

8/24/18

**To: Washington State Department of Ecology**

**CC:**

**Governor Jay Inslee**

**Director Maia Bellon**

**RE: Comments on the Puget Sound Pipeline Oil Spill Contingency Plan Update**

The undersigned are a coalition of eleven organizations that work on public safety and environmental issues in Washington State. Our work includes protecting the marine environment of the Puget Sound watershed, inland waters, lands, wildlife, the climate system, human health and public safety.

We appreciate the opportunity to comment on the Draft Trans Mountain Pipeline's (TMPL) Puget Sound Pipeline Emergency Response Plan (Plan). We applaud your effort to make this process accessible to the public and in particular appreciate the time your team has spent talking with our members.

However, the undersigned are profoundly concerned that the Plan fails to adequately address all the risks that the pipeline poses to our waterways, wildlife, and communities. The purpose of this plan is to respond and protect our communities and sensitive environments from the most severe impacts of oil spills. While the oil industry claims to have measures in place to address the unique risks posed by sinking oils, they have failed to demonstrate their ability to safely contain or clean up heavy oil spills in moving waters—one of the greatest risks posed by the Puget Sound Pipeline. We have seen multiple examples, including along the Kalamazoo River, where tar sands persisted in the environment for years despite focused cleanup efforts. In light of these risks, we respectfully request that regulators include the most up to date information on sinking oils in the update of this plan and that they strengthen spill prevention measures, which have proven the only surefire way to protect against the devastation such a spill could cause.

We are concerned that the regulations governing this process and protecting against the occurrence of spills are inadequate to the level of risk our communities face from the oil spills and other types of disasters. We ask that the company is held to the highest possible standard and best known science used for this response plan.

Furthermore, the undersigned are deeply concerned that there is a potential for expansion to the TMPL. We urge Washington's decision-makers to reject any expansion of the Puget Sound Pipeline and the associated increased spill risk in our waterways.

Additionally, recognizing the state will be going through a rulemaking process for heavy sinking oils being carried by vessels and at refineries, we request that the latest information on these types of crude oils be included in this and future response plans.

At a minimum, the plan should be improved in the following ways:

- More fully address the risks of non-floating oils, and:
  - identify which blends of oil carried by the pipeline are at risk of sinking
  - include steps in the spill response plan to identify whether the spilled oil is or could be non-floating
  - describe practices for cleanup or spill response for non-floating oils
  - describe the unique risks to waterways, drinking water and aquifer recharge areas associated with diluted bitumen and the unique risks of sinking oils for wildlife
  - Reduce response time for oil spill response and require personal protection devices for first responders that are appropriate for dilbit
- More fully address the risks associated with the use of dispersants, particularly as it relates to non-floating oils
- Update and improve the geographic response plans
- Update and improve the protections for wildlife
- Comply with, and demonstrate compliance with, all applicable statutory planning standards
- Demonstrate adequate financial responsibility
- Drill credit should not be given for spills
- Worst case discharge calculations should meet both the common sense definition and the statutory requirements
- Plan to protect archeological sites, and
- Remove copyright restrictions from this public document

The current draft misses a critical opportunity to require this company to more fully mitigate the current risk that they are taking with our communities and our natural systems. Further details are provided below. We urge you to incorporate these absences and potential improvements into the revised final Plan.

### **Unique Risks of Non Floating Oils are Not Adequately Addressed**

The signatories are deeply concerned that this plan absolutely fails to acknowledge the serious consequences of a spill of non-floating oils. A study by the U.S National Academies of Sciences highlighted many of the risks associated with a diluted bitumen spill, in particular the risk that, following a spill into water, the weathering process could lead to sunken or submerged oils. To quote a few of their topline findings:

“In comparison to other commonly transported crude oils, many of the chemical and physical properties of diluted bitumen, especially those relevant to environmental impacts, are found to differ substantially from those of the other crude oils. The key differences are in the exceptionally high density, viscosity, and adhesion properties of the bitumen component of the diluted bitumen that dictate environmental behavior as the crude oil is subjected to weathering (a term that refers to physical and chemical changes of spilled oil).”

“spills of diluted bitumen pose particular challenges when they reach water bodies. In some cases, the residues can submerge or sink to the bottom of the water body”

“In cases where traditional removal or containment techniques are not immediately successful, the possibility of submerged and sunken oil increases. This situation is highly problematic for spill response because (1) there are few effective techniques for detection, containment, and recovery of oil that is submerged in the water column, and (2) available techniques for responding to oil that has sunk to the bottom have variable effectiveness depending on the spill conditions.”<sup>1</sup>

The 2010 spill from an Enbridge pipeline into the Kalamazoo River provided a harsh illustration of the risks of transported diluted bitumen.

Specifically, we are concerned that this plan:

- Fails to identify which oils that the pipeline might carry that are non-floating or potentially non-floating under certain conditions;
- Has inadequate mechanisms or processes in place to identify whether a spill includes non-floating oils or potentially non-floating oils;
- Does not define sufficient procedures for responding to a non-floating oils situation;
- Has no equipment on hand to contain, respond to, or clean a non-floating oil spill; and
- Has inadequate equipment and has insufficient procedures to respond to the volatile gases that are likely to occur when diluted bitumen separates.

We are concerned that this complete lack of preparation demonstrates that this company doesn't take this threat seriously. We ask that Department of Ecology take every step possible to increase non-floating oil risk preparedness through this update to the PSP Plan, and we urge Ecology to implement regulations and requirements that more adequately respond to the risks posed by non-floating oils and which do not rely on the good intentions of an unresponsive and unaccountable company.

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<sup>1</sup> <https://www.nap.edu/catalog/21834/spills-of-diluted-bitumen-from-pipelines-a-comparative-study-of>

### **The Plan Should Identify which Oils are Sinking and Potentially Sinking.**

TMPL needs to specify for the benefit of the first responders and for the benefit of regulators, which products that they are carrying which are at risk of non-floating. This information should be public and should be readily accessible through a lookup table in this plan. Page 117-118 of the plan, Table 7.7 summarizes the various crude oil products that Trans Mountain anticipates carrying. The plan identifies the vapor density and gravity of all of these oils, but many of them are blends between tar sands oils and diluents - heavy non-floating oils mixed with light ends and other gasses to make a mixed product that is liquid and slightly lighter than water. When subject to weatherization, volatile light ends and diluents may dissolve in water or evaporate, leaving heavy, non-floating oil behind.

In their analysis of the 2010 spill of mostly Cold Lake Blend in the Kalamazoo River in Michigan, Enbridge Energy describes the issue similarly: “As the volatile organic components preferentially volatilize or dissolve into the surface water, the lighter fraction of the crude oil was removed leaving the crude oil heavier, and more viscous. Some of the crude oil achieved the same density as water or even a slightly greater density than water and sank in the surface water to the top of the sediment.” (Section 2.3.2 Weathering of the Crude oil through Volatilization and Dissolution<sup>2</sup>).

Cold Lake Blend, the product that sank in Michigan, is one of TMPL’s listed products. There are five products listed that have a higher specific gravity than Cold Lake Blend.

At a minimum, TMPL should be required to revise this plan to indicate which of these products are known to sink in conditions found in Northwest Washington, and which may sink but have not been studied under local conditions. The principal contents of the diluents and other light ends should also be made public in this plan so that first responders can assess the risk of toxic off gassing and ignition of volatile compounds in the air (per Plan Section 1.0 Spill Responder Safety).

The National Academy of Sciences<sup>3</sup> (NAS) recommends that the company be required to identify all of the transported crude oils using industry-standard names, such as Cold Lake Blend, and to include safety data sheets for each of the named crude oils. Both the Plan and the associated safety data sheets should include spill-relevant properties and considerations. This

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<sup>2</sup>

[http://media.mlive.com/kzgazette\\_impact/other/Enbridge%20Line%20B%20Incident%20Conceptual%20Site%20Model%2011-30-10%20%28small%29.pdf](http://media.mlive.com/kzgazette_impact/other/Enbridge%20Line%20B%20Incident%20Conceptual%20Site%20Model%2011-30-10%20%28small%29.pdf)

<sup>3</sup> <https://www.nap.edu/catalog/21834/spills-of-diluted-bitumen-from-pipelines-a-comparative-study-of>

Plan mentions safety data sheets as being available online, but the website URL, <http://kmonline/ehs/pages/sdsvault.aspx>, is not a valid, working URL.

The NAS Report also suggests that we “require operators to provide to PHMSA, and to make publicly available on their websites, annual reports that indicate the volumes of diluted bitumen, light, medium, heavy, and any other crude oils carried by individual pipelines and the pipeline sections transporting them.” While that requirement may be outside of the scope of this Plan, the signatories ask that Department of Ecology and respond to this risk and this recommendation with regulations to achieve this same end.

### **Spill and Site Assessment Should Include Assessment of Non-Floating Oils**

Section 3.1, which details the steps taken at the outset of a discharge, utterly fails to discuss non-floating oils.

The National Academy of Sciences report makes the following recommendation

Require that plans specify procedures by which the pipeline operator will (i) identify the source and industry-standard name of any spilled diluted bitumen to a designated Federal On-Scene Coordinator, or equivalent state official, within 6 hours after detection of a spill and (ii) if requested, provide a 1-L sample drawn from the batch of oil spilled within 24 hours of the spill, together with specific compositional information on the diluent.

PHMSA does require SDS information be released within 6 hours (see p. 51). But the report makes no mention of 1-L samples or diluents. Discussion of sampling is limited to samples recovered from the field. And responders are given no instructions or steps in the response checklist to evaluate the potential for oils to become non-floating or the effect of those oils on the spill area. These oversights should be corrected in this plan.

### **Spill Containment and Recovery Procedures Should be Updated to Include Procedures for Sinking Oils**

Section 4.8 of the Plan (page 72), Response Tactics for Sunken or Submerged Oils is both dismissive of the issue and cursory in its treatment of the risk. The section needs significant revision.

**Risk of Sinking Oils should be Acknowledged.** In the introductory paragraph to the section, the Plan states that “Exposure to a single condition is unlikely to cause oil to become submerged or to sink.” This statement is not accurate given the loads and types of oils being carried. The NAS Report concluded that:

Because diluted bitumen has higher concentrations of resins and asphaltenes than most crude oils, spills of diluted bitumen products will produce relatively larger volumes of persistent residues. Such residues may be produced relatively rapidly when gas condensate has been used as the diluent, and these weathered residues display striking differences in behavior compared to other oils: exceptionally high levels of adhesion, density, and viscosity.

Contrasts between diluted bitumen and other crude oils are strongly enhanced by weathering. Weathered heavy crude and especially weathered diluted bitumen are, for example, much more adhesive than the other oils. The densities of the oils also vary, with weathered heavy oils approaching the density of fresh water and weathered diluted bitumen possibly exceeding the density of fresh water.

We request that this inaccurate and dismissive statement be removed.

**Site assessment is too late in the process.** The Plan then goes on to call for a Site Assessment for sunken and submerged oils. We believe that after the company has allowed a spill it will be too late to begin this analysis. The NAS recommends that we “Require that plans adequately describe the areas most sensitive to the effects of a diluted bitumen spill, including the water bodies potentially at risk.” It does not appear that this plan does this in any meaningful way, and we ask that it be revised to account for the unique risks of the types of oils that this company is prioritizing.

Moreover, it is unclear how or when this late-stage site assessment will begin, given that there is no process defined for the identification of a non-floating oil spill and the company has established a dismissive approach to considerations of this risk. As with other priority activities in spill response, site assessment for non-floating oils should be assigned a speed benchmark, so that the analysis must begin within an established number of hours after the spill.

**Recovery and Remediation of oils that submerge or sink is inadequate.** These two sections combined offer less than 250 words of guidance about how to deal with a non-floating oil spill. Much of this section is focused on agitation of oils under the assumption that non-floating oils can be made to “refloat.” While this may work for submerged conventional oils, in the event of heavy oils with negative buoyancy, this approach will not only not work, it may exacerbate the problem by burying the sunken oil beneath a layer of sediment.

It is clear that TMPL has failed to do any due diligence about the best practices, equipment and tactics for non-floating oil spills. There are no measures described that can contain non-floating oils in streams or open water. There is no discussion of the types of equipment needed for these

tactics, and correspondingly, there is no reference to whether TMPL as any of this equipment on hand.

The NAS recommends that Ecology “require that plans describe in sufficient detail response activities and resources to mitigate the impacts of spills of diluted bitumen, including capabilities for detection, containment, and recovery of submerged and sunken oil.” The Plan fails to meet this recommendation and this section of the plan must be updated.

NAS makes several other pertinent recommendations related to the federal oversight of this issue:

- “Require that PHMSA consult with USEPA and/or USCG to obtain their input on whether response plans are adequate for spills of diluted bitumen.” It does not appear that this has been done.
- “Require that PHMSA conduct reviews of both the completeness and the adequacy of spill response plans for pipelines carrying diluted bitumen.” The Report makes some mention of PHMSA review, but it’s unclear if it’s diluted bitumen specific. We ask that this be clarified.
- “USEPA, USCG, and the oil and pipeline industry should support the development of effective techniques for detection, containment, and recovery of submerged and sunken oils in aquatic environments.”
- USEPA, USCG, and state and local governments should adopt the use of industry-standard names for crude oils, including diluted bitumen, in their oversight of oil spill response planning.”

Signatories recognize that the Washington Dept. of Ecology has limited influence with regard to PHMSA, the Coast Guard and USEPA. We ask however that you continue to work with these agencies to elevate our shared concerns about the risks these oils pose to our communities, our economy and our natural systems.

### **Impact of Dispersants on Sinking Oils is Not Addressed**

The signatories have a number of concerns about the potential use of dispersants and their short and long term impact of natural systems and human health. In general, the Plan requires that significant data be collected prior to decision making, but it offers little guidance as to how the various inputs should be weighted. We request that the document be amended to require that the decision making criteria be more transparent.

The signatories have the following concerns about the use of dispersants which are not adequately addressed by this plan:

- We are uncertain how the complicated chemistry of weathering diluted bitumen may interact with various types of dispersants. But it may be that the result is an acceleration of the separation of the lighter ends causing the rest of the oil to become non-floating. Optimally these dispersants would be tested against the various diluted bitumen products that Trans Mountain will be carrying.
- We have particular concerns about the use of dispersants in or near eelgrass beds and the toxicity in those critical habitats. We request that Ecology explore this question and provide more detailed guidance for the use of these chemicals—preferred types of chemicals and circumstances where it is a preferred approach—and that guidance should be incorporated into this plan.

### **Geographic Response Plans are Inadequate and Out of Date**

Section 10.6.4 TMPL – Geographic Information Systems does not comply with WAC 173-182-515 which requires pipeline plan holders to create and maintain a geographic information planning tool that includes “Sensitive natural, cultural and economic area information including applicable geographic response plans (GRP)” (WAC 173-182-515(2)(b)). Section 4.8.1 Sunken and Submerged Oil – Site Assessment does not include environmental sensitivity considerations for either the water column or bottom as addressed in section 9412.3.2 of the Non-Floating Oils Spill Response Tool in the Northwest Area Contingency Plan (NWACP). While Geographic Response Plans are typically a good resource for information on sensitive natural, cultural, and biological resources, the North Central Puget Sound and the San Juan Islands/North Puget Sound Geographic Response Plans referenced in this Contingency Plan do not address benthic natural, cultural, biological, and economic resources, nor do these Geographic Response Plans reference the NWACP section 9412 Non-Floating Oils Spill Response Tool or include any planning for spills of non-floating oils. It is also important to note that Chapter 6 Sensitive Resource Description in the San Juan Islands/North Puget Sound Geographic Response Plan is dated December 6, 1994, and is entirely outdated.

### **Wildlife**

Wildlife included in Section 5 Protection of Sensitive Areas of this plan remains incomplete. The majority of animals and plants listed are limited to mostly marine life. While this pipeline certainly could impact marine wildlife, a pipeline leak would also certainly impact terrestrial and freshwater wildlife too. This plan needs to include a fully comprehensive list of sensitive species and areas potentially impacted as well as protective measures for each, such as what is given in sections 5.1.4 Eelgrass, 5.1.5 Inlets, Intakes, Harbors, and Marinas, and 5.1.7 Salmon and other Spawning Streams. Reference to specific and relevant Geographic Response Plans, where sensitive species, habitat, and appropriate responses for a geographic region are outlined, should

be made in this plan to best ensure the expediency of identifying how to best respond to a leak for a given area and situation.

Section 5.1.2 Bird Colonies mentions repelling devices, but no specifics on what types of repelling devices would be used for which species. Specifics should be provided for what repellent devices would be used for which species, such as given by the National Wildlife Research Center Repellents Conference<sup>4</sup>.

Recently, there was a Washington governor's executive order<sup>5</sup> to protect the Southern Resident Killer Whales, yet there is no mention of their special status in this plan or any description of protection measures. Inclusion of NOAA's hazing methods<sup>6</sup> to deter orcas from oil spills is one example of what should be included.

Another notable species absent from the wildlife list in Section 5 includes the Oregon spotted frog (*Rana pretiosa*), which is ESA listed as endangered in Washington and listed as threatened federally.<sup>7</sup> This frog has been reported to be found at the headwaters of the Sumas River, nearby the local pipeline and could be impacted by a leak.

Section 4.7 Response to Tactics for Shorelines describes freshwater flat and fresh marsh shoreline types as "high" or "highest priority for protection" yet the recommended cleanup activity is vague or impossible. It's important that further protection be put in place for these sensitive priority areas.

Section 13.5.2 Species of Concern, contains a table of species of concern from October 2012. This list was updated in October 2017 and should be updated in this plan to reflect the most current information available as this plan is to be in place for the next 5 years.

Overall, we prefer the inclusion of the terms Best Available Practice (BAP) and/or Best Available Technology (BAT) to ensure that emergency response remains current and most protective of wildlife and sensitive areas.

### **Southern Resident Killer Whales**

Section 5.0 PROTECTION OF SENSITIVE AREAS is significantly outdated. For example, section 5.1.1 Marine Mammals includes no mention of Southern Resident Killer Whales

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<sup>4</sup> <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1031&context=nwrcrepellants>

<sup>5</sup> [https://www.governor.wa.gov/sites/default/files/exe\\_order/eo\\_18-02\\_1.pdf](https://www.governor.wa.gov/sites/default/files/exe_order/eo_18-02_1.pdf)

<sup>6</sup> <https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/oil-spill-response-and-killer-whale-s.html>

<sup>7</sup> <https://whatfrogs.wordpress.com/oregon-spotted-frog-rana-pretiosa/>

(SRKW) which were listed as endangered under the U.S. Endangered Species Act in 2005. The listing in 2005 specifically identifies the risk of oil spills to the SRKW population:

*Other Natural or Human-Made Factors Affecting Continued Existence*

Due to its proximity to Alaska's crude oil supply, Puget Sound is one of the leading petroleum refining centers in the U.S. with about 15 billion gallons of crude oil and refined petroleum products transported through it annually (Puget Sound Action Team, 2005). In marine mammals, acute exposure to petroleum products can cause changes in behavior and reduced activity, inflammation of mucous membranes, lung congestion, pneumonia, liver disorders and neurological damage (Geraci and St. Aubin, 1990). The Exxon Valdez oil spill was identified as a potential source of mortality for resident and transient killer whales in Prince William Sound, Alaska (Dahlheim and Matkin, 1994) and has raised concerns about potential implications for Southern Residents, particularly if the entire population is together in the vicinity of a spill. (Federal Register Vol. 70, No. 222, November 18, 2005, page 69908)

The North Central Puget Sound Geographic Response Plan's section 6.2 – Natural Resources at Risk Summary is dated December 2012 and does reference SRKW, but the San Juan Islands/North Puget Sound Geographic Response Plan's Chapter 6, Sensitive Resource Description, dated December 6, 1994, includes no mention of SRKW. The Southern Resident Killer Whales' critical habitat is in the geographic areas of the North Central Puget Sound and the San Juan Islands/North Puget Sound Geographic Response Plans.

Southern Resident Killer Whales require specific attention in this contingency plan given the critical status of their population and the potential impacts from a pipeline spill entering their critical habitat.

**Statutory Planning Standards Have Not Been Met**

The plan fails to comply with, or demonstrate compliance with an number of statutory planning standards.

**173-182-315 Facility planning standards for nondedicated work boats and operators**

Section 16.2 of the Plan ("Washington State Regulations") notes that this section of the WAC is not applicable. However, the WAC states,

Each facility plan holder shall plan to obtain nondedicated work boats and operators that will be available to deploy GRPs, enhance skimming, and to provide logistical support or other uses during a spill. At a minimum, the plan shall describe a plan that will support

the worst case spill response with work boats and operators that could have arrived on-scene beginning at forty-eight hours.

Please provide justification for this facility plan holder's exemption from this section of the WAC.

### **173-182-320 Facility planning standards for aerial surveillance**

This section of the WAC states, "Each facility plan shall provide for aerial oil tracking resources capable of being on-scene within six hours of spill notification." The Plan provides four sentences under section 9.4 ("Air Operations Branch") that essentially repeats the language from this section of the WAC, and does not provide any evidence that the Plan holder has the resources or ability to track oil within six-hours of a spill event.

We request the Plan specifically outline these resources, as required by the WAC.

### **173-182-323 Planning standards for pipelines carrying crude oil**

This section of the WAC states, "must have a contract with a PRC that maintains the resources, equipment, and capabilities necessary to respond to an oil [spill] that may weather and submerge or sink." Those contractors are listed in the Plan, however, there is no mention of these contractors' resources or ability to respond to a spill. Forcing the public to find and review another document that has this information, should it exist, is a barrier to public knowledge and participation.

We request that the Plan include information on the PRCs possession and maintenance of the required equipment outlined in the WAC, including but not limited to:

1. Sonar, sampling equipment or other methods to locate the oil on the bottom or suspended in the water column;
2. Containment boom, sorbent boom, silt curtains, or other methods for containing the oil that may remain floating on the surface or to reduce spreading on the bottom;
3. Dredges, pumps, or other equipment necessary to recover oil from the bottom and shoreline;
4. Equipment necessary to assess the impact of such discharges; and
5. Other appropriate equipment necessary to respond to a discharge involving the type of oil handled, stored, or transported.

### **173-182-345 Determining effectiveness of recovery systems**

The Plan notes that this standard of the WAC is addressed under section 18.2 "Planning Standards." This WAC states, "To avoid duplication, plan holders relying upon a PRC to meet the necessary planning standards may reference the information submitted in the PRC's

application, as approved by the department.” It is unclear if the Plan holder is relying upon a PRC to meet this standard. If not, the Plan is inadequate in meeting this standard, as it does not address the following as outlined in the WAC:

“For all skimmers, describe how the device is intended to be transported and deployed. List the boom and work boats associated with each water based skimming system. Identify the pumps and pumping capacity that will be used to transfer product to storage devices.”

### **173-182-348 Determining effective daily recovery capacity (EDRC)**

The Plan notes that this standard of the WAC is addressed under section 18.2 “Planning Standards.” Given that none of the variables used to determine the EDRC are supplied in the Plan, we cannot assume that the EDRCs listed are correct. We request that the variables used to calculate the EDRCs for this Plan be supplied.

Additionally, this WAC requires, “For each skimming system identify the oil storage associated with each recovery system. State the storage capacity integral to the oil recovery system, if applicable. Describe how recovered oil is to be transported to/from interim storage.” Again, the Plan does not address this requirement and should be revised.

### **173-182-350 Documenting compliance with the planning standards**

The Plan notes that this standard of the WAC is addressed under section 18.2 “Planning Standards.” This section of the WAC states, “Each plan shall provide a spreadsheet.... This spreadsheet shall account for boom, recovery systems, storage, and personnel by type, quantity, home base and provider.” This section only notes number of personnel, and makes no mention of personnel type, home base or provider, and should be revised.

Additionally, this WAC states, “For purposes of determining plan adequacy, plan holders will include time for notification and mobilization of equipment and personnel.” It is unclear how and if this information was included in determining availability of equipment and personnel. We request that this information be clearly spelled out, as any inconsistencies in this Plan could lead to less effective, less safe cleanups.

### **173-182-365 Transmission pipelines that may impact shorelines of statewide significance**

The Plan notes that this standard of the WAC is addressed under section 18.2 “Planning Standards.” The Plan does not meet this standard for the two-hour response time regarding the length of boom required within Zone 1, the Nooksack River, and is in fact, deficient by 800 feet.

This Plan is also very unclear on which planning standard is even being applied. For example, the 6-hour requirement for Minimum Storage in Barrels is [1 times the EDRC], the 12-hour

requirement is [2 times the EDRC]. Under Zone 1 of this Plan, the only reference to barrel storage in the spreadsheet is listed as “On-water Total Storage (bbls)”. Under that header, the Plan lists the required 6-hour required storage in barrels as 384. We then assume that 384 is the EDRC, according to the WAC. Then, the 12-hour required barrel storage should be [2 x 384], which equals 768. The Plan lists the 12-hours required barrel storage as 1,153. These calculations do not match the requirements from this WAC, nor WAC 173-182-366, nor WAC 173-182-375.

Because it is so unclear which planning standard is being applied, we cannot make informed comments on this aspect of this Plan’s ability to meet the standards set forth in the WACs. We request the Plan more clearly follow the outline of the requirements detailed in the WAC. Further, we request that the Operator be held to the highest standard possible from each of the appropriate planning standard WACs. For example, the 1.5-hour response time and ability to work in shallow water from the Padilla Bay standard (WAC 173-182-375) should be applied, while the higher minimum storage in barrels requirement from the Shorelines of Statewide Significance standard (WAC 173-182-365) should also be applied. We request justification for any planning standard that is chosen to evaluate this Plan.

### **Insurance**

This plan states very little on the matter of insurance. We request that the plan be updated to state the length of the term of liability and whether we the public are at risk if the company could declare bankruptcy rather than continue with the cleanup process and how this matter would be dealt with.

The cleanup process is timely, and we do not want to see a cleanup stalled and causing more environmental and/or human harm because of financial issues related to insurance coverage issues. Additionally, please clarify how the criteria for what is “clean enough” relative to the company’s financial liability are established.

The company must demonstrate sufficient financial resources on hand to be able to respond without delay. We ask that the plan be updated to provide the public with this assurance.

### **Drill Credit Should Not Be Given for Spills**

Section 17.2.4 indicates that per WAC 173-182-730, TMPL plans to request credit for required spill response drills whenever they cause an actual spill. The signatories recognize that this standard is allowed under the current regulations, but also believe that it is a perverse incentive that should be reevaluated.

Companies that allow one spill are more likely to allow future spills and pipelines that have had one accident are more likely to have another in the future. Spill response preparedness is all the more important in the event of a company and a pipeline with a recent history of failure to prevent accidents. Allowing them off the hook for additional spill response preparedness is exactly the wrong policy.

If the company wants to avoid the dual expense of spill response drills and actual oil spill response, then they should prevent oil spills. We urge the Department of Ecology and the Governor to evaluate a more appropriate approach.

### **Worst Case Discharge Calculations Must Be Revised**

The worst case discharge calculations fail to meet either the statutory nor the common sense definition of “worst case.” We ask that Ecology require that these calculations be redone based on a much more reasonable set of worst case assumptions so that the community can be assured that the company has the equipment, personnel and insurance to cover the response and cleanup to the actual worst case scenario.

From 2010 to August 2017 in the U.S., TMPL and its subsidiaries and joint ventures had 213 spills totaling 21,598 barrels of hazardous liquids. Of those spills 172 were refined petroleum products, 35 were crude oil and 6 were HVL. In total, TMPL saw 22 significant spills during this time—5 crude oil spills, 3 HVL spills, and 14 refined petroleum products spills.<sup>8</sup> In Canada since 1961, the existing Trans Mountain pipeline has reported 82 spills to Canada’s National Energy Board, including spills of greater than 500 barrels in 2005, 2007, 2009 and 2012.<sup>9</sup>

### **Worst Case Discharge Calculations Do not Meet the Common Sense Intention**

In common use, worst case scenario planning starts with the assumption of a series of failures. Yet in calculating their worst case discharge, TMPL assumes that their spill detection equipment works perfectly, that their operators in Alberta respond without error and that the shutdown valves work as expected. They claim to be able to detect a spill and shut down the pipeline segment in 15 minutes (and then used the statutory minimum of 30 minutes). In essence TMPL has estimated the worst case based on a scenario where everything works perfectly following a single accident. This isn’t what “worst case” means.

In pipeline spill after pipeline spill we have seen events play out that are worse than the proposed worst case. This plan projects a worst case discharge of between 6,143 barrels (zone 3) and 12,305 barrels (zone 2). Since 2010, in the United States, there have been three discharges worse

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<sup>8</sup> <https://www.greenpeace.org/usa/research/four-proposed-tar-sands-oil-pipelines-pose-a-threat-to-water-resources/>

<sup>9</sup> Kinder Morgan. Spill History. [www.transmountain.com/spill-history](http://www.transmountain.com/spill-history)

than the zone 3 worst case discharge and 13 worse than the proposed zone 2 worst case discharge. In many of these cases the spill occurred slowly over hours or days with pipeline operators becoming aware of the spill because local residents reported a smell because pipeline spill detection equipment and procedures are not fool-proof.

<b>Pipeline Spills Since 2010 Worse than the Purported Worst Case Discharge</b>			
<b>Date</b>	<b>Barrels Spilled</b>	<b>Spill Type</b>	<b>Pipeline and Location</b>
July 29, 2013	20,600	crude oil	Tesoro High Plains Pipeline Co., MountRail County, N.D.
July 25, 2010	20,082	crude oil	Enbridge Energy, Marshall, Mich.
Dec. 5, 2016	12,615	crude oil	Belle Fourche Pipeline Co., Billings County, N.D.
June 4, 2011	12,229	crude oil	Enterprise Crude Pipeline LLC, Chico, Texas
Oct. 11, 2010	10,200	crude oil	Centurion Pipeline LP, Levelland, Texas
Jan. 19, 2017	10,009	crude oil	Tallgrass Pony Express Pipeline, Logan County, Colo.
April 13, 2011	9,000	gasoline	Marathon Pipe Line, Dansville, Mich.
Dec. 8, 2014	8,800	gasoline	Plantation Pipe Line Co., Belton, S.C.
Aug. 29, 2016	8,600	crude oil	Sunoco Pipeline LP, Sweetwater, Texas
Oct. 23, 2016	7,603	crude oil	Enterprise Crude Pipeline LLC, Cushing, Okla.
Sept. 9, 2010	7,538	crude oil	Enbridge Energy, Romeoville, Illi.
Sept. 9, 2016	7,370	gasoline	Colonial Pipeline Co., Helena, Ala.
Jan. 27, 2011	6,911	crude oil	Enterprise Crude Pipeline LLC, Iola, TX.

In particular, if a rupture were to be caused and a discharge occurred during start up or shut down of pipeline operations, the pipeline would be operating in low pressure status which makes the presence of a leak difficult to detect. The 2010 Enbridge disaster, for example, resulted in over 20,000 barrels of oil spilled when a rupture occurred during a shut down and was not detected until the pipeline was restarted. “About 80% of the spilled volumes (or 16,000 barrels) occurred during the two failed attempts to restart the line. As is the case with most industrial accidents, the most serious incidents tend to occur during system start-ups or shutdowns, when abnormal operating conditions are very difficult to assess.”<sup>10</sup>

The purpose of requiring a worst case discharge calculation is to ensure that there is sufficient equipment and staff available to respond to a spill quickly. The signatories to this letter recognize

<sup>10</sup>

<http://www.oilsandsmagazine.com/news/2016/7/20/lessons-learned-from-enbridge-kalamazoo-river-spill>

that the company is being held to a regulatory standard that has been applied in this same way in the past. We simultaneously request that the Department of Ecology require TMPL to implement a more rigorous methodology for worst case discharge planning and we ask that the Department update the governing regulations to ensure that pipeline operators are all held to higher standards.

### **Worst Case Discharge Calculations Do Not Meet the Regulatory Standard**

From a regulatory perspective, worst case is calculated based on the historic performance of the operator. WAC 173-182-030 (70)(d)(i) details the method for calculating a worse case spill for pipelines and states:

“The pipeline’s maximum time to detect the release, plus the maximum shutdown response time multiplied by the maximum flow rate per hour, plus the largest line drainage volume after shutdown;

For planning purposes, the total time to detect the release and shutdown the pipeline should be based on historic discharge data or, in the absence of such historic data, the operator’s best estimate. At a minimum the total time to detect and shut down the pipeline, must be equal to or greater than thirty minutes...”

The historic performance of this operator includes instances of significantly longer response times than they purport in this draft.

In Abbotsford, BC in 2012, this same pipeline operator experienced a failure in a crude oil tank drain mechanism resulting in a spill to the tank’s secondary containment system. A series of failures of the company’s leak detection systems resulted in the leak continuing for more than 6 hours undetected, and more than 7 hours until it was stopped. The entire report of this incident is available through Canada’s National Energy Board (NEB).<sup>11</sup>

The series of errors is described in that report as follows:

- “A first operational error happened when the CCO, who was monitoring the Sumas Terminal during the night shift at TMPU’s control centre in Edmonton, did not set the creep alarm on the Legacy System within 15 minutes after completing the receipt of crude oil into Tank 121.” (Section 4.3.2)
- “the night shift CCO received three alarms, two from the Legacy System and one from the Test System, between 02:39 and 04:11. Each time, the night shift CCO failed to recognize the possible leak situation when viewing the Tank 121 volume trend.” (Section 4.3.2)

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<http://www.neb-one.gc.ca/sftnvrnmnt/sft/nvstgtn/archive/2012nbrdg-bbtsfrd/2012-01-24trnsmntn-bbtsfrd-eng.pdf>

- “The night shift CCO again failed to follow TMPU’s procedures by deciding that the alarms were false alarms, without sending a field technician to verify on site.”
- “Another factor that may have contributed to the late leak detection is that the threshold value for the creep alarm on the Test System was not set at the proper volume deviation value.” (Section 4.3.2)

This series of errors was made by the monitoring staff (CCO’s) in the TMPU Control Centre in Edmonton, AB. We presume that this is the same Control Centre referenced on page 235 of this spill response plan “Zones 1-4 are pipeline response zones, and have been broken down by the ability to be remotely controlled by the Control Centre located in Edmonton, Alberta Canada, which does not rely on a field response to shut down.”

Another spill event, this one in Burnaby, BC in 2007, evidences that a 15 minute detection and shut down time is simply not a commitment that TMPL is in a position to fulfil. In this case “oil shot 30 metres into the air like a geyser for 25 minutes. The black liquid rained down on houses, spewed across two lanes of traffic and ran downhill into the inlet.”<sup>12</sup>

We request that the worst case discharge volume be recalculated based on the historic discharge data in Abbotsford using the actual spill historic spill detection time of six hours as required under WAC 173-182-030. All spill response equipment and personnel and procedures will need to be recalculated based on the actual worst case discharge volumes for each section of the PSP.

### **Worst Case Discharge Map needs to Be Corrected**

The map on page 252, “18.3 Worst Case Discharge Map,” failed to identify the location of two hospitals in the region. It should be updated to include Skagit Valley Hospital in Mount Vernon and Island Hospital in Anacortes.

### **Risk of Groundwater Contamination**

Greater diligence should be given in this plan to where the pipeline comes in proximity with drinking water and irrigation water. Landowners with pipeline should not only be notified that the pipe crosses their property, but also of what types of observations they should look for in detecting even slow leaks, as well as who to contact if a leak is suspected.

### **The Plan Should Address Risk to Archaeological Sites**

Section 5.0 Protection of Sensitive Areas, makes no mention of cultural and archaeological sites. The northern section of the pipeline crosses traditional lands of the Nooksack Indian tribe. The western spur of the pipeline crosses on or near traditional lands of the Lummi Nation. And the

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<sup>12</sup> <https://www.cbc.ca/news/canada/british-columbia/cleanup-continues-on-b-c-oil-spill-1.676094>

southern spur crosses through traditional lands of the Swinomish Tribe. Prior to approving this Contingency Plan, Ecology should require that the company model the probable geographic range of impact from spills, including likelihood of transport of crude spills by freshwater mechanism into lands currently in tribal trust, and consult with potentially affected tribes on protections and mitigations and appropriate cleanup responses in potentially archaeologically or culturally significant areas.

### **Copyright Restrictions Should Not be Placed on a Public Document**

A key purpose of this plan, is to “support coordination with state, federal, tribal and other contingency planning efforts.” (WAC 173-182-010(1)c.) The current plan must be kept on file with the Department of Ecology, is subject to public review and periodic updates and improvements. By its nature, the plan must be a transparent, accessible and public document.

TMPL attempts to subvert this purpose in the very first block of text in the document saying on page 2 that “This material is protected by copyright and is the exclusive property of Trans Mountain Pipeline (Puget Sound) LLC. and its affiliates. No external distribution or transmission of this material is permitted without the prior written consent of Trans Mountain Pipeline (Puget Sound) LLC.”

We believe that the public purpose of this document and the open public records requirements in Washington state supercede TMPL’s desire to retain exclusive control of this plan. We ask that the Department of Ecology insist that this language be removed.

### **Conclusion**

We want to reiterate our concern that the existing pipeline poses unacceptable risks to waterways and communities. This plan should be updated to address these risks. Finally, we are deeply concerned that there is a potential for expansion to the pipeline and we urge Washington’s decision makers to reject any expansion and the associated increase spill risk and impact to our waterways and communities.

Thank you for your consideration. If you have questions or would like additional detail related to any of the above comments, please contact

Alex Ramel  
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360-305-5079

Alex will either answer your question or put you in touch with the policy experts responsible for the relevant section. Thank you again for your careful consideration of these points and for the opportunity to participate in the environmental review of this project.

Sincerely,

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