# FINDINGS AND DECISION

of the Director, Division of Oil and Gas

APPROVING THE
ARCTIC FORTITUDE UNIT APPLICATION

Under Delegation of Authority from the
Commissioner, Department of Natural Resources, State of Alaska

June 29, 2006

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INTRODUCTION AND BACKGROUND

The Arctic Fortitude Unit (AFU) is located on Alaska's North Slope, approximately 1.5 miles southwest of Deadhorse Airport, and adjacent to the southern boundary of the Prudhoe Bay Unit (PBU) . Alaskan Crude Corporation (ACC), on behalf of the leaseholders, filed the unit application (Application) with the Alaska Department of Natural Resources (DNR), Division of Oil and Gas (Division), on February 17, 2006. Revisions and additional support information were submitted by ACC on March 13, 21, and 31, and April 24, May 4, June 6, and June 8, 2006. James W. White and James A. White are the sole working interest owners of the leases proposed for unitization. ACC is the designated unit operator.

The Arctic Fortitude Unit Agreement (Agreement), which uses the State Only Model Form, dated June 2002, without modifications, proposes to conform and modify three individual State of Alaska oil and gas leases so that unit operations can be conducted on a unit basis instead of on a lease basis. The three leases cover approximately 6,363 acres. The AFU will be administered by the Division under the terms of the Agreement. All or portions of the following lands are included in the AFU area:

T10N-R14E, U.M., Sections 29-34
T10N-R13E, U.M., Sections 25, 26, 35, 36

The leases and their corresponding lease numbers, acreages, state royalty interests, lease issue dates, and lease expiration dates are shown below in Table 1. The leases in the AFU area retain a 12.5 percent royalty to the state and carry seven-year primary terms. All three of the leases were issued on lease form DOG 9609 (Rev 2/99).

Table 1 – AFU Lease Information

| ADL | Acres | State Royalty Interest % | Lease Effective Date | Lease Expiration Date |
|---|---|---|---|---|
| 389178 | 1280 | 12.5 | 7-01-1999 | 6-30-2006 |
| 389179 | 2523 | 12.5 | 7-01-1999 | 6-30-2006 |
| 389177 | 2560 | 12.5 | 7-01-1999 | 6-30-2006 |

APPLICATION FOR THE FORMATION OF THE ARCTIC FORTITUDE UNIT

ACC submitted the Application to form the AFU and paid the $5,000 unit application filing fee. ACC's Application included: the AFU Agreement; Exhibit A to the Agreement, legally describing the AFU, its leases, and ownership interests; Exhibit B to the Agreement, a map of the AFU; and Exhibit G to the Agreement, the proposed plan of exploration (POE). All proper parties executed the Agreement. In addition, ACC submitted an AFU operating agreement, also signed by all proper parties.

The Division gave notice that the Application was submitted for Division approval on April 8, 2006, and subsequently published an application notice in the *Anchorage Daily News* and in *The Arctic Sounder*. The Division also posted notices on the state's online public notice Web page, DNR's public notices page, and the Division's Web page. The Division provided copies of the public notice to the North Slope Borough Assembly and mayor, the Arctic Slope Regional Corporation, the cities of Barrow and Nuiqsut, the Kuukpik Corporation, and other interested parties in compliance with 11 AAC 83.311. The Division also provided public notices to the Alaska Department of Environmental Conservation, the Alaska Department of Fish and Game, and to post offices, libraries, and radio stations in the area. The notice invited interested parties and members of the public to submit comments by May 15, 2006. No public comments were received.

On April 4, 2006, in correspondence to ACC with a copy to James W. White, the Division expressed concern about the adequacy of the geological and geophysical data submitted to support the AFU. The Division advised that it was completing the Application only to publish notice of the application and that the public notice was not a substantive decision on the Application itself. The Division urged ACC to visit the Division's Web site to read and understand the guidelines for the types of geological and geophysical data required for the Division to adequately evaluate a unit application. The Division provided ACC with these guidelines as an attachment to its April 4, 2006, correspondence. ACC was given 30 days from the date of the letter (until May 4, 2006) to submit additional geological and geophysical data and any other data in support of the Application. The Division indicated it would evaluate the Application after the 30 days expired and issue a final, substantive decision approving, disapproving, or modifying the Application, including a revised POE, before the leases expired on June 30, 2006. ACC submitted additional information in support of the Application on April 24, 2006, and May 3, 2006.

ACC submitted an AFU POE with the Application on February 17, 2006. ACC submitted additional revisions on March 13, 21, and 31, and April 24, May 4, June 6, and June 8, 2006, all of which were incorporated into the Application and considered by the Division in issuing this decision.

DISCUSSION OF DECISION CRITERIA

AS 38.05.180(p) gives DNR the authority to approve an oil and gas unit when necessary or advisable in the public interest to conserve the natural resources of all or a part of an oil or gas pool, field, or like area. The DNR commissioner (Commissioner) reviews unit applications under 11 AAC 83.301 – 11 AAC 83.395. By memorandum dated September 30, 1999, the commissioner approved a revision of Department Order 003, and delegated this authority to the Division Director (Director).

The Director will approve a unit application upon finding that it will: 1) promote the conservation of all natural resources; 2) promote the prevention of economic and physical waste; and 3) provide for the protection of all parties of interest, including the state in accordance with 11 AAC 83.303(a). Subsection .303(b) sets out six factors that the Director will consider in evaluating a unit application. A discussion of the subsection .303(b) criteria, as they apply to the Application, is set out below, followed by the Director's findings under subsection.303(a), and the Director's conditional approval of the Application.

1. The Environmental Costs and Benefits of Unitization

The leases that are included in the AFU contain stipulations designed to protect the environment and address concerns regarding impacts to the area's fish and wildlife species, habitats, and subsistence activities. These stipulations include seasonal restrictions on specific activities in certain areas that reduce the impact on bird, fish, and mammal populations. They address the protection of primary waterfowl areas, site restoration, construction of pipelines, seasonal restrictions on operations, public access to or use of the leased lands, and avoidance of geophysical hazards.

The administrative approval of the AFU has no environmental impact itself because it does not authorize the unit operator to conduct operations within the unit. Unitization does not waive or reduce the effectiveness of the mitigating measures that condition the lessee's right to conduct operations on these leases. The Division's approval of the AFU and initial POE is only one step in the process of obtaining permission to drill wells and develop the known reservoirs within the unit area. The unit operator must still obtain approval of a unit plan of operations and obtain various permits from state agencies before initiating activities. Plans of operations must describe the operating procedures designed to prevent or minimize adverse effects on natural resources. The plan of operations application undergoes a multi-agency review that includes a public notice and 30-day comment period. When the operator proposes to further explore and develop the unit area with any increase in the approved footprint, it must submit a new unit plan of operations, and the Division will ensure that it complies with the lease stipulations and lessee advisories developed for the most recent North Slope areawide lease sale.

The environmental impact of unit operations will depend on the level of development activity, the effectiveness of mitigation measures, and the availability of alternative habitat and subsistence resources. With mitigation measures, the anticipated exploration and development-related activity is not likely to significantly impact bird, fish, and mammal populations. Further,

the anticipated activity under the AFU will impact habitat and subsistence activity less than if the lessees developed the resources on an individual lease basis.

The environmental costs and benefits of unitizing the AFU justify approval of the Application under the section .303(b)(1) criteria.

2. The Geological and Engineering Characteristics of the Reservoir or Potential Accumulation

Data submitted by ACC in support of the Application consists of the Burglin 33-1 open hole resistivity, sonic and mud logs, gyroscopic survey , a detailed mud log of the cored intervals, and maps from the June 1974 report "In Place Volumetric Determination of Reservoir Fluids, Sadlerochit Formation, Prudhoe Bay Field" prepared for the State of Alaska by H.K.Van Poollen and Associates. Hand contours were added to one map from this report, the Isopach of Net Oil Sand Upper Zone, Sadlerochit Reservoir, Prudhoe Bay field, but the basis for the contours is not disclosed or discussed. The application included daily drilling records which mention numerous drill stem tests (DST's) performed in the Burglin 33-1 well. The Burglin 33-1 well (Sec.33, T10N, R14E, U.M.) was drilled to a total depth of 9,458 feet in the Ivishak formation. DST results from the well are not definitive and ACC did not provide any engineering analysis.

In addition to data submitted by ACC, the Division has a copy of Core Laboratories, Inc. core porosity and permeability report from the Burglin 33-1 well. This conventional core report indicates the API gravity extracted during standard core analyses yielded 24 to 26 API gravity oil from core #18 taken from 9310'md to 9370'md in the upper Ivishak sandstone. This could indicate the presence of flowable oil or residual oil left as oil migrated through the area.

On April 24, 2006, the ACC geology consultant submitted a memo regarding the general geologic setting of the leases and potential for an accumulation based only on the mud log, and a second, more detailed, general write-up regarding oil shows from the cored intervals on May 3, 2006. The ACC consultant states:

> "We also know that structures most likely exist in the leased area, especially in the pre-LCU section. Seismic data confirms that a major NW/SE trending fault bounds the southern aspect of the leased area and separates it, to some degree, from the Storms Unit area. At the Ivishak horizon the Fortitude leases appear to be upthrown some 200 to 400 feet from the Storms Unit area. The problem to date is that adequate high quality seismic data is not available to map out probable closures that may exist in deeper horizons. Trapping mechanisms in the Ugnu and West Sak section are more complex and can most likely be attributed to a combination of both structural and stratigraphic conditions. The ConocoPhillips/Western Geco data proved useful in defining general trends and potential leads but has not proved adequate in the definition of trap closures."

The ACC consultant further noted that low deep resistivity values seen on the Burglin 33-1 resistivity log in the Ivishak interval "although outwardly wet, expressed a potential 50 foot

column of residual or relict oil that under appropriate production methods could produce liquid hydrocarbons." However, the consultant does not state what those appropriate production methods might be.

Data from the Burglin 33-1 well confirm the presence of shallower potential hydrocarbon reservoirs in the unit area, for example the Schrader Bluff formation, which produces commercial quantities of oil in the nearby PBU, Kuparak River unit, and Milne Point unit. The applicant proposes to evaluate these shallower intervals, which as demonstrated in these nearby units, may contain structural or stratigraphic traps.

While there was evidence of hydrocarbons in the Burglin 33-1 well, the limited geological information supplied by ACC and otherwise available to the Division neither clearly proves nor clearly disproves the existence of a potential hydrocarbon accumulation or reservoir within the proposed AFU under the section 303(b)(2) criteria.

Exploration of oil and gas is not an exact science. Well re-entry operations and drilling, using modern completion and drilling techniques, may confirm previously bypassed oil and gas. "Surprises" do happen where oil and gas is discovered in unlikely or previously unidentified formations. In this specific and unique instance it is in the state's interest to provide the applicant the opportunity to explore state land for oil and gas given the constraints and conditions described and imposed in this decision.

3. Prior Exploration Activities in the Unit Area

The Burglin 33-1 well was cored, logged, perforated, and tested in several formations, including sandstone intervals within the Ugnu, West Sak, Shublik, Brookian, Albian, HRZ, Kingak, and Sadlerochit. None of the tests yielded hydrocarbons that would flow to the surface. The well encountered hydrocarbon indications on the mudlog at several intervals and was suspended.

The Mobil Hemi State 3-09-11 well (Sec. 3, T9N, R11E, U.M.), approximately 12 miles to the west of the AFU, was drilled to a total measured depth of 6,032 feet, bottoming in the Middle Cretaceous Brookian section. Although conventional cores were attempted in both the West Sak and Brookian sections, only 13 feet of core was recovered in the Lower Brookian section. Conventional sidewall cores were taken in the West Sak interval, recovering oil-saturated sands with fair to good shows. The well was plugged and abandoned without testing.

The Arco Toolik Fed 2 (Sec. 5, T8N, R12E, U.M.), located approximately 13 miles southwest of the AFU, was drilled to a total measured depth of 6,032 feet, bottoming in the Kingak formation. A thin (~10' thick) Kuparuk "C" sandstone was present. Thirty-one sidewall cores were recovered between the intervals of 2,330 feet and 7,698 feet, and mud log shows were noted in the West Sak and Brookian intervals. No commercial accumulation of hydrocarbons was determined present in the well.

The Arco Put River State 1 (Sec. 7, T10N, R14E, U.M.), located approximately 2.5 miles north of the AFU within the PBU, was drilled to a total measured depth of 9,903 feet, drilling through

the Jurassic-Triassic sandstone at 8,901 feet and the Permo-Pennsylvanian limestone at 8,982 feet. Thirty-four sidewall cores were recovered from 7,300 feet to 9,880 feet. Five conventional cores were recovered from 9,000 feet to 9,212 feet; these cores showed oil and gas presence within sandstone, having a porosity of 20.2 percent to 23.1 percent. A strong gas show was encountered at 9,095 feet and black oil with a 12.8 degree API and 80 percent water was encountered at 9,075 feet. The well was initially suspended, and later plugged and abandoned.

The Mobil/Sohio Hurl State 5-10-13 (Sec. 5, T10N, R13E, U.M.), located approximately 5 miles northwest of the AFU within the PBU, was drilled to a total measured depth of 11,420 feet. During drilling operations, the 3.5 inch drill pipe was stuck in the hole at 8,954 feet and twisted off. The pipe was later recovered and the well was cased. Four "tight hole" tests were evaluated between 8,843 feet and 9,069 feet. Two production tests were completed in the Sadlerochit sands from 8,960 feet to 9,078 feet. The well flowed clean 24.4° API oil at a rate of 1,980 bbls per day, with medium gas flows, with a maximum temperature of 230° F at 8,955 feet. The well was left completed for production in November 1969. Subsequently, it was discovered that the casing had collapsed and the well was plugged and abandoned. Several subsequent exploration wells, outside of the PBU and in the vicinity of the AFU, were drilled to Ivishak (Sadlerochit) and/or Kuparuk primary exploration objectives.

In 1970, the Placid State 1 (Sec. 3, T10N, R13E, U.M.), located approximately 3 miles northwest of the AFU, was drilled to a total measured depth of 11,400 feet. Well cores and logs showed the Cretaceous at 3,907 feet, the Jurassic at 7,792 feet, the Permo-Triassic at 8,932 feet, the Pennsylvanian at 9,900 feet, and the Mississippian at 10,696 feet. Drill stem tests were performed at several intervals showing heavy 10.7° API oil at 4,063 feet having a strong blow to 9,216 feet with oil shows and intermediate strong blows. Perforations from 8,960 feet to 8,992 feet and 9,008 feet to 9,058 feet produced a clean oil having an API of 22.8° to 23.3* with a maximum rate of 2,030 bbls per day and 788 MCF per day of gas at 1,030 psi. The well was suspended in July 1970 for future production. However, in 1986 Arco plugged and abandoned the well, stating the well was not needed for unit production.

In 1972, the Ashland West Channel 1-3 (Sec. 3, T9N, R15E, U.M.), located approximately 4 miles east of the AFU, was drilled to a total measured depth of 9,880 feet. The well encountered gas shows with no visible oil from 9,160 feet to 9,235 feet. From 9,235 feet to 9,275 feet the well showed some signs of oil in limestone/sandstone with poor porosity. The well was plugged and abandoned.

In 1975, the Getty State 1 (Sec. 2, T10N, R13E, U.M.), located approximately 3 miles north of the AFU, was drilled to a total measured depth of 9,160 feet. Well cores and logs showed the Cretaceous at 4,108 feet, the Seabee at 5,962 feet, the Sag River at 8,843 feet, the Shublik at 8,861 feet, and the Saddlerochit at 8,940 feet. Sandstone cores with good oil shows were recovered from 8,928 feet to 9,149 feet. The oil-water contact was encountered at 9,078 feet. The well was completed and suspended as a producible oil well in January 1976. In 1980, Arco recompleted the well as a PBU observation well.

In 1984, the Arco Hemi Springs State 1 well (Sec.12, T10N, R11E, U.M.), located

approximately 10 miles to the northwest of the AFU, was drilled to 10,370 feet, bottoming in the Lisburne formation. The primary exploration objectives of the well were the West Sak sands and the Sadlerochit formation with the Lisburne as a secondary objective. The West Sak sands were cored between the depths of 4,527 feet and 4,856 feet, and 30 sidewall cores were also taken. The West Sak interval had marginal shows with an apparent oil-water contact (~ -4,200'ss) within one of the upper Schrader Bluff sands. Arco conducted two production tests in the lower sands of the West Sak Interval, and both recovered water. The Ivishak tested wet, the Lisburne looks wet based on logs and the Kuparuk C sand tested some gas and oil.

In 1984, the HG&G Hemi Springs Sag River 1 well (Sec. 14, T9N, R14E, U.M.) was drilled in the Ivishak formation. The well is located approximately 2.5 miles south of the AFU. Twenty-seven sidewall cores were recovered between the depths of 6,080 feet and 8,760 feet, sampling sections of the West Sak, Colville (Brookian), Albian, and Pebble Shale (HRZ) intervals. The Kuparuk sandstone was not present and the Ivishak sandstone was wet. No tests were conducted and the well was plugged and abandoned.

In 1985, the Arco Hemi Springs Unit 3 well (Sec 13, T9N, R13E, U.M.), located approximately 2.5 miles south of the AFU, was drilled to a total depth of 10,059 feet, bottoming in the Sadlerochit formation. The Kuparuk formation was the primary objective, but it was not present and the interval from 8,567 feet to 8,833 feet that was cored consisted predominantly of mudstone with oil shows from 8,721 feet to 8,833 feet. Well logs indicated that the Ivishak interval was wet.

Exploration continued in 1991 when the Rock Flour 1 well (Sec 4, T10N, R11E, U.M.) was drilled approximately 12.5 miles to the northwest of the AFU, and to a depth of 9,131 feet. The well encountered wet Ivishak sands. The Cretaceous Kuparuk "C" had hydrocarbon shows, but well log analysis indicated that the interval appeared wet. Sidewall cores taken from the West Sak interval contained oil-saturated sands and appeared to contain oil, based on well log analysis.

Pioneer drilled the Hailstorm 1 well in the newly formed NE Storms Unit in 2005. The well is less than 1,000 feet from the southwestern corner of the AFU, and approximately 5 miles west of the Burglin 33-1 well and 2 miles south of the Alaskan Crude F2 conductor. This well had a planned depth of approximately 10,000 feet and was to drill through a portion of the Ivishak formation, correlative to the interval from 9,803 feet to 9,903 feet (measured depth) as in the Hemi Springs Unit 3 well. The March 12, 2006, edition of *Petroleum News Alaska* reported that the Hailstorm well was a bust. Additional information regarding the well is confidential.

The considerable prior exploration activities in the AFU area and the units proximity to the PBU justify approval of the Application under the section .303(b)(3) criteria.

4. Plans for Exploration or Development of the Proposed Unit Area

The operator must provide plans for exploration or development that justify including the proposed acreage in the unit area. As stated under 11 AAC 83.341(a), the plans for exploration

must include a description of proposed exploration activities, including the bottom-hole locations and depths of proposed wells, and the estimated date drilling will commence.

The initial POE, attached to this decision as Attachment 3, Exhibit G, sets out a timely sequence of well testing, drilling, and exploration activities that will facilitate development and production from the unit if oil and gas are discovered in commercial quantities. The initial POE requires work commitments that include a workover of an existing temporarily plugged wellbore, drilling of two wells, and shooting 3-D seismic. A new well or workover is planned on each of three leases in the AFU and a seismic shoot will be conducted over the entire AFU. The work commitment is expected to define the oil and gas potential on the proposed unit acreage during the four-year term of the initial POE and will satisfy the performance standards and diligence requirements of the state. The initial POE provides for the working interest owner to compensate the state for unrealized bonus payments during the period that the acreage is withheld from leasing after the primary term of the leases has expired (extension charge) if the work commitments are not fulfilled.

ACC submitted written revisions to the initial POE on March 13, 21, and 31, April 24, May 4, June 6, and June 8, 2006, along with a memo to the Division dated June 6, 2006. Based on revisions and additional data supplied by ACC, the Division proposed additional revisions to the initial POE on May 24, 2006, June 5, and June 8, 2006. ACC accepted and agreed to the initial POE that is included with this document as Attachment #3, Exhibit G. Since ACC's acceptance and agreement, one change has been made to clarify the definition of a bond that could be posted as a Security Payment. The word bond is defined as a bond "acceptable to the state" to clarify the state's authority. The Security Payments are considered to be in lieu of unrealized bonus payments during the period that the acreage is withheld from leasing.

The extension charge and work commitments in the initial POE are significant and therefore provide economic benefit to the state and justify approval of the Application under the section .303(b)(4) criteria.

5. The Economic Costs and Benefits to the State

The initial POE includes significant work commitments that, if executed, will evaluate the hydrocarbon potential of the AFU. It requires a well test of an existing abandoned wellbore, drilling of two new wells, and 3-D seismic program over a four-year period. A major activity, either the well test, the drilling of a well, or 3-D seismic would be completed, on average, each year that the initial POE and AFU remain in effect. The work commitment is substantial relative to the size of the AFU. It results in significant exploration activity on each of the three leases that has the potential for discovery of oil and gas.

The work commitment in the Initial POE is back-end loaded so that a large portion of the work could be completed in the later years of the Initial POE. Since a back-end loading approach creates the risk to the state that the majority of the work commitment could be unfulfilled, the initial POE provides for the working interest owners to compensate the state with an extension

charge if the work commitments are not fulfilled. This ensures that formation of the AFU remains in the economic interest of the state.

Assuming the initial POE commitments are met, approval of the AFU could result in short-term and long-term economic benefits to the state. The assessment of the hydrocarbon potential of the leases is anticipated to create jobs and in-state economic activity in the short term and, if the drilling, workover, and exploration activity is successful, the state will receive royalty and tax revenues, as well as employment opportunities over the long term.

ACC is a small, independent company with a long history of leasing and prospecting in Alaska. Although ACC has conducted operations on state lands in Cook Inlet, ACC would be the first company of its size to successfully operate on the North Slope if the initial POE is completed and successful. This would be in the state's interest because it would serve as an example for other similarly sized firms to follow, thereby promoting interest in further development of North Slope oil and gas reserves by companies of a similar size, of which there are many hundreds in North America.

The primary terms of the leases are due to expire on June 30, 2006, but it is in the economic interest of the state to form the AFU to facilitate drilling, workover, and exploration activity to stimulate exploration and economic development and create a greater revenue opportunity through royalty and taxes. Any additional administrative burdens associated with the formation of the AFU and other risks and concerns are outweighed by the potential for additional economic, royalty, and tax benefits derived from any production that may occur if the workover, drilling, and exploration activity is completed and successful. Under the initial POE , it is expected that the leases will be explored quicker than if the leases are returned to the state and re-leased.

The economic costs and benefits to the state of the AFU justify approval of the Application under the section .303(b)(5) criteria.

FINDINGS

The Application meets the criteria in 11 AAC 83.303(a) as discussed below.

1. Promote the Conservation of All Natural Resources

The unitization of oil and gas leases is a well-accepted means of hydrocarbon conservation. Without unitization, unregulated development can result in: (1) overly dense drilling, especially along property lines; (2) rapid dissipation of reservoir pressure; and (3) irregular advance of displacing fluids. These all contribute to the loss of ultimate recovery or waste of natural resources. The proliferation of surface activity, duplication of materials, production, gathering, and processing facilities, and haste to get oil to the surface also increases the likelihood of environmental damage (such as spills and other surface impacts). Unitization, however, provides a practical and efficient method for maximizing oil and gas recovery, minimizing the use of materials and equipment, and protection of surface and subsurface resources.

The formation of the AFU will promote the conservation of both surface and subsurface resources through the unitized (rather than lease-by-lease) exploration and development. Unitization allows the unit operator to explore the area as if it were one lease. The formation of the AFU will allow this area to be comprehensively and efficiently explored and developed. Adoption of an operating agreement and initial POE and subsequent plans of exploration or development governing that production will help avoid unnecessary duplication of development efforts.

Exploring and developing the leases under a unified POE will reduce the incremental environmental impact of the additional production and will conserve natural resources. Therefore, the Division's evaluation of the section .303(a)(1) criteria supports approval of the Application

2. Promote the Prevention of Economic and Physical Waste

Economic and physical waste could occur without a well-designed and coordinated development plan and an equitable cost-sharing formula. Consequently, unitization must equitably allocate costs and production, and plan to maximize physical and economic recovery from any reservoir.

Unitized operations greatly improve ultimate hydrocarbon recovery. Marginally economic reserves, which otherwise would not be produced on a lease-by-lease basis, often can be produced through unitized operations as a standalone project or in combination with more productive leases. Facility consolidation saves capital and promotes better reservoir management. Pressure maintenance and secondary recovery procedures are much more predictable and attainable through joint, unitized efforts than would otherwise be possible. In combination, these factors allow less profitable areas of a reservoir to be developed and produced in the interest of all parties, including the state.

By combining the efforts of multiple lessees into a single effort, infrastructure can be shared. This eliminates the need to construct standalone facilities to process the volume of recoverable

hydrocarbons that may be discovered on each individual lease, thus preventing economic and physical waste.

The AFU operating agreement shares cost and revenue sharing across the unit on a surface acre basis to the two working interest owners. The working interest owners of the AFU have signed the Agreement and a unit operating agreement, which provide for equitable divisions of cost and revenue, thereby promoting the prevention of physical and economic waste.

Therefore, the Division's evaluation of the section .303(a)(2) criteria supports approval of the Application.

3. Provide for the Protection of All Parties in Interest, Including the State

The Agreement seeks to protect the economic interests of the working interest owners in the AFU, as well as the royalty owners. Combining interests and operating under the terms of the Agreement and the unit operating agreement ensures each individual working interest owner an equitable allocation of costs and revenues commensurate with the value of their leases. Although there are currently only two working interest owners in the AFU, the ownership structure is subject to change.

Because hydrocarbon recovery from the unitized area will more likely be maximized than it would be on a lease-by-lease basis, the state's economic interest is protected. Diligent development and exploration under a single approved unit plan without the complications of competing leasehold interests is in the state's interest. It promotes efficient evaluation and development of the state's resources, while at the same time minimizes impacts to the area's cultural, biological, and environmental resources.

The lease form and the conditions of this decision provide, in part, that the state's royalty share will be free and clear of all lease expenses. Operating under the terms and conditions of the lease and unit agreement also provides for accurate reporting and record keeping, royalty settlement, in-kind taking, and emergency storage of oil, all of which will further the state's interest.

Finally, the inclusion of the lands in the AFU promotes the state's interest in the evaluation and development of those lands sooner rather than later and provides economic benefit with applicable environmental safeguards.

Well spacing requirements enforced by the AOGCC will protect the correlative rights of parties holding an interest in adjacent leases.

Additional drilling, testing, and exploration will define the potential presence and lateral extent of paying quantities within the AFU, and provide for the further protection of all parties in interest. As a part of this decision, the annual report submitted to the Division by the AFU operator under the Agreement and 11 AAC 83.341 must incorporate new well test, drilling, or seismic data acquired as a result of work completed under the initial POE into an analysis that more fully defines the extent of the unit area. The analysis will include structural contour maps showing the extent of sands that are likely to be economic, estimates of hydrocarbon contacts, and geologic cross-sections through existing AFU and adjacent wells.

Therefore, the Division's evaluation of the section .303(a) (3) criteria supports approval of the Application.

DECISION

1) For the reasons discussed above, I hereby approve the Application, subject to the conditions specified herein, including terms and conditions in Attachments 1, 2, and 3 to this document, effective June 29, 2006. The Agreement and the initial POE become effective as of 12:01 a.m. on the day following approval by the Director.

2) The unitized development and operation of the leases will reduce the amount of land and fish and wildlife habitat that would otherwise be disrupted by individual lease development. Reducing environmental impacts and minimizing interference with subsistence activity is in the public interest. The formation of the new unit will not diminish access to public and navigable waters beyond those limitations imposed by law or already contained in the oil and gas leases.

3) Under regulations governing formation and operation of oil and gas units (11 AAC 83.301 – 11 AAC 83.395) and the terms and conditions under which these lands were leased from the state, the leases listed in Attachment 1 and shown on Attachment 2 are included in the AFU.

4) The operator shall submit updated Exhibits A and B to the Agreement within 30 days following approval by the Commissioner of any expansion or contraction of the unit area under Article 13 or any change of the working interest or royalty interest in any unit tract.

5) In accordance with the Agreement and 11 AAC 83.341, an annual report is due that describes the status of projects undertaken and the work completed during each year of the initial POE, as well as any proposed changes to the plan. The update to the initial POE must describe the applicant's proposed exploration activities, including the bottom-hole locations and depths of proposed wells, and the estimated date drilling will commence. The annual report must incorporate new well test, drilling, or seismic data acquired as a result of work completed under the initial POE into an analysis that defines the extent of the unit area. The analysis must include structural contour maps showing the extent of sands that are likely to be economic, estimates of hydrocarbon contacts, and geologic cross-sections through existing AFU and adjacent wells.

6) All exploration operations must be conducted under an approved unit plan of exploration.

7) The unit operator shall submit a second POE to the commissioner at least 60 days before the initial POE expires. Alternatively, the unit operator shall request approval of the first plan of development, if appropriate, at least 90 days before the initial POE expires. 11 AAC 83.341(b) and .343(c).

8) ACC is designated unit operator.

9) An approved unit plan of operations must be obtained before commencing any operations in the unit area. This decision, or the initial POE, does not authorize operations or well testing for royalty accounting purposes, or otherwise. A separate approval must be obtained from the Division for all unit operations.

An eligible person affected by this decision may file an appeal, which must be made in accordance with 11 AAC 02 before any appeal can be filed in the superior court. Any appeal received by the commissioner's office must be received within 20 calendar days after the date of "issuance" of this decision, as defined in 11 AAC 02.040 (c) and (d), and may be mailed or delivered to Michael L. Menge Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918; or sent by electronic mail to dnr_appeals@dnr.state.ak.us. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

William Van Dyke, Acting Director
Division of Oil and Gas

June 29, 2006
Date

Attachments:
1. AFU Exhibit A, Tract Description and Ownership Schedule
2. AFU Exhibit B, Map of the Arctic Fortitude Unit
3. Exhibit G, Plan of Exploration

## Attachment #1 - Exhibit A, Tract Description and Ownership Schedule

**EXHIBIT A**

**ARCTIC FORTITUDE UNIT**

| | Tract 1 | Tract 2 | Tract 3 |
|---|---|---|---|
| Lease Number | State of Alaska ADL 389178 | State of Alaska ADL 389179 | State of Alaska ADL 389177 |
| Effective Date | July 1, 1999 | July 1, 1999 | July 1, 1999 |
| Working Interest Owner | James W. White | James A. White, P.E. | James A. White, P.E. |
| Working Interest | 100 % | 100 % | 100 % |
| Legal Description | T. 10 N., R. 14 E., U.M.<br>Section 33, all<br>Section 34, all | T. 10 N., R. 14 E., U.M.<br>Section 29, all<br>Section 30, all<br>Section 31, all<br>Section 32, all | T. 10 N., R. 13 E., U.M.<br>Section 25, all<br>Section 26, all<br>Section 35, all<br>Section 36, all |
| Acreage | 1,280 Acres | 2,523 Acres | 2,560 Acres |
| Royalty Burden | 12.50 % | 12.50 % | 12.50 % |
| ORR Burden | 1.00 % | none | none |

**WORKING INTEREST OWNERS**

James W. White
4616 Bohill
Sanintonio, TX 78217

James A. White, P.E.
2214 Stephanie Brook
Street
Wenatchee, WA 98801

**ROYALTY INTEREST OWNER**

State of Alaska
Dept. of Natural Resources
Division of Oil and Gas
550 West 7th Avenue
Suite 1100
Anchorage, AK 99501

**OVERRIDING ROYALTY INTEREST OWNER**

Bruce D. Webb
P.O. Box 113141
Anchorage, AK 99511

**Attachment #2 - Exhibit B, Map of the Arctic Fortitude Unit**

**EXHIBIT B**

## ARCTIC FORTITUDE UNIT

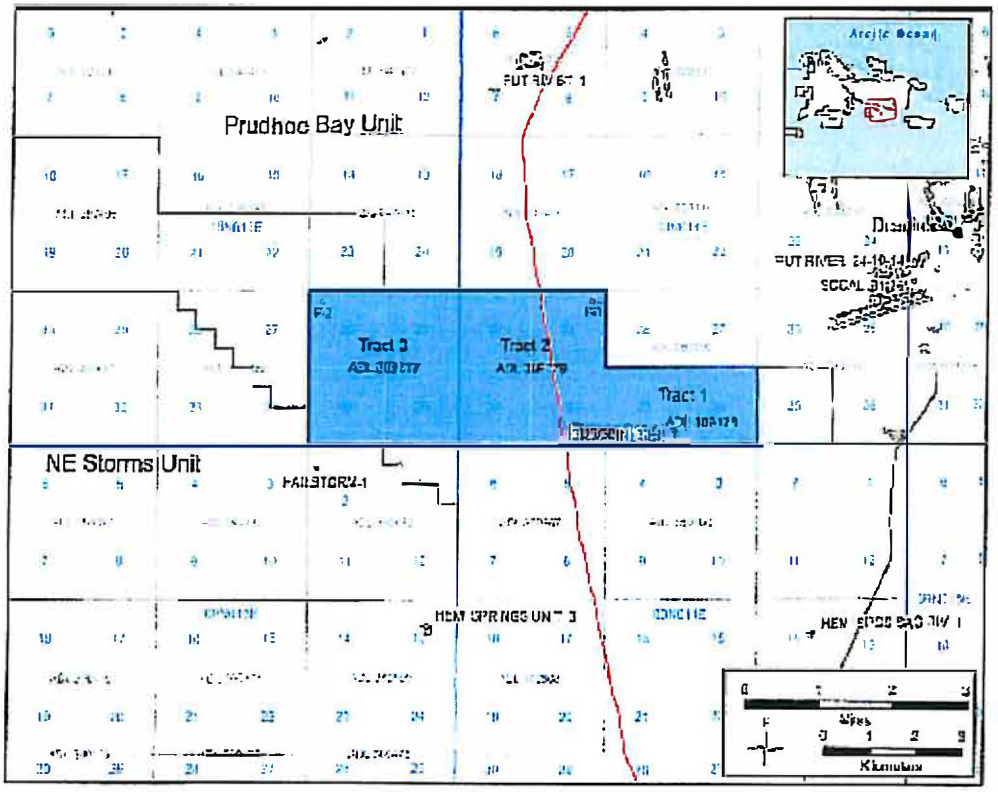

**Exhibit G**
**Arctic Fortitude Unit Agreement Initial Plan of Exploration**

The unit operator, Alaskan Crude Corporation (ACC) will complete a four-year initial plan of exploration for the Arctic Fortitude Unit (AFU), effective June 30, 2006 - June 30, 2010.

**Stage 1 Security Provisions**

1. By 5 p.m., Alaska Time, on August 15, 2006, ACC shall submit $60,000 to the Division in the form of a bond acceptable to the state, certificate of deposit, or wire transfer of cash funds (Stage 1 Security-payment #1). If ACC fails to timely submit the Stage 1 Security-payment #1, the AFU will automatically terminate at 5:01 p.m., Alaska Time, on August 15, 2006.

**Stage 2 Security Provisions and Work Obligation**

2. By 5 p.m., Alaska time, on July 1, 2007, ACC shall:
   a. provide a written statement to the Division whether or not it elects to complete all of the Stage 2 and 3 work obligations, as set out in this document;
   b. submit an additional $60,000 to the Division in the form of a bond acceptable to the state, certificate of deposit, or wire transfer of cash funds (Stage 2 Security-payment #2);

3. If ACC elects to NOT complete all of the Stage 2 and 3 work obligations, or timely submit the Stage 2 Security-payment #2, as set out in this document, by 5:00 p.m., Alaska Time, on July 1, 2007:
   a. the AFU will automatically terminate at 5:01 p.m., Alaska time, on July 1, 2007; and
   b. ACC shall forfeit all $60,000 of the Stage 1 Security-payment #1 to the Division upon termination of the AFU.

4. By 5 p.m., Alaska time, on October 1, 2007, ACC shall complete the following Stage 2 work obligations:
   a. move a drilling or workover rig onto the Burglin #33-1 well pad;
   b. re-enter and workover the well, which means to perform onsite well operations in an effort to cause production of oil or gas in paying quantities where there was none from the West Sak, Ugnu, Sag River, or Ivishak formation, but does not include bleeding the well or the well annulus;
   c. attempt to flow, pump, or circulate reservoir fluids to a surface tank or surface facility;
   d. acquire flow test data for certification of the well as capable of production in paying quantities, as those terms are defined in 11 AAC 83.361;

e. submit the flow test results, supporting geologic data, and cost data to the Division as an application for certification under 11 AAC 83.361, which the Division will approve or disapprove, in its sole discretion;
f. provide a written statement to the Division describing all the onsite activities conducted by ACC under its Stage 2 work obligations; and
g. provide a second written statement to the Division whether or not it elects to complete all of the Stage 3 work obligations, as set out in this document.

5. If ACC satisfactorily completes, as determined in the Division's sole discretion, all of the Stage 2 work obligations, as set out in this document, the AFU will remain in effect subject to Stage 3 work commitments and the Division will release or refund $20,000 of the Stage 1 Security-payment #1 to ACC, without interest, upon ACC's request.

6. If ACC satisfactorily completes, as determined in the Division's sole discretion, all of the Stage 2 work obligations, as set out in this document, but ACC elects to not complete all of the Stage 3 work obligations, as set out below, then:
a. the AFU will automatically terminate at 5:01 p.m., Alaska time, on November 1, 2007;
b. the Division will release or refund $20,000 of the Stage 2 Security-payment #2 to ACC, without interest, upon ACC's request; and
c. ACC shall forfeit the remaining $40,000 of the Stage 1 Security-payment #1 and the remaining $40,000 of the Stage 2 Security-payment #2 to the Division upon termination of the AFU.

7. If ACC does not complete, as determined in the Division's sole discretion, all of the Stage 2 work obligations:
a. the AFU will automatically terminate at 5:01 p.m., Alaska time, on November 1, 2007; and
b. ACC shall forfeit all $60,000 of the Stage 1 Security-payment #1 and all $60,000 of the Stage 2 Security-payment #2 to the Division upon termination of the AFU.

8. By 5 p.m., Alaska time, on July 1, 2008, ACC shall submit an additional $60,000 to the Division in the form of a bond acceptable to the state, certificate of deposit, or wire transfer of cash funds (Stage 2 Security-payment #3).

9. If ACC fails to submit the Stage 2 Security-payment #3 as set out in this document:
a. the AFU will automatically terminate at 5:01 p.m., Alaska time, on July 1, 2008; and

b. ACC shall forfeit the remaining $40,000 of the Stage 1 Security-payment #1 and the remaining $60,000 of the Stage 2 Security-payment #2 to the Division upon termination of the AFU.

**Stage 3 Work Obligations**

1. By 5 p.m., Alaska time, on November 1, 2009, ACC shall complete the following Stage 3 work obligations:

a. drill one exploratory well from either the ACC F-2 gravel pad to a bottom-hole location within ADL # 389177 or from the ACC F-3 gravel pad to a bottom-hole location within ADL # 389179, to a total depth sufficient to penetrate the Ivishak formation and acquire and submit to the Division open-hole formation log data from the well; or

b. acquire and submit to the Division 3-D seismic data shot over the entire AFU acreage sufficient to determine the extent of any reservoirs under the acreage;

2. By 5 p.m., Alaska time, on July 1, 2010, ACC shall complete the following additional Stage 3 work obligations:

a. If a well was drilled as set out in Step 1 of Stage 3, drill a second exploratory well from either the ACC F-2 gravel pad or from the ACC F-3 gravel pad to a bottom-hole location within either ADL # 389179 or ADL # 389177, whichever one was not drilled to in Step 1 of Stage 3, and drill to a total depth sufficient to penetrate the Ivishak formation, and acquire and submit to the Division 3-D seismic data shot over the entire AFU acreage sufficient to determine the extent of any reservoirs under the acreage;

b. If 3-D seismic was shot as set out in Step 1 of Stage 3, drill one exploratory well from the ACC F-2 gravel pad to a bottom-hole location within ADL # 389177 and drill a second exploratory well from the ACC F-3 gravel pad to a bottom hole location within ADL # 389179, both to a total depth sufficient to penetrate the Ivishak formation;

c. acquire and submit to the Division open-hole formation log data from the well or wells;

d. provide a written statement to the Division describing all the onsite activities conducted by ACC under all Stage 3 work obligations.

3. If ACC satisfactorily completes, as determined in the Division's sole discretion, all of the Stage 3 work obligations, as set out in this document, by 5 p.m., Alaska time, on July 1, 2010, the Division will release or refund, without interest, all the remaining $160,000 of the Stage 1 and 2 Securities to ACC, upon ACC's request.

4. If ACC does not complete all of the Step 1, Stage 3 work obligations, as determined in the Division's sole discretion, and as set out in this document, then:

a. the AFU will automatically terminate at 5:01 p.m., Alaska time, on November 1, 2009; and
b. ACC shall forfeit all the remaining $160,000 of the Stage 1 and 2 Securities to the Division.

5. If ACC does not complete all of the Stage 3 work obligations, as determined in the Division's sole discretion, and as set out in this document, then:

a. the AFU will automatically terminate at 5:01 p.m., Alaska time, on July 1, 2010; and
b. ACC shall forfeit all the remaining $160,000 of the Stage 1 and 2 Securities to the Division.

**Additional Provisions:**

1) ACC waives the extension provisions of 11 AAC 83.140 and Article 15.02 of the AFU Agreement.

2) ACC waives the notice and hearing provisions of 11 AAC 83.374, applicable to default and termination of the AFU.