BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of: Application No. 2013-01 TESORO SAVAGE, LLC TESORO SAVAGE DISTRIBUTION TERMINAL	CASE NO. 15-001 SWORN PRE-FILED TESTIMONY OF DANIEL ROSCOE

I, Daniel Roscoe, state as follows:

1. I declare under the penalty of perjury of the laws of Washington and the United States that the following statements are true and correct.

2. I am over eighteen years of age, have personal knowledge of the matters herein, and am competent to testify regarding all matters set forth herein.

I. INTRODUCTION, EDUCATION AND PROFESSIONAL BACKGROUND, AND OTHER QUALIFICATIONS

3. My name is Daniel Roscoe and I am a senior environmental scientist at BergerABAM. My office is located at 33301 Ninth Avenue South, Suite 300, Federal Way, WA 98003.

4. I have a Bachelor's of Science degree in Biology from the University of Puget Sound. Since graduating in 2001, I have over 15 years of experience as a biologist and permitting specialist while working for several firms. Throughout my employment as a biologist, I have conducted fish and wildlife habitat surveys, noxious weed surveys, and forest assessments. I have experience conducting wetland delineations and wetland functional assessments, stream assessments, habitat, and vegetation community assessments throughout the Pacific Northwest. I also volunteer my time as a biologist with the Seattle Audubon Society and have been conducting citizen science wintering

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seabird surveys since 2008. I have work extensively on environmental impact statements that require analysis of biological resources in relation to development activities. My expertise focuses on wetlands, wildlife, vegetation and riparian areas. My background in permitting includes federal (National Environmental Policy Act), state (State Environmental Policy Act), and local permitting, analysis, and documentation for projects throughout the West Coast. I have prepared biological assessments/biological evaluations for consultation under the Endangered Species Act. My Curriculum Vitae is attached hereto as Attachment A.

5. BergerABAM is a consulting firm with extensive expertise in planning, civil and structural engineering, environmental resource impact analysis, and construction management. BergerABAM was contracted to work as the project manager for the Vancouver Energy Project. As part of the BergerABAM team working on this project, I worked under the supervision of a team of engineers, planners, and biologists to assess existing site conditions; identify and review appropriate data sources and literature; identify resource-related issues; evaluate project-related impacts (direct, indirect, and cumulative) on resource issues; and development of mitigation measures to avoid/reduce/replace impacts.

II. PURPOSE OF TESTIMONY

6. The purpose of my testimony is to address Applicant Tesoro Savage Petroleum Terminal LLC, d/b/a Vancouver Energy's (hereinafter, TSPT or the Applicant) Vancouver Energy Project Application for Site Certification (ASC) compliance with WAC 463-62-040(2)(a) and (f), and WAC 463-60-332.

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III. SCOPE OF ANALYSIS OF THE TERMINAL'S IMPACTS

7. I became involved in the Vancouver Energy Project when I joined BergerABAM, which was the lead consultant for the Vancouver Energy Project. BergerABAM's experience includes consulting on energy projects in Washington State through the Energy Facility Site Evaluation Council (EFSEC) process and the lead consultant for the project is a former EFSEC employee.

8. In October 2013, I was hired as an environmental scientist for BergerABAM to support the project team and take responsibility for the analysis of potential project impacts on terrestrial biological resources (i.e., terrestrial wildlife and vegetation). As part of the BergerABAM project team, I worked with a team of engineers, planners, environmental specialists, biologists, and other experts.

9. In that capacity, BergerABAM analyzed the potential impacts of the Vancouver Energy Project on terrestrial resources. As an environmental scientist, my contribution to the analysis was based on the project as described in the Proposal section (Volume I, Section 2) of the Original ASC, and subsequent revisions to the proposal as described in Preliminary Draft Environmental Impact Statement (PDEIS) Chapter 2, the PDEIS Refinements Memo (submitted to EFSEC on May 27, 2015), and other project clarification as submitted in the record.

10. BergerABAM assisted the drafting of the ASC, specifically Section 3.4 Habitat, Fish, and Wildlife and the associated Biological Resources Report (ASC, App. H1). BergerABAM also had the lead in preparing of PDEIS Wildlife and Vegetation chapters (PDEIS §§ 4.4-4.5), and Train and Vessel Impacts (PDEIS §§ 5.6-5.7), coordination of PDEIS mapping and figure production, evaluation of project design changes and impacts to natural resources (e.g., ground improvement design evaluation), and drafting of the Water Quality Protection and Monitoring Plan (ASC, App. F2), Marine

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Mammal Monitoring Plan (ASC, App. H3), and Construction Wildlife Monitoring Plan (ASC, App. H4).

11. BergerABAM team, including myself, reviewed a number of industry-standard sources. Although a complete list of citations and reference documents is provided in the ASC, the PDEIS, Construction Wildlife Monitoring Plan, Marine Mammal Monitoring Plan, and the Applicant prepared comment letter on EFSEC's DEIS), these sources included: a) Species Lists from the US Fish and Wildlife Service (USFWS); b) Species Lists from National Marine Fisheries Service (NMFS); c) Washington Natural Heritage Program (WNHP) data; d) Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species data (PHS); e) WDFW Salmonscape data; f) USFWS National Wetlands Inventory (NWI) data; g) US Department of Agriculture Natural Resources Conservation Service (USDA NRCS) soils data; h) USGS GAP Analysis National Land Cover Data (NLCD); i) National Vegetation Classification System (NVCS); and j) Washington-Oregon Wildlife Habitat Associations.

12. The BergerABAM team also reviewed applicable federal, state, and local laws, regulations, and policies for vegetation and wildlife.

13. Regarding construction and operational noise levels, my analysis relied upon technical data and modeling produce by Kristen Wallace.

IV. ASC AND PDEIS ANALYSIS

14. ASC Section 3.4 and PDEIS Chapters 4 and 5, along with the other documents developed in support of the ASC, provide an assessment of existing habitat and their use as provided by WAC 463-60-332(1) and include an identification of the energy facility impacts as provided by WAC 463-60-332(2). ASC Sections 3.4.2.3 and 3.4.4.3 provides a detailed discussion of mitigation measures, including avoidance, minimization of impacts and mitigation as provided by WAC 463-60-332(3). ASC

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Section 3.4.4.2 and Appendix H4 describe the due consideration of project-type specific guidelines as provided by WAC 463-60-332(4).

15. Collectively, ASC Section 3.4 and PDEIS Chapters 4 and 5, along with the other documents developed in support of the ASC, demonstrate that the proposed project results in no net loss of fish and wildlife habitat function and value as provided by WAC 463-62-040(a).

16. The following is a summary of the analysis within ASC Section 3 and PDEIS Chapter 4, along with the documents that BergerABAM and Vancouver Energy relied upon in developing that analysis.

A. Vegetation

17. With respect to the analysis of potential project impacts on vegetation at the facility (ASC Section 3.4 and PDEIS Chapter 4.4), BergerABAM conducted baseline studies, and reviewed other publically available data such as the NLCD. At the project site, vegetation communities were established based on dominant species as described in ASC Section 3.4 and PDEIS Chapter 4.4. Standard community nomenclature was used that incorporated guidelines from the NVCS, observations of dominant species, and functional location, i.e., riparian. BergerABAM reviewed data sources to determine if federal- or state-listed species were present within the site area. BergerABAM reviewed noxious weed species lists for Clark County and incorporated a list of known or suspected species within the site.

18. As described in ASC Section 3.4 and PDEIS Chapter 4.4, the analysis of project-related impacts to vegetation focused on the following aspects: a) temporary or permanent loss of vegetation resulting from construction; b) loss of populations or individuals of federal- or state-listed species; and c) construction and operational establishment and or spread of noxious weeds.

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19. BergerABAM concluded there would be minor, temporary impacts from the loss of vegetation as a result of construction. As shown in ASC Table 3.4-4, and PDEIS Table 4.4-2, the majority of construction impacts would occur within the unvegetated industrial community, which is largely devoid of vegetation and does not contain native species, as referenced in the existing conditions summaries of these documents. BergerABAM also concluded there would be no impact to federal or state listed species as they are not known or suspected to occur at the project site. ASC § 3.4.2.1.

20. BergerABAM concluded that there is a risk for the establishment and/or spread of noxious weeds during construction and operation of the Vancouver Energy Terminal. BergerABAM included standard best management practices (BMPs) for minimizing noxious weeds establishment and spread, which would thereby reduce potential impacts. See ASC § 3.4.2.3; PDEIS § 4.4.3.1. In the revised ASC, BergerABAM incorporated a mitigation measure to conduct pre-construction noxious weed surveys to Section 3.4.2.3.

21. With respect to the train and vessel analysis of vegetation (PDEIS Chapter 5.6), BergerABAM downloaded NLCD GIS data for the entire rail and shipping corridors from North Dakota to Washington and Oregon. As specified in PDEIS Chapter 5.6 a distance of one half mile from the rail was used to assess the rail corridor and one quarter mile from the shoreline was used to assess the marine corridor. As shown in PDEIS Tables 5.6-1 and 5.6-3, BergerABAM categorized the amount of each vegetation community present within the rail and marine corridors. PDEIS Tables 5.6-2 and 5.6-4 summarize federally-listed species known or suspected to occur with the rail and marine corridors. Noxious weed lists were reviewed and summarized at the state level and presented as likely to occur with the rail and marine corridor.

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22. BergerABAM's analysis of rail/vessel transportation related impacts to vegetation focused on: inadvertent release of crude oil; risk of fire associated with an inadvertent release; and remediation of an inadvertent release (as detailed in PDEIS Section 5.6.2).

B. Wildlife

23. With respect to the project site analysis of wildlife (ASC Section 3.4 and PDEIS Chapter 4.5, 5.7), BergerABAM completed baseline studies completed and other publically available data such as WDFW PHS, USFWS, and NMFS Threatened and Endangered Species lists, and habitat within the vicinity of the project. The analysis was subdivided into terrestrial species, aquatic species, and sensitive species (PDEIS Section 4.5). GIS data for wildlife habitat (Johnson and O'Neill 2001) was downloaded from publicly available sources and reviewed for a one-mile radius of the site boundary. The one-mile radius was established by a terrestrial construction noise analysis, described in PDEIS Section 4.5.2.1. At the project site, vegetation communities were translated into the Johnson and O'Neill habitat associations as described in ASC Section 3.4 and PDEIS Chapter 4.5.

24. BergerABAM evaluated the impacts of the project on wildlife for the following factors as described in PDEIS Section 4.5.2.1:

- Terrestrial Species
  - Temporary or permanent loss of habitat resulting from construction.
  - Temporary construction noise
- Aquatic Species
  - Temporary Water Quality Impacts
  - Temporary Noise Impacts
  - Overwater Construction

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- Special Status Species
  - Direct mortality or loss of populations or individuals of federal or state listed species

25. BergerABAM assessed the following operational impacts on wildlife for the Terminal: operational spills/leaks; operational noise; and lighting.

i. Terrestrial species

26. Based on a review of the data, BergerABAM concluded that the majority of the proposed Facilities would occur within the Urban/Mixed Environs habitat on unvegetated, industrial lands within an existing industrial site. See ASC Table 3.4-5 (as revised). These areas provide very little habitat for wildlife; therefore, direct impacts to wildlife habitat would be minimal. Vegetated communities with Urban/Mixed Environs (Ruderal Grass/Forb) and Westside Lowland Conifer-Hardwood Forest at the proposed Terminal location provide potentially suitable, relatively low quality, habitat for a variety of birds and small mammals. In total, approximately 1.13 acres of habitats would be converted to the Urban/Mixed Environs and significant, adverse effects on any species are not anticipated. PDEIS § 4.5.2.1.

27. BergerABAM concluded that temporary impacts to terrestrial wildlife would result from increased noise during construction activities. However, the proposed Terminal would be in a highly-developed industrial area. Construction noises would likely increase ambient noise levels in the immediate area of the Terminal and result in avoidance behaviors by any wildlife in the area. Because wildlife habitat is low quality, and species most likely to use this habitat are highly mobile, construction-related noise would have no impact.

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28. Because temporary impacts may occur, BergerABAM developed a construction wildlife monitoring plan at the request of WDFW to monitor wildlife behavior and response to construction activities as a mitigation measure. ASC, App. H4. In developing the plan, BergerABAM conducted a literature review to determine appropriate noise thresholds that could elicit a detrimental response from wildlife. BergerABAM established protocols for monitoring construction noise and altering construction activities if loud noises were found to have an effect on wildlife.

ii. Aquatic species

29. After reviewing available data, BergerABAM concluded that aquatic habitats within the vicinity of the proposed Terminal represents suitable foraging and resting habitat for a variety of fish, marine mammals, shorebirds, and waterfowl. PDEIS §§ 4.6, 4.5.1. The Project does not include any new in-water structures, would therefore not result in any net increase in permanent impacts to the aquatic habitat. Temporary support piling would be installed in the river for construction and then removed using vibratory methods. Temporary impacts to aquatic habitat would occur from project activities that relate to water quality, underwater noise, and overwater structures as described in PDEIS Section 4.5.2.1. In response to temporary impacts to marine mammals, BergerABAM developed a Marine Mammal Monitoring Plan as a mitigation measure to reduce impacts. ASC, App. H3. The monitoring plan incorporates trained monitors to assess whether marine mammals are present and could be impacted by underwater noise. If present, construction activities would cease until the monitoring zone is clear.

iii. Special status species

30. After reviewing the data for listed species, BergerABAM concluded that while several special status wildlife species are known to occur within the proposed

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Terminal location and vicinity, these species would not be expected to use the immediate Terminal location because of the industrial land use. PDEIS § 4.5.2.1. Direct impacts (mortality) to special status species are not expected to occur under the Proposed Action.

iv. Operational impacts

31. Operational impacts to wildlife include an increased potential for spills or leaks associated with stormwater management, onsite equipment and machinery. PDEIS § 4.5.2.2. Terrestrial habitats could be affected by an increased potential for spills or leaks. Accidental leaks or spills of fuel or other chemicals into surface water or groundwater at the proposed Terminal location could reduce habitat suitability for shorebirds and waterfowl as well as marine mammals. The Project includes operational control plans, such as stormwater pollution prevention plans and oil spill control plans among others that are designed to respond to accidental leaks or spills and implement remedial actions. ASC, Apps. C2, B3, B4, B5. In conclusion, with the implementation of these plans water quality impacts to terrestrial wildlife and their habitat from operation of the proposed Terminal would be expected to be minor.

32. As described in PDEIS Section 4.5.2.2, operational noise is not expected to exceed background noise levels associated with existing Port operations, surrounding land uses, and transportation activities. Operational noise would be generated by rail and vessel traffic, mechanical noise from facilities, and equipment operation. Wildlife species have habituated to existing Port operations and surrounding noise sources. The Proposed Action would add new noise sources on Port lands; however, it is not expected to increase the operational noise levels of the Port or the surrounding area. Wildlife may exhibit avoidance behaviors initially based on the new noise sources, but would be expected to habituate over time. Therefore, operational noise is not expected to adversely impact wildlife. PDEIS § 4.5.2.2.

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33. The Proposed Action includes lighting necessary for Terminal operations and required security. Lights would be installed on proposed buildings at Area 200, storage tanks within Area 300, and the marine terminal at Area 400. This lighting would include low-level lighting around exits (minimum 2 foot-candles) and general outdoor lighting (from 0.2 to 5 foot-candles) for operating areas. This lighting would be provided for operator access and safety under regular operating conditions. Light and glare can penetrate into adjacent wildlife habitats resulting in less suitable nocturnal habitat. All proposed lighting would occur within the developed industrial site and is not expected to increase ambient light levels at night. PDEIS § 4.5.2.2. BergerABAM incorporated mitigation for lighting, specifying that it would be directional and aimed away from sensitive habitats to the extent possible to minimize impacts from night light and glare.

34. With respect to the train and vessel analysis of wildlife (PDEIS Chapter 5.7), BergerABAM reviewed available data for the entire rail and shipping corridors from North Dakota to Washington and Oregon. As specified in PDEIS Chapter 5.7 a distance of one half mile from the rail was used to assess the rail corridor and one quarter mile from the shoreline was used to assess the marine corridor. Within Washington habitats along these corridors was assessed using WDFW PHS mapping as shown in PDEIS Tables 5.7-1 and 5.7-9. State and federal agencies own and manage lands specifically for wildlife habitat and recreational activities which are shown in PDEIS Table 5.7-2. Outside of Washington the rail corridor was assessed for the presence of land management areas that would benefit wildlife and habitat, such as state or national parks, wildlife reserves and others as shown in PDEIS Table 5.7-4. Special Status Species include federally-listed species, state species of concern that may be present within the rail corridor. State species of concern are identified by the Idaho Comprehensive Wildlife Strategy (IDFG 2005), the Montana Natural Heritage Program (MNHP 2013), and the

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U.S. Forest Service Region 1 Sensitive Species list (USFS 2011)[1] as shown in PDEIS Tables 5.7-3 and 5.7-6.

35. Aquatic habitat within the vessel corridor was also assessed using Lower Columbia River Estuary Partnership high resolution of land cover mapping (LCREP 2011) as modified by Simenstad (2011) in the development of an ecosystem classification for the lower estuary. The data is summarized in PDEIS Section 5.7.1.2.

36. BergerABAM's analysis of rail/vessel transportation related impacts to wildlife focused on: inadvertent release of crude oil; risk of fire associated with an inadvertent release; remediation of an inadvertent release; collisions between wildlife and trains or vessels; aquatic habitat impacts from vessel wakes; aquatic habitat impacts from propeller wash and sediment suspension; introduction of exotic aquatic species; and underwater noise from vessel traffic (as detailed in PDEIS Section 5.7.2).

C. Water Quality Impacts from Ground Improvement Activities

37. BergerABAM's analysis of impacts of project construction included a review of ground improvement methods that could be used to mitigate seismic impacts to due liquefaction and settlement. BergerABAM prepared a supplemental analysis of different ground improvement methods and subsequent resource specific impacts as described in the Vancouver Energy Project Description Updates for Draft Environmental Impact Statement (DEIS) Development EFSEC Application for Site Certification No. 2013-0,1 Docket No. EF131590 (submitted May 27, 2015).

38. In response to EFSEC and Ecology comments regarding construction water quality concerns, BergerABAM prepared the Vancouver Energy Water Quality Protection and Monitoring Plan (WQPMP) (submitted Aug. 4, 2015), which included specific measures to address water quality concerns related to ground improvements. In addition

[1] The state of North Dakota does not maintain a species of concern list.

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to standard construction erosion and sediment control, BergerABAM developed site specific construction BMPs to mitigate potential impacts to water quality. Implementation of these BMPs, paired with the monitoring stated in the WQPMP, will maintain water quality under the current standards for the site. Additional information on water quality can be found in testimony submitted by Dan Shafar, project engineer at BergerABAM.

V. ASSESSMENT OF EFSEC'S DEIS CHAPTERS 3, 4, AND 5

39. I and other members of the BergerABAM also assisted in reviewing the EFSEC's DEIS, including Chapter 3 Vegetation and Wildlife sections, Chapter 4 – Potential Accidents, and Chapter 5 – Cumulative Impacts. Based upon this review, BergerABAM assisted in the drafting of the Applicant's Comment Letter on EFSEC's DEIS. These comments identified numerous errors within these chapters of the DEIS. These errors, summarized below, are significant for the adjudication because the DEIS overstates a number of environmental impacts.

40. The DEIS includes a study area of one mile around the Terminal for vegetation due to the potential effects of a spill or fire. This greatly overstates the potential terrestrial vegetation impact area for the reasons described in Applicant comments on Section 3.4.2.1, pages 3.4-2 and 3.4-3.

41. The DEIS erroneously concluded a moderate impact to vegetation from rail transportation by relying heavily on studies by Wilkomirski[2] regarding soil hydrocarbon contamination and effects on vegetation. The Wilkomirski studies relied on data collected

[2] Wiłkomirski, B., B. Sudnik-Wójcikowska, H. Galera, M. Wierzbicka, and M. Malawska. 2011. Railway transportation as a serious source of organic and inorganic pollution. Water, Air and Soil Pollution 218: 333-345, available at http://dx.doi.org/10.1007/s11270-010-0645-0; Wiłkomirski, B., H. Galera, B. Sudnik-Wójcikowska, T. Staszewski, and M. Malawska. 2012. Railway Tracks - Habitat Conditions, Contamination, Floristic Settlement - A Review. Environment and Natural Resources Research 2(1):86-96, available at http://dx.doi.org/10.5539/enrr.v2n1p86.

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from a heavily used rail station and included samples from ancillary facilities such as wash stations and passenger loading platforms. As stated in the Applicant DEIS Comment Letter, this sample area is not equivalent to mainline sections of the track that would be used to transport crude oil. Further, the Wilkomirski study samples were collected within the track bed showed the highest concentrations of hydrocarbons where vegetation was primarily weedy species. Wilkomirksi made no conclusion as to pathways that hydrocarbon pollution may take into adjacent, undisturbed native vegetation outside the rail bed. The sample taken from control site away from the rail bed, presumably in native soils and vegetation, conclude that the contamination does not migrate and contamination is limited to the track bed. The DEIS erroneously equates impacts to weedy vegetation within the track bed to impacts to native vegetation outside the track bed after citing a study that shows no increase in soil hydrocarbons outside the track bed. Any implication the DEIS makes that hydrocarbon pollution would affect native vegetation is incorrect and misleading.

42. The DEIS does not support the conclusion that moderate long-term impacts to shoreline vegetation are occurring causing the spread of invasive wetland and riparian plants. When considered in the PDEIS, vessel impacts were considered to be minor in comparison with existing vessel traffic on the river. As stated in the Applicant DEIS Comment Letter, there is no basis for concluding that incremental increases in ship traffic would contribute to such impacts because:

- The shorelines are not typically susceptible to erosion and impacts on vegetation (see comment on Sections 3.1.3.3, page 3.1-24). The DEIS assumes that the shoreline is susceptible to erosion from vessel wakes but it does not provide any information to demonstrate there is a risk of it occurring.

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- Impacts to wetlands particularly where they are abundant in the lower 33 mile of the river are not expected (see comment Section 3.3.3.3, page 3.3-53). The error in the DEIS is partially based on miscalculating the increase in deep draft vessels resulting from the project. The DEIS indicated that vessel wakes could impact shoreline vegetation and lead to the spread of invasive weeds based on an incorrectly calculated 223 percent increase in existing traffic levels (see Applicant DEIS Comment Letter for correct vessel counts). Wake-related effects could occur with all deep draft vessel types and not just tank ships and ATBs (Pearson et. al 2008). The increase of deep-draft vessels calling to the Terminal represents only a fraction of the existing deep-draft vessel traffic in the river. The DEIS' overstated the increase in vessel traffic as the basis for the conclusions about wake impacts are erroneous.

43. The DEIS incorrectly concludes that noise disturbance associated with construction and operations of the Facility could affect wildlife within of 3,000 feet of the Terminal. This analysis is fundamentally flawed in its use of a day-night noise level (LDN). Day-night noise levels represent a 24-hour average level, and are wholly inappropriate for assessing loud, intermittent activities typical of construction noise sources. Construction noise assessments used for Endangered Species Act consultation typically use a maximum noise level (LMAX) assessment to determine if there would be an impact to listed species. This approach was correctly applied in the PDEIS (see PDEIS at 4-83 to 4-84) and is more appropriate for assessing construction related noise impacts to wildlife. Furthermore, the DEIS did not consider the research that shows wildlife can become habituated to noise sources over time, in particular where there is established human presence or activity. The proposed Terminal would be constructed within a developed port industrial area where noise levels are typically higher than background and have occurred over long periods. Wildlife within, adjacent, or passing through the Port have habituated to high noise levels and are less likely to be impacted by operation of the

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Terminal. Furthermore, repeated exposure to noise can result in wildlife habituation and result in higher thresholds to elicit a similar response (Pater et. al. 2009).

44. The DEIS discusses the impact of rail transportation on wildlife through the increased risk of collisions and barrier effects. For several reasons, this impact analysis is flawed and does not justify the conclusion that a minor to moderate increase in mortality is significant and unavoidable.

45. First, the barrier impact is not substantiated. The DEIS notes that railways can create almost impassable barriers for reptiles, amphibians, and small mammals and that the increase in trains will block wildlife movement. This analysis fails to consider the longstanding presence of the rail corridor and that the facility related trains will not contribute to the barrier effect. The species cited (reptiles, amphibians and small mammals) are primarily affected by the physical rail corridor, such as being unable to pass over the rail, and not the trains themselves. Furthermore, the DEIS states that moving trains block wildlife crossings at a given point and represents a moving barrier. This implies that any barrier effects of a train is temporary and only occurs when a train is present at a given place. When trains are not present, wildlife are able to move normally and unimpeded. The DEIS then identifies mitigation for wildlife impacts, specifically mentioning the construction of wildlife fences to deter crossings. This construction of a wildlife fence would represent a permanent barrier to wildlife movements and could alter wildlife movements over a larger area, in comparison with the short duration of a train crossing. The prescribed mitigation to reduce impacts wildlife may result in greater impacts to wildlife migration than would occur without it if implemented.

46. Second, the DEIS does acknowledge the overall growth in rail traffic according to the Washington State Rail Plan (DEIS page 3.5-31, paragraph 3). However, the DEIS does not consider that the rail corridors are well established and have been in

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use for long periods of time, with fluctuating volumes of rail traffic that have occurred and will occur with or without the project. The rail traffic attributable to the project falls within the range of historic volumes and the DEIS statement that the proposed Terminal would incrementally increase train traffic above historic levels is not correct. Thus, conclusions that project-related wildlife collisions are a moderate impact are overstated and should be considered minor or negligible, since the number of trains, including project rail traffic would not exceed historic levels or forecasted growth under the Washington State Rail Plan.

47. Third, the DEIS relies heavily on a rail-wildlife study completed within a national park that focused on an 82 miles section of track (Dorsey 2011), and incorrectly extrapolates those conditions as present within the entire 1,187 mile rail corridor within and outside Washington. On page 3.5-32, the DEIS cites a single study of train-wildlife collisions on the Canadian Pacific Railroad through Banff and Yoho National Parks to establish annual wildlife collision rates with trains. Using this selected data from protected lands, the DEIS assumes there is a uniform strike rate along the entire rail corridor that is comparable to the observed strike rate within protected lands. Within the Washington rail corridor, the DEIS described protected lands accounting for approximately 4 percent of the entire corridor (DEIS Table 3.5-4). Outside of Washington, protected lands account for approximately 20 percent of the corridor (DEIS Table 3.5-8). The DEIS was misleading in the use of its own data sources for protected lands and in establishing a reference to wildlife collisions along the entire rail corridor from a dataset limited to protected lands when they clearly do not account for a substantial portion of the rail corridor.

48. Furthermore, the DEIS does not consider the developed (such as cities or intense agriculture) nature of the rail corridor that can deter wildlife presence. In fact, the

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conditions present within the reference study (Dorsey 2011) correspond to protected lands While it is generally agreed that wildlife abundance is generally higher and there is less human influence on behaviors within protected lands, and subsequently there is likely to be higher collision rates, the DEIS should reflect that this is not the case for the entire corridor, as described previously. Dorsey (2011) suggests that collision rates are based on a variety of factors, including abundance and behavior among others. The study area focus of a protected land (national park) suggests that the observed strike rates correspond to high wildlife abundance and normal behaviors. The reverse case must then also be true, where there is low abundance and non-normal behaviors, collision rates should be lower. Land cover types associated with human use (developed, agricultural, and recently disturbed or modified) generally exhibit lower wildlife abundance, restricted movements, and non-normal behaviors influenced by human presence, accounts for approximately 56 percent of the rail corridor in Washington (DEIS Table 3.4-1). Similarly, outside of Washington these developed land cover types account for approximately 45 percent of the rail corridor. Within these developed areas, wildlife collisions are expected to be minimal, and the proposed increase of up to 8 trains per day should not measurably change the collision frequency in these areas.

49. The impacts described in the DEIS related to wildlife collisions and barrier effects are not significant, are not specifically attributable to the project rail traffic as distinguished from rail traffic generally and any such impacts would occur under the No Action Alternative. The DEIS analysis does not demonstrate a reasonable likelihood of more than a moderate adverse impact related to wildlife collision mortality or wildlife barrier effects. For these reasons, these statements regarding significant unavoidable adverse impacts are incorrect and should be classified as minor.

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VI. ATTACHMENT

50. I have attached the following Attachment to my testimony:

Attachment A: Curriculum Vitae

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DATED this 12th day of May, 2016.

Daniel Roscoe, Declarant

STATE OF Washington)
)
COUNTY OF King)

Daniel Roscoe, being duly sworn upon oath, deposes and says: The foregoing testimony is true, correct and complete to the best of my knowledge, information and belief and is given subject to the laws of perjury in the State of Washington.

GIVEN under my hand and official seal this 12th day of May, 2016.

NOTARY PUBLIC in and for the State of:
Washington
Residing at: Pierce County
My Commission Expires: June 29 2016

Printed Name of Notary:
Jana M. Roy

STATE OF WASHINGTON JANA M. ROY NOTARY PUBLIC COMMISSION EXPIRES 06-29-16

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