OCTOBER 2016 REVISED APPLICATION FOR SITE CERTIFICATION
CHANGE HISTORY PART 3 – NATURAL ENVIRONMENT

The following table is a summary of the main revisions and updates made to the May 2016 Application for Site Certification (ASC). The table indicates the source of the materials used for the revisions, as follows, and the date the sources were submitted to EFSEC.

ASC Section	Revision	Referenced From	Date Originally Submitted to EFSEC	Description of October 6,-2016 Information *(PD) indicates the Project Description was revised)*
Part 3				
3.1.1	Added information on the number and location of field explorations and reference to geotechnical reports in Appendix L.	Appendix L.1, L.2 and L.3	4-20-2015 12-2-2014	
3.1.1.6	Removed City of Vancouver submittal.		10-6-2016	Removed the assumption that EFSEC will contract with the City for review of final project design, code compliance and provide required inspections and occupancy permits.
3.1.2.1	Added Appendix references.	Appendix L.1, L.2, L.3	4-20-2015 12-2-2014	
Figure 3.1-1	Updated project boundaries.	PRM	5-27-2015	
Figure 3.1-3	Updated figure format.	NA	5-27-2015	
3.1.3.5	Added conclusions regarding geotechnical investigation of site.	Appendix L	4-20-2015 12-2-2014	
3.1.3.6	Section reorganized to address construction mitigation followed by operation mitigation.	NA	5-27-2016	
3.1.6	Mitigation introduction revised to discuss geotechnical investigation data sets and conclusions.	Appendix L	4-20-2015 12-2-2014	

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3.1.3.6	Added discussion of ground improvement types/methods and deep structural foundations to mitigate liquefaction-induced settlement and lateral spreading deformations. Added reference locations for additional detail.	Appendix L.3, ASC 2.18.4	4-20-2015	
3.1.3.6	Added upland area Facility design information and criteria.	PDEIS	7-28-2014	
3.1.3.6	Added reference to ASC section 2.18.1.2 for preliminary ground improvement design information submitted to EFSEC for review.	PDEIS, ASC 2.17.7	7-28-2014	
3.1.3.6	Clarified mitigation review process		10-6-2016	Removed the language that stated EFSEC would work with the City for required code review and inspections.
3.1.3.6	Added additional plans the applicant will implement related seismic events.	DEIS Letter	1-25-2016	
Figure 3.1-7	Replaced with PDEIS figure.	PDEIS	7-28-2014	
3.1.4.2	Added note concerning determination and documentation of final ground improvements.	DEIS Letter	1-25-2016	
3.1.5.1	Added description of temporary topographical modification resulting from benching at the Marine Terminal (Area 400).	PRM	5-27-2015	
3.1.5.2	Added temporary benching will be removed, shoreline restored after construction is finished, no topography impacts and no mitigation required.	PRM	5-27-2015	

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3.1.7.1	Added impacts of temporary benching during ground improvement.	PRM	5-27-2015	
3.1.7.2	Section reorganized to address Construction and Operation mitigation measures.	NA	5-27-2016	
3.1.7.2	Added summary of erosion impacts.	ASC 3.1.3.5	2-25-2014	
3.1.7.2	Clarified and added mitigation measures from the DEIS Applicant Comment Letter - Attachment ES-1 (ES-1), cSWPPP BMPs for erosion control, sediment transport and construction activities associated with installation of the benches and ground improvement installation activities	ASC 2.11, Appendix C.1, DEIS Letter, PRM	1-25-2016 8-14-2015 5-27-2015	
3.1.7.2	Clarification and mitigation measures related to erosion control and references to oSWPPP.	DEIS Letter, Appendix C.2	1-25-2016	
3.2 and all of its subsections	In August 2014 the Applicant submitted to EFSEC a revised air permit application. The entirety of Section 5.1 was, therefore, replaced with the corresponding contents of the 2014 submittal. Major changes from the August 2014 submittal are indicated below. Since that time the Applicant has also responded to an EFSEC request for information dated March 14, 2016; a response was submitted to EFSEC on	August 2014 NOC	8-11-2014	

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	May 6, 2016. The information submitted into that response has also been incorporated to these ASC revisions, as indicated below. Additional changes have been made for clarification and are also indicated below			
3.2.1.1	Text was moved to this location for clarity.	NA	5-27-2016	
3.2.1.2	Text was moved to this location for clarity. The project is no longer subject to PSD review and permitting.	August 2014 NOC	8-11-2014	
3.2.1.7	Corrected statement regarding direction of prevalent winds.	NA	5-27-2016	
3.2.3	Clarified that the MVCUs may also result in a visible water vapor plume.	NA	5-27-2016	
3.2.6	Mitigation measures were updated to include reference to the Washington Associated General Contractors Brochure, "Guide to Handling Dust from Construction Projects"	PDEIS	7-28-2014	
3.3.1	Added reference to containment tank.	NA	5-27-2016	
3.3.1	Updated volume precipitation based on 47.4-acre site.	PRM	5-27-2015	
3.3.1.1	Reorganized Impacts to discuss construction impacts followed by operation impacts, added cross references to ASC sections.	NA	5-27-2016	

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3.3.1.1	Added discussion of ground improvement potential impacts (jet grouting).	Appendix L.3	4-20-2015	
3.3.1.1	Updated nomenclature of Terminal 5 stormwater "lagoons."	NA	5-27-2016	
3.3.1.1	Removed that discharges from the site will contribute only to Terminal 5 ponds.	NA	5-27-2016	
3.3.1.1	Added that discharges from the site will be treated on site and monitored for water quality compliance prior to discharge to the existing stormwater systems.	DEIS Letter	1-25-2016	
3.3.1.1	Added that this project will reduce the amount of existing impervious surface coverage at the Facility site and will convert a portion of the existing pollution-generating impervious area to non-pollution-generating roof areas.	DEIS Letter	1-25-2016	
3.3.1.2	Mitigation measures reorganized to address Construction and Operation mitigation measures.	NA	5-27-2016	
3.3.1.2	Added and revised discussion of mitigation measures: Construction Mitigation - updated with stormwater management mitigation measures from DEIS Letter, site specific BMPs from the Stormwater Management Manual for Western Washington, the NPDES Individual Construction Stormwater Permit and cSWPPP.	DEIS Letter, ASC 2.11, Appendix C.1	1-25-2016 8-14-2015	

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3.3.1.2	Added mitigation/BMPs for jet grouting activities to construction mitigation.	Appendix L.3, DEIS Letter	1-25-2016	
3.3.1.2	Added cSWPPP detail to construction mitigation.	ASC 2.11, Appendix C.1	8-14-2015	
3.3.1.2	Added NPDES Individual Construction Stormwater Permit reporting and notification details to construction mitigation.	NA	5-27-2016	
3.3.1.2	Added cSPCCP details to construction mitigation	Appendix B.2, DEIS Letter	1-25-2016	
3.3.1.2	Revised and reordered the Operation Mitigation discussion.	NA	5-27-2016	
3.3.1.2	Added details on the permanent stormwater management and treatment system for operations.	DEIS Letter	1-25-2016	
3.3.1.2	Added that the Applicant will implement secondary structural containment measures to supplement the structural source control BMPs.	DEIS Letter	1-25-2016	
3.3.1.2	Revised that equipment and parts wash (including facility washdown, and railcar exterior washing), will be conducted in a covered portion of the rail unloading building. Wastewater will be pumped to secondary containment tanks.	ER	10-15-2015	
3.3.1.2	Updated API 650 tanks inspection information.	PRM, DEIS Letter	5-27-2015 1-25-2016	
3.3.1.2	Added that the tank farm will be surrounded by a containment berm 6 feet high with a full impervious	PRM, (Appendix A, Sec 4.3.3.2)	5-27-2015	

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	liner capable of containing 110 percent of the largest tank and a 25-year 24-hour rainfall event.			
3.3.1.2	Edited transmission to transfer pipeline and added Area 500.	NA	5-27-2016	
3.3.1.2	Added that parking and access areas will be designed with a combination of catch basin spill traps and water quality filter vaults to treat stormwater runoff.	DEIS Letter	1-25-2016	
3.3.1.2	Added references to ASC sections.	NA	5-27-2016	
3.3.1.2	Added list of planning and preparedness actions required by state and federal regulations to prevent, contain, and respond to inadvertent releases that could impact surface water.	DEIS Letter	1-25-2016	
3.3.1.2	Added oSWPPP coordination with ESFEC.	DEIS Letter	1-25-2016	
3.3.1.2	Updated regarding Tier II anti-degradation analysis being completed.	NPDES Letter	5-27-2016	
3.3.2.2	Revised discussion that construction stormwater will be managed in accordance with the conditions of the Individual NPDES Construction Stormwater Permit issued to the Facility by EFSEC.	DEIS Letter,	1-25-2016	
Figure 3.3-1	Revised Mapped Floodplains using FEMA data and updated project boundaries per PRM	PRM	5-27-2015	

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Figures 3.3-2 and 3.3-3	Added Figure 3.3-2 - Public Wellhead Zones and Figure 3.3-3 Private Wellhead Zone.	PDEIS	7-28-2014	
3.3.3.2	Updated title from Protective Measures to Mitigation Measures.	NA	5-27-2016	
3.3.3.2	Added construction mitigation for the 100-500-Year Flood	DEIS Letter	1-25-2016	
3.3.3.2	Clarified that certain facilities will be located in, but elevated above, the 100-year floodplain.	DEIS Letter	1-25-2016	
3.3.3.2	Updated the mitigation measures for Flooding		10-6-2016	Several structures located in Area 400 will be elevated with the top of foundation a minimum of 3 feet above the base 100-year flood elevation and the finish floor elevations are above the 500-year elevation. Added a measure that movable equipment will be relocated above the 500-year floodplain and static equipment will be secured.
3.3.4.1	Added The impacts to groundwater from operations and maintenance activities are expected to be minor.	DEIS Letter	1-25-2016	
3.3.4.1	Section reorganized and information added regarding wellhead zones	DEIS Letter, ER	1-25-2016 10-15-2015	
3.3.4.1	Clarified location of ground improvements relative to locations of existing contaminated media.	DEIS Letter, Appendix F.1	1-25-2016 8-4-2015	
3.3.4.2	Mitigation measures reorganized to address Construction and Operation mitigation. Mitigation measures added from previous references.	DEIS Letter, Appendix F.1	1-25-2016 8-4-2015	

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3.3.4.2	Clarified well decommissioning process	??	10-6-2016	Clarified that if previously unknown wells are discovered, they would be properly logged and decommissioned.
3.3.4.2	Add ground improvement decommissioning mitigation measures		10-6-2016	Added a mitigation measure that ground improvement locations will be covered by an impervious surface during decommissioning.
3.3.5.1	Updated water consumption numbers for process and domestic potable water.	NA	5-27-2016	
3.3.6	Added reference to Figure 3.3-3.	NA	5-27-2016	
3.4.1.2	Added explanation of why the Applicant has not conducted site-specific wildlife or vegetation species surveys to determine use of the Facility site or the project vicinity.	PDEIS[4]	5-12-2015	
3.4.2	Clarified distinction between vegetation communities and terrestrial habitats.	PDEIS	7-28-2014	
3.4.2.1	Changed Terrestrial habitat to Terrestrial vegetation communities and referenced Figure 3.4-2	PDEIS	7-28-2014	
Figure 3.4-2	Added Figure 3.4-2 Terrestrial Vegetation.	PDEIS	7-28-2014	
3.4.2.1	Added terrestrial habitat types for the project site	PDEIS	7-28-2014	
Figure 3.4-3	Added Figure 3.4-3 Wildlife Habitats.	PDEIS	7-28-2014	
3.4.2.1	Clarified characterization of vegetation communities in project vicinity, and discussed presence of specific communities.	PDEIS	7-28-2014	

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3.4.2.1	Added discussion of specific habitats present at site and in project vicinity.	PDEIS	7-28-2014	
3.4.2.1	Identified presence of an existing aquatic habitat enhancement site approximately 350 feet downstream of the Berth 14 trestle and Port-planned mitigation activities regarding this site.	PDEIS	7-28-2014	
3.4.2.1	Renamed Upland Cottonwood Stands to Westside Lowland Conifer Hardwood Forest	PDEIS	7-28-2014	
3.4.2.1	Clarified presence of Agricultural, Pasture, and Mixed Environs Lands in vicinity of project.	PDEIS	7-28-2014	
3.4.2.1	Added descriptions of Aquatic Habitats in the project vicinity	PDEIS	7-28-2014	
3.4.2.1	Revised aquatic habitat within the project's vessel prism includes the main stem Columbia River from the project site downstream to the river mouth and includes PHS-listed aquatic habitats.	PDEIS	7-28-2014	
3.4.2.1	Added shoreline types discussion and revised Table 3.4.-1 Lower Columbia River GRP Shoreline Types.	PDEIS	7-28-2014	
3.4.2.1	Added noxious weeds discussion and Table 3.4-1 Noxious Weeds Known to Occur in Clark County.	PDEIS	7-28-2014	
3.4.2.2	Revised construction impacts in the upland portion of the project	PDEIS	7-28-2014	

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	including temporary impacts for staging and construction access.			
3.4.2.2	Revised construction impacts to ruderal upland grass/forb vegetation.	PDEIS	7-28-2014	
3.4.2.2	Revised construction of the pipeline and other improvements at Area 400 will not impact high quality vegetation and riparian function will not be affected.	PDEIS	7-28-2014	
Figure 3.4-4	Revised Figure 3.4-4 CPU Tree Plan	PDEIS	7-28-2014	
3.4.2.2	Revised that Table 3.4-4 summarizes the impacts to each of the vegetation communities present resulting from construction of the Facility, while Table 3.4-5 summarizes the corresponding impacts to habitats.	PDEIS	7-28-2014	
3.4.2.2	Added discussion of construction-related noxious weed impacts.	PDEIS	7-28-2014	
Table 3.4-1i	Deleted Table 3.4-1i Summary of Habitat Acreage Impacts.	PDEIS	7-28-2014	
Table 3.4-4	Added Table 3.4-4 Summary of Vegetation Community Acreage Impacts.	PDEIS	7-28-2014	
Table 3.4-5	Added Table 3.4-5 Summary of Habitat Acreage Impacts.	PDEIS	7-28-2014	
3.4.2.2	Clarified vessel trips per year in first and subsequent years of operation. This correction was made throughout the ASC.	NA	5-27-2016	

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3.4.2.2	Added discussion of Shallow Water Habitat, Exotic Species, Temporary Water Quality Impacts and minor impacts associated with each.	DEIS Letter	1-25-2016	
3.4.2.2	Added discussion regarding temporary construction noise impacts on habitats.	PDEIS	7-28-2014	
3.4.2.2	Added discussion regarding impacts of vegetation maintenance activities.	NA	5-27-2016	
3.4.2.2	Added discussion regarding overwater coverage impacts.	PDEIS	7-28-2014	
3.4.2.2	Added discussion of the frequency of marine incidents and spill risk assessment from Appendix P.1	Appendix P.1	1-25-2016	
3.4.2.2	Added discussion of bank erosion impacts resulting from vessel wakes.	DEIS Letter	1-25-2016	
3.4.2.2	Added discussion of aquatic invasive species impacts resulting from operation.	401 Response	2-19-2016	
3.4.2.2	Added updated reference	Appendix H.5	10-6-2016	Added report titled "Wake Stranding in the Lower Columbia River," by Grette Associates (revised May 2016).
3.4.2.3	Referenced other sections where mitigation is also discussed.	NA	5-27-2016	
3.4.2.3	Mitigation measures reorganized to address Construction and Operation mitigation, grammar edits, single word and phrase changes for clarity.	NA	5-27-2016	

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3.4.2.3	Updated acreage of ruderal upland grass/forb impacts.	PDEIS	7-28-2014	
3.4.2.3	Added that native species will be used to the extent practical. Area 200 will include native trees planted in groups within the landscape to provide additional mitigation for loss of trees onsite.	DEIS Letter	1-25-2016	
3.4.2.3	Added that at locations where ruderal habitat has been impacted by temporary construction laydown will be restored to previous condition so as to result in no net loss to this community.	DEIS Letter	1-25-2016	
3.4.2.3	Added compensatory habitat mitigation discussion.	PDEIS, DEIS Letter	7-28-2014	
3.4.2.3	Added that no purple martin or nest boxes would be directly affected discussion.	DEIS Letter	1-25-2016	
3.4.2.3	Added mitigation measures to minimize impacts to migratory birds during construction.	DEIS Letter	1-25-2016	
3.4.2.3	Added BMPs that will be implemented during construction to minimize the spread and establishment of noxious weeds	DEIS Letter	1-25-2016	
3.4.2.3	Added aquatic invasive species mitigation measures.	401 Response	2-19-2016	
3.4.2.3	Updated the Temporary Construction Water Quality mitigation discussion. Added detail on WQPMP, in-water work window discussion, and referenced	DEIS Letter	1-25-2016	

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	Appendix F.2. Added footnote with further explanation of work window.			
3.4.2.3	Updated spill prevention and containment discussion. Added detail related to cSPCCP BMPs and procedures. Referenced Appendix B.2	DEIS Letter	1-25-2016	
3.4.2.3	Added Vegetation Maintenance mitigation.	DEIS Letter	1-25-2016	
3.4.2.3	Added discussion regarding use of biodegradable firefighting foam.	PDEIS	7-28-2014	
3.4.2.3	Updated discussion regarding shipping related impacts relative to Bank Erosion, Exotic Species, and Vessel Transit Related Spills.	DEIS Letter	1-25-2016	
3.4.2.3	Revised in-water work period. This revision was included throughout the ASC as applicable.		10-6-2016	The in-water work window has been revised to September 1 to January 15.
3.4.2.3	Added mitigation measures to deter perching.		10-6-2016	Design features will be incorporated in buildings to restrict access to enclosed spaces for roosting or nesting or to prevent perching where in the design does not interfere with operations of the Facility.
3.4.3.2	Added construction lighting and aquatic Invasive Species impacts discussions.	DEIS Letter	1-25-2016	
3.4.3.2	Added discussion of potential impacts: Fish habitat both at the project site and within the project vicinity also could be temporarily	DEIS Letter	1-25-2016	

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	affected by the potential for temporarily reduced water quality conditions during construction and the generation of temporarily elevated levels of underwater noise during temporary pile installation and removal, permanent pile removal, and installation of ground improvements.			
3.4.3.2	Added discussion related to construction is not expected to result in permanent impacts to aquatic habitat in Area 400.	ASC Review	5-27-2016	
Table 3.4-6	Revised Table 3.4-6 Special Aquatic Species and Their Potential to Occur within the Project Area	ASC Review	5-27-2016	
3.4.3.2	Clarified for consistency with JARPA submitted to USACE that the project proposes to remove 15 steel piles (eleven 18-inch steel pipe piles and four 12 3/4-inch steel pipe piles) restoring approximately 23 square feet of benthic habitat at the project site.	NA	5-27-2016	
3.4.3.2	Revised that temporary piles will only be placed for short period of time (on the order of hours or days) and any temporary loss of productivity will be minor and the area is expected to recolonize following removal.	ASC Review	5-27-2016	

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3.4.3.2	Discussed construction related lighting impacts.	PRM	5-27-2015	
3.4.3.2	Updated Temporary Construction Noise analysis, including impacts resulting from ground improvement construction.	PDEIS, PRM	7-28-2014 5-27-2015	
3.4.3.2	Added discussion regarding impacts of aquatic invasive species.	401 Response	2-19-2016	
3.4.3.2	Removed assessment of impacts resulting from non-project related vessel traffic.	NA	5-27-2016	
3.4.3.2	Updated Operational Water Quality Impacts addressing propeller wash	DEIS Letter	1-25-2016	
3.4.3.2	Updated Facility size from 44.9 acres to 47.4 and acres of impervious surface from 38.2 to 44.4 acres.	PRM	5-27-2015	
3.4.3.2	Added reference to Appendix P.1 regarding low probability of spills resulting from Facility-related vessel calls.	NA	1-25-2016	
3.4.3.2	Added Spill planning response discussion.	Appendix B.6	1-25-2015	
3.4.3.2	Added discussion of lighting and overwater coverage impacts.	PDEIS	7-28-2014	
3.4.3.2	Updated Wake Stranding discussion.	DEIS Letter, Appendices H.5 and H.6	1-25-2016	
3.4.3.2	Updated Bank Erosion and Exotic Species impacts discussions	DEIS Letter, Appendices H.5 and H.6	1-25-2016	

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3.4.3.2	Added updated reference	Appendix H.5	10-6-2016	Added report titled "Wake Stranding in the Lower Columbia River," by Grette Associates (Revised May 2016).
3.4.3.3	Reorganized mitigation to discuss construction followed by operation.	NA	5-27-2016	
3.4.3.3	Updated Direct Habitat Modification discussion - dock modification and in water work window.	DEIS Letter	1-25-2016	
3.4.3.3	Added mitigation measures for construction lighting impacts.	DEIS Letter	1-25-2016	
3.4.3.3	Revised Temporary Water Quality mitigation discussion.	DEIS Letter	1-25-2016	
3.4.3.3	Added Aquatic Invasive Species mitigation.	DEIS Letter	1-25-2016	
3.4.3.3	Added Temporary Construction Noise discussion including details on in-water work window, implementation of an MMMP for vibratory installation and removal of temporary piles, and upland impact pile driving associated with Area 400 improvements to minimize the exposure of fish to temporarily increased underwater noise levels	ASC 2014	2-25-2014	
3.4.3.3	Added discussion of BMPs, design measures and spill response planning measures.	ASC 2014	2-25-2014	
3.4.3.3	Revised: Stormwater from Areas 200, 500, and 600 and the rail improvements will be treated to meet the water quality benchmarks	PRM Appendix A Section 4.3.2.2, pg. 4-43	5-27-2015	

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	established in the Industrial Stormwater General Permit prior to its discharge to the existing Terminal 5 stormwater system.			
3.4.3.3	Added discussion of turbidity impacts resulting from propeller wash.	DEIS Letter	1-25-2016	
3.4.3.3	Updated discussion regarding impacts of shoreline erosion from vessel wakes on ESA-listed species.	DEIS Letter	1-25-2016	
3.4.3.3	Added discussion of vessel operator requirements to avoid hull fouling and contaminated ballast water discharge.	401 Response	2-19-2016	
3.4.3.3	Updated discussion of Cumulative Impacts.	NA	5-27-2016	Editorial change to reflect the anticipated conclusion to be made by the Services that the project "may affect, but is not likely to adversely affect" fish or fish habitat resources.
3.4.3.3	Clarified the containment capabilities at Berth 13		10-6-2016	See 2.3.7.2 - Added information regarding containment capabilities at the dock
Table 3.4-8	Added Table 3.4-8 Special Status Aquatic Species and Their Potential to Occur within the Project Site or Vicinity	ASC Review	5-27-2016	See explanation for Table 3.4-6 above.
3.4.4.2	Updated acreage impacts to habitats affected by Facility construction.	PRM	5-27-2015	
3.4.4.2	Added that no purple martin or nest boxes would be directly affected by the construction of the proposed project.	DEIS Letter	1-25-2016	

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3.4.4.2	Added discussion regarding WQPMP.	Appendix F.2		
3.4.4.2	Added discussion regarding construction lighting impacts.	NA	5-27-2016	
3.4.4.2	Updated analysis of construction noise impacts.	PDEIS, Appendix H.4	7-28-2014	
3.4.4.2	Discussed lighting impacts.	NA	5-27-2016	
3.4.4.2	Added discussion of invasive species impacts.	401 Response	2-19-2016	
3.4.4.2	Identified Applicant's vessel traffic risk assessment.	Appendix P.1	1-25-2016	
3.4.4.2	Revised Bank Erosion information.	DEIS Letter	1-25-2016	
3.4.4.3	Reorganized mitigation to discuss construction followed by operation.	NA	5-27-2016	
3.4.4.3	Revised Temporary Construction Noise mitigation	DEIS Letter	1-25-2016	
3.4.4.3	Added Tree removal and landscape monitoring mitigation criteria.	DEIS Letter	1-25-2016	
3.4.4.3	Addressed construction nuisance wildlife impacts.	DEIS Letter	1-25-2016	
3.4.4.3	Addressed construction lighting impacts.	DEIS Letter	1-25-2016	
3.4.4.3	Updated mitigation for temporary water quality impacts.	DEIS Letter	1-25-2016	
3.4.4.3	Added discussion regarding special status wildlife and construction noise impacts.	Appendix H.4	6-12-2015	
3.4.4.3	Addressed impacts to marine mammals from construction noise.	Appendix H.3	4-28-2015	

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3.4.4.3	Added construction Aquatic Invasive Species mitigation.	Appendix H.1; 401 Response	2-19-2016	
3.4.4.3	Added mitigation for operation-related nuisance wildlife impacts	DEIS Letter	1-25-2016	
3.4.4.3	Updated mitigation for operational water quality impacts.	DEIS Letter	1-25-2016	
3.4.4.3	Addressed mitigation of operation lighting impacts.	DEIS Letter	1-25-2016	
3.4.4.3	Added operations Aquatic Invasive Species mitigation.	401 Response	2-19-2016	
3.4.4.3	Added discussion of vessel related invasive species impacts.	401 Response, PDEIS	2-19-2016	
3.4.4.3	Addressed lack of impact of vessel wakes.	DEIS Letter	1-25-2016	
3.4.4.3	Added mitigation regarding escort tugs for vessel-related incidents.	NA	5-27-2016	
3.4.5.1	Updated USACE permitting and ESA Consultation status.	NA	5-27-2016	
3.5.1	Clarified that Areas within 300 feet of the project site were visually assessed for the presence of wetlands in accordance with the City of Vancouver's Critical Areas Protection Ordinance (VMC Chapter 20.740).	Appendix H.1	5-27-2016	
3.5.3	Clarified that shallow stormwater swales located in the southwest corner of Parcel 1A are not jurisdictional under city code.	NA	5-27-2016	
3.5.3	Corrected number of wetland mitigation sites present in the	Appendix H.1	5-27-2016	

ASC Section	Revision	Referenced From	Date Originally Submitted to EFSEC	Description of October 6,-2016 Information *(PD) indicates the Project Description was revised)*
	vicinity of the project site and within 300 feet of the project site.			
3.5.3	Clarified relative location of wetland complexes to project facilities in terms City 300-foot CAO limit.	Appendix H.1	5-27-2016	
3.5.4	Reorganized mitigation to discuss construction followed by operation.	NA	5-27-2016	
3.5.4.2	Added discussion regarding spill response measures that would protect wetlands adjacent to Vancouver Lake.	DEIS Letter	1-25-2016	
3.5.5	Added discussion of construction spill prevention, control and countermeasures.	Appendix B.2	4-30-2015	
3.5.5	Updated mitigation measures that would protect wetlands from ground improvement water quality impacts.	Appendix H.1, PRM Appendix M	5-27-2015 5-27-2016	
3.5.5	Added Operational mitigation measures to minimize operational water quality impacts.	NA	5-27-2016	
3.5.5	Added discussion regarding spill response measures that would protect wetlands adjacent to Vancouver Lake.	DEIS Letter	1-25-2016	
3.5.5	Added discussion of impacts to wetlands resulting from shipping traffic.	DEIS Letter	1-25-2016	
3.6.1.1	Clarified that the amount of electricity consumed would be similar to other medium-sized industrial construction projects,	PDEIS	7-28-2014	

ASC Section	Revision	Referenced From	Date Originally Submitted to EFSEC	Description of October 6,-2016 Information *(PD) indicates the Project Description was revised)*
	and would not be significant in terms of overall regional supply.			
3.6.1.1	Added information regarding the amount of electricity and fuels to be used during project construction in response to EFSEC comment on ASC. Added incidental use of propane during construction.	ASC Review, PDEIS	7-28, 2014	
3.6.1.1	Identified volumes of cement and aggregates that would be used to construct ground improvements.	PRM	5-27-2015	
3.6.1.1	Updated volume of rail ballast to be used for rail infrastructure improvements.	PDEIS	7-28-2014	
3.6.1.2	Updated natural gas consumption.	August 2014 NOC	8-11-2014	
3.6.1.2	Clarified that gas service is expected to be interruptible; if gas supply is lost, operations where it is in use will be shut down.	Personal communication with NW Natural	5-27-2016	
3.6.1.2	Added that the Facility will use leased, portable power generators (emergency engines) in the event of a power failure. These generators would be fueled with ultra-low sulfur diesel or biodiesel.	PRM	5-27-2015	
3.6.2.2	Added that the Facility will use leased, portable power generators (emergency engines) in the event of a power failure.	PRM	5-27-2015	
3.6.3	Added Clark County gravel resource information.	PDEIS	7-28-2014	
3.6.3	Added electricity use and supply information.	PDEIS	7-28-2014	

ASC Section	Revision	Referenced From	Date Originally Submitted to EFSEC	Description of October 6,-2016 Information *(PD) indicates the Project Description was revised)*
3.6.3	Added information regarding adequacy of Northwest Natural Gas information regarding natural gas supply.	PDEIS	7-28-2014	
3.6.4	Added that the Applicant will construct buildings compliant with the 2012 Washington State Energy Code (or current version at the time the project is permitted).	DEIS Letter	1-25-2016	

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Section 3.1 Earth

3.1.1 Seismicity

3.1.1.6 Mitigation

The following clarifications to mitigation measures are shown in underlined text for new/added items and strikethrough for deletions.

- **Spread footings** are shallow foundation elements that are constructed by excavating the footing footprint, layering base materials, concrete forming and pouring, and backfilling.

A preliminary ground improvement design was submitted to EFSEC for review (Appendix L.3), and is described in section 2.18.1.2.

~~It is anticipated that EFSEC will contract with the City for the review of final project design for compliance with the required code provisions as well as for providing the required inspections and issuance of occupancy permits.~~ The Applicant will submit the required plans, which will be designed in compliance with the codes and requirements referred to above.

The Applicant will also implement the following plans.

- Construction Emergency Plan to address actions and responses related to seismic activities
- Operations Emergency Plan to address actions and responses to site emergencies, including those related to seismic events

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Section 3.3 Water

3.3.3 Floodplains

3.3.3.2 Potential for Flooding and Mitigation Measures

Operation/100-500-Year Flood

Vancouver Energy will design the Facility in accordance with the mitigation measure proposed by EFSEC in Table ES-2, page ES-28 of the DEIS, as indicated by the clarifications below as shown in underlined text for new/added items and strikethrough for deletions.

All upland structures or portions of structures located in Area 400 will be located outside the 100-year floodplain. ~~These include a dock transformer pad, combined control room/E-house, fire pump and foam building. These structures will be elevated so that the floor is at least 1 foot above the base flood elevation~~The dock transformer pad, combined control room/E-house, fire pump, and foam building will be elevated so that the top of foundation is at least 2 feet above the 100-year base flood elevation and finish floor elevations are above the 500-year flood elevation. The~~y~~ structures will also be anchored to resist movement and designed with utilities and other connections that are designed to withstand flood events consistent with the requirements of VMC 20.740.120 Frequently Flooded Areas.

FEMA's floodplain mapping indicates that floodwaters are anticipated to inundate the facilities with approximately 1-foot of water during the 500-year event and a maximum of 3 feet in the lowest areas. The Facility will be designed with finished floor elevations above the 500-year floodplain elevation. Facility elements within the 500-year floodplain will be designed to maintain integrity in these worst-case flood conditions. The containment berm around the product storage tanks (Area 300) provides protection against inundation. The unloading facility is located within the mapped inundation area of the 500-year floodplain but the finished floor is above the 500-year floodplain elevation. ~~Flood waters inundating the unloading area would fill the below-grade trenches and containment pans~~In order to prevent the contamination of flood water, operating procedures will require that any crude oil spill, including minor leaks and drips be contained and affected surfaces cleaned promptly limiting the amount of any residue that could comingle with flood waters inundating the containment pans, containment piping, and below-grade trenches.

In the event of flood events exceeding the 100-year or 500-year flood stages, the Applicant will monitor the rate of flood water rise and suspend threatened Facility operations prior to the flooding occurring.

In the event of an expected site inundation, movable equipment, such as railcars and motor vehicles, will be demobilized and relocated above the 500-year floodplain to the extent possible. Static equipment that cannot be moved will be secured.

3.3.4.2 Mitigation

The following mitigation clarification is shown in underlined and strikethrough text.

Construction

Construction of foundations and utility and pipeline excavations for the project may require dewatering of the excavations. Groundwater that is pumped out of the excavations will be stored on site in mobile water tanks and analyzed and managed in accordance with local, state and federal regulations prior to reuse, infiltration or disposal. Disposal will be conducted in accordance with the stormwater permit issued for the project. If dewatering wells are necessary, well points used for construction dewatering will be completed in accordance with WAC 173-160 Minimum Standards for Construction and Maintenance of Wells. If groundwater extracted for construction dewatering is directed to the City's sanitary sewer it will be disposed in accordance with VMC 14.12 Discharge of Industrial Wastes to the Industrial Wastewater Pretreatment Facility.

During construction, the Applicant will conduct on-site investigations where production wells were known to be located. If a borehole is located, confirmation will be made that the borehole has been properly sealed to a depth at least 10 feet below the finished ground surface with a cementitious grout. ~~Abandoned production wells on the site could potentially be impacted and will be monitored during construction.~~ If during construction activities other wells are discovered on site, the wells will be properly logged and decommissioned.

As part of the Contaminated Materials Management, construction activities will be identified that could potentially impede monitoring and access of groundwater through existing water supply wells if access is necessary for ongoing remediation activities.

The Applicant has submitted a preliminary cSWPPP to EFSEC for review (Appendix C.1). The cSWPPP identifies the stormwater pollution prevention measures to be implemented at the construction site and as described in section 2.11 of this Application.

The following mitigation measure is added in response to the mitigation proposed in Section 3.3.5 of the DEIS as shown in underlined text.

Decommissioning

The final decommissioning plan will verify permanent measures to seal any areas with ground improvements, either by leaving existing impervious surfaces in place (such as the containment area liner) or installing minor additional impervious surface in areas where aboveground improvements are removed without a corresponding impervious surface improvement.

Section 3.4 Habitat, Vegetation, Fish, and Wildlife

3.4.2 Habitat and Vegetation

3.4.2.2 Impacts

Operation
Shipping –

Bank Erosion –

An updated version of the report titled "Wake Stranding in the Lower Columbia River" was submitted as part of the Testimony of Glenn Grette[6] and replaces Appendix H.5 from the May 2016 ASC. The date clarification is added as shown in underlined text.

The vessel corridor and habitats along the shoreline are already exposed to vessel wakes from the ships that use the river and a baseline level of propeller scour already occurs (see Appendices H.5 (revised May 2016) and H.6.

3.4.2.3 Mitigation Measures

Construction

Temporary Construction Water Quality

The following revisions are made to the text regarding the in-water work window.

~~All in-water temporary pile installation and removal below the OHWM will be conducted within the published in-water work period for the project, which is November 1 to February 28. This work window has been established to minimize potential impacts to aquatic habitat and native fish species and avoids the peak migration timing for marine mammals in the Lower Columbia River.~~ Work below the OHWM shall only occur during the EFSEC modified in-water work period between September 1 and January 15[11].

[6] Exhibit EX-0116-000038-TSS

[11] In the Applicant-prepared PDEIS for the project, and in the JARPA and Biological Evaluation (BE) for the project, the Applicant has proposed to conduct work below the Ordinary High Water Mark (OHWM) within the US Army Corps of Engineers' (USACE) published in-water work window for the Columbia River mainstem between the mouth of the river to the Snake River confluence (November 1–February 28).[1] This work window has been established by the USACE, in coordination with resource agencies, for the protection of fish life, including ESA-listed species.

In the Advisory HPA, as well as in Sections 3.6.3.1 and 3.6.5 of the DEIS, EFSEC proposes a modified in-water work window of September 1 - January 15 to avoid peak migration and larval stages of salmonid and nonsalmonid species.

The USACE is currently reviewing the JARPA and BE for the project and consulting with National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (USFWS) as obligated under Section 7 of the Endangered Species Act (ESA). ~~Each of these regulatory agencies may have additional feedback on the preferred window for in-water work.~~

~~In the absence of a consensus among the resource agencies regarding a modified work window, EFSEC should defer to the USACE-published in-water work window of November 1 – February 28, as this is the window under consideration with the federal permitting agencies.~~

~~If USACE, NMFS, USFWS, and EFSEC can agree upon a modified window in which the project can be accomplished, and which is no shorter in duration than the window proposed in the federal permit application, then the Applicant would support discussions regarding a modified in-water work window.~~

As of the submittal of the October 2016 Final Commitments and Revisions to the ASC, the Applicant is working with the USACE and Services to align the USACE work window with the preferred EFSEC/WDFW window.

Operation

The following revision is made to the text to incorporate DEIS mitigation related to building design features to deter perching as shown in underlined text.

The Draft EIS proposes mitigation requiring design features to deter perching, such as enclosing structures, so that no horizontal top surfaces are accessible, screen openings to prevent access to enclosed spaces for roosting or nesting, and installing spikes or wires to prevent perching to avoid attracting birds, such as pigeons, gulls, and starlings to the proposed Facility. In Area 200, there are two primary types of structures: the buildings to be erected as part of the administration area and the Area 200 rail unloading structure. The administrative buildings will be fully enclosed with horizontal rooftops. The buildings in Area 600 (boiler building), Area 300 (storage building), and Area 400 (marine terminal control room) are fully enclosed spaces.

The Applicant agrees to incorporate these design features to restrict access to enclosed spaces for roosting or nesting or to prevent perching where installation will not adversely interfere with required access, operation, maintenance of the unloading facility, and deployment of fire and emergency response equipment.

3.4.3 Fish

3.4.3.2 Impacts

Operation

Shipping –

An updated version of the report titled "Wake Stranding in the Lower Columbia River" was submitted as part of the Testimony of Glenn Grette[12] and replaces Appendix H.5 from the May 2016 ASC. The revised date of the report is shown in underlined text.

- *Wake Stranding* – Wake stranding occurs when fish are caught in the wave created by a passing ship and deposited on shore by the wave the wake generates. An analysis pertinent to vessel wakes and fish stranding within the Vessel Corridor area was completed for the project (see Appendix H.5 [revised May 2016]) and provides a review of wake stranding as the mechanism which could cause mortality for juvenile salmonids and eulachon as a result of wakes caused by deep-draft vessels. The focus of this review is the lower 104 miles of the Columbia River, between the Pacific Ocean and Vancouver, Washington. The study concluded wake stranding occurs on a small subset of the shoreline beaches of the vessel corridor. Pearson et al. (2008) predicted that 16 percent or about 33 miles of non-contiguous beaches had some potential to strand fish. When additional beach morphology criteria (i.e., beaches with slopes flatter than about 5 or 6 percent) were included, Person et al. (2008) predicted that about 4 percent or about 8 miles of beaches had a high susceptibility to stranding. All the beaches in this 8-mile total are located upstream of RM 33. These results indicate that stranding risk is relatively high only in a very small portion of the 208 miles of shoreline in the Vessel Corridor and all these beaches are upstream of the lower 33 miles of

[12] Exhibit EX-0116-000038-TSS

the Columbia River. Overall, subyearling (age-0+) Chinook salmon are the species that are most often stranded by vessel wakes. That species and life stage was also the most common fish captured in beach seine nets at the study sites, indicating they were highly available to be stranded. Based on these results, no generalized conclusions about moderate to major long-term effects to nearshore fish can be supported by the data.

3.4.3.3 Mitigation Measures

Construction

The following revision is made to the text regarding the in-water work window as shown in underlined text for new/added items and strikethrough for deletions.

~~All in-water construction activities, temporary pile installation, and removal activities below the OHWM will be conducted within the published in-water work period for the project (November 1 to February 28). This work window has been established to minimize potential impacts to native fish species, particularly to ESA-listed salmonids and Pacific eulachon. While there is no time when ESA-listed fish are absent from the project vicinity, the window between November 1 and February 28 avoids the peak migratory periods for adult fish and out-migrating juveniles of most populations.~~ Work below the OHWM shall only occur during the EFSEC modified in-water work period between September 1 and January 15.

Temporary Water Quality Impacts –

The following text has been clarified as shown in underlined text for new/added items and strikethrough for deletions.

- Work below the OHWM shall only occur during the EFSEC modified in-water work period between ~~November 1 to February 28~~ September 1 and January 15.
- The WDFW Region 5 Habitat Program Manager will be notified in writing (e-mail, FAX, or mail) from the agent/contractor no less than three working days prior to the start of construction activities. The notification will include the contractor's name, project location, and starting date for work.
- If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification will be made to the Washington Military Department's Emergency Management Division at 1-800-258-5990, and to the WDFW Region 5 Habitat Program Manager.

Operation

Operational Water Quality –

The discussion regarding the 3-bbl catchment and/or sump to be provided at Berth 13 is clarified as shown in underlined text. (Makarow 2016).

The Applicant will increase the volume of containment available to capture potential releases at the dock during vessel loading activities.

Federal regulations require a catch basin at the dock that can contain 3 bbl in the event of a spill. The current design has a catch basin with a capacity to contain 84 bbl.

In addition to the catch basin design, the Applicant is committing to change the design to further increase the physical storage capacity of the catch basin by pumping oil out of the catch basin in the event of a spill. This change involves two components. First, the Applicant would use the existing pump and return pipeline already depicted in plans that are used to strip the loading hoses of any residual crude oil and return that crude oil to the Area 300 storage tanks. The Applicant proposes to connect the containment area into this system and implement an automatic trigger that would turn the pump on in the event of a system shutdown, as would occur during a rupture of the loading hoses (further described below). When engaged, that pump operates at a rate of approximately 286 bbl/hr. Second, to further increase the pumping capacity in the event of a larger spill at the dock, the Applicant proposes to install an additional larger landside pump that will connect to the same return piping and catch basin. The additional pump would be of the same size as the ones proposed in the rail unloading area and would pump approximately 2,800 bbl/hr (46 bbl/min). Collectively, this improved system far exceeds the 3-bbl regulatory requirement.

In addition to the improvements described above, several of the design features proposed in the submitted plans are engaged in the event of a spill during vessel loading to limit the volume released. First, the pump electrical drives that power the positive displacement pumps (the pumps responsible for moving oil from the storage tanks to the vessel) include a "safe torque off" feature. This feature removes rotational power from the motor of the positive displacement pumps instantly when pressure in the line drops or if the gas detection system is activated (as would occur in the event of a release), thus, stopping additional flow of material to the pipelines. Additionally, the pipelines at the dock have 30-second shutoff valves. In the event of a release, the valves are actuated and complete closure will occur within 30 seconds. During those 30 seconds, the valves are incrementally restricting the flow such that it is decreasing over that span of time.

If one assumes it takes 5 seconds for the positive displacement pumps to stop when the "safe torque off" is engaged, and one does not take into consideration any incremental decrease of flow that would be expected when the valve closes during the 30-second shutoff time (both of which are conservative assumptions and tend to underestimate the expected performance), the resulting volume that would flow past the valve during the 30 seconds is approximately 44 bbl.

By comparison, the improvements to the containment design at the dock would provide for the 84 bbl of physical storage capacity and would also remove an additional 48 bbl via pumping in that span of time. More generally, the containment system as described above would take roughly 1 minute to empty the 84-bbl containment area back to the aboveground storage tanks.

3.4.4 Wildlife

3.4.4.3 Mitigation Measures

The following revision is made to the text regarding the in-water work window as shown in underlined text for new/added items and strikethrough for deletions.

Construction

~~In addition, all work below the OHWM will be conducted within the published in-water work period for the project (November 1 to February 28). This work window has been established to minimize potential impacts to native fish species, but also avoids the peak migration timing for marine mammals in the Lower Columbia River.~~ Work below the OHWM shall only occur during the EFSEC modified in-water work period between September 1 - January 15.

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