

Findings and Decision of the Director  
of the Division of Oil and Gas

**APPROVAL OF THE  
KUPARUK RIVER UNIT  
WEST SAK PARTICIPATING AREA SECOND EXPANSION  
AND CONTRACTION OF THE KUPARUK RIVER UNIT**

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

**July 27, 2007**

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## I. DECISION SUMMARY

On April 9, 2007, ConocoPhillips Alaska, Inc. (CPAI), as Kuparuk River Unit Operator, applied to expand the Kuparuk River Unit (KRU) West Sak Participating Area (WSPA). The State of Alaska Department of Natural Resources (DNR), Division of Oil and Gas (Division), approves the expansion of the WSPA and requires the contraction of the KRU under the terms and conditions of the September 26, 2002, "Findings and Decision of the Director of the Division of Oil and Gas, Kuparuk River Unit Eighth Expansion of the Unit Area and the Ninth Expansion of the Kuparuk Participating Area" (8<sup>th</sup> KRU Expansion) and this Decision.

CPAI submitted geotechnical, engineering, and economic data that justifies expansion of the WSPA, effective June 1, 2007. The expanded WSPA includes the area proposed by CPAI because it 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 Division also approves the tract allocation schedule for and aerial extent of the WSPA, Exhibits C and D to the KRU Agreement, submitted with the application. The tract allocation schedule equitably allocates production and costs among the leases in the WSPA.

## II. BACKGROUND

Effective October 1, 2002, the Division approved the 8<sup>th</sup> KRU Expansion, which designated ADLs 380058, 380062, 385172, and 386175 (KRU Tracts 160, 161, 162, and 163) as Expansion Area 4 (West Sak). Section IV, paragraphs 5, 6, 7, and 10(e) of the 8<sup>th</sup> KRU Expansion required CPAI to drill within Expansion Area 4 by June 1, 2004, and provided that Expansion Area 4 lands not included in the WSPA by June 1, 2007, would automatically contract from the KRU on June 1, 2007.

On May 14, 2004, the Division agreed to defer the June 1, 2004, drilling commitment to June 1, 2006, (2004 Agreement), contingent upon several revisions to the terms of the 8<sup>th</sup> KRU Expansion. As a part of the 2004 Agreement, CPAI agreed to segregate the four Expansion Area 4 leases into eight smaller leases as follows.

October 1, 2002, original Expansion Area 4 leases

Tract 160	ADL 385175 (T10N, R11 E, UM, Secs 5, 6, 7, and 8)
Tract 161	ADL 380062 (T10N, R11 E, UM, Secs 17, 18, 19, 20)
Tract 162	ADL 380058 (T10N, R11 E, UM, Secs 13, 14, 23, and 24)
Tract 163	ADL 385172 (T10N, R11 E, UM, Secs 15, 16, 21, and 22)

November 1, 2004, Expansion Area 4 leases, as segregated by 2004 Agreement

Tract 160A	ADL 385175 (T10N, R11 E, UM, Secs 5 and 8)
Tract 160B	ADL 390705 (T10N, R11 E, UM, Secs 6 and 7)

Tract 161A ADL 380062 (T10N, R11 E, UM, Sec 18)  
Tract 161B ADL 390706 (T10N, R11 E, UM, Secs 17,19, and 20)  
Tract 162A ADL 380058 (T10N, R11 E, UM, Secs 13 and 14)  
Tract 162B ADL 390707 (T10N, R11 E, UM, Secs 23 and 24)  
Tract 163A ADL 385172 (T10N, R11 E, UM, Secs 15 and 16)  
Tract 163B ADL 390708 (T10N, R11 E, UM, Secs 21, and 22)

On August 12, 2004, CPAI notified the Division that the WSPA work commitments[?] were sanctioned. Effective November 1, 2004, the Division approved an "Application to Revise the West Sak Participating Area of the Kuparuk River Unit." That decision revised the WSPA's areal extent to exclude acreage CPAI had no intent to develop and to expand its areal extent to include acreage that CPAI had committed to develop.

In a January 25, 2006, decision the Division approved a deferral of the June 1, 2006, drilling commitment to August 1, 2006, and in a July 27, 2006, e-mail further extended the drilling commitment date to August 21, 2006. By April 2007, CPAI had drilled a total of six wells in the proposed WSPA Expansion Area.

### III. APPLICATION

On April 9, 2007, CPAI filed an application with the Division to expand the WSPA (Application). The Application requested the expansion of the WSPA to include four leases--ADLs 390705, 380058, 385172, and 25663--Tracts 160B, 162A, 163A, and 81, respectively. Concurrently, under the 8<sup>th</sup> KRU Expansion, and this Decision, ADLs 385175, 380062, 390706, 390707, and 390708--Tracts 160A, 161A, 161B, 162B, and 163B, respectively--will contract from the KRU. The contraction leases, which are beyond their primary terms, are not held by any PA within the KRU. They expired and returned to the State, effective June 1, 2007.

The Application contained confidential geologic, geophysical, engineering and economic data to support the expansion. The Division determined that the data submitted with the Application were insufficient to approve the Application under 11 AAC 83.351(c) and 11 AAC 83.371(a). On April 25, 2007, the Division requested the additional data listed on the "Alaska Department of Natural Resources, Division of Oil and Gas, Geologic and Engineering Data Submittal Requirement for Unit Actions" (Attachment One). CPAI responded with insufficient data. The Division again requested the full data set, informing CPAI that without the necessary data, the Division could not continue to process the Application.

On May 31, 2007, the Division received a letter requesting approval of the WSPA expansion based upon the submitted data, and in a June 1, 2007, letter CPAI requested a 90 day extension of the automatic contraction provided for in the 8<sup>th</sup> KRU Expansion. On June 4, 2007, the Division granted a deferral of contraction until June 15, 2007. On

June 12, 2007, the Division met with CPAI to discuss the issues and concerns of both parties. On June 15, 2007, CPAI submitted additional data.

In a June 15, 2007, letter the Division acknowledged that CPAI had submitted data sufficient to consider approval of the Application. Analysis of the additional data submitted led to several further questions, which the Division discussed with CPAI.

#### **IV. DISCUSSION OF DECISION CRITERIA**

The DNR Commissioner (Commissioner) reviews applications related to units, including unit contraction and participating area expansion, 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 Division Director. The Division's review of the Application is based on the criteria set out in 11 AAC 83.303 (a), (b) and (c). Subsection (c), paragraph (4), directs the Commissioner to consider the criteria in subsections (a) and (b) when evaluating a PA. A discussion of the subsection (b) criteria, as they apply to the Application, is set out directly 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 WSPA expansion**

Approval of the WSPA expansion has no direct environmental impact. This Decision is an administrative action and does not authorize any on-the-ground activity. Potential effects on the environment are analyzed when permits to conduct exploration or development in the unit area are reviewed. Approval of this expansion does not convey any authority to conduct any operations on the surface within the KRU. DNR considered environmental issues in the lease sale process, the initial KRU unitization process, and the unit plan of operations, exploration, and development approval processes. This Decision simply approves additional acreage for an existing PA for which there is an approved plan of operations and development and any environmental costs associated with this expansion are outweighed by the benefits of producing oil and gas from the existing WSPA infrastructure.

###### **2. The Geological and Engineering Characteristics of the WSPA Expansion Area**

A participating area must be expanded to include acreage 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(c).

## **A. Geologic Setting**

Located in the eastern KRU, the West Sak sands that are produced within the West Sak Participating Area (WSPA) are part of the much larger shallow Upper Cretaceous reservoirs now undergoing development for production of North Slope "heavy oil" in the KRU and the adjacent Milne Point, Prudhoe Bay and Nikaitchuq units.

An informally named member of the Upper Cretaceous Colville Group, the West Sak sands are present in the subsurface as a large structural northerly-striking monocline with gentle 1° to 2° easterly dip. The reservoir depth is only 2,700' true vertical depth subsea (tvdss) in the southwestern Kuparuk River field area, dipping to approximately 3,800' tvdss in the northeast. Two major intersecting fault systems, one system trending north and the other east, exert the primary structural control of the area. These faults, rapid facies changes, disconformities, a heavy oil/tar mat and permafrost all provide barriers to oil migration, resulting in a segmented reservoir that is separated in isolated fault blocks with widely varying oil/water contacts. Individual fault blocks contain variable in-field rock and fluid properties.

The West Sak sands are part of a large deltaic complex that also includes the Schrader Bluff sands. Deposited in a proximal delta to delta-front setting, the West Sak/Schrader Bluff reservoir consists of an aerially extensive series of stacked coarsening- and cleaning-upward strata with a gross thickness of approximately 300 feet. Individual sand bodies, separated by interbedded non-reservoir siltstones and mudstones, range from a few feet to about 40 feet in thickness.

The West Sak sands are divided into two distinct reservoir sequences: a lower inner-shelf sandstone sequence represented by the A units (oldest) and a younger shallow-marine delta-front zone represented by the B, C, and D (youngest) intervals. The lower West Sak sands, equivalent to the Schrader Bluff OBe through OBb sandstones, are subdivided from A1 (lowest) through A4. The upper West Sak sands consist of the B (lowest), C, and D units and are equivalent to the OBa and OA sandstones of the Schrader Bluff formation.

## **B. Geological and Engineering Characteristics**

Faults are the primary control on hydrocarbon distribution in the WSPA, segmenting the reservoir into separate hydraulic units with different oil-water contacts (OWC) in each of the West Sak intervals. The fluid contacts and resultant hydrocarbon volumes can vary greatly between individual fault blocks. Within the WSPA, OWC define the mapped limits of the reservoir to both the east and west. To the south, the West Sak sands appear to be more stratigraphically controlled. The stratigraphic sequences are dominated by siltstone and mudstone and contain minor, thin sand beds resulting in a decreasing net to gross ratio and a loss of calculated sand quality that limits the amount of reservoir present.

The West Sak sandstones are unconsolidated fine-to-very fine grain litharenites and lithic wackes that are locally calcite cemented. Preserved primary macro-porosity within West Sak litharenites can be as high as 35 percent and, where not cemented by calcite, the

sandstones typically have porosities of 25 percent or greater. Permeability is highly variable, but generally ranges between 10 – 800 millidarcies.

API oil gravity and viscosity are key measurements used in conjunction with the calculated reservoir rock properties to determine the producibility of the oil from the heavy oil reservoir. Regionally, the eastward structural dip of the West Sak is responsible for increasing reservoir temperature to the east and an associated decrease in the viscosity of the oil. Reservoir temperatures range from 60° F in the shallower area to the west to 80° F in the deeper eastern area. Locally, within the WSPA, oil quality varies inversely to the regional trend, and improves up-dip (westward). The API gravity of the oil varies between 10° to 22°. Viscosity varies from about 300 centipoises (cp) to about 30 cp.

### **C. Conclusions**

The compartmentalization of the West Sak reservoir into separate fault blocks with widely varying oil/water contacts, combined with the structural dip of the reservoir and the stratigraphic pinch-out of some of the sand bodies within the West Sak interval create variable net pay thicknesses and volumes within the proposed WSPA expansion area. The data requested of the Operator to support the WSPA expansion consist of those fundamental to make a reasonable evaluation of the volume, distribution and producibility of hydrocarbons in the West Sak reservoir. As for format, computer applications have become the standard tool for evaluation, mapping and modeling of geologic data for the industry. Submittal of digital data is required to allow the State to apply the same level of tools to effectively query and evaluate the pertinent geological, geophysical, engineering, and well data, and interpretation of those data supplied by the operator.

As briefly discussed in Section III, above, the Division's analysis of the June 15, 2007, CPAI data submittal resulted in further questions. CPAI had submitted, as requested, net pay maps and raw open-hole log curves. Examination of these data indicated an apparent disconnect in the interpretation of "net pay" in a portion of one of the expansion tracts. CPAI had not submitted calculated curves or the log model data, as requested, which would have allowed the Division to understand CPAI's assessment of the West Sak reservoir. Although the Division did not receive the log model data or calculated curves, discussions with CPAI provided the Division with a reasonable understanding of CPAI's reservoir interpretation. In this particular instance, the existence of producing wells within the expansion area, in conjunction with the analyses of the geologic and engineering data ultimately submitted, provided the Division sufficient information to approve the WSPA expansion.

### **3. The Further Plans of Development for the WSPA**

The State will benefit from CPAI's further Plan of Development (POD), which proposes to maximize the physical recovery of hydrocarbons from the West Sak. Increased hydrocarbon production will enhance the State's long-term royalty and tax revenues.

The Division approved the 2006 KRU POD for the period August 1, 2006 through July 31, 2007. The KRU POD separately addresses each of the four KRU participating areas. The POD specifically discusses the wells CPAI plans to drill at each of the West Sak drill sites, including 1J. For the 2007 plan year, contingent upon data obtained from current completions, CPAI may drill 15 to 20 wells, split between producers and injectors from the 1J and 3K drill sites. This may lead to a large scale water flood development in the 3K area and would require an additional expansion of the WSPA. The drill sites with existing West Sak production, 1B, 1C, 1D, 1E, and 1J, may justify the design and installation of upgraded facilities for local water separation and injection, power generation upgrades, and water injection capacity expansion.

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

CPAI submitted tract participation schedules for the individual tracts in the WSPA (Attachments Two and Three) as required under 11 AAC 83.371. The proposed allocation distributes expenses and production among the tracts in the PA on a surface acreage basis. The PA is defined by the surface acreage covering the anticipated productive area. CPAI also submitted confidential paying quantities calculations for the three producing wells and the three injection wells, demonstrating that the expansion area is reasonably capable of producing hydrocarbons in paying quantities, as required under 11 AAC 83.351(c).

The Division finds CPAI's tract participation schedules acceptable for allocating production and costs among the tracts in the WSPA. CPAI shall work with the Division's Royalty Accounting Section to submit royalty and operator reports to properly allocate the production from the PA. The account codes approved for production from tract operations on leases that are now committed to the expanded WSPA will be discontinued and CPAI shall report all of the production from the WSPA using the WSPA production accounting code.

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

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

The unitization of oil and gas reservoirs and the formation and expansion of participating areas within unit areas to develop hydrocarbon-bearing reservoirs are well-accepted means of hydrocarbon conservation. The WSPA expansion conserves natural resources by increasing hydrocarbon production without substantially increasing the facilities required to accommodate that additional production. This expansion of an existing participating area promotes efficient evaluation and development of the State's resources, yet minimizes impacts to the area's cultural, biological, and environmental resources.

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

This proposed expansion prevents economic and physical waste within the KRU. CPAI has submitted tract allocation schedules which allocate costs and revenues equitably between the Working Interest Owners (WIO). All of the leases retain a 12.5% royalty rate and the ownership of the West Sak interval within the expanded WSPA is aligned as follows:

ConocoPhillips Alaska, Inc.	52.224680%
BP Exploration (Alaska) Inc.	37.024720%
Union Oil Company of California	4.950600%
ExxonMobil Alaska Production, Inc.	5.800000 %

Alignment of interest in a PA prevents competition amongst leases with differing ownership interests that may inhibit maximum efficiency in the development of the leases as a single reservoir. And, WSPA expansion will contribute to the optimization of KRU processing facilities.

Approval of the WSPA expansion and associated field development will provide economic benefits to the State. The long-term goal is to maximize the physical and economic recovery of hydrocarbons from each of the productive reservoirs. Maximum hydrocarbon recovery will enhance the State's long-term royalty and tax revenue stream. Any additional administrative burdens associated with the the PA expansion are outweighed by the additional royalty and tax benefits derived from production.

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

The WSPA expansion protects the economic interests of the WIOs and the royalty owner. The expansion promotes the State's economic interests because hydrocarbon recovery will be maximized and additional production-based revenue will be derived from the increased production. The concurrent contraction of the KRU allows acreage that CPAI does not have firm plans to develop to be offered at the next Area Wide lease sale, providing additional revenue to the State, and opportunity for development of the acreage by other parties.

## **IV. FINDINGS AND DECISION**

Considering the facts discussed in this document and the administrative record, I hereby make findings and impose conditions as follows.

1. The acreage proposed for inclusion is underlain by hydrocarbons and reasonably estimated to be capable of production or contributing to production in sufficient quantities to justify the expansion of the WSPA, effective June 1, 2007.
2. The geological and engineering data that CPAI provided reasonably justify the

inclusion of the proposed acreage within the PA under the terms of the applicable 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.

3. The production of hydrocarbons through the existing production and processing facilities reduces the environmental impact of the additional production. Using existing facilities will avoid unnecessary duplication of development efforts on and beneath the surface.
4. The WSPA is stratigraphically limited to the West Sak Formation Sands defined as being from 3,742' MD to 4,156' MD in the West Sak No. 1 Well (API #500292009000).
5. The Accounting Unit Codes KU13 – KU19 are closed, effective June 1, 2007. WSPA production will continue to be reported to the WSPA production Accounting Unit code.
6. This expansion of the WSPA provides for the equitable division of costs and an equitable allocation of produced hydrocarbons under a development plan designed to maximize physical and economic recovery from the reservoirs within the approved participating area.
7. The allocations of production and costs for the tracts within the WSPA are approved, as submitted.
8. ADLs 385175, 380062, 390706, 390707, and 390708 contract from the KRU, effective June 1, 2007, under the terms and conditions of the 8<sup>th</sup> KRU Expansion and this Decision.
9. ADLs 390705, 380058, 385172, and 25663 are included in the WSPA, effective June 1, 2007, under this Decision.

For the reasons discussed in this Findings and Decision, I hereby approve the WSPA Expansion, the tract allocation schedules, and the KRU contraction, subject to the conditions, set out above.

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, DNR, 550 W. 7<sup>th</sup> avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918, or sent by electronic mail to [dnrappeals@dnr.state.ak.us](mailto:dnrappeals@dnr.state.ak.us). This decision takes effect immediately. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

If you have any questions regarding this decision, contact Temple Davidson with the Division at 907-269-8784.



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

7/27/07

Date

Attachments:

1. Alaska Department of Natural Resources, Division of Oil and Gas, Geologic and Engineering Data Submittal Requirement for Unit Actions
2. Kuparuk River Unit West Sak Participating Area Exhibit C
3. Kuparuk River Unit West Sak Participating Area Exhibit D

## ATTACHMENT ONE

### Alaska Department of Natural Resources, Division of Oil and Gas, Geologic and Engineering Data Submittal Requirement for Unit Actions

#### Alaska Department of Natural Resources, Division of Oil and Gas

#### Geologic and Engineering Data Submittal Requirement for Unit Actions

Submittal requirement for data from Operators in support of Unit approval or modification of existing Units, including Unit Plan of Exploration (POE), Plan of Development (POD), and formation or modification of Unit Participating Areas (PA).

Data shall include the following:

1. Depth Structure Maps and **digital grids** (including faults) for each producing horizon.
2. Gross Isochore Maps and **digital grids** for each producing horizon
3. Hydrocarbon Net Pay Maps and **digital grids** for each producing horizon.
4. Average Porosity and Hydrocarbon Saturation Maps and **digital grids** for each producing horizon.
5. Hydrocarbon Pore Feet Maps and **digital grids** for each producing horizon.
6. Paper and **digital** copies of representative seismic lines to support the applied for action. Data submitted should include both strike and dip oriented lines, include picked horizons for all mapped surfaces, mapped faults, and wells demonstrating time-depth ties to well log formation picks. Lines should be clearly annotated with seismic survey ID, seismic volume, line number, picked horizon and well names. Map clearly showing location of all seismic and well sections provided.
7. Paper and **digital** copies of representative stratigraphic and structural well-log cross-sections. Cross-sections should include, log correlations for all mapped horizons, mapped faults, identified fluid contacts and deepest "oil down to" (ODT) and shallowest "water up to" (WUT) picks. Cross-sections should be of an appropriate scale that all annotations, picks, log curves and scales are clearly legible.
8. Hydrocarbon formation volume factors ( $B_o$ ,  $B_g$ ) applied to each reservoir.
9. Oil Gravity and/or Viscosity Maps and **digital grids** for each producing horizon.
10. **Digital file** (ascii or Excel spreadsheet) of formation picks in measured depth (MD) and sub-sea true vertical depth (sstvd) for each well, including all plug backs and pilot holes. Picks should include top and base of each producing interval, all known fluid contacts and deepest "oil down to" (ODT) and shallowest "water up to" (WUT) picks.
11. **Digital files** of calculated curve data from log analysis used in determining reservoir properties and in-place hydrocarbon volumes. Curve data should include total and/or effective porosity, water saturation, permeability, clay volume, and bulk volume water.
12. Criteria /cutoffs (i.e. porosity, saturation, volume shale, permeability...) used to determine net pay in each producing horizon.
13. **Digital file** (ascii or Excel spreadsheet) of calculated rock properties of each producing interval for every well. Data to include, top and base depth of interval in measured depth and sstvd, gross interval thickness (tvt), net sand thickness, net hydrocarbon pay thickness, net to gross ratio, average reservoir porosity, average reservoir water saturation ( $S_w$ ), average permeability, permeability height (kh), and hydrocarbon pore feet

14. Location Map clearly showing all existing production, injection and planned wells in yearly POD. Horizontal wells should be shown as a line highlighting the existing and planned productive interval length. In addition, a **digital file** (ascii or Excel spreadsheet) provided with target x y coordinates for planned wells. For horizontal wells, x y coordinates for heel and toe locations should be provided for both existing and planned wells.
15. Summary of all oil and gas (including non-hydrocarbon constituents) compositional analyses, including gravity and viscosity data.
16. Paper and **digital** copies of all pressure build-up and fluid PVT analyses.
17. Relative permeability curves for oil/water, gas/oil, and gas/water.
18. Paper and **digital** copies of all capillary pressure analyses, where available.
19. Calculated original oil and/or gas in place (OOIP or OGIP) volumes
20. Estimated ultimate recovery (EUR).
21. Proposed reservoir depletion plan.
22. Production forecast.

Items 20-22 shall be provided within the context of the area affected by the requested action

Computer applications have become the standard tool for evaluation, mapping and modeling of geologic data for the industry. Submittal of **digital data** is required to allow the State to apply the same level of tools to effectively query and evaluate the pertinent geological, geophysical, engineering, and well data, and interpretation of those data supplied by the operator.

All material should be either hand-carried by bonded courier or mailed by registered mail to:

Kristin Dirks, Geologist  
 Dept. of Natural Resources-Div. of Oil and Gas  
 State of Alaska  
 550 W. 7<sup>th</sup> Avenue, Suite 800  
 Anchorage, AK 99501-3510

Telephone: (907)269-8769  
 Fax: (907)269-8942  
 Email: kristin\_dirks@dnr.state.ak.us

The state may also require the lessee to submit additional data in support of the requested action in accordance with the applicable statutes and regulations in effect at the time of application.

Any data submitted to the state in connection with this application will be available at all times for use by the state and its agents. The state will keep information confidential as provided in AS 38.05.035(a)(9) and its applicable regulations. In accordance with AS 38.05.035(a)(9)(c), in order for geological, geophysical and engineering data submitted under the lease agreement named above to be held confidential, the lessee must request confidentiality at the time the data is submitted by indicating "CONFIDENTIAL" on all confidential data items.

This action does not eliminate the need to file all data normally filed with the Alaska Oil and Gas Conservation Commission (AOGCC) under their permit requirements.

**ATTACHMENT TWO**  
**Kuparuk River Unit West Sak Participating Area Exhibit C**  
**Tract Allocation Schedule**

<u>Tract No.</u>	<u>Legal Description</u>	<u>Exhibit C ADL No.</u>	<u>Tract Participation</u>	<u>Cost Participation</u>
34	T12N-R10E-UM Sec. 34: SE 1/4	25689	0.888889	0.888889
35	T12N-R10E-UM Sec. 35: SW 1/4, W 1/2 of SE 1/4	25638	1.333333	1.333333
38	T11N-R10E-UM Sec. 2: W 1/2, SE 1/4, W 1/2 of NE 1/4 Sec. 11: All Sec. 12: S 1/2, NW 1/4, S 1/2 of NE 1/4	25649	9.777778	9.777778
39	T11N-R10E-UM Sec. 3: E 1/2, SW 1/4 Sec. 10: All	25648	6.222222	6.222222
55	T11N-R10E-UM Sec. 15: All Sec. 21: E 1/2 of E 1/2 Sec. 22: All	25651	8.000000	8.000000
56	T11N-R10E-UM Sec. 13: All Sec. 14: All Sec. 23: All Sec. 24: All	25650	14.222222	14.222222
60	T11N-R11E-UM Sec. 30: W 1/2 Sec. 31: W 1/2	28248	3.555556	3.555556
61	T11N-R10E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25661	14.222222	14.222222

Exhibit C				
<u>Tract</u>		<u>ADL</u>	<u>Tract</u>	<u>Cost</u>
<u>No.</u>	<u>Legal Description</u>	<u>No.</u>	<u>Participation</u>	<u>Participation</u>
62	T11N-R10E-UM Sec. 27: All Sec. 28: E 1/2 of E 1/2 Sec. 33: E 1/2 of E 1/2 Sec. 34: All	25660	8.888889	8.888889
81	T10N-R10E-UM Sec. 3: All Sec. 4: E 1/2 of E 1/2 Sec. 9: E 1/2 of E 1/2 Sec. 10: All	25663	8.888889	8.888889
82	T10N-R10E-UM Sec. 1: All Sec. 2: All Sec. 11: All Sec. 12: All	25662	14.222222	14.222222
160B	T10N-R11E-UM Sec. 6: NW 1/4, N 1/2 of SW 1/4	390705	1.333333	1.333333
162A	T10N-R10E-UM Sec. 13: W 1/2 Sec. 14: All	380058	5.333333	5.333333
163A	T10N-R10E-UM Sec. 15: N 1/2, SE 1/4  Sec. 16: E 1/2 of NE 1/4	385172	3.111111  100.000000	3.111111  100.000000

# ATTACHMENT THREE

## Kuparuk River Unit West Sak Participating Area Exhibit D

