BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

IN THE MATTER OF: APPLICATION NO. 2013-01 TESORO SAVAGE, LLC VANCOUVER ENERGY DISTRIBUTION TERMINAL	CASE NO. 15-001 EXHIBIT NO. _____ (-TRB) PREFILED DIRECT TESTIMONY OF: BLAINE L. PARKER SPONSORS: CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION, CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION AND COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

REGARDING POTENTIAL EFFECTS TO AQUATIC SPECIES SUCH AS WHITE STUREON AND PACIFIC LAMPREY RELATED TO THE TESORO-SAVAGE, LLC, VANCOUVER ENERGY DISTRIBUTION TERMINAL PROJECT

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS.

A. I have been employed with the Columbia River Inter-Tribal Fish Commission (CRITFC) since 1991. In my 25 years of employment with CRITFC, I have accumulated knowledge, experience, and technical expertise in a variety of disciplines related to management of Columbia River aquatic species. I currently serve as a Fish Management Department white sturgeon program leader and researcher, and also coordinator for avian predation and aquatic invasive species.

My duties at CRITFC began with the management of northern pikeminnows at the eight federal mainstem dams. Years of access to the Corps' dams gave me a unique perspective on the complexity of the facilities and how the water flows around and through them. In

addition, I worked for a number of years in the study of Pacific lamprey. These efforts included movement studies through the mainstem hydroelectric projects for both adults and juveniles, life history work of juveniles in their rearing habitat, and educating the non-tribal co-managers about the importance of this native fish to tribal people with presentations at fisheries society meetings, co-management meetings, and coordination with tribal, state, and federal researchers.

Invasive species monitoring, meetings, and rapid response sessions for the entire Columbia River basin have also been among my consistent duties since 1997; geographic areas include the Snake River Basin, Upper Columbia PUD reservoirs, the Columbia River Estuary, federal hydro projects, key tributaries to the Columbia and Snake Rivers, and regions outside the Basin. I currently serve as the aquatic invasive species coordinator for CRITFC and have served on the Oregon Invasive Species Council and the Columbia River Basin working group of the 100th Meridian Invasive Species Council.

I have eight years' experience addressing avian predation on juvenile salmonids. These efforts have resulted in many field trips to the Columbia River estuary and the mainstem Columbia River upstream to Public Utility District projects on the Columbia River in Washington.

White sturgeon are the largest and one of the most ancient aquatic species in the Columbia River basin. Over the decades at CRITFC I have worked with white sturgeon in a variety of capacities, including but not limited to artificial supplementation, disease investigations,

stock assessment, young of year indexing, translocation, diet investigations, spawning and rearing using wild broodstock, and harvest management. I have actively worked with white sturgeon since 1994. I serve as regional expert in white sturgeon management and research.

Q. PLEASE DESCRIBE STURGEON POPULATIONS IN THE COLUMBIA BASIN.

A. White sturgeon are present throughout much of the mainstem Columbia and Snake rivers. White sturgeon are most numerous in the Columbia River estuary where hundreds of thousands of sturgeon are estimated to be present. Populations in the reservoirs upstream range from roughly 192,000 in Bonneville reservoir to fewer than 1,000 in Wells Dam reservoir. There are approximately 40,000 sturgeon in John Day reservoir and in McNary reservoir there are less than 10,000. Populations in the Columbia river upstream of Priest Rapids Dam range from a 6-10 thousand in each of Priest Rapids and Wanapum reservoirs to hundreds of fish in the mainstem reservoirs above Wanapum reservoir. Populations from Priest Rapids Dam up to the Canadian border are all currently undergoing long-term supplementation and population recovery efforts. There is a genetically distinct population found in the Kootenai River, which is listed as endangered under Endangered Species Act (ESA).

My experience with sturgeon also extends to other sturgeon and paddlefish species in North America. The overall study area detailed in the Draft Environmental Impact Statement for the Tesoro Savage Vancouver Energy Distribution Terminal Facility (DEIS), specifically the rail corridor study area (page 3.6-1), Rail-Columbia River study area, and the vessel corridor study area parallels the riverine habitat for the shovelnose sturgeon, paddlefish, pallid

sturgeon (ESA listed as "Endangered"), Kootenai River white sturgeon (ESA listed as "Endangered"), white sturgeon and the green sturgeon (ESA listed as "Threatened").

Q. PLEASE DESCRIBE YOUR CONCERNS WITH THE DEIS REGARDING THESE AQUATIC RESOURCES.

A. The DEIS Aquatic Species section (3.6) contains numerous oversights and omissions. For example, the protected fish section 3.6.2.2 does not list Endangered Pallid Sturgeon and Kootenai River white sturgeon, both of which inhabit drainages that are crossed by the trains carrying oil to the proposed site. Burbot, an endemic fish in the Kootenai River is not mentioned in the DEIS, and are considered endangered by the state of Idaho. The railroad tracks that carry oil to Vancouver cross and follow critical habitat for these species often for miles. In some cases, a spill of oil along certain sections of this route has the potential to cause localized fish extinction.

Q. PLEASE DESCRIBE YOUR CONCERNS RELATED TO THE LIFE CYCLES OF STURGEON AND LAMPREY.

A. White sturgeon are long lived fishes (>100 years) and generally spawn for the first time at 15 and 25 years of age for male and female fish, respectively. Males generally spawn every 1-2 years, whereas female sturgeon may only spawning every 2-5 years, depending upon available food resources. Spawning occurs in the late spring and early summer in water temperatures ranging from 53 to 64 degrees Fahrenheit or 12 to 18 degree Centigrade. White sturgeon are broadcast spawners, using a polyandrous mating strategy, one female's eggs are fertilized by many male sturgeon. Fertilized eggs sink to the river bottom, adhering to rocks,

logs, and other obstructions. Incubation is brief, less than 2 weeks, and newly hatched larval sturgeons are carried downstream to quiet eddies and backwaters were they rear and metamorphose within the substrate and debris on the river bottom. Once they complete metamorphisis, juvenile sturgeon continue to forage and live on or near the river bottom as they grow and mature into adult fish. The river bottom consistently remains the primary habitat component the rest of their lives. This dependence on the river bottom (i.e. benthic life history strategy) makes them exceptionally vulnerable to events or occurrences that contaminate, damage, or permanently alter the river bottom habitat, particularly the spawning, food and rearing habitat components.

Pacific Lamprey. These native fish have a life cycle very similar to anadromous salmon and steelhead. Pacific lamprey are also anadromous and die soon after spawning. Pacific lampreys enter freshwater nearly a year prior to spawning; overwintering in large clean substrate in or near their natal stream. Spawning occurs the following spring; adult lamprey creating a redd similar to salmon; using their mouth to grasp and remove substrate from the river bottom to create the redd. Eggs are laid into the redd and then fertilized by the males, again similar to anadromous salmonids. Newly hatched eyeless larval lamprey drift down river and rear for 2-7 years in fine sediments and gravels, gradually moving to larger substrate and faster water velocities prior to metamorphosing in eyed juveniles that move to the ocean, again similar to juvenile salmonids.

Like white sturgeon, Pacific lamprey spend a significant amount of their life cycle in or on the river bottom. Their dependence on the benthic environment makes them extremely

vulnerable to events or occurrences that contaminate, damage, or permanently alter the benthic habitat and its food and rearing components.

Unlike white sturgeon, this vulnerability is magnified many times, since juvenile lamprey spend up to 7 years living directly in the sediments. A single damaging event can impact up to 7 years' worth of year classes at once. This can effectively eliminate lamprey from a river for multiple generations; as the returning adult lamprey cue in on the scent of rearing juveniles as the final signal to return to their specific spawning habitat.

Q. HOW DOES THE DEIS GENERALLY ADDRESS FRESHWATER AQUATIC SPECIES VERSUS MARINE SPECIES?

A. The DEIS spends significantly more time on the marine life sections (page 3.6-19 to 3.6-36) yet the bulk of the route for active transport of oil to the proposed site follows freshwater fish habitat. DEIS sections on non-listed animals, such as flatfishes, surfperch, forage fish, and marine mammals greatly exceed those for listed salmonids, eulachon, and sturgeon. The section on invertebrates is a total of one paragraph, yet fails to mention the iconic invertebrates off the Oregon and Washington coastlines, the Dungeness crab and razor clam. The diverse invertebrate populations thorough the basin from the upper reaches to the ocean are the basis for the food webs that drive both resident and anadromous fish populations in the Columbia River basin.

Q. WHAT OTHER CONCERNS HAVE YOU IDENTIFIED?

A. A variety of other concerns were found in the review of the DEIS including propeller scour from the large tankers which break down the habitat of the shallow estuary habitats and shorelines. The noise, lighting, and infrastructure around the terminal has impacts on migration smolts, and may also support avian and aquatic predators which find shelter around the terminal. The noise associated with the construction can impact both resident and migrating anadromous fishes. The current work season listed in the DEIS will impact migrating fall chinook salmon and later in the winter, eulachon spawning runs. CRITFC's comments on the DEIS addressed these issues.

Increased shipping traffic will add the increase use of ballast water for the large ships. Some estimates are that the ballast water releases will be approximately 50% of the entire flow of the Columbia or 6 million cubic metrics of water. This water can bring in a variety of non-native invertebrates, fishes, and even human disease pathogens. Little details are provided on how the project will prevent the release of these invasive materials as well the impacts of the millions of cubic meters of salty waters into the freshwaters of the Columbia.

END OF DIRECT TESTIMONY

I declare under penalty of perjury that the above testimony is true and correct to the best of my knowledge. Executed this 13th day of May, 2016.

Blaine L. Parker