

1 2) On behalf of Aspect Consulting LLC (Aspect) I have prepared the following testimony on the
2 City of Washougal's behalf to address water supply wellhead protection concerns associated
3 with the proposed Tesoro Savage Vancouver Energy Project. Aspect has focused on developing
4 comments specific to the City's water supply that can be incorporated into the City's overall
5 comments on the Vancouver Energy Distribution Terminal (VEDT) adjudication.
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7 Vancouver Energy and the Port of Vancouver have the burden of proof that the VEDT meets the
8 following standards under Washington's Energy Facility Siting laws and its regulations.
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11 RCW 80.50.010:

12 (1) To assure Washington state citizens that, where applicable, operational safeguards are at least
13 as stringent as the criteria established by the federal government and are technically sufficient for
14 their welfare and protection.

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16 (2) To preserve and protect the quality of the environment; to enhance the public's opportunity to
17 enjoy the esthetic and recreational benefits of the air, water and land resources; to promote air
18 cleanliness; and to pursue beneficial changes in the environment.

19 WAC 463-14-020:

20 (1) Ensuring through available and reasonable methods that the location and operation of such
21 facilities will produce minimal adverse effects on the environment, ecology of the land and its
22 wildlife, and the ecology of state waters and their aquatic life (emphasis added to these citations)
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25 3) The VEDT's Draft Environmental Impact Statement (DEIS) does not provide adequate proof
26 of the sufficiency of its operational safeguards to protect the public health, safety and welfare of
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1 the citizens of Washougal. In the absence of adequate study and specific, enforceable mitigation,
2 EFSEC should deny approval of this project.

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5 Comment 1 (Public Services, Utilities, Health and Safety Category):

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7 4) Regarding Section 4.7.4 of the DEIS (Exhibit 0051-Water Resources), and specifically
8 Section 4.7.4.2 (Rail Transportation), the City of Washougal has significant concerns regarding
9 the proximity of the BNSF rail corridor to the City's wellfields, and the increased risk of a crude
10 oil spill associated with the proposed project. The City provides water supply to approximately
11 15,000 residents. The City's primary water supply source is the Westside (Lower) Wellfield.
12 This wellfield has multiple water supply wells (Wells 5, 6, 7, and 11) located less than 100 feet
13 from the rail corridor (See attached Exhibit B prepared by Aspect Consulting). The wells are
14 completed in a shallow, unconfined aquifer composed of porous alluvial materials. In the
15 vicinity of the City's wellfields, including along the rail corridor, coarse-grained materials with
16 high infiltration rates extend from the ground surface to the water table, located at a depth
17 ranging from 30 to 60 feet below ground surface, with total well depths of approximately 100
18 feet. No aquitard materials are known to be present in the wellfield area that would inhibit
19 downward migration from a crude oil spill.
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24 5) The DEIS concedes in Section 4.7.4.2 (Page 4-63): "A crude oil spill from a unit train could
25 adversely impact groundwater quality if a release occurred over shallow, unconfined aquifers,
26 particularly where soils have high infiltration rates and aquifers are overlain by porous
27 alluvium". The DEIS also notes in Section 4.7.4.2 (Page 4-64): "Implementation of GRP
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1 (geographic response plan) strategies along the Spokane and Columbia rivers would likely
2 reduce damage to groundwater from spills of any size, but would not necessarily prevent
3 contamination migration into aquifers through overlying soils". Clearly, the City of
4 Washougal's Lower Wellfield is highly susceptible to groundwater contamination from a crude
5 oil spill that could occur during rail transport to the proposed marine transfer facility given its
6 location close to the rail corridor and the local hydrogeologic conditions.
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10 6) The City also has a second wellfield, the Hathaway Park (Upper) Wellfield, located
11 approximately 2,500 feet from the rail corridor, as shown on Figure 1 from the City's Wellhead
12 Protection Report as submitted to the Washington Department of Health (Pacific Groundwater
13 Group, 2012). As the report demonstrates, these wells are also completed in alluvial materials
14 that are highly susceptible to contamination from surficial contaminant spills. Only one
15 production well is active (Well 1), and typically, this well is used only to supplement summer
16 water demand. Well 1 is unable to provide sufficient water for the City's year round demands,
17 should a spill require shutdown the Lower Wellfield.
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20 Figure 1 from the above reference Wellhead Protection Report and cross section A-A' (Figure
21 2), also from the same report illustrate the extent of alluvial materials and the shallow depth and
22 vulnerability of the wellfield. Also of note on the cross section are several of the City of Camas'
23 water supply wells, which are also located in very close proximity (less than 300 feet) to the rail
24 corridor.
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1 A vulnerability of the City's wellfields combined with a lack of specific, enforceable mitigation
2 measures in place indicate that the VEDT does not meet the EFSEC standards of preserving and
3 protecting the environment and assuring technically sufficient operation safeguards for the public
4 safety and welfare.
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7 Attachments: Aspect Exhibit B and Wellhead Protection Report Figures 1 and 2.
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10 7) Comment 2 (Public Services, Utilities, Health and Safety Category):
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12 The DEIS at Section 4.7.4 (Water Resources), and specifically Section 4.7.4.2 (Rail
13 Transportation) acknowledges that the rail corridor for the project crosses the 5-year wellhead
14 protection area for several cities, and specifically mentions communities such as Bingen and
15 North Bonneville where this occurs (Page 4-64). However, the overlapping 5-year wellhead
16 protection area for the City of Washougal's primary wellfield (the Westside/Lower Wellfield) is
17 not mentioned in the DEIS. In fact, the rail corridor crosses the 6-month, 1-year, and 5-year
18 captures zones of the City of Washougal's water supply wells PW-5, -6, -7, -11, and -12, as
19 shown on the attached Figure 4 from the City's Wellhead Protection Report as submitted to the
20 Washington Department of Health (Pacific Groundwater Group, 2012). The rail corridor also
21 crosses the City's designated Critical Aquifer Recharge Area (CARA). Clearly, a spill in close
22 proximity to the wellfield could affect water supply quality in far less than a 6-month timeframe,
23 while a spill further away in the capture zones could still cause significant medium to longer-
24 term water supply contamination.
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1 8)The attached Figure 4 from the City’s Wellhead Protection Plan illustrates the location of the
2 wellhead protection captures zones and the Critical Aquifer Recharge Area (CARA) and the
3 proximity of the BNSF rail line to the project. The rail corridor is less than 100 feet from the
4 City’s primary Westside (Lower) Wellfield. The rail corridor is also within approximately
5 2,500 feet of the City’s Hathaway Park (Upper) Wellfield. The Upper Wellfield has only one
6 operational well, PW-1, which is used to augment summer peak water, demands on an
7 occasional basis. The Lower Wellfield is the City’s primary water source. As the VEDT has not
8 provided any specific sufficient mitigation for oil spills and leakage impacts into this aquifer, the
9 VEDT has not met its burden of proof regarding the above referenced EFSEC standards.
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13 Attachment: Wellhead Protection Report Figure 4.
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16 Comment 3 (Public Services, Utilities, Health and Safety Category):
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18 9) The City of Washougal has significant concerns regarding the proximity of the BNSF rail
19 corridor to the City’s wellfields, and the increased risks of crude oil spills that are associated
20 with the proposed project [see DEIS Sections 4.9 (Additional Mitigation Measures to Address
21 the Risks and Impacts from a Crude Oil Spill, Fire, and/or Explosion) and 4.10 (Potential
22 Significant Unavailable Adverse Impacts)]. The City’s wellfields are its sole water supply
23 source, as noted in the City’s Water System Plan submitted to the Washington State Department
24 of Health as required in June 2012. Rail spills are particularly a concern giving the vulnerability
25 of the Lower Wellfield (the City’s primary water source) due to the local hydrogeologic setting
26 of the wellfield in shallow, coarse-grained alluvial materials, as documented in the City’s
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1 Wellhead Protection Report submitted to the Washington Department of Health (Pacific
2 Groundwater Group, 2012).

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5 10) The VEDT does not appear to outline any specific actions to be taken by the Applicant
6 should a community such as Washougal have to shut down its water supply due to contamination
7 issues associated with significant crude oil spill (see DEIS 4.9 and 4.10). In addition, no
8 mitigation measures are outlined by the Applicant to address development in advance of the
9 Project of alternative sources of water for communities with highly vulnerable water supplies,
10 such as the City of Washougal.

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12 Nor is there any proven, long term viable alternative should a rail spill result in a shutdown of
13 the City's Lower Wellfield. A crude oil spill in this area could result in a long-term shutdown of
14 the wellfield, depending on the nature and magnitude of the spill. Two potential alternative
15 sources currently exist but both have constraints as primary sources of water for the City:

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17 -According to the City's Water System Plan filed with the Washington State Department of
18 Health (DOH), the City has two emergency interties with the City of Camas that could provide
19 water to Washougal, at least over a short duration. The longer-term viability of use of the
20 intertie, particularly during peak summer demand, is unknown at this time without further study.

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22 It is also of note that one of the wellfields supplying Camas is located approximately 2,200 feet
23 west of Washougal's Lower Wellfield (City of Camas Water System Plan as filed with DOH,
24 June 2010). Wells at this location are completed within shallow alluvial materials, similar to
25 Washougal's wells, and are less than 300 feet from the rail corridor, based on a review of Figures
26 1 and 2 from the City's Wellhead Protection Report as submitted to the Washington Department
27 of Health (Pacific Groundwater Group, 2012). In addition, based on Figure 4 from the Wellhead
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1 Protection Report, the Camas wellfield appears to be hydraulically downgradient of Washougal's
2 Lower Wellfield. Under these circumstances, a rail spill at or near the Lower Wellfield could
3 ultimately also contaminate the Camas wellfield. Were this to occur, it would clearly limit
4 water available to Washougal from the existing interties.
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7 -The City has one well (Well 1) available online at its Hathaway Park (Upper) Wellfield. In the
8 event of an emergency, this well could possible meet winter demand, but it would provide less
9 than half of summer demand. Expanding this wellfield is one option for a potential mitigation
10 measure to address the increased likelihood of a rail spill that is associated with the Vancouver
11 Energy Project. While the Upper Wellfield also has some risk of being affected by groundwater
12 contamination associated with a significant rail accident, the greater distance from the rail
13 corridor (approximately ½ mile) may provide more of a buffer should a significant spill occur,
14 solely based on its distance from the tracks. In summary, both of these alternative water sources
15 have potential or known constraints on their ability to meet the City of Washougal's water
16 demand, particularly during summer months. In addition to an expansion of capacity at the
17 City's Upper Wellfield, another potential mitigation option that should be considered is
18 development of a new wellfield in an area less vulnerable to potential crude oil rail spills. The
19 City has a pending water right application for a new groundwater source that could serve this
20 purpose, as filed and on record with the Washington State Department of Ecology. Based on the
21 water right application, the area designated for this potential wellfield is located approximately a
22 mile away from the rail corridor and would have more of a buffer for protection from potential
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3 crude oil rail spills.

4 I declare under the penalty of perjury that the foregoing is true and correct to the best of my
5 knowledge.
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7 Dated this 13th day of May, 2016
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12 Carl Einberger LHG, CWRE

13 Aspect Consulting
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16 Attachments:

17 Resume

18 Wellfield cross section

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20 Figure 1, 2 and 4 from the City's Wellhead Protection Report as submitted to the Washington
21 Department of Health (Pacific Groundwater Group, 2012
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