should they occur. The terms and conditions are contained in the enclosed incidental take statement. Also enclosed is a list of pending consultations that meet, with noted exceptions, the criteria established in the "standard" consultation. This biological opinion and the mitigating measures and terms and conditions contained in the related incidental take statement apply to these proposed removal operations. Therefore, formal consultation is concluded for these proposed actions.
Consultation must be reinitiated if: (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals impacts of the proposed activities that may affect listed species in a manner or to an extent not considered thus far in our opinions; (3) the identified activities are modified in a manner that causes an adverse effect to listed species not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the project.

I look forward to your continued cooperation in future consultations.

Sincerely,

James W. Brennan
Assistant Administrator
for Fisheries

Enclosures
Biological Opinion


Activity: Consultation for Removal of Certain Outer Continental Shelf Oil and Gas Structures in the Gulf of Mexico

Consultation Conducted By: National Marine Fisheries Service (NMFS)

Date Issued: __________

Background Information:

In a letter dated November 19, 1986, the Minerals Management Service (MMS) made an initial request for formal consultation pursuant to Section 7 of the Endangered Species Act (ESA) for the removal of an offshore oil and gas platform located in the Federal waters of the Gulf of Mexico (GOM). MMS and NMFS determined that removal of oil and gas platforms and related structures in the GOM may affect endangered and threatened marine species. This "may affect" determination was based on a possible relationship between endangered and threatened sea turtle mortalities and the dismantling of platforms using explosives. On November 25, 1986, NMFS issued the first of a series of biological opinions addressing, in detail, the potential impacts to listed marine species that may occur as a result of OCS abandonment activities.

MMS and NMFS established procedures for expediting Section 7 consultations on platform abandonment activities in the GOM referred to as "expedited consultations." Following those procedures, approximately 44 consultations have been completed for removal operations in the GOM region. All of the consultations have concluded that the proposed abandonment activities were not likely to jeopardize the continued existence of any listed species, but that the proposed activities may result in the incidental taking of endangered and threatened sea turtles.
The dismantling of platforms and related structures using explosives has evolved to a point where a "standard" protocol can be established for removal operations meeting certain criteria. Based upon removal techniques developed and reviewed in conjunction with the previously conducted "expedited consultations," MMS has requested, by letter of May 24, 1988, a "generic consultation" that would be applicable to all future removal operations that fall within a distinct category, defined by specific parameters. A category has been designed to include those structure types and removal techniques most commonly encountered during the expedited consultations and dismantling operations already completed. Since approximately 1000 structures that may be scheduled for future removal fall within the parameters of the established category, NMFS agrees that a "generic" consultation is appropriate at this time. The objective of the consultation is to reduce the administrative burden on both MMS and NMFS for conducting repetitive consultations on activities that may result in similar impacts to listed species and that require identical mitigating measures to maintain adequate protection for such species. This biological opinion responds to MMS' May 24, 1988, consultation request. The opinion is based on the best scientific and commercial data presently available and incorporates information from: 1) previous MMS Summary Evaluations, 2) previous NMFS biological opinions on platform removal, 3) the scientific literature, and 4) other pertinent and available information. Consultation must be reinitiated if new information becomes available concerning impacts to listed species that would alter the conclusions reached in this opinion or require modification of the measures identified in the attached incidental take statement. Consultation will continue on a case-by-case basis for those structure removals that do not meet the criteria established for "standard" removals.

Description of Proposed Action:

The proposed action involves the removal, by explosive means, of offshore oil and gas structures located in Federal waters in the Gulf of Mexico. Removal of the structures will be accomplished by severing the support pilings, caissons, wall conductors, etc., using varying amounts of explosives to permit salvage of the structures. This involves the placement of explosives inside or outside of supporting structures and detonating charges primarily using electronically controlled signals.

This "generic" consultation considers only those removal operations that meet certain criteria pertaining to the size of the explosive charge used, detonation depths, and number of blasts per structural grouping. The specific criteria established to cover such removals are as follows:
1) Use of high velocity explosives (detonation rate greater than 7,600 meters/second).

2) A maximum of eight individual blasts per group of detonations with charges staggered at an interval of 0.9 seconds (900 milliseconds).

3) Charges must be set at a minimum depth of 15 feet below the sediment surface. Severing of structures above the sediment surface "open water" must be accomplished by mechanical (non-explosive) methods.

4) The maximum amount of explosives per detonation is not to exceed 50 pounds.

Species Occurring in the Project Area:

Listed species under the jurisdiction of NMFS that may occur in the project area:

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>STATUS</th>
<th>LISTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>right whale</td>
<td>Eubalaena glacialis</td>
<td>E</td>
<td>6/2/70</td>
</tr>
<tr>
<td>finback whale</td>
<td>Balaenoptera physalus</td>
<td>E</td>
<td>6/2/70</td>
</tr>
<tr>
<td>humpback whale</td>
<td>Megaptera novaeangliae</td>
<td>E</td>
<td>6/2/70</td>
</tr>
<tr>
<td>sei whale</td>
<td>Balaenoptera borealis</td>
<td>E</td>
<td>6/2/70</td>
</tr>
<tr>
<td>sperm whale</td>
<td>Physeter catodon</td>
<td>E</td>
<td>6/2/70</td>
</tr>
<tr>
<td>green turtle</td>
<td>Chelonia mydas</td>
<td>Th</td>
<td>7/28/78</td>
</tr>
<tr>
<td>Kemp's ridley turtle</td>
<td>Lepidochelys kempi</td>
<td>E</td>
<td>12/2/70</td>
</tr>
<tr>
<td>leatherback turtle</td>
<td>Dermochelys coriacea</td>
<td>E</td>
<td>6/2/70</td>
</tr>
<tr>
<td>loggerhead turtle</td>
<td>Caretta caretta</td>
<td>Th</td>
<td>7/28/78</td>
</tr>
<tr>
<td>hawksbill turtle</td>
<td>Eretmochelys imbricata</td>
<td>E</td>
<td>6/2/70</td>
</tr>
</tbody>
</table>

*All of the U.S. green turtle populations are listed as threatened except the Florida breeding population, which is listed as endangered.
No critical habitat has been designated in the project area for the above species.

Assessment of Impacts:

Based upon their known distribution and abundance in the GOM, endangered whales are believed unlikely to occur in the vicinity of the proposed structure removal activities, and, therefore, unlikely to be adversely affected by the proposed action.

Previous NMFS biological opinions (November 25, 1986 and February 26, 1987) have addressed, in detail, removal of structures in the GOM. Accounts of endangered and threatened species which occur in the project area, and the "Assessment of Impacts" contained in these prior opinions also apply to this consultation and are incorporated by reference.

In summary, the opinions referenced above acknowledge the existence of a possible relationship between the use of underwater explosives in removing platforms and related structures and the occurrence of stranded sea turtles, marine mammals (Tursiops truncatus) and fish. Limited experiments conducted by NMFS, Galveston Laboratory confirm that sea turtles (and other marine vertebrates) found in proximity to petroleum platforms can be injured or killed by removal operations employing underwater explosives (Klima, 1986).

Technology most commonly used in the dismantling of platforms includes: bulk explosives, shaped explosive charges, mechanical and abrasive cutters and underwater arc cutters. The use of bulk explosives has become the industry's standard procedure for severing pilings, well conductors and related supporting structures (approx. 90% use). When using bulk charges, the inside of the structure can be jetted out to at least 15 feet below the sediment floor to allow placement of explosives inside of the structure, resulting in a decrease in the impulse and pressure forces released into the water column upon detonation. The use of high velocity shaped charges is reported to have some advantages over bulk explosives and has been used in combination with smaller bulk charges. The cutting action obtained by a shaped charge is accomplished by focusing the explosive energy with a conical metallic liner. A major advantage associated with use of high velocity shaped charges is that a smaller amount of explosive charge is required to sever the structure, which also results in reductions in the impulse and pressure forces released into the water column. Use of mechanical cutters and underwater arc cutters is successful in some circumstances and do not produce the impulse and pressure forces associated with detonation of explosives, however, these methods are, in most instances, more time consuming, costly and more hazardous to divers. As a result, these methods are not used on a routine basis (MMS Report on Platform Removal Techniques).
Based upon data obtained during previously conducted "expedited" consultations on platform removals, the following is a comparison of the types of explosives most likely to be used in the proposed removal operations:

<table>
<thead>
<tr>
<th>Explosive</th>
<th>Detonating Velocity</th>
<th>Brisance*</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDX</td>
<td>approx. 8,199 m/sec.</td>
<td>1.35</td>
</tr>
<tr>
<td>C-4</td>
<td>approx. 8,001 m/sec.</td>
<td>1.15</td>
</tr>
<tr>
<td>Comp.-B</td>
<td>approx. 7,803 m/sec.</td>
<td>1.32</td>
</tr>
</tbody>
</table>

* Brisance is the measure of shattering power as compared to TNT which has brisance of 1.00. (NMFS Report on Platform Removal Techniques, 1986.)

The proposed removal operations will be accomplished using high velocity explosives. Use of this type of explosive charge should minimize the duration of the impulse and pressure forces produced by detonation of the charges, while providing the amount of force required to sever the structures. According to NMFS, restricting the grouping of detonations to eight individual blasts per group and staggering blasts by 0.9 seconds (900 milliseconds) will minimize the area affected by the blasts and suppress phasing of shock waves, thereby decreasing the cumulative effects of the blasts. In addition, since all detonations will occur at least 15 feet below the sediment surface and no more than 50 pounds of explosives per blast will be permitted, the amount of residual energy released into the marine environment should be reduced significantly. As a result, NMFS believes that minimal shock and impulse forces will be released in the vicinity of removal operations at any given time.

To date, of approximately 44 previously conducted consultations covering abandonment activities, about 33 structure removals have been completed. Each removal operation was monitored by NMFS observers and was conducted using appropriate mitigating measures. At the present time, eight turtles have been sighted in areas near structures being dismantled, at least two of which were green turtles. Of the eight documented sightings, one turtle was reported to be floating on its back near a platform after detonation of charges, apparently stunned or injured. No other incidents of sea turtle injury or mortality have been reported. Therefore, NMFS believes that the proposed actions are not likely to result in significant adverse impacts to endangered and threatened sea turtle populations.
Conclusions:

Based on the above, it is our opinion that removal of platforms and related structures in the GM is not likely to jeopardize the continued existence of threatened and endangered species under the jurisdiction of NMFS. However, NMFS concludes that the proposed activities may result in the injury or mortality of loggerhead, Kemp's ridley, green, hawksbill and leatherback turtles. Therefore, pursuant to Section 7(b)(4) of the ESA, we have established a low level of incidental take and terms and conditions necessary to minimize and monitor this impact. Compliance with these terms and conditions is the responsibility of NMFS and the permit applicant.

Reinitiation of Consultation:

Consultation must be reinitiated if: 1) the amount or extent of taking specified in the incidental take statement is met or exceeded; 2) new information reveals impacts of the project that may affect listed species in a manner or to an extent not considered in this opinion; 3) the identified activities are modified in a manner that causes an adverse effect on listed species not previously considered; or 4) a new species is listed or critical habitat is designated that may be affected by the proposed activities.
INCIDENTAL TAKE STATEMENT

Section 7(b)(4) of the Endangered Species Act requires that when a proposed agency action is found to be consistent with Section 7(a)(2) of the Act and the proposed actions may incidentally take individuals of listed species, NMFS will issue a statement that specifies the impact (amount or extent) of such incidental taking. Incidental taking by the Federal agency or applicant that complies with the specified terms and conditions of this statement is authorized and exempt from the taking prohibitions of the ESA.

Based on stranding records, incidental captures aboard commercial shrimp vessels and historical data, five species of sea turtles are known to occur in northern Gulf of Mexico waters. Current available information on the relationship between sea turtle mortality and the use of high-velocity explosives to remove oil platforms indicates that injury and/or death of sea turtles may result from the proposed actions. Therefore, pursuant to Section 7(b)(4) of the ESA, an incidental take (by injury or mortality) level of one documented Kemp's ridley, green, hawksbill or leatherback turtle or ten loggerhead turtles is set for all removal operations conducted under the terms and conditions of this incidental take statement. The level of taking specified here is cumulative for all removals covered by this consultation. If the incidental take meets or exceeds this specified level, MMS must reinitiate consultation. The Southeast Region, NMFS, will cooperate with MMS in the review of the incident to determine the need for developing further mitigation measures.

The reasonable and prudent measures that NMFS believes are necessary to minimize the impact of incidental takings have been discussed with MMS and will be incorporated in the removal design for "standard" structure removals. The following terms and conditions are established for these removals to implement the identified mitigation measures and to document the incidental take should such take occur:

1) Qualified observer(s), as approved by NMFS, must be used to monitor the area around the site prior to, during and after detonation of charges. Observer coverage will begin 48 hours prior to detonation of charges. If sea turtles are observed in the vicinity of the platform and thought to be resident at the site, pre- and post-detonation diver surveys must be conducted.
2) On days that blasting operations occur, a 30-minute aerial survey must be conducted within one hour before and one hour after each blasting episode. The NMFS-approved observer and/or NMFS on-site personnel (NMFS employee only) must be used to check for the presence of turtles and, if possible, to identify species. If weather conditions (fog, excessive winds, etc.) make it impossible to conduct aerial surveys, blasting activities may be allowed to proceed if approved by the NMFS and/or MMS personnel on-site.

3) If sea turtles are observed in the vicinity of the platform (within 1000 yards of the site) prior to detonating charges, blasting will be delayed until attempts are successful in removing them at least 1000 yards from the blast site. The aerial survey must be repeated prior to resuming detonation of charges.

4) Detonation of explosives will occur no sooner than 1 hour following sunrise and no later than 1 hour prior to sunset. However, if it is determined by NMFS and/or MMS on-site personnel that special circumstances justify a modification of these time restrictions and that such modification is not likely to adversely impact listed species, blasting may be allowed to proceed outside of this time frame.

5) During all diving operations (working dives as required in the course of the removal), divers will be instructed to scan the subsurface areas surrounding the platform (blasting) sites for turtles and marine mammals. Any sightings must be reported to the NMFS or MMS on-site personnel. Upon completion of blasting, divers must report and attempt to recover any sighted injured or dead sea turtles or marine mammals.

6) Charges must be staggered 0.9 seconds (900 milliseconds) for each group of structures, to minimize the cumulative effects of the blasts. If a removal operation involves multiple groupings of structures, the interval between detonation of charges for each group should be minimized to avoid the "chumming" effect. Whenever such intervals exceed 90-minutes, the aerial survey must be repeated.

7) The use of scare charges should be avoided to minimize the "chumming effect." Use of scare charges may be allowed only if approved by the NMFS and/or MMS on-site personnel.

8) A report summarizing the results of the removal and mitigation measures must be submitted to the MMS Gulf of Mexico Region within 15 working days of the removal. A copy of the report must be forwarded to NMFS, Southeast Region.
This incidental take statement applies only to endangered and threatened sea turtles. In order to allow an incidental take of a marine mammal species, the taking must be authorized under Section 101(a)(5) of the Marine Mammal Protection Act of 1972. Although interest has been expressed in obtaining an exception authorizing a limited take of dolphins incidental to abandonment activities, no marine mammal take is authorized until appropriate small take regulations are in place and related "Letters of Authorization" are issued.
REFERENCES


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* Consultations whose numbers include an asterisk (*) did not totally fall under the parameters of this "standard" consultation, therefore, only those removals meeting the parameters are approved and further consultation will be necessary for the exceptions.