

**NINILCHIK UNIT**

**APPROVAL, IN PART, OF THE  
FIRST EXPANSION OF THE FALLS CREEK PARTICIPATING AREA**

Findings and Decision of the Director  
of the Division of Oil and Gas  
Under a Delegation of Authority  
from the Commissioner of the State of Alaska  
Department of Natural Resources

May 16, 2017

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

On November 2, 2016, Hilcorp Alaska, LLC. (Hilcorp), as Ninilchik Unit (NU) Operator, applied to expand the Ninilchik Unit and Falls Creek Participating Area (FCPA) (Application). On March 2, 2017, the Department of Natural Resources (DNR), Division of Oil and Gas (Division) approved the second expansion of the NU effective November 2, 2016. The unit expansion decision expanded the NU to include an additional 40 acres bringing the total unit acreage to 25,909 acres. The FCPA expansion was not addressed in the unit expansion decision. Hilcorp proposed to expand the FCPA from 988.7 to 1,512.87 acres in the Application.

A participating area “must be expanded to include acreage 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, and must be contracted to exclude acreage reasonably proven through the use of geological, geophysical, and engineering data to be incapable of producing hydrocarbons in paying quantities, subject to approval by the commissioner.” 11 AAC 83.351(c).

Hilcorp submitted confidential and public information in support of the Application. The Application proposed to expand the FCPA to areas where presence of hydrocarbons is unlikely. The Division proposed a modified FCPA incorporating areas based on differing methodology. Hilcorp later concurred with the FCPA expansion area and methodology proposed by the Division. A review and analysis of the confidential geological, geophysical, and engineering data indicate that the acreage approved for inclusion in the FCPA is producing or contributing to production of hydrocarbons in paying quantities, or is reasonably estimated to be capable of producing or contributing to production of hydrocarbons in paying quantities.

The Division finds that the expansion of the FCPA, as revised, promotes conservation of all natural resources, promotes the prevention of economic and physical waste, and provides for the protection of all parties of interest, including the State. AS 38.05.180(p); 11 AAC 83.303. I approve Hilcorp’s Application, in part, under the terms and conditions of Section IV.3.C. The effective date of the expansion of the FCPA is April 1, 2017.

## **II. APPLICATION AND LEASE SUMMARY**

The NU is a unit on the east side of Cook Inlet comprised mostly of onshore and offshore lands of the State of Alaska. The NU also consists of onshore federal, Cook Inlet Region Inc., University of Alaska, and private patent fee lands. The NU was approved effective October 30, 2001, and it was originally operated by Marathon Oil Company (Marathon). On June 30, 2003, the Division approved the First Expansion of the Ninilchik Unit which included the BLM-managed Falls Creek Unit area. The BLM approved the termination of the Falls Creek Unit Agreement concurrently with the expansion of the NU to include the Falls Creek Unit area. The June 30, 2003 decision also formed the NU’s three participating areas (PA) – Susan Dionne, Grassim Oskolkoff, and Falls Creek. The PAs were approved based on geophysical data and commitments by Marathon to drill wells in each PA or a contraction of each PA area would

occur. Marathon satisfied the well commitments and contraction of the PAs did not occur at that time.

Marathon began gas production from the FCPA on December 13, 2003. For the first ten years of production in the Fall Creek field, the royalty rate on state acreage was reduced to five percent under AS 38.05.180(f)(5). Hilcorp acquired 100% working interest in the NU on January 30, 2013, near the end of the royalty reduction period. Hilcorp drilled three wells (Falls Creek 5, Falls Creek 6, and Frances 1) in and near the FCPA since acquiring 100% working interest in the NU. Based on the results from the newly drilled wells, Hilcorp applied to expand both the NU and FCPA.

Currently, Hilcorp is producing gas from the Tyonek and Beluga formations. The Alaska Oil and Gas Conservation Commission approved Hilcorp’s request to commingle production from both formations through Conservation Order 701. Production from the Falls Creek 6 well was allocated to the FCPA. The Frances 1 and Falls Creek 5 production were not allocated to the PA. All production from these wells is allocated to fee mineral lands on a tract operation basis. To redistribute royalty payments and volumes in an equitable manner, the FCPA needs to be expanded and royalty payments reallocated to account for new engineering data provided by the new wells.

The fee mineral lands proposed for inclusion in the Application are a mixture of lands leased to Hilcorp by private landowner, the State, and the Bureau of Land Management. The lands proposed to be added to the FCPA by Hilcorp in the Application are listed below.

**Table 1: Tracts proposed to add from the FCPA application (November 2, 2016)**

Tract No	Royalty Owner	Acres	Royalty	WIO	Legal Description
002	State of Alaska, DNR ADL 384314	80.00	12.5%	Hilcorp 100%	T.2N, R.12W, S.M., AK. Sec 31: SE1/4SW1/4, SW1/4SE1/4.
003	State of Alaska, DNR ADL 389737	311.85	12.5%	Hilcorp 100%	T.1N, R.12N, S.M., AK. Sec. 1: NE1/4NE1/4, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4. Sec. 6: That part of the W1/2NE1/4 lying below the line of mean high tide. T.1N, R.13W. S.M., AK. Sec. 12: That part of the tide and submerged lands lying in the S1/2NE1/4 and SE1/4NW1/4.
015	Bureau of Land Management	39.61	12.5%	Hilcorp 100%	T.1N, R.13W. S.M., AK. Sec. 12: That part of Lot 1 lying within the S1/2NE1/4.
019	University of Alaska	40.00	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: SE1/4NE1/4.
046	Shelle K. Leman, Stephen S. Webb, Susan L. Steinbach (Private)	38.93	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec 6: That part of GLO 1 lying in the NE1/4NE1/4.

<b>Tract №</b>	<b>Royalty Owner</b>	<b>Acres</b>	<b>Royalty</b>	<b>WIO</b>	<b>Legal Description</b>
<b>051</b>	E.W Vanderbilt (Margaret Vanderbilt Living Trust) (Private)	0.91	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: That portion of the north 165' of the N1/2SE1/4 lying west of the Sterling Highway.
<b>052</b>	Harold A. and Marguerite M. Pederson (Private)	58.00	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: That part of N1/2SE1/4 lying east of Sterling Highway.
<b>053</b>	Harold Lee and Diane R. Pederson (Private)	21.09	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: That part of N1/2SE1/4 lying west of the Sterling Highway, less and except the north 165' and that portion of the Sterling Highway Right-of-Way lying within the N1/2SE1/4.
<b>056</b>	Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt, Norma Jeanne Nichols, Walter G. Williams (Private)	30.901	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: SW1/4SE1/4, less and except Block 2, Lots 1 and 8, and Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62.
<b>059</b>	Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt, Jens H. and Anneline Hansen, Veray H. Matthews (Private)	2.937	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: Block 2, Lot 1 of Clammer's Haven Subdivision, Plat 76-62.
<b>060</b>	John Stallone Jr, Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt (Private)	2.904	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: Block 2, Lot 8 of Clammer's Haven Subdivision, Plat 76-62.
<b>061</b>	Dennis Hedman, Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt (Private)	3.258	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62.
<b>066</b>	Emil and Frances Bartolowits (Private)	114.864	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: Government Lot 1 and 2 and the NE1/4NW1/4, less and except Lots 7, 9, 10, 12, 14, and 15 of Falls Creek Ridge 1978 Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2, and a portion of the NW1/4NE1/4 lying west of the centerline of the Sterling Highway.
<b>067</b>	James A. and Teresa L. Wilson (Private)	4.03	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: Lots 7 and 10 of Falls Creek Ridge Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2.

Tract No	Royalty Owner	Acres	Royalty	WIO	Legal Description
068	Richard S. Bartolowits (Private)	4.028	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: Lots 9 and 12 of Falls Creek Ridge Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2.
069	Paul D. and LaRue A. Bartolowits (Private)	2.082	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: Lot 14 of Falls Creek Ridge Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2.
070	Paul D. and LaRue A. Bartolowits (Private)	2.026	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: Lots 15 of Falls Creek Ridge Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2.
229	Penelope J Maize (Private)	24.740	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: A portion of the NW1/4NE1/4 lying east of the centerline of the Sterling Highway; more particularly described as Celia Subdivision, Plat No. 94-46, and all minerals underlying dedicated roads within the subdivision, excluding Tracts C-1A and C-1B of the Celia Subdivision, Addition #2, Plat No. 2012-53.
230	James C. Kruse and Linda C. Kruse (Private)	3.854	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: Tracts C-1A and C-1B of Celia Subdivision, Addition #2, Plat No. 2012-53.

Hilcorp proposed to exclude the following portion of the State of Alaska’s unit tract number 3 from the FCPA.

**Table 2: Tract proposed to contract from the FCPA Application (November 2, 2016)**

Tract No	Royalty Owner	Acres	Royalty	WIO	Description
003	State of Alaska, DNR ADL 389737	120.0	12.5%	Hilcorp 100%	T.1N, R13W, S.M., AK. Sec. 11: E/2NE/4 Sec. 12: SW/4NW/4

Because Hilcorp’s application included unit expansion, the Division provided public notice in accordance with 11 AAC 83.311. The Division issued a public notice for the unit and participating area expansion application on December 5, 2016 and published a public notice in the *Alaska Dispatch News* and *Peninsula Clarion* on December 3, 2016. Copies of the Application and the public notice were provided to interested parties. The Division provided public notice to, among others, the Alaska Department of Environmental Conservation, the Kenai Peninsula Borough, the City of Kenai, the Village of Tyonek, the Salamatof Native Association, Cook Inlet Region, Incorporated, the Soldotna Postmaster, and the radio station KDLL in Kenai. The notice was also published on the State of Alaska Public Notice website and

the Division’s website. The public notices invited interested parties and members of the public to submit comments by January 4, 2017.

The Division received four comments during the public notice period. Three of the comments were solicited by private mineral interest owners in or near the Ninilchik Unit – Dorothy Wallner, Stephen Webb, and Donald Shaw. The fourth comment was received from Paul Craig, manager of PLC, LLC and advocate for MH2, LLC., both limited liability companies hold overriding royalty interest in state oil and gas lease ADL 384314. The comments were all written regarding the proposed boundaries of the Falls Creek PA rather than the unit expansion portion of the Application, thus the comments are addressed in this decision instead of the separate March 2, 2017 unit expansion decision. The methodology for determining the boundary of the FCPA is directed by geologic, geophysical, and engineering data from public and confidential sources. Section III.A.2 of this decision describes the methodology used to determine the FCPA boundary. The comments pertaining to FCPA boundaries are addressed through the discussion in Section III.A.2 on how the FCPA boundaries were developed.

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

The DNR Commissioner (Commissioner) reviews applications related to units, including participating area formations, expansions and contractions, 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) 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. Analysis and discussion of subsection (b) requirements precedes and supports findings under subsection (a).

A participating area “must be expanded to include acreage 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, and must be contracted to exclude acreage reasonably proven through the use of geological, geophysical, and engineering data to be incapable of producing hydrocarbons in paying quantities, subject to approval by the commissioner.” 11 AAC 83.351(c).

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

##### **1. Environmental Costs and Benefits**

Approval of the FCPA expansion has no direct environmental impact. This decision is an administrative action and does not authorize any on-the-ground activity. The Unit Operator must 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 reservoirs within the unit area. 11 AAC 83.346. Potential effects on the environment are analyzed when permits to conduct exploration or development in the unit area are reviewed. Hilcorp has obtained the required permits for the current FCPA wells and is operating under an approved

plan of operations and plan of development. The DNR considers environmental issues during the lease sale process and the unit plan of operations approval process.

## **2. Geologic and Engineering Characteristics and Prior Exploration and Development Activities of the Proposed Falls Creek Participating Area**

### *a) Drilling history*

The Falls Creek gas field was discovered during drilling of the Falls Creek 1 (FC1) well in April 1961 by Standard Oil Company of California (Socal). FC1 penetrated the Beluga, Tyonek, Hemlock, and West Foreland Formations and reached total depth in the West Foreland Formation. Trace oil shows were present in the Hemlock and West Foreland Formations. Strong gas shows were present in the Beluga and Tyonek Formations. Socal performed five drill stem tests within the Beluga and Tyonek Formations; the best result was a Tyonek sandstone that produced a moderate amount of gas with no water. The resource, however, was deemed uneconomic and development did not proceed. However, the Falls Creek Unit was formed around the acreage believed to have the highest gas development potential.

During the ensuing 35 years following drilling of FC1, only two more wells were drilled in the area. Both wells were drilled just outside the Falls Creek Unit boundary and both were dry holes. In 1973, the Falls Creek 43-06 (FC43-06) well was drilled by Socal about 3,500 ft east of FC1. Well logs indicated no significant productive zones were present and therefore the well was not flow tested. This well is approximately 170 ft structurally lower than the FC1 well. The Corea Creek Federal 1 (CC1) well, located approximately 5,000 ft southwest of FC1, was drilled in 1996 by Marathon Oil Company (MOC). This well flow tested six intervals and produced very small amounts of gas with significant influxes of water. This well is approximately 220 ft structurally lower than the FC1 well. FC43-06 and CC1 are important control points that help define limits to the east and southwest boundaries of the Falls Creek Participating Area (FCPA).

Between 2001 and 2004, MOC drilled three directional wells from the FC1 well pad to begin producing the Falls Creek gas accumulation. Falls Creek 1RD (FC1RD) was the first of these three to be drilled. It was a sidetrack well out of the FC1 well bore and came onto production in September 2003. Since that time, it has remained the strongest gas producer in the field. FC1 was plugged and abandoned following completion of FC1RD. Falls Creek 3 (FC3) and Falls Creek 4 (FC4) were drilled to targets approximately 3,000 ft due west of FC1. FC3 appears to be 20 ft structurally higher than FC1. This indicates that the crest of the structure may extend further to the west-southwest. These three wells remained the only gas producers in the field until Hilcorp took ownership in 2013.

Hilcorp drilled Frances 1 (FR1) in late 2013 to a target approximately 3,000 ft southeast of FC1. The primary target for this well was oil in the Hemlock and West Foreland Formations with a secondary gas target in the Tyonek “G” sands. The Hemlock and West Foreland Formations yielded only minor oil shows; however, three productive gas intervals were encountered in the Tyonek Formation. Although approximately 140 ft structurally lower than FC1, this well remains a strong gas producer. Falls Creek 5 (FC5) was drilled in 2014 to approximately 2,700 ft south of



FC1. This well is approximately 110 ft structurally lower than FC1. Although FC5 has produced far less gas since completion than FC1, both wells confirm the Falls Creek gas accumulation extends south of the existing FCPA boundary.

Hilcorp's most recent drilling in the Falls Creek area was the Falls Creek 6 (FC6) well, completed in late-2014. FC6 was drilled to a target approximately 2,800 ft north of FC1 and is situated approximately 40 ft structurally lower than FC1. This well was completed in nine intervals within the Beluga and Tyonek Formations. Although the Tyonek Formation completions were not productive and the overall production rates in this well are the lowest in the Falls Creek field, FC6 does confirm the Falls Creek gas accumulation, within the Beluga Formation, extends into the northern portion of the existing FCPA.

*b) Geologic overview*

The Falls Creek gas accumulation defines the northernmost field on the Ninilchik structure, located in the south-central portion of the Cook Inlet basin. The Ninilchik structure is a thrust-cored fold that is part of a major thrust-faulted trend that runs from the Starichkof (Cosmopolitan) structure north to the Kenai Gas Field. The Ninilchik structure is approximately 24 miles long and four miles wide and straddles the coastline. However, the productive gas accumulations appear to be concentrated on the crest of the structure along a ten-mile swath between Ninilchik and Clam Gulch.

Faults play an important role in the distribution of Ninilchik structure gas accumulations. The thrust fault at the core of the fold is the largest feature in the Ninilchik structure. This fault runs parallel to the axis of the anticline and dips to the southeast. It is sometimes referred to as the bounding fault since it marks the northwest limit for Ninilchik structure gas accumulations. There are also numerous near-vertical faults oriented perpendicular to the bounding fault. These perpendicular faults divide the Ninilchik anticline into discrete blocks, some of which contain isolated gas accumulations.

The depositional environment for the Beluga and Tyonek Formations is non-marine fluvial with a mix of braided and meandering rivers and streams. The extreme variability in sand thickness of the disconnected sand bodies is typical of fluvial depositional environments. Cook Inlet reservoir sands in the Beluga and Tyonek Formations typically have high clay contents which can adversely affect porosity and permeability and make log analysis difficult.

The structural complexities associated with a large thrust belt, such as the Ninilchik structure, and the unpredictable nature of fluvial depositional environments in general make traditional reservoir evaluation methods challenging in the Falls Creek area. Seismic data, though instrumental in identifying prospective structural traps, have proven to be unreliable in the Ninilchik area and other areas in Cook Inlet for detailed subsurface mapping of the internal architecture and outer limits of producing gas accumulations.

c) *Allocation methodology*

For this determination, the operator proposed a Falls Creek PA boundary based on the Lowest Known Gas (LKG) method. This was determined by depth mapping each productive interval and interpreting an LKG contour, or polygon, for each productive interval. The operator chose to use only the existing wells in generating the depth maps and not use the seismic data. The composite outer limit of all the LKG polygons was considered the productive area. The final PA boundary was then derived from this composite polygon and the final tract factors were based on surface area.

However, the Division had issues with the results. The resulting PA boundary included the two dry holes in the area, the FC43-06 and the CC1 wells, as well as the steep structural rollover in the northwest portion of the unit. The Division agreed with the operator in not using the seismic data in this determination but disagreed with the inclusion of these areas which are very likely unproductive. The Division felt it was necessary to further simplify the approach to address these issues and the circle and tangent method was chosen.

The circle and tangent method defines the gas depletion area based on the cumulative outer boundary of multiple overlapping circles, each having a radius of 1,500 ft and centered along the well bore wherever it is open to reservoir production. This cumulative outer boundary is further defined by drawing tangent lines connecting the outermost circle perimeters to create one encompassing boundary of maximum area. This area is referred to as the *maximum convex hull*. The resultant gas depletion area is an appropriate compromise that is large enough to accommodate the estimated ultimate recovery of the field, while also honoring the results of FC43-06 and CC1 (dry-hole wells) and the steep structural rollover to the northwest.

The determination of tract factors is based on surface area. The surface area technique has been used in most Cook Inlet fields and some fields located on the North Slope. It is usually employed in fields where the uncertainties about the distribution of oil or gas are high. This occurs when available well and seismic data cannot adequately yield high-confidence interpretations of the subsurface.

The Division's decision to use a 1,500 ft radius circle for each open interval was based on the available data for this field and its historical experience with other gas developments within Beluga and Tyonek Formations in Cook Inlet. Uncertainty regarding true net pay thicknesses and the limited number of measured reservoir pressures available for analysis is typical given the mixed lithology of these formations.

To determine tract factors the maximum convex hull boundary was projected to the surface. Each section of land was divided into 40-acre quarter-quarter section aliquot parts. A fifty-percent rule was applied to each aliquot, meaning the maximum convex hull area must cover at least fifty-percent of each aliquot for that aliquot to be included in the PA. The fifty-percent rule has typically been used in Alaska when using surface area as the basis for allocations because not applying this correction will over-allocate the periphery of the field. The PA boundary was defined by including only the aliquots meeting the fifty-percent rule as described above. Tract

factors were then calculated by taking the ratio of the surface area covered by each PA tract divided by the surface area of the entire PA. The FCPA boundary established through this method is the most equitable approach with the available data.

### **3. Plans of Development**

The most recent drilling in the Falls Creek area occurred during the 2014 Plan of Development (POD) period when Hilcorp drilled the FC5, FC6, and FR1 wells. Hilcorp's 2016 NU POD was approved by the Division on April 21, 2016. During the 2016 POD period, Hilcorp did not propose drilling activities in the northern portion of the unit where the PA expansion is proposed. Hilcorp constructed the Kalotsa pad near the Susan-Dionne PA and drilled the Kalotsa 1 and 2 wells during the 2016 POD period. The 2017 POD proposes drilling the Kalotsa 3 and 4 wells in the Susan-Dionne PA. Hilcorp is evaluating future rig workover projects and plans to add compression to enhance production at the Frances pad. Hilcorp has not provided plans for drilling in or near the FCPA.

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

The expanded FCPA will continue to provide economic benefits to the State through royalty and tax payments on gas production. Increased drilling and production near the FCPA will provide increased financial benefits to private royalty landowners previously within the FCPA and those landowners included in the FCPA through this decision. The delineation and development drilling in the Ninilchik Unit is resulting in high-paying jobs for Alaskans and further assessment of state oil and gas resources.

The decision that formed the FCPA required allocation redetermination of all gas production retrospective to the date of first production if future revisions to the PA occurred. The decision also mandated that "any imbalances created by the retroactive adjustments of the FCPA tract participation schedule will be made from production of Unitized Substances from the FCPA after the effective date of the revised tract participation schedule." This provision was included to ensure the royalty owners within the PA would be correctly allocated past production upon future drilling and production.

The State has been over-allocated production from the original FCPA since the date of first production to the effective date of this decision. The expansion of the FCPA reduces the State's tract participation in the FCPA from approximately 84.6% to 62.6%. Tract allocation for PAs within the NU is determined by surface acreage, which is a long-established methodology for equitable allocation of gas reservoirs in the Cook Inlet. Each tract's allocation of gas is determined by dividing the acreage of a PA tract by the total acreage of the PA.

The State has been under-allocated production from the FR1 and FC5 wells. These recently-drilled wells were not previously in the FCPA and the State has not received any allocation of their production. Royalty on these wells have been paid exclusively to the private fee land owners holding interest in the land from where the wells are producing. Thus, the State will be allocated production on these two wells per the allocation schedule approved in this decision.

The method used to ascertain the net adjustment to royalties due to the State incorporates several factors to ensure an equitable outcome. Total royalty-bearing production from the FCPA for the September 2003 through March 2017 period is re-allocated based on the new tract factors set forth through this decision. Hilcorp will provide the Division with a revised division of interest upon issuance of this decision. For each month, the royalty payment due to the State under the new tract factors is calculated as the product of (i) the State's allocated share of production, (ii) the weighted average of royalty in value per thousand cubic feet (mcf) of gas for the FCPA and (iii) the royalty rate. Production on State acreage from the FCPA was subject to a reduced royalty rate of five percent from September 2003 to September 2013 under AS 38.05.180(f)(5). The total royalty overpayment is determined as the difference between total royalty payments to the State from Marathon, Unocal, and Hilcorp made under the previous allocation schedule percentage ( $\approx 84.6\%$ ) and the new allocation schedule percentage ( $\approx 62.6\%$ ).

The expansion of the FCPA also brings unallocated production from the FR1 and FC5 wells into the FCPA. The State is due the new allocation schedule percentage of production ( $\approx 62.6\%$ ) from both wells since their date of first production. The FR1 and FC5 wells began producing in July 2014 and March 2014, respectively. For each month, the royalty payment due to the State under the new tract factors is calculated as the product of (i) the State's allocated share of production, (ii) the weighted average royalty in value per mcf of gas for the FCPA and (iii) the standard royalty rate of 12.5% found on the leases. This underpayment of royalty amount is then reduced by the amount of royalty overpaid to the State to reach the net adjustment to royalties due to the State. An adjustment to State royalties will be made from gas produced from the FCPA during the month of April 2017. Hilcorp will make a one-time net adjustment amount in the FCPA royalty reports (A1 Forms) for the April 2017 production month, which are due by May 31, 2017.

The delineation drilling performed in and near the FCPA has provided greater certainty to the extent of the gas reservoir and PA boundary. The initial FCPA boundaries were based on minimal well control and seismic data. Future PA expansion or contraction at the FCPA will be reallocated on a prospective basis. As opposed to retrospective reallocation, prospective reallocation redistributes production from newly-drilled wells to PA tract participant back to the date of a well's first production rather than the date of the FCPA first production. The prospective approach to reallocation provides allocation to new PA tracts based on new wells drilled. Payments to current royalty owners will be more consistent upon expansion of the PA without the unit operator potentially withholding payment to reallocate. Finally, FCPA royalty reports will be resubmitted to the State for a more precise reallocation. The benefits of these factors and greater certainty of the FCPA boundaries make prospective reallocation an equitable approach to protecting all parties.

## **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 expansion and contraction of participating areas within unit areas to develop hydrocarbon-bearing reservoirs are well-accepted means of

hydrocarbon conservation. Expansion and contraction of a participating area within an existing unit, with development occurring under the terms of a unit agreement, promotes efficient evaluation and development of the State's oil and gas, and minimizes impacts to the area's cultural, biological, and environmental resources.

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

Approval of the Application will prevent economic and physical waste because the approval will allocate production revenue under the approved FCPA tract allocations, equitably allocating production revenues among the tracts. Approval of the expanded FCPA will not result in economic waste given the current well spacing, market demand, and anticipated production rates. Annual approval of the NU development activities as described in future PODs must also provide for the prevention of economic and physical waste.

The FCPA lies within the Beluga/Tyonek Gas Pool and operates under the terms of Alaska Oil and Gas Conservation Commission's Conservation Order 701 and 701A. The Conservation Orders allow Hilcorp to commingle gas production from the Beluga and Tyonek Formations. Commingled production from these formations prevents economic waste and allows Hilcorp to maximize recovery through minimizing costs and drilling of additional wells. Additionally, 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.

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

A participating area "must be expanded to include acreage 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 and must be contracted to exclude acreage reasonably proven through the use of geological, geophysical, and engineering data to be incapable of producing hydrocarbons in paying quantities, subject to approval by the commissioner." 11 AAC 83.351(c).

The Division reviewed confidential geophysical, geological and engineering data and interpretations submitted by Hilcorp to determine the acreage proposed for inclusion in the revised FCPA. The Division provided an alternative methodology, the circle and tangent method, which defines the FCPA by drainage from producing perforations in the Falls Creek wells and FR1 well. This methodology expanded the FCPA to include tracts reasonably estimated to be capable of producing hydrocarbons in paying quantities. Historically, the DNR has often employed the circle and tangent methodology in situations where reservoirs are not well delineated to define gas reservoir participating areas. The aim is to protect all parties by including only tracts reasonably estimated to be capable of producing hydrocarbons in paying quantities. Extending beyond what would be "reasonably estimated" would unfairly dilute the tract participation of parties with tracts within the FCPA. Conversely, extending the FCPA only to tracts where gas is known to be produced would fail to consider drainage area from producing wells. The expanded FCPA includes quarter-quarter sections within a 1,500-foot radius of the

portion of the well bores open to production within the proven Tyonek and Beluga reservoirs. Only quarter-quarter sections where fifty percent or more of the reservoir is observed were included in the FCPA.

As part of re-evaluating the PA boundaries, the DNR methodology shows a quarter-quarter section containing three unit tracts, included at formation of the FCPA, will be contracted from the FCPA. A portion of unit tract 46 in T.1N, R.12W, Seward Meridian has been allocated production since the formation of the FCPA. Royalty payments will cease for royalty owners of tract 46; Hilcorp will not attempt to recover past overpayments of royalties made to the royalty owner of tract 46. Additionally, portions of unit tracts 3 and 188 in T.1N, R.12W, Seward Meridian will also be contracted from the FCPA. Unit tract 3 and 188 are both state oil and gas leases which will reduce royalty payments to the State.

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

##### **A. The Conservation of All Natural Resources**

1. Revision of the FCPA will provide for continued development of the participating area under the NU Agreement and will maximize the efficient recovery of oil and gas and minimize the adverse impacts on the surface and other resources, including hydrocarbons, gravel, sand, water, wetlands, and valuable habitat.

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

1. Hilcorp submitted geological, geophysical, and engineering data to the Division in support of the Application, as revised. Division technical staff determined that the expanded FCPA area, as revised, is “reasonably estimated” to be capable of producing or contributing to production in paying quantities.
2. The available geological, geophysical and engineering data justify including the lands described in Section III.A.2. of this decision.
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.

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

1. The economic, geological, geophysical, and engineering data that Hilcorp provided reasonably justify the inclusion of the acreage into the revised FCPA under the terms of the applicable regulations governing formation, expansion, and operation of oil and gas units and participating areas (11 AAC 83.301–11 AAC 83.395) and the terms and conditions under which these lands were leased from the State. With input from the State, Hilcorp has submitted an acceptable methodology for establishing the expanded boundaries of the FCPA.

2. The NU tracts, with legal descriptions, added to the FCPA are listed in the table below.

**Table 3: Tracts added to the original FCPA**

<b>Tract №</b>	<b>Royalty Owner</b>	<b>Acres</b>	<b>Royalty</b>	<b>WIO</b>	<b>Legal Description</b>
<b>051</b>	E.W Vanderbilt (Margaret Vanderbilt Living Trust) (Private)	0.91	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: That portion of the north 165' of the N1/2SE1/4 lying west of the Sterling Highway.
<b>052</b>	Harold A. and Marguerite M. Pederson (Private)	58.00	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: That part of N1/2SE1/4 lying east of Sterling Highway.
<b>053</b>	Harold Lee and Diane R. Pederson (Private)	21.09	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: That part of N1/2SE1/4 lying west of the Sterling Highway, less and except the north 165' and that portion of the Sterling Highway Right-of-Way lying within the N1/2SE1/4.
<b>056</b>	Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt, Norma Jeanne Nichols, Walter G. Williams (Private)	30.901	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: SW1/4SE1/4, less and except Block 2, Lots 1 and 8, and Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62.
<b>059</b>	Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt, Jens H. and Anneline Hansen, Veray H. Matthews (Private)	2.937	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: Block 2, Lot 1 of Clammer's Haven Subdivision, Plat 76-62.
<b>060</b>	John Stallone Jr, Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt (Private)	2.904	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: Block 2, Lot 8 of Clammer's Haven Subdivision, Plat 76-62.
<b>061</b>	Dennis Hedman, Charles Weyhaupt, David Weyhaupt, James Reinhardt, Thomas Weyhaupt (Private)	3.258	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec. 6: Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62.
<b>066</b>	Emil and Frances Bartolowits (Private)	114.864	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: Government Lot 1 and 2 and the NE1/4NW1/4, less and except Lots 7, 9, 10, 12, 14, and 15 of Falls Creek Ridge 1978 Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2, and a portion of the NW1/4NE1/4 lying west of the centerline of the Sterling Highway.

Tract №	Royalty Owner	Acres	Royalty	WIO	Legal Description
188	State of Alaska ADL 590	524.450	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK.
229	Penelope J Maize (Private)	24.740	12.5%	Hilcorp 100%	T. 1N, R. 12W, S.M., AK. Sec. 7: A portion of the NW1/4NE1/4 lying east of the centerline of the Sterling Highway; more particularly described as Celia Subdivision, Plat No. 94-46, and all minerals underlying dedicated roads within the subdivision, excluding Tracts C-1A and C-1B of the Celia Subdivision, Addition #2, Plat No. 2012-53.
230	James C. Kruse and Linda C. Kruse (Private)	3.854	12.5%	Hilcorp 100%	T. 1N, R.12W, S.M., AK. Sec. 7: Tracts C-1A and C-1B of Celia Subdivision, Addition #2, Plat No. 2012-53.

- The redefining of the FCPA resulted in the contraction of the three unit tracts from the FCPA. The tracts contracted from the FCPA are listed in Table 4 below.

**Table 4: Tracts contracted from the original FCPA**

Tract №	Royalty Owner	Acres	Royalty	WIO	Description
003	State of Alaska, DNR ADL 389737	266.80	12.5%	Hilcorp 100%	T.1N, R13W, S.M., AK. Sec. 1: SW/4SW/4 Sec. 11: E/2NE/4 Sec. 12: W/2NW/4 T.1N, R.12W, S.M., AK. Sec. 6: That part of the NW/4NE/4 lying below the line of mean high tide
046	Shelle K. Leman, Stephen S. Webb, Susan L. Steinbach (Private)	10.44	12.5%	Hilcorp 100%	T.1N, R.12W, S.M., AK. Sec 6: That part of the GLO Lot 1 lying within the W/2NE/4.
188	State of Alaska, DNR ADL 590	40.00	12.5%	Hilcorp 100%	T.1N, R.13W, S.M., AK. Sec. 12: NE/4NW/4

- Hilcorp will submit revised Ninilchik Unit exhibits C and D for the FCPA within 30 days of the issuance of this decision. Hilcorp will submit a finalized division of interest for approval by the Division with 15 days of issuance of this decision.
- Attachment 1 and 2 of this decision provides Hilcorp's proposed FCPA exhibits C and D submitted on November 2, 2016. Attachment 3 depicts the draft exhibit C of the FCPA approved through this decision.



6. The reallocation of the FCPA royalties is retrospective to the first day of FCPA production. This reallocation methodology results in a net underpayment of royalties to the State. Hilcorp will make an adjustment for this underpayment in their royalty reports (A1 Forms) filed with the State for the April 2017 production month, due by May 31, 2017. Hilcorp should contact the Royalty Accounting Manager for the proper method of reporting the net adjustment amount on the April 2017 FCPA royalty report (A1 Form). A prospective reallocation will be applied to future expansion of the FCPA.
7. Hilcorp will be solely responsible for reallocating royalty payments to private landowners underpaid after the FCPA expansion. The State will not be held liable for royalty payments to any past Ninilchik Unit operators or lessees regarding overpayments identified in this decision.

For the reasons discussed in this Findings and Decision, I hereby approve the FCPA expansion and contraction retroactively effective to April 1, 2017.

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 Andrew Mack, 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.



Chantal Walsh, Director  
Division of Oil and Gas

May 16, 2017  
Date

## **V. Attachments**

1. Ninilchik Unit Falls Creek Participating Area Proposed Expansion Exhibit C  
Description of lands within the proposed Expansion participating area (November 2, 2016)
2. Ninilchik Unit Falls Creek Participating Area Proposed Expansion Exhibit D  
Map of proposed participating area (November 2, 2016)
3. Approved Ninilchik Unit Falls Creek Participating Area: Draft Exhibit C of Approved FCPA (Land descriptions)
4. Approved Ninilchik Unit Falls Creek Participating Area: Draft Exhibit D of Approved FCPA (FCPA Map)

**Attachment 1**  
**Ninilchik Unit Falls Creek Participating Area**  
**Proposed Expansion Exhibit C**  
**Description of lands within the proposed Expansion participating area**

**Exhibit C**  
**Falls Creek Participating Area - 2016 Proposal**  
**Ninilchik Unit**

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
002	T2N-R12W, S.M. Section 31: SE/4SW/4, SW/4SE/4	80.0000	HAK # 1030487 ADL # 384314	5.28796600%	State of Alaska, Department of Natural Resources	100.00%	12.500%	Paul Craig William Webb Cook Inlet Energy, LLC Donkel Oil and Gas LLC Jessica Craig Hea Sun Kim	2.466670% 1.333330% 1.000000% 0.500000% 0.100000% 0.100000%	Hilcorp Alaska, LLC	100.00%
003	T1N-R12W, S.M. Section 6: That part of the W/2NE/4 lying below the line of mean high tide	311.8500	HAK # 1034385 ADL # 389737	20.61315300%	State of Alaska, Department of Natural Resources	100.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.00%
	T1N-R13W, S.M. Section 1: NE/4NE/4, SW/4NE/4, SE/4NW/4, N/2SW/4, SW/4SW/4, Section 12: NW/4NW/4										
015	T1N-R13W, S.M. Section 12: That part of Lot 1 lying within the S/2NE/4	39.6100	HAK # 1034934 AKA # A-024399	2.61820400%	Bureau of Land Management	100.00%	12.500%	Hilcorp Alaska, LLC Ann L. Edwards Charles Delaney Ealand II Dorothy Anne Dedrick Alina L. Mendez Dustin D. Ealand Mary Lynne Moellering Kevin MacIntosh	3.250000% 0.350000% 0.350000% 0.100000% 0.050000% 0.050000% 0.050000% 0.050000%	Hilcorp Alaska, LLC	100.00%
015A	T1N-13W, S.M. Section 12: That part of Lot 1 lying in the NE/4NE/4	10.2300	HAK # 1034934 AKA # A-024399	0.67619900%	Bureau of Land Management	100.00%	12.500%	Hilcorp Alaska, LLC Charles Delaney Ealand II Ann L. Edwards Dorothy Anne Dedrick Kevin MacIntosh Mary Lynne Moellering Alina L. Mendez Dustin D. Ealand	3.250000% 0.350000% 0.350000% 0.100000% 0.050000% 0.050000% 0.050000% 0.050000%	Hilcorp Alaska, LLC	100.00%

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
019	T1N-R12W, S.M Section 6: SE/4NE/4	40.0000	HAK # 1033481 UA # Nimlichik Tract #2	2.6439830%	University of Alaska	100.00%	12.500%			Hilcorp Alaska, LLC	100.00%
046	T1N-R12W, S.M. Section 6: Lots 1 thru 7, inclusive, of the Webb Tracts 1974 Subdivision, Plat 74-1724, including all minerals underlying dedicated roads within the subdivision	49.3600	HAK # 1031633	3.2626750%	Shelle K. Leman	33.33%	12.500%			Hilcorp Alaska, LLC	100.00%
048	T1N-R12W, S.M. Section 6: Tract #1 of Udelhoven Subdivision (Plat #H77-70), a part of government Lot 2	2.6700	HAK # 1034912	0.1764860%	Brigitte Thebaut	16.67%	12.500%			Hilcorp Alaska, LLC	100.00%
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				
			HAK # 1034912		Ann Marie Davis	8.33%	12.500%				
			HAK # 1034912		Dawn M. Dutton	8.33%	12.500%				
			HAK # 1034912		Jennifer Linann Wiederspohn	8.33%	12.500%				
			HAK # 1034912		Jesse Udelhoven	8.33%	12.500%				
			HAK # 1034912		Sandra K. Udelhoven- Taylor	8.33%	12.500%				
			HAK # 1034912		Hanna Koger Udelhoven	4.17%	12.500%				
			HAK # 1034912		Miranda Marilyn Udelhoven	4.17%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
049	TIN=R12W, S.M. Section 6: Tracts 2, 3, 5, 6 and 7 of Udelhoven Subdivision (Plat #H77-70), a part of government Lot 2, less that part of Tracts 2 and 3 lying outside the SW/4NE/4 and also any mineral rights lying under the roadbed of the Sterling Highway right of way passing through GLO Lot 2	29.9500	1.9796820%	James Udelhoven	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.00%
				Brigitte Thebaut	16.67%	12.500%				
				Joann Steik	16.67%	12.500%				
				Shirley J. Cox	16.67%	12.500%				
				Ann Marie Davis	4.17%	12.500%				
				Dawn M. Dutton	4.17%	12.500%				
				Jennifer Linann Wiederspohn	4.17%	12.500%				
				Jesse Udelhoven	4.17%	12.500%				
				Sandra K. Udelhoven-Taylor	4.17%	12.500%				
				Hanna Keger Udelhoven	2.08%	12.500%				
				Miranda Marilyn Udelhoven	2.08%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
049A	T1N-R12W, S.M. Section 6: That part of Tracts 2 and 3 lying outside the SW/4NE/4	2.0000	HAK # 1034912	0.13219500%	James Udelhoven	25.00%	12.500%			Hilcorp Alaska, LLC	100.00%
			HAK # 1034912		Brigitte Thebaut	16.67%	12.500%				
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				
			HAK # 1034912		Ann Marie Davis	4.17%	12.500%				
			HAK # 1034912		Dawn M. Dutton	4.17%	12.500%				
			HAK # 1034912		Jennifer Linann Wiederspohn	4.17%	12.500%				
			HAK # 1034912		Jesse Udelhoven	4.17%	12.500%				
			HAK # 1034912		Sandra K. Udelhoven-Taylor	4.17%	12.500%				
			HAK # 1034912		Hanna Keger Udelhoven	2.08%	12.500%				
			HAK # 1034912		Miranda Marilyn Udelhoven	2.08%	12.500%				
050	T1N-R12W, S.M. Section 6: That part of Tract 4 of Udelhoven Subdivision lying within the SW/4NE/4	3.6200	HAK # 1034912	0.2392800%	Jennifer Linann Wiederspohn	50.00%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034912		Brigitte Thebaut	16.67%	12.500%				
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				
050A	T1N-R12W, S.M. Section 6: That part of Tract 4 of Udelhoven Subdivision lying outside the SW/4NE/4	2.6700	HAK # 1034912	0.1764860%	Jennifer Linann Wiederspohn	50.00%	12.500%	Hilcorp Alaska, LLC	3.2500000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034912		Brigitte Thebaut	16.67%	12.500%				
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
051	TIN-R12W, S.M. Section 6: That portion of the north 165' of the N/2SE/4 lying west of the Sterling Highway	0.9100	HAK # 1034850	0.0601510%	E. W. Vanderbilt (Margaret Vanderbilt Lvg Trust)	100.00%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
051A	TIN-R12W, S.M. Section 6: The North 165' of GLO Lot 3	2.3400	HAK # 1034850	0.1546730%	E. W. Vanderbilt (Margaret Vanderbilt Lvg Trust)	100.00%	12.500%	Hilcorp Alaska, LLC	3.2500000%	Hilcorp Alaska, LLC	100.00%
052	TIN-R12W, S.M. Section 6: That part of N/2SE/4 lying east of Sterling Highway	58.0000	HAK # 1033560	3.8337750%	Harold A. and Marguerite M. Pederson	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%
053	TIN-R12W, S.M. Section 6: That part of N/2SE/4 lying west of the Sterling Highway, less and except the north 165 feet and that portion of the Sterling Highway Right-of-Way lying within the N/2SE/4	21.0900	HAK # 1034913	1.3940400%	Harold Lee and Diane R. Pederson	100.00%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
053A	TIN-R12W, S.M. Section 6: Lot 3 except the North 165' thereof	28.9000	HAK # 1034913	1.9102780%	Harold Lee and Diane R. Pederson	100.00%	12.500%	Hilcorp Alaska, LLC	3.2500000%	Hilcorp Alaska, LLC	100.00%
056	TIN-R12W, S.M. Section 6: SW/4SE/4, less and except Block 2, Lots 1 and 8, and Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62	30.9010	HAK # 1034911	2.0425430%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Norma Jeanne Nichols	16.67%	12.500%				
			HAK # 1034911		Walter G. Williams	8.33%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
059	TIN-R12W, S.M. Section 6: Block 2, Lot 1 of Clammer's Haven Subdivision, Plat 76-62	2.9370	HAK # 1034911	0.1941350%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Jens H. and Anneline Hansen	12.50%	12.500%				
			HAK # 1034911		Veray H. Matthews	12.50%	12.500%				
060	TIN-R12W, S.M. Section 6: Block 2, Lot 8 of Clammer's Haven Subdivision, Plat 6-62	2.9040	HAK # 1034911	0.1919530%	John Stallone, Jr.	25.00%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Dennis Hedman	25.00%	12.500%				
061	TIN-R12W, S.M. Section 6: Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62	3.2580	HAK # 1034911	0.2153520%	Dennis Hedman	25.00%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Dennis Hedman	25.00%	12.500%				



Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
062	T1N-R12W, S.M. Section 6: That part of government Lot 4 lying in the SE/4SW/4, less Block 1, Lot 9 and less Block 2, Lots 3 and 4 of Clammer's Haven Add'n No. 1 Subdivision, Plat H-78-25; Block 2, Lots 5 and 6 and any interest in road ways and easements dedicated to public use in the Clammer's Haven Add'n No. 1 Subdivision, Plat78-25	34.9880	HAK # 1034911	2.3126920%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Norma Jeanne Nichols	16.67%	12.500%				
			HAK # 1034911		Walter G. Williams	8.33%	12.500%				
062A	T1N-R12W, S.M. Sec 6: Those parts of Clammers Haven Addition No.1 (plat H-78-25), described as all of Block 1, Lot 2 and those parts of Block 1, Lot 4 lying outside the SE/4SW/4 AND those parts of Block 2, Lot 1 lying outside the SE/4SW/4 and all minerals underlying dedicated roads and easements lying outside the SE/4SW/4 (a part of GLO Lot 4)	12.1100	HAK # 1034911	0.8004660%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	3.2500000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Norma Jeanne Nichols	16.67%	12.500%				
			HAK # 1034911		Walter G. Williams	8.33%	12.500%				
062B	T1N-R12W, S.M. Sec 6: Those parts of Clammers Haven Addition No.1 (plat H-78-25), described as all of Block 1, Lot 1 (a part of GLO Lot 4)	4.4610	HAK # 1034911	0.2948700%	Edward C. and Myong C. Greene	25.00%	12.500%	Hilcorp Alaska, LLC	3.2500000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
062C	T1N-R12W, S.M. Sec 6: Those parts of Clammer's Haven Addition No.1 (plat H-78-25), described as all of Block 1, Lot 3 (a part of GLO Lot 4)	2.9920	HAK # 1034911	0.1977700%	Keith C. and Flora D. Lovejoy	25.00%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
063	T1N-R12W,S.M. Section 6: That part of Government Lot 4 more particularly described as Block 2, Lot 4 of Clammers Haven Addition No. 1, as platted in plat # H-78-25	1.6990	HAK # 1034911	0.1123030%	Michael and Marjorie Barry	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
064	T1N-R12W, S.M. Section 6: That part of Government Lot 4 more particularly described as Block 2, Lot 3 of Clammer's Haven Addition No. 1, as platted in plat # H-78-25	1.7410	HAK # 1034911	0.1150790%	Michael and Marjorie Barry	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
065	TIN-R12W, S.M. Section 6: That part of Government Lot 4 more particularly described as Block 1, Lot 9 of Clammers Haven Addition No. 1, as platted in plat # H-78-25	1.5720	HAK # 1034911	0.10390900%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	6.5000000%	Hilcorp Alaska, LLC	100.00%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Corey Kruse	12.50%	12.500%				
			HAK # 1034911		James Kruse	12.50%	12.500%				
066	TIN-R12W, S.M. Section 7: Government Lots 1 and 2 and the NE4NW/4, less and except Lots 7, 9, 10, 12, 14 and 15 of Falls Creek Ridge 1978 Subdivision (Plat #H78-23 replatted #H78-71), a part of the government Lot 2, and a portion of the NW1/4NE1/4 lying west of the centerline of the Sterling Highway;	124.9500	HAK # 1031611	8.2591420%	Emil and Frances Bartolowits	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%
067	TIN-R12W, S.M. Section 7: Lots 7 and 10 of Falls Creek Ridge 1978 Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2	4.0300	HAK # 591276	0.2663810%	James A. and Theresa L. Wilson	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%
068	TIN-R12W, S.M. Section 7: Lots 9 and 12 of Falls Creek Ridge 1978 Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2	4.0280	HAK # 1033555	0.2662490%	Richard S. Bartolowits	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%
069	TIN-R12W, S.M. Section 7: Lot 14 of Falls Creek Ridge 1978 Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2	2.0280	HAK # 1031350	0.1340500%	Paul D. and LaRae A. Bartolowits	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%
070	TIN-R12W, S.M. Section 7: Lot 15 of Falls Creek Ridge 1978 Subdivision (Plat #H78-23 replatted #H78-71), a part of government Lot 2	2.0260	HAK # 1031612	0.1339180%	Paul D. and LaRae A. Bartolowits	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%

Tract	Tract Legal Description	Tract Acreage	Tract Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
188	T1N-R13W, S.M. Sec. 1: SE/4NE1/4, SE1/4, SE/4SW1/4 Sec. 12: NE/4NW/4, N/2NE/4, except that part lying above the line of mean high tide;	564.4500	HAK # 1034384 ADL # 590	37.3099060%	State of Alaska, Department of Natural Resources	100.00%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.00%
229	T1N-R12W, S.M. Sec. 6: W/2 except that part lying above the line of mean high tide Section 7: A portion of the NW1/4NE1/4 lying east of the centerline of the Sterling Highway; more particularly described as Celia Subdivision, Plat No. 94-46, and all minerals underlying dedicated roads within the subdivision, excluding Tracts C-1A and C-1B of the Celia Subdivision, Addition #2, Plat No. 2012-53	24.7400	HAK # 591260	1.6353040%	Penelope J. Matze	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%
230	T1N-R12W, S.M. Section 7: Tracts C-1A and C-1B of Celia Subdivision, Addition #2, Plat No. 2012-53	3.8540	HAK # 591236	0.2547480%	James C. Kruse and Linda C. Kruse	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.00%

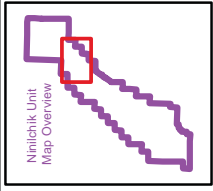
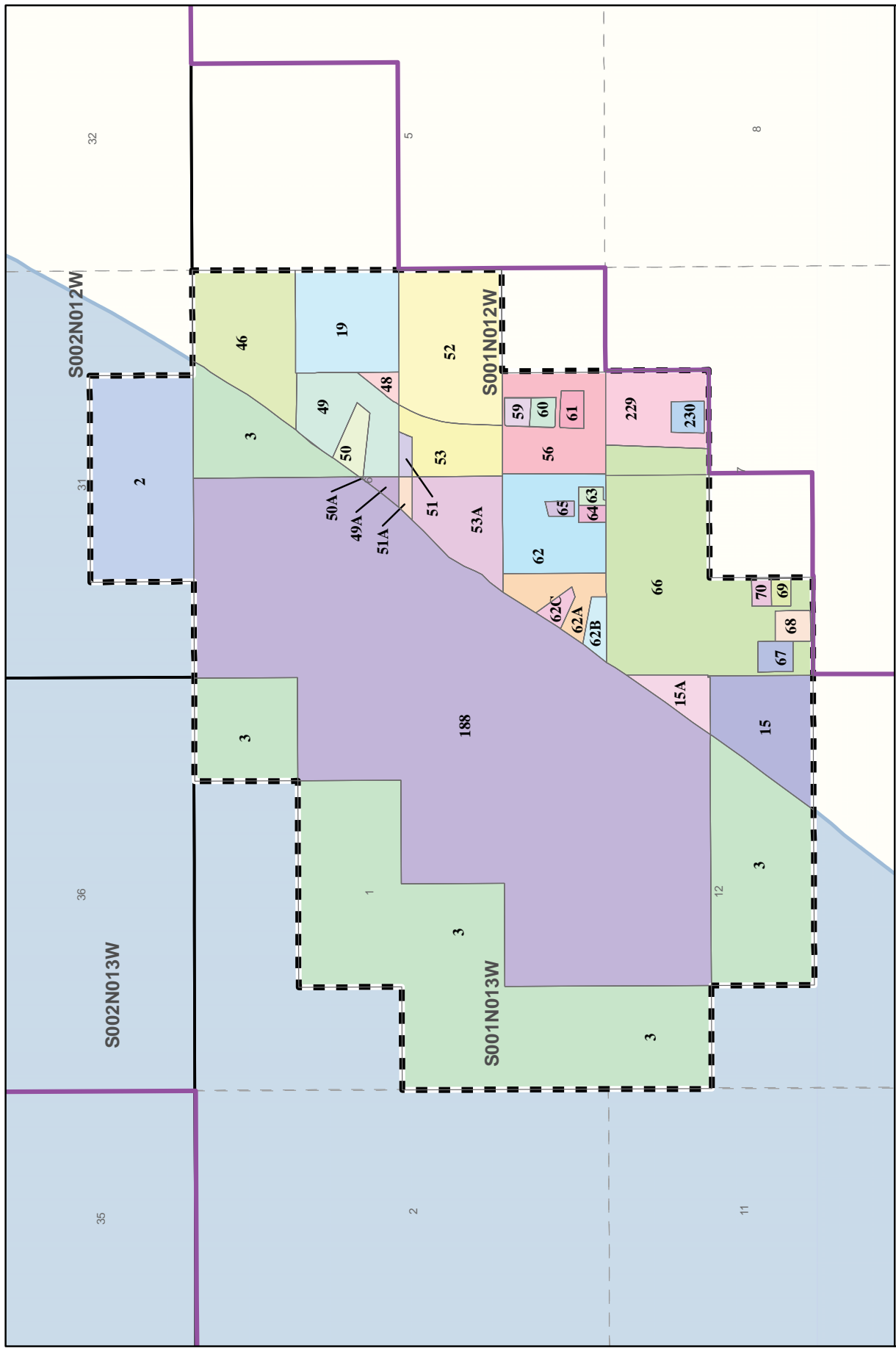
Total PA Acreage	Total Tract Percentage	Working Interest Owners	PA %
1,512.869	100.0000000%	Uncommitted Hilcorp Alaska, LLC	0.0000% 100.0000%

**Proposed Falls Creek Participating Area  
Ninilchik Unit  
Effective October 1, 2016**

RECAPITULATION BY LAND CATEGORIES:

<u>LAND OWNERSHIP</u>	<u>ACRES</u>	<u>PERCENTAGE OF PA</u>
State of Alaska Lands	956.300	63.211025%
Federal Lands	49.840	3.294403%
Patented Fee Lands	<u>506.729</u>	<u>33.494572%</u>
<b>TOTAL:</b>	<b>1,512.869</b>	<b>100.000000%</b>

**Attachment 2**  
**Ninilchik Unit Falls Creek Participating Area**  
**Proposed Expansion Exhibit D**  
**Map of proposed participating area**



**Exhibit D**

State Plane Zone 4 NAD 1927 (feet)

- Unit Tracts
- Proposed Falls Creek PA
- Proposed Ninilchik Unit Boundary

**Ninilchik Unit  
Proposed Falls Creek  
Participating Area**

Hilcorp Alaska, LLC  
Map Date: 11/2/2016

**Attachment 3**  
**Ninilchik Unit Falls Creek Participating Area:**  
**Draft Exhibit C of Approved FCPA (Land Descriptions)**



**Exhibit C**  
**Falls Creek Participating Area -2016 Proposal**  
**Nimilchik Unit**

Effective \_\_\_\_\_

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
003	TIN-R12W, S.M. Section 6: That part of the SW/4NE/4 lying below the line of mean high tide	43.7600	HAK # 1034385 ADL # 389737	4.8210660%	State of Alaska, Department of Natural Resources	100.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
015A	TIN-13W, S.M. Section 12: That part of Lot 1 lying in the NE/4NE/4	10.2300	HAK # 1034934 AKA # A-024399	1.1270450%	Bureau of Land Management	100.00%	12.500%	Mary Lynne Moellering Kevin MacIntosh Hilcorp Alaska, LLC Dustin D. Ealand Dorothy Anne Dedrick Charles Delaney Ealand Ann L. Edwards Alma L. Mendez	0.050000% 0.050000% 3.250000% 0.050000% 0.100000% 0.350000% 0.350000% 0.050000%	Hilcorp Alaska, LLC	100.000000%

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
048	TIN-R12W, S.M. Section 6: Tract #1 of Udelhoven Subdivision (Plat #H77-70), a part of government Lot 2	2.6700	HAK # 1034912	0.2941560%	Brigitte Thebaut	16.67%	12.500%			Hilcorp Alaska, LLC	100.000000%
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				
			HAK # 1034912		Ann Marie Davis	8.33%	12.500%				
			HAK # 1034912		Dawn M. Dutton	8.33%	12.500%				
			HAK # 1034912		Jennifer Linann Wiederspoltn	8.33%	12.500%				
			HAK # 1034912		Jesse Udelhoven	8.33%	12.500%				
			HAK # 1034912		Sandra K. Udelhoven- Taylor	8.33%	12.500%				
			HAK # 1034912		Hanna Koger Udelhoven	4.17%	12.500%				
			HAK # 1034912		Miranda Marilyn Udelhoven	4.17%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
049	TIN-R12W, S.M. Section 6: Tracts 2, 3, 5, 6 and 7 of Udelhoven Subdivision (Plat #H77-70), a part of government Lot 2, less that part of Tracts 2 and 3 lying outside the SW/4NE/4 and also any mineral rights lying under the roadbed of the Sterling Highway right of way passing through GLO Lot 2	29.9500	HAK # 1034912	3.2996100%	James Udelhoven	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034912		Brigitte Thebaut	16.67%	12.500%				
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				
			HAK # 1034912		Ann Marie Davis	4.17%	12.500%				
			HAK # 1034912		Dawn M. Dutton	4.17%	12.500%				
			HAK # 1034912		Jennifer Linann Wickerspolin	4.17%	12.500%				
			HAK # 1034912		Jesse Udelhoven	4.17%	12.500%				
			HAK # 1034912		Sandra K. Udelhoven-Taylor	4.17%	12.500%				
			HAK # 1034912		Hanna Koger Udelhoven	2.08%	12.500%				
			HAK # 1034912		Miranda Marilyn Udelhoven	2.08%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
049A	TIN-R12W Section 6: That part of Tracts 2, and 3 of Udelhoven Subdivision (Plat #H7-70), lying outside the SW/4NE/4	2.0000	HAK # 1034912	0.2203410%	James Udelhoven	25.00%	12.500%			Hilcorp Alaska, LLC	100.000000%
			HAK # 1034912		Brigitte Thebaut	16.67%	12.500%				
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				
			HAK # 1034912		Ann Marie Davis	4.17%	12.500%				
			HAK # 1034912		Dawn M. Dutton	4.17%	12.500%				
			HAK # 1034912		Jennifer Linann Wickerspoln	4.17%	12.500%				
			HAK # 1034912		Jesse Udelhoven	4.17%	12.500%				
			HAK # 1034912		Sandra K. Udelhoven-Taylor	4.17%	12.500%				
			HAK # 1034912		Hanna Koger Udelhoven	2.08%	12.500%				
			HAK # 1034912		Miranda Marilyn Udelhoven	2.08%	12.500%				
050	TIN-R12W, S.M. Section 6: That part of Tract 4 of Udelhoven Subdivision lying within the SW/4NE/4	3.6200	HAK # 1034912	0.3988180%	Jennifer Linann Wickerspoln	50.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034912		Brigitte Thebaut	16.67%	12.500%				
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				
050A	TIN-R12W, S.M. Section 6: That part of Tract 4 of Udelhoven Subdivision lying outside the SW/4NE/4	2.6700	HAK # 1034912	0.2941560%	Jennifer Linann Wickerspoln	50.00%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034912		Brigitte Thebaut	16.67%	12.500%				
			HAK # 1034912		Joann Steik	16.67%	12.500%				
			HAK # 1034912		Shirley J. Cox	16.67%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
051	TIN-R12W, S.M. Section 6: That portion of the north 165' of the N/2SE/4 lying west of the Sterling Highway	0.9100	HAK # 1034850	0.1002550%	Jan Elaine Vanderbilt Revocable Trust, dtd Nov 2006 Diana L. Knauf Trust, dtd May 9, 2003 Linda Kerr	33.33%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
051A	TIN-R12W, S.M. Section 6: The North 165' of GLO Lot 3	2.3400	HAK # 1034850	0.2577990%	Jan Elaine Vanderbilt Revocable Trust, dtd Nov 2006 Diana L. Knauf Trust, dtd May 9, 2003 Linda Kerr	33.33%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.000000%
052	TIN-R12W, S.M. Section 6: That part of NW/4SE/4 lying east of Sterling Highway	18.0000	HAK # 1033560	1.9830710%	Harold A. and Marguerite M. Pederson	100.00%	12.500%			Hilcorp Alaska, LLC	100.000000%
053	TIN-R12W, S.M. Section 6: That part of N/2SE/4 lying west of the Sterling Highway, less and except the north 165 feet and that portion of the Sterling Highway Right-of-Way lying within the N/2SE/4	21.0900	HAK # 1034913	2.3234980%	Harold Lee and Diane R. Pederson	100.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
053A	TIN-R12W, S.M. Section 6: Lot 3 except the North 165' thereof	28.9000	HAK # 1034913	3.1839310%	Harold Lee and Diane R. Pederson	100.00%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.000000%
056	TIN-R12W, S.M. Section 6: SW/4SE/4, less and except Block 2, Lots 1 and 8, and Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62	30.9010	HAK # 1034911	3.4043830%	Charles Weyhaupt David Weyhaupt James Reinhardt Thomas Weyhaupt Norma Jeanne Nichols Walter G. Williams	18.75%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
059	TIN-R12W, S.M. Section 6: Block 2, Lot 1 of Clammer's Haven Subdivision, Plat 76-62	2.9570	HAK # 1034911	0.3235710%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Jens H. and Anneline Hansen	12.50%	12.500%				
			HAK # 1034911		Veray H. Matthews	12.50%	12.500%				
060	TIN-R12W, S.M. Section 6: Block 2, Lot 8 of Clammer's Haven Subdivision, Plat 6-62	2.9040	HAK # 1034911	0.3199360%	John Stallons, Jr.	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
061	TIN-R12W, S.M. Section 6: Block 5, Lot 1 of Clammer's Haven Subdivision, Plat 76-62	3.2580	HAK # 1034911	0.3589360%	Dennis Hedman	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
062	TIN-R12W, S.M. Section 6: That part of government Lot 4 lying in the SE/4SW/4, less Block 1, Lot 9 and less Block 2, Lots 3 and 4 of Clammer's Haven Add'n No. 1 Subdivision, Plat H-78-25; Block 2, Lots 5 and 6 and any interest in road ways and easements dedicated to public use in the Clammer's Haven Add'n No. 1 Subdivision, Plat78-25	34.9880	HAK # 1034911	3.8546500%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Norma Jeanne Nichols	16.67%	12.500%				
			HAK # 1034911		Walter G. Williams	8.33%	12.500%				
062A	TIN-R12W, S.M. Sec 6: Those parts of Clammers Haven Addition No.1 (plat H-78-25), described as all of Block 1, Lot 2 and those parts of Block 1, Lot 4 lying outside the SE/4SW/4 AND those parts of Block 2, Lot 1 lying outside the SE/4SW/4 and all minerals underlying dedicated roads and easements lying outside the SE/4SW/4 (a part of GLO Lot 4)	12.1100	HAK # 1034911	1.3341660%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Norma Jeanne Nichols	16.67%	12.500%				
			HAK # 1034911		Walter G. Williams	8.33%	12.500%				
062B	TIN-R12W, S.M. Sec 6: Those parts of Clammers Haven Addition No.1 (plat H-78-25), described as all of Block 1, Lot 1 (a part of GLO Lot 4)	4.4610	HAK # 1034911	0.4914710%	Edward C. and Myong C. Greene	25.00%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
062C	TIN-R12W, S.M. Sec 6: Those parts of Clammer's Haven Addition No.1 (plat H-78-25), described as all of Block 1, Lot 3 (a part of GLO Lot 4)	2.9920	HAK # 1034911	0.3296300%	Keith C. and Flora D. Lovejoy	25.00%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
063	TIN-R12W, S.M. Section 6: That part of Government Lot 4 more particularly described as Block 2, Lot 4 of Clammers Haven Addition No. 1, as platted in plat # H-78-25	1.6990	HAK # 1034911	0.1871800%	Michael and Marjorie Barry	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
064	TIN-R12W, S.M. Section 6: That part of Government Lot 4 more particularly described as Block 2, Lot 3 of Clammer's Haven Addition No. 1, as platted in plat # H-78-25	1.7410	HAK # 1034911	0.1918070%	Michael and Marjorie Barry	25.00%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		Charles Weyhaupt	18.75%	12.500%				
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				



Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
065	TIN-R12W, S.M. Section 6: That part of Government Lot 4 more particularly described as Block 1, Lot 9 of Clammers Haven Addition No. 1, as platted in plat # H-78-25	1.5720	HAK # 1034911	0.1731880%	Charles Weyhaupt	18.75%	12.500%	Hilcorp Alaska, LLC	6.500000%	Hilcorp Alaska, LLC	100.000000%
			HAK # 1034911		David Weyhaupt	18.75%	12.500%				
			HAK # 1034911		James Reinhardt	18.75%	12.500%				
			HAK # 1034911		Thomas Weyhaupt	18.75%	12.500%				
			HAK # 1034911		Corey Kruse	12.50%	12.500%				
			HAK # 1034911		James Kruse	12.50%	12.500%				
066	TIN-R12W, S.M. Section 7: Government Lot 2 and the NE/4NW/4, and a portion of the NW/4NE1/4 lying west of the centerline of the Sterling Highway;	88.9360	HAK # 1031611	9.7981350%	Emil and Frances Bartolowits	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.000000%
188	TIN-R13W, S.M. Sec. 1: SE/4NE/4, SE/4, SE/4SW/4 Sec. 12: N/2NE/4, except that part lying above the line of mean high tide;	524.4500	HAK # 1034384 ADL # 590	57.7789820%	State of Alaska, Department of Natural Resources	100.00%	12.500%	Hilcorp Alaska, LLC	3.250000%	Hilcorp Alaska, LLC	100.000000%
	TIN-R12W, S.M. Sec. 6: W/2 except that part lying above the line of mean high tide;										
229	TIN-R12W, S.M. Section 7: A portion of the NW1/4NE1/4 lying east of the centerline of the Sterling Highway; more particularly described as Celia Subdivision, Plat No. 94-46, and all minerals underlying dedicated roads within the subdivision, excluding Tracts C-1A and C-1B of the Celia Subdivision, Addition #2, Plat No. 2012-53	24.7400	HAK # 591260	2.7256210%	Penelope J. Maize	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.000000%
230	TIN-R12W, S.M. Section 7: Tracts C-1A and C-1B of Celia Subdivision, Addition #2, Plat No. 2012-53	3.8540	HAK # 591236	0.4245980%	James C. Kruse and Linda C. Kruse	100.00%	12.500%	Hilcorp Alaska, LLC		Hilcorp Alaska, LLC	100.000000%

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percentage	Working Interest Ownership	Working Interest Owner %
		Total PA Acreage		Total Tract Percentage						Working Interest Owners	PA %
		907.683		100.00000000%						Uncommitted	0.00000000%
										Hilcorp Alaska, LLC	100.00000000%

**Attachment 4**  
**Approved Ninilchik Unit Falls Creek Participating Area: Draft Exhibit D of Approved**  
**FCPA (FCPA Map)**

