

NINILCHIK UNIT

CONSOLIDATION OF THE SUSAN DIONNE PARTICIPATING AREA AND PAXTON  
TRACT OPERATION INTO THE SUSAN DIONNE/PAXTON 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

December 28, 2007

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

In a July 31, 2007, letter Marathon Oil Company (Marathon), as unit operator and majority working interest owner (WIO) in the Ninilchik Unit (NU), applied to the Department of Natural Resources, Division of Oil and Gas (Division), to consolidate the Susan Dionne Participating Area (SDPA) and the Paxton Tract Operation (PTO) into the SD/PAX Participating Area (SD/PAX PA) within the existing Ninilchik Unit (Application).

The original SDPA, containing 1760.57 acres, is comprised of all or parts of three State of Alaska Leases, ADL 384372 (522.57 acres), ADL 359242 (708.72 acres) and ADL 389180 (360 acres), one Cook Inlet Region, Inc. (CIRI) lease (53.52 acres) and various fee oil and gas leases (115.76 acres). The Marathon proposed SD/PAX PA encompasses 2122.92 acres, of which 1646.26 acres are State of Alaska lands contained in ADL 384372 (1055.78 acres), ADL 359242 (510.48 acres) and ADL 389180 (80 acres), CIRI acreage (214.78 acres), University of Alaska acreage (30.19 acres), and various fee lands (230.97 acres). Approximately 544.48 acres were contracted from the original SDPA, and 906.80 acres were added into the proposed SD/PAX PA.

Marathon provided geological, geophysical, and engineering data supporting the proposed SD/PAX PA. The submitted data justifies the consolidation of the two areas, and indicates that the Tyonek Formation within the consolidated area is capable of producing or contributing to the production of hydrocarbons in paying quantities.

For the reasons set out in this Findings and Decision, the Division approves the SD/PAX PA. The SD/PAX PA is limited to the acreage proposed by Marathon because that acreage is “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 production of hydrocarbons in paying quantities.” 11 AAC 83.351(a). If additional data are obtained or submitted in the future, the boundaries of the participating area may be revised. The Division also approves the tract allocation schedule for the SD/PAX PA, Attachment 2 to this Findings and Decision. The revised tract allocation schedule adequately allocates production and costs among the leases in the participating area.

The tract participations for the SD/PAX PA will be re-determined retroactive to the first day of production from the PA and any imbalances created by the retroactive adjustments of the revised SD/PAX PA tract participations will be made from production of Unitized Substances from the PA after the effective date of the revised tract participation schedule.

Under Article 9.5 of the Agreement, the effective date of the consolidated SD/PAX PA and its revised tract allocation schedule is January 1, 2008.

## **II. APPLICATION FOR THE CONSOLIDATION OF THE SUSAN DIONNE PARTICIPATING AREA AND PAXTON TRACT OPERATION INTO THE SUSAN DIONNE/PAXTON PARTICIPATING AREA**

The WIOs in the SD/PAX PA leases are Marathon and Union Oil Company of California (Unocal). The acreage within the SD/PAX PA encompasses the intervals within the upper Tyonek Formation,

which Marathon asserts are capable of producing or contributing to the production of hydrocarbons in paying quantities.

The Division approved the current SDPA on June 30, 2003, which encompasses approximately 1760.57 acres. Marathon requested an expansion of the SDPA on October 5, 2004, based on the Susan Dionne #2 well (MSD2), but the Division took no action on the request because mechanical problems in the MSD2 wellbore precluded production from the well, and rendered expansion of the SDPA unnecessary at that time.

The Division approved the PTO on January 31, 2005, to allow production from the Paxton #1 (MPAX1) well prior to the formation of the Paxton Participating Area (PPA). The PTO area encompasses 480 acres, of which 368.94 acres are State of Alaska lands within ADL 384373 (365.6 acres) and ADL 390105 (3.34 acres), CIRI lands (1.84 acres), and various fee lands (109.22 acres). Marathon requested approval of a Paxton Participating Area (PPA) in an April 19, 2005, letter. Based on production data from the MPAX1, Marathon amended its PPA request on November 28, 2005 (Amended PPA). The Amended PPA encompasses 200 acres, all lying within State of Alaska lease ADL 384372. The Division has not taken action on the Amended PPA application, and Marathon withdrew the Amended PPA application with the Application to consolidate the SDPA and PTO area.

After drilling the MSD2 and MPAX1 wells, Marathon drilled the Marathon Ninilchik State #2 (MNS2) in June 2006, and the Marathon Susan Dionne #5 (MSD5) wells in July 2006, and obtained the data and information appropriate for the Application. The proposed SD/PAX PA consists of 2122.92 acres, of which 1646.26 acres are State of Alaska lands contained in ADL 384372 (1055.78 acres), ADL 359242 (510.48 acres) and ADL 389180 (80 acres), CIRI acreage (214.78 acres), University of Alaska acreage (30.19 acres), and various fee lands (230.97 acres). The original SDPA was contracted approximately 544.48 acres, and 906.80 acres was added into the proposed SD/PAX PA.

The vertical definition for the SD/PAX PA includes the reservoir portions of the upper Tyonek Formation within the consolidated area. The type log for the original SDPA and the SD/PAX PA is the Marathon Susan Dionne #3 (MSD3) Well. A map of the SD/PAX PA and the tract participation factors for the consolidated participating area are Attachment 1 and 2, respectively, to this Findings and Decision.

Marathon submitted several attachments in support of the Application: (1) a map and legal description of the leases for the SD/PAX PA; (2) geological, geophysical and engineering data supporting the proposed participating area; (3) the revised tract participation schedule for the participating area; and (4) a letter of concurrence from Unocal regarding the proposed SD/PAX PA. Marathon provided notice and evidence of notice of the proposed SD/PAX PA to all WIOs, royalty owners and overriding royalty owners with the right to share in production from the participating area.

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

The Commissioner of the Department of Natural Resources (Commissioner) reviews unit-related

applications, including revisions of 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 set out in 11 AAC 83.303 (a) and (b). 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 Unitized Exploration and Development**

The further delineation and development of the SD/PAX PA will take place from the existing NU drill sites and infrastructure, in particular, the Susan Dionne Pad and the Paxton Pad. SD/PAX PA fluids will be produced into the existing facilities, and transported via the Kenai-Kachemak Pipeline (KKPL). Sharing the existing unit facilities eliminates duplication and reduces the surface area altered by the continuing development of the upper-Tyonek Formation in the SD/PAX area.

Existing NU infrastructure, roads, pipelines and processing facilities, will support SD/PAX PA drilling and production operations. No significant additional impacts to habitat or biological resources are anticipated because of the additional upper-Tyonek Formation production.

Furthermore, the unit operator is required to obtain DNR's approval of a unit plan of operations and permits from various state and federal agencies before beginning operations, including exploratory wells, development wells and surface pad construction, within the unit area. State unitization regulations require the Commissioner to approve a Plan of Operations before the unit operator performs any field operations on the surface. 11 AAC 83.346. A proposed Plan of Operations must describe the operating procedures designed to prevent or minimize adverse effects on natural resources. When reviewing a proposed unit plan of operations, the Division considers whether the project complies with the mitigation measures contained in the most recent Cook Inlet Areawide oil and gas lease sale, site specific conditions, uses, or resources, and the rights of the surface owner if the state does not own the surface. If the operator and the surface owner have not come to an agreement for the payment of damages the operator may be required to post a bond. The Division, the Department of Environmental Conservation (DEC), and the Alaska Oil and Gas Conservation Commission (AOGCC) have bonding and financial responsibility requirements to ensure performance by the operator and reclamation of the area. 11 AAC 96.060; 18 AAC 75; 20 AAC 25.025.

The approval of the SD/PAX PA itself has no environmental impact. The participating area consolidation does not entail any environmental costs in addition to those that may occur when permits to conduct lease-by-lease exploration or development are issued. The Commissioner's approval of a revised participating area is an administrative action that does not convey any authority to conduct any operations on the surface within the unit area. The Division's approval of the Unit Plan of Exploration (POE) or Plan of Development (POD) is only one step in the process of obtaining permission to drill a well or wells or develop the known reservoirs within the unit area. The Unit Operator must still obtain approval of a Plan of Operations from the state, and permits from various agencies on state leases before drilling a well or wells or initiating development activities to

produce known reservoirs within the unit area.

## **2. The Geological and Engineering Characteristics of, and Prior Exploration Activities in the Proposed Consolidated Susan Dionne-Paxton Participating Area**

Marathon submitted geological, geophysical and engineering data for the proposed consolidated participating area. These data included: a report defining the geology of the gas bearing reservoirs in the SD/PAX area, structure maps on three horizons, structural and stratigraphic well-log cross section through the upper-Tyonek Formation, seismic lines, and well test results from the recently drilled MNS2 and MSD5.

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 participation area application must be evaluated under these standards, as well as those of 11 AAC 83.303.

The Division approved the NU on October 30, 2001; it encompasses approximately 25,797 acres that overlie the Niniilchik anticline. The anticline fold axis trends approximately parallel to the Kenai Peninsula coastline for over 16 miles from near the community of Clam Gulch to just north of the town of Niniilchik. Shallowest in the south, it plunges to the north and is segmented by a number of crosscutting faults along the crest of the structure. These faults are believed to form part of the reservoir trap mechanisms in the unit. The surface expression of the anticline is visible along the cliffs that out-crop along the coast.

The Niniilchik anticline was recognized as a highly potential exploration target in the late 1950s and was mapped in the subsurface with the seismic, gravity, and magnetic tools available at the time. Twenty-seven exploration wells have been drilled on this structure since Standard Oil of California (SOCAL) first drilled there in 1961. The SOCAL Falls Creek #1 (SFC1) well was the first well drilled to test the promising anticlinal structure. Originally, oil was the primary exploration objective, but none was found. However, gas was discovered in the upper Tyonek Formation in four sandstone zones and the SFC1 was completed as a gas well in 1961. The SFC1 was later plugged and abandoned because the estimated size of the accumulation did not justify the cost of facilities and transportation. Unocal drilled the Unocal Niniilchik 1 well in 1962, and tested gas in two Tyonek Formation zones. Between 1964 and 1978, six exploration wells were drilled with oil and

gas objectives: the Mobil Ninilchik #1, SOCAL Falls Creek #2, Falls Creek #43-6, Brinkerhoff Ninilchik #1, Unocal Clam Gulch #1, and Texaco Ninilchik #1. All of the wells were plugged and abandoned as dry holes without testing the upper Tyonek Formation. The Texaco Ninilchik #1 well was drilled in 1979, and flow tested gas from one upper Tyonek interval. Marathon drilled the Corea Creek #1 well in 1996, and drill stem tested four intervals within the upper Tyonek, recovering minimal gas with water. The results of the well verified and delineated the size of the Falls Creek reservoir.

Marathon has re-examined the area with new seismic and drilling technology. Because the crest of the structure parallels the coastline, acquiring quality seismic data along the intertidal transition zone between the offshore marine and coastal land has always been a difficult, technically challenging and costly problem. In May 2001, Marathon acquired three high quality 2D seismic lines over the southern end of the structure and along the crest of the structure to help delineate potential exploration targets, especially along the crest of the anticline and the area south of the former Falls Creek Unit. Marathon reprocessed these data and used them to identify additional well locations in the NU and to delineate the structure and reservoir limits for several horizons. In the spring and autumn of 2003, Marathon acquired 3D seismic data over the majority of the anticline, obtaining 79 square miles of 3D seismic data. Since 2001, it drilled eighteen delineation/development wells on the structure. On June 30, 2003, the Division approved an expansion of the NU to encompass the former Falls Creek Unit area, and formed the Falls Creek, Grassim Oskolkoff and Susan Dionne Participating Areas within the existing and expanded NU.

The Susan Dionne Participating Area (SDPA) consists of 1760.57 acres. The SDPA reservoir sands are interbedded with silt, clay and coal and were deposited in a fluvial environment. The reservoir is defined in the MSD3 well as the interval logged between the depths of 5,323 and 10,010 feet measured depth (MD), and comprises multiple sand intervals in the upper Tyonek Formation. The reservoir structure consists of a faulted anticline defined by three-way dip closure on the northwest, northeast and southeast. Closure to the southwest was originally thought to be controlled by faults trending perpendicular to the axial trend of the Ninilchik anticline, isolating this reservoir from the southward extension of the anticlinal trend. More recent data suggest the Susan Dionne reservoir sands are continuous with the Paxton reservoir sands to the southwest. To the northeast, a structural saddle separates the SDPA from the Grassim Oskolkoff Participating Area (GOPA).

Marathon drilled the MPAX1 in early 2004 from a new drilling pad in the southern part of the NU. The pad was located onshore and the well was directionally drilled to a bottom-hole location approximately 0.6 mile offshore. The well tested a fault block that is up-thrown to the productive SDPA. Marathon installed production facilities on the Paxton pad in July 2004 and applied to establish a participating area for the Paxton area. The definition of the proposed Paxton Beluga-Tyonek Participating Area (PAX PA) was the stratigraphic equivalent interval between 2050' and 9850' measured depth (MD) in the MPAX1 and encompassed 480 acres. The 2004 PAX PA application was made in advance of production that began on January 29, 2005, and based on the lowest-known-gas in the MPAX1. In November 2005, Marathon amended the PAX PA application to encompass only 200 acres based the actual production performance from the well. The Division has not taken action on Marathon's amended request to form the PAX PA and the well is being produced as a tract operation - the PTO.

The PTO is a southwest production extension of the southwest-northeast trending Ninilchik anticline. The large thrust fault that sets up the 15 mile long Ninilchik structure is located west of the PTO. Two down-to-the-north normal faults mark the north boundary of the PTO and separate it from the SDPA. These faults were originally believed to form an effective barrier between the Susan Dionne and Paxton areas, but recent data suggest that this is not the case. A down-to-the-east normal fault forms the eastern boundary. The intersection of structural dip to the southwest and west with the lowest known gas identified in MPAX1 places limits on the tract operation. The structure has a partial fault trap on the north-northeast boundaries and dip closure to the west and south. Closure on the structure extends significantly down dip of the area defined by the tract operation.

The MPAX1 penetrated the Beluga and Tyonek formations, which consist of fluvial sandstone and shale with interbedded coal. Both formations in the well are gas bearing. The sandstones have variable extent and reservoir quality between wells and are stacked to form productive gas reservoirs. Despite variable thickness and continuity, the prominent gas bearing intervals can be correlated between the MPAX1 and the current Susan Dionne wells. The highest tested gas is in the bottom portion of the Tyonek that was penetrated. Log data indicate that gas is present in sandstones as shallow as 2050' MD, but reservoir-quality sandstones are absent above 2208' MD.

Total porosity within the gas-bearing sandstones is in excess of 15%, with lower effective porosities due to the presence of clay. Within the MPAX1 wellbore, seven intervals were perforated from 8188-9556' MD. The final combined flow from the seven intervals was 3040 mcfpd of gas; single 16 foot thick sandstone was the primary contributing interval.

Log data indicate gas storage in sandstones up to 2050' MD with productive reservoirs extending to the Beluga Formation at 2208' MD. The top of producing gas in the TO reservoir is in the Beluga formation at a depth of 2050' MD. Sandstones below 9850' MD are believed to be wet. No gas shows have been encountered while drilling in the zones below 9850' MD.

The proposed SD/PAX PA encompasses 2122.92 acres. The SD/PAX structure is on the southern end of the southwest-northeast trending Ninilchik anticline. The large thrust fault that bounds the entire Ninilchik anticline forms the western extent of the SD/PAX structure. Two northwest-southeast trending normal faults cut the SD/PAX structure, but neither extends far enough to the northwest to completely separate the Paxton and Susan Dionne reservoir sands. In the western portion of the consolidated participating area, regional dips are to the west into the large bounding thrust fault. In the eastern portion of the consolidated participating area, regional dips are to the east-southeast, and to the northeast, a structural saddle separates the SD/PAX PA from the GOPA.

Current production from the proposed SD/PAX PA is from the Tyonek Formation, with the highest tested gas horizon near the top of the Tyonek in the MSD5 well and the deepest tested gas in the lower Tyonek Formation in the MPAX1 well. Prospective Beluga formation gas sands exist and may eventually be tested in the SD/PAX area.

### **3. Further Plans for Exploration or Development for the Consolidated Participating Area**

Marathon recently submitted the Fourth Plan of Development (POD) for the NU in which it



proposes two additional wells - MPAX2 and MSD6 - for the SD/PAX PA in 2008. In addition to the two wells, Marathon plans to install a new gas compressor for the Susan Dionne Pad during the summer of 2008. The Division approved the Fourth POD on October 16, 2007.

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

Approval of the SD/PAX PA will provide near-term economic benefits to the state by creating or maintaining jobs associated with the continued operation of the KKPL, production facilities and operation of the SD/PAX PA, and the further delineation of the hydrocarbon potential of the tracts within and adjacent to the consolidated participating area. The state will also benefit from the participating area's further plan of development, which proposes to maximize the physical recovery of hydrocarbons from all the gas-bearing reservoirs of the upper Tyonek and other to be delineated gas-bearing reservoirs within the participating area. Maximum hydrocarbon production will enhance the state's long-term royalty and tax revenues. The WIOs have provided sufficient technical data to define the prospects under consideration, have committed their diverse lease interests, and have agreed to a further plan of development that ensures a timely sequence of drilling and development activities to evaluate and develop all the leases in the NU participating areas.

Marathon submitted a revised allocation of production and cost schedule for the individual tracts/leases in the SD/PAX PA (Attachment 2 to this Findings and Decision) as required by 11 AAC 83.371. The currently approved allocation methodology distributes expenses and production among the tracts/leases in the participating area on a surface acreage basis. The participating area is defined by the surface acreage covering the anticipated productive area. Because the gas-bearing Tyonek reservoirs are stacked sandstone bodies, the composite area of the reservoirs, which is controlled by structure and sandstone distribution, is summed together to define the outline of the participating area.

Marathon's tract allocation schedule is acceptable for allocating production and costs among the leases within the proposed PA. Surface acreage as the basis for tract participation for the tracts within the SD/PAX PA is a long-established allocation methodology for gas reservoirs.

Under Section IV. 10. of the Findings and Decision of the Director, Division of Oil and Gas for the First Expansion of the Unit Area, Formation of the Falls Creek, Grassim Oskolkoff, and Susan Dionne Participating Areas, and Amendments to the Unit Agreement, dated June 30, 2003, any revision to a Ninilchik Unit participating area requires that the tract allocation schedule for those participating lands be re-determined retroactive to the first day of production from the participating area. Any imbalances created by the retroactive adjustments of a tract participation schedule will be made from production of Unitized Substances from the participating area after the effective date of the revised tract participation schedule.

As a result of the consolidated SD/PAX PA, royalties must be reallocated to the appropriate owners. In the Application, Marathon proposes that the reallocation of royalties be done through redistribution back to the date of first production from the consolidated participating area, which occurred in December 2003. Marathon proposes to perform this reallocation to coincide with the distribution of January 2008 production revenue.

As part of this reallocation process, Marathon, as the Unit Operator, shall (1) resubmit to the Division all the Operator Reports (Form O1) for the consolidated SD/PAX PA retroactive to December 2003; and (2) close-out the Operator Reports for PTO Accounting Unit Code **NK01**. In addition, the WIOs–Marathon and Unocal- shall (1) resubmit revised Royalty Reports (Form A1) for the consolidated SD/PAX PA retroactive to December 2003 using Accounting Unit Code **NKSD**; and (2) close-out all volumes associated with the PTO Accounting Unit Code **NK01** and include those volumes for the SD/PAX PA. Finally, Marathon accounting personnel and the Division’s Royalty Accounting staff agreed to a three month equalization period for adjusting the royalties due the State under the consolidated participating area tract participation schedule – Attachment 2 to this Findings and Decision.

## **B. 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 of participating areas within unit areas to develop hydrocarbon-bearing reservoirs are well-accepted means of hydrocarbon conservation. Without unitization, the unregulated development of reservoirs tends to be a race for possession by competitive operators. This race can produce: (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 economic waste. The proliferation of surface activity, duplication of production, gathering, and processing facilities, and haste to get oil and gas to the surface also increase the likelihood of environmental damage such as spills and other surface impacts. Requiring lessees to comply with conservation orders and field rules issued by the AOGCC would mitigate some of these impacts without an agreement to unitize operations. Unitization, however, provides a practical and efficient method for maximizing oil and gas recovery and minimizes negative impacts on other resources.

Our concern about lessees competing for the same reservoir is less in the consolidated SD/PAX PA because Marathon and Unocal have already aligned their leasehold interests throughout the NU. They have executed various joint operating agreements that establish an area of common equity, establishing ownership percentages covering all horizons within the boundaries of the unit, and certain adjacent areas, between themselves. Consolidation of the SDPA and PTO will, nevertheless, provide a more comprehensive plan for delineating and developing all the reservoirs within the participating area. The NU plans of development provide for an efficient integrated approach to development of the Tyonek Formation and any other to be discovered gas-bearing reservoirs within the unit.

The consolidation of the SDPA and PTO over the upper Tyonek Formation reservoirs will allow this area to be comprehensively and efficiently explored and developed. Adoption of an operating agreement and plan of development governing that production will help avoid unnecessary duplication of development efforts on and under the surface. 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 and subsequent revision of a participating area facilitates the equitable division of costs and allocation of hydrocarbon shares and provides for a diligent development plan that maximizes physical and economic benefit from a reservoir's production. The consolidated participating area prevents economic and physical waste by eliminating redundant expenditures for a given level of production and avoids the loss of ultimate recovery by adopting a unified reservoir management strategy. Oil and gas resources can be produced through a single facility infrastructure system. The consolidated participating area will improve the efficiency of developing the upper-Tyonek Formation, which has different producing characteristics between reservoir intervals.

Further, facility consolidation saves capital and promotes better reservoir management strategies. In combination, these factors allow the upper-Tyonek Formation reservoirs to be developed and produced in the interest of all parties, including the State, while preventing economic and physical waste.

Consolidating the SDPA and PTO to include the leases that contain productive Tyonek Formation gas-bearing reservoirs and allowing these areas to utilize existing unit facilities and infrastructure prevents economic and physical waste.

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

The consolidation of the SDPA and PTO seeks to protect the economic interests of all WIOs, as well as the royalty owners. Combining interests and operating under the terms of the Agreement and the Niniichik Unit Operating Agreement provides each individual working interest owner an equitable allocation of costs and revenues commensurate with the value of their leases.

The Niniichik Unit Agreement in combination with an approved plan of development for the participating area promotes the state's economic interests because hydrocarbon recovery will be maximized and additional production-based revenue will be derived from the participating areas' production. Diligent development and exploration under a single, approved unit plan without the complications of competing leasehold interests are certainly in the state's interest. It promotes efficient evaluation and development of the state's resources, yet minimizes impacts to the area's cultural, biological, and environmental resources. These all protect the state's interest.

## **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 consolidation of the SDPA and PTO area promotes the conservation of all natural resources, promotes the prevention of economic and physical waste, protects all parties of interest, and is necessary and advisable to protect the public interest. AS 38.05.180(p); 11 AAC 83.303.

2. The applicants for the consolidated participating area have sufficient interest in the participating area to exercise control of participating area operations. 11 AAC 83.316(c).
3. The available geological and engineering data demonstrate that a paying quantities certification is appropriate for the lands proposed for the SD/PAX PA. The data also suggest 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 consolidation of the SDPA and PTO area.
4. The available geological and engineering data justify the inclusion of the proposed tracts within the SD/PAX PA. Under the 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 of Alaska, the lands described in Attachment 2 are included within the SD/PAX PA.
5. The consolidated participating area adequately divides costs and allocates produced hydrocarbons, and sets forth a development plan designed to maximize physical and economic recovery from the Tyonek Formation reservoirs within the consolidated participating area.
6. Under 11 AAC 83.351(a) and 11 AAC 83.371(a), the Division approves the allocations of production and costs for the tracts within the SD/PAX PA under the terms and conditions set out in Section III.A.4 of this Findings and Decision.
7. Effective January 1, 2008, Accounting Unit Code **NK01** is terminated and the SD/PAX PA is assigned Accounting Unit Code **NKSD**.
8. Diligent exploration and delineation of the Tyonek Formation reservoirs underlying the approved participating area is to be conducted by the Unit Operator under the plans of development and operation approved by the state. Before undertaking any specific surface operations, the unit operator must submit a Plan of Operations to the DNR and other appropriate state and local agencies for review and approval. All agencies must grant the required permits before drilling or development operations may commence. DNR may condition its approval of a unit Plan of Operations and other permits on performance of mitigating measures in addition to those in the leases if necessary or appropriate. Requiring strict adherence to the mitigation measures will minimize adverse environmental impacts.

For the reasons discussed in this Findings and Decision, I hereby approve the consolidation of the SDPA and PTO area into the SD/PAX PA and its revised tract allocation schedule subject to the conditions specified herein. These approvals are effective January 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 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.

*Signed by*

*December 28, 2007*

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

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Date

Attachments: 1) Map of the consolidated SD/PAX PA  
2) SD/PAX PA Tract Participation Schedule

NU\_SD/PAXPA\_CONSOLIDATION\_Appv.doc

Ninilchik Unit  
SD/Pax Participation Area  
Exhibit "C"  
October 30, 2007

**Schedule of Leases**  
**State: Alaska**

Ninilchik Unit Tract No.	DESCRIPTION OF PROPERTY	GROSS ACRES	TRACT PARTICIPATION FACTOR	LESSOR/ ROYALTY OWNERS	ROYALTY	ORRIS	LESSEE/ WI OWNER	WI %
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**STATE OF ALASKA LANDS**

8	T1S, R 14W, S.M. Sec. 1: NE/4 & SE/4 & NE/4SW/4 & S/2SW/4 & SE/4NW/4 (485 acres) Sec. 12: SE/4SE/4 and all tide and submerged land (570.78 acres)	1055.78	49.7324440%	State of Alaska ADL #384372	12.50%		Marathon Oil Company Union Oil Co. of California	60% 40%
10	T1S, R 13W, S.M. Sec. 6: All tide and submerged land lying within the W/2 & W/2SE/4 & SE/4SE/4 & SW/4NE/4 (430.48 acres) Sec. 7: All tide and submerged land (80.00 ac)	510.48	24.0461251%	State of Alaska ADL #359242	12.50%	James W. White 3.5% James L. Thurman 3% Tucson, Ltd. 3% V. Paul Gavora 3%	Marathon Oil Company Union Oil Co. of California	60% 40%
6	T 1N - R 13W Sec. 31: S/2SE/4	80.00	3.7683945%	State of Alaska ADL #389180	12.50%		Marathon Oil Company Union Oil Co. of California	60% 40%

State Total: 1646.26

Ninilchik Unit  
SD/Pax Participation Area  
Exhibit "C"  
October 30, 2007

Schedule of Leases  
State: Alaska

Ninilchik Unit Tract No.	DESCRIPTION OF PROPERTY	GROSS ACRES	TRACT PARTICIPATION FACTOR	LESSOR/ ROYALTY OWNERS	ROYALTY	ORRIS	LESSEE/ WI OWNER	WI %
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**COOK INLET REGION INC. (CIRI)**  
**TRACTS**

30	T 1S, R 13W, S.M. Sec 7: GLO Lot 1 GLO Lot 2, GLO Lot 3 and SW/4NE/4 (181.54 acres)  T1S, R14W, S.M. Sec. 12: GLO Lot 1 (33.24 acres)	214.78	10.1171971%	Cook Inlet Region, Inc. C-016505	20.00%		Marathon Oil Company Union Oil Co. of California	60% 40%
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CIRI Total: 214.78

**UNIVERSITY OF ALASKA**  
**LANDS**

21	T 1S - R 13W Section 7: Lot 4	30.9100	1.4560134%	University of Alaska	12.50%		Marathon Oil Company Union Oil Co. of California	60% 40%
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University Total: 30.9100

Ninilchik Unit  
SD/Pax Participation Area  
Exhibit "C"  
October 30, 2007

Schedule of Leases  
State: Alaska

Ninilchik Unit Tract No.	DESCRIPTION OF PROPERTY	GROSS ACRES	TRACT PARTICIPATION FACTOR	LESSOR/ ROYALTY OWNERS	ROYALTY	ORRIS	LESSEE/ WI OWNER	WI %
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**PATENTED FEE LANDS**

145	T1S, R 13W, S.M. Sec. 6: GLO Lot 2	49.52	2.3326362%	Paul H. & Susan M. Dionne 100%	16.67%	Intrepid Production Company 5.33333%	Marathon Oil Company Union Oil Co. of California	60% 40%
146	T 1S - R 13W Section 7: NE/4NE/4	40.00	1.8841972%	Kim V. Butler and Sheryl S. Butler HW, 100%	16.67%	Intrepid Production Company 5.33333%	Marathon Oil Company Union Oil Co. of California	60% 40%
147	T 1S - R 13W Section 7: SE/4NE/4	40.00	1.8841972%	Paul Joseph Rochon 1/5 x 12.5% Linda Marie McCool 1/5 x 12.5% Ward Randall Grilley 1/5 x 12.5%  David Roy Reaves 1/5 Carl Wayne Kinkead 1/5	12.50%		Marathon Oil Company Union Oil Co. of California	60% 40%
148	T 1S - R 13W Section 7: That part of the NE/4SW/4 more particularly described as Lot 1 of Tieman Subdivision as platted in Plat #H-85-129	8.8400	0.4164076%	James R. Sabrowski 1/2 x 12.5% Leonard J. Sabrowski & Juanita Sabrowski Revocable Trust 1/2 x 12.5%	12.50%		Marathon Oil Company Union Oil Co. of California	60% 40%
149	T 1S - R 13W Section 7: That part of the NE/4SW/4 more particularly described as Lot 2 of Tieman Subdivision as platted in Plat #H-85-129	18.6200	0.8770938%	Laura Lee Tieman Life Estate (W. Lee McKinley, remainderman) 100%			Uncommitted	



Ninilchik Unit  
SD/Pax Participation Area  
Exhibit "C"  
October 30, 2007

**Schedule of Leases**  
**State: Alaska**

Ninilchik Unit Tract No.	DESCRIPTION OF PROPERTY	GROSS ACRES	TRACT PARTICIPATION FACTOR	LESSOR/ ROYALTY OWNERS	ROYALTY	ORRIS	LESSEE/ WI OWNER	WI %
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**PATENTED FEE LANDS**  
**(continued)**

150	T 1S - R 13W Section 7: That part of the NE/4SW/4 more particularly described as Lot 3 of Tieman Subdivision as platted in Plat #H-85-129 a/d/a E/2NE/4NE/4SW/4 and that part of the E/2SE/4NE/4SW/4 lying north of the northerly right of way of the Sterling Highway	7.6500	0.3603527%	Boyd Daniel Leman 100%	12.50%		Marathon Oil Company Union Oil Co. of California	60% 40%
151	T 1S - R 13W Section 7: That part of the NW/4SE/4 lying north of the Sterling Highway, less and except that part described as Lot 1 of Aurora Vista Subdivision platted in Plat #H-96-13	22.0700	1.0396058%	Kenai Peninsula Borough 100%			Uncommitted	
152	T 1S - R 13W Section 7: That part of the NW/4SE/4 lying north of the Sterling Highway more particularly described as Lot 1 of Aurora Vista Subdivision platted in Plat #H-96-13	1.2900	0.0607654%	Aurora Communications International, Inc. 100%			Uncommitted	
153	T 1S - R 13W Section 7: That part of the NW/4SE/4 lying south of the Sterling Highway	7.0000	0.3297345%	Robert J. Stoddard 1/3 Jeanne Potter 1/3 Kathlen McConnell 1/3			Uncommitted	

Ninilchik Unit  
SD/Pax Participation Area  
Exhibit "C"  
October 30, 2007

Schedule of Leases  
State: Alaska

Ninilchik Unit Tract No.	DESCRIPTION OF PROPERTY	GROSS ACRES	TRACT PARTICIPATION FACTOR	LESSOR/ ROYALTY OWNERS	ROYALTY	ORRIS	LESSEE/ WI OWNER	WI %
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**PATENTED FEE LANDS**  
**(continued)**

162	T 1S - R 14W Section 12: Lot 2	35.9800	1.6948354%	Carol A. Wilson 1/5 Katherine Lunne 1/5 Patricia Webster 1/5 George A. Gates 1/5 Charles E. Gates 1/5	12.50%		Marathon Oil Company Union Oil Co. of California	60% 40%
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Fee Land Total:	230.97		
Total of all Tracts:	2122.92	100.0000000%	

**RECAPITULATION BY LAND CATEGORIES**

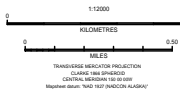
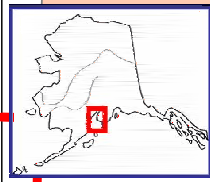
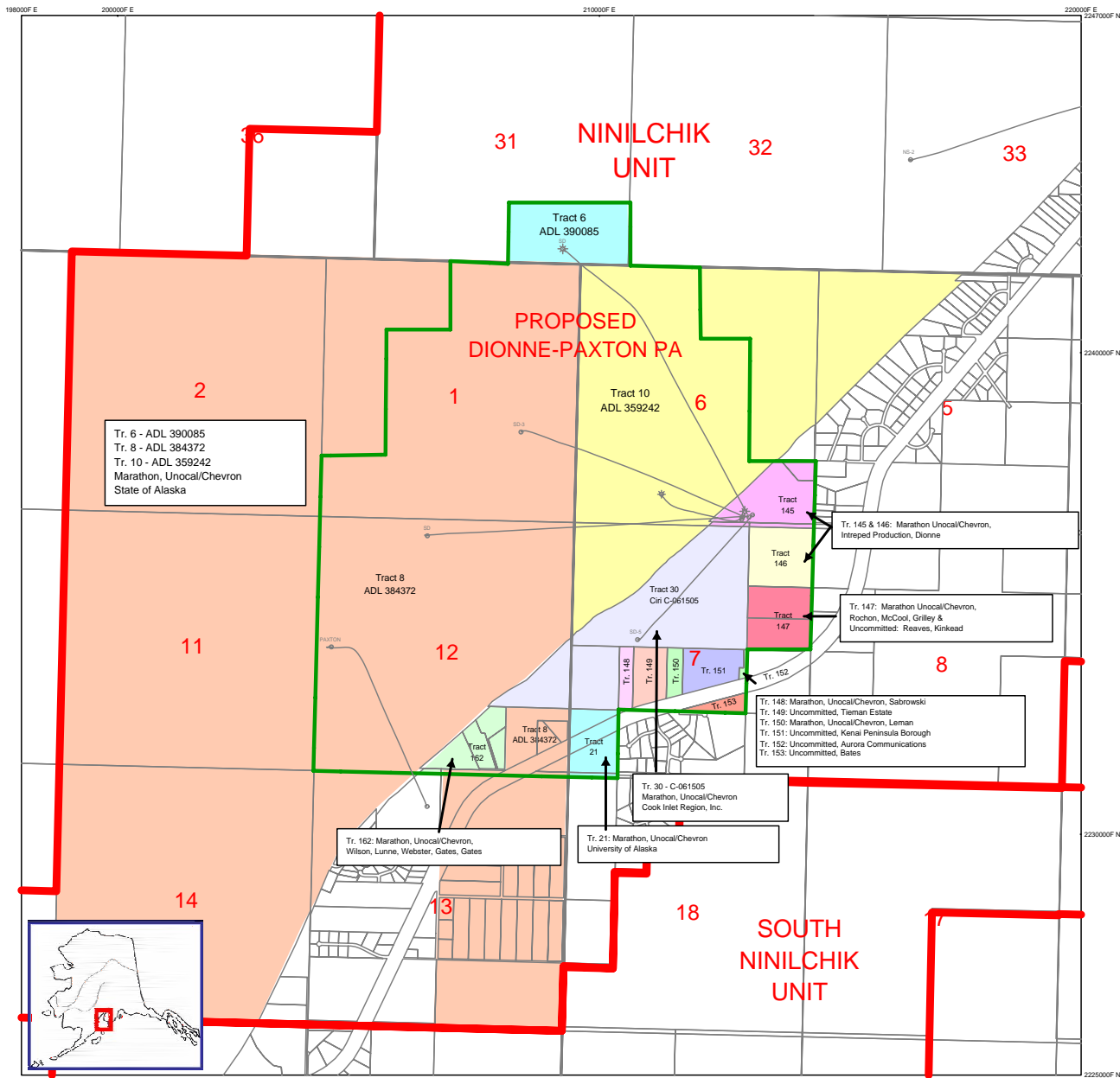
1	State of Alaska Tracts	3 Tracts	1646.26 Acres	77.5469636%
2	Cook Inlet Region, Inc. Tracts	1 Tract	214.78 Acres	10.1171971%
3	University of Alaska	1 Tract	30.9100 Acres	1.4560134%
4	Fee Tracts	11 Tracts	230.97 Acres	10.8798259%
	<b>TOTAL:</b>		<b>2122.92 Acres</b>	<b>100.0000000%</b>

**WORKING INTEREST RECAPITULATION**

1	Marathon Oil Company	1273.75 Acres	60.0000000%
2	Union Oil Company of California	849.17 Acres	40.0000000%
		<b>2122.92 Acres</b>	<b>100.0000000%</b>

**Note:** Because several sections contained in this Participation Area are correction sections, this PA contains 2122.92 acres, rather than the expected 2160 acres.

NINILCHIK-SD/PAX



MARATHON OIL COMPANY

ALASKA ASSET TEAM

Ninilchik Unit

Proposed Dionne-Paxton PA

Exhibit D

July, 2007