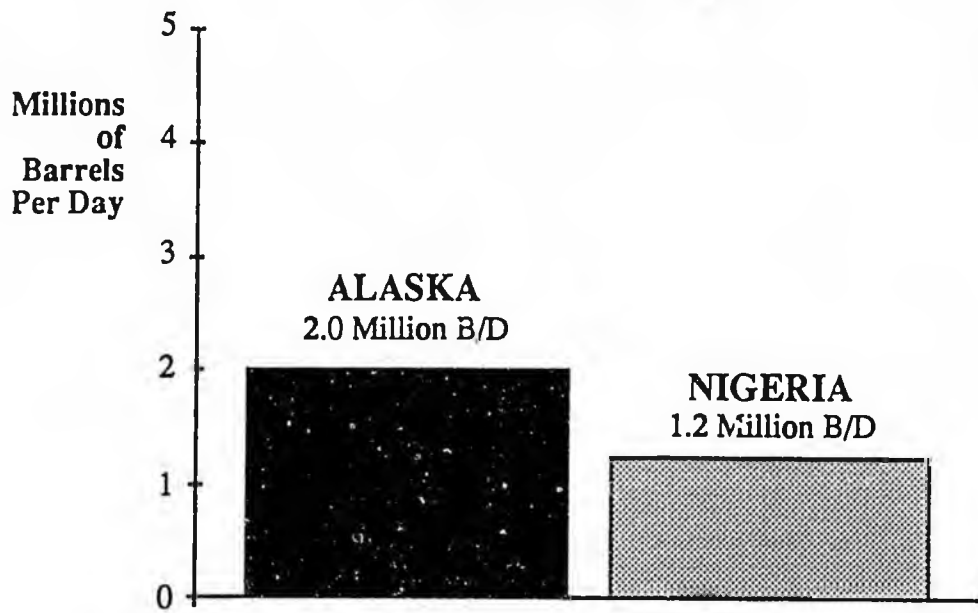


ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990 8672
5988 HOUSE RESOURCES

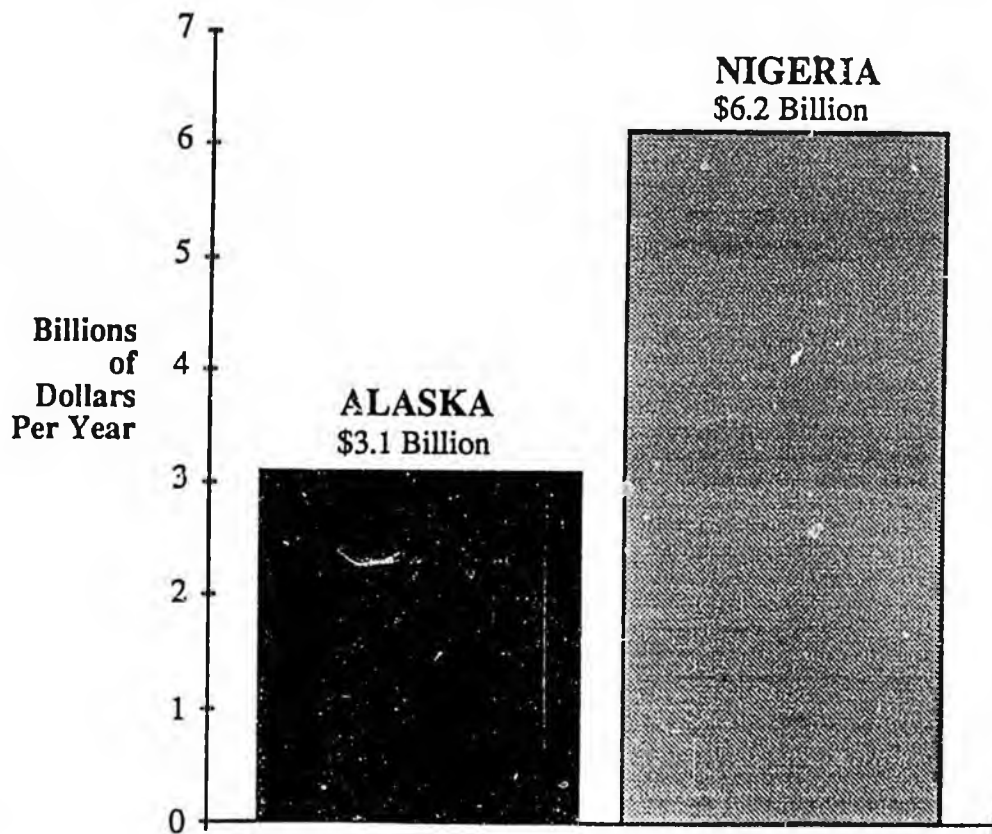
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PRODUCTION

(Calendar Year 1987)

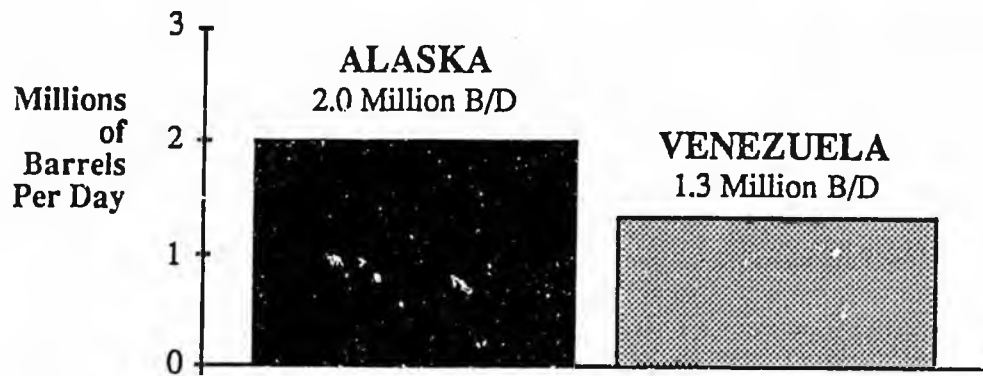


GOVERNMENT REVENUE

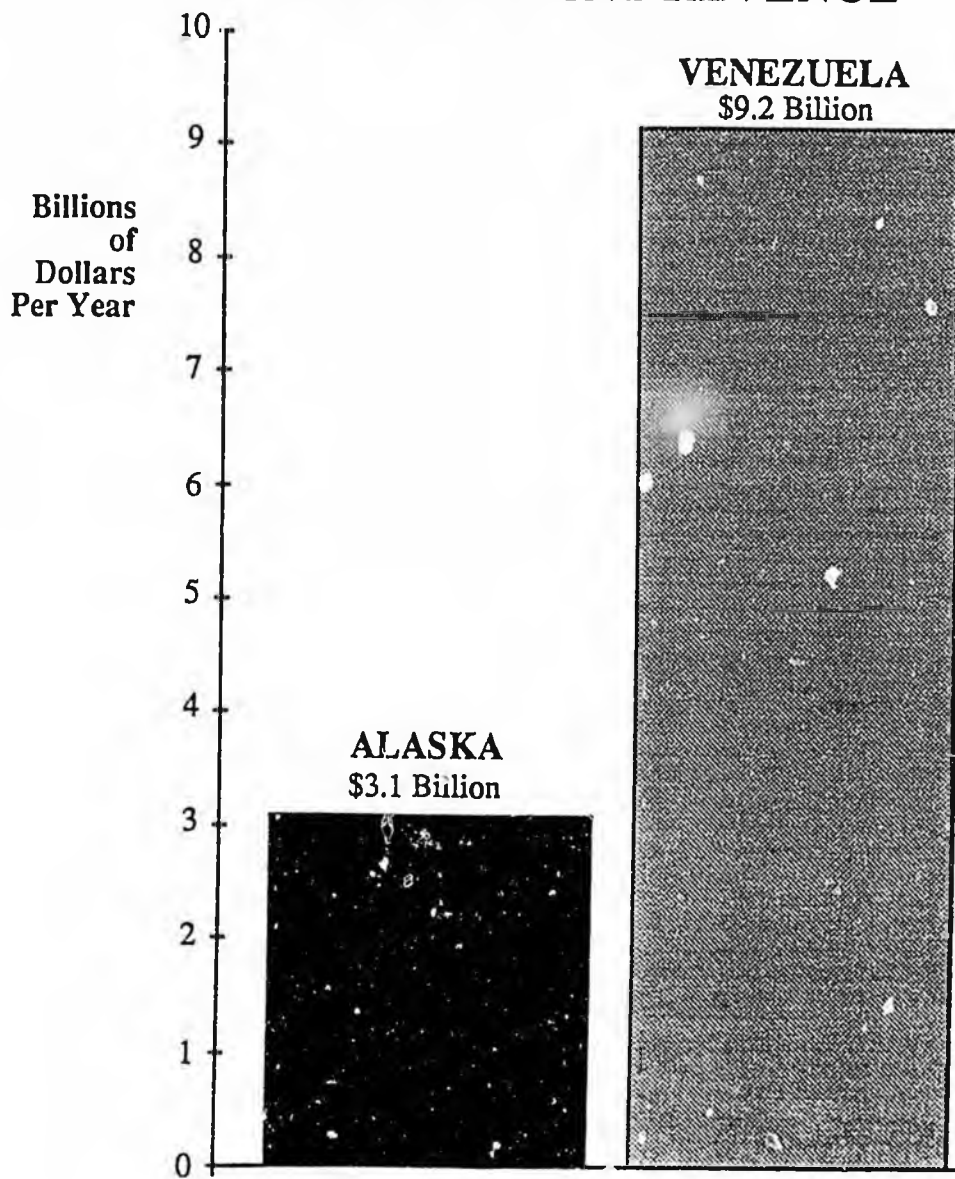


PRODUCTION

(Calendar Year 1987)

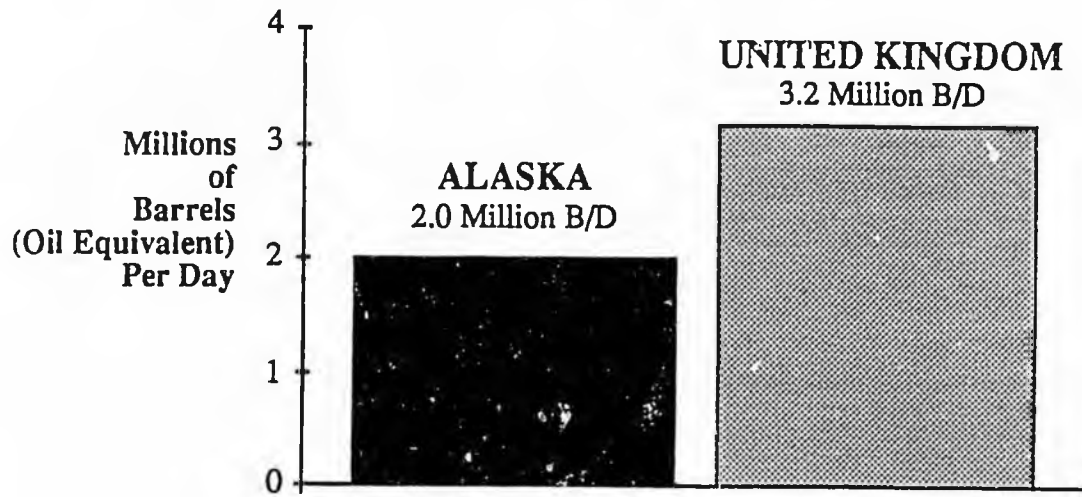


GOVERNMENT REVENUE

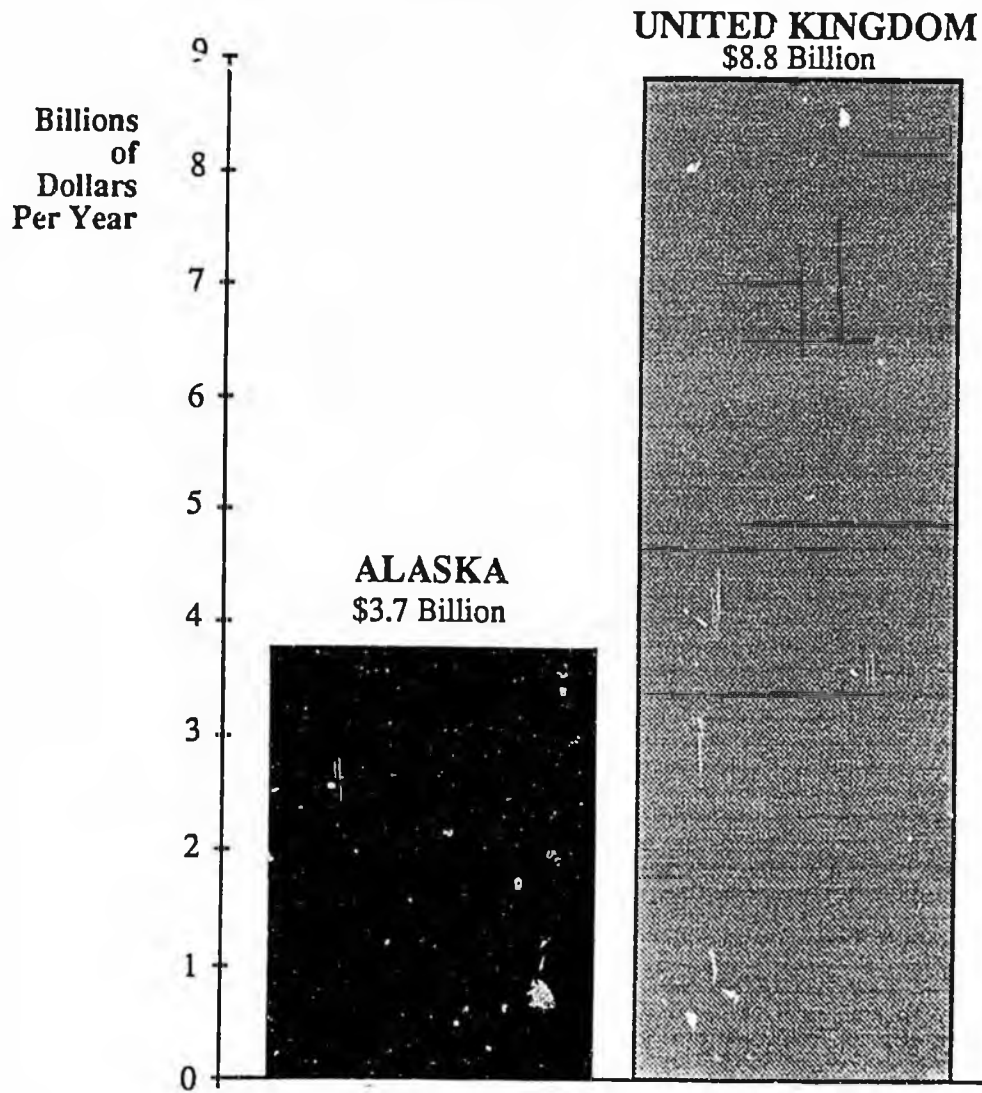


PRODUCTION

(Fiscal Year 1987)

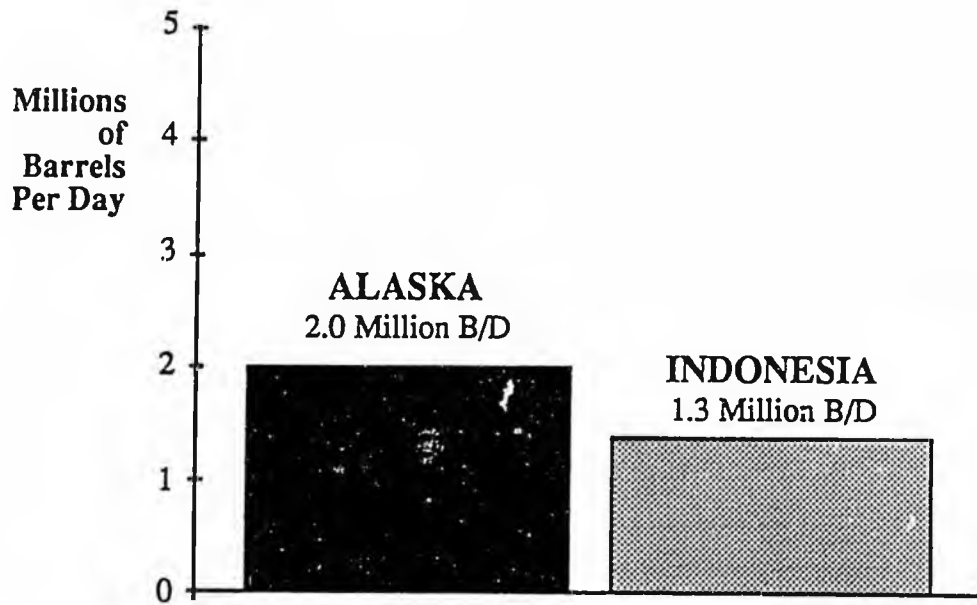


GOVERNMENT REVENUE

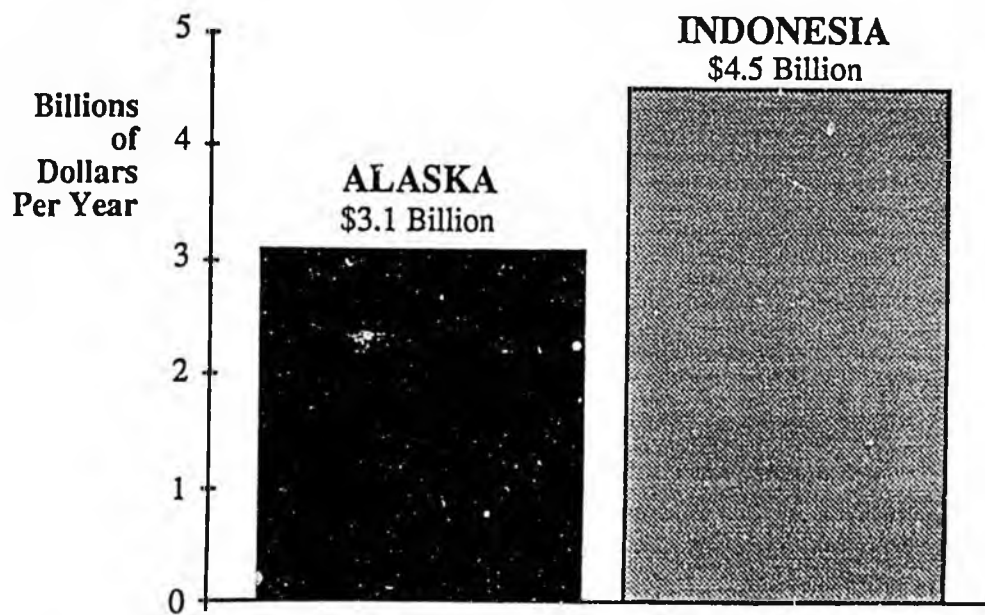


PRODUCTION

(Calendar Year 1987)



GOVERNMENT REVENUE



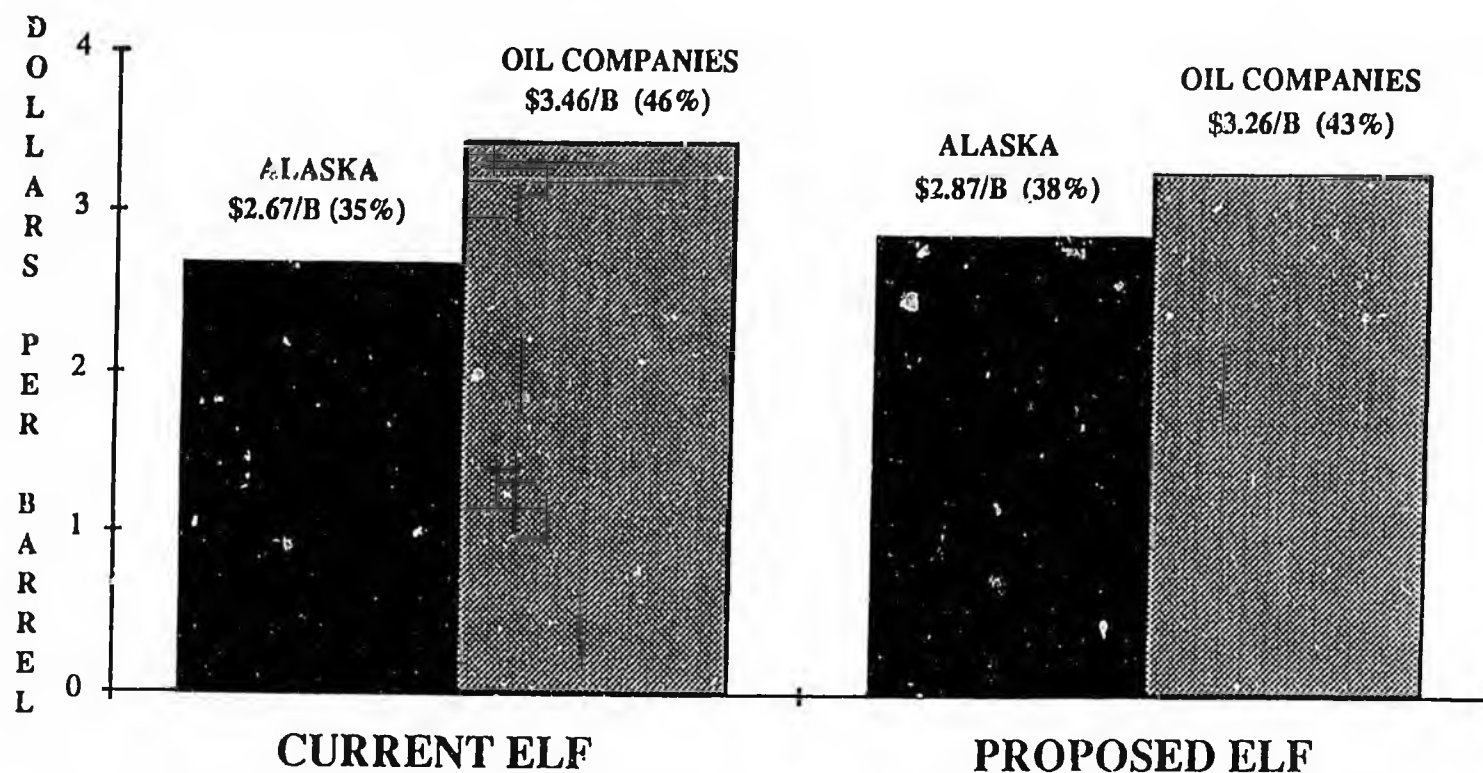
"We have also found [in Indonesia] to an almost unprecedented degree the very desirable and somewhat uncommon qualities of stability, honor, and fair dealing. In the turbulence of the international oil business, Indonesia has been an island of rationality and wisdom."

*Robert E. Wycoff
President, Atlantic-Richfield Co.
address to the Indonesian Petroleum Association
October 20, 1987*

ARCO Kuparuk Example

	<u>Current Law</u>	<u>Proposed Law</u>
Change in Annual Gross Revenue	\$981,000	\$981,000
Change in Annual Severance Tax	(\$37,846)	\$58,611
Tax Rate on Incremental Production	-3.9%	6.0%
Average Tax Rate Before Drilling	7.820%	10.944%
Average Tax Rate After Drilling	7.806%	10.938%
Percent Change in Average Tax Rate Due to Drilling	-0.180%	-0.055%

How Would The New ELF Affect Profits And Shares ?



"The power of taxation shall never be surrendered. This power shall not be suspended or contracted away...."

The Alaska Constitution

Legislator: "...[W]hat percent do you think they [the state] should collect?"

Mr. Taylor: "Something a little lower than it is now. About half the income tax for instance.... I think it would be much more fair for the industry and the state to get about the same share out of Prudhoe Bay even though we are paying the expenses and we made the investment...."

Legislator: "So you think it should be brought down to the point where the state and the industry get roughly equal shares in this. You like that better?"

Mr Taylor: "Yes, sir."

*Mr. Monte Taylor
Exxon USA Alaska Operations Manager
Joint Gas Pipeline Committee, May 21, 1981*

Legislator: "Did I hear you say you would concur on that?"

Mr. Donaldson: "I think that if you get rough parity with the state...we would have to think a long time as an industry, as a company, before we said that is not a pretty fair piece of middle ground."

*Mr. Richard Donaldson
SOHIO vice-president for government/public affairs
expressing agreement with Mr. Taylor,
Joint Gas Pipeline Committee, May 21, 1981*

"Alaska is not unfamiliar with the activities and importance of lobbies. But it is important to bear in mind that lobbying activity on a scale never before seen will take place in the capital when Alaska becomes a state....

"The taking of Alaska's mineral resources without leaving some reasonable return for the support of Alaska governmental services and the use of all the people of Alaska will mean a betrayal in the administration of the people's wealth."

*Congressional Delegate E.L. "Bob" Bartlett
Address to the Alaska Constitutional Convention
November 8, 1955*

MEMORANDUM

DEPARTMENT OF REVENUE ANALYSIS

MEMORANDUM

State of Alaska

DEPARTMENT OF REVENUE

TO: Cliff Groh
Special Assistant to the
Commissioner

DATE: February 9, 1989
2962A

FILE NO:

TELEPHONE NO:

THRU:

SUBJECT: APPLICABILITY DATE OF
HB 118

FROM:

Roger Marks *RM*
Petroleum Economist

If the ELF formula contained in HB 118 applied to oil produced after the following dates, the amount of additional revenue (relative to current law) raised through the end of FY 1990 would be as follows. This is based on the assumptions in the Department of Revenue's Fall 1988 Petroleum Production Revenue Forecast mid-case scenario, updated for actual data through November 1988:

June 30, 1987	\$397mm
December 31, 1988	\$175mm
May 31, 1989	\$126mm
August 31, 1989	\$ 96mm

The August 31, 1989 figure was the basis of the fiscal note on the bill.

Assuming the "Consensus Revenue Analysis" of January 24, 1989, the revenues would be as follows:

June 30, 1987	\$410mm
December 31, 1988	\$188mm
May 31, 1989	\$132mm
August 31, 1989	\$ 99mm

Synopsis of Alaska Fields

<u>Field</u>	<u>Volume (bbls/day)</u>	<u>Wells</u>	<u>Daily Volume p/well</u>	<u>Effctv Sev Tax Rate Under Current Law</u>	<u>Effctv Sev Tax Rate Under HB118</u>
<u>Current Fields</u>					
<u>North Slope</u>					
Prudhoe Bay	1,526,932	691	2210	11.59%	14.91%
Kuparuk	320,685	337	952	8.36%	13.18%
Lisburne	38,293	51	751	5.22%	0.36%
Endicott	98,099	35	2803	12.25%	8.68%
<u>Cook Inlet</u>					
Beaver Creek	263	2	132	0.00%	0.00%
Granite Pt.	7,454	29	257	0.00%	0.00%
McArthur River	19,053	76	251	0.00%	0.00%
Middle Ground Shoals	7,913	44	180	0.00%	0.00%
Swanson River	5,684	27	211	0.00%	0.00%
Trading Bay	2,310	34	68	0.00%	0.00%
<u>Prospective Fields</u>					
Milne Pt.	30,000	40	750	4.67%	0.00%
West Sak	250,000	4000	65	0.00%	0.00%
Pt. Thomson	50,000	45	1111	7.62%	2.43%
Seal Island	100,000	112	893	6.57%	5.75%
Niakuk	20,000	12	1657	12.25%	0.01%

For current fields: actual November 1988 data. For prospective fields the expected values at peak production.

IF LOWER 48 FIELDS WERE IN ALASKA THEY WOULD PAY
NO SEVERANCE TAX UNDER EITHER CURRENT LAW OR HB 118

<u>Top 10 Lower 48 Fields</u>	<u>Daily Production</u>	<u>Average Daily Per Well Production</u>	<u>ELF (Current or Proposed)</u>	<u>Severance Tax Under Alaska Law</u>
1. Belridge South (CA)	165,981	28	0	0
2. Midway-Sunset (CA)	157,526	19	0	0
3. Kern River (CA)	128,491	17	0	0
4. East Texas (TX)	111,225	12	0	0
5. Elk Hills (CA)	107,244	98	0	0
6. Yates (TX)	91,890	80	0	0
7. Wilmington (CA)	81,975	40	0	0
8. Wasson (TX)	78,510	36	0	0
9. Spraberry Trench (TX)	60,585	8	0	0
10. Slaughter (TX)	55,792	19	0	0

Source: Oil and Gas Journal

FEB 08 '89 11:17 PENNWELL - TULSA

U.S. fields with reserves exceeding 100 million bbl

State	Field	Disc. date	1988 prod.	Cum. prod. 1-1-89	Est. rem. reserves	Est. No. wells
ALABAMA						
	Citronelle, 1935.....		1,827	147,861	7,000	435
ALASKA						
	Endicott, 1978.....		36,098	43,098	324,902	37
	Granite Point, 1965.....		2,787	109,535	16,213	29
	Kuparuk River, 1969.....		112,055	503,357	994,945	328
	Lisburne, 1957.....		14,500	35,600	175,689	49
	McArthur River, 1965.....		7,040	529,040	34,950	76
	Middle Ground Snaal, 1962.....		2,737	155,869	5,263	42
	Prudhoe Bay, 1967.....		576,335*	6,053,018*	3,533,665	691
	Swanson River, 1957.....		2,154	209,450	8,846	29
*Includes about 30.66 million bbl of condensate. (Includes about 138.66 million bbl of condensate.						
ARKANSAS						
	Smackover, 1922.....		2,654	556,907	9,097	2,100
CALIFORNIA						
San Joaquin Valley						
	Bainbridge South, 1911.....		60,583	677,063	435,295	6,000
	Buena Vista, 1909.....		1,574	647,274	39,271	895
	Coalinga, 1890.....		10,212	753,845	161,198	2,174
	Coalinga Nose, 1933.....		1,285	498,665	17,370	78
	Colas Lavee North, 1938.....		442	160,432	2,748	85
	Cuyama South, 1949.....		469	218,191	6,938	105
	Cymric, 1909.....		8,479	199,308	40,000	1,013
	Edison, 1928.....		1,470	134,391	25,670	674
	Elk Hills, 1911.....		39,144	693,374	579,776	1,099
	Fruitvale, 1923.....		577	115,553	13,709	274
	Greeley, 1936.....		237	112,547	1,763	27
	Kern Front, 1912.....		1,500	173,056	55,230	950
	Kern River, 1939.....		46,839	1,204,479	743,000	6,709
	Kettleman North Dome, 1929.....		172	456,648	1,298	44
	Lost Hills, 1910.....		5,627	173,293	61,203	1,634
	McKittinck, 1935.....		2,551	266,522	90,919	931
	Midway-Sunset, 1994.....		57,497	1,879,347	373,963	9,180
	Mount Poso, 1925.....		6,620	263,250	79,230	411
	Rio Bravo, 1937.....		151	115,051	1,319	15
	Yowumne, 1974.....		6,570	81,363	27,015	65
Coastal Area						
	Carpentera, 1965.....		2,650	38,101	29,289	114
	Cat Canyon E. & W., 1908.....		2,735	298,236	46,930	512
	Des Cuadras, 1969.....		4,371	212,804	54,140	140
	Elwood, 1923.....		317	105,725	2,233	7
	Honco, 1959.....		9,952	89,621	112,223	20
	Orcutt, 1901.....		906	165,874	10,238	136
	Point Pescerales, 1982f.....		6,515	11,715	331,544	10
	Rincon, 1927.....		1,118	148,759	14,832	240
	San Arco, 1947.....		4,641	408,351	122,903	600
	Santa Maria Valley, 1934.....		1,751	198,131	40,408	172
	South Mountain, 1916.....		727	145,934	12,035	352
	Ventura, 1919.....		7,072	894,742	97,026	570
Los Angeles Basin						
	Beta, 1976.....		6,013	40,423	173,825	60
	Beverly Hills, 1900.....		2,034	122,616	42,356	116
	Brea Chinda, 1930.....		2,143	383,894	54,787	720
	Coyote East, 1909.....		584	103,653	13,212	103
	Coyote West, 1909.....		808	249,359	7,481	113
	Dominguet, 1923.....		607	269,266	7,448	113
	Huntington Beach, 1920.....		5,816	1,066,268	72,044	990
	Inglewood, 1924.....		2,790	345,433	54,149	366
	Long Beach, 1921.....		2,466	909,757	17,216	410
	Montebello, 1917.....		525	192,337	10,267	155
	Richfield, 1919.....		1,494	189,165	27,412	203
	Santa Fe Springs, 1919.....		587	613,077	9,035	151
	Seal Beach, 1924.....		876	203,118	14,113	168
	Torrance, 1922.....		1,693	212,023	35,847	365
	Wilmington, 1932.....		23,921	2,292,229	495,633	2,050
COLORADO						
	Rangely, 1933.....		12,492	739,418	35,000	488

State	Field	Disc. date	1988 prod.	Cum. prod. 1-1-89	Est. rem. reserves	Est. No. wells
FLORIDA						
	Jay, 1970.....		4,676	360,612	55,944	121
ILLINOIS						
	Clay City, 1938.....		2,448	393,960	6,000	2,600
	Lawrence, 1905.....		2,919	394,521	5,300	2,700
	Louden, 1936.....		1,345	389,237	3,555	1,340
	Main, 1905.....		2,066	233,273	5,000	3,356
	New Harmony, 1939.....		1,072	153,545	4,000	1,140
	Salem, 1938.....		2,167	386,983	4,500	1,325
KANSAS						
	Bemis-Shotts, 1928.....		1,169	244,247	4,405	973
	Chase-Siica, 1930.....		1,019	301,003	4,499	1,103
	El Corado, 1915.....		839	256,734	2,515	822
	Hall-Gurnay, 1931.....		1,032	145,677	4,051	1,130
	Trapp, 1929.....		1,200	225,958	4,643	1,000
LOUISIANA						
Offshore						
	Say Marchand Blk. 2, 1949.....		5,547	596,972	53,759	120
	Eugene Island Blk. 330, 1930.....		7,859	269,080	55,920	169
	Grance Isle Blk. 16, 1948.....		1,659	263,729	35,645	44
	Grande Isle Blk. 43, 1955.....		4,312	272,256	85,688	126
	Mississippi Canyon Blk. 194, 1920.....		4,929	116,958	76,311	44
	Main Pass Blk. 41, 1957.....		2,985	237,854	23,384	112
	Main Pass Blk. 306, 1969.....		1,776	201,869	78,335	94
	South Pass Blk. 27, 1954.....		1,659	125,317	75,198	119
	South Pass Blk. E1, 1968.....		9,140	152,151	45,000	156
	South Pass Blk. 62, 1965.....		3,331	106,364	91,594	73
	South Pass Blk. 55, 1969.....		4,032	100,875	89,252	61
	Ship Shoal Blk. 204, 1968.....		1,591	66,070	38,930	40
	Ship Shoal Blk. 207, 1967.....		1,023	87,818	38,000	25
	Ship Shoal Blk. 208, 1962.....		4,117	160,169	65,274	67
	South Timbalier Blk. 21, 1939.....		1,324	216,239	47,133	45
	South Timbalier Blk. 135, 1956.....		1,390	139,337	25,663	37
	West Delta Blk. 30, 1949.....		6,754	446,683	47,375	153
	West Delta Blk. 73, 1952.....		4,469	188,700	86,291	73
Onshore South						
	Bay de Chené, 1941.....		390	96,382	17,952	24
	Bay St. Etienne, 1928.....		321	164,503	25,292	18
	Bayou Sole, 1941.....		769	161,369	3,417	20
	Black Bay West, 1953.....		1,971	144,799	10,432	94
	Cattieu Island, 1930.....		2,308	602,231	74,020	136
	Cote Blanche Bay West, 1940.....		741	181,594	46,374	86
	Delta Farms, 1944.....		293	115,351	7,019	13
	Garden Island Bay, 1934.....		1,406	221,261	31,954	144
	Golden Meadow, 1938.....		894	135,439	4,290	176
	Grand Bay, 1938.....		454	170,514	3,750	41
	Hackberry, East, 1927.....		777	109,087	7,603	60
	Hackberry, West, 1928.....		1,771	141,995	6,492	107
	Iowa, 1931.....		134	99,303	697	25
	Jennings, 1901.....		315	116,409	700	181
	Lafitte, 1935.....		1,665	255,304	9,550	111
	Lake Barre, 1929.....		941	204,023	20,051	31
	Lake Pato, 1929.....		477	117,000	17,415	23
	Lake Washington, 1931.....		2,353	242,390	16,376	93
	Leeville, 1931.....		447	141,646	7,221	37
	Paradise, 1939.....		725	126,650	8,600	31

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State	Field	Disc. date	1988 prod.	Cum. prod. 1-1-89 1,000 bbl	Est. res. reserves	Est. No. wells
Quarantine Bay, 1937...			761	172.672	1,654	71
Timbalier Bay, 1938						
Venice, 1937.....			858	181.878	7,590	59
Vinton, 1910.....			287	161.001	900	96
Weeks Island, 1945.....			816	225.939	21,556	33
West Bay, 1940.....			1,349	228.246	16,355	79
North						
Caddo-Pine Island 1905			3,310	360.299	12,888	10,688
Deihi, 1944.....			675	211.707	34,651	59
Haynesville, 1921.....			761	168.237	2,373	166
Homer, 1919.....			434	98.375	1,908	199
Rodessa, 1935.....			331	105.027	1,506	67

MISSISSIPPI

Baxterville, 1944.....	2,509	239.164	10.391	316
Heiderberg, 1944.....	2,829	174.809	12.171	316
Tinsley, 1939.....	834	29.677	3.197	173

MONTANA

Bell Creek, 1957.....	958	128.836	22.984	91
Cut Bank, 1925.....	994	162.459	37.159	575
Pine, 1951.....	1,302	105.145	5.657	96

NEW MEXICO

Denton, 1949.....	652	138.693	3.000	179
Empire-Abo, 1957.....	1,424	219.983	50.017	405
Eunice-Monument, 1929	2,500	125.414	10.854	879
Hocos, 1928.....	8,480	297.482	20,000	613
Majamar, 1926.....	1,859	144.961	5.070	851
Vacuum, 1929.....	12,359	432.242	40,000	1,556

NORTH DAKOTA

Beaver Lodge, 1951.....	1,704	111.574	16.684	102
Billings Nose, 1978.....	2,550	61.659	51.744	102
Little Knife, 1977.....	3,392	51.437	57.924	131
Mondak, 1976.....	439	13.165	82.837	96

OKLAHOMA

Burbank, 1920.....	1,135	536.746	8,377	1,105
Eola-Reeberson, 1920.....	746	103.124	8,210	603
Fitts, 1934.....	2,963	199.894	12,000	589
Glenn Pool, 1925.....	1,170	327.265	5,000	714
Golden Trend, 1945.....	4,333	474.100	28,000	1,396
Healton, 1913.....	1,938	334.645	9,563	1,000
Hewitt, 1919.....	3,152	266.371	13,615	923
Oklahoma City, 1928.....	902	816.170	5,966	174
Poste, 1958.....	1,216	106.393	14,921	226
She-Vel-Tum, 1905.....	18,398	1,167.379	60,000	7,616
Sooner Trend, 1945.....	4,147	255.544	20,000	4,746

TEXAS

District 2				
Greta, 1933.....	746	147.570	12,530	100
Lake Pasture, 1953.....	2,194	87.784	12,644	143
Tom O'Connor, 1934.....	10,380	747.849	55,000	646
West Ranch, 1938.....	2,640	350.034	8,504	307

District 3				
Ananias, 1935.....	1,068	284.888	15,112	106
Canoe, 1951.....	3,864	727.215	33,728	278
Giddings, 1971.....	8,656	278.570	148,032	2,281
Hartogs, 1934.....	3,084	697.237	72,764	206
Magnet Withers, 1936...	1,834	110.950	5,000	150
Oyster Bayou, 1941.....	864	160.204	18,096	39
Thompson, 1931.....	3,972	472.540	27,360	262
Tomcat, 1933.....	400	121.055	9,858	85
Webster, 1937.....	5,304	573.192	20,000	243

District 4				
Agua Dulce-Stratton, 1926.....	360	146.623	24,751	94
Bonegas, 1943.....	192	114.021	20,186	40
Kelsey, 1938.....	200	114.359	36,247	60

State	Field	Disc. date	1988 prod.	Cum. prod. 1-1-89 1,000 bbl	Est. res. reserves	Est. No. wells
Plymouth, 1925.....			400	122.923	3,300	60
Seeligson, 1925.....			156	271.483	55,544	42
TCB, 1944.....			456	112.700	52,358	30
White Point E, 1938.....			60	104,034	6,340	21
District 5						
Alabama Ferry, 1983....			3,600	14,600	86,400	253
Van, 1928.....			3,056	521,960	15,000	366
District 6						
East Texas, 1930.....			40,597	5,008,747	988,759	9,363
Fairway, 1950.....			2,424	192,591	17,777	100
Hawkins, 1940.....			8,244	821,644	42,372	442
Neches, 1953.....			1,416	103,980	6,036	163
Quitman, 1948.....			1,680	121,346	8,440	208

District 8						
Anadarko, 1946.....			1,500	181,988	6,500	28
Block 31, 1945.....			3,555	220,068	12,000	325
Cowden, N., 1930.....			13,596	488,092	40,000	1,210
Cowden, S. Foster, Johnson, 1932.....			9,696	509,796	40,000	1,593
Dollaznic, 1945.....			2,568	153,780	11,448	202
Dune, 1938.....			2,928	183,000	18,704	771
Fullerton, 1942.....			7,452	348,200	22,000	870
Goldsmith, 1934.....			7,246	755,516	33,752	2,036
Howard Glasscock, 1925			5,844	404,508	26,000	2,239
Iatan, E., 1925.....			3,372	142,556	12,000	1,304
Jordan, 1937.....			480	128,975	2,520	135
Keystone, 1920.....			1,872	313,080	9,374	812
McElroy, 1926.....			7,884	465,549	56,800	1,600
Means, 1934.....			7,020	228,594	20,000	713
Midland Farms, 1944....			4,608	241,990	18,615	415
Sand Hills, 1931.....			2,760	248,207	21,500	1,312
TXL, 1944.....			2,004	263,515	6,500	600
Wadell, 1927.....			708	100,712	3,792	169
Ward Estes, N., 1929...			3,408	364,177	76,435	1,562
Westbrook, 1923.....			2,000	88,000	16,000	718
Yates, 1925.....			33,540	1,171,820	782,695	1,146

District 8-A						
Anton-Irish, 1944.....			3,554	175,910	24,190	239
Cogdell Area, 1949.....			1,556	292,219	41,204	103
Diamond M., 1948.....			1,903	239,415	16,053	474
Kelly-Snyder, 1948.....			11,552	1,234,962	115,038	805
Levelland, 1938.....			17,328	464,144	50,000	3,012
Prentice, 1951.....			6,216	161,036	20,000	437
Salt Creek, 1950.....			10,404	247,340	12,552	173
Seminole, 1935.....			17,004	524,765	35,000	624
Slaughter, 1936.....			20,354	1,029,800	50,000	3,001
Spraberry Trend, 1951..			22,212	653,388	50,000	7,321
Wasson, 1925.....			28,656	1,711,998	60,000	2,152
Welch, 1942.....			3,324	144,228	14,000	651

District 10						
Pannhacie, 1921.....			7,812	1,423,286	41,240	11,643

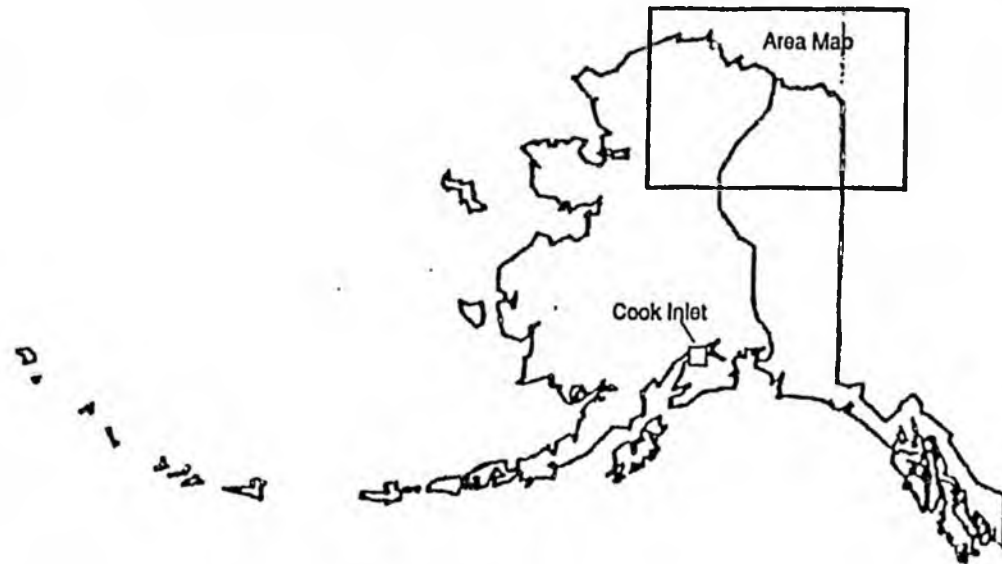
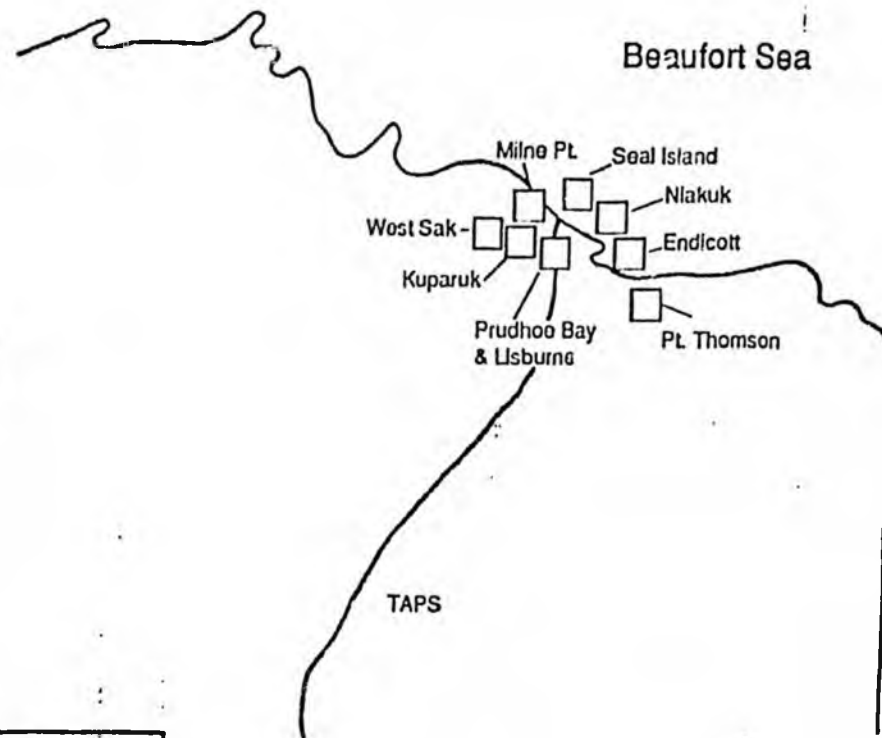
UTAH

Altamont, 1955.....	3,047	89,493	231,216	227
Aneth, 1956.....	5,340	354,004	30,000	461
East Anschutz Ranch, 1979.....	12,755	80,365	727,799	29
Red Wash, 1951.....	1,075	77,511	13,377	146

WYOMING

Brady, 1960.....	2,438	54,537	49,251	22
Byron, 1918.....	1,119	120,699	7,656	67
Elk Basin, 1915.....	2,968	446,695	25,750	170
Frannie, 1928.....	1,122	116,020	5,000	63
Garland, 1906.....	2,625	154,885	6,000	225
Grass Creek, 1914.....	2,414	185,120	9,000	288
Hamilton Dome, 1918...	2,853	268,103	6,000	239
Hartzog Draw, 1976.....	6,647	66,722	293,739	157
White, 1955.....	541	75,416	55,885	93
Lance Creek, 1918.....	163	107,805	400	24
Little Buffalo Basin, 1914.....				
	2,666	118,653	9,389	154
Lost Soldier, 1916.....	2,308	192,073	6,000	71
Oregon Basin, 1912.....	8,669	388,180	30,000	500
Painter Reservoir, 1979	1,739	31,674	80,674	31
Salt Creek, 1906.....	5,210	629,689	25,000	1,217
Wertz, 1920.....	3,500	99,695	15,000	65
Whitney Canyon, 1980..	1,652	10,379	105,435	29

State of Alaska
Approximate Field Locations
(Current and Prospective Fields)



Date: February 7, 1989

HOW REVENUE NEUTRAL WERE THE 1981 CHANGES?
(\$mm)

	<u>What collections would have been under pre 1982 Law</u>			<u>Actual Collections</u>			<u>Loss from change in law</u>
	<u>Petro. Corp. Income Tax</u>	<u>Sev. Tax</u>	<u>Total</u>	<u>Petro. Corp. Income Tax</u>	<u>Sev. Tax</u>	<u>Total</u>	
1982	980	1219	2199	669	1582	2251	52
1983	915	1099	2014	236	1494	1730	(284)
1984	836	1033	1869	265	1393	1658	(211)
1985	812	1014	1826	169	1389	1558	(268)
1986	658	805	1463	134	1108	1242	(221)
1987	<u>375</u>	<u>464</u>	<u>839</u>	<u>120</u>	<u>649</u>	<u>769</u>	<u>(70)</u>
Total	4575	5634	10210	1593	7615	9208	(1002)*

*Had the Legislature authorized deduction of the Federal Windfall Profits Tax the total loss over the period would have been \$670 mm

Severance Tax Receipts as Percentage of Gross Wellhead Value -
Prudhoe Bay

<u>Year</u>	<u>Wellhead Price (\$/bbl)</u>	<u>Volume (mmbbl)</u>	<u>Gross Value (\$mm)</u>	<u>Sev Tax (\$mm)</u>	<u>Sev Tax as % of Gross Value</u>	<u>Loss from ELF (\$mm)</u>
1982	24.45	557	13619	1787	13.1%	NA
1983	20.27	560	11351	1499	13.1%	NA
1984	19.73	562	11088	1455	13.1%	NA
1985	18.48	564	10423	1368	13.1%	NA
1986	12.74	563	7173	941	13.1%	NA
1987	11.08	567	4581	601	13.1%	NA
		(Suspension of ELF on Prudhoe Bay ends)				
1988	10.68	565	6034	657	10.9%	135
1989	7.36	540	3974	430	10.8%	92
1990	7.00	502	3514	368	10.5%	93
1991	7.56	466	3523	357	10.1%	105

DEFINITIONS

The Economic Limit Factor or ELF is a fraction which reduces severance taxes as well productivity declines.

Date: February 7, 1989

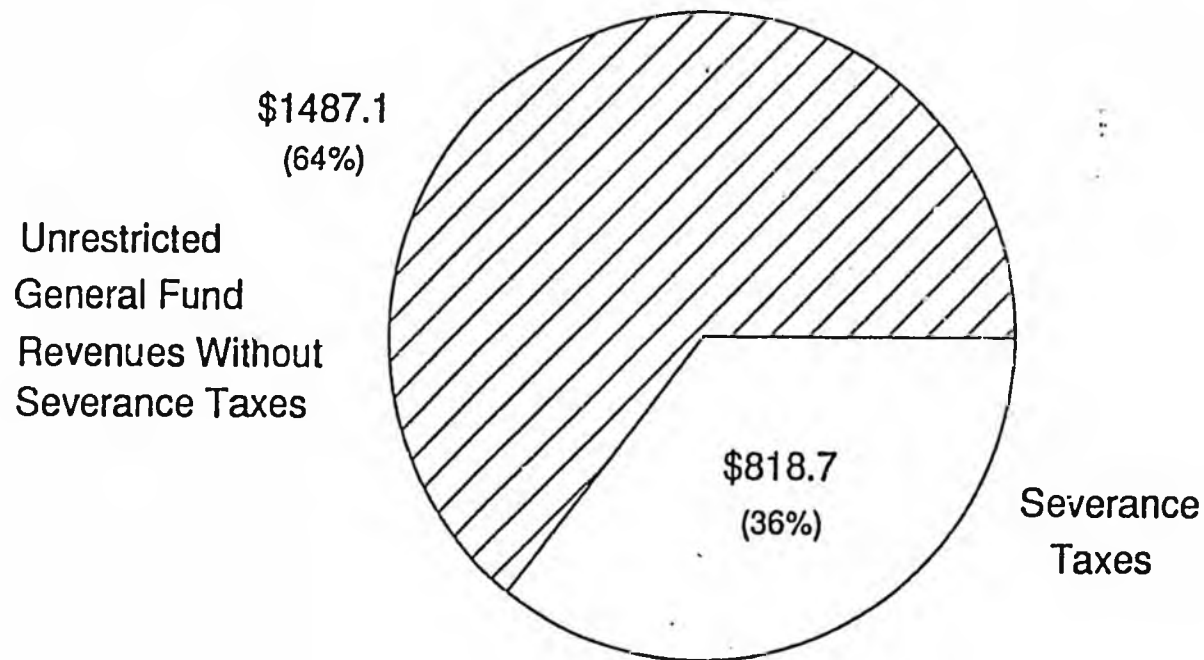
SEVERANCE TAX, also called production tax, is a tax on oil removed from the ground. The tax compensates for the depletion of the state's non-renewable resources.

Date: February 7, 1989

EFFECTIVE SEVERANCE TAX RATE
equals nominal severance tax rate times ELF.

For example, 15.00% times 0.66 equals
an effective severance tax rate of 9.90 %

Severance Taxes are an Important Part of Alaska's Revenues



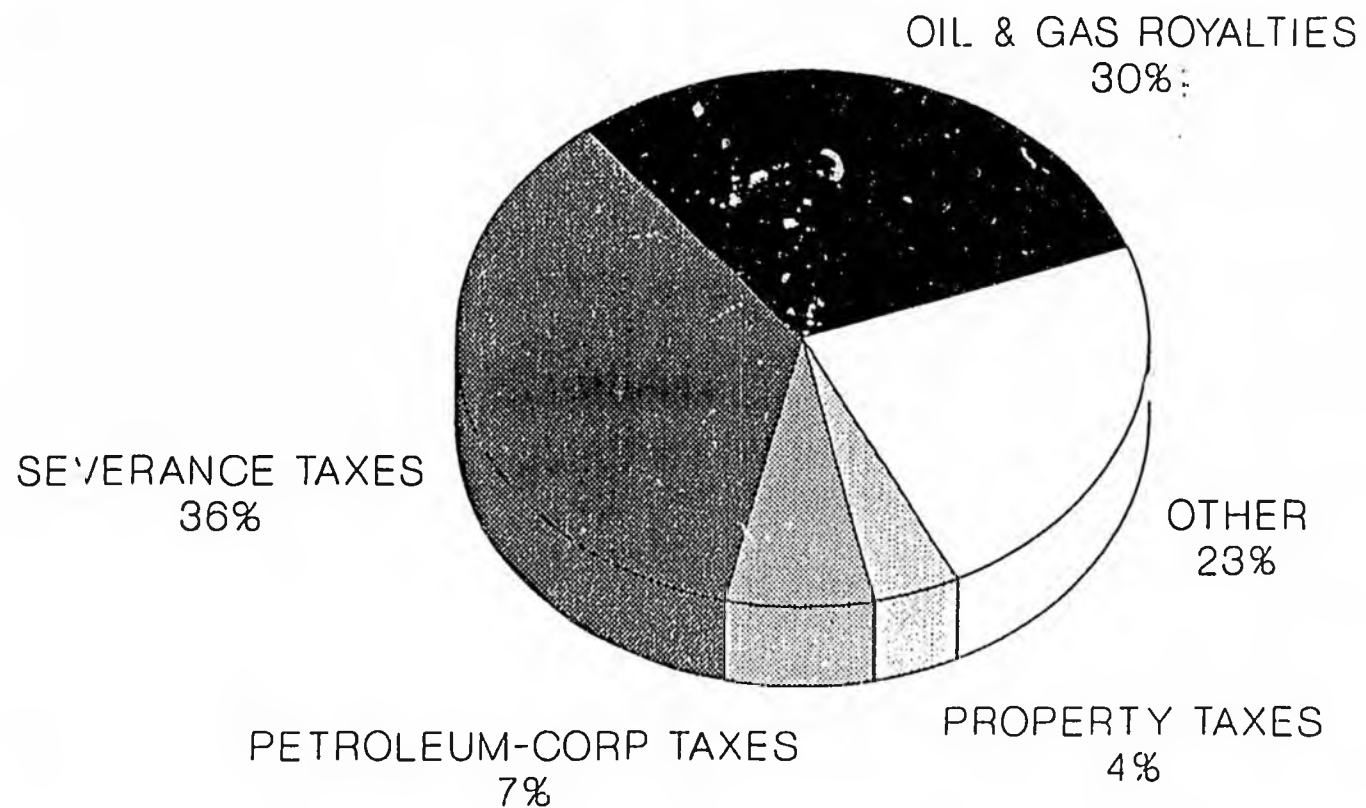
Unrestricted
General Fund
Revenues Without
Severance Taxes

Severance
Taxes

\$2305.8
Total Unrestricted General Fund
Revenues For Fiscal Year 1988

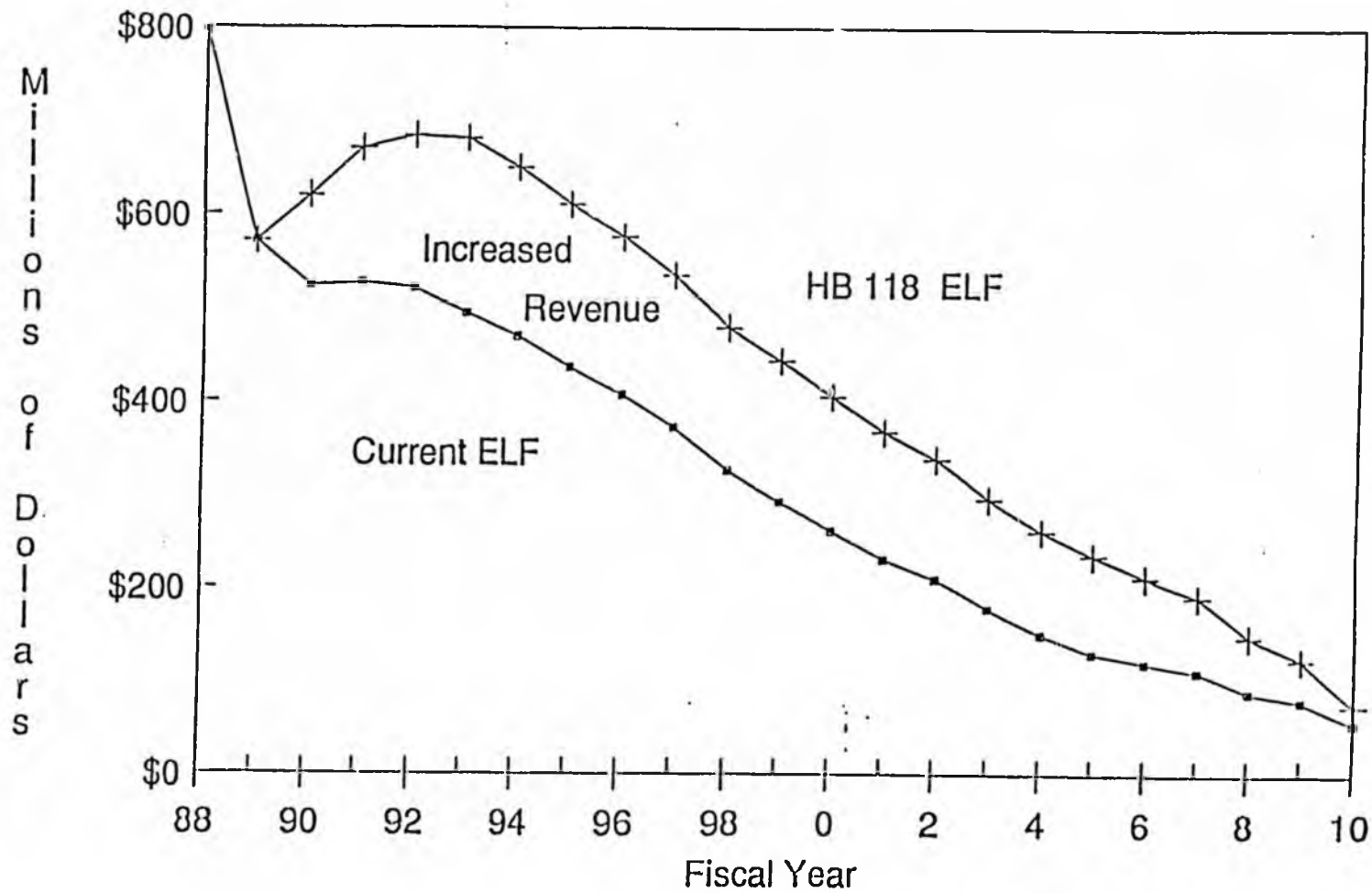
Date: February 7, 1989

GENERAL FUND UNRESTRICTED REVENUES (FY 1988)



(Alaska Department of Revenue-Research)

HB 118 Raises Net Revenue From Severance Taxes on Oil Production



OFFICE OF MANAGEMENT & BUDGET

MEMORANDUMS

OFFICE OF THE GOVERNOR
DIVISION OF POLICY

Box AD, Juneau, Alaska 99811-0164
Phone (907) 465-3568

Mary Halloran
Director

. 16 January 1988

Mr. John Havard
Planning and Evaluation
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, AK 99510-0360

Dear Mr. Havard:

In your presentation to the Bartlett Democratic Club you questioned the accuracy of the calculations of per barrel Alaska oil profits, depreciation, etc. presented by Mr. Gregg Erickson of my staff.

The figures we presented are based on the calculations published in the *Petroleum Intelligence Weekly* of February 1, 1988. We earlier summarized those calculations in Appendix B of *The ELF, A Policy Perspective*, a copy of which you will find enclosed.

After *Perspective* was published Mr. Tom Williams, an official of Standard Alaska Production Co., pointed out that the calculations failed to include property tax payments to local governments. We also noted that the *PIW* calculations did not reflect the allocations of pipeline tariff revenue provided for under the TAPS Settlement Methodology agreed to by the owner companies, the state, and the Federal Energy Regulatory Commission. After discussing the matter with Mr. Williams, James Palmer, and other Standard officials, and *PIW*, we appropriately recalculated the numbers with the adjustments (shown below) for property tax and TAPS.

<u>Purpose of Adjustment</u>	<u>(\$ per barrel)</u>	
	<u>Original</u>	<u>Adjusted</u>
	<u>PIW</u>	<u>PIW</u>
	<u>Allocation</u>	<u>Allocation</u>
Correct property tax	0.15	0.46
Add TAPS depreciation, DR&R	2.25	2.96
Add recovery of TAPS deferred return	0.43	1.15
Add TAPS operating expense	0.85	1.44

Mr. John Havard, January 15, 1989, page 2

This administration stands by the estimates presented by Mr. Erickson. Naturally, we would be happy to work with your company -- as we did in this case with Standard -- in our ongoing effort to insure that our information on the economics of Alaska oil operations is as accurate as possible.

Please contact Mr. Erickson directly if you have information to add, or further questions concerning the derivation of our estimates.

Yours truly,

Mary Halloran

enc: *The ELF, A Policy Perspective*

cc: John Levy, program chair
Bartlett Democratic Club

MEMORANDUM

Division of Policy
Office of the Governor

To: Gregg Erickson
Senior Economist
Division of Policy

Date: February 10, 1989

From: R.A. Fineberg
Senior Analyst, Oil & Gas
Division of Policy



Subject: Data on Shares of Profit from the Alaska Operations
of North Slope Producers

This memorandum discusses the undated, one-page flyer from Senator Rick Halford, "Background of the Economic Limit Factor (ELF),"¹ which was provided to the House Resources Committee yesterday. The flyer contains data on the "state share" of North Slope income from two separate sources. Review of the two source documents indicates:

1. The flyer data are derived from two separate sources using different assumptions. The reported results are therefore inaccurate.

2. Data from both sources were reported on the flyer in a manner that understates industry revenue from Alaska operations.

For these reasons, the data in the one-page flyer cannot be taken as an accurate portrayal of "state share" of North Slope revenue. The following sections discuss these conclusions are discussed in greater detail.

1. The flyer data are derived from two separate sources using different assumptions. The reported results are therefore inaccurate.

The first set of numbers, from 1985 to "1988 (to date)," is taken from a Petroleum Intelligence Weekly of Feb. 2, 1988; the figures for 1988 through 1991 are projections taken from a December 1986 report by the

¹ These data were originally circulated to all legislators Mar. 23, 1988 by Senator Mitch Abood.

Department of Revenue.² These calculations require assumptions about corporate activities that the North Slope producers decline to make public. The assumptions used by PIW (based on the best industry information the PIW analysts could get in 1988) are very different from those the Department of Revenue used in 1986.

A March 1987 memorandum by one of the authors³ of the 1986 study warned specifically that to isolate industry shares of profit from the 1986 tables may be "somewhat misleading" if taken out of context. This is precisely what occurred in the hand-out you were given yesterday.

The Department of Revenue reports that the 1986 study over-estimated production costs, capitalization and other factors. To get actual results for 1988 and results comparable to the PIW data for future years, one would have to revise the 1986 study. In that process, the Department reports, the state share of North Slope income would be significantly reduced.

2. Data from both sources were reported on the flyer in a manner that understates industry revenue from Alaska operations.

The North Slope producers own the trans-Alaska pipeline. Both sets of income data exclude the enormous profits from the trans-Alaska pipeline operations. From examination of the PIW table, it is evident that the "state share" for each of the six periods listed in the memorandum between 1985 and 1988 excluded pipeline profits. These profits increase profits from Alaska oil operations for the six periods listed from 20% to 300%. At the same time, pipeline taxes were already counted with the state property and income taxes in the PIW totals. **This omission results in a significant under-statement of producers' revenue from the North Slope and a corresponding over-statement of the state's share of production revenue.**⁴

² The Petroleum Intelligence Weekly table is reprinted in its entirety in ELF: A Policy Perspective (distributed in the House Resources Committee workbook). The Department of Revenue tables are taken from Larson, Logsdon and Marks, "Sensitivity Analysis of Projected Revenue Collections," December 1986, pages 82 and 93.

³ Memorandum from John Larson, Economist, to Vince Wright, Chief of Research, March 23, 1987.

⁴ Additionally, after discussing the Petroleum Intelligence Weekly table extensively with its authors, the Division of Policy concluded that the Petroleum Intelligence Weekly totals under-stated the

Finally, it should be noted that nothing in the 1981 dictum that the state should maintain tax and royalties "above 30 percent" indicates that policy-makers intended to exclude the profits from the trans-Alaska pipeline from this calculation. For that matter, I am aware of nothing in the 1981 record to indicate that the policy-makers considered the tremendous profit potential of the trans-Alaska pipeline to the North Slope operators who own that pipeline.

property taxes paid. However, this error was more than balanced by significant understatements of other items in the table.

SUBJECT: Background of the Economic Limit Factor (ELF)

Attached is a press release issued when Governor Hammond signed legislation in 1981 which related to the state's oil and gas taxation system. One effect of the 1981 legislation was to raise the tax rate for Prudhoe Bay from 11.7% to 15% by rounding the ELF to 1.00.

As stated in the third paragraph of the press release, one of Governor Hammond's essential conditions for signing the bill was that it "maintain the state's combined royalty and tax 'share' from its one-time resource at above 30 percent."

Also attached is an analysis from "Petroleum Intelligence Weekly". According to this analysis, the State of Alaska's share of net revenue has been the following:

<u>Year</u>	<u>State of Alaska's share</u>
1985	33.0%
1st half of 1986	41.8%
2nd half of 1986	63.7%
1st half of 1987	39.0%
2nd half of 1987	35.5%
1988 (to date)	36.3%

Additionally, here are figures as forecast by the Department of Revenue:

<u>FY</u>	<u>State's share with \$9 wellhead value (\$13-14 market price)</u>	<u>State's share with \$11 wellhead value (\$15-16 market price)</u>
88	79%	57%
89	92%	61%
90	96%	63%
91	103%	67%

Source: Department of Revenue (Larson, Logsdon, and Marks), "Sensitivity Analysis of Projected Revenue Collections" (December, 1986), page 82 (for \$11 wellhead figures) and page 93 (for \$9 wellhead figures).

HB 118 MEMORANDUM

OIL FIELD SIZE VS. TAX REVENUE

Size of Field Where Taxes Will Increase or Decrease Under HB118

HB118 modifies the ELF statute in two ways which affect the relationship of field size to the tax rate for the field: (1) by modifying the formula; and (2) by repealing the "rounding rule." (Under current law if a field has an ELF of greater than 0.7 for the first ten years of the field, the ELF is elevated to 1.0. This is called the "rounding rule.") The combined effect of these two changes will increase the severance tax on fields producing an average of more than approximately 150,000 barrels per day, and will reduce the severance tax on fields producing an average of less than approximately 150,000 barrels per day. An analysis of these two changes and the underlying assumptions follows.

The change in the formula would raise taxes on fields which produce more than approximately 115,000 barrels per day and for which the rounding rule does not apply. (Only Prudhoe Bay and Kuparuk fit this description. The rounding rule does not apply to them now because Prudhoe Bay is older than ten years, and Kuparuk's current ELF is less than 0.7.) The Bill would cut taxes -- or leave them at zero -- for any field producing less than approximately 115,000 barrels per day. If a field produces an average of less than 300 barrels per well per day, their taxes are zero under current law and the new Bill.

The Bill also initially decreases the ELF for new higher productivity (where average well productivity is greater than 1500 barrels per day) large fields (over the 115,000 barrel per day level). Under current law, fields producing more than an average of 1500 barrels per well per day will have an ELF of greater than 0.7, and would have an initial effective ELF of 1.0 because of the rounding rule. Since the first ten years of the field is when the greatest proportion of oil is produced (upwards of 75 percent), these large fields could have reduced weighted average severance taxes over the entire life of the field under the Bill since it eliminates the rounding rule. The exact size of field that will benefit over the entire life of the field will depend on its well productivity, decline profile, and the discount rate. We estimate that a field with the same well productivity and decline characteristics as Endicott, for example, (which produces 100,000 barrels per day and produces 2800 barrels per well per day average), but with peak production of 280,000 barrels per day, would have the same discounted (8%) weighted average effective ELF over the life of the field under the Bill as it would under current law. Fields producing less than that amount would have a lower ELF than under current law.

A weighted average of all field sizes and average per well productivities from all Alaska fields indicates that on average fields which produce less than approximately 150,000 barrels per day will have a reduced severance tax under HB 118.

GOVERNOR COWPER'S LETTER TO EDITORS

STEVE COWPER
GOVERNOR



STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

February 8, 1989

Dear Editor:

During the next several days the public will have the chance to talk to their legislators about an issue that will make a big difference in Alaska's economic stability.

The so-called ELF - or Economic Limit Factor - went into effect last June on the tenth anniversary of the pipeline. The ELF gives a major tax break to Prudhoe Bay, the largest and most profitable oil field in North America. I believe tax breaks should be reserved for those fields that really need it.

My administration strongly supports a measure that encourages further economic development and more jobs by expanding the tax break for the truly marginal fields. The legislation, House Bill 118, would correct the loophole that permits the most profitable oil field in the country to be classified as a marginal field.

The ELF adjustment we're proposing will be a tax break for eight of the ten oil fields immediately affected. Even Prudhoe and Kuparuk, North America's two biggest oil fields, will pay less than before the loophole took effect 18 months ago. We think that by plugging the loophole and giving a bigger break to smaller fields will mean that more oil company investment and jobs can be kept in Alaska in the long run.

I want a system of taxation that's fair and stable and fosters development. Adjusting the Economic Limit Factor is an important and necessary step. Citizens who support that effort can participate in a public hearing with the House Resources Committee, Monday, February 13, from 3 to 5 in the afternoon and from 7 to 9 in the evening. Just go to your local Legislative Information Office if you'd like to have your say.

Sincerely,

Steve Cowper
Governor

THE ELF: A POLICY PERSPECTIVE

The ELF
A Policy Perspective

April 1988

Division of Policy
Office of the Governor

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Preface

Since statehood, oil taxes have been a continuing and difficult policy issue for Alaskans. The current debate centers on the state severance tax and the economic limit factor or "ELF." Put simply, the ELF is a tax reduction formula meant to encourage marginal oil field development. The Governor proposed ELF legislation last year, and a bill to make a change in the ELF formula passed the House.¹ The oil companies, with one notable exception, oppose the change, and the bill has now stalled in the state Senate, where the leaders have said they oppose allowing the bill to come to a vote.

In the Alaska legislature oil tax issues have traditionally received intense scrutiny. Each side has had the opportunity to challenge the assertions of the other, bring its experts forward, and present its case. This process has not been perfect, but the legislators and the public have been able to get the facts to make informed decisions. Nothing will substitute for the give and take of a public hearing, but in the face of the Senate's refusal to allow this major policy issue the open debate it deserves, the state administration has a responsibility to make its perspective known.

We believe passage of the new ELF will help stabilize the Alaska economy at a time when it needs the reassurance of stable state spending. More stable revenues from the new ELF will help guarantee that local governments receive the money they need for roads, public safety and other services, and explains why the Alaska Conference of Mayors, among others, supports the ELF bill. Most importantly, passage of the new ELF

¹ House Finance Committee Substitute for House Bill 164, amended [CSHB 164 (Fin.) am].

will provide a more reliable incentive for marginal field development — the ELF's original purpose — by lowering tax rates on Alaska's smaller fields, such as Milne Point, Endicott, and Lisburne.

This paper attempts to fully discuss the reasons behind our perspective. We have tried to include all the relevant facts. We also have tried to avoid unnecessary complication. If others have additional information and perspectives, we welcome hearing from them.

Mary Halloran
Director, Division of Policy
Office of the Governor

Executive Summary

- The immediate revenue loss from the current ELF is about 8 percent of Alaska's oil revenues, or about \$150 million this year. This percentage loss will increase over the next six years to about 14 percent and will erode Alaska's fiscal strength.
- The 1987 application of the ELF to Prudhoe Bay was adopted within 72 hours in the closing days of the 1981 legislative session. Legislators and the Governor were assured the tax changes were revenue neutral — incorrectly as it turned out. In fact, the revenue loss has been over \$1 billion from FY82-FY87.
- Neither the Railbelt Energy Fund nor the Permanent Fund earnings reserve provides a long-term response to the on-going loss of 8 percent to 14 percent of Alaska's oil revenues and the erosion of Alaska's fiscal strength. The new ELF does.
- Prudhoe Bay and Kuparuk are extraordinarily profitable oil fields. Industry journals indicate oil companies make \$6.2 million per day in profits from North Slope operations. Currently, the oil industry is taking \$8 Outside for every \$2 it reinvests in Alaska. Without their Alaska holdings, neither ARCO nor Standard would be as strongly positioned against their industry competitors as they are today.

- The oil industry has one of the poorest resident hire records in the state, with major drilling, exploration and service companies employing about 28 percent non-residents.
- The written record of the 1981 legislative deliberations on oil taxes provides no evidence of any legal, moral, or political commitment by state officials regarding any limit on the state's appropriate share of future oil income. In fact, the legislature and the governor explicitly recognized that today's legislature would have to grapple with the revenue problems caused by the reimposition of the ELF.
- At Prudhoe Bay, at a profit of \$3 per barrel, wells that average over 2,000 barrels per day — more than 100 times greater than the national average of 14 barrels per day — are receiving the benefit of an ELF reduction designed for fields whose economics are marginal.
- The new ELF's consideration of total field productivity, as well as per-well productivity, provides a better incentive for marginal field development than the current ELF and better reflects field profitability.
- By adding total field productivity to the ELF calculation, most Alaska fields will receive a larger tax break under the new ELF than under the current ELF. Only the two giant fields, Prudhoe Bay and Kuparuk, will not receive increased tax breaks. Fields with Alaska corporation ownership, such as Endicott, will benefit more under the new ELF than the current ELF.

- The current ELF provides a substantial state subsidy to oil company drilling operations in the nation's two largest and very profitable oil fields by lowering the effective tax rate on an entire field every time a below-average producing additional well is brought on line.

Introduction

The major issue in the current debate over the ELF (economic limit factor) is whether this tax reduction to the oil industry makes sense for Alaska at this time. Among the different perspectives against which Alaskans judge the issue are the ELF's effects on the rate of oil development and jobs, and its impact on state revenue, budget stability and the economy. The purpose of this paper is to fill in as much as possible of the factual background. The following issues are therefore addressed in detail:

(1) ELF AND OIL DEVELOPMENT: Does the current ELF tax subsidy work to increase marginal field development? Are Prudhoe Bay and Kuparuk marginal fields? Do ARCO, Standard and Exxon, the major North Slope producers, need a substantial tax break now to continue production from Prudhoe Bay and Kuparuk? How does Alaska's tax structure compare with that of other states?

(2) ELF AND ALASKA'S ECONOMY: How much does the current ELF contribute to industry drilling activity? What will be the effect of the new ELF on drilling activity? Are oil company development dollars spent in Alaska or Outside? How many jobs does ELF create? Who gets those jobs?

(3) ELF AND ALASKA'S REVENUES: What is the difference in revenues between the current ELF and the new ELF? How does ELF affect revenue stability? What is the long-term impact of ELF on the state's fiscal strength? What roles do revenue stability and a balanced budget play in creating a stable Alaska economy?

(4) ELF AND THE PAST: What happened in 1981? Why was the ELF suspended for Prudhoe Bay? What were the commitments?

Background

The roots of the current tax debate go back to the early days of North Slope oil production. In 1979 several major oil companies sued the state, arguing that the separate accounting form of corporate income tax adopted by Alaska in 1978 was unconstitutional. The state won that lawsuit in 1986, but in 1981, in an attempt to limit the fiscal effects of possibly losing the case, the legislature changed the method for assessing oil and gas corporate income tax from separate accounting to modified apportionment.² That legislation also dealt with the ELF.

The 1981 tax package gave Alaska's oil producers a big reduction in their corporate income taxes, but legislators were assured by then-Revenue

² To tax corporate income, separate accounting focuses on the income a corporation actually produces in the taxing jurisdiction. In contrast, the apportionment formula looks at all the income produced worldwide by the corporation and attempts to attribute a portion of that income to the taxing jurisdiction. Alaska now uses a modified version of the standard apportionment method in assessing corporate tax liability.

Commissioner Tom Williams — incorrectly as it turned out — that most of the state revenue lost from the income tax would be offset by gains from a severance tax increase adopted at the same time. The bill also suspended the applicability of the ELF to Prudhoe Bay "for the first ten years following the commencement of commercial production."

The tenth anniversary came in June of 1987, triggering reinstatement of the ELF to Prudhoe Bay. Since the ELF is a formula that reduces severance tax rates, it gave the oil companies a tax cut in addition to the net tax reduction they won in 1981. The 1987 cut was substantial — worth over \$15,000 per hour to the Prudhoe Bay producers or about 8% of Alaska's revenues from oil operations.

The ELF Formula: Well Productivity & Field Productivity

The ELF bill, CSHB 164 (Fin) am, substitutes a new formula for calculating the "economic limit" — the point at which production is no longer profitable. The new formula will reduce the tax reduction provided to Prudhoe Bay and Kuparuk, and increase the tax reduction afforded to smaller fields, such as Endicott, Lisburne or Milne Point.

The ELF is a number between one and zero that is multiplied by the nominal tax rate, producing the effective tax rate. The nominal severance tax rate at Prudhoe Bay is 15 percent. With the average FY 88 Prudhoe Bay ELF at .82, the field's effective tax rate is 12.3 percent ($.15 \times .82 = .123$).

The current ELF is determined by *per-well productivity* in the field, measured by the number of barrels produced by an average well in an

average day. If well productivity is high, the ELF is relatively close to 1 (.9 for example), and the field gets a small tax reduction. Fields with low per-well productivity have a smaller ELF (.5 for example), and get a larger tax break. Most fields in Cook Inlet are currently paying no severance tax because their very low per-well production gives them an ELF of zero. (Zero times the nominal tax rate gives an effective tax rate of 0.0 percent.)

In Cook Inlet, the current ELF works properly, encouraging production of marginal fields.

But the super-giant Prudhoe Bay field³ is a different story. At Prudhoe Bay, wells that average over 2,000 barrels per day — more than 14 times greater than the Texas average and more than 100 times greater than the national average — are receiving the benefit of an ELF reduction designed for fields whose economics are marginal.

This inappropriate ELF break results from the fact that the current ELF takes account only of productivity *per well* and not overall *field* productivity. By giving a profitable field a larger tax break than a marginal field, the current ELF distorts the purpose of this tax subsidy.

Consider, for example, the case of Milne Point, a small field near Prudhoe Bay. Soon after the Milne Point field opened in late 1985, revenue officials, state economists and the management team at Conoco, the oil company operating the Milne Point field, discovered that per-well productivity, if used by itself, can be an inadequate measure of a field's ability to pay severance tax.

³ Production from Prudhoe Bay, the largest field in the United States, is five times that of the nation's second largest field (Kuparuk). Industry publications consistently refer to Prudhoe Bay as "super-giant."

The average well in the Milne Point field initially produced 950 barrels per day, giving it an ELF very nearly the same as the Kuparuk field, where the average well produced 1,000 barrels per day. Total Kuparuk production was then 250,000 barrels per day, while Milne Point produced less than one-tenth of that amount.

But due to its smaller size, operators at Milne Point had far fewer barrels of production over which to spread operating costs than the Kuparuk field. Although the two fields had almost identical per-well productivity, the smaller Milne Point field was less profitable, and in January 1987 the owners elected to shut down production. This experience illustrates the deficiency of an ELF formula based solely on per-well productivity.⁴

The new formula incorporated in the ELF bill will correct this perverse and unintended effect *by adding total field productivity to the ELF calculation*. Fields producing less than 120,000 barrels per day, such as Milne Point and Endicott, will have a lower ELF (bigger tax break) than under current law, while fields producing more than that amount will have a higher ELF (smaller tax break). This change will affect estimated FY 89 severance tax rates as follows:

⁴ Under provisions of the current severance tax law, Milne Point producers requested and received additional tax reductions after showing that the field would be uneconomic to operate without the reductions. The administrative uncertainties of this avenue would be eliminated for smaller fields by the automatic reduction provided by the new ELF. Large fields facing similar problems could still apply for and receive the special "hardship" reductions.

EFFECTIVE FY 89 SEVERANCE RATES

	<u>Existing Law</u>	<u>New ELF</u>	<u>Percent Change</u>
Prudhoe Bay	11.9 %	14.8 %	23 %
Kuparuk River	6.9 %	11.3 %	65 %
Endicott	12.3 %	8.9 %	-27 %
Lisburne	6.8 %	3.6 %	-47 %
Cook Inlet Fields	0.0 %	0.0 %	0 %

That this approach benefits producers in smaller fields is reflected in the March, 1987 testimony of Conoco supporting the new ELF: "This legislation is a positive first step in encouraging the development of marginal fields in Alaska."⁵

ELF Subsidy Effect

In the summer of 1987 oil producers increased the rate at which they were drilling additional wells at Prudhoe Bay and Kuparuk. Since total North Slope production is limited by pipeline capacity to just over 2 million barrels per day, more producing wells means that average production per well is being reduced. Lower per-well production, in turn, means a bigger tax break for producers under the current ELF.

⁵ Tom Painter, Conoco Anchorage Division Manager, Transcript of Joint House Finance and House Resources Committees Hearing on House Bill 164, March 19, 1987, pp. 49-54.

Because the drilling increase started about the same time as ELF's application to Prudhoe Bay, state officials investigated the possibility of a cause-and-effect relationship between the two. The ELF's role could not be precisely determined. At the same time, because of the current ELF's sensitivity to per-well productivity changes, the investigation found that the current ELF provides a substantial — and unintended — state subsidy to oil company drilling operations in the nation's two largest and very profitable oil fields.

An example of how this subsidy works was provided by ARCO official James Weeks, during 1987 testimony before the House Finance Committee.⁶ Weeks' example showed how a new Kuparuk well, so long as it produced below the Kuparuk per-well average, would result in a lower severance tax payment on the now-higher total Kuparuk production than the severance tax would have been on the lower total Kuparuk production without the well. In Weeks' example, the result was an overall tax savings or subsidy to the producer of \$37,846 yearly from drilling that single additional well.

Weeks' example showed that the per-well emphasis of the current ELF formula will cause the effective tax rate on an entire field to drop when a below-average producing well is brought on line. Despite the increase in total production, the state will receive less tax revenue than if the well and its production had never occurred. This would be a perverse effect even in a marginal field.

Because this subsidy takes the form of a tax reduction rather than a payment from the state's treasury, the subsidy is restricted to fields paying

⁶ A copy of the ARCO handout and the state's analysis of it are in Appendix D.

severance tax. In short, the subsidy is not available to fields like Cook Inlet, where no severance tax is currently paid.

While Weeks' example was restricted to one hypothetical new well at Kuparuk, and may or may not reflect what is currently happening at Kuparuk or Prudhoe Bay, recent econometric modeling studies by the Department of Revenue estimate the Prudhoe Bay drilling subsidy in the range of \$19 million in FY 88, and about \$40 million in FY 89. The model indicates that a tax break that would have totalled about \$240 million during FY88-89 has been increased to approximately \$300 million by the additional drilling.

Not only is this subsidy going to be costly to Alaska, it is an extraordinarily inefficient way to create jobs or additional oil production.⁷ The overall effect of this subsidy may be that, by accelerating drilling that would have occurred later anyway, it robs jobs and economic stability from the future for the sake of higher production and profits in the short term.

ELF and Jobs

Alaskans are concerned about the effects a change in the ELF may have on jobs. Oil industry proponents have said that the recent increase in drilling has created 2,400 new jobs — 800 drilling jobs and 1,600 additional jobs. They implied that those jobs would be lost if the proposed new ELF is adopted.

⁷ A March 1988 analysis by the Dept. of Revenue implies that each barrel gained through the subsidy through the year 2000 costs the state \$175 in foregone revenue.

The figure of 2,400 new jobs (or even 800) bears no resemblance to the reality reflected in Department of Labor employment figures taken from employer records. Total oil and gas employment on the North Slope during the fourth quarter of 1987 was 3,994 jobs, down by 122 jobs from a year earlier. Drilling employment at the end of 1987 was actually about 50 jobs less than at the end of 1986. Some modest employment increase may occur this spring, but nothing on the scale of 800 new jobs is conceivable, given that 1987 year-end North Slope drilling employment was only around 500 with 12 rigs operating.⁸ The Department of Natural Resources estimates the rig count will climb to 14 on the North Slope this spring. The resulting rise in employment might be 80 to 100. Each rig employs an estimated 40 to 50 workers, depending on the type of drilling.

In total, the oil industry generates about 8,500 jobs in Alaska, about 4 percent of Alaska's work force — and only about 6 percent of the entire private sector work force. Unfortunately, many of those employed by the oil industry are not Alaska residents.

The drilling companies now operating on the North Slope employ about 28 percent non-Alaskans. The hiring record of the major drilling firms ranges from 57 percent non-residents to 15.4 percent non-residents. The hiring of non-residents by other oil industry segments (exploration and services) also runs about 28 percent , with the exception of the production/management sector, which has trimmed its non-Alaskan hiring to about 11 percent.⁹ These statistics make for one of the poorest resident hire

⁸ Statewide oil industry employment, however, was up by about 200 jobs over this period. For more detail on recent employment trends, see Alaska Economic Trends, Alaska Department of Labor, October 1987.

⁹ The Department of Labor developed the statistics by cross-checking employment records with Permanent Fund dividend records.

records in the state, according to the Department of Labor.

Industry-wide, these non-Alaskans have total earnings of about \$80 million, which is the highest amount of wages paid by any industry to non-residents. Much of this non-resident income, of course, does not circulate in or benefit the Alaska economy.

As oil fields mature, labor required to produce a given amount of oil tends to increase. Over the long run, oil and gas employment is likely to increase in Alaska due to these technical factors, regardless of the state's action on the ELF bill. A huge tax increase might discourage additional field development, but economic studies by the state and others indicate that the economic effects of the ELF change will be marginal.¹⁰ Also, correcting the misapplication of the current ELF to Prudhoe Bay and Kuparuk, while improving incentives for smaller fields, is not likely to adversely affect future field developments. From an Alaskan perspective, given the record of the oil industry to date, a real concern will continue to be whether the jobs generated by additional oil development will be filled by residents or non-residents.

¹⁰ "[T]he economic limit factor in Alaska's severance tax...has limited ability and high revenue cost for conserving oil and gas from producing fields," according to University of Alaska researchers led by Mathew Berman in Alaska Petroleum Revenues: The Influence of Federal Policy. Institute of Social and Economic Research, October 1984, pp. xxvii. See also, "Severance Tax Impact Often Misinterpreted," by John Lohrenz, in Oil and Gas Journal, June 18, 1984, pp. 133-137; "Analysis of ELF Alternatives," by Charles Logsdon, Alaska Dept. of Revenue, October 14, 1986; and "A Model to Assess Economic Feasibility and Optimum Production Volume for North Slope Fields," by R. Marks and J. W. Moore (both with the Alaska Dept. of Revenue) in Journal of Petroleum Technology, August 1987, pp. 943-54.

Profitability

Does the oil industry in Alaska need a tax break now to continue production at Prudhoe Bay and Kuparuk? This question is at the heart of the current oil tax discussions.

Companies with major oil interests in Alaska are all publicly traded on the stock market. Alaska industry operations have attracted the interest of numerous trade publications, investment advisory services, and occasionally academic and government researchers. All the studies indicate that Prudhoe Bay and Kuparuk are extraordinarily profitable oil fields.¹¹

According to a recent study, published February 1, 1988, in *Petroleum Intelligence Weekly (PIW)*, a respected trade journal, oil companies are currently making after-tax profits of \$6.2 million per day from North Slope operations. State and local revenue from North Slope oil, by comparison, is estimated by *PIW* at \$4.7 million per day. (The *PIW* article and the state's analysis of the *PIW* figures are found in Appendix B.)

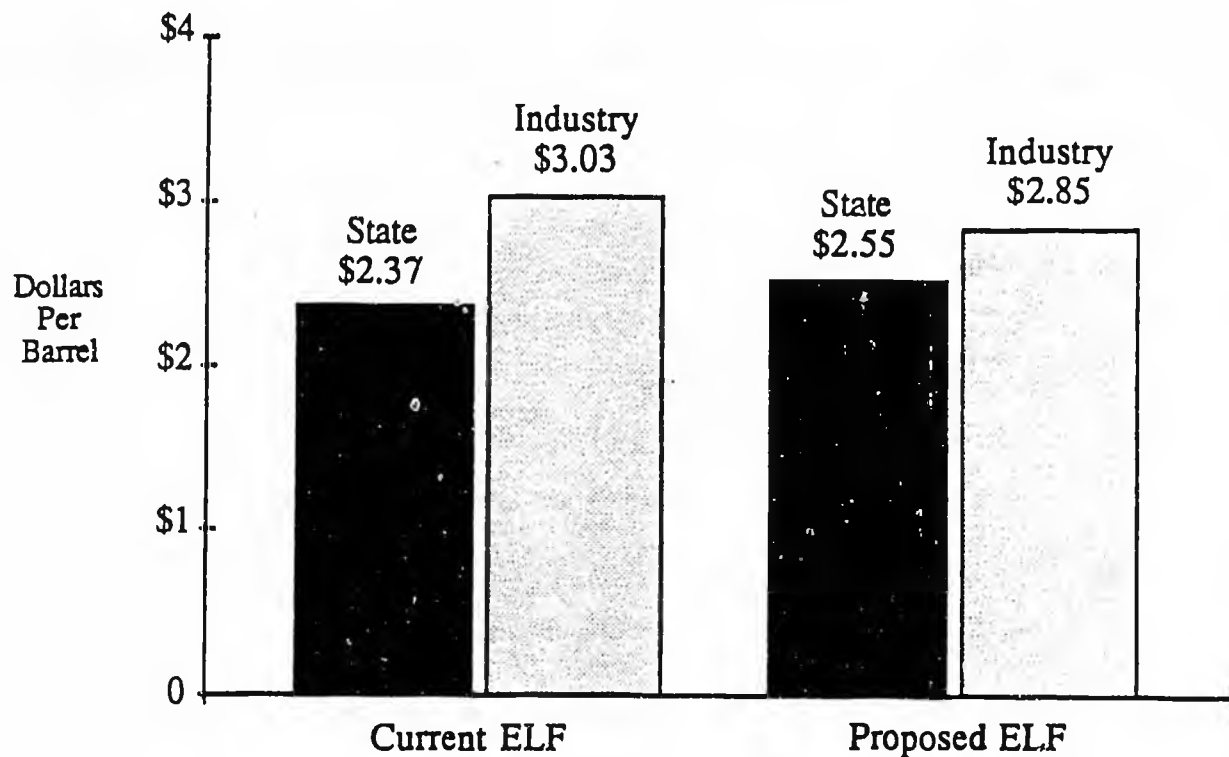
Under the new ELF, oil companies' profits would continue to be larger than state revenue, though not by as big a margin. Industry profits would decline to \$5.6 million daily, after all expenses, taxes and royalties are paid. As Figure 1 shows, the ELF will have only a small impact on the relative shares of revenue going to the state and the producers.

¹¹ In addition to the *PIW* analysis described below, the following studies have been released in 1988: "Alaska's Oil Promise Remains Strong," in *International Petroleum Finance*, March 18, 1988, p. 8; "Alaskan Resource Wealth -- The Inestimable Bounty" in *Atlantic Richfield Company -- Restructured and Resourceful, Part II*, by Salomon Brothers (Bernard Picchi, author), March 31, 1988, p. 3-4; "\$30 a Barrel Profits in an \$18 World," in *Forbes*, March 21, 1988, pp. 110-114; and "Income and Investment Flows From Alaska Oil and Gas Producing Activities," by Edward Deakin, in *Joint Special Committee on Tax Policy, Final Report*, Alaska State Legislature, January 1988.

Figure 1

State and Industry Shares

(Dollars Per Barrel)



Shares under current ELF are from *Petroleum Intelligence Weekly* Feb. 1, 1988; shares under the proposed ELF are by the Division of Policy, April 11, 1987.

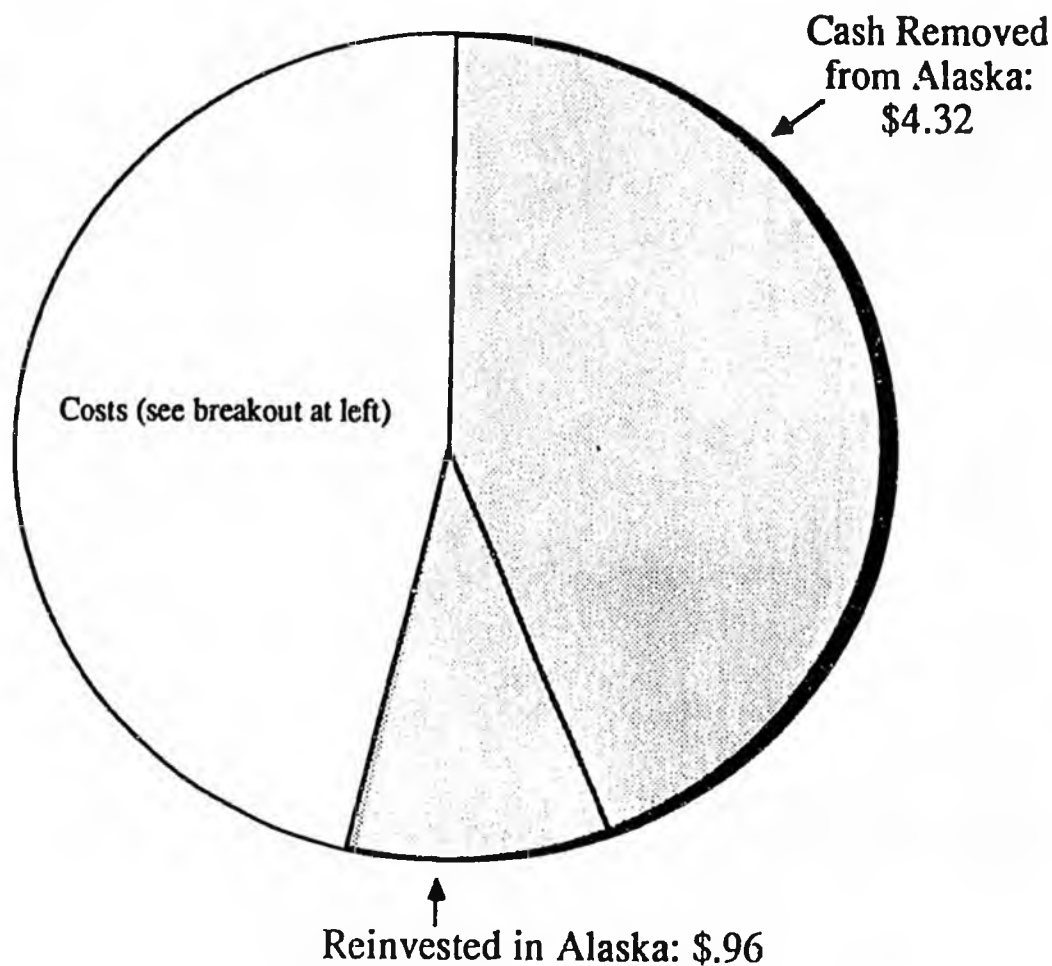
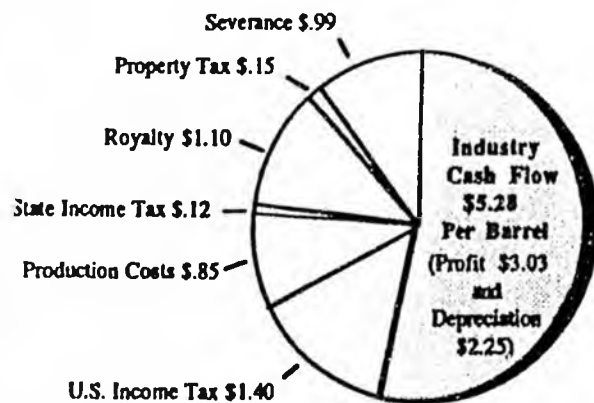
Data on the cash flowing to and from North Slope operations suggest that since 1978 in Alaska, only a fraction of the funds generated by North Slope oil have been reinvested in Alaska. According to the *PIW* figures, the companies' current cash flow (profits and depreciation) from the North Slope comes to \$10.6 million per day.¹² The Division of Policy estimates that the rate of oil industry reinvestment in Alaska is \$1.9 million per day. Thus, as shown in Figure 2, the oil industry today is taking \$8 Outside for every \$2 it reinvests in Alaska.

This "takeout" from Alaska's North Slope production has made the major producers in Alaska uniquely successful companies. A March 21,

¹² The *PIW* figures do not include depreciation on the pipeline, so the cash flow to producers from North Slope operations is understated.

The Economics of North Slope Oil

(Dollars Per Barrel)



Source: Division of Policy, based on *Petroleum Intelligence Weekly* February 1, 1988.

Office of the Governor
Division of Policy
4/12/88

1988 *Forbes* article examined ARCO's phenomenal success: "...a return on equity of 23 percent, just about the best in the industry and roughly twice the industry average." Astute corporate management, company restructuring, and its Alaska resources let ARCO "claim the highest per-barrel profit of any marketer on the West Coast." Key to ARCO's current strength, said *Forbes*, "is its commanding position in the U.S. largest oil reserve, the Alaskan North Slope, from which it derived 68 percent of its production last year." With \$3 billion in cash reserves, ARCO is actively investing its Alaskan profits elsewhere.

A report by Salomon Brothers, March 31, 1988, similarly calls ARCO "the premier equity investment in the domestic oil industry." The report goes on to say, "Arco's Alaskan resource base is without parallel in the industry in terms of its size alone. Arco's net share of the original oil in place in its Alaskan oil fields, 20 billion barrels, is equal to 75 percent of the proved oil reserves of the rest of the country." Top ARCO management also cited its Alaska holdings as key to the company's profitability: "ARCO Alaska's low-cost producing ability provides the base for ARCO's West Coast downstream infrastructure: its integrated transportation and refining and marketing assets." ¹³

Production

Oil development patterns are not easily predictable so forecasts of future production should be interpreted cautiously. Department of Revenue modeling studies nevertheless suggest that while the new ELF

¹³ "Alaska Operations," Harold Heinze, President, ARCO Alaska, Inc., Oil Industry Analysts Meeting, March 31, 1987.

could initially cause lower production, any impact would be small. The probabilities are that the new ELF will decrease North Slope output by a cumulative 1 million barrels during the FY 1988-93 period — equal to about 12 hours of flow through the TAPS pipeline. The cumulative production loss through 2005 is estimated at about 21 million barrels, or about 10 days of North Slope production. Losses taper off in later years but become gains sometime after 2020, when the new ELF increases incentives for production in the later stages of oil field life.

The ELF is a minor factor in industry decisions to pursue Prudhoe Bay development. What matters most is oil prices. For example, a spokesperson for ARCO, commenting on that company's plans to drill five Prudhoe Bay development wells in September, 1987, stated, "resuming production drilling in Prudhoe is good news and strictly the result of higher oil prices."¹⁴ A March 31, 1988, stock research report notes, "West Sak field production could start in 1992, because the field is profitable at oil prices of \$15-20 per barrel."¹⁵

How does increased production benefit Alaska? Nearly all manufacturing and assembly of equipment used in the oil industry is done outside Alaska so economic impacts from that sector are small, according to Department of Labor economists. The ARCO newsletter of January 1, 1988, states, "Between 1980 and 1986, North Slope development accounted for approximately \$10.5 billion in hard goods alone, according to ARCO Alaska, Inc., Standard Alaska Production Company and Conoco." The newsletter indicates one-eighth of that amount (\$1.35 billion) was spent in

¹⁴ Alaska Report, p. 1, 7/22/87.

¹⁵ Atlantic Richfield Company---Restructured and Resourceful, Part II, by Salomon Brothers, March 31, 1988, p 1.

Alaska, with the remainder going Outside, with Texas and California the largest beneficiaries.¹⁶ Employment opportunities, however limited, and revenues to the state, are the most readily discernible benefits to Alaska.

Comparing Taxes

Though the existing tax at Prudhoe Bay is 12.3 percent, the *nominal* rate at Prudhoe Bay, without the ELF, is 15 percent. But no field in Alaska pays the full tax rate. Furthermore, the severance tax rate contrasts with the low corporate income tax rate.¹⁷

Each state designs its severance tax structure for its particular conditions in that jurisdiction. The range of profitability among fields in Alaska is very different from any other state. In none of the other states is there an oil field even close to the size of Prudhoe Bay. But because the fields in other states are much nearer to oil markets, the wellhead price of a barrel is much lower in Alaska. Unlike other states, Alaska gains little

¹⁶ On Top of ANWR, ARCO Alaska, Inc., January 1, 1988.

¹⁷ Here is how Alaska's effective severance tax rate compares to other major oil-producing states on a percentage basis:

<u>State</u>	<u>Severance Tax as a Percent of Value</u>
Alaska (<i>Prudhoe proposed</i>)	14.8 %
Wyoming (state & average local)	13.0 %
Louisiana	12.5 %
Alaska (<i>Prudhoe existing</i>)	12.3 %
Alaska (<i>Kuparuk proposed</i>)	11.9 %
Alaska (<i>Kuparuk existing</i>)	8.0 %
Oklahoma	7.0 %
Texas	4.6 %
New Mexico	3.8 %

This chart is based on average effective severance tax rates in FY 1988. Under current law the Prudhoe Bay rate will decline to 11.9 percent in FY 1989.

from the manufacturing and retail sales of most of its petroleum resources — although the producers realize additional profits from transporting, refining, and selling North Slope oil. Differences like these make simplistic comparisons regarding which state has the "highest" or "lowest" severance tax of limited use.

On a dollars-per-barrel basis, for example, Alaska's tax rate is among the lowest of all the producing states.¹⁸ If the oil fields in these states were somehow transported to Alaska, all would find their severance taxes reduced or eliminated. The reason for this apparent paradox is that all are so much smaller than Prudhoe Bay or Kuparuk. Prudhoe Bay wells, according to Standard Alaska, are producing an average 2,300 barrels per day. The average oil well in Texas, in contrast, produces 145 barrels per day. A well producing at that rate in Alaska, like most oil wells in Cook Inlet, would pay no severance tax whatever under either the existing or proposed ELF. Similarly, virtually all the fields Outside that would pay tax under the current ELF would pay less tax under the new ELF.

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<u>State</u>	<u>Approximate Severance Tax Per Barrel</u>
Wyoming (state & average local)	\$2.02
Louisiana	\$1.94
Alaska (Prudhoe proposed)	\$1.26
Oklahoma	\$1.08
Alaska (Prudhoe existing)	\$1.05
Alaska (Kuparuk proposed)	\$1.04
Texas	\$0.71
Alaska (Kuparuk existing)	\$0.62
Alaska (Cook Inlet)	\$0.00

Estimates for other states are derived from the effective tax rates of other states at a well-head price of \$15.50 (Gulf Coast).

The "Commitment"

The ELF issue in 1988 is the legacy of a 1981 tax bill that passed in an extraordinary hurry. The issue of how to respond to the North Slope oil producers' legal challenge to separate accounting was the focus of attention for much of the 1981 legislative session. However, the proposal that modified the ELF was first unveiled to a free conference committee on June 22, 1981. Two days later, it passed both houses and was on its way to the governor. There was little time to study the bill; moreover, the fiscal note prepared by then-Commissioner Williams included no projections beyond FY 1985. The confusion concerning what legislators and Governor Hammond meant when they adopted the 1981 legislation is not surprising.

A 1981 post-session analysis by the Legislative Finance Division showed that the ELF provision would cause state revenue to fall sharply in FY 1988. When Governor Hammond reluctantly signed the bill, he expressed "full confidence in the ability of the legislature to deal at that time" with any adverse revenue consequences.

Governor Hammond insisted that the oil tax changes adopted in 1981 not reduce the state's share below the 30 percent that was thought to be the rough percentage level of the state's share *at that time*. Hammond sought to insure that the tax changes would be "revenue neutral;" i.e., that the changes would leave state oil revenue largely unaffected. It is now clear that the changes adopted in that bill were far from neutral as to state revenue: between fiscal 1982-87 total tax collections were reduced by over \$1 billion compared with what would have been collected had the changes not been made.

As shown in Appendix C, the 1981 record contains statements by Hammond, then-Rep. Rick Halford, Commissioner Williams and others addressing the future need to revise the 1981 scheme by 1987 or 1988. But the written record of the 1981 deliberations provides no evidence of any legal, moral, or political commitment by state officials to limit the state's appropriate share of future oil income. Additionally, company officials testified to the Legislature that the state's share should equal the industry share.

Revenue Effects

As originally introduced by the Governor in 1987, the ELF legislation would have kept the ELF from applying to Prudhoe Bay for an additional five years. The measure that passed the House and now awaits action in the Senate takes a more comprehensive approach: the new ELF applies at Prudhoe Bay, but the formula for calculating the new ELF includes consideration of field productivity in addition to well productivity. The new formula gives Prudhoe Bay a much smaller tax break now, but a larger tax break later when the giant field finally reaches its marginal years of production. Tax revenue from nearby Kuparuk, the second largest producing field in the United States, would also increase. All other producing fields would either pay no tax at all or receive a bigger tax break than they get under the current ELF.

The net effect of the new ELF, using the Department of Revenue's March, 1988 "mid-case" assumptions, would be \$150 million in additional state revenue in FY 1988, and \$152 million in FY 1989. To put this amount

in perspective, \$150 million is about the amount of the combined annual general fund budgets of the departments of Fish and Game, Labor, Commerce, Natural Resources, Revenue and Environmental Conservation, and about one-quarter of the amount the state spends each year on elementary and secondary education. As the table below shows, the revenue gain from the new ELF depends, in part, on the level of oil prices.¹⁹

<u>Average Oil Prices</u> ²⁰	<u>Incremental FY 89 Revenue From the ELF Bill, CSHB 164 (Fin) am</u>
\$11.00/B	\$114 million
\$12.00/B	\$125 million
\$13.00/B	\$136 million
\$14.00/B	\$146 million
\$15.00/B	\$157 million
\$16.00/B	\$167 million

According to Department of Revenue projections, the dollar gain from the new formula would peak in FY 91 at \$223 million, and then gradually diminish as Prudhoe Bay production declines. The yearly dollar gain from the new ELF will vary with oil prices and total oil production. Over the next six years, the percentage loss to the state's oil revenue from

¹⁹ Other factors would also affect the fiscal effect of the proposed legislation. The table is based on the "mid-case" assumptions in the current Department of Revenue forecast.

²⁰ Weighted average of U.S. West Coast and Gulf Coast selling prices for Alaska North Slope crude.

the current ELF will increase from approximately 8 percent this year to nearly 14 percent in fiscal year 1993. (Complete long-run projections are contained in the ELF legislation fiscal note, in Appendix A .)

Budget Stability and the Economy

In opposing the ELF legislation, one senator argues that "the solution to Alaska's economic problems is not increasing taxes to fuel more government spending," but instead to just cut state spending.

How big a cut would be required to balance the budget? With only weeks to go in the legislative session, Alaska faces a revenue shortfall of about \$150 million to \$400 million, depending on the optimism of the forecaster. Theoretically, the budget could be balanced by cutting hundreds of millions of dollars from spending, but this approach is hard to take seriously in light of the vital impact of state spending on a recovering economy. In fact, the legislature has already recognized the role of state spending in the economy's health in its early passage of the "jobs" bill.

Budget cuts over the last three years have brought per capita real spending down — dramatically. The deepest recession the state has ever experienced was one consequence. Now — as that recession is ending — is not the time for extracting hundreds of millions of dollars from Alaska's economy.

With state spending now well below its 1979 level and the economy starting its recovery, Governor Cowper has proposed a maintenance level budget. The House and Senate can reduce the budget shortfall by eliminating proposed expenditures. But, close to half the budget is pass-

through entitlement programs to local governments, schools, and individuals, politically difficult areas to cut. It appears the majority of Senators and Representatives do not believe this is the time for inflicting the stress of another multi-million dollar spending cut on the Alaska economy. Although reductions and reallocations will certainly occur, deep cuts are not a realistic possibility.

So what options are left? The use of the Railbelt Energy Fund has been proposed. But many Railbelt voters rebel against "their" money being spent to solve a statewide problem, and the construction industry opposes any non-construction use of the money.

Another option is to use the cash reserves (earnings reserve account) of the Permanent Fund. Using the reserves would reduce future dividends. However, the necessary appropriation could be a "loan" with a promised but problematical payback in the future. Combined, the Railbelt Energy Fund and the Permanent Fund earnings reserves are the state's cash reserves since last year the Budget Reserve Fund was emptied to help meet last year's revenue shortfall. Without these funds as backstops, Alaska is left with no emergency monies to meet another precipitous drop in oil prices.

Leaving aside the obvious difficulties inherent in the use of either the Railbelt Energy Fund or Permanent Fund earnings to fill the budget shortfall this year, there remains the issue of revenue stability. This issue deserves very serious consideration for two reasons. First, Alaskans desire and need public services. Second, there clearly exists a now-demonstrated tie between Alaska's revenue stability and Alaska's economic stability.²¹

²¹ For evidence of the relationship of state budget stability to economic activity in Alaska, see "Can State Spending Speed Alaska's Recovery," by Professor Scott Goldsmith and Lee Gorsuch, Institute of Social and Economic Research, University of Alaska, December 8, 1987.

Both reserve sources are only stop-gap measures, providing one or two years of fiscal relief, at most. Neither fund provides an answer to the ongoing loss of more than 8 percent of Alaska's oil revenues and the erosion of Alaska's fiscal strength year after year. The new ELF does. It's a long-term solution to what will otherwise be a long-term loss.

Finally, the legislature simply could pretend that there is no problem. Led by the Senate, the legislature gambled last year that oil price increases would cover the shortfall in the budget with extra revenue. It worked then, due in part to the unexpected receipt of some monies owed the state by the federal government.²² The legislature could roll the dice again. The risk is that the extra revenue will not materialize and that the state will be unable to pay its bills. If oil prices don't rise, current cash flow projections show that the risk could become reality as early as February or March 1989.

Division of Policy

April, 1988

²² The funds received were \$160 million which had been held in escrow by the federal government pending resolution of the Dinkum Sands boundary dispute.

Appendix A

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION: CSHB164 (fin) am
PUBLISH DATE: _____

FISCAL NOTE

REQUEST:

Revision Date: April 4, 1988
Title: An Act Relating to the Oil and Gas Properties Production Tax & Effective Date
Sponsor: Rules/Governor
Requestor: _____

Agency Affected: _____
BRU: _____
Components: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING						
CAPITAL						
REVENUE	150,150	152,330	203,450	222,850	213,940	207,490

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

See Attached

Prepared by: Charles L. Logsdon
Division: Oil and Gas Audit

Phone: 277-5627

Date: April 4, 1988

Approved by Commissioner: [Signature]
Agency: Revenue

Date: 4/4/1988

Distribution (by preparer):

Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

This bill would effectively increase the severance tax rate on fields producing greater than approximately 120,000 barrels per day. At the same time, fields producing less than this amount would be taxed at a lower rate. The relative increase or decrease would depend on the relative per well productivity of the field. The estimates contained in this fiscal note are based on the Department of Revenue March 1988 mid scenario assumptions about production, wells, and oil prices.

The attached tables illustrate the revenue and tax rate impact of the bill by North Slope oil field. The sensitivity of the tax revenues to change in oil prices is also illustrated.

FY 1989 PRICE/REVENUE SENSITIVITY OF CSHB164(fin) am
(Millions \$)

	\$16.00/bbl	11.00	12.00	13.00	14.00	15.00	16.00	17.00
Prudhoe	93.16	102.47	111.79	121.10	130.42	139.73	149.05	158.36
Kuparuk	21.54	23.69	25.84	28.00	30.15	32.30	34.46	36.61
Milne	0	0	0	0	0	0	0	0
Endicott	-6.49	-7.14	-7.79	-8.43	-9.08	-9.73	-10.38	-11.03
Lisburne	-3.72	-4.10	-4.47	-4.84	-5.21	-5.59	-5.96	-6.33
TOTAL	104.48	114.93	125.37	135.82	146.27	156.72	167.17	177.61

CHANGE IN REVENUE CSHB164
(Millions \$)

YEAR	PRUDHOE	KUPARUK	MILNE	ENDI	LISB	W SAK	PT THOM	SEAL IS	NIAKUK	TOTAL
1988	130.03	30.30	0.00	-4.27	-5.93	0.00	0.00	0.00	0.00	150.15
1989	125.82	31.40	0.00	-9.46	-5.43	0.00	0.00	0.00	0.00	152.33
1990	172.12	39.56	0.00	-2.04	-5.19	0.00	0.00	0.00	0.00	203.45
1991	150.27	40.37	0.00	-2.25	-5.53	0.00	0.00	0.00	0.00	222.85
1992	182.74	39.51	0.00	-2.40	-7.01	0.00	0.00	0.00	0.00	213.94
1993	180.62	38.38	0.00	-5.24	-6.27	0.00	0.00	0.00	0.00	207.49
1994	176.59	35.55	0.00	-5.65	-5.74	0.00	0.00	0.00	0.00	199.74
1995	171.39	30.60	0.00	-7.41	-7.18	0.00	0.00	0.00	0.00	187.40
1996	162.93	22.19	0.00	-7.50	-7.83	0.00	0.00	0.00	0.00	169.69
1997	164.10	14.09	0.00	-7.22	-8.17	0.00	0.00	0.00	0.00	162.70
1998	157.08	6.98	0.00	-5.84	-8.44	0.00	0.00	0.00	0.00	148.78
1999	144.16	2.76	0.00	-4.22	-8.30	0.00	0.00	0.00	0.00	134.23
2000	137.86	1.22	0.00	-2.29	-8.44	0.00	0.00	0.00	0.00	129.25
2001	127.38	0.46	0.00	-0.61	-9.22	0.00	0.00	0.00	0.00	117.94
2002	118.80	0.08	0.00	0.00	-9.79	0.00	0.00	0.00	0.00	109.09
2003	122.08	0.06	0.00	0.00	-9.43	0.00	0.00	0.00	0.00	112.71
2004	116.55	0.04	0.00	0.00	-9.28	0.00	0.00	0.00	0.00	107.32
2005	103.90	0.03	0.00	0.00	-8.50	0.00	0.00	0.00	0.00	95.03
2006	91.47	0.00	0.00	0.00	-9.26	0.00	0.00	0.00	0.00	82.11
2007	80.13	0.00	0.00	0.00	-7.52	0.00	0.00	0.00	0.00	72.67
2008	69.43	0.00	0.00	0.00	-5.12	0.00	0.00	0.00	0.00	62.31
2009	61.76	0.00	0.00	0.00	-4.73	0.00	0.00	0.00	0.00	57.03
2010	55.85	0.00	0.00	0.00	-2.28	0.00	0.00	0.00	0.00	52.48

CHANGE IN SEVERANCE TAX RATE PERCENT OF VALUE CSHB164

YEAR	PRUDHOE	KUPARUK	MILNE	ENDI	LISB	W SAK	PT THOM	SEAL IS	NIAKUK
1988	0.0249	0.0391	0.0000	-0.0259	-0.0382	0.0000	0.0000	0.0000	0.0000
1989	0.0281	0.0448	0.0000	-0.0322	-0.0321	0.0000	0.0000	0.0000	0.0000
1990	0.0323	0.0481	0.0000	-0.0340	-0.0324	0.0000	0.0000	0.0000	0.0000
1991	0.0373	0.0513	0.0000	-0.0223	-0.0291	0.0000	0.0000	0.0000	0.0000
1992	0.0394	0.0539	0.0000	-0.0023	-0.0277	0.0000	0.0000	0.0000	0.0000
1993	0.0421	0.0550	0.0000	-0.0098	-0.0270	0.0000	0.0000	0.0000	0.0000
1994	0.0450	0.0545	0.0000	-0.0194	-0.0282	0.0000	0.0000	0.0000	0.0000
1995	0.0488	0.0491	0.0000	-0.0251	-0.0282	0.0000	0.0000	0.0000	0.0000
1996	0.0548	0.0405	0.0000	-0.0315	-0.0289	0.0000	0.0000	0.0000	0.0000
1997	0.0548	0.0234	0.0000	-0.0353	-0.0314	0.0000	0.0000	0.0000	0.0000
1998	0.0574	0.0171	0.0000	-0.0375	-0.0345	0.0000	0.0000	0.0000	0.0000
1999	0.0593	0.0093	0.0000	-0.0320	-0.0368	0.0000	0.0000	0.0000	0.0000
2000	0.0597	0.0042	0.0000	-0.0231	-0.0373	0.0000	0.0000	0.0000	0.0000
2001	0.0595	0.0017	0.0000	-0.0102	-0.0391	0.0000	0.0000	0.0000	0.0000
2002	0.0585	0.0001	0.0000	0.0000	-0.0413	0.0000	0.0000	0.0000	0.0000
2003	0.0559	0.0000	0.0000	0.0000	-0.0426	0.0000	0.0000	0.0000	0.0000
2004	0.0553	0.0000	0.0000	0.0000	-0.0433	0.0000	0.0000	0.0000	0.0000
2005	0.0509	0.0000	0.0000	0.0000	-0.0440	0.0000	0.0000	0.0000	0.0000
2006	0.0452	0.0000	0.0000	0.0000	-0.0475	0.0000	0.0000	0.0000	0.0000
2007	0.0409	0.0000	0.0000	0.0000	-0.0434	0.0000	0.0000	0.0000	0.0000
2008	0.0344	0.0000	0.0000	0.0000	-0.0411	0.0000	0.0000	0.0000	0.0000
2009	0.0229	0.0000	0.0000	0.0000	-0.0257	0.0000	0.0000	0.0000	0.0000
2010	0.0209	0.0000	0.0000	0.0000	-0.0214	0.0000	0.0000	0.0000	0.0000

Notes to analysis of *PIW* data on North Slope economics:

1. *PIW* data for the first and second half of 1986 and 1987 were averaged using equal weights to produce the average annual values shown on the preceding page.
2. *PIW* values stated separately for U.S. West and Gulf coasts were combined to provide weighted average figures; the following weighting factors were used (West/Gulf): 1985-50%/50%; 1986-52.5%/47.5%; 1987-56.66%/46.67%; 1988-60%/40%.
3. Annual revenue figures assume production levels of 1.90 MMB/D, 1.93 MMB/D, 1.96 MMB/D, and 2.00 MMB/D in 1985-88 respectively.
4. Data for 1988 are extrapolated assuming costs and revenues continue at the per barrel levels reported in *PIW* for the first two months of 1988.
5. Reinvestment estimates for 1985-6 are from Income and Investment Flows From Alaska Oil and Gas Producing Activities, by Edward Deakin, May, 1987. Estimates for 1987-8 are Division of Policy estimates based on industry statements of current and planned project activity.
6. Cash flow is understated by an estimated \$2.00 per barrel because depreciation on pipeline investments are not accounted for separately in the *PIW* data. (Pipeline tariffs are deducted before determining the wellhead price per barrel.)

Division of Policy
11 April 1988

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- Living With \$15 Oil p.5 • Shift In Tanker War..... p.7

Short-Haul Sales By Saudis Key To Overseas Stockbuild

Oil markets should be very careful in drawing grand conclusions about Saudi Arabia's oil policies on the basis of its latest foray to charter ships for moving crude oil into its overseas stockpile. The fact is that Saudi Arabia is in the process of placing a large chunk of stockpile crude with several of the Aramco partners on a delivered basis, and it chartered the tankers almost entirely to replenish those supplies, according to well informed PIW sources in shipping circles. The stockpile moves say more about Riyadh's wish to retain a basic presence as a short-haul crude supplier in the Caribbean and Europe (p5) than about its long-term goals or role within Opec (PIW Jan.25,p1). PIW confirms that the Saudis have lined up five ships to move 10-million barrels of oil into overseas storage in the coming weeks, plus at least one other vessel to supply non-Aramco clients like Ashland and Marathon. In the past, the Saudis have used the Western Hemisphere stockpile for occasional spot sales, and more routinely to supply term customers on a prompt basis.

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By taking nearby crude from the stockpile now, the Aramco partners get the benefit of the oil in the heart of the winter season, rather than in late March or early April when oil loaded today in Saudi Arabia would arrive at Atlantic Basin destination. The stockpile barrels are within the overall 1.4-million b/d oil crude the partners obtained from the Saudis in January, and are expected to take in February. They do not represent any extra supply. Overall Saudi output volume is still below Opec quota in the 3.8- to 4-million b/d range (excluding the Neutral Zone). This suggests Riyadh is willing to cautiously and temporarily stick with other Opec producers in sharing some of the burden of *(continued on p.4)*

Alaskan Oil Profits Staying Buoyant Amid Volatile Prices

With oil markets again threatening a possible sharp drop in prices, US Alaskan production looks surprisingly well positioned to cope with a repeat of the collapse of 1986. Despite high transport costs that would appear to make Alaskan North Slope output highly vulnerable to lower prices, it is currently making good profits at \$14.50-\$15.50 delivered prices, and has shown it can break even at \$10 a barrel. Profits also bounce back quickly as prices recover, according to a PIW analysis of Alaskan North Slope economics (see table). Producers briefly suffered losses of a few pennies a barrel in mid-1986 when the delivered price at the Gulf Coast fell to \$10. But profits rebounded to an average \$3.50 in 1987, and even managed to average over \$1 a barrel in disastrous 1986. ANS crude — which is one-fourth of US production — realizes a healthy \$2.60-\$3.20 a barrel now, depending on sales destination.

Even if prices dropped below \$10, very little North Slope production would be shut in, mainly because of the large amounts already invested in current output and its importance to US supply. What's more, the oil is primarily absorbed into the refining and marketing systems of producing companies, and low crude prices usually provide

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offsetting improvements in the profitability of downstream refining. Meanwhile, the long-term outlook for Alaskan North Slope crude is encouraging a continuing buildup of production capacity, in sharp contrast to plunging production in other US areas. ANS output surged over 2-million b/d in late 1987 as Alaska displaced Texas for the first time as the largest source of US crude. The North Slope is still regarded as holding the best potential for finding big new fields. But discoveries have to be large to offset growing development and operating costs, already apparent at the Kuparuk River and Endicott fields, and for enhanced recovery in super-giant Prudhoe Bay (PIW Jan.25,p10).

Since the 1986 price collapse, the economics for Alaskan North Slope crude sold on the West Coast have become relatively more profitable than the longer shipments to the Gulf and East Coasts, which used to earn almost as much. As a result, more North Slope crude is moving to the California market, with the West Coast absorbing 60% of last year's higher production versus 50% in 1985. Profits on West Coast sales are now about 65¢ a barrel higher than those to Atlantic ports, compared to a gap of 10¢ in 1985. This mainly reflects the much larger \$11.66 a barrel drop in ANS prices to Gulf and East Coast destinations in the last two years compared to a drop of just under \$10 on the West Coast. The bigger decline in the east is hard to explain but is probably only partly due to the highly competitive Atlantic Basin crude oil market.

THE COMPARATIVE ECONOMICS OF ALASKAN NORTH SLOPE PRODUCTION (in dollars per barrel)

	Sales To US East Coast						Sales To US West Coast					
	1985	1987		1988		1985	1987		1988		1985	
Delivered Price	Current	2nd H	1st H	2nd H	1st H	Year	Current	2nd H	1st H	2nd H	1st H	Year
Sohio Price	\$15.50	\$18.45	\$17.00	\$12.00	\$16.80	\$27.00	\$14.50	\$17.45	\$16.00	\$11.00	\$15.80	\$25.00
Average Price(a)	15.25	18.62	13.99	12.31	16.72	26.97	14.28	18.48	13.56	10.78	14.54	24.23
Less:												
Shipping Cost	3.35	3.21	3.19	3.38	3.72	4.21	0.99	0.96	0.94	0.94	1.14	1.29
Valdez l.o.b.	11.90	13.61	13.80	8.93	12.00	22.70	13.26	14.52	14.62	9.81	13.40	22.94
Less:												
Pipeline Loss	0.05	0.10	0.05	0.05	0.05	0.10	0.05	0.10	0.05	0.05	0.05	0.10
Pipeline Tariff	3.20	3.95	3.95	4.50	4.50	6.00	3.20	3.95	3.95	4.50	4.50	6.00
Wellhead Price(b)	8.86	9.56	9.88	4.38	7.48	16.88	18.01	18.47	16.62	5.28	8.85	16.84
Less:												
Royalty(c)	1.00	1.11	1.14	0.47	0.85	1.99	1.17	1.23	1.24	0.58	1.02	2.02
Severance(d)	0.91	1.00	1.30	0.59	0.99	2.19	1.05	1.09	1.40	0.70	1.17	2.22
Property Tax	0.15	0.15	0.15	0.18	0.18	0.21	0.15	0.15	0.15	0.18	0.18	0.21
Producing Cost	0.85	0.85	0.85	0.75	0.75	0.90	0.85	0.85	0.85	0.75	0.75	0.90
Depreciation(e)	2.25	2.25	2.25	2.17	2.17	1.53	2.25	2.25	2.25	2.17	2.17	1.53
Pre-Tax Profit	3.49	4.20	4.11	0.23	2.51	9.78	4.54	4.90	4.72	0.68	3.56	9.96
Less:												
State Income Tax(f)	0.10	0.13	0.12	0.01	0.08	0.29	0.14	0.15	0.14	0.03	0.11	0.30
US Windfall Tax(g)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
US Income Tax(h)	1.19	1.43	1.40	0.11	1.16	4.50	1.54	1.67	1.61	0.41	1.64	4.58
Oil Profit	2.29	2.64	2.59	0.12	1.28	4.03	2.86	3.08	2.98	0.45	1.81	5.88
Pipeline Profit	0.43	0.53	0.53	0.64	0.64	2.18	0.43	0.53	0.53	0.64	0.64	2.18
Overall Profit	2.63	3.17	3.12	0.76	1.82	7.17	3.29	3.62	3.51	1.09	2.45	7.28

a) Average of all producers. b) Price at Pump Station #1. c) Royalty 12.5% after deduction of gathering costs (63¢ 1988, 66¢ 1987 & 1986, 65¢ 1985). d) Severance Tax based on wellhead price after deduction of royalty (11.94% from 2nd Half 1987 to present, 14.96% 1985 to 1st Half 1987. e) Includes depletion. f) Average state income tax rate of 3% for all producers. g) Windfall profits tax not applicable at lower wellhead prices. h) US income tax rate 34% 1987 to present and 46% previously, after deduction of costs, state taxes.

Another big change in the last few years is the more even split between producing company profits and the tax take of federal and state governments. With Alaskan wellhead prices well below the floor level of US "windfall" taxation, the tax burden has shrunk to an estimated \$3.35 a barrel currently. Reduced corporate income tax rates from 46% to 34% starting in 1987 has also helped producers. However, Washington claims that the companies may owe \$200-million in "windfall" profits taxes for 1984 and 1985 due to disparities in pricing and pipeline charges among the various Alaskan oil producers (PIW June 13, '83,p3).

The settlement of a 7-year legal dispute over Alaskan pipeline tariffs has also put an extra squeeze on profits since 1986, with the Trans-Alaskan Pipeline providing 15% of North Slope profits now compared to 30% in 1985. Aimed at fostering greater competition for North Slope leases, the resolution with the seven owners (BP 50%, Exxon and Arco

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20% each, and the rest split between Mobil, Phillips, Union and Amerada Hess) sharply reduced tariffs, settled back claims of overcharges and put the pipeline on a real-rate-of-return basis starting in 1986 (PIW Nov. 4, '85, p8).

The existence of a semi-secret and unofficial "mini-Brent" North Sea market might help London's International Petroleum Exchange win a central role in the globalization of oil futures dealing. Mini-Brent could provide a model for the IPE as it prepares another relaunch for its failed Brent futures contract following the New York Mercantile Exchange's refusal to trade US crude futures in London as a joint venture (PIW Jan. 25, p8). Shocked and disappointed by Nymex's rejection of joint trading of West Texas Intermediate futures, the IPE is considering a number of alternative options, with a restyled 1,000-barrel Brent contract based on cash settlement rather than physical delivery at the top of the list (PIW Jan. 25, p8). Other possibilities include a London-based West Texas Intermediate contract administered independently of Nymex, and a link to another US exchange such as the Chicago Board of Trade, which dabbled with oil futures several years ago.

Steady but largely unpublicized trade in the unregulated mini-Brent market leaves little doubt that demand exists for a financial tool of this type geared to European crude. Also known as the Brent partial market, and only reluctantly revealed to PIW by major players, mini-Brent is the brainchild of US investment banks. But its future is now in doubt due to new UK laws which may leave room for the IPE to take over instead. Mini-Brent works because the investment banks are willing to buy and sell futures contracts for part-cargoes of Brent in 50,000 barrel increments under their own set terms, normally closing out at an agreed cash-settlement price as 600,000-barrel forward Brent cargoes begin to trade in the physical market. However, this trading could fall foul of the forthcoming UK Financial Services Act (PIW Jan. 11, p2). The IPE, as a recognized futures exchange, might win approval of a similar standard contract, using well-established procedures of exchange-of-futures-for-physicals for participants wanting to take delivery. The IPE is now seeking industry advice on how to tailor a new contract, but there's virtually universal agreement that simply restyling the existing 1,000-barrel contract won't work.

Even with its poor track record in marketing and planning, the London futures exchange is still eager to launch its own crude contract that will spark trade both locally and from Mideast and Far East time zones, largely out of New York's normal reach. It plans "some form of significant trading incentive scheme to encourage initial participation" and scope for broader membership, aimed at attracting more active floor traders. While Nymex boasts almost 800 members and last year traded an average 40-million b/d, there are currently just 57 authorized IPE dealers. There's general dismay in European trading circles over the Nymex's "parochial" decision not to come to London, coupled with the recognition that Eastern Hemisphere traders increasingly want to use crude futures (PIW Dec. 7, p6). The IPE has already been approached by the Singapore International Monetary Exchange on possible broad cooperation.

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Like the big Mideast exporters, Opec's key African members are moving fast to cushion themselves against rapid swings in output even in a weak market. But they are using very different means to achieve the same ends. Resisting straight market-related pricing, the Africans are looking to product sales, processing deals of various kinds and enhanced margins for foreign equity producers to sustain volumes. Though techniques differ, almost all Opec exporters are adapting to an oil market in which some price volatility is seen as inevitable, making maintenance of sales to key customers in ways that cause the least market disruption a top priority (PIW Jan. 25, p1). The various methods reflect marketing strengths of individual producers and preferences of traditional customers, among other factors.

Among African producers, Libya appears to have significantly reduced its vulnerability to short-term market swings. Though volume has fallen somewhat, Tripoli seems to be offsetting much of the recent loss of up to 200,000 b/d in third-party crude sales to traders without flooding the Mediterranean with discounted crude. "They

APPENDIX C -- EXPLANATION OF 1981 OIL TAX LAW CHANGES

I. Introduction

The 1981 oil tax legislation (ch. 116, SLA 1981) replaced the separate accounting oil and gas corporate income tax, enacted in 1978, with a modified apportionment-based corporate income tax. To make up the substantial loss in revenues caused by this shift, the legislation also raised the severance tax rate on Prudhoe Bay from an effective rate of just over 11% (with the ELF) to 15%. This increase was accomplished by raising the nominal rate from 12.25% to 15% and effectively suspending the ELF until the tenth anniversary of Prudhoe Bay production in 1987. (For fields beginning production after June 1981, the nominal rate was set at 12.25% for the first five years of production.) Taken together, the two changes were intended to be revenue neutral.

In addition to the two primary changes -- eliminating separate accounting and increasing the severance tax -- the 1981 law also:

- (a) made retroactive technical amendments (known as the "warts" amendments) to state tax laws in order to improve the retrospective constitutionality of separate accounting;
- (b) corrected tax problems posed by the sharing of oil and gas revenues among Native corporations under §7(i) of the Alaska Native Claims Settlement Act;
- (c) allowed for the retroactive deduction of federal windfall profit tax payments; and
- (d) instituted a graduated, stair stepped rate, beginning at 1%, for the taxation of corporate income under \$100,000, and raised the top rate from 9.4% to 11% for one year.

Tax "stability" was not the issue in 1981. The 1981 law was passed solely in response to litigation filed by the oil industry challenging the 1978 separate accounting corporate income tax. Unlike the separate accounting law, which was passed after nearly a decade of study, discussion, and debate, the 1981 oil tax changes were not designed to make the state's tax system fair and predictable, or to encourage future exploration and production. Instead, the 1981 law was designed to limit the state's potential liability as a result of the oil companies' legal challenge to the 1978 separate accounting law. Because the oil industry benefitted from the 1981 law, it did not object to the changes in the state's oil tax structure.

At the time the 1981 law passed, many assumed that the oil tax issue would be revisited, after a decision on the 1978 law was made, and before the June 1987 reimposition of the ELF. The state won the separate accounting litigation in the trial court in May 1983 and on appeal to the Alaska Supreme Court in August 1985. The statute's constitutionality was affirmed by the U.S. Supreme Court in January 1986.

II. How It Happened

A. Activity Before 1981

The 1977-78 Alaska Legislature and Hammond Administration, confronted with the prospect of the first commercial production from Prudhoe Bay, instituted a comprehensive revision of the state's oil and gas tax structure. In 1977, the legislature, with the active support of the governor, increased the maximum severance tax rate from 8% (first put in effect in 1970) to 12.25%. An economic limit factor [ELF] formula replaced the statutorily-reduced rates for well production less than one thousand barrels per day (from 1973-1977, a well's first 300 barrels were taxed at 5%, and the next 700 barrels at 6%). The ELF was designed to give the severance tax a curved or sliding scale, instead of stair stepped, rate.

In 1978, the separate accounting oil and gas corporate income tax was enacted. The law was developed and passed in response to detailed analyses, prepared for the legislature and administration from 1970-78, showing that the state's existing apportionment-based corporate income tax would result in Prudhoe Bay oil producers paying less than a third of the statutory rate of 9.4% of net income. The apportionment tax also had the inequitable effect of imposing different tax levels on producers with the same profits in Alaska, in effect penalizing producers with a larger degree of investment and employment in Alaska.

In early 1979, the major Prudhoe Bay oil producers filed suits challenging the constitutionality of the 1978 separate accounting law. Concerned over the amount of revenues at risk in the litigation, in the fall of 1980 the Hammond Administration engaged in substantive settlement discussions with those companies. The options proposed would have required the sacrifice of several hundred million dollars of state revenue in order to settle the litigation.

B. The 1981 Session -- Policy Background

At the beginning of the 1981 session, House and Senate leaders urged the Administration to pursue solutions to the problems posed by the oil industry suit that would not require revenue losses to the state. On March 18, 1981, the leadership of

both chambers, including Senate President Kerttula and Finance Chairmen Dankworth and Bennett, House Speaker Duncan and Finance Chairman Cotten, and Governor Hammond, Attorney General Condon, and Revenue Commissioner Tom Williams, joined in a statement declaring that "any significant decreases in state oil and gas revenues appear both unwarranted and unsupported by a majority of Alaskans. . . . All agree that any changes which would give large sums of money to the oil industry at the expense of the people of Alaska are unacceptable."

House leaders did not agree with the Administration's view that existing law needed to be changed. They were more optimistic that the separate accounting statute would be upheld, as it was in 1986. They believed that the tax structure put in place in 1977-78 was sound, and preferable to the alternatives of a higher severance tax or an apportionment-based income tax. They also believed any changes to state tax laws should be made after, not prior to, any unfavorable court decision, and that the potential problem of having to refund money to the oil industry was better left to the future, if and when it was more than a hypothetical possibility.

C. The 1981 Legislation

Because the Administration felt that some action was required to limit the risk posed by the separate accounting lawsuit, the House developed a "backstop" bill (in conjunction with the Administration), which set an oil and gas reserves tax in place to take effect and preserve state revenues if the 1978 separate accounting law were to be found unconstitutional.

Governor Hammond introduced the backstop bill in May 1981 (as SSHB 200). It passed the House (as SB 524) in early June. A free conference committee, consisting of Senators Ray, Bennett, and Dankworth, and Reps. Gardiner, Vaska, and O'Connell, first met on June 11.

During the latter half of the session, Senator Dankworth had attempted to develop a bill that would succeed in settling the separate accounting litigation while preserving, in substantial part, past and future state oil revenues. He was unsuccessful, and gave up the idea of ending the existing separate accounting litigation. He then attempted to craft a bill that would repeal the separate accounting law prospectively and maintain future state oil revenues at a level roughly comparable to those collected under the separate accounting law.

On June 17, following the reorganization of the House, Rep. Halford replaced Rep. Vaska on the conference committee and became the House chair. At that time, the oil industry circulated a settlement proposal which repealed separate accounting, increased severance taxes, and instituted a 10% investment tax credit. The oil

industry estimated the proposal's revenue loss to the state for FY 82-85 at \$1.37 billion; legislative staff estimates of revenue losses ranged from \$1.5 to \$2.1 billion.

Senator Dankworth prepared a draft bill embodying the settlement proposal, and distributed it to the conference committee on June 22. At a later point in the June 22 meeting, he also distributed a draft bill that modified the settlement proposal in two important ways, in order to make the bill as revenue neutral as possible. He abandoned the 10% investment credit and suspended the application of the ELF during a field's first ten years of production in order to achieve a 15% effective severance tax rate at Prudhoe Bay. As a result of these changes, the oil industry was not willing to settle the litigation, and stated in testimony that they would continue the separate accounting litigation even if the modified proposal were enacted.

Prior to the next meeting of the conference committee on June 23, Governor Hammond wrote a letter to all legislators clarifying his position on the oil tax issue. He stated his preference was for a public vote on the backstop bill versus the oil industry settlement proposal. Alternatively, he urged the Senate to pass the backstop bill, and stated he preferred passage of any proposal to doing nothing. He noted that legislative action should "[r]educ[e] the likelihood that the oil tax issue will continue to be a perennial political liability for those in public office."

On June 23, Senator Dankworth submitted to the conference committee the legislation ultimately signed by Governor Hammond, described on the first page of this appendix. The June 23 bill, known as "Dankworth 3," retained the basic characteristics of Senator Dankworth's earlier proposal, but suspended the application of the ELF during the first ten years of production only if the ELF was greater than .7. The change did not affect Prudhoe Bay, but did provide a tax break for Kuparuk.

The June 23 legislation received only cursory examination in the free conference committee and on the floor of the House and Senate before its passage on June 24. No committee report or written analysis was provided by either the bill's sponsor, Senator Dankworth, or the Administration. A bare bones fiscal note, which projected total revenue losses from FY 82-85 of \$141 million, did accompany the bill during the legislature's deliberations. Specifically, the note showed revenue losses of \$21 million in FY 82, \$117 million in FY 83, \$18 million in FY 84, and a gain of \$15 million in FY 85. No figures for the effect of the reimposition of the ELF on Prudhoe Bay in 1987 were provided. Revenue Commissioner Williams personally prepared the fiscal note and provided no supporting documentation for it, other than stating the estimates were based on confidential figures provided by the oil industry.

Speaker Hayes refused to allow a minority report opposing the legislation,

authored by Rep. Gardiner, to be published in the House Journal. At pages 2-3 of the minority report, after questioning the validity of the \$141 million estimate, Rep. Gardiner stated the fiscal note "failed to point out an even more significant revenue loss which will occur in the latter half of this decade, due to the sharp decline in severance tax collections from Prudhoe Bay after the reimposition of the economic limit factor in 1987. This loss is on the order of two billion dollars." (The two billion dollar estimate was based on the optimistic oil price assumptions prevailing at the time.) The bill passed over the strenuous objections of the former House majority.

At the time he signed the 1981 law, Governor Hammond noted that the new law would only reduce state income by .6%, relying on the figures in the fiscal note.

The key arguments made in opposition to the 1981 law were:

(a) It was not revenue neutral, because the estimates for the amounts to be collected by the new apportionment formula were overstated and speculative.

(b) A future legislature and administration would be saddled with a huge drop in revenues by the reimposition of the ELF in 1987.

Other arguments concerned the harmful effects of a shift from a net income-based separate accounting tax to a gross revenue severance tax.

Both Commissioner Williams and Governor Hammond explicitly recognized that a future legislature would have to deal with the post-1987 revenue effects from reimposition of the ELF. In the press statement issued on July 21, 1981, at the time he signed the oil tax bill, Governor Hammond declared, "As for the possible revenue effects in 1988 and beyond, I have full confidence in the ability of the Legislature to deal at that time with whatever is required to retain the state's 'fair share' of our oil wealth."

In responding to a question about the post-1987 ELF revenue loss at the June 23 conference committee meeting, Commissioner Williams noted that a future legislature would have the option of reimposing separate accounting if it proved constitutional. A newspaper account of the meeting reported that "If the projected revenue loss proves true, Williams said the Legislature would have the option of hiking taxes." (*Anchorage Daily News*, June 25, 1981, p. A4, "Lawmakers Pass Revision of Oil Tax Law.")

During the June 24 House floor debate on the 1981 bill, Rep. Gardiner noted the ELF factor would cause multi-hundred million dollar losses after 1987. Rep. Halford responded that "by that time [1987], if the companies continue to challenge the portion of funds that are in the state's hands under chapter 21 [separate accounting], we should have an answer to that lawsuit. And with that answer, we should be able to develop possibly a more consistent taxing policy at that time. That's

pretty far in the future, but we'll have more information available to us at that time."

III. Postscript

The revenue losses resulting from the shift to the modified apportionment method have exceeded considerably the \$141 million estimate for FY 82-85 made in 1981 by Commissioner Williams. Analyses by the Department of Revenue shows the FY 82-85 revenue loss of the 1981 law at over seven hundred million dollars. Through FY 87, the state lost over one billion dollars in revenue as a result of passage of the 1981 law.

The problems arising from the reimposition of the ELF are the subject of the main body of this report.

Appendix D

DRILLING/WORKOVER DISINCENTIVE COMMITTEE SUBSTITUTE HB 164

SEVERANCE TAX CALCULATION

CURRENT LAW

Field Rate x Wellhead Price x Severance Tax x ELF

90,168,000 BOPY x \$9/BO x 0.15 x 0.52134

= \$63,461,050/year

Addition of 1 well:

90,277,000 BOPY x \$9/BO x 0.15 x 0.5204

=\$63,423,203/year

A decrease of \$37,846 year

PROPOSED LAW

Field Rate x Wellhead Price x Severance Tax x ELF

90,168,000 BOPY x \$9/BO x 0.16 x 0.7296

=\$88,811,873/year

Addition of 1 well:

90,277,000 BOPY x \$9/BO x 0.15 x 0.7292

=\$88,870,484/year

An increase of \$58,611 year

[Copy of ARCO Handout, March 27, 1987]

TECHNICAL NOTE ON ARCO'S KUPARUK EXAMPLE

Tax Effects of Drilling an Additional Well Under Current Law

Mr. James Weeks, Kuparuk Unit Manger for ARCO, provided testimony to the House Finance Committee on March 27, 1987. Examples of severance tax effects (see preceding page) accompanied his testimony. The examples compare the severance tax effects of adding one additional well in the Kuparuk field under the current ELF and under the proposed ELF. The examples show that the addition of one well producing just under 300 barrels per day would increase output from 90,168,000 barrels of oil per year (BOPY) to 90,277,000 BOPY. At the \$9.00 per barrel price assumed in ARCO's example, annual gross revenue to the owners increases by \$981,000.

$$(90,277,000 \text{ BOPY} - 90,168,000 \text{ BOPY}) * (\$9/\text{barrel}) =$$

$$(109,000 \text{ BOPY}) * (\$9/\text{barrel}) = \$981,000$$

The first of ARCO's two examples shows how under current law the owners would collect an annual severance tax *rebate* of \$37,846 on this additional revenue. The effective severance tax rate on the new production is thus -3.9 percent. The effect is analagous to a personal income tax where the effective tax rates become lower as increasing income moves the taxpayer into a higher bracket.

The second ARCO example illustrates how this will be changed under the proposed law. Instead of giving the owners a \$37,846 windfall, the proposed law will collect \$58,611 (6.0 percent) of the incremental \$981,000 for the state in severance tax. The table below summarizes the effects under the current and proposed severance tax laws, as shown in the ARCO examples.

TAX EFFECTS OF DRILLING ONE ADDITIONAL WELL (ARCO Kuparuk Example)

	Change In Annual Gross Revenue	Change In Annual Severance Tax	Tax Rate On Incremental Production	Average Tax Rate Before Drilling	Average Tax Rate After Drilling	Percent Change In Average Tax Rate Due To Drilling
Current Law	\$981,000	(\$37,846)	-3.9%	7.820%	7.806%	-0.180%
Proposed Law	\$981,000	\$58,611	6.0%	10.944%	10.938%	-0.055%

Prepared by Division of Policy, April 1987.

Oil Revenue Update

March 1989

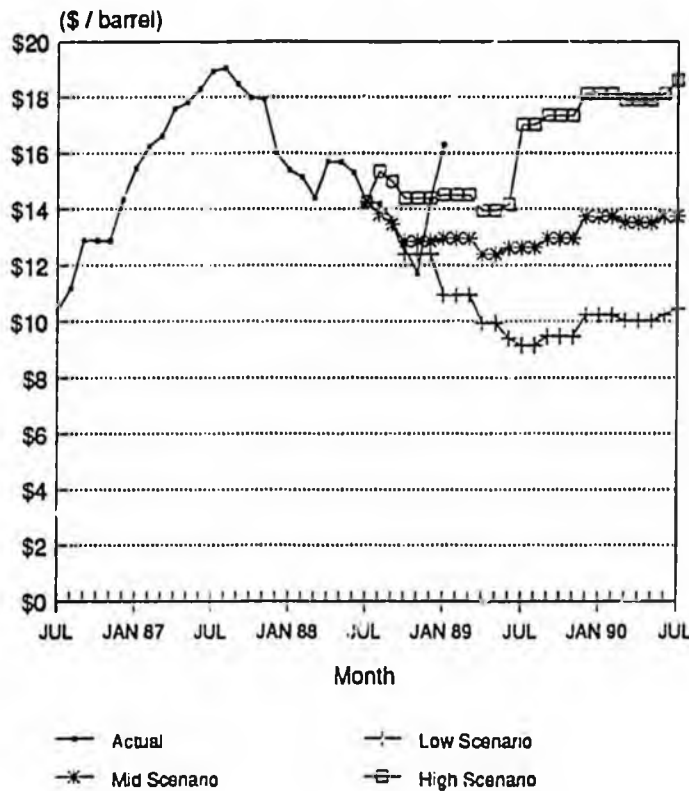
RECEIVED FEB 27 1989

The purpose of this note is to briefly update the oil revenue situation to reflect events which have occurred since our last revenue forecast released November 1988.

Oil Prices

World oil prices have remained strong through December and January in response to the November OPEC production agreement. It appears that OPEC production has averaged 19.5 million bbl/day through January. Although this is 1 million bbl/day over the agreed upon quota, strong demand and supply disruptions in the North Sea have kept Saudi Light oil prices near \$15.00/bbl on the spot market. BP Exploration, the largest producer of Alaska North Slope (ANS) crude oil, recently announced a February price for ANS of \$16.30/bbl for Gulf Coast delivery. The figure below illustrates the current Department of Revenue scenarios and actual ANS Gulf Coast prices.

ANS at the U. S. Gulf
(Nominal data)



The TAPS tariff filing for calendar 1989 sets the average tariff for the pipeline at \$3.01/bbl. This is \$0.04/barrel higher than assumed in the Fall Forecast.

Oil Production

Production from Alaska's North Slope held firm through year end at well over 2.0 million bbl/day. It is still not clear if the production slide at Prudhoe Bay of 50,000 bbl/day, which ARCO envisions, can be avoided in calendar 1989. Based on preliminary information from Conoco, it looks like Milne Pt. may recommence production sometime this Spring barring another price drop.

Oil Revenues

Higher prices, and higher than expected production through year-end result in a slightly improved outlook for the remainder of the fiscal 1989. The high scenario we developed last Fall outlined a revenue stream predicated on a successful OPEC production agreement. So far events outlined in the high scenario continue to unfold with the result being oil prices which correspond roughly to those characterizing this scenario. For example, under the high scenario the world economy was expected to increase at 3.5% in both 1989 and 1990. OECD growth appears to have been 4 percent for 1988. World oil consumption growth for 1988 has been revised upward by Energy Security Analysis, Inc. to an estimated 3.6%, or about 1.8 million barrels/day. The high scenario assumes a growth in demand of 1.5 million barrels/day for 1989 and 1990. In the November OPEC meeting Iran and Iraq were given a quota of 2.6 million barrels/day, about 14% higher than the 2.3 million barrels/day of production from these countries assumed by the high scenario. The high scenario was based on a total OPEC quota of 18.7 million barrels/day, with continued cheating by the member countries. The current OPEC quota is 18.5 million barrels/day. Over production by member countries has resulted in an estimated production in January of 19.5 million barrels/day.

There is, however, no guarantee that conditions within OPEC will remain the same. In particular the seasonal drop in oil consumption during the second quarter may present serious problems to cartel cohesiveness.

Table 1 outlines the price/revenue sensitivity for the remainder of FY 1989 and FY 1990. The FY 1989 outlook incorporates our most recent data on actual revenue collections through December and substitutes current spot market price data for January 1989. A summary of the current mid case assumptions, as well as actual collections through December production month and corresponding January revenue month, is shown on Table 2.