

MAY 20 1997

CONFIDENTIAL

REGIONAL SUPERVISOR
FIELD OPERATION
MINERALS MANAGEMENT SERVICE

KUVLUM-GEOLOGICAL AND GEOPHYSICAL STUDY RESULTS

1. Micropaleo Consultant's Multivariate Cluster Analysis

Cluster analysis is a computer process which examines check lists of forams and pollen for samples of the same age. Similar assemblages are grouped or clustered by the computer. The paleontologist assigns depositional environments (water depths) to the clusters and color-codes them.

With regards to Kuvlum, cluster analysis was performed on Wild Weasel #1 and Kuvlum #1, #2, and #3 wells within the Oligocene, productive sand interval. A predictable pattern emerged with one important exception. Wild Weasel was more proximal than Kuvlum #1 and Kuvlum #3 but all three wells were in a middle neritic to upper slope depositional setting. The exception was Kuvlum #2 which had more distal faunal associations than Kuvlum #1 or Kuvlum #3. At first glance this appears to be very anomolous because with a general trend of depositional dip oriented from southwest to northeast, Kuvlum #2 should have been more proximal than Kuvlum #1 or Kuvlum #3. The explanation is that Kuvlum #2 is more marginal rather than more distal. We envision a distributary system prograding to the edge of the shelf where a small delta system formed which was later partially eroded by a submarine canyon. Kuvlum #2 is west and marginal to the distributary system, Kuvlum #1 is at the delta front, with partial erosion by the submarine canyon, and Kuvlum #3 has complete erosion by the submarine canyon.

2. Schlumberger FMI/Dipmeter Analysis

Schlumberger did a detailed formation microscan image analysis of the Oligocene productive sand section in the Wild Weasel and Kuvlum wells. The formation microscan image is a detailed microresistivity image around the entire circumference of the well bore - a pseudo-core photograph. Major and minor dip changes, unconformities, bedding thickness, slumps, etc. are continuously recorded.

Wild Weasel and Kuvlum wells showed two predominant dip directions. The dip direction associated with depositional dip was south-southwest to north-northeast. The other dip direction, south-southeast to north-northwest, is thought to record long shore drift. The style of bedding in Kuvlum #2 was different from the other wells - numerous cut and fill depositional features often associated with channeling were identified. These patterns would be consistent with stacked crevasse splays marginal to the main distributary system.

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3. Peter Station's Petrographic Study of Kuvlum and Wild Weasel Wells

There was a difference of opinion in the original Kuvlum group about which oil sand (6700' sand or 7100' sand) in Kuvlum #2 correlated with the Kuvlum #1 oil productive sand (6500' sand). One company thought the 6700' sand in Kuvlum #2 correlated with the 6500' sand in Kuvlum #1 and Kuvlum #2's 7100' sand pinched-out in Kuvlum #1. The rest of the group thought the 7100' sand in Kuvlum #2 correlated to the 6500' sand in Kuvlum #1 and Kuvlum #2's 6700' sand equivalent in Kuvlum #1 was eroded by the submarine canyon. Peter Station did a statistical comparison of the mineralogy of the three sands and determined that the 7100' sand in Kuvlum #2, rather than the 6700' sand in Kuvlum #2, more closely matched the mineralogical composition of the 6500' sand in Kuvlum #1.

4. Frank Brown's Sequence Stratigraphic Analysis

The problem in doing sequence stratigraphic analysis in the Kuvlum area is that much of the Oligocene is eroded in Kuvlum #1, and more is eroded in Kuvlum #3, by the submarine canyon. Wild Weasel and Kuvlum #2 appear to record similar progradational cycles of weak delta front out-building. Wild Weasel is more proximal, Kuvlum #2 seems to be more marginal. Some of the cycles seen in Kuvlum #2 may be crevasse splays. These cycles are often the same thickness which would indicate similar water depths and similar periods of time. The Kuvlum #1 6500' productive sand appears to have top and bottom progradational cycles with a transgressive internal inbetween. The basal part of sand may be a distributary mouth bar on the basis of petrography - clean, fine grained sand with black coffee-grind organic lamina.

CONFIDENTIAL

R. Pomeroy 11-20-96

NOV 25 1996

Memorandum

To: Regional Supervisor, Resource Evaluation
Attention: Frank Neary

From: Regional Supervisor, Field Operations

Subject: Geological Well Data Release Date

On November 20, 1996, our office released to the public the well data for Leases OCS-Y 0866 #1, Kuvlum #1, OCS-Y 0865 #1, Kuvlum #2, and OCS-Y 0866 #2, Kuvlum #3. The well samples for these wells can now be released to the Geologic Materials Center in Eagle River as soon as practicable.

~~cc: John W. Reeder, Ph.D.
Department of Natural Resources
P.O. Box 72116
Eagle River, Alaska 99577-2116~~

bcc: OCS-Y 0866#1, 0866#2, and 865#1 6-C
Chron (area/cc/rd)
RPomeroy:rdp:11/21/96:Neary10.mem



IN REPLY REFER TO:

R. Pomroy
United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

OCT 16 1996

Mr. Bruce S. Hamilton
Union Texas Petroleum Alaska Corporation
P.O. Box 2120
Houston, Texas 77252-2120

Dear Mr. Hamilton:

In accordance with 30 CFR 250.18 of the Operating Regulations, effective July 1, 1994, for a lease in effect and within the primary term specified in the lease, geological well data and analyzed geological information are releasable 2 years after submission of the data or information or 60 days after a lease sale such that any portion of an offered block is within 50 miles of a well, whichever is later. Lease OCS-Y 0866 #1, (Kuvlum #1) was completed October 13, 1992, OCS-Y 0865 #1, (Kuvlum #2) was completed August 26, 1993, and OCS-Y 0866 #2 (Kuvlum #3) was completed October 5, 1993, all leases are in the Beaufort Sea, Sale 87 area. Sale 144 Beaufort Sea area, was held September 18, 1996, therefore; November 18, 1996, is the later date. Accordingly, we are preparing to release geological data and analyzed geological information (well logs and analytical reports) associated with these wells on November 20, 1996.

If you have any questions regarding these releases or would like to review these data, please contact this office at (907) 271-6065 prior to the aforementioned release data.

Sincerely,

*original signed by
Kyle Monkelien*
Acting Regional Supervisor
Field Operations

bcc: OCS-Y 0866#1, 0865#1, 0866#2 6C
Chronos(Area/CC/RD)

Rpomero:rp/nll:10/15/96
g:/everyone/fo/letters/releas10.mem

District Office

Lease Well

Description

0866	1	Reservoir Fluid Study
------	---	-----------------------

Signed By:

Date:

11-18-95

Provided To:

Alia Office Vardit
(Section)

(Section)

11 a. Borrowed Data

Date Borrowed Data Returned:

☒ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

Date:

12/15/93

ARCO Alaska, Inc.
Post Office Box 100360
Anchorage Alaska 99510-0360
Telephone 907 276 1215



August 10, 1993

CONFIDENTIAL

U.S. Department of the Interior
U.S. Minerals Management Service
949 East 36 Avenue, Room 603
Anchorage, Alaska 99508-4302

RECEIVED
Anchorage, Alaska

AUG 10 1993

ATTENTION: Mr. Rodney A. Smith
Regional Supervisor

RE: Structure Interpretation
Proposed Kuvlum Unit

**REGIONAL SUPERVISOR
FIELD OPERATION
MINERALS MANAGEMENT SERVICE**

Gentlemen:

Two accompanying displays prepared by our exploration group document our current interpretation of the Kuvlum Prospect and support the Kuvlum Unit boundary as proposed. These displays include; (1) a time structure map on the "p" horizon which is the base of the discovery sand at the ARCO Kuvlum No. 1 Well and, (2) a structural cross-section that depicts the Kuvlum Prospect and regional relationships to the Unocal Hammerhead Wells and the Shell Corona No. 1 Well.

The Kuvlum structure is a faulted asymmetric anticline present on the southwest plunge of the greater Camden Anticline. The reservoir interval involves a clastic section of Oligocene deltaic/shallow marine deposits of age equivalent to those encountered in the lower most sands of the Unocal Hammerhead No. 1 and No. 2 Wells.

A clearly defined oil/water contact was not apparent within the 160 foot "p" sand of the ARCO Kuvlum No. 1 discovery well. Immediately underlying the "p" sand is a section of interbedded fine-grained sands and silts. The nature of these lithologies did not allow for precise delineation of an oil/water contact; but nevertheless, allowed for certain well defined inferences. The following observations from the well were critical to our understanding of the apparent limits of the hydrocarbon column:

- (1) Shows of heavy gas (C2-C5) persisted to a depth of approximately 7,150 feet. Below 7,150 feet heavy gas shows decreased even though lithologies were similar to that encountered in the overlying section of fine-grained clastics.
- (2) Resistivity logs indicated a rather abrupt shift to decreased resistivity below 7,150 feet.

Mr. Rodney A. Smith

August 10, 1993

Page 2

- (3) Fair to good oil shows were observed in ditch cuttings from the discovery sand down section to total depth.

Based upon velocity control from the ARCO Kuvlum No. 1 Well, the intersection of the 7,150 foot oil down to (ODT) with the base "p" sand structure contour occurs at approximately 1,890 ms. Structure above the 1,890 ms. contour is confined, for the most part, within the Kuvlum Exploratory Unit boundary. The absolute northern boundary for the Kuvlum hydrocarbon column is defined by the intersection of the reservoir interval with a large, northwest/southeast trending Tertiary master fault as identified on the enclosed structure map. Under our present understanding of the hydrocarbon column as interpreted from the ARCO Kuvlum No. 1 discovery well, we believe the accumulation is restricted to the boundaries of the proposed Kuvlum Exploratory Unit.

Should you require additional information or have any questions, please call either myself at 263-4933 or Don Brizzolara at 265-6829.

Sincerely,

A handwritten signature in black ink, appearing to read "David A. Sutter", with a stylized flourish at the end.

David Sutter
District Landman

Enclosure

:jf



United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

WALKER 6/8/93
R499
SW
6/8

TAKE
PRIDE IN
AMERICA

IN REPLY REFER TO:

JUN 10 1993

Mr. D. Sutter
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Sutter:

This letter is in followup to a telephone conversation between Mr. Jeff Walker and Ms. Lorraine Wiles regarding the minimum royalty/rental payments for OCS-Y 0866 and other leases covered by the proposed Kuvlum Unit.

As discussed, OCS-Y 0866 has changed from a rental-payment status to a minimum-royalty status as a result of the producibility determination for OCS-Y 0866, Well No. 1, dated May 6, 1993, and we have notified the Royalty Management Program office of the producibility determination. It is our understanding that ARCO Alaska, Inc. (ARCO) has paid the rental for OCS-Y 0866 for November 1992 to November 1993. The next payment would be a minimum royalty payment and ARCO should confirm the schedule for this payment with the Royalty Management Program office.

Unitization will not change the rental/minimum-royalty status of the other leases within the unit, if and when approved. Each lease within the unit, other than OCS-Y 0866, will remain in a rental status unless a well is drilled on the lease and the well is determined producible under 30 CFR 250.11. Commencement of production from one or more leases from the unit or inclusion in an approved participating area will be deemed to be performed for the benefit of the leases pursuant to 30 CFR 250.190(f) and the effected leases would change to a royalty-on-production status or minimum-royalty status in accordance with Section 5 and Section 6 of the lease agreement.

If you have further questions regarding royalty or rental payments, please contact Royalty Management Program directly at:

Minerals Management Service
Royalty Management Program
P.O. Box 25165, Mail Stop 3100
Denver, Colorado 80225-0165
(303) 231-3058

Sincerely,

Orig. Sgd. by
Rodney A. Smith

Regional Supervisor
Field Operations

Mr. D. Sutter

2

bcc: OCS Y-0866 No. 1 6-A
Chron's (RD/CC/ORR/DIST/area)
Royalty Management Program
w/copy of Producibility Determination

TMurrell:6/2/93:JWalker:pmw:6/3/93|Final:elw:6-8-93
F:\users\ora\KuvRoy.ltr



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302



Bennett 6/9/93
Palmer 6.9

JUN 9 1993

Memorandum

To: Royalty Management, Operations Department
Data Management Division Branch 2
Attention: Cecilia Reynolds

JUN 9 1993

Through: Regional Director (sgnd) Alan D. Powers

From: Regional Supervisor, Field Operations *Orig. Sgd. by Rodney A. Smith*

Subject: Producibility Determination

Please be advised that on May 7, 1993, the District Supervisor, Alaska Outer Continental Shelf (OCS) Region, determined Lease OCS-Y 0866, Kuvlum Well No. 1, capable of producing oil in paying quantities in accordance with 30 CFR 250.11, and notified ARCO Alaska, Inc. of said findings by letter (copy attached).

If you have any questions on this matter, please contact Brian Schoof, District Supervisor, Alaska OCS Region, at (907) 271-6066.

Attachment

bcc: OCS-Y 0866 #1 6a (area/dist)
Chronos(area/dist/ros/cc/rd)
Regional Supervisor, Leasing and Environment

F:\USERS\ROS\BBennett:nep:final:060993\KUV_DET.MEM

DR Choromanski
JUN 8 1993

Mr. M. Winfree
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

In reviewing our well data files for the Kuvlum OCS-Y 0866 #1 well, it was noted that a water analysis from the DST's was not received. We request these data at this time.

Sincerely,

Orig. Sgnd. By Brian Schoof

Supervisor, District Office
Field Operations

✓cc: OCS-0866 #1 - 6A Area/District
Chron's Area/District/CC/RD
DChoromanski:6-08-93:drc/nll:dc/arcolet2

ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360
Telephone 907-276-1215



June 4, 1993

United States Department of the Interior
Minerals Management Service
Alaska Outer Continental Shelf Region
949 East 36th Avenue, Suite 503
Anchorage, Alaska 99508-4302
(907) 271-6066

Received
OCS District Office

JUN 08 1993

Minerals Management Service
Anchorage, Alaska

Attention: Mr. Brian Schoof
District Office Supervisor

Subject: Relief Well Drilling Rig Contingency
Kuvlum #2 APD
Kuvlum 1993 Delineation Project, Kulluk Drilling System
Beaufort Sea, Alaska

Dear Mr. Schoof:

Please find attached an updated letter from Canmar with regard to Beaufort Sea relief well drilling rig contingency for your files. This letter should be inserted in the Relief Well Section of the APD package submitted to your office for the Kuvlum #2 project. I am providing three copies of this correspondence as required for APD submittals.

Any questions pertaining to this matter should be directed to Mike Winfree at 263-4603, or to myself at 265-6890.

Yours truly,

ARCO ALASKA, INC.

T.W. McKay
Senior Drilling Engineer
New Ventures Drilling

enclosure

United States Department of the Interior
Minerals Management Service
June 4, 1993
Page 2

cc: Kuvlum No. 2 Well File
Kuvlum No. 3 Well File
M.B. Winfree ATO-1428
G.L. Alvord ATO-1405
D.R. McKelvey ATO-1400
M.J. Schindler ATO-1932
R.L. Ranger ATO-1928

CANADIAN MARINE DRILLING LTD.

Box 200
Station M
CALGARY, ALBERTA, CANADA
T2P 2H8

Tel (403) 298-3500

May 31, 1993

93151ACC0091

Mr. D.J. Ruckel
Arco Alaska Inc.
P.O. Box 100360
Anchorage, Alaska
U.S.A. 99510-0360

Dear Mr. Ruckel:

RE: Relief Well Drilling Contingency; File: 58100-80-1

We herewith advise you of the status of Canadian Marine Drilling Ltd. ("Canmar") drillships for the purposes of relief well contingency.

Canmar designates the Canmar Explorer II as the relief well drillship. The Explorer II is located in McKinley Bay, North West Territories.

While the Explorer II is presently cold stacked, Canmar confirms that the unit could be made ready to sail for emergency use in approximately 25-days. This sail date is based on our confidence that the regulatory drydock work which is required prior to the Explorer II undertaking a normal sail, would be waived by the class and regulatory bodies, should an emergency requirement for the vessel exist.

For your information, the Canmar Explorer is actively being marketed for sale, and the Canmar Explorer III is operating in Australia.

Mr. D.J Ruckel
Page 2

We will advise you of any changes to this status.

Yours truly,

A handwritten signature in dark ink, appearing to read 'C. Mark Helmer', written in a cursive style.

C. Mark Helmer
General Manager, Drilling Operations

CMH/ey

cc:

- I. Fretheim, President, Canadian Marine Drilling Ltd.
- O. Monteith, Alaska General Manager, Canmar (U.S.) Inc.

ARCO Alaska, Inc.
Post Office Box 100360
Anchorage Alaska 99510-0360
Telephone 907 276 1215



May 14, 1993

U. S. Department of Interior
Minerals Management Service
Alaska Outer Continental Shelf Region
949 E. 36th Ave., Rm 603
Anchorage, AK 99508-4302

RECEIVED
Anchorage, Alaska

MAY 17 1993

REGIONAL SUPERVISOR
FIELD OPERATION
MINERALS MANAGEMENT SERVICE

Attn: Mr. Rodney Smith
Regional Supervisor

Re: Application for Approval for Kuvlum Unit
Beaufort Sea, Alaska

Dear Mr. Smith:

Pursuant to our previous discussions and meetings held earlier this year, ARCO Alaska, Inc., as Designated Operator of the proposed Kuvlum Unit, hereby submits the following documents in triplicate:

- 1) Kuvlum Unit Agreement;
- 2) Kuvlum Unit Operating Agreement.
- 3) A Plan of Unit Operations

The proposed Kuvlum Unit consists of 20,736 hectares, and is located in the Beaufort Sea, Alaska. Concurrently with this application we are submitting a request for Suspension of Production. Included with that request is a structure map, an outline of the proposed unit and a work schedule outlining a work plan for the Kuvlum Unit over the next five (5) years which is tied to our Plan of Unit Operations. ARCO Alaska and its partners, Union Texas Petroleum Alaska Corporation, Phillips Petroleum Company, TOTAL MINATOME CORPORATION, Murphy Exploration & Production Company, and Mobil Oil Corporation, believe that the lands designated herein represent a logical area for unitization. Further, we respectfully submit that this unit proposal shall ensure conservation of natural resources, prevention of waste, and the protection of correlative rights in accordance with 30 CFR 250.190.

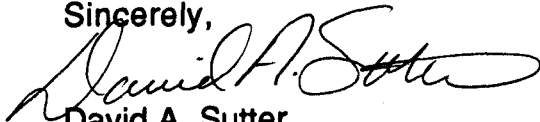
Please note that we have made the following elections under the Unit Agreement:

1. **Article 6.1:** Selection of a successor Unit Operator shall be made pursuant to the Unit Operating Agreement;

Both agreements have been executed by all of the Working Interest Owners included within the proposed Kuvlum Unit, except Chevron. Chevron has been provided with a copy of the Unit Operating Agreement and Unit Agreement. Chevron is currently reviewing both agreements. In the event Chevron opposes the unit as proposed, we would respectfully request that the MMS approve the unit area as proposed, but either exclude the area covering Chevron's interest in Block 627 (OCS-Y-1586) and Block 671 (OCS-Y-1588), or include this interest as a non-committed interest in the unit.

We trust that the information enclosed herein will be satisfactory and await your response. Should you require additional information or have any additional questions regarding this proposal, please feel free to contact the undersigned at 263-4933.

Sincerely,

A handwritten signature in cursive script, appearing to read "David A. Sutter".

David A. Sutter
District Landman

:jls

Application for Approval for Kuvlum Unit
Beaufort Sea, Alaska
Page 3

cc:

Union Texas Petroleum Alaska Corp.
Attn: Bruce Hamilton
1330 Post Oak Boulevard
Houston, TX 77056

Phillips Petroleum Company
Attn: John E. Herndon
6330 West Loop South
Bellaire, TX 77401

Total Minatome Corp.
Attn: Kirby Barry
909 Fannin, Suite 2000
Houston, TX 77010

Murphy Exploration & Producing Co.
Attn: James Hunt
131 South Robertson
New Orleans, LA 70112

Mobil Exploration & Producing U.S. Inc.
Attn: Fred Pierson
3000 Pegasus Park Drive
Dallas, TX 75247

Chevron U.S.A. Production Company
Attn: Paul Walker
1301 McKinney St.
Houston, TX 77010

MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

District Office

DATA TRANSMITTAL FORM

Lease Well Description

0865	1	Kwibum #2
		MWD Tape + History
		M.D.T. Pressure Plot 1 Blue line 1 Syria
		M.D.T. Raw Field 1 Blue line 1 Syria

Signed By: [Signature] Date: 25 April 74

Provided To: Area Office Vault
(Section)

☐ a. Borrowed Data Date Borrowed Data Returned: _____

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

☒ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature: [Signature] Date: 5/4/74

MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

District Office

DATA TRANSMITTAL FORM

Lease Well Description

0865	1	Kwilm #2	1 <u>Bluehina</u> + 1 <u>Sysia</u>
✓		(Finals) NGT Log	
✓		" Comp Neutron Litho-density	
✓		" ARARY Log Induction	
✓		" Dipole Sonic	
✓		" Microlog	
✓		" RFT	

Signed By:

[Signature]

Date:

2-8-94

Provided To:

[Signature]
(Section)

☐ a. Borrowed Data

Date Borrowed Data Returned: _____

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

☒ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

[Signature]

Date:

2/15/94

MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

District Office

DATA TRANSMITTAL FORM

Lease Well

Description

0865	1	Kwiliuk #2 Final ADT Well Summary Rpt for Kwiliuk #2 ✓
		Geochanical Analysis 26 Aug 93 3ps ✓
		Hydropace Gas Data 10 pgs + Final Report ✓
		Organic Carbon and Rock-EVAL D651/93 12740 ✓
		Modified LDWD Open Log Edit Type + Listing ✓
		Geochanical Reports: Hydropace Gas/Rock Eval/VIT Ref/Packman Tech ✓

Signed By:

Richard D. Conroy

Date: 1-3-94

Provided To:

Alaska Office Vault

(Section)

☐ a. Borrowed Data

Date Borrowed Data Returned: _____

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

☒ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

Richard D. Conroy

Date:

1/13/94



United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

PRIDE IN
AMERICA

IN REPLY REFER TO:

Mr. Winfree
ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360

JAN 7 1994

Dear Mr. Winfree:

In reviewing our data files for the wells listed below the data identified have not been received, or accounted for, as per your approved Application for Permit to Drill. Specific information regarding these requirements and to the number of copies needed are listed in the Conditions of Approval to Drill for Oil and Gas. Please refer to our letter of October 20, 1993, for data previously identified as not having been received to date.

OCS-Y 0865#1, Kuvlum #2:

- Final composite well logs
- Final composite Combination Mudlogs
- Final Geochemical Report
- Final Borehole Seismic Report

OCS-Y 0866#2, Kuvlum #3:

- Final composite well logs
- Final composite Combination Mudlogs
- Final Geochemical Report
- Final Sidewall Core Analysis
- Final Repeat Formation Tester fluids data

OCS-Y 1597 #1, Wild Weasel #1:

- Final composite well logs
- Final composite Combination Mudlogs
- Final Geochemical Report
- Final Borehole Seismic Report
- Final Repeat Formation Tester fluids data

Please submit these data by February 7, 1994, to the Supervisor, District Office at the address listed above. If you have any questions concerning this letter please call me or Douglas Choromanski at 907-271-6066.

Sincerely,

Orig. Sgnd. By Brian Schoof

Brian Schoof
Supervisor, District Office
Field Operations

bcc: 1 OCS-Y 0865 #1 - Area/District
OCS-Y 0866 #2 - Area/District
OCS-Y 1597 #1 - Area/District
Chronos - Area/District/CC/RD
DChoromanski:1/6/94:nll:ARCOLT94

District Office

DATA TRANSMITTAL FORM

Description

[illegible]

Signed By:

Date:

1/-19-73

Provided To:

Area Office Visited
(Section)

(Section)

11 a. Borrowed Data

Date Borrowed Data Returned:

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

~~X~~ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

Date:

12/13/93

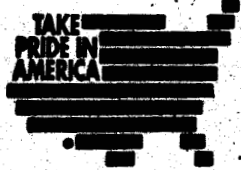


IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302



OCT 26 1993

Mr. M. B. Winfree
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

Enclosed is the approved copy of your Sundry Notice and Reports on Wells
(3 Enclosures) for the following:

- 1) Sundry Notice #2, OCS-Y 1597 #1, Block 760
- 2) Sundry Notice #4, OCS-Y 1597 #1, Block 760
- 3) Report of Well Abandonment, OCS-Y 0865 #1, Kuvlum #2

Please feel free to contact me at (907) 271-6066, if you have any questions.

Sincerely,

Orig. Sgnd. By Brian Schoof
Brian F. Schoof
Supervisor, District Office
Field Operations

3 Enclosures

✓ OCS-Y 0865 #1 - 6A AREA/DISTRICT
bcc: OCS-Y 1597 #1 - 6A Area/District
Chronos Area/District/CC/RD
BSchoof:10-26-93:nll:arco_su5



United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region

949 E. 36th Avenue, Room 603

Anchorage, Alaska 99508-4302



IN REPLY REFER TO:

M. Winfree
ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360

OCT 20 1993

Dear Mr. Winfree:

In reviewing the well files for OCS-Y 0865 #1, Kuvlum #2 and OCS-Y 0866 #2, Kuvlum #3, we noted the data listed below have not been received or accounted for in our records:

OCS-Y 0865 #1: Final Geochemical report
Final Sidewall Core descriptions and analysis
Final Micropaleo Biostratigraphic Report
Fluids data report from Repeat Formation Tester
Final composite well logs
Final Mudlog and MWD logs
Final composite LIS tape

OCS-Y 0866 #2: Final Geochemical report
Final Sidewall core descriptions and analysis
Final Micropaleo Biostratigraphic report
Fluids data report from RFT
Wellbore seismic report
Final composite well logs
Final Mudlog and MWD logs
Final composite LIS tape

We also request at this time any fluids data, chemistry, and characteristics, for the OCS-Y 0866 #1 well. The Conditions of Approval for the approved APD specify the number of copies required to be submitted to us.

If you have any questions regarding this letter please call me or Douglas Choromanski at 271-6066.

Sincerely,

Orig. Sgnd. By Brian Schoof

Brian Schoof
Supervisor, District Office
Field Operations

bcc: ✓ OCS-Y 0865 #1 - Area/District 6-A
OCS-Y 0866 #2 - Area/District
Chronos - Area/District/CC/RD
DChoromanski:10-19-93:nll:dc\kuvlet93

MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

District Office

DATA TRANSMITTAL FORM

<u>Lease</u>	<u>Well</u>	<u>Description</u>
✓	0865	Borehole Seismic Report 0865 #1 Kuskum 2 [#]
✓		LIS Tape Adjusted sonic + Verification 0865 #1
✓		Mylar Calibrated sonic log 0865 #1
✓		Mylar Geogram 0865 #1
✓		LIS VSP Processing & File + Verification 0865 #1
✓		Dipole Shear Source Images Borehole Comp DTS
✓		Dipole Shear Source Images Upper Dipole proj Plot
✓		" " " " MPS Proj Plot
✓		Geogram Full scale Mylar 0865 #1
		Vertical Seismic Profile Full scale Mylar

Signed By:

[Signature]

Date:

10-8-92

Provided To:

Area Office Vault
(Section)



a. Borrowed Data

Date Borrowed Data Returned: _____

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.



b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

[Signature]

Date:

10/13/93

District Office

<u>Lease</u>	<u>Well</u>	<u>Description</u>
--------------	-------------	--------------------

[illegible]

Signed By: W. L. Chazman

Date: 10-12-93

Provided To: HR EA Office
(Section)

11 a. Borrowed Data

.. Date Borrowed Data Returned:

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

~~/V/~~ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

Date: 10/13/93



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

TAKE
PRIDE IN
AMERICA

OCT 4 1993

Mr. M. B. Winfree
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

Enclosed please find a Notice on Incidents on Noncompliance (INC), Form MMS-1832, for the abandonment of OCS-Y 0865 #1, Kuvlum #2. Specifically, the INC refers to the openhole plug set in the well as not being in compliance with the approved abandonment plan. The warning violation has been issued after our review of the subsequent report of abandonment received by this office on September 8, 1993. The authority for the INC resides in 30 CFR 250.000 (Approvals) and 250.112 (Permanent Abandonment). No corrective action is needed regarding the warning INC. Please sign, date, and return the green copy on the INC to this office.

Should you have any questions regarding the INC, please contact me at 271-6066.

Sincerely,

Orig. Sgnd. By Brian Schoof

Brian F. Schoof
Supervisor, District Office
Field Operations

Enclosure

bcc: OCS-Y 0865 #1 - Area/District 6-19
Chronos Area/District/CC/RD
JRegg:09-17-93:nll:arco_inc

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:

MR. STEVE PORTER
ARCO ALASKA INC.
P.O. BOX 100360
Anchorage, AK 99510-0360

5. Signature (Addressee)

6. Signature (Agent)

[Handwritten Signature]

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

4a. Article Number

P 175 855 335

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

10-25-99

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt

PS Form 3811, December 1991

★U.S. GPO: 1992-323-402

DOMESTIC RETURN RECEIPT



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region

949 E. 36th Avenue, Room 603

Anchorage, Alaska 99508-4302



SEP 23 1993

Mr. M. B. Winfree
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

Enclosed is the approved copy of your Notice of Intent/Report of Well Abandonment for OCS-Y 0865 #1 (Enclosure 1).

Please feel free to contact me at (907) 271-6066, if you have any questions.

Sincerely,

Orig. Sgnd. By **Brian Schoof**

Brian F. Schoof
Supervisor, District Office
Field Operations

Enclosure

bcc: ~~OCS-Y 0865 #1 Area~~ District
Chronos Area/District/CC/RD
BSchoof:09-22-93:nll:arco_su2

MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

District Office

DATA TRANSMITTAL FORM

Lease Well Description

0865	1	Run 1 FMS 3 logs 1 Tape + Listing	✓
		Run 2 Dipole Sonic	✓
		Run 1 Formation Micro-scanner 'Hypack Plot'	✓
		Biostereographic Reports 1-7	✓
		SWC descriptions 17 pgs (John Britner)	✓
		Geochronal Head space box	✓

Signed By: D. R. Chappard Date: 9-14-93
Provided To: Area Office Vault
(Section)

☐ a. Borrowed Data Date Borrowed Data Returned: _____

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

☒ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature: Richard Comarow Date: Sept 21, 93

NOTICE OF INCIDENTS OF NON-COMPLIANCE DETECTED AND ACTIONS TAKEN

Page 1 of 1

Lease No: OCS-4 0865

Date: 9/15/93

Time: (24-hour clock) 1300

District Name: ALASKA

Lessee Operator: ARCO ALASKA INC

Address: 449 EAST 36TH AVENUE
ANCHORAGE AK 99508

Area: BEAUFORT SEA
CAMDEN BAY

Block: 672

Platform or
Rig Name: KULLUK

Field: Kuvlum Prospect

TO: MIKE WINFREE / TOM MCKAY
(Company Representative)

THE FOLLOWING LIST OF INCIDENTS OF NON-COMPLIANCE WERE FOUND BY MINERALS MANAGEMENT SERVICE INSPECTOR(S) ON THE DATE AND AT THE SITE LISTED ABOVE

WARNING IS HEREBY GIVEN TO CORRECT THE FOLLOWING DEFICIENCIES:

Inc. No.

Explanation or Remarks

Date Corrected

A-100(W) OPENHOLE PLUG NOT PLACED AS APPROVED; PLUGGED
INTERVAL AND VOLUME LESS THAN APPROVED

NO CORRECTIVE
ACTION NEEDED

Free
00890860

YOU ARE HEREBY ORDERED TO SHUT-IN THE FOLLOWING OPERATIONS: *(The related INC's are marked with an asterisk *)*

Signature of M.M.S. Representative

U.S. Representative
James B. Ray

Date:

9-16-93

The date each incident of non-compliance was corrected should be inserted in the appropriate column and the green copy of this form returned to the District Engineer at the address shown no later than 7 days from the date of inspection. Each item cited in the above list shall be corrected before the form is returned. The operator's representative shall sign the form certifying that all the incidents of non-compliance on the list have been corrected. If the form cannot be returned within 7 days, appropriate waiver must be obtained through the District Engineer.

Any water platforms shut-in by this order must be inspected before returning to operation.

MIKE WINFREE

corrected as of 10/12/93, certify that each incident or non-compliance listed above has been

corrected as of 10/12/93

(Company Representative)

Position Title:

AREA DRILLING ENGINEER

JEFF/ROD - 8/14/93

Benny BAB

9/8/93

LEE/BRIAN

COPY made
JBR 9/10/93

BB

Memo:

To: Jim Regg JBR

From: Jon Nauman

Subject: Procedures for cuttings that don't pass a sheen test.

I talked to Dan Robinson September 8th, concerning the outcome of the sheen test on ARCO's Kuvlum #2 cuttings on August 13th. Dan stated that the problem isn't the sheen, but where did the cuttings go. He said that is a Solid Waste Problem which comes under the state. As far as MMS responsibility, we have done what was expected by reporting the results of the sheen test. It is EPA's responsibility to follow through on where the cuttings end up. In the future if we are able to provide that information that is an added bonus to EPA; but MMS as a non EPA inspector is not expected to do anymore than report the results of the test.

Jon Nauman

cc:

→ File: OCS-4 0865#1, 6.B.

MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

District Office

DATA TRANSMITTAL FORM

Lease Well

Description

0865	#1	Kuvlum #2	Daily Drilling Report	file 8
			Daily Barge Report	" 8
			DDR - SPERRY SUN	" 8
			DDR - NPDES	" 8
			DDR - ALERT STATUS	" 8

Signed By:

[Signature]

Date:

30 August 93

Provided To:

AREA Office Vault

(Section)

☐ a. Borrowed Data

Date Borrowed Data Returned: _____

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

☒ b. Transmitted Data to OFO Vault

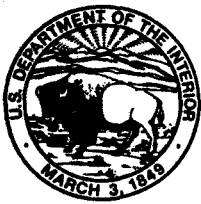
Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

[Signature]

Date:

Sept 1 93



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

TAKE
PRIDE IN
AMERICA

AUG 6 1993

Mr. Mike Winfree
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

As discussed with you on August 6, 1993, the cementing plans for the 13-3/8 inch surface casing included in the Application for Permit to Drill (APD) for both Kuvlum #2 (OCS-Y 0865 #1) and Kuvlum #3 (OCS-Y 0866 #2) are in compliance with the MMS regulations at 30 CFR 250.54(c)(2). Please disregard the well-specific condition of approval included in our APD approval letters dated June 29 (Kuvlum #2) and July 30, 1993 (Kuvlum #3) which establishes cement volume requirements for the subject casing string.

Sincerely,

ORIG. SIGNED BY JAMES B. REGG

Jim Regg
Acting Supervisor, District Office
Field Operations

bcc: ✓ OCS-Y 0865 #1 - 6A Area/~~District~~
OCS-Y 0866 #2 - 6A Area/~~District~~
Chronos Area/District/CC/RD
JRegg:8-6-93:jr/nll:common\oops.ltr

PROPRIETARY

ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360
Telephone 907-276-1215



August 10, 1993

United States Department of the Interior
Minerals Management Service
Alaska Outer Continental Shelf Region
949 East 36th Avenue, Suite 503
Anchorage, Alaska 99508-4302
(907) 271-6066

Received
OCS District Office

AUG 11 1993
Minerals Management Service
Anchorage, Alaska

Attention: Mr. Brian Schoof
District Office Supervisor

Subject: Kuvlum #2 and Kuvlum #3
Response to APD Stipulations

Dear Mr. Schoof:

As per your correspondence dated June 29, 1993, the attached document is provided to your office in response to the stipulations applied to the conditionally approved APD for the above referenced project.

Thank you for maintaining the confidential nature of this information.

Any further questions pertaining to this issue should be directed to Tom McKay at 265-6890, Tim Billingsley at 265-6575 or to me at 263-4603.

Yours truly,

ARCO ALASKA, INC.

M. B. Winfree
Area Drilling Engineer
New Ventures Drilling

enclosure

cc: Kuvlum No. 2 and No. 3 Well Files
Onsite ARCO Drilling Engineer - Kulluk
T. W. McKay ATO-1438
T. A. Billingsley ATO-1446

KUVLUM PROSPECT

ARCO Response to MMS APD Stipulations

The following listing of responses corresponds by number to the list of stipulations and conditions outlined by the MMS for conditional approval of the Kuvlum #2 and #3 Application for Permit to Drill submitted by ARCO Alaska, Inc.

Condition #1

Per your letter of August 6, 1993, condition #1 has been addressed.

Condition #2

- a) If the directional function of the MWD tool should fail, any new tool will be calibrated and "benchmark checked" to ensure consistent readings with previous tools.
- b) The total riser length is approximately 166' long and contains 4 connections. If the riser should fail by parting the total reduction in hydrostatic head at the heaviest mud weight proposed would be less than 30 pounds.

$$(11.5 \text{ ppg} - 8.5 \text{ ppg}) \times (.052) \times 166" = 25.8 \text{ psi}$$

If the riser should leak, it would easily be observed from the surface and would quickly equalize with a small reduction in hydrostatic pressure.

Divers are routinely used for various inspections and would be available from time to time to visually inspect the riser but would not be dedicated to daily inspections.

Given the minimal downside of a riser failure and the frequency of diving operations, ARCO requests that Condition 2b be waived.

Condition #3

The change-over criteria from an 8-point mooring system to a 12-point system stated in its simplest form is that when the global loads exceed the capacity of the 8-point system, then the 12-point system will be used. As a practical matter the decision would take one of several forms.

Case #1

As encroaching ice is detected by any of the ice surveillance methods, an ice breaker would be dispatched to intercept the ice and determine whether or not the impact on the Kulluk would result in excessive global loads. Some of the items critical to the determination are:

1. Ridging- If the particular feature has numerous ridges or very high ridges, it can be an indication of ice that is hard and difficult to break. Very high ridges are indicators of deep keels. These type of features, particularly if they are large, would be expected to exceed the global load limits of an 8-point system if they were allowed to impact the rig. Floes of this type in the range of 300m by 300m are usually manageable.

2. Aerial extent- If the feature is large in area, then the rig could potentially be influenced by its presence for a longer period of time. Features whose dimensions are measured in miles could be expected to increase the global loads to a point where a 12-point system would be required.

3. Velocity- If the feature is moving at a speed greater than the icebreakers can manage, then there is potential for larger "unbroken" pieces of ice to impact the rig increasing the global loads.

4. Physical Characteristics- The physical characteristics of the feature are critical in determining the potential to exceed the global load of an 8-point system. Key items that are monitored are thickness and age. Is it first year or multi-year ice? Is it loosely packed and easily broken? Does it have keels deep enough to drag on anchor wires?

While these are the basic items used in the determination, any single item would not be cause to deploy additional anchors.

Case #2

The most obvious case of course is when the global loads exceed the capability of the 8-point system and the unit is required to leave the location. When the unit returns to the location and if the same general conditions exist, then a 12-point system will be deployed.

Case #3

As operations continue later into the season and first year ice begins to form and increase in thickness/coverage, it is expected that the global loads will increase. When the global loads developed by the late season first year ice approach 80% of the maximum acceptable load for the 8-point system, then the 12-point system will be deployed.

In all cases the ultimate decision is of course very subjective and based on the collective experience of the vessel captains, marine crew and Arco supervisors.

The entire alert system is built around the drilling units ability to withstand a given ice load. Whether the unit has 8 or 12 anchors deployed, the alert system will not allow global loads to build up beyond established acceptable limits.

The characteristic difference between an 8-point system and a 12-point system is not in safety but in the fact that more anchors allow higher loads which in turn increases working time on the location.

Condition #4

Arco will test each casing string to 70% of its burst pressure in accordance with MMS regulations. After running production casing and prior to testing, we would like the opportunity to address this requirement again.

Condition #5

- a) When testing the diverter sealing element, we request that the element not be required to completely close on itself. Repeated full closure can cause damage to the element reducing its life.

In addition, we request that the diverter sealing element, diverter valves and all diverter control systems be actuation tested weekly (rather than daily) in conjunction with the weekly BOP tests.

Actuation tests of the diverter system will be alternated between the control stations.

- b) The BOP system high pressure tests will be of 5 minutes duration at a stabilized pressure for each component.
- c) Except for the pressure rating, the BOP stacks are identical and interchangeable.

Condition #6

No wellbore activities will be initiated or continued when the calculated kick tolerance is zero or negative without prior approval from the MMS. The MMS District Supervisor will be consulted when the calculated kick tolerance is less than 0.5 ppg.

Condition #7

- The Airborne SAR image is down-linked to Tuktoyaktuk Harbour and facsimiled to the rig every Saturday.
- The ERS-1/Radarsat imagery is available over the Kuvlum site at three 2-day intervals. This cycle is repeated every 14 days. These images are ordered on an as needed basis.
- Helicopter ice reconnaissance frequency is on an as needed basis which is usually daily.

PROPRIETARY

Condition #8

Attached is the current status of available relief well drilling vessels. ARCO will continue to update the MMS as the status of the vessels changes.

Condition #9

Updated documentation of ARCO's efforts to minimize potential conflicts with subsistence communities will be submitted to the MMS from ARCO's Environmental Compliance Group on a regular basis.

ARCO is prepared to suspend or curtail operations within 24 hours upon notification by the MMS that for regulatory reasons a shut down or curtailment is required.

Condition #10

If drilling operations extend beyond October 1, 1993 Arco will consult with the MMS District Supervisor regarding late season suspensions and abandonment.

Condition #11

The revised Oil Spill Contingency Plan was approved by the Regional Supervisor, Field Operations prior to spudding the well

Also attached is additional requested documentation.

1. Report of Mooring system inspection.
2. Record of factory calibration of load cells.
3. Discussion of gas detection in airlift system
4. Discussion of well test upgrades.

We have addressed the well specific conditions of approval for the Application for Permit to Drill for the Kuvlum #2 #3 and are available to meet with you or provide additional information as required.

If you have any questions regarding our response please contact Mike Winfree at 263-4603, Tom McKay at 265-6890 or Tim Billingsley at 265-6575.

Sincerely



Mike Winfree
Area Drilling Engineer

Attachments: 4

CANADIAN MARINE DRILLING LTD.

Box 200
Station M
CALGARY, ALBERTA, CANADA
T2P 2H8

Tel (403) 298-3500

July 14, 1993

93194ACC0253

VIA FACSIMILE

Arco Alaska, Inc.
700 "G" Street
P.O. Box 100360
ANCHORAGE, Alaska
U.S.A. 99510-0360

PROPRIETARY

ATTENTION: Mr. D.J. Ruckel
Drilling Manager

Dear Mr. Ruckel:

RE: Relief Well Drilling Contingency; File: 58100-80-1

We herewith provide you with the status as of today's date on Canadian Marine Drilling Ltd. ("Canmar") drillships for the purposes of relief well drilling contingency.

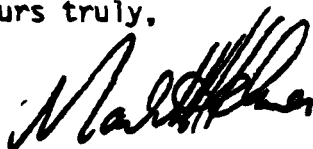
The Canmar Explorer II, the designated relief well drillship, is presently on drydock in McKinley Bay, North West Territories. The Explorer II will be undocked on July 31, and thereafter, stacked in McKinley Bay. Upon completion of the drydocking the Explorer II could be started up and ready to sail for emergency relief well purposes within 25± days.

The Canmar Explorer is presently stacked in McKinley Bay and it is our intention to demobilize it from the Arctic in late August or September, 1993.

The Canmar Explorer III is operating in Western Australia.

As agreed, we will advise you of any changes to the above stated status.

Yours truly,



C. Mark Helmer
General Manager, Drilling Operations



Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31322-1A

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ31/ 21691

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1348	0.1441	-0.91
1700.0	0.2536	0.2419	1.14
2550.0	0.3606	0.3396	2.05
3400.0	0.4613	0.4373	2.34
4250.0	0.5562	0.5350	2.07
5100.0	0.6468	0.6327	1.38
5950.0	0.7375	0.7304	0.69
6800.0	0.8250	0.8281	-0.30
7650.0	0.9116	0.9258	-1.39
8500.0	0.9975	1.0235	-2.54

Cal.Resistor 260 Kohms

701 ohm Bridge

Sensitivity at 8500.0 kN = 1.0235 mV/V. CAL.5597.78 kN
Sensitivity at 850.0 Tonf = 1.0199 mV/V. CAL. 561.75 Tonf
Sensitivity at 850.0 Tonne = 1.0038 mV/V. CAL. 570.76 Tonne
Sensitivity at 850.0 S.Ton = 0.9106 mV/V. CAL. 629.18 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.0046mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Straininstall Engineering Services Ltd.
Denmark Road, Cowes, Isle of Wight, PO31 7TB, U.K.
Tel: +44 (0) 983 295111, Fax: +44 (0) 983 291335, Telex: 86369 STRAIN G

Signed

M.Thomas

No. 14
INSP.

Date

27 APR 93



Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31322-1S

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ31/ 21691

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1285	0.1359	-0.73
1700.0	0.2410	0.2332	0.77
2550.0	0.3480	0.3305	1.73
3400.0	0.4476	0.4278	1.96
4250.0	0.5443	0.5251	1.90
5100.0	0.6353	0.6224	1.28
5950.0	0.7254	0.7197	0.56
6800.0	0.8147	0.8170	-0.23
7650.0	0.9015	0.9143	-1.27
8500.0	0.9897	1.0116	-2.16

Cal.Resistor 260 Kohms

701.05 ohm Bridge

Sensitivity at 8500.0 kN = 1.0116 mV/V. CAL.5664.03 kN
Sensitivity at 850.0 Tonf = 1.0080 mV/V. CAL. 568.43 Tonf
Sensitivity at 850.0 Tonne = 0.9921 mV/V. CAL. 577.54 Tonne
Sensitivity at 850.0 S.Ton = 0.9000 mV/V. CAL. 636.64 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.052mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M.Thomas

No.14
INSP.

Date

27 APR 93

Straininstall Engineering Services Ltd.

Denmark Road, Cowes, Isle of Wight, PO31 7TB, U.K.
Tel: +44 (0) 983 295111, Fax: +44 (0) 983 291335, Telex: 86369 STRAIN G



Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31322-2A

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ31/ 21691

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1247	0.1314	-0.67
1700.0	0.2353	0.2278	0.75
2550.0	0.3392	0.3243	1.49
3400.0	0.4390	0.4208	1.82
4250.0	0.5344	0.5172	1.72
5100.0	0.6260	0.6137	1.23
5950.0	0.7154	0.7102	0.52
6800.0	0.8044	0.8066	-0.22
7650.0	0.8923	0.9031	-1.08
8500.0	0.9789	0.9996	-2.07

Cal.Resistor 260 Kohms

701.26 ohm Bridge

Sensitivity at 8500.0 kN = 0.9996 mV/V. CAL.5733.75 kN
Sensitivity at 850.0 Tonf = 0.9960 mV/V. CAL. 575.45 Tonf
Sensitivity at 850.0 Tonne = 0.9803 mV/V. CAL. 584.66 Tonne
Sensitivity at 850.0 S.Ton = 0.8893 mV/V. CAL. 644.49 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.23mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M. Thomas

No. 14
INSP

Date

27 APR 93

Straininstall Engineering Services Ltd.

Denmark Road, Cowes, Isle of Wight, PO31 7TB, U.K.
Tel: +44 (0) 983 295111, Fax: +44 (0) 983 291335, Telex: 86369 STRAIN G



Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31322-2S

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ31/ 21691

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1276	0.1356	-0.80
1700.0	0.2394	0.2321	0.73
2550.0	0.3461	0.3286	1.74
3400.0	0.4459	0.4251	2.07
4250.0	0.5411	0.5215	1.95
5100.0	0.6323	0.6180	1.42
5950.0	0.7210	0.7145	0.65
6800.0	0.8085	0.8110	-0.25
7650.0	0.8946	0.9075	-1.28
8500.0	0.9805	1.0040	-2.34

Cal.Resistor 260 Kohms

701.11 ohm Bridge

Sensitivity at 8500.0 kN = 1.0040 mV/V. CAL.5707.40 kN
Sensitivity at 850.0 Tonf = 1.0004 mV/V. CAL. 572.79 Tonf
Sensitivity at 850.0 Tonne = 0.9846 mV/V. CAL. 581.99 Tonne
Sensitivity at 850.0 S.Ton = 0.8932 mV/V. CAL. 641.54 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.0012mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M.Thomas

No.14
INSP.

Date

27 APR 93

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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31326-1A

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ29/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1328	0.1419	-0.88
1700.0	0.2517	0.2411	1.02
2550.0	0.3603	0.3402	1.94
3400.0	0.4616	0.4394	2.15
4250.0	0.5578	0.5385	1.87
5100.0	0.6510	0.6376	1.30
5950.0	0.7433	0.7368	0.63
6800.0	0.8329	0.8359	-0.29
7650.0	0.9220	0.9351	-1.27
8500.0	1.0101	1.0342	-2.33

Cal.Resistor 260 Kohms

701.02 ohm Bridge

Sensitivity at 8500.0 kN = 1.0342 mV/V. CAL.5540.02 kN
Sensitivity at 850.0 Tonf = 1.0305 mV/V. CAL. 555.99 Tonf
Sensitivity at 850.0 Tonne = 1.0142 mV/V. CAL. 564.93 Tonne
Sensitivity at 850.0 S.Ton = 0.9201 mV/V. CAL. 622.70 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset -0.0020mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M. Thomas

No. 14
INSF

Date

27 APR 93

Straininstall Engineering Services Ltd.

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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31326-1S

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ29/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1340	0.1419	-0.78
1700.0	0.2500	0.2391	1.07
2550.0	0.3567	0.3364	2.00
3400.0	0.4562	0.4336	2.22
4250.0	0.5505	0.5308	1.94
5100.0	0.6416	0.6281	1.33
5950.0	0.7318	0.7253	0.64
6800.0	0.8193	0.8225	-0.31
7650.0	0.9064	0.9197	-1.31
8500.0	0.9925	1.0170	-2.41

Cal.Resistor 260 Kohms

701.04 ohm Bridge

Sensitivity at 8500.0 kN = 1.0170 mV/V. CAL.5633.88 kN
Sensitivity at 850.0 Tonf = 1.0133 mV/V. CAL. 565.45 Tonf
Sensitivity at 850.0 Tonne = 0.9973 mV/V. CAL. 574.52 Tonne
Sensitivity at 850.0 S.Ton = 0.9048 mV/V. CAL. 633.25 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.030mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M. Thomas

No. 14
INSP.

Date

27 APR 93

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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31326-2A

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ29/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1347	0.1450	-0.98
1700.0	0.2577	0.2452	1.19
2550.0	0.3677	0.3454	2.13
3400.0	0.4691	0.4455	2.25
4250.0	0.5643	0.5457	1.78
5100.0	0.6594	0.6459	1.29
5950.0	0.7514	0.7460	0.52
6800.0	0.8429	0.8462	-0.32
7650.0	0.9328	0.9464	-1.30
8500.0	1.0227	1.0466	-2.28

Cal.Resistor 260 Kohms

701.38 ohm Bridge

Sensitivity at 8500.0 kN = 1.0466 mV/V. CAL.5477.20 kN
Sensitivity at 850.0 Tonf = 1.0428 mV/V. CAL. 549.72 Tonf
Sensitivity at 850.0 Tonne = 1.0263 mV/V. CAL. 558.55 Tonne
Sensitivity at 850.0 S.Ton = 0.9311 mV/V. CAL. 615.66 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.023mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M.Thomas

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Date

27 APR 93

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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31326-2S

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ29/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1322	0.1420	-0.96
1700.0	0.2513	0.2391	1.20
2550.0	0.3582	0.3361	2.18
3400.0	0.4568	0.4332	2.32
4250.0	0.5490	0.5303	1.84
5100.0	0.6408	0.6273	1.33
5950.0	0.7299	0.7244	0.54
6800.0	0.8182	0.8215	-0.32
7650.0	0.9050	0.9185	-1.33
8500.0	0.9916	1.0156	-2.36

Cal.Resistor 260 Kohms

701.27 ohm Bridge

Sensitivity at 8500.0 kN = 1.0156 mV/V. CAL.5643.50 kN
Sensitivity at 850.0 Tonf = 1.0119 mV/V. CAL. 566.41 Tonf
Sensitivity at 850.0 Tonne = 0.9960 mV/V. CAL. 575.46 Tonne
Sensitivity at 850.0 S.Ton = 0.9035 mV/V. CAL. 634.37 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset -0.036mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M.Thomas

No. 14
INSP.

Date

27 APR 93

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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31324-1A

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ30/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1271	0.1386	-1.10
1700.0	0.2470	0.2393	0.74
2550.0	0.3596	0.3400	1.88
3400.0	0.4583	0.4407	1.68
4250.0	0.5632	0.5414	2.09
5100.0	0.6580	0.6421	1.52
5950.0	0.7509	0.7428	0.78
6800.0	0.8416	0.8435	-0.18
7650.0	0.9310	0.9442	-1.26
8500.0	1.0191	1.0449	-2.47

Cal.Resistor 260 Kohms

701.02 ohm Bridge

Sensitivity at 8500.0 kN = 1.0449 mV/V. CAL.5483.29 kN
Sensitivity at 850.0 Tonf = 1.0412 mV/V. CAL. 550.28 Tonf
Sensitivity at 850.0 Tonne = 1.0247 mV/V. CAL. 559.14 Tonne
Sensitivity at 850.0 S.Ton = 0.9296 mV/V. CAL. 616.34 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.0024mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M.Thomas

No. 14
INSP.

Date

27 APR 93

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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31324-1S

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ30/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1294	0.1416	-1.16
1700.0	0.2513	0.2431	0.78
2550.0	0.3654	0.3447	1.96
3400.0	0.4651	0.4463	1.78
4250.0	0.5705	0.5478	2.15
5100.0	0.6660	0.6494	1.57
5950.0	0.7593	0.7510	0.79
6800.0	0.8504	0.8526	-0.21
7650.0	0.9402	0.9541	-1.32
8500.0	1.0287	1.0557	-2.56

Cal.Resistor 260 Kohms

701.02 ohm Bridge

Sensitivity at 8500.0 kN = 1.0557 mV/V. CAL.5427.20 kN
Sensitivity at 850.0 Tonf = 1.0519 mV/V. CAL. 544.68 Tonf
Sensitivity at 850.0 Tonne = 1.0353 mV/V. CAL. 553.41 Tonne
Sensitivity at 850.0 S.Ton = 0.9392 mV/V. CAL. 610.04 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset 00.00mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M. Thomas

No. 14
INSP.

Date

27 APR 93

Straininstall Engineering Services Ltd.
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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31324-2A

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ30/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1298	0.1433	-1.26
1700.0	0.2541	0.2467	0.69
2550.0	0.3683	0.3501	1.69
3400.0	0.4774	0.4535	2.23
4250.0	0.5796	0.5569	2.11
5100.0	0.6776	0.6603	1.61
5950.0	0.7722	0.7637	0.79
6800.0	0.8646	0.8671	-0.23
7650.0	0.9562	0.9705	-1.33
8500.0	1.0460	1.0739	-2.60

Cal.Resistor 260 Kohms

700.76 ohm Bridge

Sensitivity at 8500.0 kN = 1.0739 mV/V. CAL.5333.24 kN
Sensitivity at 850.0 Tonf = 1.0701 mV/V. CAL. 535.22 Tonf
Sensitivity at 850.0 Tonne = 1.0532 mV/V. CAL. 543.81 Tonne
Sensitivity at 850.0 S.Ton = 0.9554 mV/V. CAL. 599.47 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset -0.0083mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M. Thomas

No.14
INSP

Date

27 APR 93

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Straininstall Engineering Services Ltd.

A Member of TT Group PLC

Load Cell 2128
Ser. No. 31324-2S

CERTIFICATE OF TEST AND CALIBRATION

All test measurements applied are traceable to National Standards.

No. LQ30/ 21690

Rating 850 Tonne

Proof Load 129%

Calculation Method - MATH.(y = mx + c).

Shear mode

LOAD kN	MEASURED mV/V	B.S.L. mV/V	DEVIATION % OF BSL
850.0	0.1296	0.1427	-1.22
1700.0	0.2534	0.2462	0.67
2550.0	0.3677	0.3496	1.69
3400.0	0.4767	0.4531	2.20
4250.0	0.5790	0.5565	2.10
5100.0	0.6769	0.6600	1.57
5950.0	0.7716	0.7634	0.76
6800.0	0.8643	0.8669	-0.24
7650.0	0.9562	0.9703	-1.31
8500.0	1.0464	1.0738	-2.55

Cal.Resistor 260 Kohms

701.13 ohm Bridge

Sensitivity at 8500.0 kN = 1.0738 mV/V. CAL.5336.55 kN
Sensitivity at 850.0 Tonf = 1.0699 mV/V. CAL. 535.60 Tonf
Sensitivity at 850.0 Tonne = 1.0530 mV/V. CAL. 544.20 Tonne
Sensitivity at 850.0 S.Ton = 0.9553 mV/V. CAL. 599.85 S.Ton

CONNECTION DETAILS

+ SUPPLY - SIGNAL +
P1 = Red A P2 = Blue B S1 = Yellow D S2 = Green C

Supply voltage NORMAL 10 Volts. MAXIMUM 15 Volts.

Stability test 12 hours at 15 Volts. Zero Offset +0.0083mV/V

Insulation Resistance > 500 Mohms at 50 Volts.

PROPRIETARY

Signed

M.Thomas

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INSP.

Date

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***** CDU KULLUK *****

JULY 02,1993 RIG WIRE INSPECTION REPORT
TO: JOHN RICHINGS AMERICAN BUREAU OF SHIPPING

WIRE # 2 WAS RUN OUT TO 957 METRES WITH TWO COMPLETE WRAPS LEFT ON THE DRUM. NO DAMAGE WAS NOTED AND THE WIRE APPEARED IN VERY GOOD CONDITION WITH VISIBLE MANUFACTURERS LUBRICANT. ON WIRE RETRIEVAL THE FOLLOWING IS A LOG OF MY FINDINGS.

946 METRES OUT SLIGHT OPEN LAY FOR LESS THAN ONE COMPLETE LAY NO BROKEN WIRES.

908 METRES ONE BROKEN WIRE.

720 METRES CALIPER MEASUREMENT 3.50 INCHES

500 METRES CALIPER MEASUREMENT 3.50 INCHES

200 METRES CALIPER MEASUREMENT 3.48 INCHES

THIS WIRE WAS WITHIN THE GUIDELINES OF THE A.P.I. REQUIREMENTS FOR 6X47 WIRE AND REPLACEMENT IS NOT REQUIRED AT THIS TIME.

↳ MASTER CDU KULLUK

WIRE # 4 THE FOLLOWING RESULTS WERE OBSERVED

932 METRES SLIGHT PINCHING NOTED NO BROKEN WIRES

917 METRES LAY OPENED SLIGHTLY CORE VISIBLE NO BROKEN WIRES

863 METRES STRAND 1 3 BROKEN WIRES

STRAND 2 OK

" 3 2 BROKEN WIRES

" 4 2 BROKEN WIRES

" 5 3 BROKEN WIRES

" 6 1 BROKEN WIRE

" 2 NEXT LAY 3 BROKEN WIRES

705 METRES LAY SLIGHTLY OPENED CORE VISIBLE NO BROKEN WIRES

695 METRES 1 BROKEN WIRE

685 M. SLIGHTLY OPEN LAY

615 M. KINK NO BROKEN WIRES

581 M -610 M. 581 M. 1BROKEN WIRE

583 M. 1 BROKEN WIRE

584 M. 4 BROKEN WIRES

3RD STRAND 2 BROKEN WIRES

4TH STRAND 3 BROKEN WIRES

586 M. 2 BROKEN WIRES

590 M. SLIGHT OPEN LAY NO BROKEN WIRES

590.5 M STRAND 1 2 BROKEN WIRES

" 2 2 " "

" 3 2 " "

" 4 3 " "

" 5 3 " "

" 6 4 " "

" 1 1 " "

" 2 3 " "

" 3 2 " "

" 4 3 " "

PROPRIETARY

(# 4 CONT'D)

" 5 3 "
" 6 3 "

460 M. CALIPER MEASUREMENT 3.51 INCHES
WIRE # 4 (CONTD)

432 M. 1 BROKEN WIRE

354 M. 1 " "

284 M. 1 " "

267 M. 1 " "

254 M. CALIPER MEASUREMENT 3.49 INCHES

213 M. 1 BROKEN WIRE

144 M. 1 BROKEN WIRE

THIS WIRE IS WITHIN THE GUIDELINES OF A.P.I. FOR 6X47 WIRE
AND REPLACEMENT WILL NOT BE REQUIRED AT THIS TIME.

KD MASTER CDU KULLIK

WIRE # 8

685 M. STAND 1 2 BROKEN WIRES

" 2 2 " "

684 M. " 1 2 " "

" 2 1 " "

675 M. 1

672 1

670 1

646 1

640 1

593 1

586 1

548 1

528 1

527 1

518 ONE LAY OPENED SLIGHTLY NO KINK NO SQUEEZE
CORE NOT VISIBLE NO BROKEN WIRES

511 1

510 1

487 CALIPER MEASUREMENT 3.49

487 TOTAL 6 BROKEN WIRES 2 PER STRAND 3 STRANDS

480 2

367 1

365 2

338 2

335 1

328 1

327 2

321 1

290 1

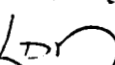
PROPRIETARY

282	1
267	2
259	1
240	1
239	1
236	1

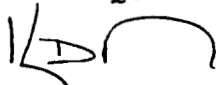
PROPRIETARY

(#8 CONT'D)

228	1
152	1
76	1

#8 Requires Approx 200' of copper
AND RESOCKETED 

THIS WIRE IS WITHIN THE GUIDELINES OF THE A.P.I. FOR 6X47
WIRE AND REPLACEMENT WILL NOT BE REQUIRED AT THIS TIME

 → MASTER CDU KULLUK

WIRE # 5

723 METRES- WIRE WAS NOT RUN TO FULL EXTENSION DUE TO
BOAT NOT HAVING ENOUGH ROOM IN THAT DIRECTION IN THE BAY.

700 M. 1 BROKEN WIRE

650- 670 M LAY SLIGHTLY OPENED NO BROKEN WIRES

602 " " " " " "


384 " " " " " "

262 " " " " " "

165 " " " " " "

118 1 BROKEN WIRE

THIS WIRE WAS WITHIN THE GUIDELINES SET BY A.P.I. AND
REPLACEMENT IS NOT REQUIRED AT THIS TIME.

 → MASTER CDU KULLUK

WIRE # 12

WIRE WAS RUN TO ALMOST FULL EXTENSION WITH APPROX 1 1/2
WRAPS REMAINING ON DRUM. THE FOLLOWING RESULTS WERE NOTED

779 METRES OUT SLIGHTLY ELONGATED LAY. CALIPER
MEASUREMENT WAS 3.47 INCHES

865 M. 1 BROKEN WIRE

759 M. STRAND 1 3 BROKEN WIRES CALIPER 3.46

" 2 3 " "

" 3 3 " "

755 M. 1 BROKEN WIRE

754 M. 2 " "

700 M. 1 " "

397 M. CALIPER MEASUREMENT 3.48 SLIGHT COROSION

325 M. PARTIAL OPEN LAY ONE STRAND NO KINKING CORE VIS

265 M. 1 BROKEN WIRE

225 M. 2 " "

215 M. 1 " "

196 M. 2 " "

192 M. - 196 M. 2 BROKEN WIRES ON EACH OF 5 STRANDS
OVER 4 M. LENGTH
183 M. 1 BROKEN WIRE
180 M. 1 BROKEN WIRE
113 M. LOOSE LAY FOR APPROX 1M. NO CORE VISIBLE

THIS WIRE WAS WITHIN THE GUIDELINES OF A.P.I. FOR 6X47 WIRE AND REPLACEMENT IS NOT REQUIRED AT THIS TIME.

↳ MASTER CDU KULLUK

PROPRIETARY

WIRE # 6

THIS WIRE WAS RUN OUT TO ONLY 770 M. DUE TO DISTANCE AVAIL. FOR BOAT.

FOUR WRAPS REMAINING ON THE DRUM WERE IN LIKE NEW CONDITION WITH THE EXCEPTION OF ONE VERY SLIGHTLY FLATTENED AREA NO MORE THAN 12 INCHES IN LENGTH VISIBLE.

ONLY ONE BROKEN WIRE WAS OBSERVED AND THAT WAS AT 165 M. THIS WIRE IS WITHIN THE GUIDELINES OF A.P.I. FOR 6X47 WIRE AND REPLACEMENT IS NOT REQUIRED.

↳ MASTER CDU KULLUK

WIRE # 7

#7 WIRE WHICH HAS BEEN RUN OUT AS PART OF THE WINTER MOORING SYSTEM WAS PAYED OUT TO 574 M. WHERE A DAMAGED SECTION WAS SEEN ON THE DRUM. AT THIS POINT IT SHOULD BE NOTED THAT THERE WAS EXTENSIVE DAMAGE MAINLY BROKEN WIRES AND KINKING. AN AREA OF APPROX. 5 M. HAD NUMEROUS BROKEN WIRES THE WORST OF WHICH IS ONE ROTATION OF LAY WITH BROKEN WIRES AS FOLLOWS.

STRAND 1	4 BROKEN WIRES
" 2	5 " "
" 3	9 " "
" 4	10 " "
" 5	5 " "
" 6	7 " "

THIS WIRE THEREFORE DOES NOT COMPLY WITH A.P.I. SPECS FOR 6X47 WIRE AND MUST BE REPLACED.

↳ MASTER CDU KULLUK

WIRE # 1 WAS RUN OUT TO 983 M. AND VISUALLY INSPECTED WITH THE FOLLOWING RESULTS:

967 M.	1	BROKEN WIRE
928 M.	1	" "
894 M.	1	" "

880 M.	2	"	"	
859 M.		SLIGHTLY OPEN LAY	ONE STRAND LESS THAN ONE TURN	
839 M.	"	"	"	3 TURNS
734 M.	3	BROKEN WIRES	THREE CONSECUTIVE STRANDS	
713 M.	1	"	WIRE SLIGHTLY OPEN STRAND	
700 M.		CALIPER MEASUREMENT	3.50"	
683 M.	1	BROKEN WIRE		
663 M.	1	"	"	
633 M.	1	"	"	
552 M.	1	"	"	
548 M.	2	"	"	ON 2 CONSECUTIVE STRANDS
500 M.		CALIPER	3.49"	
479 M.	1	BROKEN WIRE		
459 M.	2	"	"	ON 2 CONSECUTIVE STRANDS
451 M.	1	"	"	
443 M.	1	"	"	
421 M.	1	"	"	
404 M.	3	"	"	3 " "

(# 1 WIRE CONT'D)

396 M.	1	BROKEN WIRE	
328 M.	3	"	3 CONSECUTIVE STRANDS
321 M.	1	"	"
317 M.	1	"	"
297 M.	1	"	"
296 M.	1	"	"
278 M.	3	"	"
272 M.	1	"	"
248 M.	1	"	"
245 M.	2	"	2 " "
239 M.	1	"	"
216 M.	1	"	"
151 M.	2	"	"
145 M.	2	"	"
133 M.	2	"	, 2 ON STRAND 2
108 M.	2	"	STRAND 1

1	"	"	"	2	.
3	"	"	"	3	.
1	"	"	"	4	.
2	"	"	"	5	.
2	"	"	"	6	.
2	"	"	"	1	5, / / / / / / / / / /
1	"	"	"	2	.
1	"	"	"	3	.
2	"	"	"	4	.
3	"	"	"	5	.
2	"	"	"	6	.
3	"	"	"	1	.

WITHIN
2
METER
LENGTH

PROPRIETARY

	2	"	"	"	2
	1	"	"	"	3
99 M.	1	"	"	"	
95 M.	4	"	"	"	1
	4	"	"	"	2
	4	"	"	"	3
	2	"	"	"	4
	3	"	"	"	5
	3	"	"	"	6
	1	OPEN	"	"	1
	4	BROKEN	"	"	2
	3	"	"	"	3
	1	OPEN	"	"	4
75 M.	1	BROKEN	"		
74 M.	2	"	"		
73 M.	2	"	"		
72 M.	2	"	"		
71 M.	1	"	"		

THIS WIRE CONFORMS TO A.P.I. SPECS HOWEVER IT IS RECOMMENDED TO CROP 108 M. FROM THE END AND RESOCKET

KPN → MASTER CDU KLUK

PROPRIETARY

10 WIRE

THIS WIRE WAS RUN OUT TO THE LAST WRAP ON THE DRUM AND INSPECTED AND IN THE ENTIRE LENGTH ONLY ONE BROKEN WIRE AT THE 86 M. WAS NOTED, CONSEQUENTLY THIS WIRE DOES CONFORM TO A.P.I. SPECS. AND NEED NOT BE REPLACED.

KPN → MASTER CDU KLUK

#3 #9 & #7 wires were condemned and will be replaced by new wires in the loadout off Tuk Seaboy. Estimated time of Arrival July 8 1993

Regards
 Kerry Nee →
 Master CDU KLUK



DATE: July 29, 1993

SUBJECT: GAS MONITORING ON AIR LIFT

FROM: Fred Johnson

TO: Tom McKay

Gas is being monitored while we are drilling riserless (30" and 20" intervals) and using the airlift system in the following ways

1. The airlift returns have ben routed to the gumbo box which dumps into the possum belly where Sperry has their mud gas detector rigged up. We are bypassing the shaker screens so the level in the possum belly is low bu t the mud gas detector is sampling the atmosphere in the possum belly and would detect gas if it were there. The gas would break out of the seawater in the possum belly and be detected. i have discussed this with the Mudloggers and they are monitoring.
2. The shaker/pit room is a Class 1 Div 1 area and has a combustible gas detector rigged up to an alarm system. This is part of the rig system. The detector is located just behind the shakers.
3. The moonpool is a Class 1 Div 2 area and has a combustible gas detector. This detector is located above the trip tank in the moonpool area. This is part of the rig safety equipment also.

PROPRIETARY

RIG SURFACE TEST EQUIPMENT MODIFICATIONS

A number of surface testing equipment modifications are planned and in progress for the 1993 testing operation onboard the Kulluk. Halliburton Reservoir Services (HRS), ARCO's surface testing contractor for the project, will be coordinating these modifications. HRS has also produced a short video detailing some of the major modifications to be made which is available for viewing and discussion on request. These modifications are explained as follows:

Communications

Improvements to the communication system onboard the Kulluk have been done for increasing the security and reliability of transmitting confidential test information between parties on the rig.

Surface Storage Test Tank Stability

As in 1992, ARCO plans to place ten (10) upright 400 barrel test tanks on the Kulluk deck to produce into and store any crude oil and other fluids produced during testing operations. The question of the stability of these tanks during various sea states has been formally evaluated by ARCO Plano's marine engineering personnel, and they have concluded that the tanks are indeed capable of withstanding the most severe sea states expected in the Kuvlum prospect area.

One recommendation this evaluation generated however, was to clamp the tanks to the deck, and to "package" the tanks together using steel bars of some sort to increase the overall stability of the tank "farm" on the deck. While the tanks were spot welded to the deck during the 1992 testing period, in 1993 tank stability will be increased substantially. A copy of this tank stability evaluation is available on request.

Test Tank Spill Prevention and Control

The test tank farm on the main deck of the Kulluk will, as in 1992, be "curbed in" using steel curbing welded to the deck for spill containment. ARCO will instruct its Contractors to maintain this curbed area, and to keep the containment area free of snow and standing water which may accumulate. The curbing is designed to contain at the very minimum 110% of the volume held by the single largest vessel within the containment area and takes into consideration displaced volumes of the equipment within the berm area and a 10 year average rainfall.

PROPRIETARY

These tips will be removed from the Kulluk at the completion of operations, but available for use on future ARCO operations.

Condensate gas scrubbers were installed on the low pressure gas lines at the base of the burner booms. These scrubbers will remove any condensate or water that forms in the gas line prior to exiting the flares. The Coanda effect flare tips also aid in burning any residual fluids.

High pressure gas scrubbers could not be installed alongside the low pressure scrubbers due to size limitations. High pressure scrubbers are not deemed to be necessary because 1) the addition of the Kaldair flare tips will eliminate liquid drips and 2) the increased velocity in the high pressure line makes "pooling" of liquids in the line unlikely.

Water Degasser Check Valve on Gas Out Line

The water degasser has been isolated from the system by a two valve closure on the inlet and blind flanging the outlet on the vessel. This was done due to the lack of a pressure relief on the vessel.

Rig Lighting During Testing

Plans are underway to install lights on the flare booms which will illuminate the potential flaring area to increase visibility as per the MMS request during the 1992 operations.

HRS Gas Scrubber

A gas scrubber will be installed on the gas flow line to contain any potential liquid carryover from the primary separator. While the chances of this taking place are remote, it is felt that using the gas scrubber is good insurance.

PROPRIETARY

KUVLUM WELL
FILE

Date: July 23, 1993
To: All Planholders
Kuvlum Prospect Oil Discharge Prevention and Contingency Plan
From: Richard Ranger, ARCO Alaska, Inc.
Exploration Permits and Compliance
Telephone: (907) 263-4318
Facsimile: (907) 263-4966

DATE:	PAGE	CHANGE
07/23/93	NEW Table i-1	New copy of Kuvlum C-Plan Distribution List
07/23/93	1	Replace Statement of Corporate Commitment with signed copy of same

RECEIVED
Anchorage, Alaska

JUL 28 1993

REGIONAL SUPERVISOR
FIELD OPERATION
MINERALS MANAGEMENT SERVICE

Table I-1

KUVLUM PROJECT Oil Spill Contingency Plan Distribution				
Copy No.	Address	MSRT Position Title	Job Title	Name
1	SPCO Anch.	Agency	AK Dept. of Environmental Conservation, State Pipeline Coordinators Office	R. Watkins
2	USCG MSO Anch.	Agency	U.S. Coast Guard, MSO Anchorage	M. Miller
3	Barrow	Agency	Mayor, North Slope Borough	J. Kaleak
4	DOI Anch.	Agency	U.S. Dept. of the Interior, Office of Environmental Affairs	Gates
5	MMS Anch.	Agency	Minerals Management Service, Field Operations	RSFO
6	MMS Anch.	Agency	Minerals Management Service, District Office	School
7-8	MMS Anch.	Agency	Minerals Management Service, Library (Public File Copies)	
9	Kulluk Rig	On Site Response/IRT IC	Project Drilling Supervisors (on rig)	B. Campbell/S. Schultz Bumgarner/B. Morrison
10	Kulluk Rig	On Site Response/IRT IC	Canmar OIM/Superintendent (on rig)	
11	Canmar Supplier	On Site Response	Alaska Clean Seas IRT	
12	Miscaroo	On Site Assist	Chief Officer	
13	Kalvik	On Site Assist	Chief Officer	
14	Ikaluk	On Site Assist	Chief Officer	
15	ATO 1420	Incident Commander	Manager, Exploration Drilling	D. J. Ruckel
16	ATO 1400	Well Control Ops	Project Area Drilling Superintendent	D. R. McKelvey
17	ATO 1428	Well Control Engineering	Project Area Drilling Engineer	M. B. Winfree (Prim)
18	ATO 1928	Planning Section Chief	Exploration Permits & Compliance (Prim)	R. L. Ranger
19	ATO 1960	Deputy/Planning Section	Drilling Compliance Coordinator	L. L. Brown
20	ATO 1438	Well Control Operations	Project Drilling Engineer	T. W. Mc Kay
21	Canmar/Calgary	Well Control Operations	CANMAR Rig Operations	N. Vanderkooy
22	Beaudril/Calgary	Well Control Operations	BEAUDRIL Coord. Mktg and Engineering	G. A. Pidcock
23	ACS Anch.	Planning Section	ACS Planning Sec. Chief	B. McKenzie
24	ACS Deadhorse	Beaufort Sea Recovery Ops	Alaska Clean Seas Ops Section Chief	W. Mackie P. Larsen
25	PRB 7	Liaison Officer	Director, Field Environmental Compliance	R. Hoffman R. Elder
26	PRB 45	Shoreline Response Ops	Spill Specialist	N. J. Mabile R.J. Helinski
27	PRB 19	Alt Deputy Incident Commander or Alt Deputy Planning Sec. Chief	Superintendents, Gas Plants (Alternate) Superintendents, Flow Stations/LPC (Alt)	G. From J. Roam
28	ATO 1396	Safety Officer	Kuparuk Safety Engineer	J.L. Pierson
29	ATO 1426	Deputy Incident Commander	Regional Drilling Engineer (Primary)	R.F. Morgan
Page 1 of 3				

Table I-1

KUVLUM PROJECT Oil Spill Contingency Plan Distribution				
Copy No.	Address	MSRT Position Title	Job Title	Name
30	PRB 31	Safety Officer	Safety & Training Supervisor	G. Holt T. Christenson
31	ATO 2048	Public Information Officer	Manager Media Communications	S. Reed(Primary) R. Chappell
32	ATO 2084 ATO 2086	Legal Officer	Senior Attorney, Legal	S.R. Porter (Primary) A. Sorensen (Alt.)
33	ATO 2028	Government Liaison Officer	Mgr. Federal Government Relations	J. M. Posey
34	ARCO Fairbanks	Community Liaison Officer	Director, Northern Reg. Public Affairs	J.J. Cook
35	ATO 2032	Community Liaison Officer	Director, Exploration Permits & Compliance	S. B. Porter
36	ATO 1992	Science/Environmental Liaison	Director, Environmental Science	K. J. Donajkowski (Prim.)
37	ATO 1370	Science/Environmental Liaison	Director New Ventures Permitting	J. M. Short (Alt.)
38	ATO 1402	Operations Section Chief	Area Drilling Superintendent (Prim)	D. B. Stoltz
39	Canmar/Calgary	Rig Contractor Representative	CANMAR Mgr. Drilling Operations (Prim)	C. M. Helmer
40	Canmar/Anch.	Rig Contractor Representative	CANMAR Alaskan Operations	O. Monteith
41	ATO 1404	Well Control Operations	Project Drilling Engineer	F. C. Johnson
42	ATO 1405	Well Control Operations	Project Drilling Engineer	G. L. Alvord
43	ATO 1436	Well Control Operations	Project Drilling Engineer	T. E. Maunder
44	PRB 41	Staging Area Manager	Drill Site Maintenance Supervisor	E. Campbell E. Vaughn
45	PRB 7	Environmental Unit Leader	Coordinator, Field Environmental Compl.	B. Gerken B. Colver
46	ATO 1996	Environmental Unit, Planning	Senior Consultant, Aquatic Sciences	M. A. Bozeman
47	ATO 1986	Environmental Unit, Planning	Senior Consultant, Air Sciences	W. R. Poteet
48	ATO 1992	Environmental Unit, Planning	Senior Consultant, Biological Sciences	M. R. Joyce
49	ATO 1976B	Environmental Unit, Planning	Project Compliance Coordinator	L. Humphrey
50	ATO 1968		Mgr., Prudhoe/Lisb. HS & E	R.E. Morris
51	ATO 1932	Situation Status Unit Leader	Exploration Permits & Compliance	M. J. Schindler
52	ATO 1207	Situation Status Unit, Planning	Project New Ventures Engineer	J. Eldred
53	ATO 1290	Situation Status Unit, Planning		T. Scarbrough
54	ATO 1950	Situation Status Unit, Planning	Area Landman, Kuvlum Project	D. Sutter
55	PRB 6	Resource Status Unit Leader	Maintenance Planning Specialist	K. Axelson L. Erickson
56	ATO 1962	Documentation Unit, Planning	Exploration Permits & Compliance	W. J. Grether
57	ATO 1988	Local Response Team Unit Ldr	Senior Consultant, Exploration	R. R. Griffeth
58	ATO 1916		HS & E Risk Management/Audit	H.R. Engel
59	ATO 1409	Demobilization Unit Leader	Drilling Materials Coordinator	C. Gentz
60	ANO 680	Demobilization Unit, Planning	Purchasing & Transportation	B. Gilmore
				Page 2 of 3

Table I-1

KUVLUM PROJECT Oil Spill Contingency Plan Distribution				
Copy No.	Address	MSRT Position Title	Job Title	Name
61	PRB 3	Logistics Section Chief	Camp Services Supervisor	Randy Burdick Troy Arterbury
62	ATO 1354	Communications Unit Leader	Project Exploration Network Services	A. J. Lyford P.J. Allen
63	PRB 36	Communications Unit, Planning	PBO Communications Supervisors	P. Elverum G. Hendricks
64	PRB 32	Finance Section Chief	Field Business Analyst, 1	T. Williamson M. Gibbs
65	ATO 928	Finance Section Chief (Alt)	Kup/Expl Business Group Director	J. Thomas
66	ATO 556	Contracts Admin. Finance	Contracts Director	D.R. Miller
67	ATO 1407	Contracts Admin. Finance	Drilling Analytical Supervisor	S. Walters
68	ARCO LA	Insurance/Claims, Finance	Insurance Manager, Corporate	R. O. Merrill E.H. Germer
69	ARCO LA		ARCO Corporate Spill Response Team	S. Robertson
				Page 3 of 3

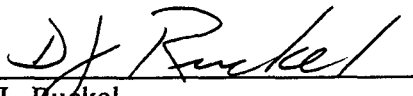
**KUVLUM PROSPECT
EASTERN ALASKAN BEAUFORT SEA**

STATEMENT OF CORPORATE COMMITMENT

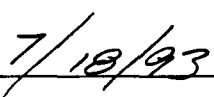
A drilling program will be conducted in the Kuvlum Prospect offshore exploration area (Eastern Alaskan Beaufort Sea) utilizing a drilling rig contracted by ARCO Alaska, Inc. ARCO's priorities with regard to contingency plan development are personnel safety, spill prevention, and minimization of environmental impacts should a spill occur. This Oil Discharge Prevention and Contingency Plan has been prepared to address activities associated with the Kuvlum Prospect area drilling operations in accordance with ARCO's stated priorities.

MANAGEMENT APPROVAL AND MANPOWER AUTHORIZATION

This Oil Discharge Prevention and Contingency Plan has the full approval of management with the authority to commit the necessary resources to fully implement the plan.



D. J. Ruckel
Alaska Exploration Drilling Manager
ARCO Alaska, Inc.
Anchorage, Alaska



Date



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

TAKE
PRIDE IN
AMERICA

JUN 29 1993

Mr. M.B. Winfree
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

Enclosed is the approved Application for Permit to Drill (Attachment 1) for OCS-Y 0865 #1, Kuvlum Prospect, General Conditions of Approval (Attachment 2), and NTL #91-4 reporting procedures (Attachment 3). The API number is 55-171-00009 for the well.

The following items are well-specific conditions of approval:

1. The cement volume for the 13-3/8" casing string must provide annular fill-up to a minimum of 500 feet above the 20-inch casing shoe.
2. Departures in the Application for Permit to Drill (APD) are approved as requested except:
 - a) Regarding a MWD tool failure, an appropriate "benchmark check" of the new MWD tool will be required to ensure consistent readings with the previous tool.
 - b) Arco must inspect the BOP system and marine riser daily with a subsea camera unless a diver inspection is conducted.
3. A "Mooring Analysis and Anchoring Plan" (Section 1.10) states the Kulluk will operate with 12 anchors deployed "when the environmental monitoring information indicates that an ice and/or weather environmental event could potentially occur for which the 8-point system would not be adequate." Arco should clarify and quantify the change-over criteria (8-point to 12-point mooring) in terms of global load or other appropriate specific criteria.
4. Arco must test each casing string to 70% of the burst pressure in accordance with the MMS requirements.
5. BOP/Well Control Equipment Testing
 - a) The diverter sealing element, diverter valves, and all diverter control systems shall be actuation tested not less than once every 24 hours, alternating between control stations;

- b) The BOP system high pressure tests will be of 5 minutes duration at a stabilized pressure for each component;
- c) The configuration for both 10,000-psi and 15,000-psi BOP stacks should be consistent.

6. No wellbore operations are permitted with a zero or negative kick tolerance (KT) without prior MMS approval. Arco must consult with the MMS District Supervisor if the KT is less than 0.5 ppg. A 24-hour summary of the KT value will be reported on the Daily Report submitted to the MMS.

7. Update the 1993 Kuvlum "Regional Ice Surveillance Systems" table (Table 1.1) presented in the Ice Management Section of the Critical Operations and Curtailment Plan with:

- the status of a down-link for the Airborne SAR;
- the specific frequency for the ERS-1/Radarsat imagery;
- the specific frequency for helicopter ice reconnaissance.

8. The "Relief Well Drilling Contingency" letter supplied by Canmar refers to the availability of two drillships for drilling a relief well. Arco must reconfirm the status immediately prior to spudding Kuvlum #2 and provide an update immediately if the status of either drilling unit changes.

9. Exploratory drilling and other downhole activities may be conducted during the fall bowhead whale migration only if a monitoring program has been approved by the MMS and such is actively being pursued. Arco must also provide updated documentation and coordination efforts with subsistence communities to minimize potential conflicts.

Arco must be prepared to suspend or curtail operations within 24 hours upon notification that exploratory activities are causing adverse effects to bowhead whales or that operations are causing unauthorized take of marine mammals.

10. For operations extending beyond October 1, Arco must consult with the District Supervisor regarding late season suspensions and abandonment considerations.

11. No drilling operations may commence until the revised Oil Spill Contingency Plan has been submitted and approved by the Regional Supervisor, Field Operations.

In addition to the above conditions, the following are items the MMS will be checking during our first onsite inspection prior to drilling:

- crane operating restrictions or criteria in place for operations near the motion compensated satellite dish;

Mr. M. B. Winfree

3

- mooring system verifications (documentation of the nondestructive tests and visual inspections of the mooring line conducted by Arco and its contractor);
- record of the factory calibrations of the Performance Monitoring System;
- verification of the anchor tension monitoring system repairs;
- actual maximum anchor winch tension capabilities (286 T; 260 mT per Operations Manual).
- gas detector in airlift system;
- USCG certifications (when completed);
- well test system upgrades (when completed).

If you have any questions regarding these conditions, please contact Jim Regg at (907) 271-6188 or Brian Schoof at (907) 271-6066.

Sincerely,

Orig. Signed by
D. Choromanski

Douglas R. Choromanski
Acting Supervisor, District Office
Field Operations

3 Enclosures

bcc ~~6-A~~ OCS-Y 0865 6-B Area/District
Chronos (Area/Dist/ROS/ORR/CC/RD)

F:\USERS\ROS\BSchoof:JRegg:jr:nep:nll:062993\ARCO_APD.LTR



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region

949 E. 36th Avenue, Room 603

Anchorage, Alaska 99508-4302



B June 1993

Capt. Max Miller
Marine Safety Office
United States Coast Guard
510 L Street, Suite 100
Anchorage, Alaska 99501

JUN 25 1993

Dear Capt. Miller:

Enclosed please find our Notice to Lessees #91-4 which has our telephone reporting procedures and numbers for 24-hour reporting.

If you should have any questions regarding this information, call me at (907) 271-6066.

Sincerely,

Orig. Sgnd. By ~~Brian Schoof~~

Brian F. Schoof
Supervisor, District Office
Field Operations

Enclosure

bcc: ✓ OCS-Y 0865 #1 6A-Area District
Chronos - Area/District/CC/RD

BSchoof:6-25-93:nep:final:6-25-93

F:\USERS\BOS\DOC\MILLER.LTR
COMMON

DR Chyngma 12 June 93

JUN 8 1993

Mr. M. Winfree
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

In reviewing our well data files for the Kuvlum OCS-Y 0866 #1 well, it was noted that a water analysis from the DST's was not received. We request these data at this time.

Sincerely,

Orig. Sgnd. By Brian Schoof

Supervisor, District Office
Field Operations

bcc: OCS-0866 #1 - 6A Area/~~District~~
Chronos Area/District/CC/RD
DChoromanski:6-08-93:drc/nll:dc/arcolet2



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region

949 E. 36th Avenue, Room 603

Anchorage, Alaska 99508-4302



MAY 21 1993

Memorandum

To: Deputy Associate Director for Operations and Safety Management
From: ^{Acting} Regional Director (sgnd) Irven F. Palmer, Jr.
Subject: Certificate of Financial Responsibility (COFR)

We understand that ARCO Alaska, Inc. (ARCO), has filed an application with the Minerals Management Service (MMS) pursuant to Notice to Lessees (NTL) 93-1N for a COFR for all of its outer continental shelf facilities/operations to satisfy the requirements of the Oil Pollution Act of 1990 (OPA). Apparently, ARCO originally filed the application with the U.S. Coast Guard (USCG) and was advised to resubmit the application to the MMS. ARCO is the designated operator and lessee for the proposed Kuvlum exploratory drilling program to be conducted this summer, and we need to determine and document that ARCO is in compliance with the NTL. We presume that a designation of operator for the well(s) filed pursuant to 30 CFR 250.8 provides the basis for ARCO to be the responsible owner or operator for financial responsibility.

During a teleconference between Dick Giangerelli and Jeff Walker, Dick indicated the application had been received, but that additional information may be needed to process the application and issue the certificate. However, Dick also indicated that because the application had been originally submitted to the USCG prior to the effective date of the OPA, ARCO was in compliance with the NTL. Dick said that the Region could proceed to process and approve the Application for Permit to Drill (APD) for ARCO's Kuvlum well.

We would like to confirm and document for our records that ARCO has complied with the NTL. We would appreciate a memorandum documenting the status of the application and whether or not the application is satisfactory to proceed with approving the APD. ARCO is planning to mobilize in early July, and we would like to resolve any questions as soon as possible.

As discussed with Offshore Inspection Steering Committee personnel during Rodney Smith's recent visit to Herndon, we believe there needs to be some procedures and guidelines established to determine the responsible owner/operator for financial responsibility purposes (e.g., lessee, designated operator, unit operator, contractor, etc.).

We do not believe the MMS should be permitting activities without determining that appropriate COFR has been furnished. We are including a list of specific questions regarding financial responsibility in separate memorandum.

bcc: Kuvlum 0866 6-A
RSFO - Gulf of Mexico OCS Region
RSFO - Pacific OCS Region
Chronos (area/dist/ora/cc/rd)

JWalker:pmw:5/19/93:5/21/93
F:\users\ora\cfr



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302



MAY 7 1993

Mr. D. Sutter
ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Sutter:

The Kuvlum #1 Well, OCS-Y 0866, Block 673, is determined as a well capable of producing oil in paying quantities, as provided under 30 CFR 250.11, as per your enclosed request of March 5, 1993.

If you have any questions, please feel free to call me at (907) 271-6066.

Sincerely,

Orig. Sgnd. By Brian Schoof

Brian F. Schoof
Supervisor, District Office
Field Operations

Enclosure

bcc: ✓ 0866#1 6A - Area/District
Chronos - Area/District/CC/RD RDS
BSchoof:5-7-93:nll:bs\arco_prod

ARCO Alaska, Inc.
Post Office Box 100360
Anchorage Alaska 99510-0360
Telephone 907 276 1215



March 5, 1993

U.S. Minerals Management Service
Attention: Mr. Allen D. Powers, Regional Director
949 East 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

Re: Determination of Well Producibility
Kuvlum #1 Well
OCS-Y-0866, Block 673
Flaxman Island Area
Eastern Beaufort Sea

RECEIVED
4:15 PM
MAR 5 1993

REGIONAL SUPERVISOR, ALASKA OCS
MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

Gentlemen:

We hereby respectfully request that the Kuvlum #1 Well be determined as a well capable of producing oil in paying quantities, as provided under 30 CFR 250.11.

The production test on this well began on September 30, 1992 and was completed on October 4, 1992. A representative from your office, Mr. Jim Reggs was present during the time of the testing of the well. The test results from this well have already been provided to your office. Additionally, we have included the PVT data from the oil sample that was taken, as well as a breakdown of lifting costs associated with the Kuvlum #1 Well. Should you need additional information to qualify the Kuvlum #1 Well, please advise the undersigned and I will be happy to provide it to you. We would respectfully request that this data be held confidential in accordance with 30 CFR 250.18.

We intend to unitize Block 673 with additional leasehold around the block and plan to have a formal unit proposal and a request for suspension of production submitted to you no later the end of this month. Therefore your attention to this request prior to that date would be very much appreciated.

If you have any questions, please feel free to call me at (907) 263-4933.

Very truly yours,

David A. Sutter
District Landman

:jls

cc: Kuvlum Working Interest Owners

RECEIVED
Anchorage, Alaska

MAR 8 1993

REGIONAL SUPERVISOR
FIELD OPERATION
MINERALS MANAGEMENT SERVICE



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302



MAY 7 1993

Mr. D. Sutter
ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Sutter:

cc: 40866, Block 613
The Kuvlum #1 Well is determined as a well capable of producing oil in paying quantities, as provided under 30 CFR 250.11, as per your enclosed request of March 5, 1993.

If you have any questions, please feel free to call me at (907) 271-6066.

Sincerely,

Orig. Sgnd. By Brian Schoof

Brian F. Schoof
Supervisor, District Office
Field Operations

Enclosure

bcc: 40866#1 6A - ~~Area~~/District
Chronos - Area/District/CC/RD
BSchoof:5-7-93:nll:bs\arco_prod



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 603
Anchorage, Alaska 99508-4302



MAY 7 1993

Mr. M. Winfree
ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

The API number for the for OCS-Y 0865 #1, Kuvlum Prospect, is 55-171-00009. The following items need to be worked on or submitted for the Application for Permit to Drill (APD) which was submitted for the Kuvlum #2 well.

The American Bureau of Shipping and U.S. Coast Guard certificates for the 1993 inspections should be submitted as soon as possible after completed.

A date for submitting the final location plat should be set in the plan. We would suggest a week after the anchors are down and the well is spudded.

Item 9 shows an estimated water depth of 103 feet per well location. Other sections in the APD include a water depth of 96 feet, such as in the drilling time curves. A consistent water depth should be reported throughout the form and accompanying documentation.

The cement volume reported for the 13-3/8" casing string in section 20 doesn't appear to be sufficient to comply with MMS regulations.

The departure from the 500 foot directional survey requirements in the event of MWD tool fails will be honored unless the hole goes into a directional hole or goes over a total 500 foot interval without having any reference to direction (i.e. tool fails then drilling cannot proceed beyond 500 feet).

ARCO should check their calculations accompanying the departure for displacing the riser with sea water as per the calculations supplied. It appears that ARCO will be

drilling a 67 foot gloryhole. This is assuming the 103 foot water depth which is inconsistent with other sections of the APD.

The request for lower BOP test pressures will be approved providing that they are tested to anticipated surface pressures and anticipated surface pressures are listed as a part of the APD.

The departure request from the required H₂S drills, drilling within 24 hours after duty begins onboard refers to an incorrect regulation. The correct regulation is 30 CFR 250.67. Also, it should be stated that if a departure from the 24 hours is requested, what will be the timeframe in which they will be trained by.

On the drilling time curves, the setting depth for 30" casing should be 300 feet according the Form 331-C, not 297 feet as indicated. Also, the water depth is inconsistent with that reported on the APD form.

Section 2.2 refers to a final geopressure analysis. This should be submitted before the APD is approved.

Section 2.6 in casing design calculations, the casing length used in a the 30", 20", 13-3/8", 19-5/8" calculations appear to be incorrect. For example, the setting depth for the 30" casing string is 300 feet as measured from the KB. This represents 86 feet of casing instead of 300 feet, assuming a 54 foot glory hole depth, 103 foot water depth, and 66 feet from the KB to sea level. The wall thickness for the 13-3/8" surface casing should be .48" instead of .98".

Section 2.7 Casing Tests. The text following Table 2.4 suggest revising test pressures pending MMS approval. If ARCO is requesting a departure for a lower test pressure the test pressures should be listed within the table to be followed in the APD.

Section 2.8 - Figures and Tables. Table 2.7 includes safety design and casing factors for a contingency production long string. Approval of the APD will not cover the 7" long string unless a submittal is made with other appropriate information such as the cement and testing.

Figure 2.1 - Proposed Well Bore Schematic. This shows a inconsistent water depth of 96 feet and a depth of structure casing of 320 feet.

Figure 2.2 - Contingency Well Bore Schematic. This shows the same inconsistencies as identified in Figure 2.1.

Section 4.8 discusses the mud qualities need to ensure well control. Under the assumption for polimar calculations, which refers to a maximum hole volume of 1200

barrels. Why has this changed from the 1700 hole volume for the barite? There appears to be a 500 barrel discrepancy.

Please check the cement volume include on MMS 331C for the 13-3/8" casing string. It appears to be short for compliance with MMS regulations.

In Attachment 4, which discusses kicks, kick tolerances, and cessation of drilling operations, ARCO should put into the plan the policy as which drilling operations should cease and casing would be run.

Section 2.D, page 2, Table 1.B. Is there an H2S detector in the bell nipple or are you going to request a departure identifying the same level of protection if no detector is available in the bell nipple.

The phone numbers listed on page 10 for MMS of the H2S contingency plan should be revised to (907) 271-6066 primary and (907) 271-6065 alternate.

Page C.9 refers to equipment that will be stored on the CANMAR supplier. It has been indicated on previous discussions that the supplier was not going to be used for the Kuvlum #2 well. If not, where is the equipment going to be stored.

Page C.11, Table 1.B, refers to one H2S safety equipment package. The package should be listed as to types of equipment, such as bull horns, retrieval rope, portable detectors, etc.

Table 2.C, page C.16, should be consistent with Table 1.B regarding the volume of zinc carbonate, which was 200 stacks.

The dedicated H2S vessel should be identified so that the special drills identified in the plan are conducted and can be verified.

It should be noted that the requirements for the crew to be clean shaven is not an MMS requirement as stated on pages D.3 and D.4. MMS requires that the equipment manufacturers recommendations be followed.

With the relief well drilling contingency, CANMAR refers to the availability of two drilling ships for drilling and relief well. Should any changes take place the status should be reconfirmed at that time.

Why is there a reduction of the mobilization time from 7 weeks to a plus or minus 3 weeks in the relief well planning?

The Critical Operations and Curtailment Plan (COCP) is still under review and we would encourage ARCO to submit any updates to the COCP that have been discussed as soon as possible.

Sincerely,

Orig. Sgnd. By Brian Schoof

Brian F. Schoof
Supervisor, District Office
Field Operations

bcc: QCS-Y 0865 6a - Area/District
Chron's Area/District/CC/RD
BSchoof:5-07-93:nll:arco_0865

PROPRIETARY

**UNITED STATES GOVERNMENT
MEMORANDUM**

To: District Supervisor
From: District Engineer (Drilling)
Subject: Kuvlum #2 Application for Permit to Drill (APD) (OCS-Y 0865 #1)

General Observations (APD Cover Letter)

1. The lease identified for the APD (OCS-Y 0865, Block 672) has not been included in the current Exploration Plan (EP). ARCO Alaska, Inc.'s (ARCO), APD cannot be approved until the EP revisions (forthcoming per Mark Schindler) have been reviewed for concurrence and a decision made regarding consistency. (Note that if decision made to require consistency for significant revisions, the APD could not be approved until consistency granted by the State.)
2. A formal submittal date should be set for the receipt of the official survey plat. I suggest giving ARCO 7 days after the Kulluk "anchors up on location" to submit the plat. ARCO tends to forget about our submittal requirements unless we make it clear to them what is required and when.
3. Lease assignments occurred in November 1992 to realign the interest/ownership of the Kuvlum Prospect leases. Formal designation of operator forms (MMS-1123) will be required for the OCS-Y 0865 well and any other subsequent wells proposed by ARCO. Mark Schindler was informed of the needed MMS-1123 forms on March 22, 1993.
4. The American Bureau of Shipping and U.S. Coast Guard certificates for the 1993 inspections should be submitted within 7 days after completion of the inspections (apparently scheduled for the mobilization period).
5. The API number for the proposed well is 55-171-00009.

APD Form MMS-331C

1. Item 9 shows an estimated water depth of "103 feet" for the well location. Other sections in the APD include a water depth of 96 feet (Drilling Time Curves). A consistent water depth should be reported on the form and in the accompanying documentation.
2. The cement volume reported for the 13-3/8 inch casing string in section 20 of Form MMS-331C is not sufficient to comply with Minerals Management Service (MMS) regulations. See "Cement Program" calculation spreadsheet prepared by Jim Regg dated March 18, 1993.

Requested Departures from MMS Regulations

1. ARCO requests a departure from 500-foot directional survey requirements in the event the measurement while drilling tool fails until such time that the next required bit change or casing point is reached. ARCO refers to repairing or replacing the tool if it should fail. ARCO should identify the provisions for a "benchmark check" of the new and old tools to document any necessary corrections. ARCO should be aware that the MMS is also interested in knowledge of the wellbore location for relief well purposes in addition to crossing lease lines.
2. ARCO should check their calculations accompanying the departure from displacing the riser with sea water. Per the calculations supplied, it appears that the company will be drilling a 67-foot glory hole (assuming a 103-foot water depth) which is inconsistent with other sections of the APD (Figure 2-1 and others).
3. ARCO's reason for lower blowout prevention (BOP) test pressures includes reference to pressure testing as the "primary source of wear while the stack is in service." If available, we would appreciate receiving ARCO's information which leads to such a conclusion. Testing requirements, maintenance, and wear of BOP system components is an area which the MMS is currently studying for possible changes to the existing regulations.
4. The departure request from required "H₂S drill within 24 hours after duty begins onboard for all personnel" refers to the incorrect regulation. The correct regulation is 30 CFR 250.67. Also, it should be stated clearly to ARCO that the requirement for H₂S training for all personnel must still be completed within 24 hours after duty begins onboard.

Drilling Time Curves

The setting depth for the 30-inch casing string should be 300 feet according to Form MMS-331C, not 297 feet as indicated. Also, the water depth is inconsistent with that reported on the APD form.

APD

1. Section 2.1.b. presents the recommendations from the shallow hazards analyses performed by both Fugro and Deepsea Development Services. Included was the use of a higher-weight mud system in the shallow part of the well due to potential shallow gas and hydrate problems. ARCO should be required to use the heavier weighted mud being proposed as "kill mud" to avoid the potential for shallow hazards problems. (Check the MMS shallow hazards site clearance analysis).

2. Section 2.1.d. refers to increasing the glory hole depth "from 35-40 feet to 40-45 feet." ARCO should provide documentation for only deepening the glory hole 5-10 feet.

3. Section 2.2 refers to a Final Geopressure Analysis. This should be submitted before the MMS approves the APD.

4. Section 2.6, Design Calculations:

- The casing length used in 30-, 20-, 13-3/8-, and 9-5/8-inch calculations appear to be incorrect. For example, the setting depth for the 30-inch structural casing is 300 feet as measured from the kelly bushing; this represents 86 feet of casing instead of 300 feet (assuming ARCO's 45-foot glory hole depth; 103-foot water depth; and 66 feet from the kelly bushing to sea level).

- The wall thickness for the 13-3/8-inch surface casing should be .48-inch instead of .98-inch. We note that this error was brought to ARCO's attention last year. It should be corrected before any other APD's are submitted to this office;

- The MMS casing design analysis is okay (see Jim Regg's spreadsheet analysis dated March 3, 1993)

5. Section 2.7, Casing Tests:

- Text following Table 2-4 suggests revising test pressures "pending MMS approval." It is unclear if ARCO is requesting a departure for lower casing test pressures. ARCO follows this with the statement that a "reasonable approach should be taken when establishing test pressures." The MMS regulations call for testing casing to 70 percent of the burst pressure; this is a reasonable approach. ARCO should comply with the MMS requirements.

6. Section 2.8, Figures and Tables:

- Table 2-7 includes casing design safety factors for a contingency Production Longstring. ARCO should be reminded that a request of a change in plans (sundry notice) would be needed if a decision is made to run the longstring. Approval of the APD should not cover the 7-inch longstring unless ARCO submits the other appropriate information (cement, testing, etc.).

- Table 2-10 shows the expected mud weights for the Kuvlum #2 well. ARCO identifies low mud weights (seawater) for the drilling of 30-inch and 20-inch hole sections. ARCO should consider running a higher mud weight to reduce the risk of an influx at these shallow depths. This is especially important given the shallow hazards assessment in the APD and the fact that these sections of hole will be drilled riserless. Keeping the higher weight kill mud available is not a valid approach for controlling a shallow kick, especially given the lack of a pit gain as an early alarm. (Check the MMS shallow hazards site clearance analysis.)

- Figure 2-1 (Proposed Wellbore Schematic) shows an inconsistent water depth (96 feet) and setting depth for the structural casing (320 feet) as compared to previous sections of the APD. The inconsistencies should be corrected.

- Figure 2-2 (Contingency Wellbore Schematic) shows the same inconsistencies as identified in Figure 2-1. In addition, the 30-inch casing is shown as being drilled into place with a 36-inch hole. This is inconsistent with our understanding of the drilling-in process and should be clarified.

7. Section 3.1 identifies a proposed glory hole depth of approximately 40 feet below mudline. The height of the 15M BOP stack is approximately 26 feet (top of guide posts after disconnect LMRP). ARCO should demonstrate that 14 feet is sufficient to protect the ice gouging in the area, especially following the ice events at Kuvlum during 1992.

8. Sections 3.2 and 3.3 refer to maintaining "1000 barrels of 11.0 ppg kill mud" on board for the 30-inch and 20-inch hole sections. It is suggested that ARCO use the higher weight mud for drilling these hole sections. Also, the 1000-barrel kill mud figure is inconsistent with later sections in the APD (Section 4).

9. Section 3.4 refers to drilling a pilot hole since this section of the well appears to be the "most potentially troublesome for well control problems." According to the Deepsea Development assessment in Section 2.1, faults near the surface were of concern since they would serve as "a conduit for gas migration from deeper reservoirs." This is further reason for requiring ARCO to drill the upper sections of the wellbore with the higher weighted mud. The same comment applies to Section 3.14.

10. The BOP Testing Schedule included in Table 3-6 should be updated with the BOP test pressures if the well remains active after setting the 7-inch production liner.

11. Section 4.1, Mud Design - 30" Casing Drill Section:

- The mud properties appear to have been copied from the Kuvlum #1 APD and are not consistent with previous discussions in the Kuvlum #2 APD (i.e., Table 2-10 refers to 9.0 ppg mud; Section 4.1 refers to 8.6 ppg mud).

- See previous comments regarding the use of higher mud weights (comments #1 and #6) and the amount of kill mud to be available (comment #8). Regarding the kill mud volume, it is unclear how this relates to the 880-barrel active mud volume referred to in Section 4.8.

- the same comments apply to Section 4.2.

12. Section 4.8 discusses the mud quantities needed to ensure well control. I performed calculations of the hole volume assuming 12.5-inch hole to 10,000 feet TVDss in order to determine if adequate volumes of barite, polymer, and the H₂S scavenger have been built into the well plan. My observations:

- is 1.5 ppg weight-up a sufficient assumption?
- my calculations reveal a hole volume of approximately 1500 barrels; 2600 barrels of mud capacity is available in the Kulluk mud pits; why has ARCO only assumed 1700 barrels as the active volume for calculating "weight-up" purposes?
- assumptions for ARCO's polymer calculation refers to a maximum hole volume of 1200 barrels; why has this changed from the 1700 barrel hole volume for barite?
- Table I-B of the H₂S Contingency Plan (page C-11) identifies 200 sacks of zinc carbonate; this would be sufficient to treat the entire mud system (hole + reserve pit + active pit).

13. Section 5.0. Cementing Program:

- should discuss provisions for conducting cement bond logs to verify the casing cement jobs;
- the cement volume included on MMS-331C for the 13-3/8-inch casing string (13-3/8-inch by 20-inch annulus) is approximately 250 cubic feet shy of **minimum** compliance with MMS regulations (See "Cement Program" calculation spreadsheet prepared by J. Regg; March 18, 1993);
- ARCO should also include the cement volume for the contingency case of drilling a 36-inch hole for the 30-inch casing.

4. Attachment IV discusses the Kick Tolerance policy. ARCO should be notified that no operations with a negative kick tolerance are permitted without prior MMS approval. Also, this was discussed during our debrief meeting with ARCO; ARCO is expected to respond to the issues we discussed and presented in the follow-up letter dated March 12, 1993.

15. H₂S Contingency Plan:

- it is unclear from Section II.D. (page 2) and Table I-B (page C-11) whether there is a H₂S detector in the bell nipple as required by MMS regulations (250.67(h)(5). ARCO should be asked to clarify this. A formal departure request identifying the same level of protection should be submitted if no detector is available in the bell nipple. This same comment was made on the 1992 Kuvlum #1 APD;
- ARCO should be reminded that the H₂S Contingency Plan requirements must be in place prior to spudding the well (page 4, Section III.A.)
- H₂S training for all personnel must be completed within 24 hours after duty begins onboard; ARCO's departure request to delay drills beyond the 24-hour time-frame is acceptable;
- The phone numbers listed for the MMS on page 10 of the H₂S Contingency Plan should be revised to 271-6066 (primary) and 271-6065 (alternate);
- Page C-9 refers to equipment to be stored on the Canmar Supplier. ARCO indicated in previous discussions that the Supplier was not going to be used for Kuvlum #2;

- Page C-11 (Table I-B) refers to one "H₂S safety equipment package" but is unclear what is included in the package. Also, the Table appears to be incomplete regarding other safety and rescue equipment such as bull horns, retrieval rope, portable detectors, and chalkboards. ARCO should complete the listing prior to our approval;
- Table II-C (page C-16) should be consistent with Table I-B (page C-11) regarding the volume of zinc carbonate (200 sacks);
- ARCO should identify the "dedicated H₂S vessel" so that MMS can verify that the special drills identified in the Plan are conducted (page D-2);
- Should note that the requirements for crew to be clean shaven is not an MMS requirement as stated on pages D-3 and 4.

16. Relief Well Plan:

- The "Relief Well Drilling Contingency" letter supplied by Canmar refers to the availability of two drillships for drilling a relief well. ARCO should reconfirm the status immediately prior to spudding Kuvlum #2;
- Figure 1 should be based on 12,000-foot well (permitted depth) if a worst case scenario is intended as stated. This comment was raised in the review of the Kuvlum #1 APD;
- It is unclear what ARCO is basing the reduction of mobilization time from 7 weeks to +/- 3 weeks. Again, this is not a worst case analysis as identified.

17. The Critical Operations and Curtailment Plan (COCOP) is still under review by the Operations Review and Approval Section. Several issues raised in the letter sent to ARCO on March 12, 1993, will effect the review and the compilation of the Special PINC List. ARCO should be encouraged to submit the updates to the COCP requested in the letter as soon as possible.

bcc: File OCS-Y 0865 (APD) *w/o attachments*

JRegg:jbr:pmw:4/5/93

ORA proprietary disk/apd2.mem

Regg 3/12/93
Butcher 3/12/93

MAR 12 1993

Mr. Mike Winfree
ARCO Alaska, Incorporated
New Ventures Drilling
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Winfree:

The Minerals Management Service (MMS) has initiated a review of the 1992 Kuvlum operations. A meeting was held on February 25, 1993, to discuss several concerns identified in our review. At the meeting were Messrs. Tom McKay and Fred Johnson with ARCO Alaska, Inc. (ARCO), Gary Pidcock of BeauDril, David Geer of Global Marine Drilling, and several MMS staff. We appreciate the opportunity to openly discuss our concerns regarding last year's Kuvlum operations and how this year's activities might be changed to address the MMS concerns. The technical experiences of Messrs. Pidcock and Geer was extremely beneficial in helping us better understand the operating capabilities of the Kulluk and the various procedures involved in operating at the Kuvlum location during 1992.

A number of issues were discussed during the February 25 meeting and a good exchange of information was achieved. We understand that several of the MMS concerns were also of concern to ARCO and changes are being considered. In order for ARCO to specifically address our concerns, we have summarized below the major discussion points and identified where additional information or clarification should be provided to this office.

Well Testing

We understand that several changes are being contemplated for the well test equipment, including modification of the flare lines to integrate a scrubber before the flare and the installation of smokeless flare tips. We have concerns about the existing design and tendency of the flare system lines to collect fluids during flaring operations. We would appreciate ARCO providing the MMS with the flare system design changes and any other changes to be made to the test system.

Also discussed was the use of the Kulluk's outboard lights during flaring. The testing

procedure should provide for the use of such lights to illuminate the area directing under the flare to ensure no pollution is reaching the water or ice surface.

We would appreciate an early opportunity to review plans for testing the Kuvlum No. 2 well.

Data Collection and Reporting

A number of reports were provided to the MMS during the 1992 drilling season by ARCO. Per discussions during our meeting, it is evident that the number of reports provided to ARCO by the various sources (contractors, etc.) resulted in confusion, some mistakes, and mixed sets of units (anchor tensions) in the reports provided to MMS. If needed we would be happy to discuss further the reports the MMS needs to avoid the confusion experienced in 1992.

The meteorological and oceanographic data collection requirements has also apparently caused some confusion with ARCO. The conditions of approval for the 1992 Kuvlum well referred to a set of guidelines (attached to our APD approval letter) which identifies the type of data to be collected and the reporting frequency for the data. Another copy of the guidelines is attached for your information. The guidelines require a final (end-of-well) summary 30 days following completion of the well. We have yet to receive this data for 1992 and understand that it is still being compiled. Questions regarding the data collection requirements should be directed to this office.

Communication

The MMS is very interested in ARCO maintaining effective communications between permitting and drilling personnel and with field personnel, especially given the arrangement of contractor and subcontractors for the Kuvlum drilling effort (relationship of BeauDril and Global Marine to ARCO, for example). A number of requirements established by MMS are part of the regulations while others may be included as conditions of approval to the Exploration Plan and Application for Permit to Drill which may not be evident to all parties. One such instance where this may have been a problem was with the data collection and reporting as presented above. At the meeting, we were told that ARCO is intending to have a workshop or series of workshops prior to the 1993 drilling season to discuss the provisions of the various permits and special operating plans so all affected personnel will understand their responsibilities. We believe this will be an effective method to disseminate information and would be happy to participate if ARCO deems this beneficial.

Critical Operations and Curtailment Plan (COCP)

We understand that ARCO is also conducting a post-1992 review of the effectiveness of the COCP. One area which ARCO is considering making changes is the concept of what is included in the optimum secure procedure. As we noted in the meeting, optimum secure was approved by the MMS as the securing criteria to be used in 1992; similar provisions have been built into the 1993 COCP recently submitted. Any changes being

contemplated by ARCO should be provided in writing and reflected in the COCP as part of the APD.

Some changes are also being considered for the ice monitoring program at Kuvlum during 1993 as part of ARCO's analysis of 1992 performance. Any changes should be updated in the APD for 1993.

Kulluk Mooring System

Several questions were expressed by the MMS regarding the Kulluk mooring system. Specific discussions focused on the anchor pretension tests, operating tensions which exceed the pretension test values, the calculation of global loads, dragging versus breaking strength of anchor lines as criteria for maintaining the vessel on location, and how anchor tensions are integrated into the COCP actions. The presence of Mr. Geer with Global Marine was helpful in trying to better understand the Kulluk mooring system and several good points came out of the discussions. In the meeting it was stated that the pretension tests are based on a mooring analysis done which apparently integrates soil strength information into the designed test tension as a part of the anchoring procedure. The plan should clearly explain the intent of the pretension test and what criteria is used to allow anchor tensions to exceed the pretension value as was experienced during 1992 operations. Any analysis and/or technical information that would support the discussion should be included (i.e. mooring analysis, soil analysis, documented experience in the area). We would also appreciate information regarding the inspection of mooring lines prior to operations.

The vessel offset, as measured by positioning equipment and the riser angle, was stated as being a more reliable indication of the Kulluk's performance than anchor tensions. It was unclear in our discussions what factors and assumptions (e.g., number of anchors deployed) are built into the alarmed vessel offset settings.

The COCP refers to disconnecting the lower marine riser package when anchor tensions are "dangerously high, or 80% of the pretension values." This should be explained as to how this is factored into elevating alert levels in the COCP.

Well Control (Kick Tolerance)

The Kuvlum COCP identifies several kick tolerance levels. Certain actions are tied to and associated with the kick tolerance levels, including changing alert designations (deteriorating wellbore conditions) and specific responses for mud logging, fluids control and monitoring, and preparation for impending situations. The kick tolerance policy is a part of the BeauDril COCP for the Kulluk which has been adopted by ARCO. Per discussions in the meeting, we are expecting a modification in ARCO's plans to reflect either a firm commitment to use the BeauDril kick tolerance policy or provide specific alterations to the BeauDril policy. If alterations are made, the assumptions and engineering principles behind the alterations must be provided as well as the policy which will trigger the shut down of drilling operations and when casing will be run.

Mr. Mike Winfree

4

During the meeting, ARCO agreed to providing the minimum kick tolerance for the day on the daily drilling report submitted to the MMS.

Again, we appreciate ARCO's early coordination and willingness to discuss these issues. We encourage you to consult with the MMS early in the well planning stages so that potential problems can be worked out before time constraints become an issue. Should you have any questions or need additional clarification regarding the above information, please contact Jim Regg at 271-6188 or Brian Schoof at 271-6066.

Sincerely,

Orig. Sgnd. By Brian Schoof
Supervisor, District Office

Attachment

6-A
bcc: ✓ OCS-Y 0866, ~~6B~~ Area/District
Chronos (area/dist/ora/cc/rd)

JRegg\BSchoof:jr:pmw:nll:3/12/93

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ARCO Alaska, Inc.
Post Office Box 100360
Anchorage Alaska 99510-0360
Telephone 907 276 1215



March 5, 1993

U.S. Minerals Management Service
Attention: Mr. Allen D. Powers, Regional Director
949 East 36th Avenue, Room 603
Anchorage, Alaska 99508-4302

Re: Determination of Well Producibility
Kuvlum #1 Well
OCS-Y-0866, Block 673
Flaxman Island Area
Eastern Beaufort Sea

RECEIVED
4:15 PM
MAR 5 1993

REGIONAL SUPERVISOR, ALASKA OCS
MINERALS MANAGEMENT SERVICE
ANCHORAGE, ALASKA

Gentlemen:

We hereby respectfully request that the Kuvlum #1 Well be determined as a well capable of producing oil in paying quantities, as provided under 30 CFR 250.11.

The production test on this well began on September 30, 1992 and was completed on October 4, 1992. A representative from your office, Mr. Jim Reggs was present during the time of the testing of the well. The test results from this well have already been provided to your office. Additionally, we have included the PVT data from the oil sample that was taken, as well as a breakdown of lifting costs associated with the Kuvlum #1 Well. Should you need additional information to qualify the Kuvlum #1 Well, please advise the undersigned and I will be happy to provide it to you. We would respectfully request that this data be held confidential in accordance with 30 CFR 250.18.

We intend to unitize Block 673 with additional leasehold around the block and plan to have a formal unit proposal and a request for suspension of production submitted to you no later the end of this month. Therefore your attention to this request prior to that date would be very much appreciated.

If you have any questions, please feel free to call me at (907) 263-4933.

Very truly yours,

David A. Sutter
District Landman

:jls

cc: Kuvlum Working Interest Owners

RECEIVED
Anchorage, Alaska

MAR 8 1993

REGIONAL SUPERVISOR
FIELD OPERATION
MINERALS MANAGEMENT SERVICE



IN REPLY REFER TO:

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Alaska Outer Continental Shelf Region

949 E. 36th Avenue, Room 603

Anchorage, Alaska 99508-4302

TAKE
PRIDE IN
AMERICA

MAR 3 1993

Mr. Mark Schindler
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Mr. Schindler:

As discussed with Jeff Walker on February 23, 1993, enclosed is information which documents the status of operations at the Kuvlum well (specifically those activities of the drilling vessel Kulluk and ice management support) during 1992.

The enclosed information has been extracted from various proprietary and nonproprietary reports contained in our files and summarized for public dissemination. We are considering providing the information in response to inquiries by Mr. Bruce Mate of the Oregon State University. He is currently under contract by Minerals Management Service (MMS) to study movements of migrating bowhead whales by satellite. Some of the information he collected during 1992 in the eastern Beaufort Sea near Kuvlum was coincident to ARCO Alaska, Inc.'s, activities. We believe that release of the information to Mr. Mate could help clarify the understanding of whale movements in the vicinity of the major ice concentrations and Kuvlum operations in the eastern Beaufort Sea during 1992.

Because some of the information extracted from lessees' reports have been considered privileged by MMS, we request you review the enclosed information for accuracy and inform us if you have any objections to releasing this information to Mr. Mate.

We would appreciate your response by March 19, 1993. We will furnish you a copy of our final response to Mr. Bruce Mate. If you have any questions, please contact Jeff Walker or Jim Regg at 271-6188.

Sincerely,
Orig. Sgd. by
Barry A. Boudreau

Acting Regional Supervisor
Field Operations

Enclosure

bcc: OCS-Y 0866 33, Kuvlum
Chronos (area/dist/ora/cc)

JRegg:pmw:2/26/93:3/2/93
F:\users\ora\mark

DRAFT

KUVLUM OPERATIONS: 9/16/92 through 9/24/92

Purpose

The purpose of this summary is to describe the status and various positions of the Kulluk, Kalvik, Miscaroo, Kigoriak, and Supplier in relation to the Kuvlum well location. The information would then be available for a comparison of the movements of bowhead whales in the vicinity of 1992 Kuvlum activities (detected by satellite monitoring efforts under the guidance of Bruce Mate (Oregon State University), and COPAC aerial survey efforts).

History

Several massive ice floes grounded in the vicinity of the Kuvlum location on 8/26/92. The attached maps show the approximate relationship of the floes to the Kulluk prior to and during this period. The Kuvlum well surface location (Kulluk) was at 70° 18.96' North, 145° 25.18' West. The Kulluk and associated vessels activities between the dates of 9/16/92 and 9/24/92 are presented below.

9/16/92

- Kulluk off location at 0330 hours; under tow to SE of Kuvlum.
- Kulluk moored 13 miles SE of Kuvlum at 1630 hours; (located at 70° 9.4', 144° 57.8'); Kalvik at Barter Island, Supplier is monitoring ice floe near Kuvlum, Miscaroo attempting to recover anchors at Kuvlum location, Kigoriak (tow vessel) with Kulluk.

9/17/92

- Kulluk remains at 9/16/92 location; Kigoriak and Kalvik managing ice in vicinity of Kulluk; Miscaroo (anchor retrieval) and Supplier (ice monitoring) in vicinity of Kuvlum.

9/18/92

- Kulluk under tow by Kalvik to new location 6 miles due West of Kuvlum at 0500 hours.
- Kulluk moored at new location (time unknown); Kigoriak 2 miles SW of well location in ice; Kalvik 1 mile NNE of well; Miscaroo 2 miles SW of well pushing on S. Columbia ice floe which straddles 4 anchors; Supplier conducting ice recon, and on standby SE of well.
- Kulluk under tow by Kalvik to open water location NNW of Kuvlum at 1800 hours.

9/19/92

- Kulluk reaches new location (70° 23', 145° 30') at 0100 hours; Kalvik released at 0100 hours to assist with ice management; Miscaroo and Kigoriak continue ice management and anchor recovery operations; Supplier standing by at Kulluk.

9/20/92

- Kulluk remains at 9/19/92 location; Miscaroo and Kalvik managing ice near Kulluk; Kigoriak and Supplier monitoring ice movements West of Kulluk.

DRAFT

9/21/92

- Kulluk at 70° 23', 145° 30', 4.6 miles NNW of Kuvlum location; Kalvik and Miscaroo managing ice 1.5 n.miles North of Kuvlum; Supplier monitoring for ice movements on S. Columbia floe; Kigoriak performing ice management for the Kulluk.

9/22/92

- Kulluk remains 4.6 n.miles NE of Kuvlum (70° 23', 145° 30'); Miscaroo and Kalvik broke ice to well location; Miscaroo at Kuvlum well location for diver survey; Kigoriak on S. Columbia floe North of Kuvlum (floe moving east) grappling for anchors and monitoring S. Columbia movement; Kalvik returned to Kulluk at 2230 hours for ice management; Supplier monitoring ice 5 miles West of Kulluk.

9/23/92

- Kulluk at 70° 15', 145° 05' (3.85 n.miles NE of Kuvlum) - no indication of move except for new position on reports; Supplier in vicinity of Kulluk; Kigoriak, Miscaroo, and Kalvik monitoring East side of S. Columbia ice floe (East of Kuvlum) and working North end of same floe to try and unground.

9/24/92

- Kulluk at 70° 18.6', 145° 25' (5.3 n.miles NE of Kuvlum) - no indication of move except for new position on reports; Kigoriak, Miscaroo, and Kalvik working S. Columbia floe;
- Kalvik dispatched to Arctic Ivik 40 miles East at 0820 hours for assistance in towing 2 barges to Kulluk; Supplier monitoring S. Columbia movement; Kigoriak ice recon in area; Miscaroo managing ice around Kulluk.
- Kulluk under tow to the Kuvlum well location by Kalvik at 1200 hours; Kigoriak and Miscaroo conducting ice management, Supplier standby and ice monitoring, at the Kuvlum location(?).
- Kulluk at Kuvlum well location by 1800 hours; Kalvik assisting in holding position; Miscaroo and Kigoriak running anchors and ice management, Supplier conducting ice recon in vicinity.
- Kigoriak, Kalvik, Miscaroo and Supplier monitoring for movement of N. and S. Columbia floes at 2359 hours.

9/25/92 - 9/27/92

- Kulluk on and off location several times due to movements of S. Columbia floe. Kalvik served as tow vessel, Miscaroo and Kigoriak managing ice; Supplier on standby.

SEP 15 '92

5:28

FRO

CO KUULUM CO MAN

TO DO

KELVEY

PAGE.811

BEAURIL

HELICOPTER ICE OBSERVATION SHEET

DATE: 15 SEP 92 TIME: 0445 ADT OBSERVER: DIXTLOCATION: KUULUM VESSEL: KULLUK HELICOPTER: RADAR

0-5 10 NAUTICAL MILES

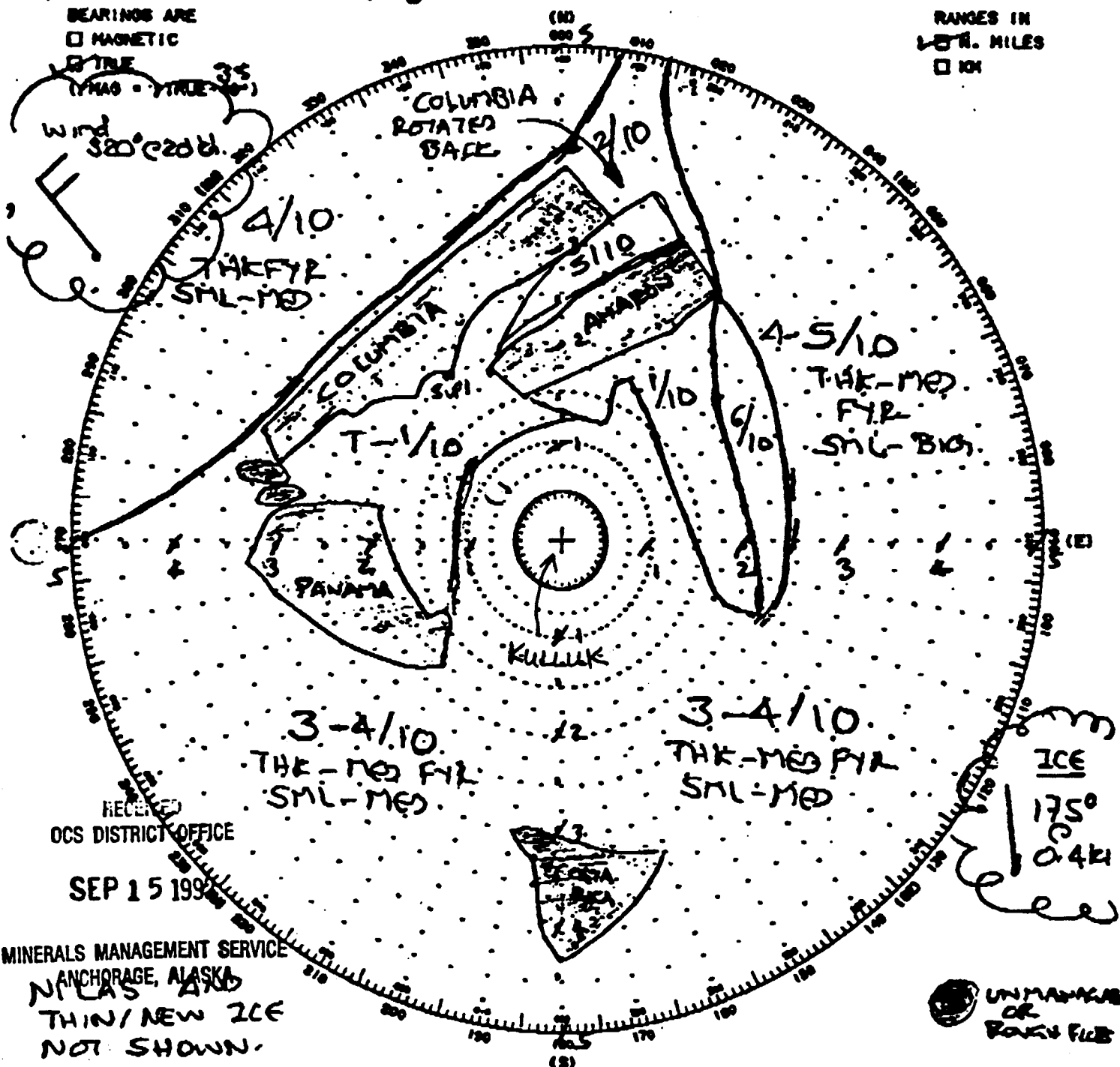
BEARINGS ARE

☐ MAGNETIC☒ TRUE

(MAG - TRUE =)

RANGES IN

1000 YARDS

☐ 100

SUMMARY OF ICE OBSERVATIONS NAMED FILES ARE GROUNDED/STATIONARY
EXCEPT COSTA RICA WHICH WAS MOVING SSE @ 0.2 KTS WHEN LEFT.

BEAUDRIL

HELICOPTER ICE OBSERVATION SHEET

DATE: 18 SEP 92 TIME: 1026-1106 OBSERVER: DIXT/NAZOLLINI/KAWIK

LOCATION: KUULUM VESSEL: KULLUK HELICOPTER: 92-19

0-5 10 NAUTICAL MILES

BEARINGS ARE

☐ MAGNETIC☒ TRUE

(1-MAG - TRUE - 40°)

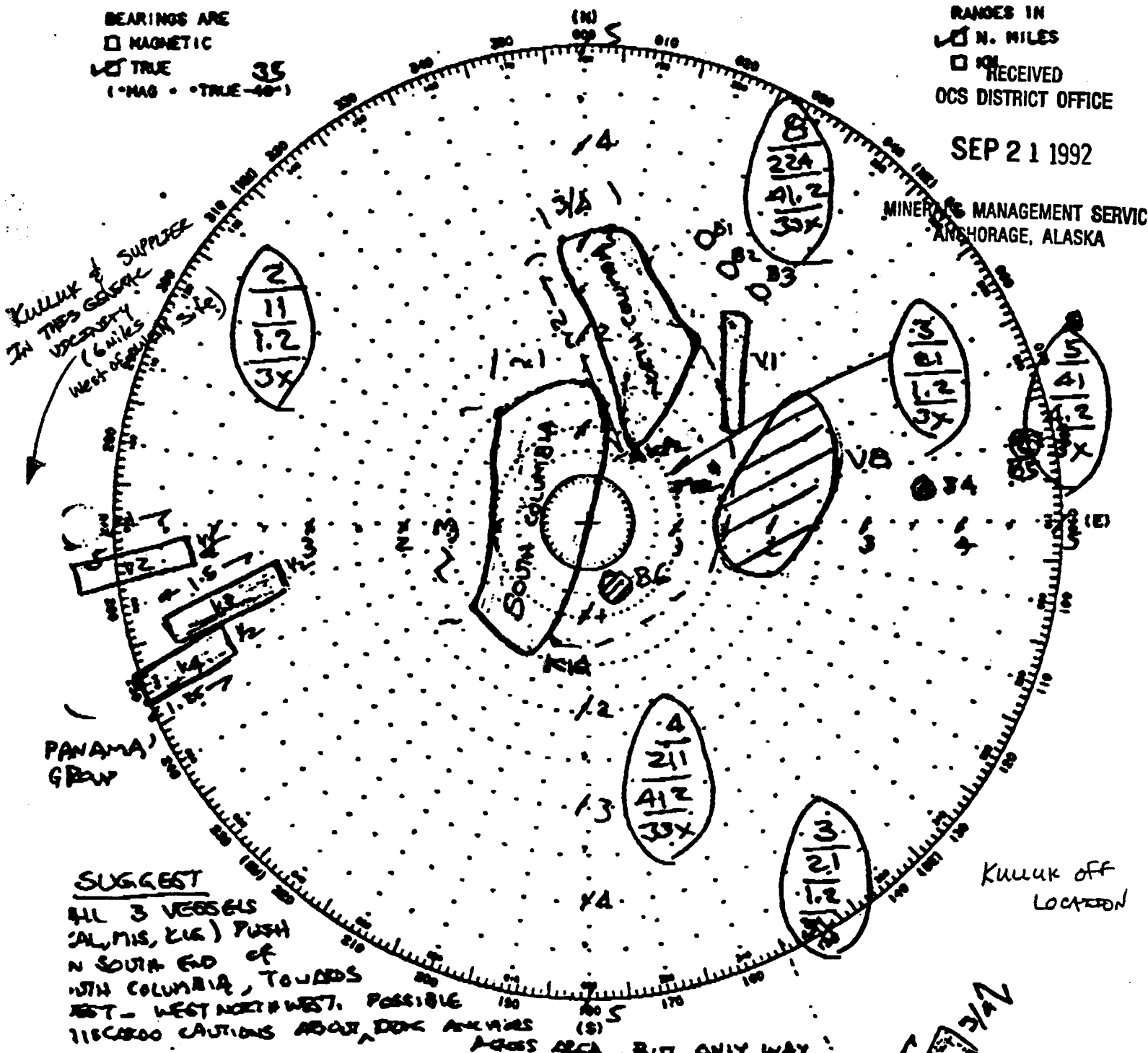
RANGES IN

☒ N. MILES☐ 101

RECEIVED

OCS DISTRICT OFFICE

SEP 21 1992

MINERAL MANAGEMENT SERVICE
ANCHORAGE, ALASKA

SUGGEST

ALL 3 VESSELS
(ALMIS, EUC) PUSH
N SOUTH END OF
WITH COLUMBIA, TOWARDS
WEST - WEST NORTHWEST. POSSIBLE
HISCOO CAUTIONS ABOUT DARK AREAS

SUMMARY OF ICE OBSERVATIONS

DISTANCES IN MILES

DARK FLIES ARE BLACK

MODERATE / MORE LEVEL = RED.

8CAST. = 81, 82, 83, 84, 85, 86

V7 FLEW NOT IMMEDIATE HAZARD AS ARE V2, V3 EUC

SEP 18 '92 12:52

lewd 2/24/93

UNITED STATES GOVERNMENT
MEMORANDUM

FEB 24 1993

To: District Supervisor
Through: Regional Supervisor, Field Operations
From: Supervisor, Operations Review and Approval
Subject: Meeting with ARCO Alaska, Inc. (ARCO), and BeauDril

Orig. Sgd. by
Rodney A. Smith
FEB 24 1993

As discussed, following is a list of topics which we believe should be discussed at the subject meeting on February 25, 1993. We believe it would be very beneficial to have operations people present in addition to the permitting and sales persons.

- o Kulluk rig modifications: We understand that BeauDril was considering design changes to the flare system to redesign or remove portions that collect condensate, and we would appreciate it if they could describe any changes to the system. We also suggest discussing our concerns regarding use of exterior lights during testing operations.
- o We would like to verify status of data submission from last year and review expectations for this season. We are specifically interested in meteorological and oceanographic data collection and reports and the status of Critical Operations and Curtailment Plan (COCP) actions.
- o The COCP implementation: We would like to discuss specific examples where securing activities do not appear to have been consistent with optimum secure times as defined under the COCP, and how to avoid such inconsistencies in the future.
- o Kick tolerance: We would like to discuss ARCO's plans and procedures for notifying the MMS of drilling decisions and COCP actions when they vary from, and prior to exceeding, the BeauDril kick tolerance criteria which has been integrated into the Kuvlum COCP.
- o Anchor tensions: We would like to clarify the Kulluk anchor pretension and tension monitoring procedures, specifics regarding reasons operating tensions exceed pretensions, and how global loads are factored into the tensioning criteria. We are also very much interested in how COCP actions are tied to anchor pretension and tension values. Our intent is to better understand the BeauDril system.
- o Ice monitoring: We would like to clarify the ice monitoring programs (systems) and their relationship to COCP actions.

bcc: OCS-Y 0866 (Kuvlum) ⁶⁰⁷ ~~607~~
Chronos (area/dist/ora/cc)

JWalker:jw:JRegg:pmw:2/23/93:2/24/93
F:\users\ora\ice

UNITED STATES GOVERNMENT
MEMORANDUM

To: District Supervisor

Through: Regional Supervisor, Field Operations

From: Supervisor, Operations Review and Approval

Subject: Kuvlum Application for Permit to Drill

FEB 22 1993

Orig. Sgd. by
Rodney A. Smith
FEB 24 1993

Your February 12, 1993, memorandum (copy attached) forwarded the Kuvlum OCS-Y 0865 No. 1 APD for review and requested the special Potential Incidence of Noncompliance (PINC) list be developed by June 1.

Development of the PINC list is appropriately handled by the Rules, Orders and Standards Section, and by copy of this memorandum, I am requesting they coordinate this task with your office and the Operations Review and Approval Section (ORA).

In accordance with your earlier request, Jim Regg has been designated as the Drilling Engineer for the Kuvlum project. I suggest that Jim be invited to all meetings and District discussions relating to the Kuvlum project. Except for the Critical Operations and Curtailment Plan (COCP), I expect Jim to work directly with you during the APD review and drilling activities. The ORA Section will continue to coordinate a review of the COCP pursuant to our previous practices. We plan to provide you comments on the COCP within the next 3 weeks.

If you have any questions, please let me know.

Attachment

cc: Supervisor, ROS
Jim Regg

bcc: 1 OCS-Y 0865 6a
Chronos (area/dist/ora/cc)

JWalker:JRegg:jw:pmw:2/23/93
F:\users\ora\apd

FEB 12 1993

UNITED STATES GOVERNMENT
MEMORANDUM

To: Supervisor, Operations Review and Approval

Through: Regional Supervisor, Field Operations *B.A. Boudreau*

From: Supervisor, District Office

Subject: Application for Permit to Drill Kuvlum #2

Received

FEB 1

ORA Section

The attached APD is ready for your assessment as to the contents satisfying our present regulations and NTL's. If changes to either the APD or our NTL's are deemed necessary, please advise the District Office of these needed changes.

Please make up a special PINC list on the COCP by June 1, 1993, for the District Office to review.



Brian Schoof

Received
FEB 12 1993
ORA Section

UNITED STATES GOVERNMENT
MEMORANDUM

FEB 12 1993

To: Regional Supervisor, Field Operations
From: Supervisor, District Office
Subject: ^uBea^uDril

A meeting is scheduled with Bea^uDril on the 25th of February, 1993, at 2pm in the District Office conference room. Please advise me of any topics you would like to discuss or have presented to them.

Orig. Sgnd. By Brian Schoof

Brian Schoof

bcc: ✓ OCS-Y 0866 #^{LOA}~~26~~ Area/District
Chron's Area/District/CC
BSchoof:2-11-93:nll:bs175

FEB 12 1993

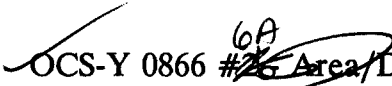
UNITED STATES GOVERNMENT
MEMORANDUM

To: Supervisor, Operations Review and Approval
Through: Regional Supervisor, Field Operations FEB 12 1993
From: Supervisor, District Office
Subject: Application for Permit to Drill Kuvlum #2

The attached APD is ready for your assessment as to the contents satisfying our present regulations and NTL's. If changes to either the APD or our NTL's are deemed necessary, please advise the District Office of these needed changes.

Please make up a special PINC list on the COCP by June 1, 1993, for the District Office to review.

Orig. Sgnd. By Brian Schoof
Brian Schoof

bcc:  OCS-Y 0866 #26 Area/District
Chron's Area/District/CC
BSchoof:2-10-93:nll:bs174

District Office

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Description

0866	1	Sidewall core Descriptions	Percussion	13 pg
		" " "	mech	2 pg
		" " "	Mech	1 pg
		Mud sample bag		1 pg

Signed By:

Date:

2-2-93

Provided To:

(Section)

// a. Borrowed Data

Date Borrowed Data Returned:

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

~~X~~ b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

Date:

4 Feb 93

District Office

<u>Lease</u>	<u>Well</u>	<u>Description</u>
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[illegible]

Signed By:

Date:

1-25-93

Provided To:

(Section)

// a. Borrowed Data

Date Borrowed Data Returned:

The undersigned accepts responsibility for the security of the proprietary data listed above until it is returned to the District Office, and agrees to abide by the restrictions on proprietary data storage and use. The material must be kept in a Security Area when not in active use. The borrower may not duplicate, divulge, or transmit these data to another office without the prior approval of the District Supervisor.

FI b. Transmitted Data to OFO Vault

Please acknowledge receipt by signing below and retaining the original copy of this form for your records.

Signature:

Date:

1-25-92