

Petrographic thin-section data of core from the following wells:

Husky Oil NPR Operations (U. S. Geological Survey) Kuyanak T. W. No. 1 (5,099.5'),  
Husky Oil NPR Operations (U. S. Geological Survey) Peard T. W. No. 1 (7,840'; 7,851.5';  
7,861.8'),  
Husky Oil NPR Operations (U. S. Geological Survey) Walakpa T. W. No. 2 (2,624'; 2,638.35'),  
and  
Sinclair Oil and Gas Colville No. 1 (9,030'-9,031'; 9,145'-9,146').



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**TABLE 1  
THIN SECTION PETROGRAPHIC DATA**

**Various Wells  
Alaska**

DEPTH (feet)	2624.00	2638.35	5099.50	7840.00	7851.50	7861.80
Well Name	Walakpa #2	Walakpa #2	Kuyanak #1	Peard #1	Peard #1	Peard #1
WWRC #:	4251X:156	3351X:451	4243X:165	43545:563	43456:61	43455:61
<b>TEXTURE</b>						
Grain Size (mm)	LF (0.138)	UM (0.410)	LF (0.174)	LF (0.136)	LF (0.130)	LF (0.136)
Sorting	Well	Poor-Mod.	Mod. Well	Mod.	Mod.	Mod.
<b>FRAMEWORK CONSTITUENTS</b>						
Quartz, monocr, stalline	46.4	31.2	57.6	35.2	41.4	41.2
Quartz, polycrystalline	0.4	2.8	0.8	--	0.8	--
Plagioclase Feldspar	2.8	0.8	1.2	0.8	0.8	1.2
Potassium Feldspar	--	--	--	--	--	--
Plutonic Rock Fragment	1.2	--	--	--	--	0.4
Rock Fragment, Undiff.	1.2	0.4	0.4	1.2	0.8	0.4
Chert	7.2	25.2	1.2	--	--	0.4
Sedimentary (argillaceous) Rock Fragments	0.4	1.2	--	1.2	1.2	1.6
Volcanic Rock Fragment	--	--	--	0.4	--	0.4
Metamorphic Rock Fragment	--	--	0.4	--	--	--
Peloids	--	--	--	--	--	--
Mica	0.4	--	--	--	0.8	0.4
Glauconite	--	10.4	6.0	10.0	4.0	5.6
Heavy Minerals/Opaques	--	0.4	--	--	0.4	--
<b>Total Framework Constituents</b>	<b>60.0%</b>	<b>72.4%</b>	<b>67.6%</b>	<b>48.8%</b>	<b>53.2%</b>	<b>51.6%</b>
<b>INTRAGRANULAR REPLACEMENTS</b>						
Dolomite Replacement, Undiff.	--	2.8	--	--	--	1.2
Calcite Replacement	--	--	--	2.0	1.6	0.4
Siderite Replacement	4.4	0.8	0.8	1.6	--	--
Pyrite/Marascite Replacement	--	--	--	--	1.2	1.2
Clay Replacement	0.4	--	--	1.2	2.0	0.8
<b>Total Intragranular Replacements</b>	<b>4.8%</b>	<b>3.6%</b>	<b>0.8%</b>	<b>4.8%</b>	<b>4.8%</b>	<b>3.6%</b>
<b>MATRIX</b>						
Siderite-Poor Clay	--	0.4	--	--	15.6	33.6
Organic	--	--	--	--	--	1.6
Dolomite	--	--	--	--	--	--
Siderite-Rich Clay	--	--	5.6	28.0	--	--
<b>Total Matrix</b>	<b>0.0%</b>	<b>0.4%</b>	<b>5.6%</b>	<b>28.0%</b>	<b>15.6%</b>	<b>35.2%</b>
<b>PORE-FILLING CONSTITUENTS</b>						
Calcite	--	--	--	3.2	0.4	--
Dolomite	0.4	10.4	1.2*	--	0.8	--
Siderite	8.0	10.4	2.4	8.8	--	--
Quartz Overgrowths	8.8	1.6	9.2	0.4	1.6	0.8
Feldspar Overgrowths	0.4	--	--	--	--	--
Pyrite/Marascite Cement	--	--	0.4	--	0.4	0.4
Iron Oxide Cement	0.4	--	--	--	--	--
Hydrocarbon	--	--	--	--	--	--
Authigenic Clay, Undiff.	0.8	0.8	3.6	4.0	20.8	8.0
Kaolinite	1.2	--	--	--	--	--
<b>Total Pore-Filling Constituents</b>	<b>20.0%</b>	<b>23.2%</b>	<b>15.6%</b>	<b>16.4%</b>	<b>24.0%</b>	<b>9.2%</b>
<b>PORE SPACE</b>						
Intergranular Primary Porosity	14.4	0.4	8.0	--	1.2	--
Leached-Grain	0.8	--	1.2	2.0	1.2	0.4
Intercrystalline	--	--	--	--	--	--
<b>Total Pore Space</b>	<b>15.2%</b>	<b>0.4%</b>	<b>9.2%</b>	<b>2.0%</b>	<b>2.4%</b>	<b>0.4%</b>

\*ferroan dolomite

**TABLE 1 (CONTINUED)**  
**THIN SECTION PETROGRAPHIC DATA**

Various Wells  
Alaska

DEPTH (feet)	9130-38 <sup>31</sup> FR	9145-46
Well Name	Sinclair Colville #1	Sinclair Colville #1
WWRC #:	844X:53	823X:3
<b>TEXTURE</b>		
Lithology	Dolomite	Dolomite
Texture	Mudstone	Packstone/Wackestone
<b>FRAMEWORK CONSTITUENTS</b>		
Quartz, monocrystalline	0.8	5.2
Quartz, polycrystalline	--	0.4
Plagioclase Feldspar	--	--
Potassium Feldspar	--	0.8
Plutonic Rock Fragment	--	--
Rock Fragment, Undiff.	--	--
Chert	--	0.8
Sedimentary (argillaceous) Rock Fragments	--	--
Volcanic Rock Fragment	--	--
Metamorphic Rock Fragment	--	--
Peloids	0.4	3.2
Mica	--	--
Glauconite	--	--
Heavy Minerals/Opaques	--	--
<b>Total Framework Constituents</b>	<b>1.2%</b>	<b>10.4%</b>
<b>INTRAGRANULAR REPLACEMENTS</b>		
Dolomite Replacement, Undiff.	--	--
Calcite Replacement	--	--
Siderite Replacement	--	--
Pyrite/Marascite Replacement	0.8	--
Clay Replacement	--	--
<b>Total Intragranular Replacements</b>	<b>0.8%</b>	<b>0.0%</b>
<b>MATRIX</b>		
Siderite-Poor Clay	--	--
Organic	--	--
Dolomite	93.2	66.8
Siderite-Rich Clay	--	--
<b>Total Matrix</b>	<b>93.2%</b>	<b>66.8%</b>
<b>PORE-FILLING CONSTITUENTS</b>		
Calcite	--	1.2
Dolomite	--	--
Siderite	--	--
Quartz Overgrowths	--	1.2
Feldspar Overgrowths	--	--
Pyrite/Marascite Cement	--	9.6
Iron Oxide Cement	--	--
Hydrocarbon	--	5.2
Authigenic Clay, Undiff.	--	--
Kaolinite	--	--
<b>Total Pore-Filling Constituents</b>	<b>0.0%</b>	<b>17.2%</b>
<b>PORE SPACE</b>		
Intergranular Primary Porosity	--	--
Leached-Grain	3.2	--
Intercrystalline	1.6	5.6
<b>Total Pore Space</b>	<b>4.8%</b>	<b>5.6%</b>

**TABLE 2**  
**BASIC ROCK PROPERTIES**

Peard No. 1 Well  
Alaska

Depth (ft)	Permeability to Gas (md)	Porosity (%BV)	Grain Density (g/cc)	Bulk Density (g/cc)
7840.00	0.027	15.5	2.98	2.52
7851.50	0.010	13.7	3.12	2.69
7861.80	0.018	16.1	2.80	2.35

