

Alpine Transportation Company



Post Office Box 100360
Anchorage, Alaska 99510-0360
Telephone (907) 265-1618

Raj Choudhury
Vice President
Alpine Pipeline Company

OIL TARIFF FILING

December 18, 2018

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20046

Re: FERC Tariff No. 19.0.0, Alpine Transportation Company Local Pipeline Tariff

Dear Ms. Bose:

In accordance with section 6 of the Interstate Commerce Act (the “ICA”)¹ and the rules and regulations of the Federal Energy Regulatory Commission (the “FERC”),² Alpine Transportation Company (“Alpine”) hereby submits for filing FERC No. 19.0.0, effective February 1, 2019.

Tariff Number

FERC No. 19.0.0, Quality Bank Tariff

Effective Date

February 1, 2019

Explanation of the Tariff Filing

A. Background

Alpine owns and operates a 14-inch diameter pipeline on the North Slope of Alaska. Oil produced on the North Slope originates in several fields, each of which contains crude of differing characteristics.³ Alpine has historically transported crude petroleum from the Colville River Unit in the Alpine Field, approximately 34 miles to an interconnection with the Kuparuk Transportation Company (“KTC”) pipeline system. From there, the petroleum is transported via KTC to the inlet of the Trans Alaska Pipeline System (“TAPS”) at Prudhoe Bay. The petroleum then is transported through TAPS, primarily to the port of Valdez, where it is loaded onto tankers for shipment to various refineries.

Since 1984, the FERC has approved the use of a quality bank to calculate monetary adjustments between oil companies that use TAPS to transport oil in a commingled stream.⁴ A quality bank is a methodology utilized when different shippers inject petroleum of different values into a

¹ 49 U.S.C. app. §§ 6, *et seq.* (1988).

² 18 C.F.R. §§ 341.1, 341.2 and 341.5 (2018).

³ See *Trans Alaska Pipeline Sys.*, Opinion No. 481, 113 FERC ¶ 61,062 at P 3 (2005).

⁴ See *Trans Alaska Pipeline Sys.*, 29 FERC ¶ 61,123 (1984).

common stream pipeline.⁵ The TAPS' quality bank "charges shippers of relatively low-quality petroleum who benefit from commingling and distributes the proceeds to shippers of higher quality petroleum whose product is degraded by commingling."⁶ The quality bank's goal is to place each company in the same economic position it would enjoy if it received the same petroleum that it delivered to the pipeline on the North Slope.⁷

B. Need for a Quality Bank Tariff

Alpine is filing this tariff to implement a Quality Bank on its pipeline. The Quality Bank is needed because Alpine will begin transporting crude petroleum of different characteristics from the crude it has historically transported. Alpine's Quality Bank will calculate the value for the following streams: (1) Colville River Unit stream; (2) the Southern Miluvecch Unit stream, which is blended with the Colville River Unit stream at the interconnection of Alpine and the Mustang Field pipeline; and (3) any new streams introduced into Alpine at a later time. Quality Bank Tariff Section II(B)(1). The crude streams will be blended as they are transported on Alpine.

Alpine has developed its Quality Bank to mimic the TAPS' quality bank. Alpine's Quality Bank will use a distillation-based methodology that is consistent with the TAPS Pump Station No. 1 Quality Bank Methodology.⁸ Like the TAPS quality bank, Alpine will appoint a Quality Bank Administrator.⁹ The Alpine Quality Bank Administrator will obtain from the TAPS Quality Bank Administrator all of the adjusted component unit values necessary to determine the Alpine Quality Bank stream values in accordance with the distillation methodology used at TAPS Pump Station 1. Quality Bank Tariff Section II(D)(1). In fact, the Alpine Quality Bank "will employ the same product prices, the same adjustments, and the same weightings as the TAPS Pump Station No. 1 Quality Bank." *Id.* Moreover, "[i]f at any time the TAPS quality bank administrator is ordered to make any changes to the adjusted component unit values used in the TAPS Pump Station No. 1 Quality Bank," as the result of a FERC, Regulatory Commission of Alaska, or court order, "the Alpine Quality Bank Administrator will reflect any such changes in the [Alpine] Quality Bank" Quality Bank Tariff Section II(D)(2). Similarly, if the KTC quality bank administrator makes changes to the results reported for the Alpine Reference Stream, the Alpine Quality Bank Administrator "will reflect such changes in the [Alpine] Quality Bank debits and credits, including making any retroactive readjustments necessary to maintain consistency with the TAPS Pump Station No. 1 Quality Bank." Quality Bank Tariff Section II(D)(3).

⁵ The commingling of petroleum of different and uneven qualities may result in some shippers withdrawing product that is of better quality than the product they injected into the pipeline, while others may withdraw product that is inferior to the product they injected into the pipeline. See *Trans Alaska Pipeline Sys.*, 29 FERC ¶ 61,123 at 61,238; and *BP Pipelines (Alaska) Inc., et al.*, 162 FERC ¶ 61,147.

⁶ See *OXY USA, Inc. v. FERC*, 6 F.3d 679, 684-685 (D.C. Cir. 1995).

⁷ *Id.*

⁸ Quality Bank Tariff Section II(A)(1). The TAPS distillation method operates as follows: "[A] stream's value is determined by valuing the components, or cuts, derived by the process of distilling (boiling and recondensing) the stream, with each cut separated out of the petroleum at a certain temperature." *Trans Alaska Pipeline Sys.*, 65 FERC ¶ 61,277 at 62,282 (1993), *order on reh'g*, 66 FERC ¶ 61,188 (1994), *further order on reh'g*, 67 FERC ¶ 61,175 (1994).

⁹ Alpine will use the same Quality Bank Administrator as is used by TAPS.

The Alpine Quality Bank Administrator's goal is to "maintain consistency" with the TAPS distillation methodology and to that end, the administrator is authorized to resolve implementation issues. Quality Bank Tariff Section II(G). The Quality Bank Administrator's "resolution of any such issue shall be final unless and until changed prospectively by orders of FERC and [the Regulatory Commission of Alaska]." *Id.*

The Commission and the D.C. Circuit have reviewed and evaluated the TAPS quality bank many times and found it to be an appropriate methodology.¹⁰ As noted, Alpine's Quality Bank is fully consistent with the longstanding TAPS Quality Bank methodology. Moreover, as Alpine will be using the same Administrator as that used for the TAPS quality bank, its shippers can expect consistent results and consistent application of the methodology. Consequently, the tariff should be accepted as proposed.

Alpine requests that any protests or complaints, which in any way affect this tariff publication, be transmitted concurrent with their filing to the following persons at the contact information shown below:

Steven Reed
Monique Watson
Steptoe & Johnson, LLP
sreed@steptoe.com
mwatson@steptoe.com
Fax: (202) 429-3902
Phone: (202) 429-6232

I hereby certify that I have on or before this date distributed by agreed-upon means, one copy of the publication listed hereon to all subscribers thereto. Questions regarding this tariff filing should be directed to Raj Choudhury at (907) 265-1618.

Sincerely,



Raj Choudhury
APC Vice President

¹⁰ The D.C. Circuit has addressed the TAPS Quality Bank methodology in at least six cases. *See Petro Star Inc. v. FERC*, 835 F.3d 97 (D.C. Cir. 2016); *Flint Hills Res. Alaska, LLC v. FERC*, 631 F.3d 543, 544 (D.C. Cir. 2011); *Tesoro Alaska Petroleum Co. v. FERC*, 234 F.3d 1286, 1287 (D.C. Cir. 2000); *Exxon Co. v. FERC*, 182 F.3d 30, 34-35 (D.C. Cir. 1999); and *Oxy USA, Inc. v. FERC*, 64 F.3d 679, 684-685 (D.C. Cir. 1995).

ALPINE TRANSPORTATION COMPANY LOCAL PIPELINE TARIFF

Containing the

QUALITY BANK METHODOLOGY

GENERAL APPLICATION

This tariff shall apply only to those tariffs which specifically incorporate this tariff, supplements to this tariff and successive issues hereof, by reference.

For rules and regulations other than the Alpine Transportation Company Quality Bank Methodology tariff, see F.E.R.C. No. 16.0.0, supplements thereto and reissues thereof.

NOTICES

This is a baseline tariff filing to establish a quality bank for the Alpine Pipeline.

The provisions published herein will, if effective, not result in an effect on the quality of the human environment.

ISSUED: December 18, 2018

EFFECTIVE: February 1, 2019

ISSUED BY
Raj Choudhury
Vice President of Alpine Pipeline Company
Managing Partner for
Alpine Transportation Company
700 G Street, ANO-1032
Anchorage, Alaska 99501

COMPILED BY
Sandra Pierce
Alpine Transportation Tariff Coordinator
700 G Street, ANO-1024
Anchorage, Alaska 99501
Phone 907-265-6316

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ALPINE QUALITY BANK METHODOLOGY

I. General Provisions

A. Definitions

“Alpine Quality Bank Administrator” – as used herein is defined in Section I.B.

“Barrel” – as used herein means forty-two (42) U.S. gallons at sixty degrees (60°) Fahrenheit and atmospheric pressure.

“CPF-2” – as used herein means Central Processing Facility-2, which is located at the terminus of the Alpine Pipeline.

“Gravity” – as used herein means the gravity of Petroleum expressed in API degrees at sixty degrees (60°) Fahrenheit.

“KTC” – as used herein means the Kuparuk Transportation Company.

“LSR” – as used herein means Light Straight Run.

“Month or Monthly” – as used herein means a calendar month commencing at 0000 hours on the first day thereof and running until 2400 hours on the last day thereof according to Valdez, Alaska, local time.

“Pump Station No. 1” – as used herein means the pump station facilities near Prudhoe Bay, Alaska where Petroleum is received into TAPS.

“Quality Bank Value” – as used herein means the value of each Petroleum stream as calculated in Section II.

“Shipper” – as used herein means a party who tenders Petroleum to ATC for transportation and thereafter actually delivers Petroleum to ATC for transportation.

“TAPS” – as used herein means the Trans Alaska Pipeline System.

“TBP” – as used herein means True Boiling Point.

“Volume” – as used herein means a quantity expressed in Barrels.

B. Quality Bank Administrator

The Alpine Transportation Company (“ATC”) Quality Bank shall be administered by the Alpine Quality Bank Administrator, who shall be appointed by ATC, and by those designated by the Alpine Quality Bank Administrator to assist the Administrator (hereinafter collectively referred to as the “Alpine Quality Bank Administrator”). The name and address of ATC’s designated Quality Bank Administrator will be made available upon written request to ATC.

C. Cost Recovery: ATC Quality Bank Operating and Administrative Costs

All reasonable and necessary costs of operating and administering the ATC Quality Bank Methodology, including and without limitation, costs incurred for obtaining, handling and processing samples of the various petroleum streams, assay costs, and costs incurred by the ATC Quality Bank Administrator as a result of administering the ATC Quality Bank, shall be recovered by ATC through the ATC Quality Bank debits and credits in the form of per-barrel charges on a monthly basis.

D. Other General provisions

1. In the event any payment is made to any shipper hereunder and it is subsequently determined by any Federal or state court, administrative agency or other governmental entity having jurisdiction that no other shipper was liable for the adjustment for which payment was made, the shipper receiving such payment shall upon receipt of an accounting from ATC return the same to ATC or its designee. ATC shall promptly utilize same to reimburse all shippers who made such payments.
2. All payments due from any shipper under the ATC Quality Bank Methodology shall be made by such shipper within 20 days of receipt of each accounting and, for any delay in payment beyond such 20 day period, shall bear interest calculated at an annual rate equivalent to 125% of the prime rate of interest of Citibank N.A. of New York, New York, on ninety-day loans to substantial and responsible commercial borrowers as of the date of accounting.
3. If any shipper fails to make payment due hereunder within 30 days of issuance of each accounting, ATC shall have the right to sell at public auction either directly or through an agent at any time after such 30 day period any Petroleum of the shipper in its custody. Such auction may be held on any day, except a legal holiday, and not less than 48 hours after publication of notice of such sale in a daily newspaper of general circulation published in the town, city or general area where the sale is to be held, stating the time and place of sale and the quality and location of Petroleum to be sold. At said sale ATC shall have the right to bid, and, if it is the highest bidder, to become the purchaser. From the proceeds of such sale, ATC will deduct all payments due and expenses incident to said sale, and the balance of the proceeds of the sale remaining, if any, shall be held for whomsoever may be lawfully entitled thereto.
4. ATC and its designee are authorized to receive through measurement, connecting carriers or otherwise all information and data necessary to make the computations under the ATC Quality Bank Methodology. All shippers will furnish ATC or its designated Quality Bank Administrator, and consents to ATC or its designated Quality Bank Administrator acquiring from other carriers or other persons, any additional information and data necessary to make the computations under this Methodology. Shippers also consent to ATC or its agents disclosing to the

designated Quality Bank Administrator all information and data necessary to make the computations under this Methodology.

5. Adjustment payments and administrative costs in this Methodology are not a part of ATC's transportation tariff rates, and such shall not be an offset or other claim by any shipper against sums due ATC for transportation or other charges, costs, or fees due or collected under ATC's rate tariff.
6. The Alpine Quality Bank Administrator shall furnish to the State of Alaska each month copies of the invoices for Alpine Quality Bank adjustments and supporting data sent to each shipper. Such information is furnished to the State based upon the State's representation that it will hold such information in confidence and that such information will be used only by officers or agents of the State in the exercise of the officers' or agents' powers.

II. Quality Bank Procedures

A. Overview

1. A Distillation-based methodology consistent with the TAPS Pump Station No. 1 Quality Bank Methodology shall be implemented for ATC. This methodology for calculation of the ATC Quality Bank debits and credits is based on valuations of petroleum components. This methodology shall apply to the specific petroleum (as defined in the tariffs) streams identified in Section II.B. and also shall be applied to any streams tendered to ATC through a new connection. The Quality Bank value of each petroleum stream shall be the volume-weighted sum of the Quality Bank values of its components. The characteristics and volumes of components for each separate petroleum stream are based on assay information obtained using a defined set of testing procedures as set forth in Section II.C. Quality Bank credits and debits are determined by comparing the Quality Bank value of each petroleum stream to the appropriate ATC reference stream Quality Bank value.
2. Shippers shall be debited and/or credited for all adjustments as provided for in this Section II with respect to all Petroleum shipped. The calculation of Shipper's debits and credits shall be made each Month as required herein. The credit and debit balances for each accounting shall be adjusted among Shipper and all Shippers on Alpine by collecting funds from those Shippers (including Shipper, if applicable) having debit balances and by thereafter remitting funds collected to the Shippers (including Shipper, if applicable) having credit balances. In the event of delay in collection or inability to collect from one or more Shippers for any reason, only adjustment funds and applicable interest charges actually collected shall be distributed pro

rata to Shippers having credit balances. A Monthly accounting shall be rendered to Shipper after the end of each Month.

B. ATC Quality Bank Streams

1. The ATC Quality Bank calculates the value for the following streams: (1) the Colville River Unit ("CRU") stream; (2) the Southern Miluveach Unit ("SMU") Stream, which is blended with the CRU stream at the interconnection of the ATC pipeline and the Mustang Field pipeline; and (3) any new streams introduced into ATC.
2. The ATC Quality Bank reference stream is the blended common stream as sampled at CPF-2.

C. ATC Quality Bank Methodology

1. Assay Methodology

Sampling Procedure: The SMU stream, as well as any new streams, will be sampled at the direction of the ATC Quality Bank Administrator using continuous monthly composite samplers on a flow rate dependent basis, and the Alpine Quality Bank Administrator shall cause assays of these continuously collected samples to be performed monthly. Composition of the CRU stream will be determined by the Alpine Quality Bank Administrator based on the difference between the SMU sample stream assay results and the ATC reference stream assay results. An illustration of this calculation appears in Attachment 1A hereto. Once the composition of the CRU stream is thus calculated, the Quality Bank Value of the CRU stream will be determined as if the assay values had been measured directly.

2. Assay Analysis Procedure

- a. Except as specified in paragraph b. below, the assays will include a true boiling point ("TBP") distillation and, as applicable, gas chromatograph analysis of each Quality Bank stream. Specifically, the TBP procedure will employ ASTM 2892 up to 650 F and ASTM 5236 for the 650 to 1050+ F range for the petroleum samples. The light ends (175 F minus) from the petroleum streams will be subject to gas chromatograph analysis to determine the volumes of the propane ("C3"), Iso-butane ("iC4"), and normal butane ("nC4"), with the light straight run ("LSR") (sometimes referred to as natural gasoline) volume determined by difference between the total of the three components and the measured 175 F minus volume.
- b. The specific gravities of C3, iC4, and nC4 will be derived from GPA Standard 2145.

3. Assay Data

- a. The following volume and quality data will be determined for each stream.

Component	TBP Boiling Range	% Vol.	Specific Gravity
Propane (C3)		X	X
I-Butane (iC4)		X	X
N-Butane (nC4)		X	X
LSR	C5-175	X	X
Naphtha	175-350	X	X
Light Distillate	350-450	X	X
Heavy Distillate	450-650	X	X
Gas Oil	650-1050	X	X
Resid	1050+	X	X
Full Petroleum Stream			X

- b. The total volume must add to 100% and the total component weighted mass must be checked against the mass of the full petroleum stream. These weight balances must be the same within calculation and assay precision. If the assay fails this threshold test of validity, a second assay shall be performed on the sample. An example of assay data required is presented in Attachment 1. These data are the basis for all calculations in this Quality Bank methodology. The ATC Quality Bank will operate on a calendar month basis, with the continuous samples retrieved for analysis on the last day of each month.
- c. The Alpine Quality Bank Administrator shall investigate the validity of a sample if each of the following two tests is met.
- i. If one or more of an individual stream's reported component percentages for a month varies by more than the ranges indicated in the following table as compared to the prior month's assay.

Variation in % of Stream Relative to Prior Month	
Component	
Propane	±0.1
I-Butane	±0.1
N-Butane	±0.25
LSR	±0.5
Naphtha	±1.0
Light Distillate	±1.0

Heavy Distillate	±1.0
Gas Oil	±1.5
Resid	±1.0

As an example, if a petroleum stream's heavy distillate volume percent is 23% for the prior month, a heavy distillate volume percent less than 22% or greater than 24% (exceeding the $\pm 1\%$ range) shall cause the Alpine Quality Bank Administrator to check the second test.

- ii. The second test is whether the volume change in the specific component has resulted in a significant change in the stream's relative value when compared to the prior month's relative value using the prior month's prices. If the change results in a price movement of more than ± 15 cents per barrel, then the sample's validity must be investigated.
- iii. The Alpine Quality Bank Administrator may ascertain from the tendering shipper(s) possible causes for the change in the stream's assay. The Alpine Quality Bank Administrator may have a second assay performed for any sample it has taken. The Alpine Quality Bank Administrator may decide that the first assay is valid, that the second assay is valid, or that the sample is invalid.
- iv. Should the Alpine Quality Bank Administrator determine that a sample is invalid, the last assay results accepted and used in the ATC Quality Bank for the stream will be used instead of the invalid sample in the Quality Bank calculation.

D. Component Unit Value Procedure

1. The Alpine Quality Bank Administrator will obtain from the TAPS Quality Bank Administrator all of the adjusted component unit values necessary to determine the Alpine Quality Bank stream values in accordance with the distillation methodology used at TAPS Pump Station No. 1. The ATC Quality Bank will employ the same product prices, the same adjustments, and the same weightings as the TAPS Pump Station No. 1 Quality Bank, as set forth in FERC No. 44.14.0 (BP Pipelines (Alaska) Inc.), FERC No. 21.14.0 (ConocoPhillips Transportation Alaska Inc.), FERC No. 404.14.0 (ExxonMobil Pipeline Company), as well as supplements thereto and successive issues thereof, effective on the later of February 1, 2019 or the effective date on TAPS, for as long as a distillation methodology is maintained at TAPS Pump Station No. 1.

2. If at any time the TAPS Quality Bank Administrator is ordered to make any changes to the adjusted component unit values used in the TAPS Pump Station No. 1 Quality Bank, as the result of any order of the RCA or FERC or any court of competent jurisdiction, the Alpine Quality Bank Administrator will reflect any such changes in the ATC Quality Bank debits and credits, including making any retroactive readjustments necessary to maintain consistency with the TAPS Pump Station No. 1 Quality Bank back to the later of the effective date of any such retroactive change to the TAPS adjusted component unit values or February 1, 2019.
3. If the KTC Quality Bank Administrator makes any changes to the assay results initially reported for the ATC reference stream as received at KTC, the Alpine Quality Bank Administrator will reflect any such changes in the ATC Quality Bank debits and credits, including making any retroactive readjustments necessary to maintain consistency with the TAPS Pump Station No. 1 Quality Bank.

E. Quality Bank Stream Component Calculation Procedure

After all volume, quality, and pricing data are collected, the Alpine Quality Bank Administrator will establish quality differentials for each stream identified in Section II.B.

F. Quality Bank Calculation Procedures

The assay data and calculation procedures required by this Methodology are summarized in the Attachments. The Attachments are for reference purposes only and are not intended to predict the impact of this procedure on any specific petroleum stream or any specific company. In the event of a conflict between the provisions of this Methodology as set forth above and the Attachments, the provisions of this Methodology shall control.

ATTACHMENT 1:	Yield Data for Example Streams
ATTACHMENT 1A:	Calculation of Unsampled Stream
ATTACHMENT 2:	Example Component Unit Values in \$/Bbl
ATTACHMENT 3:	Example Stream Values in \$/Bbl
ATTACHMENT 4:	Quality Bank Calculation Example

G. Unanticipated Implementation Issues

This Methodology is intended to contain a comprehensive treatment of the subject matter. However, unanticipated issues concerning implementation of this Methodology may arise. If so, the Alpine Quality Bank Administrator is authorized to resolve such issues in accordance with the goal of maintaining consistency with the distillation methodology applied by the TAPS Carriers at TAPS Pump Station No. 1. The Alpine Quality Bank Administrator's resolution of any such issue shall be final unless and until changed prospectively by orders of the FERC and RCA.

ATTACHMENT 1

YIELD DATA FOR EXAMPLE STREAMS⁽¹⁾

COMPONENT	DEFINITION BOILING RANGE (°F)	STREAM A	STREAM B
PROPANE (C ₃)	-----	0.00	0.22
ISOBUTANE (iC ₄)	-----	0.02	0.13
NORMAL BUTANE (nC ₄)	-----	0.10	0.67
LSR	C5-175	3.50	4.93
NAPHTHA	175-350	11.00	14.57
LIGHT DISTILLATE	350-450	9.00	9.00
HEAVY DISTILLATE	450-650	22.00	20.57
GAS OIL	650-1050	30.38	31.62
RESID	1050+	24.00	18.29
TOTAL		100.00	100.00
EXAMPLE VOLUME, Thousand Barrels per Month		900	2,100

⁽¹⁾ In this example, hypothetical streams are used to demonstrate the ATC Quality Bank calculations.

ATTACHMENT 1A

CALCULATION OF UNSAMPLED STREAM

COMPONENT NAME	REFERENCE STREAM ⁽¹⁾	STREAM A	STREAM B ⁽³⁾
Propane (C3)	0.15	0.00	0.22
Isobutane (iC4)	0.10	0.02	0.13
Normal Butane (nC4)	0.50	0.10	0.67
LSR (C5 - 175°F)	4.50	3.50	4.93
Naphtha (175°F - 350°F)	13.50	11.00	14.57
Light Distillate (350°F - 450°F)	9.00	9.00	9.00
Heavy Distillate (450°F - 650°F)	21.00	22.00	20.57
Gas Oil (650°F - 1050°F)	31.25	30.38	31.62
Resid (1050°F and over)	20.00	24.00	18.29
TOTAL	100.00	100.00	100.00
EXAMPLE VOLUME, MBPM	3,000.00 ⁽²⁾	900.00	2,100.00

⁽¹⁾ ATC Reference Stream yield data to be obtained from the KTC Quality Bank Administrator.

⁽²⁾ MBPM REFERENCE = MBPM A + MBPM B.

⁽³⁾ Planned calculation with a single ATC sampler at Southern Miluveach Unit: Stream B calculated by difference.

ATTACHMENT 2

EXAMPLE COMPONENT UNIT VALUES IN \$/Bbl

<u>COMPONENT NAME</u>	<u>WEST COAST (\$/Bbl)</u>	<u>GULF COAST (\$/Bbl)</u>	WEIGHTED AVERAGE⁽¹⁾ (\$/Bbl)
Propane (C ₃)	19.7925	15.0442	19.68
Isobutane (iC ₄)	24.1238	18.4333	23.99
Normal Butane (nC ₄)	18.1125	18.4800	18.12
LSR (C ₅ - 175°F)	18.5850	19.5854	18.61
Naphtha (175°F - 350°F)	21.3383	21.3383	21.34
Light Distillate (350°F - 450°F)	25.9817	22.9396	25.91
Heavy Distillate (450°F - 650°F)	23.0000	22.1112	22.98
Gas Oil (650°F - 1050°F)	20.8133	21.8133	20.84
Resid (1050°F and over)	14.6349	15.0000	14.64
WEIGHTING FACTOR	97.71	2.29	

⁽¹⁾ Obtained from TAPS Quality Bank Administrator.

ATTACHMENT 3

EXAMPLE STREAM VALUES IN \$/Bbl

COMPONENT NAME	STREAM A	STREAM B
Propane (C ₃)	0.000000	0.043296
Isobutane (iC ₄)	0.004798	0.031187
Normal Butane (nC ₄)	0.018120	0.121404
LSR (C ₅ - 175°F)	0.651350	0.917473
Naphtha (175°F - 350°F)	2.347400	3.109238
Light Distillate (350°F - 450°F)	2.331900	2.331900
Heavy Distillate (450°F - 650°F)	5.055600	4.726986
Gas Oil (650°F - 1050°F)	6.331192	6.589608
Resid (1050°F and over)	3.513600	2.677656
TOTAL	20.253960	20.548748

ATTACHMENT 4

QUALITY BANK CALCULATION EXAMPLE

QUALITY BANK REFERENCE STREAM VALUE CALCULATION

	VOLUME (MBPM)	VALUE (\$/Bbl)
STREAM A	900	20.253960
STREAM B	2,100	20.548748
TOTAL: (REFERENCE STREAM)	3,000	20.460312 ⁽¹⁾

⁽¹⁾ Reference Stream Value from KTC Quality Bank for Alpine Pipeline Stream

QUALITY BANK PAYMENT/RECEIPT CALCULATIONS

	DIFFERENTIAL ⁽²⁾	VOLUME (MBPM)	PAYMENT OR RECEIPT (M\$/Month) ⁽³⁾⁽⁴⁾
STREAM A	(0.206352)	900	\$(185.72)
STREAM B	0.088436	2100	\$185.72

⁽²⁾ Stream value minus reference value.

⁽³⁾ Differential times volume.

⁽⁴⁾ Excludes Quality Bank cost recovery.