2795 SRES PETROLEUM PRICING

heavier portion of the crude which NPR is unable to market), to the TAPS by way of one of the two CVEA connecting pipelines. This, in effect, allows NPR to convert the residual portion of its processed feed to the refinery into a crude oil equivalent after paying a fifteen cents per degree gravity quality correction; this amounts to about $1.15 PB of material returned to TAPS. The quality of the ANS that the refinery receives is approximately 26.8 degree API; the return oil is approximately 19.4 degree API.

The construction of NPR was completed in August of 1977 to coincide with the start-up of TAPS. NPR was designed to run ANS crude oil at a rate of 25,000 BPSD over the life (25 years) of the plant. The refinery is a simple distillation unit manufacturing kerosene, light atmospheric gas oil (LAGO), heavy atmospheric gas oil (HAGO), straight run (SR) fractions (both heavy and light) and residual bottoms. Finished products are "blends" of the fractions obtained from the crude unit.

Special products, such as diesel fuel arctic (DF-A), are obtained by slightly varying the distillation tower operations; this is done on an exception basis to fill demand requirements.

When it initially started, the refinery made JP-4 (a mixture of SR and kerosene) , heating oils #1 and #2 and an electric turbine fuel designated #4 oil. In October 1978, the refinery also began the sale of Jet A-1 which is a kerosene based jet fuel (Jet B and JP-4 are naphtha based internal combustion aircraft fuels).

Considering the latest expansion at NPR to 46,500 BPSD, the maximum production of refined products would be:

Refined Products	BPSD
JP-4,JET-B	3,720
#1 HO/dsl,Jet A-1	8,370
#2 HO/dsl	2,420
#4 turbine	2,530

NPR was built without any of the tax incentives which were provided to Chevron and Tesoro by the State of Alaska. The cost of the NPR

refinery was calculated at $31 MM in 1977 by the Fairbanks North Star Borough, for tax assessment purposes. In 1980 NPR initiated a debottleneck project which increased the maximum throughput to 46,500 BPSD, and the current assessed value of the refinery is $40.1 MM (Table III-G-1).

The 2.4 mile GVEA pipeline and the 50,000 BPSD metering station connecting the GVEA pipeline with TAPS cost an estimated $4.4MM. The GVEA pipeline is a common carrier and regulated by the APUC which set the initial GVEA tariff at 8.6 cents per barrel of ANS crude received from TAPS. The return oil is reinjected into the TAPS downstream of the TAPS inlet to GVEA at no tariff cost.

NPR relies exclusively upon ANS for its crude charge since its purchase options are limited to the ANS producers, including the State Royalty oil. NPR has purchased ANS crude over its operating history from Exxon, Sohio, Arco, Placid-Hunt, and the State of Alaska. The crude arrangements allow for the return of the ANS residual portion (as much as sixty-five per cent) back to TAPS, except for the residual portion from the State Royalty oil, it is repurchased by the producers. The reduced crude from the Royalty crude must be accomodated by MAPCO. In the FY 1981 report MAPCO states:

> "For 1982, all return oil volume has been pre-sold under sales contracts or will be delivered under exchange agreements which is expected to avoid the level of losses realized on sales of this crude oil in 1981."

It is estimated that MAPCO had substantial losses on its crude oil sales in 1981 and by the admission of one of its senior executives in Alaska, this loss was recovered by higher margins on its NPR refined product sales.

The State Royalty Contract which was signed March 17,1978 allows for the purchase of 15 per cent of the State's ANS Royalty oil or, if available, a maximum of 35,000 BPD of Royalty oil. NPR is not required to provide the State the option to take the return oil. The State receives a price at the ANS that is calculated by a formula called "Exhibit B" in the original contract, and this price calculates to be slightly higher than the equivalent in-value price, see Table II-A-4.

H. TESORO PETROLEUM CORPORATION'S NIKISKI REFINERY

Tesoro Petroleum Corporation headquartered in San Antonio, Texas owns and operates the Tesoro refinery at Nikiski, and markets gasoline and diesel in Alaska under the Tesoro logo; in addition it is the major supplier of jet fuels to the Alaska market. Tesoro is a fully integrated petroleum company with activities encompasing exploration, production, refining, and marketing. The company is also engaged in coal development and in oil field services.

A review of the 1980/1981 profit-sales figures is shown below:

Tesoro Petroleum Corporation's FY Revenues and Profits

$ MM

	marketing and refining div.			total corportation		
	profits	assets	sales	profits	assets	sales
1980	95	218	2,314	182	708	3,528
1981	65	258	1,745	87	760	3,034

Note that the refining and marketing profit was 75 per cent of the total company profit in 1981 and resulted from 33 per cent of the company's assets! In 1980 the refining and marketing division profit was only 53 per cent of the total corporate profits.

Tesoro's total companywide refined products marketing activity resulted in sales of 132.7 MBPD in FY 1981 and sales of 137.9 MBPD in FY 1980:

MBPD Refined Product Sales

	1981	1980
Mogas	34.6	47.7
Jet Fuel	11.4	12.9
Distillates	59.1	33.4
Fuel Oil	23.8	43.8

Tesoro stated in their FY 1981 report the following:

> "It's noteworthy that Tesoro's refining and marketing results out performed many domestic refiners during the past fiscal year. This performance was due in large measure to the location of the companies two refineries with respect to crude oil sources and refined products markets. By maintaining refinery configurations and operating levels matched to refined-product demands in the immediate market areas, Tesoro has been able to establish competitive positions that allow it to market effectively, even during depressed periods."

What should be emphasized is that Tesoro's high profitability is due to a large extent to its unique geographical location with regards to crude supply and market availability.

Tesoro owns and operates two refineries. The Carrizo Springs, Texas refinery with a capacity of 26,100 BPD operated during FY 1981 at only 6,893 BPD. The Nikiski refinery FY 1981 capacity was rated at 48,500 BPD with a throughput of 42,636 BPD. In effect the Nikiski refinery accounted for over 86 per cent of Tesoro's refinery production.

The Nikiski refinery is capable of receiving crude oil from tanker and/or barges at the Port of Nikiski on the west side of the Kenai Peninsula; it also can receive Cook Inlet crude oil from the Kenai Pipeline Company.

Refined petroleum products are available at the refinery rack, the Nikiski rig tenders dock, and at the Anchorage Port terminal(s) which receive products shipped through Tesoro's Nikiski Pipeline. The location of the Tesoro refinery was determined because of the closeness of (a) the Cook Inlet Oil fields which minimized crude transportation costs and (b) Railbelt region which contains the majority of the State's refined product market.

The Nikiski refinery was constructed in 1969 with an initial capacity of 17,500 BPSD. In 1975 a 6,000 BPSD naphtha reformer was added for the production of gasoline direct from crude oil. The refinery's thru-put was increased to 48,500 BPSD in 1978. In 1981 the addition of a 7,500 BPSD heavy gasoil hydrocracker was added, and the naphtha reforming capacity increased to 12,000 BPSD. The maximum operating

capacity of the refinery is 51,053 BPSD and 48,500 BPCD, as reported by the "Oil and Gas Journal: 1982 Annual Refining Summary."

The Kenai Borough's assessed value (see Table III-G-1) of the Tesoro refinery in 1982 was $101.7 MM, reflecting the expansions of the refinery over its thirteen years of operation; normal project economics usually project a fifteen year life of a refinery. The 1981 expansion cost slightly under $60MM. The refinery employs eighty people out of Tesoro's total employment in Alaska of 150 employees.

Based on data presented by Tesoro a typical product slate at a 48,500 BPSD thru-put yields following refined products:

Typical Tesoro Product Slate

	BPCD
Propane	190
Mogas;JetB/JP-4	13,350
JetA-1	12,200
#2Diesel,#2HO	4,200
Residual	16,500

While the Tesoro refinery is capable of producing the above product volumes, the actual volumes of refined products produced will vary with the amount of and the quality of crude charged to the refinery. In addition, because of the various types of processing units at the Tesoro refinery, this refinery has more flexibility in varying its yield pattern than that available at the simpler Chevron Nikiski and North Pole refineries whose main control of product volumes is by crude volume and selective cut-points variation on the distillation column. Tesoro, by changing the feed quantities to the reformer and/or hydrocracker, may vary the amount and type of products manufactured and still maintain product specifications. This flexibility is important, since it allows a refiner to pursue the most attractive priced products such as mogas and Jet A-1.

Tesoro markets only a portion of its products directly to the Alaska consumer; primarily through its 75 Alaskan retail outlets. Tesoro enters into extensive product exchange agreements with the major Alaskan wholesalers and distributors for a large proportion of its production. These exchange agreements are apparantly a big reason for

Tesoro's Alaska success. Texaco, Union, and Chevron accept petroleum products from Tesoro in Alaska which are then marketed under the trademark of Texaco, Union or Chevron. These companies either purchase or exchange (directly or indirectly) Tesoro Nikiski refinery products in Alaska for crude or refined products in the lower 48 states for Tesoro to market. For example in FY 1981, Tesoro's marketing division had over 81 service stations in California averaging 119 BPCD per station for a total of 9640 BPCD of gasoline and diesel; Tesoro has no refining capacity in California, but because of its Alaskan product exchanges with Union, Texaco, and Chevron it was able to obtain supplies in that market.

About three quarters of the Tesoro products sold in Alaska are moved into the Railbelt region and total approximately 26,260 BPCD of products in 1982 (see Table III-H-2). Tesoro's refinery also supplies about 3,440 BPCD to other Alaska communities such as Dutch Harbor, Adak, Valdez, Kodiak, and Ketchikan. In most of these communities Tesoro refinery products are marketed by others such as Texaco, Union and Chevron. These products are shipped by barge or tanker from Nikiski.

Tesoro's current residual product is equivalent to a low sulfur #6 fuel oil which is sold to large marine craft, such as the Alaska foreign fishing fleet and to utilities for power generation. The demand in Alaska for #6 fuel oil is limited and Tesoro's residual oil is purchased primarily by San Diego Gas and Electric Company because of its low sulfur content. Tesoro pays the shipping charges (probably a cheaper backhaul rate) from Nikiski to California and attempts to maximize the use of "sweet crudes" in its refinery crude oil feed to ensure a low sulfur residual fuel oil. The Tesoro FY 1981 report stated that the amount of residual oil manufactured at the Nikiski refinery was about 30 per cent of the product yield; the indication is that this residual yield can only be achieved with little (less than 15 per cent) ANS crude oil in the refinery feedstock. If a "sour crude" (high sulfur content) was charged to the Nikiski refinery the fuel oil produced would contain a higher sulfur level and the price it now commands would have to be lowered. (Table V-Q-1a/b summarizes heavy fuel oil prices in the Lower 48 less transportation from Nikiski: namely, Bunker-C, and #6 Fuel Oil prices for both 0.3 per

cent sulfur content and 1.0+ per cent sulfur content.)

The Tesoro Nikiski refinery was originally designed to operate on "sweet" crudes from Cook Inlet. These crudes are high gravity crudes which average 35.5 degree API (see Table II-A-1), are low in sulfur, and produce high proportions of valuable light products --- they are valuable as refiner crude feedstocks. A refiner is willing to pay a higher cost for these lighter crude oils than he would for a heavier gravity crude oil, such as ANS of 26.8 degree API. Kerosene, for example, has a gravity of 39 degree API and light atomspheric gas oil (LAGO) about 30.5 degree API. Consequently, the higher the gravity of the crude feedstock the greater the amount of the lighter, high valued, products made This eventually means less barrels of crude must be charged as refinery crude feedstock to meet the desired demands for Alaska: mogas, Jet A-1 (kerosene) and diesel oils. The Cook Inlet Royalty oil volumes taken, and average field price paid by Tesoro, are summarized in Table II-A-2.

A typical crude feedstock composition to the Nikiski refinery is shown below:

Typical Tesoro Crude Slate Composition

	BPCD	
Crude Type	1981	1982
ANS	4,820	5,400
Tesoro's Indonesian	2,800	2,550
Cook Inlet Royalty	9,730	8,460
Cook Inlet Purchase	22,830	28,770
total	40,180	45,200

Tesoro has indicated that it can not accomodate more than 15% ANS crude in its crude feedstock mix in order to maintain its sale of low sulfur heavy fuel oil to San Diego Gas and Electric.

Tesoro purchases Indonesian crude from its own production from the Sanga Sanga Field in Kalimantan, the Pamusian Field on Tarakan Island, and the Samboja Field. The official price for these crudes was $31.30 in 1980 and $34.80 thereafter. The Tesoro FY 1981 report stated that its Indonesian sales resulted in a $31 MM operating profit with a

profit/assets ratio of 208%. The Indonesian crudes are of high gravity, "sweet" and similar in quality to Cook Inlet crudes.

The west side Cook Inlet production is "gathered" at the Drift River terminal by Cook Inlet Pipeline Company, and that amount purchased by Tesoro is barged or shipped by tanker to the Nikiski dock (usually adjunct to a crude oil tanker movement from Drift River terminal to the West Coast), and then delivered to the refinery by pipeline. The 1982 marine cost for this tanker shipment of west side Cook Inlet crude was about $.24 per barrel (see Table II-B-1). Approximately 85% of the Cook Inlet production is gathered on the West side of the Inlet.

The East side Cook Inlet production sold to Tesoro is delivered directly to the refinery by the Kenai Pipeline Company. Tesoro owns no Cook Inlet production and must exchange or outright purchase the Cook Inlet crude(s) from the producers namely: Union, Arco, Phillips, Chevron, Marathon, Amoco, Mobil, Shell or Getty.

Tesoro has two State Royalty crude oil contracts approved by the legislature. The Cook Inlet Contract sells all of the State's Cook Inlet Royalty share, 12.5% of total production, to Tesoro. The original contract was dated January 31,1969 --- the year the refinery was completed --- and this contract was extended March 8,1977 and on February 24, 1978. The price is exactly that which the State would have received if it had taken the oil "in-value" as opposed to "in-kind". The Cook Inlet Royalty volumes are summarized in Table II-A-2.

The Cook Inlet field production is declining, and its current production level is about 66,200 BPCD; the estimated production is 52,600 in 1983, 41,900 in 1984, and 33,200 in 1985. These declining production levels present a supply problem to Tesoro beyond 1984, since they prefer sweet high gravity crudes. Tesoro is, therefore, evaluating some of the following alternatives:

(1), to modify their existing plant to handle the "sour" ANS crude oil; this will require the removal of the sulfur in the residual fuel oil.

(2), forgo any plant modification and process ANS crude but

sell the high sulfur residual fuel oil at lower price than what is currently obtained.

(3), import more low sulfur, high gravity foreign crudes. In todays marketplace such crudes are readily available at an attractive price.

The second crude oil contract that Tesoro has is the Alaska North Slope State Royalty Contract dated February 26,1982; it runs for twelve years and became effective January 1,1983. It provides Tesoro with 24.5% of the States ANS Royalty crude oil up to 46,000 BPCD, less the Cook Inlet Royalty Crude oil anticipated to be received under the Cook Inlet contract during the month of July of any given year. A penalty of 1.25% of the Royalty price per barrel is assessed by the State if Tesoro underlifts or does not take the ANS crude.

The maximum amount of ANS crude that the Tesoro refinery configuration is capable of handling, while still meeting the sulfur restrictions on its residual fuel oil sold in California, is approximately 15% (about 7,000 BPD) when operating with Cook Inlet and Indonesian crudes. The State contract allows Tesoro to trade/exchange the Royalty oil it purchases to meet the needs of the Nikiski refinery. If the refinery is not modified, Tesoro will have to enter into exchange agreements for foreign crude, or sell low valued high sulfur fuel oil. In a departure from the North Pole ANS Royalty crude contract, the State has a "call" on any residual fuel oil(s) sold by Tesoro, as well as a "claim" on any future Nikiski coke production.

The price paid by Tesoro for the Royalty ANS crude oil it receives is the "in-value" price that the State would have received, less the field gathering and transportation costs which Tesoro pays to the producers. The price of ANS Royalty oil under the different price formulas is given in Table II-A-4. The price Tesoro pays for the Royalty oil is less than NPR pays under the NPR-State contract's "Exhibit B" formula. The difference is currently 33 cents PB, and is at the same pickup point as the NPR pickup point, namely Pump Station #1 of TAPS. Tesoro, as well as Chevron, however, must transport the ANS crude through the length of the TAPS paying the APUC intra state tariff --- equal to the interim $5.84 current inter-state FERC rate (see Table II-A-3), and then move the ANS crude from Valdez to Nikiski

which costs at least $.41 per barrel (see Table II-B-1).

I. RAILBELT PRODUCT DEMAND SUPPLY BALANCE

Based on the information gathered and described above, an approximate detailed product balance for the Railbelt region was constructed for 1981 and 1982. The purpose of the material balance is to develop an overall picture of imports into the Railbelt and the levels of product manufactured by the three refineries. The intent here is to define in a general sense what is "going on" in the Railbelt. Since access to confidential refinery and importer files was denied an "exact" model is not possible. The level of detail developed here, however, is sufficient for the purpose of this pricing study.

The two product supply/demand balances are given in Table III-H-1 and III-H-2 for 1981 and 1982, respectively. Knowledge of the volumes of jet fuel consumed in the Railbelt, the product volumes moving across the Anchorage and Nikiski docks, the volumes moved on the ARR, and through the GVEA, Nikiski and Whittier pipelines, along with the knowledge of what the refineries produce, allows the construction of an input/output model around each region and refinery. This computerized model provided the basis for the Railbelt product supply/demand balance.

What each refiner's product production was came from an assessment of the average crude mix they were running over a period (year) and the petroleum products that could be manufactured from that(those) crude(s). The fact that Chevron and NPR utilize only ANS crude oil defines, within a small error range, the amount of petroleum products that they are manufacturing with their simple distillation processes. Tesoro is more sophisticated since they can vary the quantity of their manufactured petroleum products. For example, JP-4 and gasoline each require naphtha stocks which are available from simple distillation, from a hydrocracker, or from a reformer which may accept feedstock from the distillation unit or hydrocracker. Consequently, if there is a drop in JP-4 demand, Tesoro can reduce crude throughput or make more motor gasoline.

The Chevron numbers (because of [illegible] batch mode of operating) do not reflect on an annual average ba[illegible]D) the actual stream day thru-puts. For example the cr[illegible]es were 12,300 BPCD in 1981 and 11,800 BPCD in 1982, and are equivalent to approximately an 18,000 BPSD thru-put when running ANS crude. The production figures, also, include the manufacture of asphalt and kerosene as a by-product during the summer months.

It was difficult to assess the extent to which Tesoro or Chevron was the party exporting the petroleum products through the Nikiski dock to other Alaska locations, or the extent to which each's volumes were the ones shipped through the Nikiski products pipeline. Based on discussions, an allocation was made between the two refineries, however, the allocation does not change the volumes nor volume by product though the Nikiski pipeline nor Nikiski port.

Finally, the definition of certain refined products is flexible. The Alaska refiners' kerosene derived products are, in many instances, identical products, but are sold under different labels. It is virtually impossible, without access to shipping data, to know whether the estimated 1340 BPCD of #1 oil out of Nikiski bound for other Alaska ports is Jet A-1, #1 Diesel, #1 Heating Oil, or DF-A. Again an arbitrary allocation was made based on discussion(s) which indicate these volumes, to be Jet A-1.

The table below (taken from Table III-H-1 and III-H-2) outlines the dramatic decrease on the imports of petroleum products into the Railbelt at the Anchorage Port. The reason is the expanded production at Tesoro and NPR, coupled with a decline in AvGas demand. The JP-4 that is imported (DFSC purchase) moves primarily through Whittier, not the Port of Anchorage (an exception was 1981 when the equivalent of 330 BPCD was imported at Anchorage).

RAILBELT IMPORT SUMMARY: Anchorage and Whittier Ports

	BPCD		
Product	1981	1982	+/-
Mogas	820	620	- 200
JP-4	1,600	630	- 970
Av-Gas	940	710	- 230
Jet A-1	3,880	4,030	+ 150
#2 Oil	1,170	140	-1,030
Asphalt	0	120	+ 120
total	8,410	6,250	-2,160

The decrease in mogas imports resulted from Tesoro's increased production and sale of this petroleum product in the Railbelt. Most of the imported mogas is Chevron's premium unleaded; Union also imports some regular and unleaded volumes. Most of the premium leaded, regular unleaded and leaded used in the Railbelt originates at the Tesoro refinery. TESORO MANUFACTURES OVER 94 PER CENT OF THE GASOLINE CONSUMED IN THE RAILBELT.

The decrease in the imports of #2 oils was due to the increased capacity at both Tesoro and NPR. The AvGas decrease was due to a decline in the demand for AvGas in the Railbelt region (probably due to the declining activity of fish processers at Anchorage) and the fact that there was an inventory spill over from 1981 into 1982. The increase in asphalt mix imports in 1982 is a result of large inventories present during the 1981 construction season, which required no asphalt imports that year.

The increase in Jet A-1 imports of 150 BPCD masks the increased production by Tesoro (2,870 BPCD) and NPR (260 BPCD) and the fact that demand at the two airports increased over 1890 BPCD. Specifically there was a decline in Jet B demand at the Fairbanks airport of 1.1 MBPCD (mostly foreign cargo carriers) and the transfer of 600 BPCD of Jet A-1 to Anchorage. Also NPR shipments to Anchorage of Jet A-1 decreased an estimated 300 BPCD, but Jet A-1 sales at the Fairbanks airport increased by 560 BPCD whereas Jet B sales decreased an estimated.

The total production of the three refineries is summarized below:

TOTAL PRODUCTION OF RAILBELT REFINERIES

	MBPCD					
Product	Chevron		Tesoro		NPR	
	1981	1982	1981	1982	1981	1982
Mogas			10.5	11.5		
Jet B					1.6	.6
JP-4	.9	.8	.6	1.0	1.5	2.1
Jet A-1	2.3	2.3	9.8	12.6	5.1	5.4
#1 Oil					1.6	1.8
#2 Oil	.7	.7	3.5	3.9	2.0	2.6
Turbine					.6	.8
Asphalt	.6	.7				
TOTAL	4.5	4.5	24.4	29.0	12.4	13.3
crude	12.3	11.8	40.2	45.2	41.3	43.0

The above information presents a good profile of what petroleum products each refinery is providing the Railbelt and other Alaska communities. Not included are marine fuel oil sales in the Gulf of Alaska.

Chevron in 1982 manufactured 260,000 barrels of asphalt, a 30,000 barrel increase over 1981. The amount of kerosene (40 per cent) used to make the asphalt mixture (meet viscosity/pour limitations for transport to Alaska) accounts for the total quantity of products manufactured remaining about constant while crude charge declined for Chevron's refinery.

Obviously, Tesoro with the ability to manufacture 60+ per cent of its crude charge into products is the most important refiner in supplying jet fuel and motor gasoline. Tesoro can supply all of the Railbelts' regular gasoline demand (leaded and unleaded) which, from the data, Tesoro apparantly did to a large extent in the two study years.

The most significant deficiency in Railbelt petroleum product manufacturing capacity is Jet A-1. The demand for jet fuel at the

airports increased overall with Anchorage increasing faster than Fairbanks.

The import of JP-4 appears to be a policy decision on the part of the DFSC to keep the Whittier pipeline operational, since the military consistently brings JP-4 into the region even when there is an excess capability in the three refineries; for example Tesoro was not awarded a JP-4 contract in FY 1983.

The operation of the Chevron Nikiski refinery is done in conjunction with the other Chevron refineries in their system, so that exchange of crude or refined products (e.g. residual, SR, and asphalt mix) are closely coordinated.

Tesoro's crude supply mix is dictated in large part to maintaining the low sulfur #6 fuel oil that they now produce as their residual material. They are also evaluating changes in crude mix (crude flexibility) against capital investments, while minimizing sulfur level on their #6 fuel oil.

The next chapter, Chapter IV, will discuss prices in Alaska and compare these with outside postings and retail prices. Chapter V will analyze the operation of the refineries in Alaska using the prices developed in Chapter IV and thru-puts discussed above.

CHAPTER FOUR

ALASKA PRODUCT PRICING

The pricing of petroleum products in Alaska has followed the traditional historical pattern of other areas, and is of highest concern to Alaskans because of the magnitude of the fuel and gasoline cost increases that have occured over the last three years in Alaska. There have been significant decreases in crude oil pricing and petroleum product prices in the Lower 48/worldwide. These decreases have been identified in the local press, and Alaskans have expressed concern and questioned the prices they are paying for refined products purchased locally, compared to "outside" prices.

A. BRIEF GENERAL HISTORY OF PETROLEUM PRODUCT PRICING

Up to about the mid sixties the petroleum products used in Alaska were "imported". A base price on the West Coast determined by a refiners rack price, plus marine transportation and handling to bring the product to Alaska, determined the local market price; the Alaska price fluctuated with the base price at the refiners rack (e.g. California or Washington State). Many of the integrated refiners operated in Alaska during this period; namely, Mobil, Shell, Chevron, Texaco, and Union. The local prices basically reflected the competition on the West Coast amongst the refiners.

In the middle fifties commercial quantities of crude oil were discovered on the Kenai Peninsula and later at the Alaska North Slope. A refiner(s) could recognize the cost advantages of placing a refinery at or near the crude source to take advantage of the lower crude transportation costs to his refining site; also transportation costs would be saved by supplying the local markets from the locally situated refinery. The refiner also recognized that his small refinery unit (designed to meet his

demands) would be unable to supply his competitors supplies who would have to continue importing products at the old imported costs. These costs incured by his competitors, would dictate a minimum market price for the locally consumed products. In this situation the local refiner(s) has no incentive to reduce prices below the competitor's cost levels, since the local refiner can sell all of his output at this price; in effect the local refiner becomes a price follower. He thereby enjoys a larger profit than his competitor when selling at the same prices, because his costs are less than his competitors. The local refiner is limited on the price he can charge because if his price is higher than an import parity (West Coast plus transportation cost), a West Coast refinery could underbid the local party.

The "outside" refiner recognizes the strengths of the "local" refiner, namely, his "high markup" which the local refiner could lower (although taking smaller profits) to make his petroleum products more attractive. Consequently, a careful and dynamic price structure (balance) is always in effect.

At the time that the region's refining capacity for a given petroleum product equals or exceeds the demand, then the local refiner(s) becomes the price leader(s); an "outside" refiner can not economically match the geographic advantage that the local refiner(s) possesses.

In this latter development, the local refiners' compete amongst themselves for the available market except in the monopoly case where only one refiner makes a sufficient petroleum product volume to meet or exceed local demand. In a free market sitation, the existing local refiners being accustomed to a "large" margin, reluctantly drop their price(s) and thereby reduce the return on their local investment; less margin leads to less profit. The local refiners cost advantage over "outside" product imports is narrowed. Furthermore, when the "outside" refinery has surplus product, he is prepared to take a less than usual refinery netback at his refinery, and would be willing to sell his product into the local market at less than import

parity. Unless the local refinery meets this new price level he will lose market volume; which he is reluctant t do since this volume is profitable. To meet the competition, the local refinery will reduce his prices.

What occurs above between the local refinery and the "outside" refinery also can and does occur among local refinery(s). When this happens prices should fall and a competitive price at a competitive rate of return be obtained for the refinery.

B. ALASKA'S PETROLEUM PRODUCT PRICES

The purpose of this chapter is to analyze Alaska's petroleum product prices. The final price paid by Alaskans is traced from crude oil, through the refiner, through the wholesaler (if different from the refiner), and then the local distributor. A detailed look at heating oil and gasoline prices in the Alaska communities of Fairbanks, Anchorage, and Ketchikan is made. The prices in these communities are then further compared with prices offered at the retail level and posted rack level in Seattle, Los Angeles, and San Francisco. From this presentation the reader will have a quantitative analysis of product pricing in Alaska. The presentation will allow Alaskans to appreciate whether the petroleum product prices they pay are reasonable, relative to what "others" in the U.S.A. are paying. The Chapter first reviews heating oil and then gasoline prices over the 1980-1982 period.

C. HEATING OIL PRICING IN ALASKA

The different regions of Alaska utilize different heating oils. Fairbanks, because of the extreme cold winter weather, utilizes #1 heating oil with a -55 degree Fahrenheit minimum pour point for above ground storage and utilize #2 heating oil for buried tanks -15 degree Fahrenheit pour point in winter and 0 degree Fahrenheit pour point in summer. The #2 oil heating is sold primarily in South Central and Southeast Alaska. For comparison

only #2 oil data is available in the trade journals for the West Coast.

Each month the Fairbanks North Star Borough Community Research Center tabulates the average prices of #1 and #2 heating oil at the distributor retail level for Fairbanks and Anchorage. A summary of #1 and #2 retail data, wholesaler Consumer Tank Wagon (CTW), and NPR rack prices is presented in Tables IV-I-1a thru IV-I-1b together with their respective markups for the study period, January 1980 to December 1982.

FAIRBANKS #2 HEATING OIL DATA

	price, c/g			
	Jan'80	Jan'81	Jan'82	Nov'82
Retail	79	111	123	114
CTW	71	100	113	104
NPR	64	91	105	93
	price markup, c/g			
retail	7.7	10.6	10.5	10.0
wholesaler	5.4	7.8	5.6	9.2
NPR	21.3	30.9	45.2	35.0
Gross	36.2	51.2	63.4	56.4

From the Tables IV-I-1a/b, the #2 retail prices rose steadily from 79 c/g in Jan'80 to 124 c/g, a high in Feb'82, and have since declined to 114 c/g by Dec'82. The CTW (price sold by a wholesaler to a consumer in large volumes) rose from 71 c/g to 113 c/g in Jan'82 and declined to 104 c/g by Dec'82. The NPR rack price of #2 started out at 64 c/g in Jan'80, went to 105 c/g in Jan'82, and then declined to 93 c/g by Dec'82.

A DISTRIBUTOR'S MARGIN IS DEFINED, HEREAFTER, AS THE RETAIL SELLING PRICE LESS THE WHOLESALE PRICE HE PAYS THE WHOLESALER. The study did not have access to wholesale prices for heating oils; the study was provided with wholesaler public CTW postings. Therefore, in this analysis of heating oil a surrogate measure ,markup, is used in place of margin. MARKUP IS DEFINED, HEREAFTER, AS THE RETAIL PRICE LESS THE WHOLESALER'S CTW PRICE. In actuality, the price a distributor pays to

the wholesaler may be somewhat different from the CTW price. In general the wholesale prices are "pegged" in the distributor's purchase contract to the wholesaler's CTW posted price. This allows the wholesaler to change all the contracts at once by merely changing his posting. The Fairbanks distributor markups rose from 7.7 c/g in Jan'80 to about 10.6 c/g at the start of 1981 and have remained constant thru Dec'82 at about 10 c/g. The Anchorage distributor markups over 1981-1982 have varied from 17 c/g to 21 c/g.

The wholesalers markups (CTW price less acquisition cost from the refinery) rose from 5.4 c/g in Jan'80 to over a high of about 7.0 c/g in 1980; since then they have dropped to a low of 5.6 c/g during 1981/1982 and by the end of 1982 rose to 9 c/g.

The NPR #2 posted rack price markup over crude was 21.3 c/g in Jan'80 and rose to over twice that level to 48.3 c/g in Feb'82; it has declined to 35.0 c/g by the end of 1982.

Tables IV-I-2-a/c for the 1980-1982 period provides a comparison of Fairbanks CTW prices relative to Anchorage, Los Angeles, San Francisco, and Seattle. Anchorage because, of its low priced natural gas, does not utilize heating oil to the extent of other Alaska areas. (consequently the volumes moved by a HO retailer in Anchorage are limited, and his unit costs of doing business do not have an economy of scale to it that higher volumes attract; accordingly, margins are higher).

Anchorage retail prices at the start of 1980 were greater than Fairbanks by 13.4 c/g. This margin eroded over the year so that by Jan'81 Fairbanks was 0.7 c/g higher than Anchorage. For a significant part of 1981 Anchorage prices exceeded Fairbanks by 1-2 c/g. At the start of 1982 Fairbanks slightly exceeded Anchorage, and then in the Spring of 1982 were less than Anchorage by four to six c/g.

Fairbanks wholesaler CTW prices less Anchorage wholesaler CTW prices indicated about a negative 5 c/g at the start of 1980. By the fall of 1980 the Fairbanks wholesaler CTW prices were 4.7 c/g higher than Anchorage, and this increased in 1981 to 8-9 c/g. In the Spring of

1982 it began to decline and by December 1982 Fairbanks was only about 1.7 c/g higher than Anchorage.

Anchorage is not the best basis of comparison because of the extensive use of natural gas in home/industrial heating. This fact restricts heating oil sales in Anchorage (see Table III-H-1 for movements of HO into the Railbelt region). Consequently, a more valid comparison is that made between NPR and Seattle, San Francisco, and Los Angeles. These West Coast areas are of particular interest because they also contain the bulk of the refining capacity on the West Coast. For example, if a price in LA plus marine transportation to Alaska and ARR transportation to Interior Alaska is less than what the Interior Alaska market price is, then the opportunity exists to bring alternative (West Coast imports) supply into the Interior at a cheaper cost to the end user.

Fairbanks CTW Price Compared To Outside CTW

	Jan'80	Jan'81	Jan'82	Oct'82
Seattle	-5.1	+16.5	+17.7	+10.0
San Francisco	-8.7	+19.2	+19.4	+12.3
Los Angeles	-8.7	+20.3	+20.8	+11.2

What these figures indicate is that, FAIRBANKS IN EARLY 1980 ENJOYED A 5-9 C/G PRICE ADVANTAGE (LOWER COST) OVER THE WEST COAST PRICES. That ADVANTAGE CHANGED OVER 1980/1981 TO BECOME 16-20 C/G HIGHER THAN WEST COAST CTW POSTINGS. Since NPR is close to the ANS crude oil source it has a geographical advantage over other users of ANS and one questions how much premium NPR must obtain for its heating oil relative to West Coast sources.

Fairbanks CTW Price Compared to Outside CTW
(corrected for marine and ARR trans. costs)

	Jan'80	Jan'81	Jan'82	Oct'82
Seattle	-13.9	+7.0	+7.8	-0.1
SF	-18.0	+9.2	+8.9	+1.7
LA	-18.4	+9.8	+9.9	+0.2

The above figures clearly indicate that comparisons of West Coast rack prices (corrected for transportation) with Fairbanks prices does not indicate the true petroleum market place dynamics. In other words, the price in Fairbanks is not based on a West Coast alternative. However, during the period from mid-1980 to early 1982, an importer of West Coast products could bring petroleum products from the West Coast into the Interior of Alaska and undersell, on a parity basis, NPR offered products by 1 to 11 c/g. At the beginning of 1982 NPR began to reduce this "premium" and by the end of 1982 the premium has almost disappeared.

Tables IV-I-3a/b outline the cost components making up the Fairbanks retail price for #1 and #2 heating oils starting with crude costs at NPR; also shown are the NPR markup, ARR freight to Fairbanks and the CTW and distributors markup. Crude costs at NPR began at 40.9 c/g in Jan'80, rose to a high of 71.8 c/g in Feb'81 and are 57.5 c/g in Nov'82.

Tables IV-I-4a/b indicates by month for the 1980/1982 period the same data as discussed above only presented as a per cent of the crude price for a given month. A few months are summarized below:

Fairbanks #2 Heating Oil Cost Components
(As Percentage of Monthly Crude Cost)

	North Pole MU	ARR freight	CTW MU	distr. MU	retail price
Jan'80	50	4	13	18	184
Jan'81	52	3	13	18	185
Jan'82	75	3	9	17	205
Nov'82	61	4	16	17	198

Table IV-I-5-a/b presents data similar to that shown in I-3a/b and I-4a/b, but indicates by month the percent change in the individual cost components making up the #2 retail heating oil price relative to a Jan'80 level, month by month, for the 1980/82 period. Some monthly data from Tables IV-I-5a/b is outlined below.

Fairbanks Price Composition As % of Jan'80

	crude @ NPR	NPR MU	ARR	CTW MU	distr MU	retail price
Jan'81	39.3	44.7	12.0	44.1	37.5	40.3
Jan'82	40.3	112.1	20.0	4.0	35.8	56.3
Nov'82	34.0	64.2	28.0	70.7	28.7	44.0

Note that #2 heating oil's retail price has increased 44 per cent over the period in question while crude oil price has increased only 34 per cent. This is highlighted by the fact that NPR's markup has increased by 64 per cent; other large markups have increased at the CTW level.

Tables IV-J-1a/b and Tables IV-J-2a/b compare heating oil CTW posted prices for Bethel, Fairbanks, Anchorage and Ketchikan with West Coast cities: Seattle, San Francisco and Los Angeles. The West Coast CTW data was obtained from Platt's Oilgram Monthly Price Summary. What these two tables indicate is that the pricing of #2 oil in the West Coast market is a dynamic process since prices across the board are not very different --- if they were, one region would move products into the high cost region and prices would adjust back to the competive level. The West Coast prices at the end of 1982 have increased about 14-22 % from January 1980; Alaska's prices are 39-46 % of January 1980 prices! The October 1982 #2 heating oil CTW price on the West Coast was 93-91 c/g, whereas Alaska varied from 101-111 c/g.

At times, the CTW heating oil price in Fairbanks has exceeded the #2 heating oil price in Dutch Harbor! In fact, the prices in Dutch Harbor and Bethel are reasonable compared to Fairbanks and Anchorage. These distribution centers must carry sufficient inventory from the summer thru spring of the next year. The price of the petroleum products purchased for the inventory defines the markup for most of the year. Another factor in distributor markup is that these communities do not have the economics of scale that exist in the urban areas of Alaska; consequently, the retail price may be higher resulting from the larger cost per unit of doing business. The main point is that the CTW prices in these two centers are reasonable compared to other Alaska points.

Tables IV-K-1a/c present Heating oil (#1 and #2) pricing data in the Anchorage area for the years 1980-1982 at both the retail and wholesaler level; also Anchorage CTW prices relative to Seattle, San Francisco, Los Angeles and Houston.

As mentioned previously, heating oil sales in Anchorage are affected in a large measure by natural gas which is the dominant fuel in this market. Accordingly, the heating oil market there is not a dynamic one, and price comparisons using Anchorage as a basis can be misleading. What is meaningful from these Tables, however, is that over the period 1980-1982 the distributor, selling heating oil in Anchorage has maintained his markup, namely 14-15 c/g although at times it has increased to 19 c/g for a short time. Probably a distributor has tried to raise his margin (prices), but every time he attempts this it drives more of his customers to natural gas. He is stymied and, while his markup has remained steady, his profit margin has decreased due to escalating costs.

This erosion in profitability and location premium is highlighted by the fact that in early 1980 heating oil parity price (Anchorage CTW terminal less Outside Platt's less GPM) in Anchorage was at a 3 to 7 c/g premium over West Coast supply sources. In mid 1980 this premium disappeared, and Anchorage heating oil was selling at a 3 to 6 c/g discount relative to a West Coast parity price. Over the next two years this discount increased to 7 to 9 c/g.

Tables IV-L-1a/c illustrate Ketchikan pricing data for #2 heating oil (major heating oil component sold in Southeast), as well as price comparisons to West Coast terminal postings.

What the data illustrates is that over the period 1980-1982 the wholesaler has maintained a fairly constant markup level --- about 17 to 18 c/g, although there have been dips to as low as 14 c/g and highs to 25 c/g. In general, the mean has been about the 17-18 c/g level.

The Ketchikan terminal CTW price seems to be based on the Nikiski terminal price plus GPM freight to Ketchikan. However, there is still

a premium built into the Ketchikan price relative to Nikiski. Another guide to compare Ketchikan competitiveness (due to the forementioned problems with Anchorage/ Nikiski prices) is to review Ketchikan terminal CTW prices less West Coast Platt's rack prices less GPM freight rates. This relationship indicates that Ketchikan, which was obtaining its #2 oil at a discount from West Coast parity in the early 1980's, began to pay a premium starting in mid-1980; by the end of 1980 it was at a 10-13 c/g premium (higher than West Coast parity) and this premium level has stayed at about this level over the 1981/1982 period.

D. MOTOR GASOLINE PRICING IN ALASKA

There are four grades of motor gasoline sold in Alaska, namely regular leaded, regular unleaded, premium unleaded and premium leaded. From a pricing standpoint these four grades of gasoline are marketed on a self service and full service basis. Accordingly, rather than analyze every grade's pricing irregularities and inconsistences, pricing trends and the more obviouus imbalances on comparative pricing among various Alaska locations versus the West Coast Rack Prices will be reported.

When reviewing Tables IV-M-1a/c, "Fairbanks Gasoline Analysis and Comparison", one is struck by the relatively stable (constant) price of motor gasoline in Fairbanks at the retail level over the last year and a half. At the wholesaler level the prices increased significantly during 1980 and early 1981 and have more or less stabilized (as have retail prices) since then. Service station markups (distributor) which bottomed at the 13 to 26 c/g level in early 1981 are approaching the early 1980 levels which are 23-29 c/g. At 1982 year end the markups were 18 to 28 c/g, however, they have been increasing since mid-1982.

Another interesting correlation obtained from Tables IV-M-1 is the "premium" (over parity price) Fairbanks is paying for gasoline moved into the Interior relative to the Anchorage terminal price. The

Fairbanks terminal price, less the Anchorage terminal price less the ARR tariff, should show no premium or discount if the two terminal prices are at parity. In 1980/1981 the parity between the two locations was close. In early 1982, however, Fairbanks began to pay a premium over Anchorage parity for the gasoline sold in the Interior. This premium increased continuously in 1982, and is now slightly over 5 c/g for the gasoline sold in Fairbanks.

The consistency in retail prices in Fairbanks over the past eighteen months is shown in Tables IV-N-1a/b which present the retail prices for both regular leaded and unleaded gasoline over the 1980/1982 period in Fairbanks, Anchorage, and the West Coast cities of Seattle, San Francisco, and Los Angeles. Note that the West Coast retail price in these areas over the last eighteen months has been responsive to competitive market forces and has moved downward --- this movement occured during a period that Fairbanks retail prices have remained almost constant.

Tables IV-N-1c/d present the same retail data as above but corrected for both State and Federal taxes. The Federal mogas tax is 4 c/g. The State of Alaska mogas tax is 8 c/g. The State of California has a 7 c/g tax plus a surtax of 6 per cent on the total price (including the Federal tax and the California 7 c/g highway tax). The State of Washington's tax is 12 c/g (which during the last half of 1981 was 13.5 c/g) for a total of 16 c/g Federal and State.

The following table summarizes the retail prices for regular leaded motor gasoline in the five cities over the study period, 1980-1982.

RETAIL REGULAR LEADED PRICES CORRECTED FOR TAX

	FAI	ANC	SEA	SF	LA
Feb'80	115.2	NA	99.7	104.6	105.0
Jan'81	122.4	NA	103.3	105.8	104.0
Jan'82	136.2	118.6	110.3	111.7	109.1
Dec'82	136.2	110.9	93.3	97.4	93.6

In the last month of 1982, Fairbanks residents paid 42.6 c/g more than Seattle or Los Angeles residents, and Anchorage residents paid 17.3 c/g more. Whereas, the West Coast has responded to market dynamics in 1982 (a drop of over 15.5 c/g) the Fairbanks market has remained constant! The Anchorage price has dropped only 8.7 c/g!

Tables IV-N-2a/d present a comparison of the retail price in Fairbanks and Anchorage corrected for transportation and taxes with West Coast cities and briefly summarized below for regular leaded self service price.

Retail Price Comparisons corrected for trans. and taxes

	Fairbanks				Anchorage		
	ANC	SEA	SF	LA	SEA	SF	LA
Feb'80	NA	7.5	2.0	1.3	NA	NA	NA
Jan'81	NA	10.6	7.6	9.0	NA	NA	NA
Jan'82	10.8	17.0	15.1	17.4	6.2	4.3	6.6
Dec'82	17.2	32.8	28.2	31.7	15.6	11.0	14.5

This table reconfirms the observation above, that the retail price difference between Fairbanks and the West Coast has been growing even when corrected for transportation and taxes! The same conclusion holds true for Anchorage. This table indicates that the alternative of bringing West Coast product into these two cities at selling at parity with existing price would be viable because of the large "markup" available as indicated in the table.

Tables IV-N-3a/b present Lundberg Letter wholesale prices at Anchorage, Seattle, San Francisco, and Los Angeles for self service. The table indicates a regular leaded (RL) drop from September 1981 at 115 c/g to 105 c/g in Dec'82, or roughly a drop of 10 c/g. This does not compare to a drop of over 17 c/g on the West Coast. Clearly Anchorage wholesale pricing is not the same as the West Coast.

Tables IV-N-4 compares Anchorage and West Coast wholesale prices for regular leaded and unleaded corrected for GPM transportation to Alaska for the period that the Lundberg Letter monitored Anchorage, starting Sep'81. Highlights of that Table are given below.

Anchorage Wholesale RL Price Comparison
(corrected for GPM transportation)

	SEA	SF	LA
Sept'81	4.1	3.7	3.2
Mar'82	14.4	14.7	14.0
Dec'82	11.6	9.4	10.3

This table indicates that in 1982 one could purchase RL in Los Angeles and transport it to Alaska and sell it wholesale and realize the above "markup" if your price was at parity with Anchorage.

Table IV-N-5a/b presents the Lundberg Letter's implied margin between retail price and wholesale price corrected for motor gasoline taxes. Anchorage distributor margins have remained almost constant at about 5.4 c/g. West Coast margins on RL self service since Sept'81 which were about the same as Anchorage have decreased to a Dec'82 level of 1.2 c/g to 3.6 c/g. Table IV-N-6 presents a comparison of Anchorage with Seattle, San Francisco, and Los Angeles for the period Sep'81 thru Dec'82. These comparisons indicate that Anchorage distributor margins in Dec'82, having remained constant, were 4.0 c/g higher than West Coast margins which have been declining. THE ABOVE ANALYSIS INDICATES THAT SINCE MARGINS ARE RELATIVELY CONSTANT IN ANCHORAGE THE PRIMARY PRICE DETERMINANT IN ANCHORAGE IS THE WHOLESALE PRICE WHICH IS SIGNIFICANTLY ABOVE WEST COAST PRICES CORRECTED FOR TRANSPORTATION.

Retail motor gasoline price data was available for Fairbanks from the Fairbanks North Star Borough Community Research Center. The only other retail information available for Alaska was the Lundberg Letter for Anchorage. The Lundberg Letter also monitors wholesale price and calculates an implied margin. The other data that was available was the CTW motor gasoline prices for Fairbanks, Anchorage, Dutch Harbor, Bethel, and Ketchikan. The following analysis utilizes this information, and as in the heating oil discussion, the term markup is the difference (where available) between the retail price and the wholesaler's CTW posted price.

Table IV-N-7a/b presents the public posted CTW prices for the Alaska terminals in the study and the West Coast. Striking is the lack of movement in price in the Alaska market compared to the West Coast, and the Fairbanks' prices in the Table are only exceeded, at times, by Bethel. Generally, Dutch Harbor has a lowe' price than Ketchikan (which contradicts what one would expect given GPM tanker costs and the size of the two communities). Bethel in the last half of 1982 did not change its price reflecting the inventory cost. The following table summarizes points over the study period.

Regular leaded posted CTW prices in Alaska

	Jan'80	Jan'81	Jan'82	Nov'82
ANC	79.9	102.9	112.3	107.2
BET	94.2	117.0	124.5	121.0
DUT	90.6	103.9	116.5	107.3
FAI	85.8	108.8	120.1	119.0
KET	79.6	102.9	114.7	110.7
Regular leaded posted prices on West Coast				
SEA	84.5	92.7	101.0	94.3
SF	82.6	91.2	95.8	92.8
LA	82.6	91.1	95.4	90.8

Tables IV-N-8a/c compares the Alaska communities CTW price with Seattle, San Francisco and Los Angeles, respectively, for regular leaded motor gasoline corrected for transportation (GPM). From the tables it is clear that Alaska enjoyed a lower price at the start of 1980 and that this has switched around completely by the start of 1981 where Alaskans were paying a "premium" above the alternative of West Coast.

RL CTW At Alaska Cities Comparison With Los Angeles CTW

(corrected for transportation)

	FAI	ANC	KET	DUT	BET
Jan'80	-5.5	-5.9	-4.5	-5.3	-5.7
Jan'81	+8.4	+8.8	+10.2	+9.6	+8.8
Jan'82	+15.0	+13.9	+17.6	+11.0	+21.0
Nov'82	+18.2	+13.5	+18.1	+13.5	+17.2

Tables IV-N-9a/b present the calculated distributor markups determined from the CTW prices for Fairbanks, Anchorage and West Coast cities. The distributor markup in Fairbanks remained constant at about 16 c/g to 17 c/g, and in Anchorage the distributors' markup also remained constant, albeit, at a lower level of 5 c/g to 6 c/g. Juxtaposed is the West Coast where at Jan'80 the markup was 15 c/g, it has subsequently declined to 8 c/g by Nov'82.

Table IV-N-10a/b presents a comparison of distributor margins (retail less wholesale as reported by the Lundberg letter) and markups (retail price less the CTW price). A shift has occured from the early 1980's where the CTW price was greater than wholesale to the 1981-1982 period where the CTW price is less than Lundberg Letter's reported wholesale price to distributors on the West Coast. In Anchorage the CTW and wholesale price reached parity in fall 1982. This supports the use of the markup as an indicant of distributor margin.

WHAT THE ABOVE SEEMS TO INDICATE IS THAT ALASKAN MARKETS ARE NOT RESPONDING AS QUICKLY (IF IT DOES AT ALL) TO MARKET FORCES AS IS OCCURING ON THE WEST COAST MARKET.

CHAPTER FIVE

ALASKA IN-STATE REFINING PROFITABLILITY

In determining the profitability of Alaska refinery(s), data from 1981 and 1982 was used. The information on pricing of products and crude for these years was complete and consistent; these two years also encompass the period free of the Federal Oil Controls commencing with decontrol in January 1981. It was not the intent of the study to exactly model or define the profitability of an particular refiner, but to determine levels of magnitude of profitability between Alaska refiners and with other refiners in the industry. The level of detail ,herein, is sufficient to attain a good appreciation of how the Alaska refiners are profiting from their Alaska operations.

A. NORTH POLE REFINERY

Utilizing the pricing data shown in Table V-O-1 and the product volume data in Table III-H-1 and III-H-2, the NPR revenue estimates for the years 1981 and 1982 were calculated as outlined in Tables V-P-1 and V-P-2. These Tables are the basis for determining NPR's return on investment.

A review of the refinery's total revenue, crude cost and product markup (refinery price less raw material costs) over the 1981/1982 period collaborates the trend outlined in Chapter IV, namely that once decontrol became effective (end of January 1981), refinery markup (profitability) increased till mid-1982. At that time the markup began a slight decrease. What may have motivated this reduction in refinery markups was the expressed concern of the Interior consumers to their elected public officials/legislators. By mid-1982 there was sufficient concern that the legislators perceived the need for a preliminary study on the pricing of petroleum products in the Interior

of Alaska.

Table V-P-2a/b present 1981 and 1982 volumes, average product realizations and markups. Some interesting results from reviewing these two tables indicate the following:

--- During 1982, the refinery averaged about 800 BPCD more crude throughput (over 1981), yet the total cost of crude to the refinery for 1981 and 1982 was about the same. In effect, the cost of a barrel of crude to NPR during 1982 was about two dollars lower than 1981.

--- The average product realization on a dollar per barrel ($ PB) remained about the same namely $41.65 PB, during 1981 and 1982.

--- The margin per barrel as a result of the overall lower cost of crude to the refinery was $3.15 PB (7.5 c/g) more in 1982 versus 1981.

--- It must be noted that NPR does not manufacture any motor gasoline or asphalt. Also the return oil is pumped back to TAPS, and the value of this material as shown (in the Tables V-P), is delivered crude value less a gravity decrease penalty, less the GVEA pipeline tariff on delivered crude.

--- The unit gross margins for 1981 and 1982, namely $10.17 PB and $12.38 PB, when multiplied by the 1981 and 1982 BPCD product volumes shows a yearly gross margin of 46 and 60 million dollars.

The profitability of a refinery is determined by subtracting the "other" costs from the gross margin. These costs include interest, depreciation, operating costs and taxes.

NPR <u>"operations" cost</u> in 1981/1982 amounted to $2.96 and $2.88 per barrel respectively. These conservative figures were arrived at by using "Petroleum Intelligence Weekly" reported average refinery operating cost for all U.S. refineries set at $.65 PB of crude charge for 1982. The number and type of refineries operating in the U.S. is

quite varied with respect to operation costs. Since the Chevron and NPR refineries are simple hydroskimming type refineries, typical of the lowest operating cost refineries in the U.S., the extrapolation of the average U.S. operating cost for all refineries to Alaska's skimming operations is a most conservative application. This "operations" cost figure is for the refinery alone; because, this study does not include distribution operations costs and profits as part of the refinery operations.

This average for all U.S. refineries was multiplied by 1.30 to take into effect the higher Alaska costs. The $.845 figure ($.65 x 1.3) was multiplied by 1.1 to reflect the higher Fairbanks costs. The $.93 PB ($84.5 x 1.1) was then corrected for the fact that approximately three plus barrels of crude must be charged at NPR for every barrel of product manufactured. If the $.93 PB figure is divided by the per cent of each crude barrel in 1982 that is manufactured into refined petroleum products then the $2.88 PB figure for 1982 is obtained.

The same reasoning as above was used to obtain a 1981 operations cost at the refinery; however, a correction for inflation must be made for the period 1982 to 1981. The State of Alaska's inflation factor (6.3% for 1982 from 1981) was used to obtain a comparable 1981 operating cost. When this is done, the 1982 $.845 PB cost element deflates to $.80 PB. Applying the 10 per cent Fairbanks cost adjustment and then dividing this number by the percentage of refined products manufactured from crude, the 1981 "operations" unit cost of $2.96 PB is obtained.

The depreciation cost was determined by using a fifteen year life and straight line amortization.

Insurance and taxes' cost (local/borough but not including State and Federal) were estimated to be at 2 per cent of the refinery cost which was taken from the Borough assessed value of $40.0 million.

Interest was estimated at 11 per cent, however, this interest was only applied to 70 per cent ($28 million) of the plant cost. It is assumed that $12 million is equity investment.

The total of all the North Pole operating costs in 1981 and 1982 amount to $4.56 and $4.38 per barrel of product manufactured. This is subtracted from the gross margin figures(s) of $10.17 and $12.38 PB to yield an income of $5.61 and $8.00 PB of product manufactured. Stating this another way, the refinery produced a profit of $25.4 million and $38.8 million in 1981/1982 respectively. The table below highlights some of these statistics for 1981 and 1982.

DERIVED NORTH POLE REFINERY INCOME STATEMENT

	1981		1982	
	MM$/yr	$PB products	MM$/yr	$PB products
Product Revenue	188.6	41.7	201.9	41.7
Crude Purchases	142.5	31.5	141.9	29.3
Gross Margin	46.1	10.2	60.0	12.4
Operation Costs	20.7	4.6	21.2	4.4
Net Income	25.4	5.6	38.8	8.0
Income(after 54% tax)	11.7	2.6	17.8	4.3
Payout, years	3.2		2.2	
DCF,return %	31		46	

A review of the above table indicates that the NPR refinery improved its profit in 1982 above a very attractive 1981 income base. In effect NPR increased its net income by over 50 per cent in 1982 relative to 1981; also its DCF return on investment by the same percentage. What is worth noting in the above table is that the NPR refinery is paying for itself every two years. Normally, refineries try to attract a return of 15-18% (straight line) and to pay for themselves in 5-7 years. Over the past ten years this desired return level of 15-18% for U.S. refineries has not been achievable --- in fact many refineries have been and are operating in the red (loss).

B. Nikiski Refineries (Tesoro and Chevron)

Tables V-Q-1a/b present the base data on crude costs and product price net backs at the Nikiski refineries for 1981 and 1982 respectively.

The crude costs are shown for ANS, Indonesian, Cook Inlet (West and East side) crudes. The ANS crude costs (using the average in-value price) include TAPS pipeline loss, the TAPS tariff, and the GPM freight from Valdez to Nikiski. The Cook Inlet crudes from the West Side include a GPM freight cost to Nikiski on the East Side. The Indonesian crudes are at the official price plus GPM freight to Nikiski. The asphalt mix (used as an input during the summer by Chevron) price is the summer CTW price reported in Platt's Oilgram for "cutback" asphalt on the West Coast discounted by 30 percent, since asphalt is a difficult product to place in the West Coast market. The alternate product made from the asphalt is high sulfur fuel oil --- a low economic return product in California which is very sensitive to air quality levels. In addition, the asphalt mix is an inter-company transfer from a company refinery in California. For these reasons the asphalt mix was discounted. To bring the asphalt mix to Nikiski, a GPM tariff was added to the discounted West Coast Platt's price on cutback asphalt.

The product net back prices at Nikiski are the Anchorage terminal postings (except for gasoline which is the Anchorage wholesale price) less the Nikiski pipeline charges on the Nikiski to Anchorage movement. The Nikiski Fuel Oil #6, prices which vary with sulfur percentage, are U.S. average prices corrected for General Purpose Marine (GPM) freight from Nikiski to Los Angeles. The Nikiski Bunker C price is a Los Angeles terminal price corrected for GPM from Nikiski to Los Angeles to achieve a net back price at the refinery. The asphalt price from Nikiski was the contractor price for the two years.

C. TESORO NIKISKI REFINERY

Tables V-R-1a/b present revenue and crude costs for the Tesoro Refinery for the 1981-1982 period. These tables indicate that in early 1981 (decontrol of oil took place in January) the margin (difference between revenues and crude costs) increased significantly, and that this margin gain has been retained over the remaining 1981/1982 period. It is interesting to note that while margins have increased, product revenue and crude costs on a per barrel basis have decreased.

Tables V-R-2a/b present this data more specifically on an annual basis: In 1982 Tesoro processed about 5 MBPCD more crude (a 10 % increase over 1981), yet its total crude cost only went up about 2-3 per cent (unit cost decreased) while its total product realization increased about 6-7%. In effect, Tesoro was able to make more petroleum products at minor increased cost in raw material. While its product realization decreased somewhat, this decrease was more than offset by the cheaper cost of raw materials.

The result of this increase in margins (both on a unit basis and annual total) is outlined in Tables V-R-3a/b, Tesoro's Income Statements. The product revenue and crude purchase figures are from Tables R-1 and R-2a/b.

The operational costs were calculated using the same basis and factors as in the North Pole discussion except, (a) the Interior Alaska factor was not applied to Nikiski and (b) Tesoro refinery is somewhat more sophisticated than the Chevron and NPR refineries which are hydroskimming plants. Since the U.S. average refinery cost of $.65 was for all types ofU.S. refinery plants, a 60 per cent increase to the average number was applied to compensate for the cost applicable to the Tesoro refinery; the Tesoro Alaska operational cost therefore became $1.36 PB in 1982 and $1.28 PB in 1981.

Not included in the refinery inputs is neither the natural gas the refinery purchases, nor the refinery's sale of propane. For the natural gas, no data was available on the volume purchased or the price paid. For the propane no data was available on posted price. The refinery cost and refinery revenue on propane sales may or may not cancel each other, but the effect on the directional economics should not be great. A summary of the Tesoro refinery economics is outlined below.

DERIVED TESORO INCOME STATEMENT

	1981		1982	
	MM$/yr	$PB product	MM$/yr	$PB product
Product Revenue	590.3	40.9	631.0	38.9
Crude Purchases	462.7	32.1	474.3	29.2
Gross Margin	127.6	8.8	156.7	9.7
Operating Cost	35.4	2.4	36.0	2.2
Net Income	92.2	6.4	120.7	7.5
Income(after 54% tax)	42.4	2.9	55.5	3.4
Payout, years	2.3		1.8	
DCF Return, %	43		57	

In effect Tesoro increased their margin, by approximately 35 per cent. This is indicated in the above income levels, comparing 1981 with 1982, and resulted in Tesoro improving upon their already attractive 1981 financial results; namely a payout decreasing from 2.3 years to 1.8 years, and a DCF rate of return increasing from 44 to 57 per cent.

D. CHEVRON NIKISKI REFINERY

Tables V-S-1a/b present the product revenue and crude costs for the Chevron refinery at Nikiski. The unit prices for crude oil products are based on the values as shown in V-Q-1a/b and discussed earlier. Chevron's residual oil is priced as a high sulfur fuel oil (greater than one per cent); the value of this material as a Chevron refinery feedstock for cracking was not available. Chevron consequently did not in the analysis receive the $25 PB that Tesoro receives for its low sulfur residual in 1982, but approximately $23 PB because of the high sulfur content.

Chevron also takes its excess refined straight run naphtha (SR) and exports this to its West Coast refineries where it is used in benzene and gasoline manufacture. This product is not identified separately in the revenue figures for lack of price data. Instead, the volume is included in the residual totals; this results in a conservative profit margin because of the high value of SR.

It should be noted that the asphalt and product revenues which are indicated over all twelve months of the year are "notional" inputs, since the asphalt is sold together with the kerosene by-product (from the asphalt mix processed) only over the summer months of the Alaska construction season. The same is true of the other products which Chevron manufactures during the fall, spring and winter when it processes crude oil in the unit. The "notional" basis is on a BPCD basis in the annual summaries, so that it does result in the correct cost figures and revenue amounts over a calender year. This approach was necessary, because Chevron operates in a batch mode: crude or asphalt.

A review of the V-S-1a/b tables indicates that while the product revenue on a unit basis is decreasing over the 1981/1982 period, refinery raw material (crude oil plus asphalt mix) costs have

decreased also. The net effect is that the Chevron margins have improved; going from a negative position in 1981 to above $3 PB in 1982. This is vividly shown in Tables V-S-2a/b. Chevron had a decrease in crude thru-put in 1982 of about 3-4 per cent and, while its product revenue went down 6 per cent, its crude costs went down 10 per cent relative to 1981. This increase in unit margins from $.65 to $3.29 PB of product sold --- an increase of 500 per cent in margin was a salient factor in Chevron's profit turn around in 1982. The Table below presents Chevron's economic statistics for the 1981/1982 period.

DERIVED CHEVRON INCOME STATEMENTS

	1981		1982	
	MM$/yr	product	MM$/yr	product
Product Revenue	154.2	32.0	143.7	30.9
Crude Purchase	151.0	31.3	128.4	27.6
Gross Margins	3.2	.7	15.3	3.3
Operating Costs	4.6	1.0	4.6	1.0
Net Income	(1.4)	(0.3)	10.7	2.3
Income (after 54% tax)	(1.4)	(0.3)	4.9	1.1
Payout, years	neg.		4.6	
DCR Return, %	neg.		21.0	

Chevron operates as part of a large network of refineries. It just recently converted its operation to run ANS crude oil and thru product pricing and crude oil cost improvements their position greatly improved from 1981 to 1982.

E. COMPARISON OF GROSS MARGINS WITH OUTSIDE REFINERS

The "U.S. Refining --- Rotan Mosle Gross Margin Index" published quarterly by Rotan Mosle's (a Wall Street Brokerage House) Oil and Gas Research Division out of Houston Texas provides a basis of comparison between the Alaska refiners and "others". For the first three quarters of 1982, the refinery gross margin for six U.S. refiners

("others") that represent the industry were: $4.17 PB; $5.04 PB; and $6.49 PB, respectively for the first three calender quarters. The 1982 calculated gross margin of NPR was $12.38 PB; the gross margin for Tesoro was $9.65 PB; and the gross margin for Chevron was $3.29 PB.

These numbers, which reflect the 1982 gross markup above crude costs for product prices, clearly indicate that:

NPR gross margin exceeded "others" by a 1.9 to 3.0 factor;
Tesoro gross margin exceeded "other" by a 1.5 to 2.3 factor;
Chevron gross margin did not exceed the index.

CHAPTER SIX

EXECUTIVE SUMMARY

--- The demand for petroleum products in Alaska increased about 6 per cent (4 MBPD) in 1982 over 1981. Chevron maintained their volume level, but, NPR increased their product volumes by 800 BPCD, and Tesoro increased their product volumes by about 4,700 BPCD. While this increase is greater than the year to year volume increase of products sold in Alaska, it indicates that product imports into the State decreased. In effect Alaska is becoming more self sufficient in supplying itself with refined products. (Table III-H).

--- In calculating tanker/barge rates a number of tariffs (dollars per ton) are quoted for movements between two ports, depending on the size vessel used. Since it was difficult to determine the vessels each company used in its actual crude/product movements, a General Purpose Marine (GPM) rate tariff (which is the highest tariff quoted) was used. It is the most conservative basis, since the study then utilizes the highest cost element of ocean transportation in the product price buildup of an equivalent delivered product price. Actually, the oil companies incur lower transportation costs than shown in this study (company owned and larger vessels), and this difference (savings) actually increases the oil companies profit. (Table II-B).

--- The Alaska Railroad (ARR) freight rates have increased 28% (1.6 cents per gallon) for the Anchorage Fairbanks movement over the 1980-1982 period. Nonetheless, when comparing ARR freight rates to comparable rail movements in the Lower 48, the ARR rates are very reasonable. (Table II-C).

--- Refinery investments have been/are extremely profitable in Alaska. The following table indicates the profitability of the three Alaskan refineries for the period 1981/1982; also included are payouts, DCF's,

net income after tax, and original plant investments.

ALASKA IN-STATE REFINERIES RETURN ON INVESTMENT

	North Pole		Tesoro		Chevron	
	1982	1981	1982	1981	1982	1981
Income (AT), MM$	17.8	11.7	55.5	42.4	4.9	-1.4
Payout, years	2.2	3.2	1.8	2.3	2.1	neg
DCF, %	46	31	57	43	21	neg
Investment MM$	40.0	40.0	101.7	101.7	22.3	22.3

It should be noted that the Alaska refineries are paying for themselves in about 2 years, at a time that many refineries around the world are going bankrupt and/or operating in the red. Furthermore the profit levels (16-60 % DCF's) indicate that Alaska's refineries are among the most profitable in the U.S.A. In the last year the profitability of the refineries in Alaska more than doubled from an already very profitable return basis. (Tables V-P, V-R, V-S).

A primary reason for the high profitability of the Alaska refineries is that the pricing basis that they are using for their refined products greatly exceeds the sum of West Coast ex refinery price plus ocean transportation cost plus terminal and handling costs; this in spite of the fact that the Alaskan refineries are using mostly local crude oils which are favorably priced relative to their refinery location. (See Chapter III).

--- Another reason for the high profitability of the Alaska refineries is that the reductions in crude pricings are not being reflected in the Alaska market price of the refined products. (See Chapter IV).

--- Cook Inlet production of crude oil is decreasing and is presently about 66 MBPCD (June 1982). This decrease in Cook Inlet production is important to Tesoro's profitability which is dependent upon low sulfur crude to manufacture low sulfur fuel oil for sale to San Diego Power and Light. (Table II-A-1 & 2).

--- The price of Alaska North Slope (ANS) Royalty crude oil at Pump Station #1 of TAPS is not the same for all in-state refineries. North Pole refinery is paying about 35-40 cents per barrel (varies monthly) more for its Royalty ANS crude than Tesoro at P.S. #1. (Table II-A-4). However delivered costs of ANS crude are less for NPR than for Tesoro and Chevron because of NPR's location on the TAPS.

--- Following decontrol (January 1981) the price of ANS has dropped about $7-8 PB over the next 14 months. Since Mar'82, the ANS crude price has increased about $1.50 PB --- this during a period that domestic crude costs in the lower 48 have been dropping. (Table II-A-4).

--- Tesoro is responsible for over 95 per cent of the gasoline used in the Railbelt. The imports into the Railbelt at Anchorage (less than 5 per cent of total) consist of super unleaded product and other gasoline stocks. Most regular leaded, and unleaded, and premium leaded motor gasoline is manufactured by Tesoro.

--- The price of motor gasoline in Fairbanks at the retail level increased significantly during 1980, a period of increased costs of crude oil. Starting in early 1981 until today, gasoline prices have remained steady in spite of significant decreases in crude costs. The motor gasoline retail market has reacted to cost increases on the upside but not on the downside. This lack of a market reaction to declining costs seems to indicate a "structured" non-competitive retail environment in Fairbanks. (Table IV-M).

--- When comparing Fairbanks' retail motor gasoline prices with Anchorage retail prices, and when considering the freight to move the motor gasoline from Anchorage to Fairbanks on the ARR, the price of motor gasoline in Fairbanks in 1982 is about 17 cents per gallon higher (a premium) than Anchorage retail price plus ARR freight. This premium of 17 cents per gallon has steadily built up over 1982; the premium amounted to only 6 cents per gallon in Sept'81. The justification for such a premium is difficult to identify, since the retail price in Anchorage since Sept'81 to Dec'82 dropped about 12 cents per gallon (Table IV-N-1 thru IV-N-10).

--- The Fairbanks distributor markups have remained constant at about 16 c/g over the last year and a half, and the Anchorage distributor markups relatively constant at 6 c/g. As a comparison, the markup in Seattle has decreased from about 10 c/g to 3 c/g by Nov'82. The margins for distributors in Anchorage reflect this conclusion and have remained constant at about 5 c/g while on the West Coast they have dropped from 7 c/g to 2-3 c/g over the period Sept'81 to Dec'82. The markup in Fairbanks is over 2.5 times that of Anchorage distributors.

--- When comparing retail gasoline prices in Fairbanks and Anchorage with Seattle, San Francisco, and Los Angeles, there is a significant "premium" paid for motor gasoline in Alaska relative to the West Coast. Anchorage in Dec'82 is paying about 8 to 12 cents per gallon higher for regular gasolines at self service stations than at similar service stations on the West Coast; Fairbanks is paying 29-37 cents per gallon more. When the retail prices are corrected for motor gasoline taxes, Fairbanks pays 38-42 cents per gallon more; Anchorage pays 23-27 cents per gallon more.

It is interesting to note that the retail price in self service stations in Fairbanks has remained steady over the 1982 period, whereas in Anchorage, Seattle, San Francisco and Los Angeles the decrease in price during 1982 has been significant. The following table outlines this point. (Table IV-N-1).

RETAIL SS GASOLINE PRICE CHANGE OVER 1982

location	cents per gallon
Fairbanks	0 drop
Anchorage	8 drop
Seattle	15 drop
San Francisco	15 drop
Los Angeles	16 drop

--- When considering regular unleaded and premium motor gasoline (high octane) the pricing and margin trends move along the same patterns as shown for regular gasoline as discussed above. What is different, is the margin levels at the retail, wholesale and distributor levels. The relative comparisons of Fairbanks and Anchorage, however, with Seattle, San Francisco and Los Angeles indicate the same trend, namely that prices in the Lower 48 cities are significantly lower than in Alaska, and that prices in the Lower 48 are reacting positively to competitive forces, whereas in Anchorage they are reacting only somewhat and in Fairbanks they are not reacting at all. (Table IV-N).

--- The CTW posted motor gasoline prices across Alaska indicate that Anchorage (Nikiski) maybe the basis for mogas pricing, because all prices are higher than Nikiski and appear to vary in similar pattern. For example, Ketchikan is 5 c/g higher than Anchorage which is striking because of the proximity of Ketchikan to the West Coast refineries. Obviously, an "Alaska" pricing policy is being followed which has no relationship to the West Coast alternative, except to be higher. (Table IV-N-7)

--- As a general statement it can be stated that the prices of motor gasoline products at the Alaska retail and wholesaler level have remained about constant over a two year period while retail and wholesaler prices elsewhere have dropped. Not surprisedly, crude costs, also, dropped during this period. As a result Alaska refiner/wholesaler margins (hence profits) have increased dramatically; in some instances by 80 per cent.

--- The higher cost of jet fuel at Fairbanks relative to Anchorage has resulted in some air carrriers picking up more of their jet fuel volumes (700 -800 BPD) at the cheaper Anchorage jet fuel supply source.

--- In the period 1980/1982, Fairbanks has gone from a 6 cents per gallon lower price than Anchorage to a 4 cents per gallon higher price. Furthermore this shift (in the pick up of jet fuel) to Anchorage has required NPR to move jet fuel to Anchorage and to pay for the transportation --- Fairbanks to Anchorage; a cost of about 7

cents per gallon. (Table III-F).

--- Jet fuel demand in Alaska is growing at about 8.7 per cent per year; this is the fastest growth of a petroleum product in the State. Most of this demand for jet fuel is in Anchorage --- 85 per cent of the Railbelt's jet fuel demand is in Anchorage. (Table III-[illegible]).

--- A "consortium" has been formed at both Anchorage and Fairbanks airports which negotiates on behalf of the airlines to obtain jet fuel at a most favorable price for the airlines. In order to achieve a lower price at both Anchorage and Fairbanks, the "consortium" is importing (foreign) cheaper supplies of jet fuel into Alaska (starting December 1982). This creates imbalances in the Alaska supply-demand of jet fuel, which in turn puts pressure on the refinery suppliers to either lower their prices of this high profit product (in order to secure the sale and minimize the export of jet fuel out of Alaska), or to cut crude rates at their refinery to counter a surplus production of jet fuel. (general comment)

--- Heating oil prices in Anchorage, which for most of 1981 and the beginning of 1982 were about the same as Fairbanks, have increased above the Fairbanks level in the latter part of 1982. This increase (4 cents per gallon) however must be tempered by the fact that very little heating oil is sold in Anchorage because of cheap natural gas. Also, because of the limited amount of heating oil sold into the Anchorage market, little economy of scale is experienced so costs are higher per unit. This is reflected in the higher unit cost of heating oils in Anchorage, as well as higher dealer margins.

--- When comparing heating oil prices in Alaska (Fairbanks, Anchorage and Ketchikan) relative to West Coast locations, there has been a complete flip-flop during the 1980-1982 period. In early 1980 the Alaska locations had a lower price than West Coast locations of 4 to 8 cents per gallon. Around mid 1980 the price difference disappeared, and today the Alaska locations are experiencing a 7--- 12 cents per gallon higher price. It must be emphasized that most of this price difference <u>exceeds</u> transportation costs from the West Coast to Alaska locations. (Table IV-I-2, Table IV-K-1, Table IV-L-1).

--- In the period 1980-1982, the cost of crude at the North Pole refinery has gone up about 35 per cent; however, the margin on diesel oil manufactured at the refinery has gone up almost twice this amount (about 60 per cent) or, in cents per gallon, from 23 to 38 cents. (Table IV-I-5 and IV-I-3)

--- There is an almost total vacuum in the collection, analysis and assimilation of meaningful sale/cost data on the pricing of petroleum products in Alaska. The only two entities involved in the collection of meaningful pricing data on petroleum products in the State are the Fairbanks North Star Borough Community Research Center and Rural Alaska Community Action Program (RurAlCap) --- they are to be complimented for undertaking this data collection. (General Comment).

--- Because of an almost complete lack of meaningful data on petroleum pricing in Alaska, the Legislature is unable to oversee, and the Administration is unable to achieve, proper implementation of the various Statutes and Regulations in effect which are supposed to guarantee to the Alaskan citizen the maximum benefit of crude oil price. Today's sales price for refined petroleum products, which is higher than material moved from the Lower 48 to Alaska locations, precludes any benefits to Alaskans. (General Comment).

--- The Borough tax payments for the Tesoro and NPR refineries are about the same in spite of the fact that the assessment on the Tesoro refinery is 2.5 times that of NPR, i.e. 100 MM$ to 40 MM$. (Table III-G)

--- The Alaska Public Utilities Commission (APUC) which inherited the duties of the Alaska Pipeline Commission (APC) has not reviewed the intra-state tariffs of Trans-Alaska Pipeline System (TAPS), the Golden Valley Electric Association (GVEA) or the Nikiski Pipeline since the tariffs were first established. The APUC/APC is required to review the tariffs in effect at any given time, and ensure that the APC originally established pipeline tariff(s) methodology is adhered to by the pipeline companys. The APC method would allow an annual declining tariff because of annual reduction in the depreciated value of the

pipeline. (General Comment).

--- The State, through its long term sale of Royalty oil at "in-value" prices, makes possible the profit of the in-state refineries that receive this oil. It can represent directly (as in the case of NPR) or indirectly (as in the case of Tesoro) a major percentage of the refiners crude slate. (General Comment).

--- Existing Royalty oil contracts do not specifically address "benefiting Alaskans" when an in-state refinery utilizes the Royalty oil. It is interesting to note that every in-state purchaser that has applied/purchased Royalty oil has implied or stated directly that his purchase/acquisition of Royalty oil will result in lower petroleum product prices to Alaskans. This is hardly the case when an Alaskan must pay for refined petroleum products manufactured in Alaska, a price equal to West Coast product prices plus transportation/handling costs, p[illegible] a sizeable premium. (General Comment).

--- There is presently no requirement for instate refineries and marketers to report, to government agencies, pricing/operating data so that the Legislature and Administration can insure that;

(1) "Alaskans" are truly benefiting from in-state use of Royalty oil, and

(2) "Alaskans" our not taken advantage of due to our "isolation" from a dynamic market. (General Comment).

GLOSSARY OF TERMS USED

ANS	Alaska North Slope, usually refers to ANS crude oil
API	in degrees, specific gravity measure, American Petroleum Index
ARR	Alaska Railroad
AvGas	Aviation Gasoline, naphtha based fuel
B	barrel, equivalent to 42 U.S. gallons
BPD	barrels per day, a general term, either BPCD or BPSD
BPCD	barrels per calender day, a period average
BPSD	barrels per stream day, actual thru-put
c/g	cents per gallon
CTW	a wholesaler's public posted consumer tank wagon price
DEPD	State Division of Energy and Power Development
DNR	State Department of Natural Resources
DOTPF	State Department of Transportation and Public Facilities
DR	State Department of Revenue
F	Fahrenheit
FY	fiscal year
gate	delivered into the refinery
GPM	general purpose tanker freight rates
M	thousand
MM	million
markup	difference between retail price and wholesaler's CTW price
margin	difference between retail price and wholesale price
mogas	motor gasoline (regular or premium; leaded or unleaded)
PB	per barrel
rack	point of product delivery and title transfer at refinery
SR	straight run, a naphtha stream from distillation
TAPS	Trans Alaska Pipeline System

APPENDIX OF TABLES

TABLE II-A-1

Cook Inlet Crude Oil Production Summary Degree API

June 1982	deg. API	MBPCD
Westside		
Granite Point 1	41.00	3.31
Granite Point 2	41.00	5.92
Granite Point 3	33.00	0.33
Trading Bay Pool	27.00	3.41
Trading Bay Unit	35.00	43.82
Pool API/sum	35.43	56.79
Eastside		
Middle Grand Shoal	36.00	8.66
S.Mid. Grand Shoal	32.00	1.08
Pool API/sum	35.55	9.74
Cook Inlet		
Pool API/total	35.44	66.53

TABLE II-A-2

TESORO COOK INLET STATE ROYALTY CRUDE OIL PURCHASES, 1981-82
west and east side, 26-41 degree gravity

	VOLUME B	COST $	PRICE $/B	BPCD	
JAN81	325753	2123457	6.52	10508	@control $
FEB	288598	9339107	32.36	10307	@decontrol
MAR	313576	9978101	31.82	10115	
APR	291967	9228873	31.61	9732	
MAY	299389	9464400	31.61	9658	
JUN	303922	9423861	31.01	10131	
JUL	303778	9414941	30.99	9799	
AUG	291901	8845250	30.30	9416	
SEPT	280586	8499013	30.29	9353	
OCT	296005	8867207	29.96	9540	
NOV	278295	8337339	29.96	9276	
DEC81	276079	8412075	30.47	8906	
SUM/YR	3549849	101933624	28.71	9726	
JAN82	267279	7919467	29.63	8622	
FEB	235585	6979400	29.63	8414	
MAR	260509	7459420	28.63	8404	
APR	246431	6801670	27.60	8214	
MAY	257638	7134874	27.69	8311	
JUN	246815	6670209	27.03	8227	
JUL	265730	7495356	28.21	8572	
AUG	265730	7459576	28.07	8572	
SEPT	270196	7612179	28.17	9007	
OCT	257587	7231380	28.07	8309	
NOV	259357	7338933	28.30	8645	
DEC82	NA	NA	NA	NA	
SUM/11	2832855	80102464	28.28	8456	

TABLE II-A-3

TRANS ALASKA PIPELINE TARIFF, $/barrel

OWNER	OWNERSHIP	FERC RATE 8/20/77	FERC RATE 1/1/82	FERC RATE 9/1/82	APUC FM ANS TO GVEA P/L	
EXXON	.203378	6.27	5.30	5.30	3.76	(A)
SOHIO	.333363	6.16	6.16	6.16	3.70	(A)
ARCO	.213547	6.04	6.04	6.04	3.63	(A)
UNION	.01356	6.09	6.09	6.09	3.66	(A)
MOBIL	.040845	6.31	6.31	6.31	3.67	(B)
AMERADA HESS	.015	6.44	6.44	6.44	3.78	(B)
BP	.166745	6.35	6.35	5.40	3.54	(B)
PHILLIPS	.013561	6.22	6.22	6.22	3.86	(B)
sum/average	.999999	6.20	6.00	5.84	3.67	

Note (a)APUC Docket P77-8/11
(b)APUC Docket P78-5

LEGEND FOR TABLES II-A-4 a thru c

Decontrol — the volume ratio of that oil sold at market determined price to total.

Control — the volume ratio of that oil sold at the Federal DOE determined price to total.

FIELD — the cost to pay for operating the field and collection system.

control — the Federal DOE determined price of ANS oil at Pump station #1.

decontr — the market determined weighted average price for the oil, as reported by each producer.

Ex-"B" — the weighted average price paid by North Pole Refining under their State contract.

ANS-ave — the weighted (under DOE controls) total price for ANS crude oil with decontrol and control price.

"b" ave — the weighted (under DOE controls) total price paid by NPR to the State of Alaska.

TAPS-NP — the TAPS tariff to GVEA pipeline connection at North Pole.

pl loss — the approximate value of the oil used by TAPS as fuel and assessed to each shipper on a volume basis.

GVEA pl — the GVEA pipeline tariff to transport oil from TAPS to the NPR refinery.

ANS@npr — the total Exhibit-B cost of ANS crude oil delivered to the NPR refinery gate, dollars per barrel.

@np c/g — the total Exhibit-B cost of ANS crude oil delivered to refinery gate, cents per gallon.

TAPSval — the TAPS tariff from Pump Station #1 to tanker at Valdez.

pl loss — as above.

ANS@val — the weighted average price of ANS oil at Valdez, dollars per barrel.

@va c/g — the weighted average price of ANS oil at Valdez, cents per gallon.

TABLE II-A-4a

ANS average prices at PS#1, NPR, and Valdez
$/b

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
Federal controlled price ratio												
Decontrol	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Control	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIELD control	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
decontr	21.13	19.52	18.42	18.78	19.02	20.29	20.24	20.37	20.34	20.33	19.97	NA
Ex-'B'	21.43	20.15	18.98	19.01	19.14	20.87	20.87	21.06	20.82	20.83	20.30	NA
ANS-ave	21.13	19.52	18.42	18.78	19.02	20.29	20.24	20.37	20.34	20.33	19.97	NA
'b' ave	21.43	20.15	18.98	19.01	19.14	20.87	20.87	21.06	20.82	20.83	20.30	NA
TAPS-NP	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
GVEA pl	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
ANS@npr	25.28	24.00	22.83	22.86	22.99	24.72	24.72	24.91	24.67	24.68	24.15	NA
@np c/g	60.19	57.14	54.36	54.43	54.74	58.86	58.86	59.31	58.74	58.76	57.50	NA
TAPSval	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	5.84	5.84	5.84	5.84
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ANS@val	27.23	25.62	24.52	24.88	25.12	26.39	26.34	26.47	26.28	26.27	25.91	NA
@va c/g	64.83	61.00	58.38	59.24	59.81	62.83	62.71	63.02	62.57	62.54	61.69	NA

See Legend for explanation of terms.

TABLE II-A-4b

----------ANS average prices at PS#1, NPR, and Valdez----------
$/b

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
Decontrol	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Control	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIELD	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
ANS-dc	24.92	25.64	25.61	25.13	23.88	23.24	23.17	22.65	22.05	22.14	22.04	21.86
ANS-con	14.99											
Ex-'B'	25.48	26.29	26.22	25.76	24.23	23.74	23.66	23.06	22.27	22.33	22.22	22.00
ANS-ave	20.93	25.64	25.61	25.13	23.88	23.24	23.17	22.65	22.05	22.14	22.04	21.86
'b' ave	21.26	26.29	26.22	25.76	24.23	23.74	23.66	23.06	22.27	22.33	22.22	22.00
TAPS-NP	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
GVEA pl	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
ANS@npr	25.11	30.14	30.07	29.61	28.08	27.59	27.51	26.91	26.12	26.18	.07	25.85
@np c/g	59.79	71.76	71.60	70.50	66.86	6 .69	65.50	64.07	62.19	62.33	2.07	61.55
TAPSval	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ANS@val	27.23	31.94	31.91	31.43	30.18	29.54	29.47	28.9	28.35	28.44	28.34	28.16
@va c/g	64.83	76.05	75.98	74.83	71.86	70.33	70.17	68.93	67.50	67.71	67.48	67.05

TABLE II-A-4c

----------ANS average prices at PS#1, NPR, and Valdez----------
$/b

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC80
Decontrol	0.05	0.09	0.14	0.18	0.23	0.28	0.32	0.37	0.41	0.46	0.51	0.55
Control	0.95	0.91	0.86	0.82	0.77	0.72	0.68	0.63	0.59	0.54	0.49	0.45
FIELD	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	55	0.55	0.55	0.55
ANS-de	24.19	24.71	25.07	24.31	23.09	22.97	21.62	21.55	21.53	20.84	22.25	24.13
ANS-con	13.66	13.75	13.85	13.95	14.03	14.16	14.27	14.38	14.50	14.62	14.77	14.87
Ex-'B'	24.81	25.04	25.40	25.44	25.40	25.21	22.85	22.56	22.60	21.27	22.90	24.54
ANS-ave	14.14	14.76	15.40	15.86	16.11	16.59	16.64	17.02	17.41	17.48	18.55	19.98
'b' ave	14.17	14.79	15.44	16.06	16.65	17.21	17.03	17.39	17.85	17.68	18.88	20.21
TAPS-NP	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
GVEA pl	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
ANS@npr	18.02	18.64	19.29	19.91	20.50	21.06	20.88	21.24	21.70	21.53	22.73	24.06
@np c/g	42.91	44.38	45.94	47.41	48.80	50.14	49.72	50.57	51.67	51.26	54.13	57.28
TAPSval	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
pl loss	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ANS@val	20.44	21.06	21.70	22.16	22.41	22.89	22.94	23.32	23.71	23.78	24.85	26.28
@va c/g	48.44	49.90	51.42	52.51	53.13	54.27	54.37	55.28	56.22	56.38	58.94	62.34

LEGEND FOR TABLES II-B-1a/c AND TABLES II-B-2a/c

general and medium marine freight rates

general — refers to the general purpose marine tanker Worldscale designation.
MEDIUM — refers to the medium marine tanker Worldscale designation.
MOGAS — refers to Motor Gasoline at 6.08 pounds per gallon.
CRUDE OIL — refers to Crude Oil at 7.45 pounds per gallon.
KEROSENE — refers to kerosene derived fuels such as heating oil or Jet A-1, the average weight used is 6.83 pounds per gallon.

Following are port codes, where the "port" is a region defined in Worldscale tariff:

Ana	Anacortes, Washington
Anc	Anchorage, Alaska
Dri	Drift River, Alaska: terminal of the Cook Inlet pipeline
DUT	Dutch Harbor, Alaska
Hou	Houston, Texas
KET	Ketchikan, Alaska
LA	Los Angeles, California
Nik	Nikiski, Alaska
Sang	Sanga Sanga, Indonesia
SF	San Francisco, California
Val	Valdez, Alaska

TABLE II-B-1a

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1982

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
generalTANKER CRUDE OIL TRANSPORTATION, $/BARREL									(312.98 lbs/bbl)		
Val-Ana	1.00	1.03	0.99	0.94	0.94	0.91	0.99	0.96	0.94	0.92	0.96
Val-SF	1.29	1.32	1.27	1.21	1.21	1.17	1.27	1.23	1.21	1.18	1.23
Val-LA	1.47	1.51	1.45	1.38	1.38	1.34	1.45	1.41	1.39	1.35	1.41
Val-Hou	4.75	4.85	4.68	4.49	4.49	4.38	4.63	4.50	4.45	4.34	4.51
Dri-Ana	1.01	1.03	0.99	0.95	0.95	0.92	0.99	0.96	0.95	0.92	0.96
Dri-SF	1.28	1.31	1.26	1.20	1.20	1.17	1.26	1.22	1.21	1.17	1.23
Dri-LA	1.47	1.51	1.45	1.38	1.38	1.34	1.45	1.41	1.38	1.35	1.41
Nik-SF	1.29	1.32	1.27	1.21	1.21	1.18	1.27	1.23	1.21	1.18	1.23
Nik-LA	1.48	1.51	1.45	1.39	1.39	1.35	1.45	1.41	1.39	1.35	1.41
NIK-VAL	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
DRI-NIK	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
SangNik	3.71	3.80	3.65	3.48	3.48	3.39	3.57	3.47	3.42	3.32	3.47
generalTANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON									(255.4 lbs/bbl)		
KET-NIK	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Ket-Ana	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Ket-SF	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	2.11	2.16	2.08	1.98	1.98	1.93	2.08	2.02	1.99	1.93	2.02
Anc-SF	2.62	2.68	2.58	2.46	2.46	2.39	2.58	2.51	2.47	2.40	2.51
Anc-LA	2.99	3.06	2.94	2.81	2.80	2.73	2.94	2.86	2.82	2.74	2.86
DUT-NIK	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
DUT-SEA	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Dut-SF	2.75	2.81	2.70	2.58	2.57	2.51	2.70	2.62	2.58	2.51	2.62
Dut-LA	3.09	3.16	3.04	2.90	2.89	2.82	3.04	2.95	2.91	2.83	2.95
generalTANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON									(287.0 lbs/bbl)		
KET-NIK	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Ket-Ana	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Ket-SF	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
Ket-LA	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
ANC-NIK	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Anc-Ana	2.37	2.43	2.34	2.23	2.22	2.17	2.34	2.27	2.24	2.17	2.27
Anc-SF	2.95	3.02	2.90	2.77	2.76	2.69	2.90	2.82	2.77	2.70	2.82
Anc-LA	3.36	3.44	3.30	3.15	3.15	3.07	3.31	3.21	3.16	3.08	3.21
DUT-NIK	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
DUT-SEA	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
Dut-SF	3.09	3.16	3.03	2.90	2.89	2.82	3.04	2.95	2.90	2.82	2.95
Dut-LA	3.47	3.55	3.41	3.26	3.25	3.17	3.42	3.32	3.27	3.18	3.32

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1981

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC81
generalTANKER CRUDE OIL TRANSPORTATION, $/BARREL									(312.98 lbs/bbl)			
Val-Ana	1.05	1.10	1.08	1.08	1.05	1.03	0.99	0.96	0.95	0.91	0.94	0.91
Val-SF	1.35	1.41	1.39	1.39	1.36	1.32	1.28	1.24	1.22	1.17	1.21	1.18
Val-LA	1.51	1.59	1.56	1.56	1.52	1.49	1.46	1.41	1.39	1.34	1.39	1.34
Val-Hou	4.80	5.01	4.94	4.93	4.83	4.72	4.81	4.68	4.63	4.45	4.61	4.48
Dri-Ana	1.05	1.11	1.09	1.09	1.06	1.04	1.01	0.98	0.97	0.92	0.96	0.93
Dri-SF	1.34	1.41	1.39	1.38	1.35	1.32	1.28	1.24	1.22	1.17	1.22	1.18
Dri-LA	1.51	1.58	1.56	1.55	1.52	1.48	1.47	1.42	1.40	1.34	1.40	1.35
Nik-SF	1.35	1.41	1.39	1.39	1.36	1.32	1.29	1.25	1.23	1.18	1.23	1.19
Nik-LA	1.52	1.59	1.56	1.56	1.53	1.49	1.47	1.43	1.41	1.35	1.40	1.36
NIK-VAL	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
DRI-NIK	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
SangNik	3.97	4.17	4.10	4.09	4.00	3.90	3.78	3.66	3.62	3.46	3.60	3.48
generalTANKER MOGAS TRANSPORTATION RATES,CENTS/GALLON									(255.4 lbs/bbl)			
KET-NIK	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Ket-Ana	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Ket-SF	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
Ket-LA	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
ANC-NIK	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Anc-Ana	2.22	2.33	2.29	2.29	2.24	2.18	2.11	2.05	2.02	1.94	2.01	1.95
Anc-SF	2.75	2.89	2.84	2.84	2.78	2.71	2.62	2.54	2.51	2.40	2.50	2.42
Anc-LA	3.08	3.23	3.18	3.18	3.11	3.03	2.99	2.89	2.86	2.73	2.84	2.75
DUT-NIK	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.87	3.01	2.96	2.96	2.89	2.82	2.75	2.66	2.63	2.52	2.61	2.53
Dut-LA	3.16	3.32	3.27	3.26	3.19	3.11	3.08	2.99	2.95	2.82	2.93	2.84
generalTANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON									(287.0 lbs/bbl)			
KET-NIK	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Ket-Ana	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Ket-SF	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
Ket-LA	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
ANC-NIK	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Anc-Ana	2.50	2.62	2.58	2.57	2.52	2.45	2.38	2.30	2.27	2.18	2.26	2.19
Anc-SF	3.10	3.25	3.20	3.19	3.12	3.04	2.95	2.86	2.82	2.70	2.80	2.71
Anc-LA	3.46	3.63	3.57	3.57	3.49	3.40	3.35	3.25	3.21	3.07	3.19	3.09
DUT-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	3.22	3.38	3.33	3.32	3.25	3.17	3.09	2.99	2.95	2.83	2.94	2.84
Dut-LA	3.55	3.73	3.67	3.67	3.58	3.49	3.46	3.36	3.31	3.17	3.29	3.19

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

TABLE II-B-1c

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1980

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
generalTANKER CRUDE OIL TRANSPORTATION, $/BARREL									(312.98 lbs/bbl)			
Val-Ana	1.09	1.18	1.05	1.04	1.04	1.03	0.97	1.01	0.98	0.97	0.99	1.03
Val-SF	1.35	1.46	1.31	1.29	1.29	1.28	1.22	1.27	1.24	1.23	1.25	1.29
Val-LA	1.56	1.68	1.50	1.48	1.49	1.47	1.41	1.48	1.44	1.42	1.44	1.50
Val-Hou	4.55	4.90	4.41	4.35	4.36	4.32	4.17	4.34	4.24	4.19	4.26	4.41
Dri-Ana	1.09	1.18	1.05	1.04	1.04	1.03	0.98	1.03	1.00	0.99	1.01	1.04
Dri-SF	1.33	1.44	1.29	1.27	1.27	1.26	1.22	1.27	1.24	1.22	1.24	1.29
Dri-LA	1.59	1.71	1.53	1.51	1.52	1.50	1.46	1.52	1.48	1.47	1.49	1.55
Nik-SF	1.34	1.45	1.30	1.28	1.28	1.27	1.23	1.28	1.25	1.24	1.26	1.30
Nik-LA	1.56	1.69	1.51	1.49	1.49	1.48	1.44	1.50	1.46	1.44	1.47	1.52
NIK-VAL	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
DRI-NIK	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
SangNik	3.73	4.03	3.61	3.55	3.56	3.53	3.58	3.73	3.64	3.59	3.66	3.79
generalTANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON									(255.4 lbs/bbl)			
KET-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Ket-Ana	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Ket-SF	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
Ket-LA	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
ANC-NIK	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Anc-Ana	2.28	2.47	2.21	2.17	2.18	2.16	2.05	2.14	2.09	2.06	2.10	2.18
Anc-SF	2.78	3.00	2.69	2.64	2.65	2.63	2.53	2.64	2.57	2.54	2.58	2.68
Anc-LA	3.18	3.43	3.07	3.03	3.04	3.01	2.90	3.03	2.95	2.92	2.97	3.08
DUT-NIK	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.87	3.10	2.78	2.73	2.74	2.72	2.63	2.75	2.68	2.65	2.69	2.79
Dut-LA	3.26	3.52	3.15	3.10	3.11	3.08	3.00	3.13	3.05	3.02	3.07	3.18
generalTANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON									(287.0 lbs/bbl)			
KET-NIK	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Ket-Ana	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ket-SF	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	2.56	2.77	2.48	2.44	2.45	2.43	2.31	2.41	2.35	2.32	2.36	2.45
Anc-SF	3.12	3.37	3.02	2.97	2.98	2.95	2.84	2.96	2.88	2.85	2.90	3.01
Anc-LA	3.57	3.86	3.45	3.40	3.41	3.38	3.26	3.41	3.32	3.28	3.33	3.46
DUT-NIK	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	3.22	3.49	3.12	3.07	3.08	3.05	2.96	3.09	3.01	2.97	3.02	3.14
Dut-LA	3.66	3.95	3.54	3.48	3.50	3.46	3.37	3.52	3.43	3.39	3.45	3.58

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1980

	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
MEDIUM TANKER CRUDE OIL TRANSPORTATION, $/BARREL (312.98 lbs/bbl)												
Val-Ana	0.91	1.08	0.88	0.81	0.81	0.78	0.71	0.71	0.73	0.74	0.76	0.82
Val-SF	1.12	1.34	1.09	1.01	1.00	0.97	0.90	0.90	0.92	0.94	0.95	1.03
Val-LA	1.30	1.54	1.25	1.16	1.15	1.12	1.04	1.04	1.07	1.08	1.10	1.19
Val-Hou	3.84	4.51	3.71	3.47	3.44	3.35	3.15	3.15	3.22	3.26	3.32	3.56
Dri-Ana	0.91	1.08	0.88	0.81	0.81	0.78	0.73	0.73	0.74	0.75	0.77	0.83
Dri-SF	1.11	1.32	1.07	0.99	0.98	0.96	0.90	0.90	0.92	0.93	0.95	1.03
Dri-LA	1.32	1.57	1.28	1.18	1.17	1.14	1.08	1.08	1.10	1.12	1.14	1.23
Nik-SF	1.12	1.33	1.08	1.00	0.99	0.97	0.91	0.91	0.93	0.94	0.96	1.04
Nik-LA	1.30	1.55	1.26	1.17	1.16	1.13	1.06	1.06	1.09	1.10	1.12	1.21
NIK-VAL	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
DRI-NIK	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
SangNik	3.11	3.69	3.00	2.79	2.76	2.68	2.64	2.64	2.71	2.74	2.79	3.02
MEDIUM TANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON (255.4 lbs/bbl)												
KET-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Ket-Ana	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Ket-SF	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
Ket-LA	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
ANC-NIK	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Anc-Ana	1.90	2.26	1.84	1.71	1.69	1.64	1.52	1.52	1.55	1.57	1.60	1.73
Anc-SF	2.31	2.75	2.23	2.07	2.05	2.00	1.86	1.86	1.91	1.93	1.97	2.13
Anc-LA	2.64	3.14	2.55	2.37	2.35	2.29	2.14	2.14	2.20	2.23	2.27	2.45
DUT-NIK	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.39	2.84	2.31	2.14	2.12	2.07	1.94	1.94	1.99	2.02	2.06	2.22
Dut-LA	2.71	3.22	2.62	2.43	2.41	2.34	2.22	2.22	2.27	2.30	2.35	2.53
MEDIUM TANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON (287.0 lbs/bbl)												
KET-NIK	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Ket-Ana	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ket-SF	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	2.14	2.54	2.06	1.92	1.90	1.85	1.70	1.70	1.75	1.77	1.80	1.95
Anc-SF	2.60	3.09	2.51	2.33	2.31	2.25	2.09	2.09	2.15	2.17	2.22	2.39
Anc-LA	2.97	3.53	2.87	2.67	2.64	2.57	2.41	2.41	2.47	2.50	2.55	2.75
DUT-NIK	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.69	3.19	2.59	2.41	2.39	2.32	2.18	2.18	2.24	2.27	2.31	2.50
Dut-LA	3.05	3.62	2.94	2.73	2.71	2.63	2.49	2.49	2.55	2.58	2.63	2.85

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1981

	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC81
MEDIUM TANKER CRUDE OIL TRANSPORTATION, $/BARREL									(312.98 lbs/bbl)			
Val-Ana	0.90	0.91	0.81	0.80	0.76	0.72	0.77	0.71	0.67	0.69	0.68	0.69
Val-SF	1.16	1.17	1.05	1.03	0.98	0.93	0.99	0.92	0.86	0.89	0.87	0.89
Val-LA	1.30	1.31	1.18	1.16	1.09	1.05	1.14	1.05	0.98	1.01	1.00	1.02
Val-Hou	4.21	4.23	3.85	3.79	3.62	3.48	3.87	3.60	3.42	3.51	3.45	3.51
Dri-Ana	0.91	0.92	0.82	0.81	0.76	0.73	0.79	0.73	0.68	0.70	0.69	0.70
Dri-SF	1.16	1.16	1.04	1.03	0.97	0.93	1.00	0.92	0.86	0.89	0.88	0.89
Dri-LA	1.30	1.31	1.17	1.15	1.09	1.04	1.14	1.05	0.99	1.02	1.00	1.02
Nik-SF	1.16	1.17	1.05	1.03	0.98	0.93	1.01	0.93	0.87	0.90	0.88	0.90
Nik-LA	1.31	1.32	1.18	1.16	1.10	1.05	1.15	1.06	1.00	1.03	1.01	1.03
NIK-VAL	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
DRI-NIK	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
SangNik	3.42	3.45	3.09	3.04	2.87	2.75	2.95	2.72	2.55	2.63	2.58	2.63
MEDIUM TANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON									(255.4 lbs/bbl)			
KET-NIK	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Ket-Ana	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Ket-SF	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
Ket-LA	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
ANC-NIK	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Anc-Ana	1.92	1.93	1.73	1.70	1.61	1.54	1.65	1.52	1.43	1.47	1.45	1.47
Anc-SF	2.37	2.39	2.15	2.11	1.99	1.91	2.04	1.88	1.77	1.82	1.79	1.83
Anc-LA	2.66	2.67	2.40	2.36	2.23	2.13	2.33	2.14	2.02	2.08	2.04	2.08
DUT-NIK	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.47	2.49	2.23	2.19	2.08	1.98	2.14	1.97	1.85	1.91	1.88	1.91
Dut-LA	2.73	2.75	2.46	2.42	2.29	2.19	2.40	2.21	2.08	2.14	2.11	2.15
MEDIUM TANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON									(287.0 lbs/bbl)			
KET-NIK	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Ket-Ana	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Ket-SF	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
Ket-LA	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
ANC-NIK	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Anc-Ana	2.15	2.17	1.94	1.91	1.81	1.73	1.85	1.71	1.60	1.65	1.62	1.66
Anc-SF	2.67	2.69	2.41	2.37	2.24	2.14	2.30	2.12	1.99	2.05	2.01	2.05
Anc-LA	2.98	3.00	2.70	2.65	2.51	2.39	2.62	2.41	2.27	2.33	2.29	2.34
DUT-NIK	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
DUT-SEA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dut-SF	2.78	2.80	2.51	2.47	2.33	2.23	2.41	2.22	2.08	2.15	2.11	2.15
Dut-LA	3.06	3.09	2.77	2.72	2.57	2.46	2.70	2.49	2.34	2.41	2.37	2.41

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

TABLE II-B-2c
ALASKA MARINE PETROLEUM FREIGHT RATES FOR 1982

	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
MEDIUM TANKER CRUDE OIL TRANSPORTATION, $/BARREL (312.98 lbs/bbl)											
Val-Ana	0.76	0.77	0.72	0.73	0.70	0.69	0.72	0.70	0.70	0.71	0.71
Val-SF	0.98	0.99	0.93	0.93	0.90	0.89	0.93	0.90	0.90	0.91	0.92
Val-LA	1.12	1.13	1.07	1.07	1.03	1.02	1.07	1.03	1.02	1.04	1.05
Val-Hou	3.73	3.76	3.58	3.58	3.46	3.45	3.54	3.43	3.42	3.47	3.49
Dri-Ana	0.77	0.77	0.73	0.73	0.70	0.70	0.73	0.70	0.70	0.71	0.72
Dri-SF	0.97	0.98	0.93	0.93	0.89	0.89	0.93	0.89	0.89	0.91	0.91
Dri-LA	1.12	1.13	1.06	1.07	1.02	1.02	1.06	1.03	1.02	1.04	1.05
Nik-SF	0.98	0.99	0.93	0.93	0.90	0.89	0.93	0.90	0.90	0.91	0.92
Nik-LA	1.12	1.13	1.07	1.07	1.03	1.03	1.07	1.03	1.03	1.05	1.05
NIK-VAL	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
DRI-NIK	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
SangNik	2.82	2.84	2.69	2.69	2.58	2.57	2.63	2.53	2.53	2.57	2.58
MEDIUM TANKER MOGAS TRANSPORTATION RATES, CENTS/GALLON (255.4 lbs/bbl)											
KET-NIK	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Ket-Ana	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Ket-SF	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Ket-LA	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
ANC-NIK	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Anc-Ana	1.60	1.62	1.53	1.53	1.47	1.47	1.53	1.47	1.47	1.49	1.50
Anc-SF	1.99	2.01	1.90	1.90	1.83	1.82	1.90	1.83	1.82	1.85	1.87
Anc-LA	2.27	2.29	2.16	2.17	2.08	2.07	2.16	2.09	2.08	2.12	2.13
DUT-NIK	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
DUT-SEA	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Dut-SF	2.08	2.10	1.99	1.99	1.91	1.90	1.99	1.92	1.91	1.94	1.95
Dut-LA	2.35	2.37	2.24	2.24	2.15	2.14	2.24	2.16	2.15	2.18	2.20
MEDIUM TANKER KEROSENE TRANSPORTATION RATES, CENTS/GALLON (287.0 lbs/bbl)											
KET-NIK	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Ket-Ana	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Ket-SF	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
Ket-LA	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
ANC-NIK	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Anc-Ana	1.80	1.82	1.72	1.72	1.65	1.65	1.72	1.66	1.65	1.68	1.69
Anc-SF	2.24	2.26	2.13	2.14	2.05	2.04	2.13	2.06	2.05	2.08	2.10
Anc-LA	2.55	2.57	2.43	2.44	2.34	2.33	2.43	2.34	2.34	2.38	2.39
DUT-NIK	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
DUT-SEA	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17
Dut-SF	2.34	2.36	2.23	2.24	2.15	2.14	2.23	2.15	2.15	2.18	2.20
Dut-LA	2.63	2.66	2.51	2.52	2.42	2.41	2.51	2.42	2.41	2.45	2.47

derived from: American Tanker Rate Schedule; Worldwide Tanker Nominal Freight Scale

TABLE II-C-1

ALASKA RAILROAD PETROLEUM TARIFF SUMMARY, cents/100 lbs.

Effective Thru December 31, 1982

TARIFF/SUPPLEMENT			8-O	8-P	8-P/1	8-P/2	8-P/3	8-Q	8-q/1	8-R	8-S	8-T
EFFECTIVE MONTH			NOV	APR	MAY	JAN	MAR	MAY	JUN	AUG	DEC	JUL
DAY			02	07	21	01	03	04	25	09	09	06
YEAR		Volume	1979	1980	1980	1981	1981	1981	1981	1981	1981	1982
FAI fm NPR	#440	tankcar	31	33	33	35	36	36	38	38	38	40
	#440	20M+min	25	27	27	28	29	29	30	30	30	32
FAI fm ANC	#635	tankcar	147	157	157	165	170	170	179	179	179	188
or	#635	20M+min	127	136	136	143	147	147	154	154	154	162
ANC fm NPR	#635	7.5MMyr	NA	NA	NA	NA	NA	NA	NA	NA	NA	142
or	#635	10 MMyr	NA	NA	NA	NA	NA	NA	NA	NA	NA	134
Nenana fm ANC	#635	15 MMyr	97	104	104	109	112	112	118	118	118	124
	#635	20 MMyr	89	96	96	101	104	104	109	109	109	114
	#635	30 MMyr	NA	NA	NA	NA	NA	NA	NA	NA	96	101
Nenana fm NPR	#440	tankcar	57	61	61	64	66	66	69	69	69	72
	#440	20M+min	51	55	55	58	60	60	63	63	63	66
Palmer fm ANC	#555	tankcar	34	36	36	38	39	39	41	41	41	43
Palmer fm NPR	#440	tankcar	NA	NA	146	153	158	158	166	166	166	174
	#440	20M+min	NA	NA	126	132	136	136	143	143	143	150

Volume defines the size of shipment (a tankcar or minimum of 20,000 gallons) or the amount of petroleum products shipped annually, e.g. 7.5 million gallons (7.5MMyr).

TABLE II-C-2a
MOTOR GASOLINE
ARR TARIFF SUMMARY TARIFF TABLE LEGEND

origin/destination	item#	size	LEGEND
FAI fm NPR	#440	tankcar	col.1
	#440	20M+min	col.2
FAI fm ANC	#635	tankcar	col.3
or	#635	20M+min	col.4
ANC fm NPR	#635	7.5MMyr	col.5
or	#635	10 MMyr	col.6
Nenana fm ANC	#635	15 MMyr	col.7
	#635	20 MMyr	col.8
	#635	30 MMyr	col.9
Nenana fm NPR	#440	tankcar	col.10
	#440	20M+min	col.11
Palmer fm ANC	#555	tankcar	col.12
Palmer fm NPR	#440	tankcar	col.13
	#440	20M+min	col.14

MOGAS	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
col.1	1.93	1.93	1.93	2.02	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
col.2	1.55	1.55	1.55	1.65	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68
col.3	9.13	9.13	9.13	9.63	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75
col.4	7.89	7.89	7.89	8.33	8.45	8.45	8.45	8.45	8.45	8.45	8.45	8.45
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	6.04	6.04	6.04	6.37	6.46	6.46	6.46	6.46	6.46	6.46	6.46	6.46
col.8	5.53	5.53	5.53	5.87	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.10	3.54	3.54	3.54	3.74	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79
col.11	3.17	3.17	3.17	3.37	3.42	3.42	3.42	3.42	3.42	3.42	3.42	3.42
col.12	2.11	2.11	2.11	2.21	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
col.13	NA	NA	NA	NA	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07
col.14	NA	NA	NA	NA	7.82	7.82	7.82	7.82	7.82	7.82	7.82	7.82

TABLE II-C-2b

MOGAS	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
col.1	2.17	2.17	2.23	2.24	2.24	2.26	2.36	2.36	2.36	2.36	2.36	2.36
col.2	1.74	1.74	1.80	1.80	1.80	1.81	1.86	1.86	1.86	1.86	1.86	1.86
col.3	10.25	10.25	10.54	10.56	10.56	10.67	11.12	11.12	11.12	11.12	11.12	11.12
col.4	8.88	8.88	9.11	9.13	9.13	9.22	9.56	9.56	9.56	9.56	9.56	9.56
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	6.77	6.77	6.94	6.96	6.96	7.03	7.33	7.33	7.33	7.33	7.33	7.33
col.8	6.27	6.27	6.45	6.46	6.46	6.52	6.77	6.77	6.77	6.77	6.77	6.77
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.96
col.10	3.97	3.97	4.09	4.10	4.10	4.14	4.28	4.28	4.28	4.28	4.28	4.28
col.11	3.60	3.60	3.72	3.73	3.73	3.76	3.91	3.91	3.91	3.91	3.91	3.91
col.12	2.36	2.36	2.42	2.42	2.42	2.45	2.55	2.55	2.55	2.55	2.55	2.55
col.13	9.50	9.50	9.79	9.81	9.81	9.91	10.31	10.31	10.31	10.31	10.31	10.31
col.14	8.20	8.20	8.43	8.45	8.45	8.53	8.88	8.88	8.88	8.88	8.88	8.88

MOGAS	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
col.1	2.36	2.36	2.36	2.36	2.36	2.36	2.46	2.48	2.48	2.48	2.48	NA
col.2	1.86	1.86	1.86	1.86	1.86	1.86	1.97	1.99	1.99	1.99	1.99	NA
col.3	11.12	11.12	11.12	11.12	11.12	11.12	11.58	11.67	11.67	11.67	11.67	NA
col.4	9.56	9.56	9.56	9.56	9.56	9.56	9.98	10.06	10.06	10.06	10.06	NA
col.5	NA	NA	NA	NA	NA	NA	NA	8.82	8.82	8.82	8.82	NA
col.6	NA	NA	NA	NA	NA	NA	NA	8.32	8.32	8.32	8.32	NA
col.7	7.33	7.33	7.33	7.33	7.33	7.33	7.64	7.70	7.70	7.70	7.70	NA
col.8	6.77	6.77	6.77	6.77	6.77	6.77	7.03	7.08	7.08	7.08	7.08	NA
col.9	5.96	5.96	5.96	5.96	5.96	5.96	6.22	6.27	6.27	6.27	6.27	NA
col.10	4.28	4.28	4.28	4.28	4.28	4.28	4.44	4.47	4.47	4.47	4.47	NA
col.11	3.91	3.91	3.91	3.91	3.91	3.91	4.07	4.10	4.10	4.10	4.10	NA
col.12	2.55	2.55	2.55	2.55	2.55	2.55	2.65	2.67	2.67	2.67	2.67	NA
col.13	10.31	10.31	10.31	10.31	10.31	10.31	10.73	10.81	10.81	10.81	10.81	NA
col.14	8.88	8.88	8.88	8.88	8.88	8.88	9.24	9.32	9.32	9.32	9.32	NA

TABLE II-C-3a

ARR TARIFF SUMMARY TARIFF TABLE LEGEND HEATING OIL AND DIESEL

origin/destination	item#	size	LEGEND
FAI fm NPR	#440	tankcar	col.1
	#440	20M+min	col.2
FAI fm ANC	#635	tankcar	col.3
or	#635	20M+min	col.4
ANC fm NPR	#635	7.5MMyr	col.5
or	#635	10 MMyr	col.6
Nenana fm ANC	#635	15 MMyr	col.7
	#635	20 MMyr	col.8
	#635	30 MMyr	col.9
Nenana fm NPR	#440	tankcar	col.10
	#440	20M+min	col.11
Palmer fm ANC	#555	tankcar	col.12
Palmer fm NPR	#440	tankcar	col.13
	#440	20M+min	col.14

HO/DSL	JAN80	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC80
col.1	2.15	2.15	2.15	2.26	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29
col.2	1.73	1.73	1.73	1.84	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87
col.3	10.19	10.19	10.19	10.74	10.88	10.88	10.88	10.88	10.88	10.88	10.88	10.88
col.4	8.80	8.80	8.80	9.30	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	6.74	6.74	6.74	7.11	7.21	7.21	7.21	7.21	7.21	7.21	7.21	7.21
col.8	6.17	6.17	6.17	6.56	6.65	6.65	6.65	6.65	6.65	6.65	6.65	6.65
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.10	3.95	3.95	3.95	4.17	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.23
col.11	3.53	3.53	3.53	3.76	3.81	3.81	3.81	3.81	3.81	3.81	3.81	3.81
col.12	2.36	2.36	2.36	2.47	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
col.13	NA	NA	NA	NA	10.12	10.12	10.12	10.12	10.12	10.12	10.12	10.12
col.14	NA	NA	NA	NA	8.73	8.73	8.73	8.73	8.73	8.73	8.73	8.73

TABLE II-C-3b

HO/DSL	JAN81	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC81
col.1	2.43	2.43	2.49	2.50	2.50	2.52	2.63	2.63	2.63	2.63	2.63	2.63
col.2	1.94	1.94	2.01	2.01	2.01	2.02	2.08	2.08	2.08	2.08	2.08	2.08
col.3	11.44	11.44	11.76	11.78	11.78	11.91	12.41	12.41	12.41	12.41	12.41	12.41
col.4	9.91	9.91	10.17	10.19	10.19	10.29	10.67	10.67	10.67	10.67	10.67	10.67
col.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
col.7	7.55	7.55	7.75	7.76	7.76	7.85	8.18	8.18	8.18	8.18	8.18	8.18
col.8	7.00	7.00	7.19	7.21	7.21	7.28	7.55	7.55	7.55	7.55	7.55	7.55
col.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.65
col.10	4.44	4.44	4.57	4.57	4.57	4.62	4.78	4.78	4.78	4.78	4.78	4.78
col.11	4.02	4.02	4.15	4.16	4.16	4.20	4.37	4.37	4.37	4.37	4.37	4.37
col.12	2.63	2.63	2.70	2.70	2.70	2.73	2.84	2.84	2.84	2.84	2.84	2.84
col.13	10.60	10.60	10.93	10.95	10.95	11.06	11.51	11.51	11.51	11.51	11.51	11.51
col.14	9.15	9.15	9.41	9.43	9.43	9.52	9.91	9.91	9.91	9.91	9.91	9.91

HO/DSL	JAN82	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC82
col.1	2.63	2.63	2.63	2.63	2.63	2.63	2.75	2.77	2.77	2.77	2.77	NA
col.2	2.08	2.08	2.08	2.08	2.08	2.08	2.20	2.22	2.22	2.22	2.22	NA
col.3	12.41	12.41	12.41	12.41	12.41	12.41	12.93	13.03	13.03	13.03	13.03	NA
col.4	10.67	10.67	10.67	10.67	10.67	10.67	11.14	11.23	11.23	11.23	11.23	NA
col.5	NA	NA	NA	NA	NA	NA	NA	9.84	9.84	9.84	9.84	NA
col.6	NA	NA	NA	NA	NA	NA	NA	9.29	9.29	9.29	9.29	NA
col.7	8.18	8.18	8.18	8.18	8.18	8.18	8.5	8.59	8.59	8.59	8.59	NA
col.8	7.55	7.55	7.55	7.55	7.55	7.55	7.85	7.90	7.90	7.90	7.90	NA
col.9	6.65	6.65	6.65	6.65	6.65	6.65	6.94	7.00	7.00	7.00	7.00	NA
col.10	4.78	4.78	4.78	4.78	4.78	4.78	4.96	4.99	4.99	4.99	4.99	NA
col.11	4.37	4.37	4.37	4.37	4.37	4.37	4.54	4.57	4.57	4.57	4.57	NA
col.12	2.84	2.84	2.84	2.84	2.84	2.84	2.96	2.98	2.98	2.98	2.98	NA
col.13	11.51	11.51	11.51	11.51	11.51	11.51	11.97	12.06	12.06	12.06	12.06	NA
col.14	9.91	9.91	9.91	9.91	9.91	9.91	10.32	10.40	10.40	10.40	10.40	NA

LEGEND FOR TABLE III-D-1 AND TABLE III-D-2

Department of Revenue Motor Fuel Summary

This information is required under AS.43.40.010-100.

Taxed	Motor Fuels that are taxed by State.
Exempt	Motor Fuels that are exempt from State tax.
Av-Jet	Jet Fuels: JP-4, JP-5, Jet A-1, Jet B
av-gas	Aviation gasolines: 100/130, 80/87
hi-dsl	Diesel fuel used on highways
hi-gas	Motor gasoline used on highways
hi-oth	Either gasoline or diesel used on highways
mr-dsl	Marine diesel used by marine craft
mr-gas	Motor gasoline used by marine craft
mr-oth	Either gasoline or diesel used by marine craft
av-bond	Jet fuel that is foreign manufactured
unhidsl	Diesel that not used on highways
unhigas	Motor gasoline that is not used on highways

TABLE III-D-1

DEPT. OF REVENUE MOTOR FUEL REPORT SUMMARY, bpcd

	taxed							
	av-jet	av-gas	hi-dsl	hi-gas	hi-oth	mr-dsl	mr-gas	mr-oth
jan80	6377	402	3925	9985	8548	2051	59	0
feb	8850	515	3885	9234	7474	2589	50	3
mar	9752	685	3485	9651	6833	2985	88	8
apr	6141	825	4122	9955	8868	3779	226	3
may	9714	1022	3812	11276	6668	4051	456	3
jun	10280	1490	3881	11601	6862	5048	1029	21
jul	10953	2383	4405	13174	8701	5528	1570	16
aug	9578	1776	4061	12786	7104	5813	1112	4
sept	8206	1742	5728	12047	7050	4704	809	3
oct	9346	851	3639	10545	9293	6396	313	2
nov	4806	572	4698	10097	6420	3815	122	1
dec80	8341	476	4962	11596	7380	1843	51	1
sum	8540	1064	4215	11006	7604	4055	492	5
%	13.26	1.65	6.55	17.10	11.81	6.30	0.76	0.01
jan81	6257	481	6162	8889	8764	2290	92	1
feb	6952	579	6511	10240	8133	2295	42	0
mar	11799	715	6941	9813	7597	3299	89	0
apr	7457	1147	7999	11034	7387	4569	178	0
may	8664	1164	5912	11399	7402	3758	430	0
jun	8634	1967	4806	13434	4741	5750	1345	0
jul	12364	2452	13837	13530	1	7038	1428	0
aug	9167	1791	12414	13434	1	6001	963	0
sept	9445	1644	13374	13041	1	6134	848	0
oct	14642	1026	12168	11502	1	4700	206	0
nov	14211	730	15072	11201	3	4248	143	0
dec81	9534	499	14712	11269	1	2347	94	0
sum	9952	1186	10017	11570	3640	4377	490	0
%	15.08	1.80	15.18	17.53	5.52	6.63	0.74	0.00
jan82	18232	410	13426	10757	2	2152	65	0
feb	31211	426	14314	10800	2	2092	43	0
mar	22358	689	13099	11875	1	3368	88	0
apr	21538	749	15603	11944	1	4037	159	0
may	19229	1037	14911	12411	1	4852	447	0
jun	21749	1777	14941	15158	1	5814	1262	0
jul	22441	2149	15303	15652	0	6744	1328	0
aug	25164	1891	12967	14756	0	7598	1151	0
sept	23581	1349	17173	14540	0	6722	795	0
oct	NA	NA	NA	NA	NA	NA	NA	NA

TABLE III-D-2

DEPT. OF REVENUE MOTOR FUEL REPORT SUMMARY,. bpcd
continued, page two of two

	exempt								
	av-jet	av-gas	av-bond	hi-dsl	hi-gas	unhidsl	mr-dsl	mr-gas	unhigas
jan80	15845	8	3586	1488	722	7775	376	0	0
feb	19117	12	2722	1453	312	5755	354	3	0
mar	15339	22	3205	1068	264	5598	313	8	0
apr	15927	10	3940	1552	891	5113	342	3	0
may	9868	37	3424	4074	359	4919	301	3	0
jun	10331	95	4140	1799	1015	4426	368	4	0
jul	7383	55	8880	2009	512	6631	413	11	0
aug	13718	53	9965	1713	382	5933	406	11	0
sept	12600	42	9247	1414	337	6802	304	10	0
oct	11418	35	8866	872	955	6674	413	8	0
nov	11129	40	8236	493	290	7672	285	3	0
dec80	6772	24	7925	708	328	8346	309	4	0
sum	12417	36	6195	1557	531	6310	349	6	0
%	19.29	0.06	9.62	2.42	0.82	9.80	0.54	0.01	0.00
jan81	9246	12	6091	884	390	6630	278	2	0
feb	4463	22	6943	409	428	5931	279	4	0
mar	13929	35	6620	619	328	4717	296	7	0
apr	11072	25	6562	1156	409	4902	366	3	0
may	8928	42	6835	2590	851	5150	274	5	0
jun	10332	58	6867	3340	1021	7153	345	7	0
jul	11917	52	7171	1146	553	9564	492	7	0
aug	11694	62	6778	2472	870	3971	387	6	0
sept	11257	56	6404	2426	437	7349	349	16	0
oct	8318	30	7314	743	701	5051	300	5	0
nov	9844	28	3288	1030	377	7832	305	3	0
dec81	8018	27	3512	1013	727	5590	358	2	0
sum	9955	37	6197	1489	593	6148	336	6	0
%	15.09	0.06	9.39	2.26	0.90	9.32	0.51	0.01	0.00
jan82	3867	19	1325	1077	762	7444	43	4	0
feb	3549	32	539	1127	368	6782	23	0	0
mar	9402	28	0	686	341	7544	144	0	0
apr	7563	61	281	1877	333	6582	310	0	0
may	6341	23	208	1649	895	10175	179	0	0
jun	2380	63	236	1273	406	17402	255	0	0
jul	6429	68	236	3557	777	15925	180	0	478
aug	7386	52	0	3690	495	8826	165	1	427
sept	6780	46	0	2387	381	9225	278	14	490
oct	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE III-D-3

DEPARTMENT OF REVENUE MOTOR FUEL REPORT SUMMARY
barrels per calender day

	AV-JET	AV-GAS	MOGAS	DSL/HO	MOTOR TOTAL
jan80	25808	410	10767	24164	61148
feb	30689	527	9599	21513	62328
mar	28296	707	10011	20289	59303
apr	26008	836	11075	23779	61698
may	23006	1059	12094	23828	59987
jun	24752	1585	13650	22406	62392
jul	27217	2439	15266	27703	72624
aug	33261	1828	14292	25035	74416
sept	30053	1784	13203	26006	71046
oct	29631	886	11822	27288	69626
nov	24171	612	10512	23385	58681
dec80	23038	500	11979	23549	59067
sum	27152	1100	12035	24095	64381

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan81	21594	493	9373	25009	56469
feb	18359	600	10714	23558	53231
mar	32347	750	10237	23469	66803
apr	25092	1172	11623	26379	64266
may	24427	1207	12685	25086	63405
jun	25833	2025	15807	26134	69799
jul	31451	2504	15518	32078	81551
aug	27640	1854	15272	25247	70013
sept	27106	1700	14342	29633	72781
oct	30275	1056	12415	22964	66709
nov	27343	758	11724	28490	68315
dec81	21064	526	12092	25036	58717
sum	26104	1223	12658	26094	66079

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan82	23424	428	11588	24144	59585
feb	35299	458	11212	24340	71310
mar	31760	718	12304	24842	69624
apr	29382	810	12437	28408	71038
may	25778	1059	13754	31767	72357
jun	24365	1840	16827	39685	82717
jul	29106	2217	18235	41709	91267
aug	32550	1943	16831	33247	84571
sept	30361	1395	16221	35785	83761
oct	NA	NA	NA	NA	NA
nov	NA	NA	NA	NA	NA
dec82	NA	NA	NA	NA	NA

TABLE III-D-4

DEPARTMENT OF REVENUE MOTOR FUEL REPORT
cummulative bpcd by month

	AV-JET	AV-GAS	MOGAS	DSL/HO	MOTOR TOTAL
jan80	25808	410	10767	24164	61148
feb	28167	467	10202	22883	61719
mar	28211	548	10137	21999	60896
apr	27665	620	10370	22440	61095
may	26715	709	10721	22723	60869
jun	26391	854	11204	22671	61120
jul	26511	1084	11795	23403	62794
aug	27369	1179	12112	23611	64271
sept	27663	1245	12232	23873	65012
oct	27863	1209	12190	24220	65481
nov	27532	1155	12040	24145	64872
dec80	27152	1100	12035	24095	64381

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan81	21594	493	9373	25009	56469
feb	20059	544	10009	24320	54932
mar	24292	615	10088	24027	59021
apr	24492	754	10471	24615	60332
may	24478	847	10926	24712	60963
jun	24703	1043	11735	24947	62428
jul	25690	1256	12288	25990	65224
aug	25938	1332	12669	25895	65835
sept	26067	1373	12853	26306	66598
oct	26496	1340	12808	25965	66609
nov	26572	1288	12711	26192	66763
dec81	26104	1223	12658	26094	66079

	AV-JET	AV-GAS	MOGAS	DSL/HO	TOTAL
jan82	23424	428	11588	24144	59585
feb	29060	443	11409	24237	65149
mar	29990	537	11717	24446	66690
apr	29338	606	11897	25436	67777
may	29004	699	12278	26736	68717
jun	28236	888	13032	28882	71038
jul	28363	1082	13793	30758	73996
aug	28897	1192	14181	31075	75345
sept	29058	1214	14405	31593	76270
oct	NA	NA	NA	NA	NA
nov	NA	NA	NA	NA	NA
dec82	NA	NA	NA	NA	NA

LEGEND
TABLES III-E-1 AND III-E-2

These refiner filings are required under Federal DOE reporting statutes.

110 PROPANE A hydrocarbon with a chemical composition of predominantly, C_3H_8.

200 MOGAS Includes all of the various grades of refined naphtha which by their composition are suitable for use as carburants in internal combustion engines.

310 KERO Means a relatively low freezing point distillate of the kerosene type and includes all kerosene products with an average gravity of 40.7 API and 10 percent to 90 percent distillation temperatures of 390 degrees F to 470 degrees F covered by ASTM D1655 specifications, and excluding JP-5 and other fuels meeting military specifications.

320 #2 HO Is No. 2 heating oil grade No. 2 as defined in ASTM D-396-71.

330 #2 DSL Is diesel fuel grade No. 2 as defined in ASTM D-975-71.

340 M-DIST Are Nos. 1 and 2 heating oils, Nos. 1-D and 2-D diesel fuels, kerosene, and aviation fuels not reported elsewhere.

410 Av-GAS includes all of the various grades of aviation gasoline as defined in ASTM D-910-70.

420 Jet A is a kerosene-type aviation fuel used in jet engines.

430 Jet B is a naphtha-type aviation fuel used in internal combustion engines.

520/40/50 #5,#6,Bunkr-C are residual fuel oils which are commonly known as Nos. 5 and 6 fuel oils, Bunker C respectively, and all other fuel oils which have a 50 percent boiling point over 700 degrees F in the ASTM D-86 standard distillation test.

bpcd

	110 PROPANE	200 MOGAS	310 KERO	320 #2 HO	330 #2 DSL	340 M-DIST	410 AV-GAS	420 JET-A	430 JET-B	520/40 #5,#6	550 BUNKR-C	TOTAL
JAN80	344	10479	3039	7854	5722	901	318	11892	2922	11699	0	55170
FEB	308	9339	2188	5976	4499	734	423	13387	3996	25290	0	66140
MAR	335	9419	1810	6138	4842	426	587	12788	4242	11429	323	52338
APR	124	10624	1674	4807	6834	78	715	12770	2323	19833	333	60121
MAY	302	11684	1168	5513	10278	321	926	14104	2937	23130	323	70685
JUN	322	12986	4218	4950	9093	90	1270	13056	3090	11968	333	61375
JUL	301	14798	4616	4928	11549	163	2023	16862	3364	22735	323	81660
AUG	260	13810	3665	5182	9888	120	1431	16857	9062	21808	323	82404
SEPT	277	12696	2688	6073	11578	276	1477	15915	7352	13683	333	72348
OCT	267	12858	2101	6097	9471	301	709	15262	8401	11554	323	67343
NOV	286	10015	1957	5135	5939	625	490	13970	2544	33928	333	75222
DEC80	338	11861	2962	6833	3947	694	406	14614	3735	10194	323	55906
SUM80	289	11729	2677	5795	7815	394	899	14299	4508	18046	273	66723
%	0.43	17.58	4.01	8.69	11.71	0.59	1.35	21.43	6.76	27.05	0.41	100.00

	PROPANE	MOGAS	KERO	#2 HO	#2 DSL	M-DIST	AV-GAS	JET-A	JET-B	#5,#6	BUNKR-C	TOTAL
JAN81	293	8755	2272	5551	3563	467	382	17179	2684	22075	323	63543
FEB	327	10269	2116	5247	8425	906	446	16142	2951	11566	357	58751
MAR	322	10394	1727	5176	5487	1003	576	16153	3870	23029	323	68066
APR	146	11126	1298	5567	6644	524	994	19173	2898	11544	333	60247
MAY	257	12285	2304	5214	8422	101	935	9969	1865	9713	323	51385
JUN	391	15561	3364	5604	12571	162	1556	20831	183	10510	0	70734
JUL	267	15206	7740	5542	7960	189	2110	26061	2744	16972	323	85115
AUG	195	14997	322	5967	10736	222	1481	24103	234	7761	323	66341
SEPT	276	15304	2556	5504	10742	288	1412	22364	939	19065	333	78782
OCT	326	11665	2032	5430	7852	509	903	29063	135	8627	323	66866
NOV	52	6741	2051	4778	5689	0	605	8655	946	1041	0	30558
DEC81	298	15599	2164	5277	6792	1341	524	21202	96	6145	323	59761
SUM81	263	12344	2501	5406	7892	476	997	19283	1622	12364	274	63419
%	0.41	19.46	3.94	8.52	12.44	0.75	1.57	30.41	2.56	19.49	0.43	100.00

	PROPANE	MOGAS	KERO	#2 HO	#2 DSL	M-DIST	AV-GAS	JET-A	JET-B	#5,#6	BUNKR-C	TOTAL
JAN82	415	10929	2964	6032	4218	699	13018	11348	96	19952	323	69994
FEB	418	10492	2453	5660	4161	642	461	22450	190	0	0	46927
MAR	404	11718	2441	6026	7129	624	704	26437	5746	15057	323	76607
APR	57	8658	1701	4921	6120	0	843	12146	957	0	0	35404
MAY	79	9304	3004	4780	8031	0	1072	11053	1002	0	0	38324
JUN	413	16483	2730	6604	9743	356	1850	24742	2257	10115	333	75625
JUL	2	12855	4973	3613	11182	0	2227	13372	996	0	0	49221
AUG	68	11727	3185	4774	11046	253	1949	16131	758	0	0	49892
SEPT	137	24123	2432	5833	16359	294	1401	27143	1657	10776	267	90423
OCT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE III-E-2

Monthly CUMMULATIVE REFINERS, bpcd

	110 PROPANE	200 MOGAS	310 KEROSENE	320 #2 HO	330 #2DSL	340 OTHR-MID	410 AV-GAS	420 JET-A	430 JET-B	520/40 #5,#6	550 BUNKR-C	TOTAL
JAN80	344	10479	3039	7854	5722	901	318	11892	2922	11699	0	55170
FEB	326	9928	2628	6946	5131	821	368	12615	3441	18268	0	60472
MAR	329	9755	2349	6671	5032	686	443	12674	3714	15938	110	57701
APR	278	9970	2182	6209	5479	535	510	12698	3371	16904	165	58301
MAY	283	10320	1975	6067	6458	492	595	12984	3282	18174	197	60827
JUN	290	10759	2345	5883	6892	425	706	12996	3250	17151	220	60917
JUL	291	11347	2675	5744	7570	387	898	13559	3267	17963	235	63936
AUG	287	11660	2801	5672	7864	353	966	13978	4003	18452	246	66283
SEPT	286	11773	2789	5716	8271	345	1022	14190	4370	17930	255	66947
OCT	284	11884	2719	5755	8393	340	990	14299	4780	17282	262	66987
NOV	284	11716	2650	5699	8173	366	945	14269	4579	18772	269	67724
DEC80	289	11729	2677	5795	7815	394	899	14299	4508	18046	273	66723
JAN81	293	8755	2272	5551	3563	467	382	17179	2684	22075	323	63543
FEB	309	9473	2198	5407	5870	676	413	16686	2811	17088	339	61269
MAR	314	9791	2036	5327	5738	790	469	16503	3176	19134	333	63610
APR	272	10124	1851	5387	5965	724	600	17170	3106	17237	333	62770
MAY	269	10568	1944	5351	6469	596	669	15692	2852	15692	331	60432
JUN	289	11306	2180	5393	7480	524	816	16544	2409	14833	276	62140
JUL	286	11953	2993	5415	7551	475	1005	17935	2458	15146	283	65499
AUG	274	12341	2652	5485	7957	443	1066	18722	2175	14204	288	65607
SEPT	274	12667	2641	5487	8263	426	1104	19122	2039	14738	293	67055
OCT	280	12564	2579	5481	8221	434	1083	20136	1845	14115	296	67035
NOV	259	12041	2532	5418	7994	395	1040	19105	1764	12941	269	63759
DEC81	263	12344	2501	5406	7892	476	997	19283	1622	12364	274	63419
JAN82	415	10929	2964	6032	4218	699	13018	11348	96	19952	325	69994
FEB	416	10722	2722	5855	4191	672	7059	16617	140	10483	169	59047
MAR	412	11065	2625	5914	5203	656	4870	19999	2071	12059	222	65096
APR	323	10463	2394	5666	5432	492	3863	18036	1793	9044	167	57673
MAY	273	10225	2519	5484	5966	391	3290	16602	1630	7187	132	53700
JUN	296	11262	2554	5669	6592	385	3052	17951	1734	7672	166	57334
JUL	253	11495	2908	5369	7263	329	2931	17282	1626	6551	142	56148
AUG	230	11525	2943	5293	7746	319	2806	17135	1516	5715	123	55350
SEPT	220	12909	2887	5352	8692	316	2651	18295	1531	6271	139	59204
OCT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE III-F-1

RAILBELT AIRPORT JETFUEL SALE SUMMARIES
(derived from DOTPF fuel tax reports)

	--ANCHORAGE----------			--FAIRBANKS----------			--RAILBELT----	
YEAR	BPCD	% RAILBELT	GAIN	BPCD	% RAILBELT	GAIN	BPCD	GAIN
1977	15332	95.56	---	712	4.44	---	16044	---
1978a	17156	95.24	1824	858	4.76	146	18014	1970
1979	16960	87.28	-196	2472	12.72	1614	19432	1418
1980b	17410	80.65	450	4178	19.35	1706	21588	2156
1981c	17450	80.12	40	4331	19.88	153	21781	193
1982d	19924	84.70	2474	3600	15.30	-731	23524	1743

note: a. NPR begins jet A-1 sales fall 1978
b. NPR completes debottleneck, begins jet A-1 sales in ANC
c. Tesoro completes expansion before spring
d. Estimated from data thru October

TABLE III-F-2

JETFUEL POSTINGS ANCHORAGE & FAIRBANKS
(average monthly c/g)

	CTW-FAI	CTW-ANC	FAI-ANC
JAN80	81.83	87.04	-5.20
FEB	85.41	92.31	-6.91
MAR	87.75	92.70	-4.95
APR	89.27	92.70	-3.43
MAY	91.64	92.70	-1.06
JUN	95.40	94.70	0.70
JUL	98.25	98.96	-0.71
AUG	102.29	101.97	0.32
SEP	104.47	101.07	3.40
OCT	105.38	102.71	2.67
NOV	107.90	103.00	4.90
DEC80	108.53	104.39	4.14
JAN81	111.11	106.94	4.17
FEB	116.58	113.14	3.43
MAR	119.75	117.39	2.36
APR	124.20	120.00	4.20
MAY	124.20	120.00	4.20
JUN	124.20	120.00	4.20
JUL	124.20	120.00	4.20
AUG	124.20	120.00	4.20
SEP	124.20	120.00	4.20
OCT	126.01	120.00	6.01
NOV	126.20	120.00	6.20
DEC81	126.20	120.00	6.20
JAN82	126.20	120.00	6.20
FEB	126.20	120.00	6.20
MAR	126.20	119.93	6.27
APR	124.17	115.65	8.53
MAY	120.00	114.97	5.03
JUN	120.00	115.20	4.80
JUL	120.00	115.20	4.80
AUG	120.00	115.20	4.80
SEP	120.00	115.20	4.80
OCT	120.00	115.60	4.40
NOV	120.00	116.57	3.43
DEC82	120.00	116.70	3.30

CTW is consumer tank wagon price

TABLE III-G-1

BOROUGH AND CITY ASSESSED VALUE AND TAXES INSTATE REFINERS

	KENAI									FNSB+NP				
	CHEVRON					TESORO				NORTH POLE				
	assessed value					assessed value				assessed value				
YEAR	rate	land	plant	sum	taxes	land	plant	sum	taxes	rate	land	plant	sum	taxes
1963	NA	NA	NA	NA	NA									
1964	NA	NA	NA	NA	NA									
1965	NA	97	0	97	NA									
1966	NA	97	0	97	NA									
1967	NA	108	0	108	NA									
1968	NA	108	0	108	NA									
1969	5	108	0	108	1	0	0	0	0					
1970	5	108	0	108	1	0	0	0	0					
1971	8	105	0	105	1	0	0	0	0					
1972	7.4	105	0	105	1	0	0	0	0					
1973	6.4	105	0	105	1	250	15645	15895	102					
1974	7.6	1410	7852	9262	70	250	16005	16255	124					
1975	9.1	1824	12075	13899	126	284	22615	22899	208					
1976	8.8	1824	12075	13899	122	284	31105	31389	276					
1977	6.75	2350	12174	14524	98	320	31637	31957	216	10.9	291	0	291	3
1978	6.75	2350	12124	14474	98	320	33253	33573	227	13	291	30502	30793	400
1979	4.72	4700	13124	17824	84	569	42342	42911	203	11.60	291	30693	30983	362
1980	4.95	4700	13242	17942	89	569	42342	42911	212	10.2	434	32624	33058	337
1981	4.37	6345	14773	21118	92	853	95631	96484	422	7.5	434	39446	39880	299
1982	3.58	6345	15994	22339	80	853	101693	102546	367	8.4	564	39535	40099	337

notes: CHEVRON BEGAN PRODUCTION IN 1963; TAXES BEGAN 1974
TESORO BEGAN PRODUCTION IN 1969; TAXES BEGAN 1973
NORTH POLE BEGAN PRODUCTION IN 1977

Table III-H-1

RAILBELT DEDUCED PRODUCT DEMAND AND INSTATE REFINER SUPPLY
BPCD,1981

PRODUCT	ANC/WHTR IMPORTS	CHEVRON	other	TESORO	other	NPR	TOTAL
GASOLINE	820	0		9380	1150	0	10200
JP-4	1600	860		630		1480	4570
JET-B	0	0		0		1690	1690
AV-GAS	940	0		0		0	940
JET-A	3880	1360	910	9750	0	5100	20090
#1 HO/DSL/DFA	0	0	0	0		1550	1550
#2 HO/DSL	1170	0	740	1190	2280	2000	4360
#4 HO	0	0		0		620	620
ASPHALT,summer	0	630(a)		0		0	630
TOTAL	8410	2850	1650	20950	3430	12440	44650
CRUDE		12300		40180		41340	93820
fuel%= 1.6		190		640		660	1501
RESID		8720(b)		15160(b)		28240(c)	47669
%		71		38		68	51

-other indicates products sold instate (e.g. Valdez,Kodiak,Ketchikan,etc.)
(a) Chevron figures are annualized,refinery operated in batch mode
(b) indicates product produced instate and sold "outside"
(c) NPR returns this to TAPS