NATIONAL ENERGY BOARD

HEARING ORDER RHW-001-2013

TRANS MOUNTAIN PIPELINE ULC

ON BEHALF OF

TRANS MOUNTAIN PIPELINE L.P. (TRANS MOUNTAIN)

APPLICATION FOR TARIFF AMENDMENTS REGARDING VERIFICATION PROCEDURES

PREPARED TESTIMONY OF NEIL K. EARNEST

FOR

TESORO CANADA SUPPLY & DISTRIBUTION LTD. (TESORO CANADA)

August 8, 2014

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PURPOSE OF TESTIMONY

Q1. What is the purpose of your testimony and on whose behalf are you filing this rebuttal testimony?

A1. The purpose of this testimony is to respond to proposals made to the National Energy Board ("the Board") as to why nominations to Export Destinations should be first apportioned to the capacity of the Puget Sound Pipeline, followed by a second round where the nominations to Export Destinations and Canadian Land Destinations are apportioned ("Double Apportionment"). I am filing this testimony on behalf of Tesoro Canada Supply & Distribution Ltd. ("Tesoro Canada").

Q2. Could you please summarize your conclusions?

A2. Yes. My conclusions are:

- There is neither a tangible Delivery Point or a capacity constraint at the international border ("Sumas").
- Trans Mountain has operated as an integrated system for over 60 years without a Delivery Point that required apportionment at Sumas, and nothing has changed that now requires a major revision to the long-standing Trans Mountain apportionment methodology.
- The current apportionment methodology with regard to the Puget Sound Pipeline is not broken, and there is no exigent need to change the existing apportionment methodology.
- Should the Board elect to adopt a Double Apportionment methodology, then there are predictable shipper actions that will undermine economic

efficiency, which is one of the Board's expressed guiding principles for regulatory design.[1]

PUGET SOUND PIPELINE DESIGN AND CAPACITY

Q3. Is it most appropriate to regard the Puget Sound Pipeline as a separate pipeline from the Trans Mountain Pipeline with a tangible delivery point at Sumas that connects the two?

A3. No. The Puget Sound Pipeline was built as part of an integrated system that has served British Columbian and the Puget Sound refineries for over 60 years, and operates as an integrated system today. Furthermore, there are no custody transfer meters at or near Sumas, nor can Trans Mountain physically deliver crude oil to shippers at (or near) Sumas.[2]

Q4. What is the current capacity of the Puget Sound Pipeline?

A4. When transporting 20 percent heavy crude oil, the capacity of the Puget Sound Pipeline is 241,000 bpd. This is based upon Trans Mountain's public response to NEB IR 2.2 a) i), which also asserts that there is no capacity constraint at Sumas:

> *Taking into account a heavy crude percentage of 20% the capacity allocated to Land Destinations on the Trans Mountain Pipeline is approximately 221,000 bpd (300,000 bpd less 79,000 bpd allocated to Westridge Marine Terminal pursuant to Rules 14.3 (a), (b) and (c) of the Trans Mountain Tariff).*
>
> *The capability of the Puget Sound Pipeline as indicated in Table 1 is approximately 241,000 bpd which not only takes into account 20% heavy crude but also takes into account a % split of deliveries between the Anacortes and Ferndale segments of 60%*

[1] The Board's guiding principles are discussed in the Prepared Testimony of Neil K. Earnest for Tesoro Canada, April 21, 2014, pp. 10-11.
[2] NEB-TMPL-3.1(a) and (d).

> *and 40% respectively (based on recent delivery activity). The capability of the Puget Sound Pipeline of 241,000 bpd is greater than the 221,000 bpd allocated to Land Destinations demonstrating that the current area of constraint on the Trans Mountain System occurs upstream of the Sumas station (between Edmonton and Sumas). The Land Destinations at Burnaby, BC and Export Destinations are both downstream of the Sumas station and therefore downstream from the point of constraint on the Trans Mountain System.* [emphasis added]

This straightforward statement by Trans Mountain confirms that there is not now or likely to be a capacity constraint at Sumas that compels Trans Mountain to apportion crude oil shipments on the Puget Sound Pipeline. Furthermore, Trans Mountain's comments understate the degree of surplus capacity on the Puget Sound Pipeline. Trans Mountain, in its comments above, is comparing the capacity of the Puget Sound Pipeline to the total volume of shipments (221,000 bpd) that can be made to all Land Destinations. To obtain a direct comparison of the Puget Sound Pipeline capacity to the potential shipment volume, the deliveries to the Lower Mainland must first be subtracted, which would considerably increase the degree of surplus capacity on the Puget Sound Pipeline.

Q5. Is there a capacity bottleneck at Sumas now or has there been in recent years?

A5. No. Throughput on the Puget Sound Pipeline has not, at any relevant time, reached the physical capacity of the pipeline. In Trans Mountain's public response to Imperial-Suncor IR 3 l), Trans Mountain states that:

The Puget Sound Pipeline has not had to apply the apportionment clause in its Tariff during the period January 2006 to December 2013 as the amounts apportioned under Rule 14.5 (a) of the Trans Mountain Pipeline Tariff resulted, in

all periods, in an offer of Petroleum to the Puget Sound Pipeline below the capacity of the Puget Sound Pipeline.

The considerable excess of Puget Sound Pipeline capacity over the likely throughput, in my opinion, refutes the suggestion that Sumas must be regarded as a Delivery Point. Sumas has not historically, does not now, and is not at all likely in the future to act as bottleneck point on the Puget Sound Pipeline. Any requirement to make Sumas a Delivery Point subject to apportionment would be purely a regulatory artifact with no connection to the physical characteristics of the Puget Sound Pipeline or the broader Trans Mountain System.

CURRENT APPORTIONMENT METHODOLOGY

Q6. How does the current apportionment methodology on the Puget Sound Pipeline work?

A6. As I discussed in my earlier evidence, the Trans Mountain Tariff states:[3]

Under the current version of Rule 14.5 of the Tariff:

> *33.1. All Land Shippers submit their nominations, subject to verification by an identical methodology;*
>
> *33.2. All Land Shippers are apportioned by an identical proportion for capacity at Edmonton;*
>
> *33.3. If the apportioned nominations for Export Destinations exceed the physical capacity of the Puget Sound Pipeline, then all nominations to*

[3] Prepared Testimony of Neil K. Earnest for Tesoro Canada, April 21, 2014, p. 27.

Export Destinations only are further apportioned by an identical proportion; and

33.4. All excess capacity thus created on Trans Mountain will then be allocated to Canadian Land Destinations as required.

The last clause takes care of what happens if "…the apportioned nominations for Export Destinations exceed the physical capacity of the Puget Sound Pipeline…." In other words, in the very unlikely event that there is a bottleneck on the Puget Sound Pipeline, there would be apportionment and the resulting excess capacity on the Trans Mountain Pipeline would be turned back to the shippers to the Canadian Land Destinations.

Q7. Do you consider the current apportionment methodology to be reasonable and equitable?

A7. Yes. As I stated in my initial testimony, the current apportionment procedure treats all shippers on the Trans Mountain Pipeline equally to the maximum extent possible.[4]

Q8. Can you provide a numerical example of how Trans Mountain currently apportions nominations between Canadian Land Destinations and the Export Destinations?

A8. Table 1 illustrates the current apportionment methodology. Apportionment is determined by the difference between the nominations of domestic and export shippers (in aggregate) and the pipeline capacity, all relative to the available capacity of the Trans Mountain Pipeline. The Trans Mountain Pipeline has a

[4] Prepared Testimony of Neil K. Earnest for Tesoro Canada, April 21, 2014, pp. 26-29.

capacity of 221,000 bpd available for Land Shippers, which equals the overall capacity of the Trans Mountain Pipeline (300,000 bpd) less the 79,000 bpd dedicated to the Westridge Dock.[5] In the example provided in Table 1, the nominations for both domestic and export shippers are based on publically available data on nominations to Canadian Land and Export Destinations.[6] In this example, Export Destination and Canadian Land Destination nominations are 434,000 and 268,000 bpd, respectively. The resultant accepted nominations are 136,630 and 84,370 bpd to the Export Destinations and the Canadian Land Destinations, respectively.

Table 1 – Current Apportionment Methodology

Apportionment Formula		**Calculation**		**Apportionment**
$\left[\frac{\text{(Puget Sound Noms + Domestic Noms) - Trans Mountain PL Capacity}}{\text{(Puget Sound Noms + Domestic Noms)}}\right]$		$\left[\frac{\text{(434,000 + 268,000) - 221,000}}{\text{(434,000 + 268,000)}}\right]$	=	68.5%
Accepted Nomination Formula		**Calculation**		**Accepted Nominations, bpd**
(Puget Sound Noms) * (1 - Apportionment)	=	(434,000) * (1 - 0.685)	=	136,630
(Domestic Noms) * (1 - Apportionment)	=	(268,000) * (1 - 0.685)	=	84,370

Q9. Please provide an example of how "Double Apportionment" would work.

A9. Tables 2 and 3 show how I understand the Double Apportionment methodology proposed by some shippers in this proceeding would work. The initial nominations remain the same as in Table 1. Puget Sound nominations are first apportioned (Step 1) to the 241,000 bpd capacity identified by Trans Mountain in

[5] Assuming that Trans Mountain is transporting 20 percent heavy crude oil.
[6] On behalf of Imperial Oil Limited and Suncor Energy Products Partnership, Evidence of Drazen Consulting Group, Inc., April 25, 2014, p. 10.

its public response to NEB IR 2.2 a) i) quoted previously.[7] The Canadian Land nominations are unchanged by Step 1.

Table 2 – Step 1 of Double Apportionment Methodology

Apportionment Formula		Calculation		Apportionment
$\frac{\text{[Puget Sound Noms - Puget Sound PL Capacity]}}{\text{(Puget Sound Noms)}}$	=	$\frac{\text{[434,000 - 241,000]}}{\text{434,000}}$	=	44.5%
Accepted Nomination Formula		**Calculation**		**Accepted Nominations, bpd**
(Puget Sound Noms) * (1 - Apportionment)	=	(434,000) * (1 - 0.445)	=	241,000

In Step 2, the reduced Export Destination nominations (241,000 bpd) and the Canadian Land Destination nominations (268,000 bpd) are apportioned to the capacity on the Trans Mountain pipeline available for land destinations (221,000 bpd).

Table 3 – Step 2 of Double Apportionment Methodology

Apportionment Formula		Calculation		Apportionment
$\frac{\text{[(Puget Sound Noms + Domestic Noms) - Trans Mountain PL Capacity]}}{\text{(Puget Sound Noms + Domestic Noms)}}$	=	$\frac{\text{[(241,000 + 268,000) - 221,000]}}{\text{(241,000 + 268,000)}}$	=	56.6%
Accepted Nomination Formula		**Calculation**		**Accepted Nominations, bpd**
(Puget Sound Noms) * (1 - Apportionment)	=	(241,000) * (1 - 0.566)	=	104,639
(Domestic Noms) * (1 - Apportionment)	=	(268,000) * (1 - 0.566)	=	116,361

The Double Apportionment methodology has the effect of reducing the Export

[7] It should also be noted that the capacity used for the Puget Sound Pipeline (221,000 bpd) assumes that it is transporting 20 percent heavy crude oil. In fact, based upon the table provided in NEB-TMPL-3.2(b), the maximum heavy crude oil percentage transported by the Puget Sound Pipeline for the period January 2011 to June 2014 is 11 percent, and the heavy crude oil percentage is frequently much less (as low as zero). Accordingly, the effective capacity of the Puget Sound Pipeline is higher than the 241,000 bpd used in this example.

Destination shippers' accepted nominations by 31,991 bpd (or 11,676,715 barrels per year). This also results in the Puget Sound Pipeline operating at approximately 43 percent of capacity, down from about 57 percent of capacity.

Q10. What is the cost of the reduction in accepted nominations to the Export Destination Shippers using your example?

A10. I calculate it to be approximately $177 million per year. As a proxy for the value of being able to ship one barrel of crude oil on the Trans Mountain Pipeline versus some alternative, I use the average of last five quarters (2013 Q1 to 2014 Q1) for the Westridge Dock bid premium.[8] This average equals $15.12 per barrel. The dock premium multiplied by the reduction in Export Destination deliveries (11,676,715 barrels per year) equals the $177 million per year estimate. In a recent Board proceeding, Wood Mackenzie, acting on behalf of Chevron Canada Limited, provided a forecast of the pricing differential between light sweet crude at Edmonton and Brent (the international light sweet crude oil benchmark).[9] In its forecast, Wood Mackenzie estimated that the pricing differentials observed in 2012 would persist until at least 2020 (the end of the Wood Mackenzie forecast period).

LIKELY SHIPPER REACTION TO DOUBLE APPORTIONMENT

Q11. How would you expect Export Destination Shippers to react if Double Apportionment was adopted?

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[8] Trans Mountain Pipeline ULC Westridge Dock – Aggregate Quarterly Bid Results, Average Accepted Bid Price.
[9] Hearing Order AO-001-MH-002-2012: Chevron Reply Evidence, Part 5, ex. B-25h, pdf p. 8/11; 1T1192.

A11. I would expect the Export Destination Shippers would seek to increase the capacity of the Puget Sound Pipeline so as to reduce the impact of the initial apportionment step. To illustrate the implications of increasing the capacity of the Puget Sound Pipeline, Table 4 illustrates the first step of the Double Apportionment methodology using an assumed capacity increase on the Puget Sound Pipeline of 50,000 bpd (to 291,000 bpd).

Table 4 – Step 1 with Increased Puget Sound Pipeline Capacity

Apportionment Formula		Calculation		Apportionment
$\frac{[\text{Puget Sound Noms} - \text{Puget Sound PL Capacity}]}{(\text{Puget Sound Noms})}$	=	$\frac{[434{,}000 - 291{,}000]}{434{,}000}$	=	32.9%
Accepted Nomination Formula		**Calculation**		**Accepted Nominations, bpd**
(Puget Sound Noms) * (1 - Apportionment)	=	(434,000) * (1 - 0.329)	=	291,000

Table 5 provides the resultant final accepted nominations for the Export Destination and the Canadian Land Destination shippers. Increasing the Puget Sound Pipeline capacity by the indicated 50,000 bpd would increase the accepted nominations of the Export Destination Shippers by 10,408 bpd. It should be understood that the additional 50,000 bpd of Puget Sound Pipeline capacity would not be physically utilized, as the higher throughput (115,047 bpd) is still much less than the pre-expansion capacity of the pipeline.

Table 5 – Step 2 with Increased Puget Sound Pipeline Capacity

Apportionment Formula		Calculation		Apportionment
$\frac{\text{[(Puget Sound Noms + Domestic Noms) - Trans Mountain PL Capacity]}}{\text{(Puget Sound Noms + Domestic Noms)}}$		$\frac{\text{[(291,000 + 268,000) - 221,000]}}{\text{(291,000 + 268,000)}}$	=	60.5%
Accepted Nomination Formula		**Calculation**		**Accepted Nominations, bpd**
(Puget Sound Noms) * (1 - Apportionment)	=	(291,000) * (1 - 0.605)	=	115,047
(Domestic Noms) * (1 - Apportionment)	=	(268,000) * (1 - 0.605)	=	105,953

Q12. Would such an expansion of the Puget Sound Pipeline, even if it is not used, make economic sense for the Export Destination shippers?

A12. Very likely. Table 6 provides the calculations that demonstrate the simple, pre-tax payback of the capacity expansion if the project cost is $50 million.[10] The payback period is approximately 11 months. This calculation uses the average of the last five quarters for the Westridge Dock bid premium as a proxy for the value of shipping on the Trans Mountain System.

Table 6 – Simple Payback Period for 50,000 bpd Expansion

Incremental Volume to Puget Sound from Expansion		Calculation		Incremental Accepted Nominations, bpd
Accepted Noms after Expansion - Accepted Noms without Expansion	=	115,047 - 104,639	=	10,408
Puget Sound Expansion Benefit Analysis		**Calculation**		**Months Payback**
$\frac{\text{Expansion Cost}}{\text{Total Monthly Value of Westridge Dock Bid Premium}}$		$\frac{\text{\$50,000,000}}{\text{(10,408 bpd * \$15.12/bbl * 30 days)}}$	=	10.6

[10] As a reasonableness check on the $50 million cost assumption, Trans Mountain has estimated that the Puget Sound Pipeline can be expanded by 55,000 bpd at a cost of $40 million. See slide 6 of the publicly available Trans Mountain presentation to the Northwest Area Committee Meeting, 13 February 2013, found at http://www.rrt10nwac.com/files/files/11%2002%2013%20NWAC%20KM%20FINAL%20(5).pdf and attached as Appendix "A".

Q13. To what capacity would the Puget Sound Pipeline have to be expanded to eliminate the consequences to the Export Destination shippers of adopting Double Apportionment?

A13. The capacity of the Puget Sound Pipeline would have to equal the Export Destination nomination volume (434,000 bpd), thus exceeding the current capacity of the Trans Mountain System to all destinations.

If the Export Destination shippers were prepared to accept a simple, pre-tax payback period of 3 years, they could spend up to $520 million on such an expansion. As the Puget Sound Pipeline is only 105 kilometers long, the Export Destination shippers could conceivably find it in their economic interest to loop the entire existing pipeline, but not use it.

Q14. Would such expansions of the Puget Sound Pipeline improve economic efficiency, which is one of the Board's guiding principles?

A14. No, just the opposite. Tangible economic resources would be expended on a pipeline expansion that is never physically utilized.

CONCLUSIONS

Q15. Please summarize your conclusions.

A15. In my opinion:

- Sumas is not a tangible Delivery Point nor a capacity constraint in the Trans Mountain System.
- The Puget Sound Pipeline is an integral part of the Trans Mountain System and has operated as such for over 60 years.

- There is no functional reason to change the current apportionment methodology for the Puget Sound Pipeline relative to the Trans Mountain System.

- The adoption of a Double Apportionment methodology will undermine the Board's desire to enact regulations that further its stated guiding principle of economic efficiency, as Export Destination shippers have a substantial economic incentive to pay for an expansion of the Puget Sound Pipeline, notwithstanding the fact that such expansion capacity is unnecessary from a physical perspective.