

COLVILLE RIVER UNIT

APPLICATION FOR THE FORMATION OF THE  
QANNIK PARTICIPATING AREA

FINDINGS AND DECISION OF THE DIRECTOR,  
DIVISION OF OIL AND GAS,  
UNDER DELEGATION OF AUTHORITY FROM THE COMMISSIONER  
STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

July 1, 2008

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**COLVILLE RIVER UNIT**  
**FORMATION OF THE QANNIK**  
**PARTICIPATING AREA**

**I. INTRODUCTION, BACKGROUND, AND DECISION SUMMARY**

In an April 30, 2008, letter, ConocoPhillips Alaska, Inc. (ConocoPhillips), as Colville River Unit (CRU) Operator, applied for itself and the other Colville River Unit working interest owners (WIOs) to form the Qannik Participating Area (Qannik PA) within the boundaries of the CRU (Application). The Qannik PA will be the sixth participating area in the CRU, which will be developed from an existing CRU drillsite--Drillsite CD2.

The proposed Qannik PA includes all or portions of four State of Alaska leases and sixteen leases that are held jointly by the State and the Arctic Slope Regional Corporation (ASRC). The State-only leases comprise approximately 2,205.75 acres and the joint State/ASRC leases comprise 15,908.31 acres, for a total Qannik PA of approximately 18,114.06 acres. ConocoPhillips provided the State with geological, geophysical and engineering data regarding the proposed Qannik PA. The data indicate that the Qannik Reservoir within the Nanushuk Formation is capable of producing or contributing to the production of hydrocarbons in paying quantities.

The Division approves the Application to form the Qannik PA. The Qannik PA encompasses an area that is “reasonably known to be underlain by hydrocarbons and known or reasonably estimated ... to be capable of producing or contributing to production of hydrocarbons in paying quantities.” 11 AAC 83.351(a). The effective date of the Qannik PA is July 1, 2008.

**II. APPLICATION FOR THE FORMATION OF THE QANNIK PARTICIPATING AREA**

ConocoPhillips submitted the Application under 11 AAC 83.351, and Sections 9.1, 9.3, 9.5 and Subsection 10.1.10 of the CRU Agreement. The Qannik Reservoir is a Gas Cap Reservoir, as defined in Subsection 10.1.10 of the CRU Agreement, because it is a reservoir that contains crude oil (with gas in solution) as well as an associated gas cap under original reservoir conditions. It is the second Gas Cap Participating Area to be formed within the CRU; the first is the Nanuq Nanuq PA. As such, it will have two sets of Unit Tract Participations--a Liquid Unit Tract Participation and a Gas Unit Tract Participation. The other CRU participating areas, Alpine, Fiord Kuparuk, Fiord Nechelik and the Nanuq Kuparuk, have a single Unit Tract Participation for each Unit Tract in their respective participating areas.

Under Subsection 10.1.10(a) of the CRU Agreement, the Liquid Unit Tract Participation is based on the recoverable volumes and recoverable participating area volumes of crude oil and other Unitized Substances in the form of liquid in the Reservoir, plus condensate contained in gas in the Reservoir. The Gas Unit Tract Participation is based on the estimated total volumes of

gas or gaseous Unitized Substances originally in place in the respective Unit Tracts in the participating area both in the form of free gas in the Reservoir, the original free gas in place, and in the form of gas entrained in solution in liquid Unitized Substances in the Reservoir, the original solution gas in the crude oil. Or more simply stated, the Liquid Unit Tract Participation is based on recoverable oil in place, while the Gas Unit Tract Participation is based on the original solution gas in place plus the original non-solution (Gas Cap) gas in place.

The proposed 18,114.06 acre Qannik PA is comprised of all or portions of: 1) four State of Alaska leases, ADLs 25538, 25558, 25559 and 372097; and 2) sixteen leases that are held jointly by the State and ASRC, ADLs - 25526, 25529, 25530, 380075, 380077, 380082, 380096, 384209, 384211, 387207, 387208, 387211, 387212, 388901, 388902 and 388903. The proposed Qannik PA acreage encompasses the Qannik Reservoir within the Nanushuk Formation in the central and southern parts of the CRU. The tracts/leases proposed for inclusion and the proposed tract participation schedule for the Qannik PA are set out in Attachment 1 to this Findings and Decision. A map depicting the outline of the proposed Qannik PA and the Unit Tracts proposed for inclusion in the Qannik PA are set out in Attachment 2 to this Findings and Decision.

Because the Qannik PA will include lands held jointly by the State and ASRC, the outline of each participating area depicted in Exhibit D to the CRU Agreement (Attachments 2 to this Findings and Decision) is prescribed by Section 9.5 of the CRU Agreement. The boundary depicted in Attachment 2 is the product of a mechanical methodology that involves drawing circles and tangents around proposed development wells, combined with a mapping evaluation of the hydrocarbon-bearing Qannik Reservoir. The mapping evaluation used well and seismic data to estimate the area within the CRU that is underlain by hydrocarbons and capable of producing or contributing to production of hydrocarbons in paying quantities. Subsection 9.5.1 of the CRU Agreement describes how a participating area for the Qannik Reservoir must be drawn using the circle and tangent method. The boundaries of the participating area are those lands encompassed within the outermost circles or ellipses and connecting tangents drawn around qualified, drilled and proposed injection or production wellbores. The radius of the circles and ellipses is one-half mile, and the area encompassed includes the entirety of each quarter-quarter section whether or not the entirety of that quarter-quarter section falls within the drawn configuration.

The initial Plan of Development (POD) for the Qannik PA includes a listing and schedule of drilled and proposed injection and production wells. The POD provided the drilled and proposed bottomhole locations, actual and proposed injection points (in injection wells) and actual and proposed completion intervals (in production wells), and the resulting Qannik PA after applying the circle and tangent method. The proposed Qannik PA outline encompass the lands that ConocoPhillips has drilled or intends to drill and put into production or on injection within two years of commencement of production from the participating area. The lands proposed to be included in the Qannik PA (as described in Exhibit C and depicted in Exhibit D to the CRU Agreement) are a result of the proposed POD and the application of Section 9.5 of the CRU Agreement.

Finally, Section 9.8 of the CRU Agreement provides that the effective date for each subsequent participating area (other than the initial participating area, the Alpine Participating Area) shall be established by the proper authority. ConocoPhillips did not request any effective date in the

Application. Because sustained production from the participating area is scheduled for July 2008, the Division approves the Qannik PA with an effective date of July 1, 2008.

### **III. DISCUSSION OF DECISION CRITERIA**

The Commissioner of the Department of Natural Resources (Commissioner) reviews applications to form participating areas under 11 AAC 83.303--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 Director of the Division of Oil and Gas (Director). The Division's review of the Application is based on the criteria in 11 AAC 83.303(a) and (b).

A participating area may include only land reasonably known to be underlain by hydrocarbons and known or reasonably estimated through use of geological, geophysical, or engineering data to be capable of producing or contributing to the production of hydrocarbons in paying quantities. 11 AAC 83.351(a). "Paying quantities" means:

quantities sufficient to yield a return in excess of operating costs, even if drilling and equipment costs may never be repaid and the undertaking as a whole may ultimately result in a loss; quantities are insufficient to yield a return in excess of operating costs unless those quantities, not considering the costs of transportation and marketing, will produce sufficient revenue to induce a prudent operator to produce those quantities.

11 AAC 83.395(4). A discussion of the 11 AAC 83.303(b) criteria, as they apply to the Application to form the Qannik PA, is set out below, followed by a discussion of the subsection (a) criteria.

#### **A. Decision Criteria considered under 11 AAC 83.303(b)**

##### **1. The Environmental Costs and Benefits of Unitized Exploration and Development**

DNR considered environmental issues in the lease sale process and the initial unitization process for the CRU leases; DNR reviewed them again during the unit plan of operations approval process. Unitized exploration, development, and production minimize surface impacts by consolidating facilities and reducing activity in the field. The Qannik PA POD was designed to minimize the amount of surface impact from the facilities necessary to develop the Qannik Reservoir, which will be developed from an expansion of existing gravel pad-CD2.

Qannik development will share all existing infrastructure to the extent possible. The project expands Drill Site CD2, which is currently used for Alpine PA development and production, by 7.5 acres to allow up to 18 new Qannik development wells. Drill Site CD2 is located approximately 3 miles west of the Alpine Central Facility (ACF) and is accessible by an all-season gravel road. Drill Site CD2 facilities and infrastructure include produced oil, water injection, miscible injectant, and gas lift pipelines, and electric power from the ACF.

The Qannik project will promote efficient development of the State's resources, while minimizing impacts to the region's cultural, biological, and environmental resources. These impacts would be significantly greater if the Qannik Reservoir was developed on a lease-by-lease basis, rather than on an integrated unitized basis.

## **2. The Geological and Engineering Characteristics, and Prior Exploration Activities of the Qannik Participating Area**

Prior to submitting the Application, ConocoPhillips held numerous meetings with the Division and provided data and information that included net pay maps of the reservoir, a discussion of the development well drilled to date- (CD2-404), a discussion of reservoir fluid contacts and quality, well logs, core data from CD2-11, production and injection test data from CD2-404, structure maps, and multiple power point-slide stratigraphic cross sections through the development area.

During Early to Late Cretaceous time, tectonic events far to the southwest of the present day CRU created the ancestral Brooks Range. Sediments eroded from this uplift filled an extensive west to east trending foreland basin, the Colville Trough, across the present day North Slope. The foreland basin was filled in an easterly to northeasterly direction. Deposits in the southwestern part of the foreland basin represent more proximal fluvio-deltaic to shallow marine facies whereas equivalent strata deposited distally to the northeast represent deeper marine slope to basinal turbidite and sediment gravity flow facies. Numerous successions of prograding, clastic, nearshore to slope as well as aggradational, offshore marine sequences filled the foreland basin. Tectonic activity and sea level fluctuations throughout Cretaceous and Tertiary time have alternately truncated strata and created accommodation space which has been filled by these predominantly progradational shelf /slope/ basin floor successions.

The Qannik sandstone is an-informally named shallow marine sandstone. It was deposited as the topset component of an eastward prograding shelf edge sequence. The Qannik sandstone is roughly age equivalent to the Nanushuk Formation, which has been revised in age as Albian to Upper Cenomanian (Mull et al, 2003). The Qannik sandstone has been penetrated in early development wells including Nanuk #5 and in over 130 well penetrations in the CRU.

The Qannik Reservoir is defined as the accumulation of oil and gas common to and correlating with the stratigraphic interval between 6,086 and 6,249 feet measured depth in well CD2-11 and its lateral equivalents. It overlies the existing Alpine, Nanuk and Fiord Reservoirs in the CRU. Because the Qannik represents the topset component of a progradational (coarsening upward) sequence, it is very continuous, at least 12 miles long - in the depositional strike or north-south direction. The sandstone is 6 miles wide in a depositional dip or east-west direction. The Qannik sandstone is stratigraphically trapped as it shales out down depositional dip to the east and is either truncated or onlaps updip to the west. The entire sandstone is relatively flat lying.

Both oil and gas occur in the Qannik Reservoir. No oil-water contact has been observed and no water was produced from CD2-404 Qannik Reservoir production test conducted from June through September 2006.

Oil properties of the Qannik Reservoir were characterized from MDT samples obtained from Nanuq #5 and the recombined surface samples acquired from the CD2-404 flow test. This data indicate that oil gravity ranges from 27 to 32 API, with oil viscosity estimated at 2.0 centipoise. Solution gas-oil-ratio is approximately 404 SCF/STB, and reservoir pressure is approximately 1865 psia.

ConocoPhillips submitted data that supports the mapped Qannik PA as being underlain by hydrocarbons and capable of producing or contributing to the production of hydrocarbons in paying quantities. The participating area outline is drawn in accordance with the rules described in Subsection 9.5.1 of the CRU agreement. The Division's evaluation of the subsurface geology supports the configuration of the proposed Qannik PA.

### **3. Plan of Development for the Qannik Participating Area**

Under Subsections 8.1.2(b) and 8.1.2(c) of the CRU Agreement, the term of the Initial Qannik PA POD is a period commencing with Sustained Unit Production from a participating area and ending two years after the commencement of Sustained Unit Production. Sustained Unit Production from the Drill Site CD4 is scheduled to commence in July 2008.

The Qannik Project involves the development of approximately 5,000 acres of the Qannik Reservoir from Drill Site CD2. This will be accomplished by drilling eight new horizontal wells and using the existing Qannik exploration well-CD2-404. The nine wells, six producers and three interior, water injectors are planned as the base Qannik development. Qannik wells will be drilled on 20-foot centers and will trend roughly north-south. The horizontal section through the reservoir will range in length from 6,000 feet to 9,000 feet, and the spacing between wells will be approximately 3,000 feet apart. Original Oil in place for the base development is estimated at 79 MMBO.

The Qannik Reservoir recovery mechanism will involve waterflood from inboard injection wells supplemented with gas cap expansion drive from the east. The peak annual production rate is estimated to be 4,000 BOPD (barrels of oil per day) in 2009 with a range of 3,000 to 6,000 BOPD. Ultimate recovery is estimated at 17 million barrels of oil with a range of 11 to 25 million barrels of oil.

### **4. The Economic Costs and Benefits to the State**

Division approval of the Qannik PA will provide near-term economic benefits to the State by creating jobs associated with the construction of the Qannik Project facilities, operation of the field, and the assessment of the hydrocarbon potential of the leases within the Qannik Project area. The State will also benefit from the Qannik PA POD, which will maximize the physical recovery of hydrocarbons from the Qannik Reservoir. Maximum hydrocarbon production will enhance the State's long-term royalty and tax revenues. The WIOs have provided sufficient technical data to define the participating area, and have agreed to a POD for the participating area that will ensure a timely sequence of drilling and development activities to evaluate and develop both participating areas.

The leases in the Qannik PA are written on a variety of forms. Previously, during the CRU Agreement negotiations, the parties bargained for amendments to the terms and conditions of the leases to harmonize them. By amending, in the unit agreement, the terms of the older leases, the State avoided costly and time-consuming re-litigation over problematic lease provisions in the older forms.

Under the CRU Agreement, the State will benefit economically from a number of amendments to the individual leases. Specifically, the State's royalty share of production from the participating area will be free and clear of all field costs incurred on the North Slope of Alaska.

Any additional administrative burdens associated with the Qannik PA will be outweighed by the additional royalty and tax benefits from the production from the participating area.

#### **5. Any Other Relevant Factors the Commissioner Determines Necessary or Advisable to Protect the Public Interest**

Under 11 AAC 83.351 and 11 AAC 83.371, ConocoPhillips must submit for Commissioner approval a proposed division of interest setting out the percentage of production and costs to be allocated to each lease or portion of lease within each participating area. Furthermore, the proposed division of interest allocating production and costs may not take effect until approved by the Commissioner in writing. The Application included an allocation of production (CRU Agreement, Exhibit C for the Qannik PA, dated April 21, 2008), an allocation of participating area expenses (CRU Agreement, Exhibit E for the Qannik PA), and an allocation of unit expenses (CRU Agreement, Exhibit F for the Qannik PA) for the leases in the Qannik PA. The proposed division of interest schedule distributes production and ultimately costs among the tracts in the Qannik PA according to original recoverable oil-in-place.

The Exhibit C includes the division of interest allocating unit tract participation within the proposed participating area as determined by ConocoPhillips in accordance with the standards and principles set out in Article 10 of the CRU Agreement. The basis for the Qannik PA's liquid unit tract participation schedule, original recoverable oil-in-place, and the gas unit tract participation schedule, original solution gas plus non-solution (Gas Cap) gas-in-place, is set out in Subsection 10.1.10 of the CRU Agreement. Under Section 9.3 of the CRU Agreement, the division of interest submitted by ConocoPhillips allocating unit tract participation for the Qannik PA does not require approval by the Commissioner or the President of ASRC, and remains effective until changed by Section 10.1 of the CRU Agreement. Even if the parties had not agreed to Section 9.3 of the CRU Agreement, the Division finds that the methodology embodied in the Exhibit C for the Qannik PA acceptable for allocating production to the various tracts in the participating area.

Further, under Section 9.3 of the CRU Agreement, ConocoPhillips submitted, for Commissioner approval, Exhibit E, Allocation of Participating Area Expense, and Exhibit F, Allocation of Unit Expense, with the Application. Participating Area Expense has two components, capital expenditures and operating expenditures. Exhibit E for the Qannik PA sets

out how these two components of Participating Area Expense are to be allocated to the Tracts within the participating area. Ultimately, each Unit Tract in the Qannik PA has the same percentage of Participating Area Expense as the percentage of Unitized Substances allocated to the Tract under Exhibit C.

Similarly, Unit Expense has two components, capital expenditures and operating expenditures. Exhibit F for the Qannik PA sets out how these two components of Unit Expense are to be allocated to the Tracts in the participating area. Ultimately, each Unit Tract in the Qannik PA has the same percentage of Unit Expense as the percentage of Unitized Substances allocated to the tract via Exhibit C.

Exhibit E and Exhibit F for the participating area are based on Exhibit C. Allocated Unit Tract costs are ultimately based on recoverable oil-in-place. The Division finds the Exhibits E and Exhibits F for the Qannik PA acceptable for allocating costs among the Unit Tracts in the Qannik PA<sup>1</sup>.

ConocoPhillips has no plans for stand-alone processing facilities at the Qannik PA. Produced fluids from Qannik will be processed through the existing processing facilities at the ACF. Qannik produced fluids will be commingled with other CRU participating areas' produced fluids prior to final processing and custody transfer metering. All produced fluids from the various participating areas within the CRU will be treated identically in the commingled stream irrespective of individual stream quality differences, if any. Only one commingled stream from the ACF will be tendered to the Alpine Pipeline for delivery to the Trans Alaska Pipeline (TAPS).

The indigenous gas from all the CRU participating areas will be commingled at the ACF where some of it will be flared, some will be used as fuel in support of Alpine, Fiord Kuparuk, Fiord Nechelik, Nanuq Kuparuk, Nanuq Nanuq and Qannik Participating Areas, and the remainder, an enriched gas and a dry gas, will be injected into each unit participating area as an EOR mechanism.

An integral part of a successful implementation of commingled production is the allocation of the produced fluids back to the originating reservoir for revenue and reservoir management purposes. Two issues regarding commingled production from multiple reservoirs through common surface facilities are not addressed directly in the Application, but were negotiated between the State, ASRC, and ConocoPhillips. These issues are: 1) a methodology for allocating the commingled fluid streams through the common Alpine processing facilities; and 2) a unit-wide gas management agreement for the allocation of commingled produced gas that will be used for development and production, repressuring, recycling, storage or enhanced recovery purposes of all reservoirs in the CRU. This Findings and Decision does not address these issues. Rather, they are addressed under a separate document, the CRU Gas Management Agreement.

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<sup>1</sup> For the Qannik PA, the Liquid Unit Tract Participation factor of its Exhibit C will apply for its Exhibit E and Exhibit F.

Finally, Section 9.8 of the CRU Agreement provides that the effective date for each subsequent participating area shall be established by the Proper Authority. ConocoPhillips did not request an effective date in the Application. Since sustained production from Qannik is anticipated in July 2008, the Division approves the Qannik PA effective date July 1, 2008.

**B. Decision Criteria considered under 11 AAC 83.303(a)**

**1. Promote the Conservation of All Natural Resources**

The formation of oil and gas units, as well as the creation of participating areas within units, generally conserves hydrocarbons. The coordinated development of leases held by diverse parties maximizes total hydrocarbon recovery and minimizes waste. The formation of the Qannik PA provides for more efficient, integrated development of the entire Qannik Reservoir. The CRU Operating Agreement and the POD for each participating area avoids duplicative development efforts on and beneath the surface.

The number of facilities required to develop the resource and the area of land that may be required to accommodate those facilities is reduced when resources on several leases are developed as one participating area. Facilities can be located to maximize recovery and to minimize environmental impacts, without regard for individual lease ownership.

**2. The Prevention of Economic and Physical Waste**

Generally, the formation of a participating area facilitates the equitable division of costs and allocation of hydrocarbon shares, includes a diligent development plan that maximizes the physical and economic benefits from a reservoir's production. The creation of the Qannik PA prevents economic and physical waste by eliminating redundant expenditures, and maximizes the ultimate recovery from the reservoir by adopting a unified reservoir management strategy. Oil and gas resources can be produced through a single facility infrastructure system. The Qannik PA will improve the efficiency of developing its reservoir, which has variable productivity across adjoining leases. Economically marginal reserves, which otherwise would not be produced on a lease-by-lease basis, can be developed through the participating area.

Further, facility consolidation saves capital and promotes better reservoir management through pressure maintenance and enhanced recovery procedures. These factors allow the Qannik Reservoir to be developed and produced in the interest of all parties, including the State, while preventing economic and physical waste.

**3. The Protection of All Parties of Interest, Including the State**

Because hydrocarbon recovery will be maximized resulting in additional production-based revenue from the Qannik production, the State's economic interest is promoted. Also, diligent exploration under a single unit, without the complications of competing leasehold interests, promotes the State's interest. The formation of the participating area promotes efficient evaluation and development of the State's resources, yet minimizes impacts to the area's cultural, biological, and environmental resources. Operating under the CRU Agreement provides for accurate reporting and record keeping, State concurrence with operating procedures,

royalty settlement, in-kind taking, and emergency storage of oil. These all protect the State's interests.

The formation of the participating area protects the economic interests of all WIOs of the reservoir in the participating area. Combining interests and operating under the terms of the CRU Agreement and CRU Operating Agreement ensures that each individual working interest owner an equitable allocation of costs and revenues commensurate with the resources of its leases.

#### **IV. FINDINGS AND DECISION**

Considering the facts discussed above and the administrative record as a whole, I make the findings and impose conditions as follows.

1. The formation of the Qannik PA, under the terms and conditions of the Application and this decision, will promote the conservation of all natural resources, promote the prevention of economic and physical waste, protect all parties of interest, and are necessary and advisable to protect the public interest. AS 38.05.180(p); 11 AAC 83.303.
2. The available geological and engineering data demonstrate that the acreage is underlain by hydrocarbons and known and reasonably estimated to be capable of production or contributing to production in sufficient quantities to justify the formation of the Qannik PA within the CRU.
3. The Qannik PA POD, dated April 30, 2008, meets the requirements of 11 AAC 83.343 and Section 8.1 of the CRU Agreement. The Qannik PA POD, which provides for the rational development of the hydrocarbon accumulations within the proposed participating area, is approved.
4. ConocoPhillips shall submit annual updates to the initial Qannik POD to DNR consistent with the provisions of 11 AAC 83.343 and Article 8 of the CRU Agreement. The annual updates must describe the status of projects undertaken and the work completed, and any proposed changes to the POD.
5. The available geological and engineering data and Qannik POD justify the inclusion of the proposed tracts within the Qannik PA. In accordance with the regulations governing the formation and operation of oil and gas units (11 AAC 83.301 - 11 AAC 83.395), the CRU Agreement, and the terms and conditions under which these lands were leased from the State, the lands described in Attachment 1 to this Findings and Decision are included in the Qannik PA.
6. The formation of the Qannik PA provides for the equitable allocation of produced hydrocarbons and costs to the tracts within the participating area, and set out a POD designed to maximize physical and economic recovery from the Qannik Reservoir. Under Section 9.3 of the CRU Agreement, 11 AAC 83.351(a), and 11

AAC 83.371(a), the Allocation of Participating Area Expense (CRU Agreement, Exhibit E for the Qannik PA) and the Allocation of Unit Expense (CRU Agreement, Exhibit F for the Qannik PA) are approved.

7. All produced fluids from the various participating areas within the CRU will be treated identically in the commingled stream irrespective of individual stream quality differences, if any. Only one commingled stream from the ACF will be tendered to the Alpine Pipeline for delivery to TAPS. The Application does not address quality differences among the various participating areas within the CRU, and this Findings and Decision does not recognize any quality differences in the commingled stream for royalty payment purposes.
8. The commingling of Qannik PA production with Nanuq, Alpine and the Fiord Participating Areas' production in surface facilities before custody transfer is not authorized under this Findings and Decision. The implementation of a production allocation methodology, the terms and conditions governing the commingling of the various CRU participating area produced fluids through the ACF, and the terms and conditions governing the transfer of gas among the various CRU participating areas for production and development, repressuring, recycling, storage, and enhanced recovery purposes are subject to the CRU Gas Management Agreement, effective July 1, 2006.
9. The WIOs have allocated production for royalty reporting purposes from the CD2-404 Well Qannik Tract Operation (Accounting Code "CR09") as of June 2006. Both the CD2-404 Qannik Tract Operation and Account Code "CR09" expired on April 30, 2007.
10. For royalty accounting purposes, the **Qannik PA** is assigned two accounting unit codes: (1) Accounting Unit Code "**CRQL**" for the Liquid Unit Tract Participation factor; and (2) Accounting Unit Code "**CRQG**" for the Gas Unit Tract Participation factor. Effective July 1, 2008, all operator reports and royalty reports for the participating area must reference these Accounting Unit Codes.

For the reasons discussed in this Findings and Decision, I approve the formation of the Qannik PA, and its respective allocation of participating area expense and allocation of unit expense schedules. These approvals are effective July 1, 2008.

A person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal 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 Tom Irwin, 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@alaska.gov](mailto:dnr.appeals@alaska.gov). This decision takes effect immediately. An eligible person must first appeal this decision in

AAC 02 may be obtained from any regional information office of the Department of Natural Resources.



Kevin R. Banks, Acting Director  
Division of Oil and Gas

7-1-08  
Date

- Attachments: 1) Exhibit C to the CRU Agreement for the Qannik PA  
2) Exhibit D to the CRU Agreement for the Qannik PA

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## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
10	25538	T12N,R5E-U.M.		None	12.5	CPAI	78.00	0.00289032	0.00774773
	4715	Sec. 19, W1/2SW1/4,				APC	<u>22.00</u>		
	932100	SW1/4NW1/4	78.75				100.00		
		TOTAL	78.75						
14	25530	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.06609689	0.05284614
	4714	Sec. 24, All	640.00			APC	<u>22.00</u>		
	932098	TOTAL	640.00				100.00		
15	25529	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.02929847	0.02074304
	4713	Sec. 23, All	640.00			APC	22.00		
	932096	TOTAL	640.00				100.00		
16	25529	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.00634808	0.00449438
	4713	Sec. 22, E1/2, E1/2SW1/4,				APC	22.00		
	932096	SE1/4NW1/4, excl. NPRA	325.27				100.00		
		TOTAL	325.27						
17	387211	T12N,R4E-U.M.		None	16.66667	CPAI	78.00	0.00231775	0.00164094
	4833	Sec. 22, E1/2 SW1/4,				APC	22.00		
	932197	SE1/4NW1/4 within NPRA,					100.00		
		excl. USS 9502 Lot 2	114.50						
		TOTAL	114.50						

## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
24	387212	T12N,R4E-U.M.		None	Sliding	CPAI	78.00	0.01158188	0.00983869
	4834	Sec. 27, S1/2, NE1/4,			Scale	APC	22.00		
	932199	E1/2NW1/4, within NPRA	470.29		*16.66667		100.00		
		TOTAL	470.29						
25	25530	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.00407174	0.00288276
	4714	Sec. 27, All, excl. NPRA	89.71			APC	22.00		
	932098	TOTAL	89.71				100.00		
26	387212	T12N,R4E-U.M.		None	Sliding	CPAI	78.00	0.00114473	0.00081046
	4834	Sec. 26, All, within NPRA	17.36		Scale	APC	22.00		
	932199	TOTAL	17.36		*16.66667		100.00		
27	25530	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.04749003	0.03374945
	4714	Sec. 26, All, excl. NPRA	622.64			APC	22.00		
	932098	TOTAL	622.64				100.00		
28	25530	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.06833792	0.06204540
	4714	Sec. 25, All	640.00			APC	22.00		
	932098	TOTAL	640.00				100.00		
29	25558	T12N-R5E,U.M.		None	12.5	CPAI	78.00	0.02448798	0.06975062
	4716	Sec. 30, W1/2	268.00			APC	22.00		
	932102	Sec. 31, W1/2, SW1/4SE1/4	311.00				100.00		
		TOTAL	579.00						

## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
35	380096	T12N,R4E-U.M.		None	16.667	CPAI	78.00	0.06501214	0.05392854
	4622	Sec. 36, All	640.00			APC	22.00		
	932058	TOTAL	640.00				100.00		
36	25530	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.04959452	0.03511246
	4714	Sec. 35, All, excl. NPRA	596.62			APC	22.00		
	932098	TOTAL	596.62				100.00		
37	387212	T12N,R4E-U.M.		None	Sliding	CPAI	78.00	0.00281910	0.00199590
	4834	Sec. 35, All, within NPRA	43.38		Scale	APC	22.00		
	932199	TOTAL	43.38		*16.66667		100.00		
38	387212	T12N,R4E-U.M.		None	Sliding	CPAI	78.00	0.01308821	0.01125418
	4834	Sec. 34, All, within NPRA	640.00		Scale	APC	22.00		
	932199	TOTAL	640.00		*16.66667		100.00		
39	387207	T11N,R4E-U.M.		None	Sliding	CPAI	78.00	0.02772728	0.01963065
	4830	Sec. 3, All, within NPRA	588.85		Scale	APC	22.00		
	932191	TOTAL	588.85		*16.66667		100.00		
40	380075	T11N-R4E- U.M.		None	16.667	CPAI	78.00	0.00222207	0.00157321
	4608	Sec. 3, All, excl. NPRA	51.15			APC	<u>22.00</u>		
	932034	TOTAL	51.15				100.00		
42	380075	T11N-R4E, U.M.		None	16.667	CPAI	78.00	0.03889084	0.02753435
	4608	Sec. 2, All	640.00			APC	<u>22.00</u>		
	932034	TOTAL	640.00				100.00		

## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
43	380075	T11N-R4E,U.M.		None	16.667	CPAI	78.00	0.04610859	0.04913130
	4608	Sec. 1, All	640.00			APC	<u>22.00</u>		
	932034	TOTAL	640.00				100.00		
44	25559	T11N,R5E-U.M.		None	12.5	CPAI	78.00	0.05222834	0.09186111
	4717	Sec. 6, W1/2, W1/2E1/2	433.00			APC	<u>22.00</u>		
	932104	Sec. 7, W1/2, W1/2NE1/4, SE1/4	516.00				100.00		
		TOTAL	949.00						
50	380075	T11N-R4E, U.M.		None	16.667	CPAI	78.00	0.05254106	0.03719857
	4608	Sec. 12, All	640.00			APC	<u>22.00</u>		
	932034	TOTAL	640.00				100.00		
51	380075	T11N-R4E, U.M.		None	16.667	CPAI	78.00	0.04095533	0.02899599
	4608	Sec. 11, All, excl. NPRA	594.02			APC	<u>22.00</u>		
	932034	TOTAL	594.02				100.00		
52	387207	T11N,R4E-U.M.		None	Sliding	CPAI	78.00	0.00285780	0.00202330
	4830	Sec. 11, All, within NPRA	45.98		Scale	APC	<u>22.00</u>		
	932191	TOTAL	45.98		*16.667		100.00		
53	380075	T11N-R4E, U.M.		None	16.667	CPAI	78.00	0.00011876	0.00008408
	4608	Sec. 10, All, excl. NPRA	5.83			APC	<u>22.00</u>		
	932034	TOTAL	5.83				100.00		

## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
54	387207	T11N-R4E-U.M.		None	Sliding	CPAI	78.00	0.03087216	0.02369128
	4830	Sec. 10, N1/2, SE1/4, N1/2SW1/4,			Scale	APC	<u>22.00</u>		
	932191	SE1/4SW1/4 within NPRA	594.17		*16.667		100.00		
		TOTAL	594.17						
57	387208	T11N-R4E-U.M.		None	Sliding	CPAI	78.00	0.00377325	0.00267142
	4831	Sec. 15, N1/2NE1/4,			Scale	APC	<u>22.00</u>		
	932193	NE1/4NW1/4, within NPRA	44.40		*16.667		100.00		
		TOTAL	44.40						
58	380075	T11N-R4E, U.M.		None	16.667	CPAI	78.00	0.01785727	0.01264957
	4608	Sec. 15, E1/2, E1/2NW1/4,				APC	<u>22.00</u>		
	932034	NE1/4SW1/4, excl. NPRA	395.60				100.00		
		TOTAL	395.60						
59	380075	T11N-R4E, U.M.		None	16.667	CPAI	78.00	0.03008819	0.02130215
	4608	Sec. 14, All	640.00			APC	<u>22.00</u>		
	932034	TOTAL	640.00				100.00		
60	380075	T11N-R4E, U.M.		None	16.667	CPAI	78.00	0.04750556	0.04342380
	4608	Sec. 13, All	640.00			APC	<u>22.00</u>		
	932034	TOTAL	640.00				100.00		
61	372097	T11N,R5E-U.M.		Above 10,350'	12.5	CPAI	78.00	0.02315825	0.06868214
	4553	Sec. 18, All	599.00			APC	<u>22.00</u>		
	931996	TOTAL	599.00				100.00		

## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./	Legal Description	Acres	Depth Restrictions	Original	Tract Owners	Working	Liquid Tract Allocation**	Gas Tract Allocation**
	AK No.				Royalty (%)		Interest (%)		
70	384211	T11N,R5E-U.M.		Above 7,631'	16.667	CPAI	78.00	0.00442325	0.02281121
	4702	Sec. 20, W1/2W1/2	160.00			APC	<u>22.00</u>		
	932080	TOTAL	160.00				100.00		
71	384211	T11N,R5E-U.M.		Above 7,631'	16.667	CPAI	78.00	0.02868955	0.06440862
	4702	Sec. 19, All	601.00			APC	<u>22.00</u>		
	932080	TOTAL	601.00				100.00		
72	380077	T11N,R4E-U.M.		None	16.667	CPAI	78.00	0.02467130	0.01761338
	4609	Sec. 24, All	640.00			APC	<u>22.00</u>		
	932036	TOTAL	640.00				100.00		
73	380077	T11N,R4E-U.M.		None	16.667	CPAI	78.00	0.01403766	0.00993853
	4609	Sec. 23, All	640.00			APC	<u>22.00</u>		
	932036	TOTAL	640.00				100.00		
74	380077	T11N,R4E-U.M.		None	16.667	CPAI	78.00	0.00365892	0.00260953
	4609	Sec. 22, N1/2NE1/4,				APC	<u>22.00</u>		
	932036	SE1/4NE1/4, NE1/4SE1/4, excl. NPRA	154.86				100.00		
		TOTAL	154.86						
75	387208	T11N,R4E-U.M.		None	Sliding	CPAI	78.00	0.00006508	0.00005867
	4831	Sec. 22, NW1/4NE1/4,			Scale	APC	<u>22.00</u>		
	932193	NE1/4SE1/4, within NPRA	5.18		*16.66667		100.00		
		TOTAL	5.18						

## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
79	380077	T11N,R4E-U.M.		None	16.667	CPAI	78.00	0.00366610	0.00259556
	4609	Sec. 26, E1/2, E1/2NW1/4,				APC	<u>22.00</u>		
	932036	excl. NPRA	400.00				100.00		
		TOTAL	400.00						
80	384209	T11N-R4E,U.M.		None	16.667	CPAI	78.00	0.01639147	0.01160501
	4700	Sec. 25, All	640.00			APC	<u>22.00</u>		
	932076	TOTAL	640.00				100.00		
81	384211	T11N,R5E-U.M.		None	16.667	CPAI	78.00	0.03280098	0.02486053
	4702	Sec. 30, All	604.00			APC	<u>22.00</u>		
	932080	TOTAL	604.00				100.00		
82	380082	T11N-R5E,U.M.			16.667	CPAI	78.00	0.00991605	0.00866766
	4614	Sec. 29, W1/2W1/2	160.00			APC	<u>22.00</u>		
	932046	TOTAL	160.00				100.00		
92	25526	T12N-R4E,U.M.		None	12.5	CPAI	78.00	0.01110525	0.00786242
	4712	Sec. 13, Unsurveyed,				APC	<u>22.00</u>		
	932094	S1/2SW1/4,SW1/4SE1/4	120.00				100.00		
		TOTAL	120.00						
93	388901	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.00723085	0.00511938
	4943	Sec. 14, Unsurveyed, S1/2S1/2	160.00			APC	<u>22.00</u>		
	932349	TOTAL	160.00				100.00		

## Exhibit C

### Qannik Participating Area Tract Participations

Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
94	388901	T12N,R4E-U.M.		None	12.5	CPAI	78.00	0.00075808	0.00053671
	4943	Sec. 15, Unsurveyed, SE1/4SE1/4,				APC	<u>22.00</u>		
	932349	east of the highest water mark on the left bank of the Nechelik Channel of the Colville River	40.00				100.00		
		TOTAL	40.00						
122	388902	T11N,R4E-U.M.		None	16.667	CPAI	78.00	0.00105068	0.00074387
	4944	Sec. 35, Unsurveyed, NE1/4NE1/4,				APC	<u>22.00</u>		
	932351	excluding the NPR-A	40.00				100.00		
		TOTAL	40.00						
123	388902	T11N,R4E-U.M.		None	16.667	CPAI	78.00	0.00938395	0.00664375
	4944	Sec. 36, Unsurveyed, N1/2N1/2,				APC	<u>22.00</u>		
	932351	SE1/4NE1/4	200.00				100.00		
		TOTAL	200.00						
124	388903	T11N,R5E-U.M.		None	16.667	CPAI	78.00	0.02066632	0.01463156
	4945	Sec. 31, Unsurveyed, N1/2	303.50			APC	<u>22.00</u>		
	932353	Sec. 32, Unsurveyed, NW1/4NW1/4	40.00				100.00		
		TOTAL	343.50						
<b>TOTAL PARTICIPATING AREA ACREAGE</b>			<b>18,114.06</b>						

## Exhibit C

### Qannik Participating Area Tract Participations

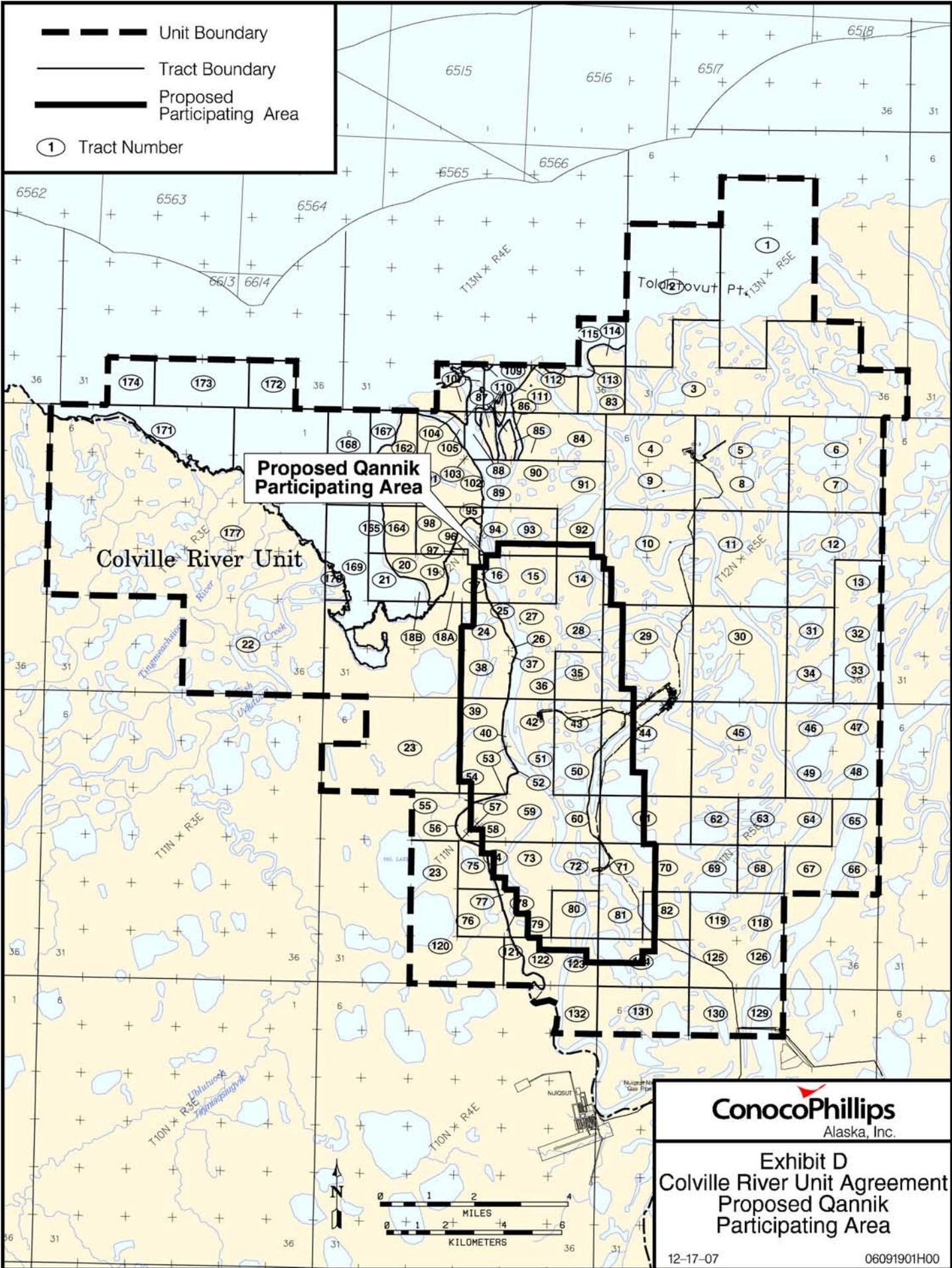
Tr. No.	ADL No./ AK No. Tobin No.	Legal Description	Acres	Depth Restrictions	Original Royalty (%)	Tract Owners	Working Interest (%)	Liquid Tract Allocation**	Gas Tract Allocation**
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\* Kuukpik shall receive an overriding royalty equal to 10% of the Original Royalty Percentage, payable out of ASRC Original Royalty Percentage share of production. For example, using a fictitious tract with equal ownership of mineral interest between the State and ASRC, if the royalty rate escalates to 20%, then Kuukpik shall be entitled to receive 2% overriding royalty ( $0.10 \times 0.20 = 0.02$ ) on 8/8ths of production, the State would receive 10% royalty on 8/8ths of production ( $0.50 \times 0.20 = 0.10$ ), and ASRC would receive 8% royalty on 8/8ths of production [ $(0.50 \times 0.20) - (0.10 \times 0.20) = 0.08$ ].

\*\* Tract allocations are rounded to 8 decimal places such that the total sums to 1.00000000.

**KEY:**                    **APC:** Anadarko Petroleum Corporation  
                               **CPAI:** ConocoPhillips Alaska, Inc.

-  Unit Boundary
-  Tract Boundary
-  Proposed Participating Area
-  Tract Number



**ConocoPhillips**  
Alaska, Inc.

**Exhibit D**  
**Colville River Unit Agreement**  
**Proposed Qannik**  
**Participating Area**

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