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REVISION TO AN APPROVED PLAN OF EXPLORATION
PROPOSED EXPLORATORY DRILLING OPERATIONS
ON THE BELCHER PROSPECT
OCS LEASE SALE 87 AREA, OFFSHORE ALASKA

Prepared by :
AMOCO PRODUCTION COMPANY

APRIL 1988

With the Assistance of :
HOOKS, McCLOSKEY & ASSOCIATES, INC.

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(1) INTRODUCTION

Amoco Production Company (Amoco) acquired an interest in sixty-two (62) leases during Lease Sale No. 87. On July 3, 1985, the Minerals Management Service (MMS) approved a Plan of Exploration (POE) for proposed operations on eight (8) of these leases which were grouped together to form the Erik (i.e., OCS-Y 0886, 0892, 0910, 0912 and 0913) and Belcher (i.e., OCS-Y 0917, 0918 and 0926) Prospects.

The approved POE described a single well location on lease OCS-Y 0917 to evaluate the hydrocarbon potential of the Belcher Prospect (see Figure 1). Since the approval, Amoco has continued its evaluation of available geophysical and geologic data, and has determined that two additional well locations are needed in the Belcher Prospect to identify, to the maximum extent possible, all of the potential hydrocarbon accumulations within the prospect.

Amoco is proposing a revision to the approved POE to incorporate the new well locations, and to up-date environmental and other information originally submitted in 1986. All of the operations proposed for 1988 will take place at sites located within the Belcher Prospect; no operations are planned at the Erik Prospect.

This document has been prepared by Amoco to comply with the MMS requirement that proposals to revise an approved POE be submitted "...with the same information required for a new exploration plan." Amoco does not believe the revisions will result "...in a significant change in the impacts previously identified and evaluated" [30 CFR 250.34-1(j)(2)].

This POE is accompanied by two documents. The first is an updated version of an Environmental Report (Exploration) which describes the environmental setting and the environmental, economic,

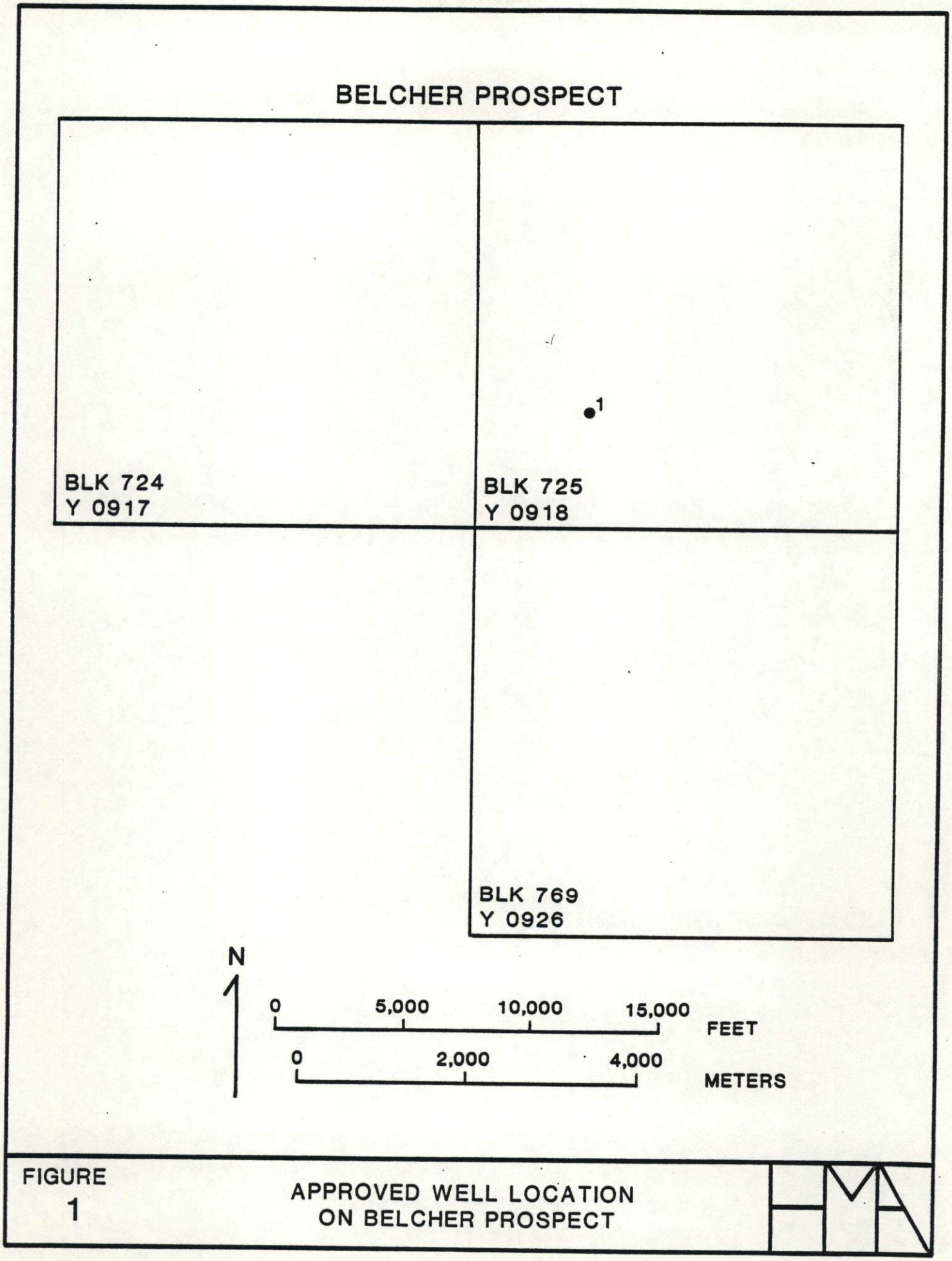

FIGURE 1

APPROVED WELL LOCATION ON BELCHER PROSPECT

social, and other impacts associated with the proposed exploratory drilling operations on the Belcher Prospect. The second document contains revisions to Amoco's Oil Spill Contingency Plan for operations in the Beaufort Sea. The plan was originally approved in July 1985 and was last revised in April 1987.

(2) PROPRIETARY DATA

All proprietary data have been placed in Appendix 1 of this POE, which is a separate volume. These data are provided for the exclusive use of the MMS. Included in Appendix 1 are: a brief geologic description of the Belcher Prospect with regard to structural and stratigraphic elements; a structure map, based on seismic data; and schematic cross-sections. Also included is a tentative drilling prognosis. Geophysical sections will be provided to the MMS with the APD for each well.

(3) LOCATION OF PROPOSED OPERATIONS

The Belcher Prospect is located in the eastern Beaufort Sea, approximately 47 statute* miles (76 km) east-northeast of Barter Island. The closest land area to the Belcher Prospect is Siku Point, which is 30 miles (48 km) to the southwest. Figure 2 depicts the location of the Belcher Prospect in relation to geographic reference points in Alaska.

A total of three proposed well locations are included in the revised exploration program (see Figure 3). Detailed information on the proposed well locations is provided in Table 1.

* All distances are in statute miles unless otherwise noted.

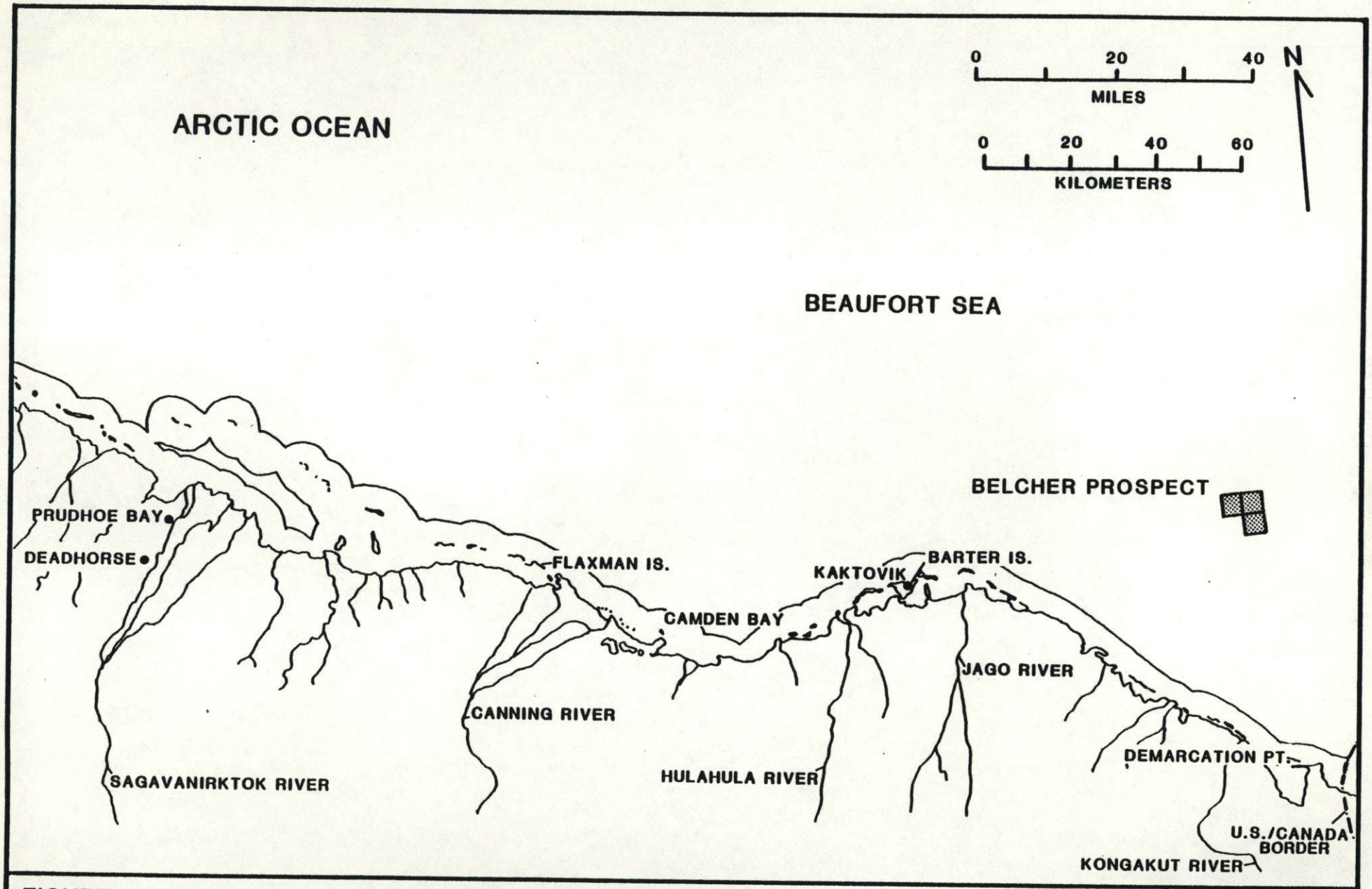

FIGURE 2

LOCATION OF THE BELCHER PROSPECT IN THE EASTERN ALASKA BEAUFORT SEA

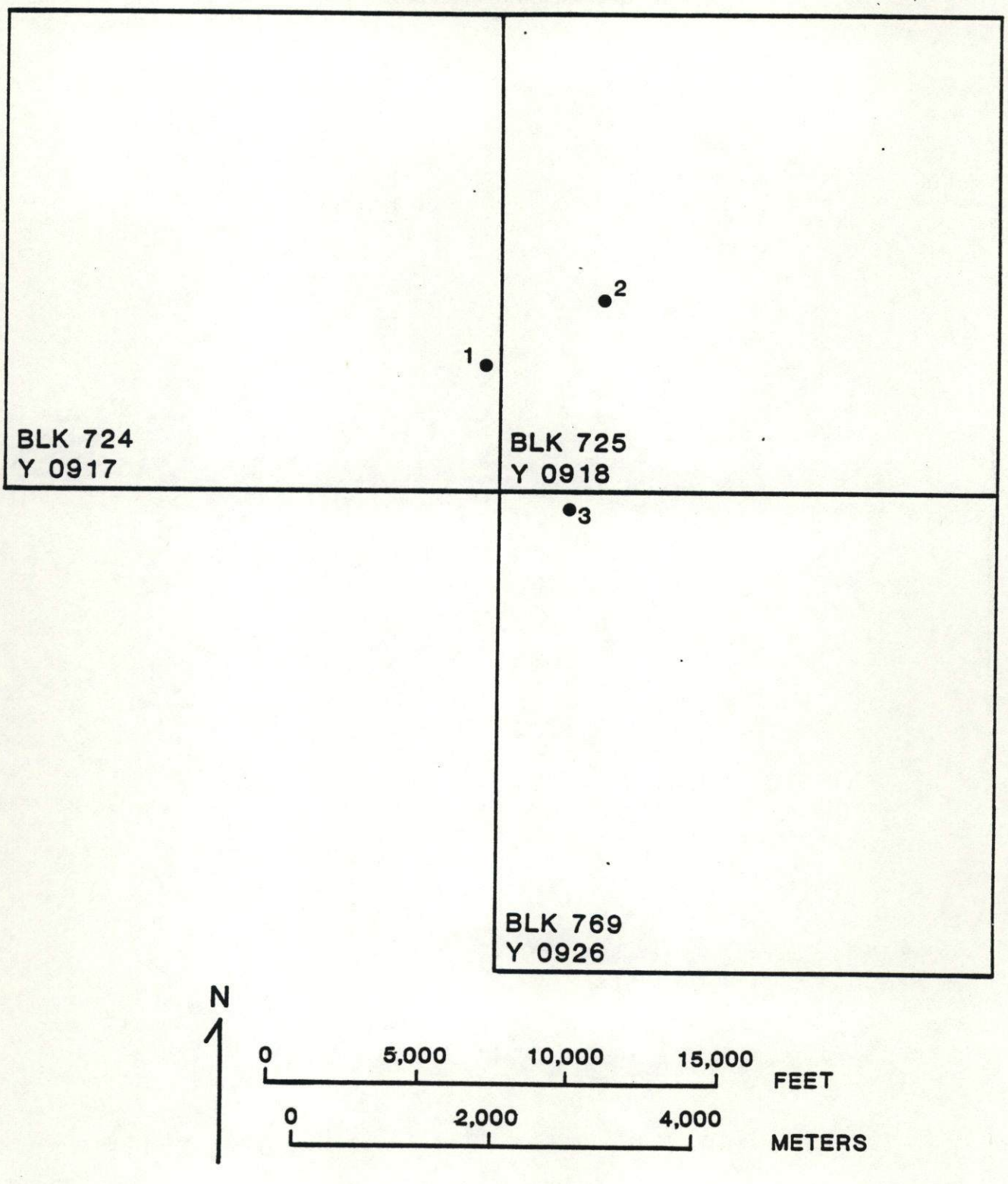

FIGURE 3

REVISED WELL LOCATIONS

TABLE 1

DETAILED INFORMATION ON REVISED WELL LOCATIONS ON THE BELCHER PROSPECT

WELL NO.	UTM ZONE LOCATIONS (Zone 7) (meters) (X)	(Y)	LATITUDE	LONGITUDE	WATER DEPTHS (feet)	(meters)	PROPOSED PERMIT DEPTH - BML (feet)	(meters)
1	467989.979	7817726.532	70°27'52"N	141°51'27"W	167	51	13,000	3,962
2	469962.534	7818313.019	70°28'12"N	141°48'18"W	167	51	13,000	3,962
3	469251.958	7815056.938	70°26'26"N	141°49'22"W	167	51	13,000	3,962

(4) DESCRIPTION AND SCHEDULE OF PROPOSED OPERATIONS

The proposed exploratory drilling operations on the Belcher Prospect will be of temporary duration. Up to three exploratory wells may be drilled on the prospect (i.e., one well each on the three leases that make up the prospect). The proposed wells will be drilled to a planned depth of 13,000 feet (3,962 m).

The spud date for the first well may be as early as the "open water" period in 1988.* The initial well to be drilled probably will be located on lease OCS-Y 0917. Final well selection, however, will be based on further analysis of available data and this decision will be reflected in the initial Application for Permit to Drill (APD). The location and sequence of subsequent wells will depend upon the results obtained from previous drilling operations.

The minimum level of activity envisioned on the Belcher Prospect would be the drilling of one well per "open water" period. The maximum level of activity would be the drilling of two wells per "open water" period.

Operational flexibility is considered necessary to schedule drilling operations so that adjustments may be made as new data are obtained. Decisions on whether and when to drill subsequent wells will be made within a reasonable period of time following the evaluation of geologic data provided by the most recent well(s) drilled.

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* The duration of the "open water" period is difficult to predict. In 1986, "break up" occurred on July 24 and "freeze up" occurred on October 8; in 1987, "break up" occured on July 15 and "freeze up" occured on October 16.

These decisions also will be dependent upon weather conditions, sea ice concentrations, the availability of appropriate drilling equipment, the results of drilling and seismic control programs conducted on adjacent leases, and/or government-imposed seasonal drilling limitations.

Although Amoco believes that the proposed operations can be conducted through the "open water" period without adversely affecting bowhead whales, the Company recognizes and will comply with the provisions of Stipulation No. 4 of the Final Notice of Sale for Lease Sale No. 87 (herein referred to as Final Notice of Sale) which prohibits exploratory drilling, testing and other downhole activities, with the exception of testing through casing, during a period which coincides with the fall migration of bowhead whales. This stipulation is in force unless the MMS Regional Supervisor, Field Operations (RSFO) determines that continued operations are necessary to prevent a loss of well control or to ensure human safety. Amoco is requesting an exception to the provisions of this stipulation to allow operations to be conducted throughout the endangered bowhead whale fall migration period.

Amoco estimates that it will require up to 70 days to drill, test and abandon each of the proposed wells. However, government-imposed seasonal drilling limitations, sea ice, or weather conditions could shorten this period to an extent that drilling operations might require two or more seasons to complete.

Prior to the initiation of drilling operations from a floating drilling vessel, the MMS may require that a "glory hole" be constructed at one or more of the proposed well locations to house and protect blowout prevention and other well head equipment in the event of ice invasion. If the MMS requires the construction of a glory hole, it would be drilled from the drilling unit with a conventional glory hole bit.

As currently planned, helicopters will be used to move personnel and small supplies between Deadhorse and/or Barter Island and the drilling unit. Personnel will be transported to Deadhorse on commercial, fixed-wing aircraft operating out of Anchorage. Helicopter routes from Deadhorse are planned generally to follow an existing aircraft corridor along the coast between Prudhoe Bay and the Camden Bay area and then proceed directly offshore to the drill site. If used, personnel and small supplies will be transported to Barter Island by fixed-wing aircraft operating out of Anchorage and/or Deadhorse. From there, personnel and small supplies will travel by helicopters directly offshore following take-off.

Current plans call for one to three ice class supply vessels to be dedicated to the project at all times. An additional ice class support vessel also may be dedicated to the project to transport supplies and equipment from an existing shorebase to the drilling site. Marine support vessels most likely will travel direct routes (ice conditions permitting) between Tuktoyaktuk, Canada and the drilling unit.

Consistent with Section 14(a) of the Information to Lessees portion of the Final Notice of Sale, aircraft and vessels will maintain at least a 1.0-mile (1.6-km) distance from observed wildlife or known wildlife concentration areas such as bird colonies or marine mammal concentrations, unless such an action would jeopardize human safety. Also, to reduce potential effects to bowhead whales and subsistence use activities, project-related aircraft and vessel traffic will be reduced and/or rerouted to avoid bowhead whales and minimize interference with hunting activities during the fall bowhead whale migration, unless such an action would jeopardize human safety. Project-related aircraft will maintain a minimum altitude of 1,500 feet (457 m), unless such an action would jeopardize human safety.

(5) DESCRIPTION OF DRILLING UNIT

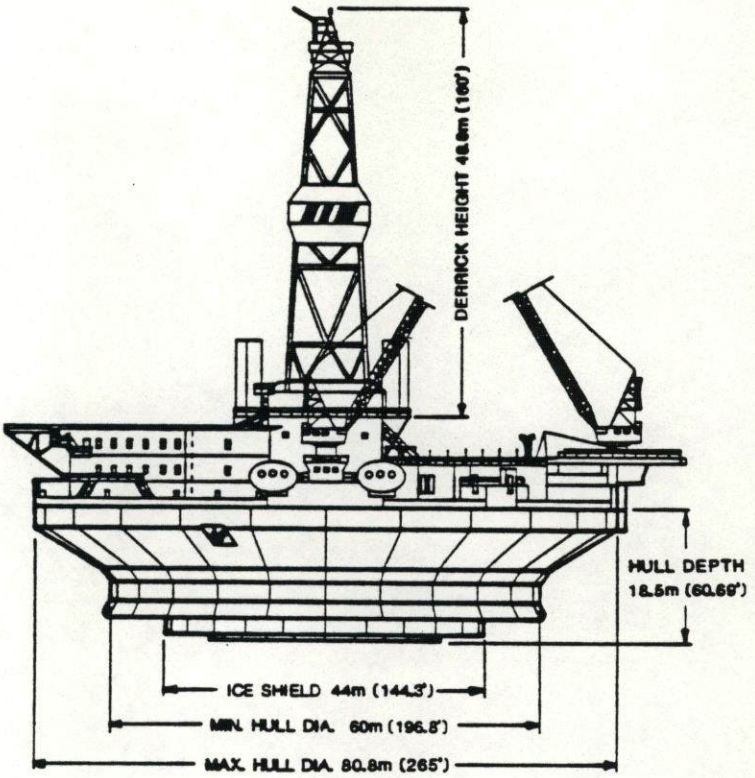
A floating drilling unit, like the KULLUK or CANMAR Explorer II, most likely will be used to drill the proposed wells. The KULLUK and/or CANMAR Explorer II are briefly described below. The information is provided to illustrate the basic characteristics of the type of floating drilling unit that Amoco proposes to use on the Belcher Prospect. If a different drilling unit, like the CANMAR Explorer IV, is selected, information on the unit will be submitted to the MMS with the APD for each well.

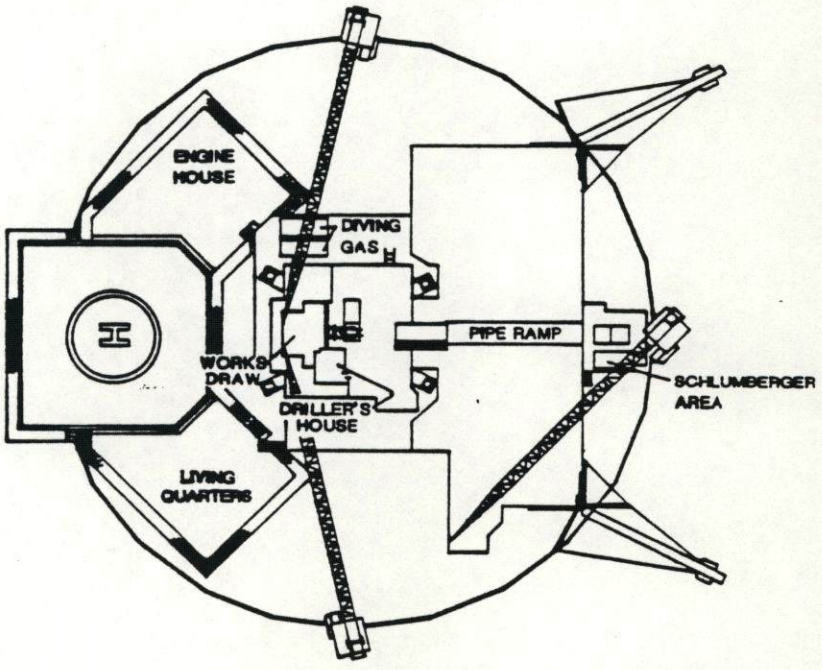
A. KULLUK

The KULLUK has been specifically developed for offshore oil and gas exploration in Arctic regions. The KULLUK is a semisubmersible drilling barge which is conical in shape. The conical design, which was developed to withstand the ice forces encountered during late fall and early winter in the Beaufort Sea, is built in accordance with the Arctic Shipping Pollution Prevention Regulation Class IV and the American Bureau of Shipping rules for Ice Class 1AA. A schematic diagram of the KULLUK is provided in Figure 4.

The KULLUK has a rated drilling capacity of 20,000 feet (6,098 m) in water depths up to 600 feet (183 m). The large storage capacity and drilling equipment are designed to enable the vessel to sustain long periods of uninterrupted service.

The drilling unit will be moored by anchors. All mooring lines will be equipped with remote anchor release units. This special feature, in conjunction with the collapsible pawls installed on the





PLAN VIEW

FIGURE 4

CONICALLY SHAPED SEMI-SUBMERSIBLE

drums, will allow for quick disconnection from the anchors and enable the drilling unit to withdraw from the drilling location quickly in the event of unmanageable ice encroachment.

General descriptive information on the KULLUK is provided below. More detailed information can be submitted with the APD for each well, if necessary.

1. ENVIRONMENTAL CAPABILITY

(a) Operating Condition Without Ice:

- Maximum horizontal displacement equal to 5 percent of water depth.
- One year return seas (9-foot significant wave height, 8 second peak period).
- 70 mph sustained wind.
- 1.6-foot/second current.
- Maximum line pull equal to 50 percent of breaking strength.

(b) Operating Condition With Ice:

- Maximum horizontal displacement equal to 5 percent of water depth.
- One year return ice (4 feet thick, 110 psi flexural strength).
- Total system response to ice load of 800 tons.
- 88 mph sustained wind.

- o 1.0-foot/second current.

- o Maximum line pull equal to 50 percent of breaking strength.

(c) Survival Condition Without Ice:

- o Marine riser disconnected.

- o 100 year return storm (24-foot significant wave height, 12.5-second peak period).

- o 175 mph sustained wind.

- o 2.3-foot/second current.

(d) Survival Condition With Ice:

- o The system is designed to release the anchors prior to the point at which the breaking strength of the system is reached.

2. DRILLING CAPABILITY

(a) Water Depth Capability - 600 feet maximum depth.

(b) Well Depth Rating - 20,000 feet.

(c) Typical Drilling Equipment:

- o 160-foot derrick with 1,400,000 pounds capacity.

- o Mud Pumps - Ideco Model T 1200 kw triplex (4 6E 752R DC motors).

- o Rotary - 49.5 inches, 1,000 HP (Ideco Model LR-495).

- o Drawworks - Ideco Model E-3000 (3 GE motors @ 940 kw each).

- o Accessory - all additional drilling and pipe handling equipment to complement the above primary drilling equipment.

3. SUBSEA EQUIPMENT

(a) BOP - 18.75-inch, 10,000 or 15,000 psi.

(b) Riser - 21-inch and 30-inch with integral choke and kill line.

(c) Accessory - all additional required and state-of-the-art design control systems and accessory equipment to complement the above primary subsea equipment.

4. MOORING SYSTEM

(a) Points - 12 points wire line mooring system.

(b) Anchors - Bruce 16.5-ton anchors.

(c) Anchor Wire Lines - 3.5-inch, 3,760 feet long.

5. POWER PLANT

3 - 2190 kw @ 600 volts.

6. CRANES

3 - Liebherr offshore pedestal cranes with maximum rated life of 72 tons.

1 - BOP handling hoist, rated lift 85 tons.

4 - Derrick floor air hoists (3 tons).

7. HELIPORT

Capable of handling Sikorsky S-61, Super Puma, and all smaller helicopters - complete fuel system, aircraft fire-fighting system, and flight navigation system (DME type), SAWRS (Certified) weather station onboard to meet FAA rules for IFR aircraft operations.

8. SURVIVAL EQUIPMENT

(a) Personnel Safety - all USCG, SOLAS, ABS and OSHA required equipment.

(b) Fire Safety - all firefighting equipment and sensors as required by USCG.

(c) H_2S Safety - equipment for detection and personnel safety as required by the H_2S contingency plan.

9. STORAGE CAPACITIES

(a) Drilling Water - 4,225 barrels.

(b) Potable Water - 1,875 barrels (two on-board water makers rated at 358 barrels per day).

(c) Diesel Fuel - 10,000 barrels (approximately 55-100 days operating supply).

(d) Liquid Drilling Mud - Active = 908 barrels, Reserve = 1,144 barrels, Kill Mud = 450 barrels.

(e) Bulk Cement - 13,450 cubic feet.

(f) Bulk Barite - 8,040 cubic feet.

The drilling unit is designed to provide self-contained facilities sufficient to house a maximum of 100 persons. The vessel will provide the necessary utilities, including a potable water supply and sewage treatment plant.

Storage tanks will be provided for fuel, and limited storage on the unit is available for the collection and storage of hydrocarbons or contaminated fluids produced during production testing. In addition the KULLUK is equipped with two built-in flare booms (one port and one starboard) which are complete with Porter Test burners rated at 10,000 barrels/day each. The KULLUK also has testing/processing units which are permanently installed on the drilling unit and can handle up to 10,000 barrels/day of hydrocarbon fluids. Amoco is currently investigating available technology for complete and efficient flaring of well test fluids. If a flaring system is determined to be practical and environmentally acceptable, use of this type of system is presently perceived as operationally desirable. In either case, disposal of such fluids will comply with all applicable MMS and U.S. Coast Guard requirements.

B. CANMAR EXPLORER II

The CANMAR Explorer II also has been specifically developed for offshore oil and gas exploration in Arctic regions. The hull, built to ABS Ice Reinforced Type 1A Super Class 1AA specifications, is

fully equipped for open water Arctic environmental conditions and is classified by both ABS and Lloyds registry. The drilling unit's outboard profile is shown in Figure 5.

The CANMAR Explorer II has a rated drilling capacity of 19,700 feet (6,000 m) in water depths up to 600 feet (180 m). The large storage capacity and drilling equipment are designed to enable the drilling unit to sustain long periods of uninterrupted service.

The drilling unit will be moored by anchors. All eight of the unit's mooring lines are equipped with remote anchor release units. This special feature, in conjunction with the collapsible pawls installed on the drums, will allow for quick disconnection from the anchors and enable the unit to withdraw from the drilling location quickly in the event of unmanageable ice encroachment.

General descriptive information on the CANMAR Explorer II is provided below. More detailed information can be submitted with the APD for each well, if necessary.

1. ENVIRONMENTAL CAPABILITY

   (a) Drilling Operations Capability - concurrent 17.5-foot waves and winds at 65 knots in 85-foot water depth.

   (b) Cold Weather Capability - enclosed drillrig (no cold weather restrictions).

   (c) Water Depth Capability - 600 feet maximum depth capability.

2. DRILLING CAPABILITY

   (a) Depth rating - 20,000 feet.

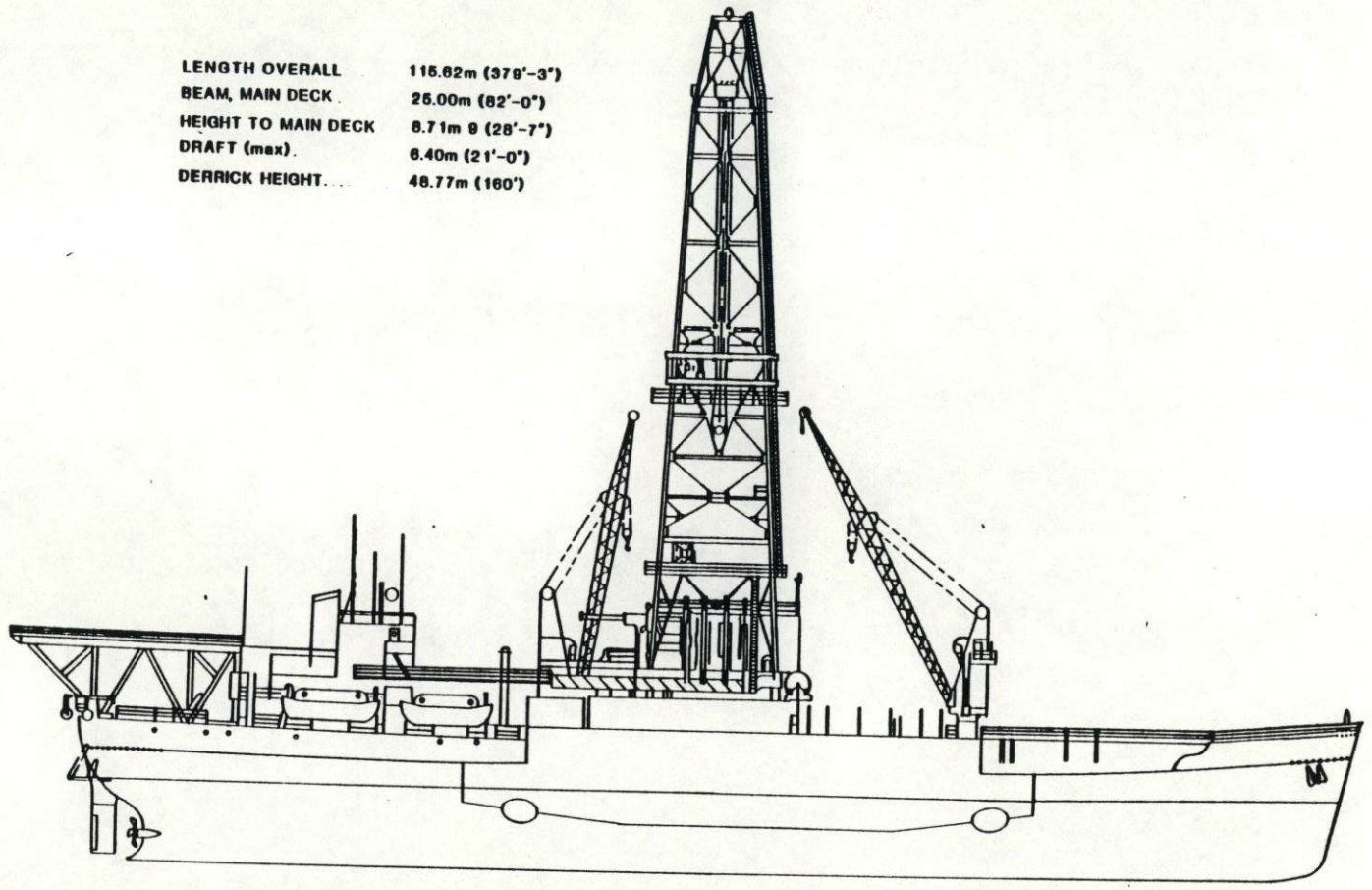


FIGURE 5

DRILLSHIP SCHEMATIC

(b) Major Drilling Equipment:

- Derrick - 160 feet with 1,330,000 pound capacity, designed to withstand 86 knot winds.
- Drawworks - IDECO Model 2100 with Baylor Elmagco Model 6032 auxiliary brake, driven by two GE Model 752R motors.
- Rotary Table - IDECO Model LR-375 (37 1/2 inches).
- Maximum support load of 700 tons.
- Mud Pumps - Two National 12P-160 triplex pumps each driven by two GE 752R DC motors.

3. SUBSEA EQUIPMENT

(a) Blowout Preventers - 18 3/4-inch, 10,000 psi WP system:

- One - triple ram.
- One - single ram.
- One - unitized double spherical (5,000 psi WP).

(b) Marine Riser - 22-inch riser with 10,000 psi kill/choke/booster lines.

(c) All accessory and control equipment necessary to complement the primary subsea equipment represents state-of-the-art design.

4. MOORING SYSTEM

The CANMAR Explorer II utilizes an eight point system with acoustic quick release modules on all eight lines. Four Skagit model DMW-250 double drum winches with collapsible pawls and 2 3/4-inch wires. Eight Bruce 6.5-ton moorfast anchors are employed.

5. POWER PLANT

(a) Main Engines - Seven Caterpillar D-399Ta (1125 BHP each).

(b) AC Generators - Four GE 1162.5 KVA - 600VAC - three Tamper 1250 KVA - 600 VAC.

(c) DC Conversion - Seven GE SCR's 1000 AMP @ 750VDC, two Marine & Industrial SCR's, 700 AMP @ 750 VDC.

(d) Emergency Power - One caterpillar D-343, 250 kw (360 BHP).

6. CRANES

(a) One Liebherr Model BOS 35/360 (100-foot boom, 35-ton).

(b) One Liebherr Model BOS 80/1800 (95-foot boom, 80-ton).

(c) One Skagit (35 tons).

7. HELIPORT

Capable of handling Sikorsky S-61, Puma, and all smaller helicopters - complete fuel system, aircraft fire fighting

system, and flight navigation system (DME type), SWRS (Certified) weather station onboard to meet FAA rules for IFR aircraft operations.

8. SURVIVAL EQUIPMENT

(a) Personnel Safety - all USCG, SOLAS, ABS, and OSHA required equipment.

(b) Fire Safety - All firefighting equipment and sensors as required by the USCG.

(c) Evacuation - covered power lift boats as required by the USCG.

(d) H_2S Safety - Equipment for detection and personnel safety as required by the H_2S contingency plan.

9. STORAGE CAPACITIES

(a) Drilling Water - 2,000 bbls.

(b) Potable Water - 16,800 gallons (onboard water maker capable of producing 9,600 gallons per day).

(c) Diesel Fuel - 294,000 gallons.

(d) Helicopter Fuel - 1,200 gallons.

(e) Liquid Drilling Mud - 3,800 bbls.

(f) Bulk Cement - 9,600 cubic feet.

(g) Bulk Mud - 9,600 cubic feet.

(h) Sacked Material - 313 tons.

The CANMAR Explorer II will provide self-contained facilities for housing about 106 people. The drilling unit contains all necessary utilities, a potable water supply, and a sewage treatment plant.

Storage tanks are provided for fuel and contaminated fluids produced during production testing. Small quantities of produced hydrocarbons will be incinerated in the drilling unit's boiler system while larger quantities will be flared outboard.

(6) POLLUTION PREVENTION AND CONTROL PROCEDURES

The prevention of pollution will be given a high priority, exceeded only by the protection and safety of personnel.

Prevention of oil spills will be maximized through compliance with all applicable laws and regulations, with the specific requirements of Alaska Region OCS Orders Nos. 2 and 7 which relate to prevention of oil spills and water pollution, and Stipulation Nos. 4 and 6 of the Final Notice of Sale. Order No. 2 establishes casing and casing-cement requirements; blowout prevention equipment specifications; mud program, testing, and control requirements; and a mandatory program for the supervision and surveillance of activities and the training of personnel. Order No. 7 establishes requirements for liquid and solid waste disposal; personnel training and drills for pollution prevention; and pollution inspections and reports. Stipulation No. 4 prohibits drilling, testing and other downhole activities, except testing through casing, during a period which coincides with the fall migration of bowhead whales. Stipulation No. 6 authorizes the RSFO to prohibit exploratory drilling and other downhole activities below a predetermined depth, with the exception of testing through casing, in broken ice conditions unless Amoco demonstrates to the RSFO the Company's ability to detect, contain, clean up, and dispose of spilled oil in broken ice.

The drilling unit will be adequately equipped with the necessary diverter and blowout prevention equipment (BOP) to maintain well control. The diverter and BOP will be installed and tested as required by Alaska Region OCS Order No. 2, and the results will be recorded on the daily driller's report. Regular inspection and maintenance will be performed on the equipment. Drilling personnel will be trained and qualified in accordance with the provisions of the

MMS OCS standard "Training and Qualifications of Personnel in Well-Control Equipment and Techniques for Drilling on Offshore Locations" (MMSS-OCS-T1) before initiating work on a well. Blowout prevention drills will be conducted as required by the MMS and recorded on the daily driller's report. A description of the diverter and BOP to be installed will be provided in the APD.

Drilling mud, casing, and cementing programs will be designed to insure that all the wells are drilled in a safe and workmanlike manner. These programs will be described in the APD for each proposed well. Company representatives will provide onsite supervision of drilling operations on a 24-hour basis. Also, a member of the drilling crew or the tool pusher will continuously maintain rig floor surveillance, unless the well is secured by BOP, bridge plugs, storm packer, or cement plugs.

Amoco has submitted a comprehensive Oil Spill Contingency Plan for exploratory drilling operations in the Beaufort Sea OCS area. Revisions to this plan to update its contents and extend its application to the Belcher Prospect accompanies this plan as a separate submission.

The Oil Spill Contingency Plan contains a description of the containment and cleanup equipment available onsite and from offsite sources, and demonstrates, among other things, the Company's ability to respond to an oil spill in broken ice conditions.

The Oil Spill Contingency Plan is designed to assist personnel and contractors in responding rapidly and effectively to oil spills that may result from the proposed exploration operations. It contains a description of response times and the techniques that will be used to control the source of a spill, contain, clean up, store and dispose of spilled oil, and protect sensitive habitats and biological resources. The plan will be updated, as necessary, to address current operations.

In the event that an oil spill should occur, either from surface transfer operations or from the well, and response operations will not endanger the lives of personnel, onsite containment and cleanup equipment will be deployed by a response team organized and trained to react immediately to the spill incident. In accordance with Order No. 7, this equipment will be designed to provide an immediate response capability to contain and clean up small spills. This cleanup equipment will be inspected regularly and maintained in a constant state of readiness. Results of the inspections will be recorded and maintained as required.

If an oil spill occurs which is beyond the means of onsite personnel and equipment, the Company will request assistance from Alaska Clean Seas (ACS), an oil spill cleanup organization whose Area of Interest includes the eastern Alaska Beaufort Sea OCS area. A complete description of the equipment maintained by ACS and other cleanup organizations located in Alaska is provided in the Oil Spill Contingency Plan.

(7) DESCRIPTION OF SOLID AND LIQUID WASTES

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 USC 1251 et seq.), the U.S. Environmental Protection Agency (EPA) regulates and must approve the discharge of liquid and solid wastes into OCS waters. On June 7, 1984, the EPA promulgated a general NPDES permit for the Beaufort Sea which covers the eastern Alaska Beaufort Sea OCS area. This permit sets forth effluent limitations, standards, monitoring criteria, and other conditions for discharges from drilling units operating in the area. By law and under the provisions of Stipulation No. 7 of the Final Notice of Sale, Amoco is required to and will comply with all provisions of the Beaufort Sea general NPDES permit.

Estimates of the volumes of the discharges from the proposed activities are summarized in Table 2. The estimates are based on an 65 to 70 day drilling program, which is the maximum amount of time envisioned to drill, test and abandon the proposed wells.

1. DRILLING UNIT

Liquid discharges from the drilling unit will result from the normal domestic activities onboard the unit, the cooling systems, deck drainage, and boiler blowdown. Discharges of solids or solid suspensions will be generated as part of the proposed drilling operations and will include drilling mud, cuttings, and cement.

Seawater discharges, resulting from desalinization unit wastes, fire control system test water, non-contact cooling water, and uncontaminated bilge water and ballast water, will form the largest discharge at approximately 1,357,000 gallons per day. The remaining daily liquid discharges (i.e., deck drainage, sanitary wastes,

TABLE 2

ESTIMATED SOLID AND LIQUID WASTE DISCHARGES
(13,000-ft well)

DISCHARGE	ESTIMATED VOLUME
Drill mud (daily dump)	10,000 GPD
+ excess mud	42,000 gals, 4 times
Drill cuttings and wash water	200,000 GPD
Deck drainage	25,000 GPD
Sanitary waste	5,000 GPD
Domestic waste	4,000 GPD
Desalinization unit	15,000 GPD
Blowout prevention (BOP) fluid	50 GPD
Boiler blowdown	200 GPD
Non-contact cooling water	1,300,000 GPD
Fire control system test water	10,000 gals, 1 time/mo.
Uncontaminated ballast water	30,000 GPD
Uncontaminated bilge water	2,000 GPD
Excess cement	7,500 gals, 4 times
Mud, cuttings, cement at ocean floor	175,000 gals
Well test fluids	200,000 gals, 2 times

domestic wastes, BOP fluid and boiler blowdown) will yield about 34,250 gallons per day. In addition, up to 200,000 gallons of formation and injected water will be discharged during each formation test.

Domestic sewage will be treated prior to release. A marine sanitation device, which meets the requirements of the U.S. Coast Guard will be used, and the resulting effluent will be chlorinated to a level greater than or equal to 1 mg/l of total residual chlorine prior to discharge.

Contaminated deck drainage will be released only after desilting, gravity separation, and oil/water separation processing.

Mud discharges during the proposed exploratory drilling operations will total approximately 1,378,000 gallons. Cuttings and wash water will be discharged commensurate with the drilling rate, and could amount to 200,000 gallons per day.

If a glory hole is constructed to protect the subsea wellhead, each glory hole construction operation would result in the discharge of dredge spoils. These discharges would be made at the drill site.

Except for the structural and conductor casing holes, all mud and cuttings will be discharged at the ocean surface at the drill site. Any oil contaminated mud will be transported to shore for storage and eventual disposal at an approved site.

Cuttings and seawater gel mud will be discharged at the ocean floor while drilling the structural hole, and mud and a small quantity of cement will be displaced at the ocean floor while running and cementing the structural and conductor casing.

The composition of the drilling mud used, and hence the composition of the mud discharged, will be determined by the conditions encountered as the well is drilled. A description of representative mud systems is presented in the Exploration Plan which accompanies this report and the APD that will be submitted for each well. Drilling mud will only be discharged if such discharges are approved by the EPA.

Other solid wastes from the proposed operations will include scrap iron or metal, packing materials, and miscellaneous items like boxes and paper. These materials will be incinerated or taken to shore in containers and sold as junk (scrap iron or metal) or disposed of at an approved onshore disposal facility.

2. ICE CLASS SUPPORT VESSELS

Discharges from the ice class support vessels will consist primarily of ballast water. Additional quantities of bilge water, domestic water, and sewage also will be discharged. The sewage will be treated prior to discharge to the ocean. Solid wastes, such as garbage and packing materials, also will be produced, and will be transported to shore for reclamation or disposal at a state or Canadian-approved facility. Since the ice class support vessels have not been contracted for yet, the quantities of liquid discharges from these vessels will be provided at a later date.

3. HELICOPTERS

Liquid and solid wastes generated as a result of the proposed helicopter operations will be small in quantity and will consist almost exclusively of sanitary wastes. These are included in the quantities estimated for the service bases presented below.

4. SERVICE BASES

Wastes generated at the service bases will include wastewater and solid wastes such as packing materials and domestic refuse. The quantities of wastes produced will depend on a variety of factors including the level of drilling activity, the number of vessels and helicopters used and their travel frequency, and the number of onshore support personnel. For purposes of this report, it is estimated that 3,300 GPD of domestic wastewater and 1,000 GPD of sewage will be produced at each base. Wastewater will be disposed of through existing systems. Solid waste generation is highly variable, but all solid wastes generated will either be reclaimed or disposed of at a state or Canadian-approved disposal facility.

(8) TRAINING AND DRILLS

1. DRILLING PERSONNEL TRAINING

As required under Section 7 of the Alaska Region OCS Order No. 2, Amoco and contractor personnel directly involved in drilling operations will be trained in well control methods and detection of abnormal pressures. Such training will be completed in approved Amoco or industry schools before drilling operations commence. A list of personnel and verification that they have completed training will be maintained on the drilling unit and will be available to the MMS upon request.

Blowout prevention drills will be conducted as specified under Section 5 of Alaska Region OCS Order No. 2.

2. FIRE DRILLS

Procedures for emergencies, such as fires, will be identified in a Station Bill and, together with the specific emergency responsibilities of crew members, will be posted at appropriate, conspicuous places on the drilling unit. Fire drills will be conducted on a regular basis for all crew members.

3. SAFETY MEASURES

Safety meetings will be conducted periodically to make crews aware of safety procedures and to review potential sources of accidents, and the means of preventing them. Post-accident causes and corrective measures to be taken to prevent their recurrence will be reviewed in the event of an accident.

(9) MUD SYSTEMS

Sea water will be the base of the mud used to spud each well and for drilling prior to the setting point of the first two casing strings. Freshwater/saltwater gel mud will be used for drilling the hole for surface casing. Below surface casing, a fresh water EPA Mud No. 6 will be used. All components for these muds will be EPA-approved for discharge to the ocean. Specific mud programs will be provided with the APD for each well.

Quantities of basic mud materials maintained at the drill sites will meet or exceed the minimum quantities required under Section 6 of Alaska Region OCS Order No. 2. In compliance with the provisions of Stipulation No. 7 of the Final Notice of Sale, all discharges will comply with the conditions of the general NPDES permit for the Beaufort Sea. Amoco will comply with the Notice and reporting provisions specified in the general NPDES permit.

Mud testing and monitoring will be completed as required under Section 6 of Alaska Region OCS Order No. 2. A description of the mud logging and monitoring system to be used will be submitted with the APD for each well.

(10) FORMATION SAMPLING PROGRAM

Formation cutting samples will be collected during drilling operations and cores will be taken at selected depths in each well. Descriptions of sample intervals and planned core intervals will be described in the APD for each well.

(11) ENVIRONMENTAL TRAINING

The Orientation Program required under Stipulation No. 2 of the Final Notice of Sale has been prepared and will be presented to all management, supervisory, and other personnel (Amoco and Amoco's agents, contractors and subcontractors) involved in the proposed operations. The program will provide information on the physical, biological, and archaeological resources of the Beaufort Sea OCS area, and the history and present day lifestyles, values, and customs of the residents of communities that may be affected by oil and gas operations proposed for the sale area.

A videotape presentation has been prepared for viewing by all personnel who will be working on or visiting the proposed operations. All presentations will be conducted under the direction of a qualified instructor.

(12) COASTAL ZONE MANAGEMENT CONSISTENCY CERTIFICATION

The activities proposed in this POE are consistent with Alaska's Coastal Zone Management Program and will be conducted in a manner consistent with the purposes of that program. A copy of the evaluation of consistency is contained in Appendix C of the Environmental Report (Exploration) which accompanies this plan.

(13) EMERGENCY SITUATION PROVISIONS

Plans for dealing with emergency situations involving oil spills are presented in Amoco's Oil Spill Contingency Plan for the Beaufort Sea. A plan covering the Company's response to hydrogen sulfide hazards will be included in the APD for each well. Other emergency situations are discussed below.

1. CRITICAL OPERATIONS AND OTHER CONDITIONS

a. Critical Operations: Operations will be considered to be "critical" when the wind and waves either individually or in combination exceed the limits expressed below. Critical operations are: drilling, coring, running and cementing casing or riser; cutting and recovering casing; logging or other wireline operations; and drill stem testing. As a general rule, no critical operation will commence or be conducted when the significant wave height exceeds 9 feet and/or the wind velocity exceeds 70 mph. Specific curtailment limits for each of these critical operations will be included with a more detailed Critical Operations and Curtailment Plan that will be submitted with the APD for each well.

b. Other Conditions: No drilling operations will commence or be conducted when any of the following conditions exist:

(1) When there is an insufficient supply of drilling fluid materials onboard the drilling unit to control the well.

(2) When there are not enough boats in the area to deploy oil spill response equipment.

(3) When oil spill response equipment is not on location or is not in good working order.

(4) When the manpower required to safely conduct drilling operations is not available.

(5) When any critical machinery needed to assure a safe operations is not operative.

(6) When directed to curtail operations by the MMS to avoid potential impacts to bowhead whales migrating through the area.

IMPORTANT: The above list is only a guideline. Decisions concerning what actions to implement during a given emergency, no matter what the cause, must be based on the judgment of the Amoco Drilling Foreman and the Contract Tool Pusher. The Amoco person in charge of the overall drilling operation is:

Mr. Michael Golas
Area Supervisor
Amoco Production Company
Anchorage, Alaska
(907) 562-2147

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2. RELIEF WELL PLAN

Routine well control procedures on a floating drilling unit include, as an objective, an attempt to disconnect from the wellhead and move the unit as fast as possible off the location, prior to abandoning the unit in case of a blowout. Within the constraints of a typical 100- to 200-foot water depth mooring pattern, Amoco expects to be able to move the unit quickly off the location with the anchor winches prior to abandoning the unit. Depending on personnel safety

considerations, weather conditions, and the status of the unit, Amoco would then make every effort to reposition the unit a safe distance from the blowing well and immediately spud a relief well. To facilitate such an operation, a complete spare wellhead assembly, plus sufficient extra casing, cement and mud materials will be available. In the event that the drilling unit is too badly damaged to immediately spud a relief well, another unit would be mobilized to the blowout location as soon as possible.

If an oil blowout occurs, immediate action would be taken to initiate the drilling of a relief well. This well would be directionally drilled to intercept the vicinity of the uncontrolled well. Specialized logging tools can be used to determine the proximity of the target wellbore. The uncontrolled flow would then be killed by sequential pumping of water, heavy drilling mud and cement into the blowing well.

It is not practical to pre-plan relief well drilling and kill operations in detail prior to the event due to the large number of variables that will affect an actual situation. Amoco drilling experts will be on location at all times and, if a blowout occurs, will comprise the Well Control Team. Based on their specific knowledge of the well, they will plan a relief well. The Well Control Team can communicate directly with Amoco's drilling experts in other locations, if necessary. A general plan is presented here which describes basic rig mobilization considerations for the Lease Sale No. 87 area.

Relief well capability will primarily be provided by the drilling unit used to drill the original well. The KULLUK, which is classified by the American Bureau of Shipping as a Mobile Offshore Drilling Unit (MODU), is capable of winching itself off location to a distance great enough to be out of danger. The KULLUK then would be available and capable to commence a relief well. This capability will be backed up by the four Canmar drilling units available for hire in the Beaufort Sea. If a Canmar drilling unit is used, it also can be winched off location and used to drill a relief well. In addition,

Canmar will provide a reciprocal contingency agreement to back up their drilling unit by providing another for relief well drilling if the need arises.

3. LOSS OR DISABLEMENT OF THE DRILLING UNIT

If the drilling unit becomes partially or totally disabled while under contract to Amoco in Alaskan waters, the priorities for action in all cases will be:

- o Personnel safety and evacuation, if required.
- o Prevention of pollution from a well in progress.
- o Minimize property and rig damage.
- o Regulatory agency and Amoco management notification.

All contingency plans are developed with these priorities in mind. If the drilling unit is damaged to the point where it cannot be repaired on the location, after evacuation of personnel (if necessary) and securing or plugging the well in progress, the unit would be towed to the nearest suitable harbor (or dry dock) facility for repairs. If the unit is damaged beyond repair, a new unit could be brought in as soon as possible to continue drilling or to plug and abandon the well in progress. Re-entering a subsea well in this fashion is a routine procedure as long as the wellhead is not severely damaged by the first unit. If there is significant damage to the wellhead or shallow casing strings, the well would be re-entered and plugged, to the extent possible, to prevent pollution or underground flow. Debris would be removed from the seafloor in accordance with U.S. Coast Guard (USCG) regulations and other agency requirements.

4. LOSS OR DAMAGE TO SUPPORT CRAFT

The same priorities for emergency response in the event of a support boat or helicopter accident will be followed as for a drilling

unit mishap. While operating in the Lease Sale No. 87 area, there will be up to three ice class support vessels and one helicopter dedicated to Amoco's operations at all times. These vessels assure strong back-up capability to provide assistance in the event that any one of these support craft requires help. Additional assistance for search and rescue operations would be expected to come from other drilling operators' boats and helicopters, the Prudhoe Bay operators, and equipment available at Deadhorse and through the USCG and other military organizations. If any support craft is lost from service, a suitable replacement for that support craft will be acquired before proceeding with any segment of the operations which depends for its safety on that support craft.

5. ENVIRONMENTAL HAZARDS UNIQUE TO THE SITE OF THE DRILLING OPERATIONS

The significant environmental hazards in the eastern Alaska Beaufort Sea include superstructure icing, for both drilling unit and support craft, and sea ice.

a. Superstructure Icing: Meteorological data for the area indicate that moderate to heavy superstructure icing can occur during the months of September and October. The occurrence of icing conditions is dependent upon air temperature, surface water temperature, and wind speed. The drilling unit will be instrumented with meteorological and oceanographic monitoring systems that will accurately monitor wind speed, air temperature, and water temperature. Meteorological and oceanographic forecasts will be made on a routine basis. Conditions at the drill site will be monitored and recorded, and information disseminated to supervisory personnel on a routine basis. Also, routine reports will be disseminated to the supply craft. By utilization of recorded data and forecasts, impending superstructure icing conditions can be predicted, and support craft can be advised to take protective actions.

Operations on the drilling unit should not be affected unless a storm of significant magnitude and duration occurs simultaneously with low surface water temperatures. Such an event might result in having to secure the well until the storm subsides.

b. Sea Ices: The Lease Sale No. 87 area is subject to some degree of sea ice cover from late September through June. In the event that encroaching ice threatens the safety of drilling operations, the ice class support vessels will be used to break up the ice around the drilling unit. Large floes will be broken, forced, or pushed so that their drift trajectories will avoid impacting the drilling unit. In heavy ice, the support vessels will continuously move around the drilling unit to keep the ice broken up so as to minimize the ice forces upon the drilling unit. The conical design of the drilling unit will enhance this capability.

An ice observation and monitoring program will be implemented to forecast ice movements. Based on these information sources, a Critical Operations and Curtailment Plan will be followed to protect the drilling unit from damage by ice. This plan will be included with the APD for each well. The drilling unit and support vessels being considered for Amoco's program are designed to work in solid ice cover.

APPENDIX 1

GEOLOGICAL DATA
(Proprietary and Confidential)

Appendix 1 contains: (1) a brief geologic description of the Belcher Prospect with regard to structural and stratigraphic elements; (2) a structural map, based on seismic data; (3) two schematic cross-sections; and (4) a drilling prognosis applicable to all prospects. Geophysical sections will be included with the APD for each well.