

EVALUATION REPORT AND FINDINGS

on the
Application for Certification
Pursuant to Section 401 of the
Federal Clean Water Act

Submitted by:

Department of the Army

U.S. Army Corps of Engineers for the

The Columbia River Channel Improvement Project and The Columbia River Operations and Maintenance Dredging

Pursuant to Oregon Administrative Rules
Chapter 340, Division 48



Prepared by:

Oregon Department of Environmental Quality

Northwest Region
2020 SW 4th Avenue
Portland, Oregon 97201

May 30, 2008

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INTRODUCTION

On July 7, 2007, the Department of Environmental Quality (DEQ) received application materials from United States Army Corps of Engineers (USACE) pursuant to renewing 401 Water Quality Certifications (WQC) for the Columbia River Channel Improvement Project (CRCIP) and Columbia River Operations and Maintenance Dredging (O&M). USACE requested DEQ to combine the previously distinct evaluations and consider issuing a single 401 WQC.

CRCIP: The original application for 401 WQC for the deepening the 600 foot wide Columbia River Federal Navigation Channel from RM 3.0 to 106.5, was received by DEQ in 1999 and denied 401 WQC on September 29, 2000. Subsequent application was made on September 4, 2002 with supplemental submittals made on November 26, 2002 and March 28, 2003. DEQ issued 401 WQC for CRCIP on June 23, 2003 to cover two years of construction and three years of maintenance dredging to a maximum depth of -43 feet. A depth of -48 feet (-43 feet with up to 5 feet of overdepth) and overwidth dredging of up to 100 feet was authorized in selected high volume shoal areas. On June 23, 2005, DEQ issued a modification letter in response to USACE's safety concerns with regard to monitoring requirements. On June 12, 2006, DEQ issued an additional Clarification Letter in response to USACE's request dated January 12, 2006. The CRCIP 401 WQC with these amendments expires on June 22, 2008.

O&M: Maintenance dredging of the Federal Navigation Channel and various side channels has been on-going in the Columbia River for decades. Annual maintenance dredging of the Mouth of the Columbia River from RM -3.0 to 3.0 is evaluated and certified distinctly from maintenance dredging of RM 3.0 and above. The most recent iteration of certification for O&M began with publishing of the USACE Public Notice, Reference Number NWPOP-CLA-F05-001 *Maintenance Dredging of the Columbia River and Side Channels (RM 3-192)* on January 21, 2005, which described continued maintenance dredging of RM 3.0 to 106.5 to a depth of -40 feet with up to five feet of depth for advanced maintenance and up to 100 feet of advance width in select high shoaling areas, as well as dredging various depths (including up to two feet advanced maintenance depth) and channel widths in RM 106.5 to 192 and specific side channels (in Oregon these were, Skipanon Channel, Hammond Boat Basin, Wahkiakum Ferry/Westport Slough, and the upstream end of Oregon Slough). DEQ issued 401 WQC on May 26, 2004 (effective June 6, 2005) for the entire proposed project with the understanding (as noted in the USACE Public Notice) that dredging above RM 125 was unlikely to occur during the duration of the certification. The 401 WQC was conditioned to require preconstruction notifications and additional analysis prior to dredging in areas other than RM 3.0 to 125.3. On June 12, 2006, DEQ issued a Clarification Letter in response to USACE's request dated January 12, 2006. The O&M 401 WQC with this amendment expires June 23, 2008.

Due to unanticipated delays and funding shortages, CRCIP was not able to be completed within the predicted two year timeframe for construction, nor will it be completed within the five year duration of the existing 401 WQC. Therefore, USACE is requesting additional time to complete construction of the deepened channel, continued maintenance of the former channel depth, and eventually on-going maintenance of the deepened channel upon completion of construction through duration of the 401 WQC. Although USACE requested certification for maintenance dredging from RM 3 to RM 192, adequate analysis of water quality and beneficial use impacts has not been

completed and, therefore, DEQ is only considering 401 WQC for maintenance dredging from RM 3 to RM 125.3.

Additionally, USACE requested that DEQ's evaluation of both projects under a single certification be completed six months prior to expiration of the existing WQC's in order to facilitate new, earlier contracting procedures.

This document represents DEQ's findings on this project relative to the applicable parts of the Clean Water Act and State Statute and Administrative Rules. These findings have been prepared pursuant to Section 401 of the Clean Water Act (33 U.S.C. Section 1431), Oregon Revised Statutes (ORS 468B) and Oregon Administrative Rules (OAR 340 Division 048).

The record generated in the process of reviewing the application, all supplemental information submitted by the applicant, and all materials received as part of the public review process, are considered part of the record regarding this application.

REQUIREMENTS FOR CERTIFICATION

Section 401 of the CWA establishes requirements for state certification of proposed projects or activities that may result in any discharge to navigable waters. Before a federal agency may issue a permit or license for any project that may result in any discharge to navigable waters, the state must certify that the proposed project or activity will comply with applicable effluent limitations, water quality-related effluent limitations, water quality standards and implementation plans, national standards of performance for new sources, and toxic and pretreatment effluent standards (Sections 301, 302, 303, 306, and 307 respectively, of the CWA) and any state regulations adopted to implement these sections. The state is further authorized to condition any granted certificate to require compliance with appropriate water quality-related requirements of state law.

The CWA creates a unique system for protection of water quality. The state has primary responsibility and authority for protecting water quality. The federal law recognizes and supports state requirements as long as they are not less stringent than established federal minimums. Indeed, federally approved state requirements and standards become federal requirements and standards. The U.S. Environmental Protection Agency (EPA) can intervene only if the state refuses to act or if state requirements do not meet federally prescribed minimums.

In the Section 401 certification process, the state acts as a federal agent under the authority of the federal law. However, the state must also comply with state law to the extent that federal law does not supersede it. In Oregon, statutory authority for Section 401 certification is contained in ORS Chapter 468B. The DEQ is the agency of the State of Oregon designated to carry out the certification functions prescribed by Section 401 of the Clean Water Act. DEQ may issue an unconditional certification where a project will not impact water quality. A conditioned certification may be issued in those cases where a project may have an impact on water quality, but implementation of the conditions contained in the certification will assure compliance with standards. Certification may be denied in cases where a project cannot be undertaken in accordance with water quality standards.

Administrative rules (OAR Chapter 340 Division 48) prescribe the procedure DEQ is required to follow for Section 401 certifications. The rules identify the information that must be included in an application for Section 401 certification [OAR 340-48-0020(2)]. Aside from general information about the project, the substantive information is that "required by the federal permitting or licensing agency or such other environmental background information as may be necessary to demonstrate that the proposed project or activity will comply with water quality requirements." DEQ may also request any additional information necessary to adequately evaluate the project impacts on water quality [OAR 340-48-0020(3)].

SUMMARY OF APPLICATION

Documents Filed by the Applicant

The following documents are considered to be the application as filed by the applicant and have become part of the DEQ record:

- 1 USACE 401 WQC application submittal, undated but received July 2, 2007.
- 2 USACE 401 WQC application submittal amendment, in response to DEQ information request (November 8, 2007), undated but received January 3, 2008.
- 3 USACE Memorandum for Chief CENWP-OD – FY 2006 Sediment Quality Summary Report Update, dated January 5, 2007.
- 4 National Marine Fisheries Service Reinitiation of the Biological Opinion for the Columbia River Federal Navigation Channel Improvement Project, dated February 16, 2005 and amended April 13, 2005.
- 5 US Fish and Wildlife Service Concurrence Letter, dated December 14, 2004.
- 6 USACE Columbia River Operations & Maintenance Dredging Biological Assessment, dated September 2004.
- 7 National Marine Fisheries Service Conference Biological Opinion for Columbia River Channel Operations and Maintenance Program, Mouth of the Columbia River to Bonneville Dam, dated March 11, 2005.
- 8 US Geological Survey, in cooperation with USACE, report on *Site Fidelity, Habitat Associations, and Behavior During Dredging Operations of White Sturgeon at Three Tree Point in the Lower Columbia River* by Parsley, Michael J. and Popoff, Nicholas D., dated July 8, 2004.
- 9 Additionally the following list of documents, which were previously considered in the 401 WQC evaluation (certification issued June 23, 2003), were referenced in various sections.

USACE Final *Supplemental Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement*, dated July 2002.

National Marine Fisheries Service Biological Opinion for the Columbia River Federal Navigation Channel Improvement Project, dated May 2002.

US Fish and Wildlife Service Biological and Conference Opinions for the Columbia River Channel Improvement Project, dated May 2002.

USACE Final *Biological Assessment: Columbia River Channel Improvement Project*, dated December, 2001.

USACE Final *Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement*, dated August 1999.

USACE Final *Integrated Dredged Material Management Plan & Supplemental Environmental Impact Statement*, dated June, 1998.

USACE CRCIP BA, dated December 2001.

USACE *Final Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement* dated August 1999 and the *Final Supplemental Integrated Feasibility Report and Environmental Impact Statement* dated January 2003.

Notification of Complete Application

DEQ reviewed the initial application and deemed that it was deficient in that it did not provide information specific to the potential impacts to water quality and beneficial uses as required in OAR 340-048-0020; no current information on actual impacts to water quality and beneficial uses obtained since the project actions had been certified in 2003 and carried out; nor any analysis of potential impacts to water quality or beneficial uses within RM 125-192, which had not previously been analyzed by DEQ.

DEQ advised the applicant of these deficiencies in a detailed letter dated November 8, 2007.

At a meeting on January 3, 2008, USACE submitted additional information and agreed that proposed portions of the project for which no analysis of water quality and beneficial use impacts had been submitted, specifically RM 125 to 192, would not be considered for 401 Water Quality Certification at this time.

Legal Name and Address of Project Applicant

Department of the Army
Portland District
Corps of Engineers

P.O. Box 2946
Portland, OR 97208

Description of Project Location

The Columbia River from approximately River Mile (RM) 3 to 125.3, and some tributaries.

Waters of the State Impacted by Project

The Columbia River, Skipanon Channel, Hammond Boat Basin, Wahkiakum Ferry/Westport Slough, and the upstream end of Oregon Slough. Direct impacts from dredging and mitigation are as specified in the Description of Proposed Project section below. Impacts to surface waters can also be expected from disposal sites identified in the disposal section below.

Adjacent Landowners

The list of adjacent landowners known to DEQ in 1999 is presented in the table that follows. This list was supplied on a compact disc by the USACE. No updates were provided to DEQ by USACE for the current evaluation.

In order to ensure that interested parties are notified of the certification decision, DEQ will use existing current USACE and DEQ mailing lists and email lists to notify area residents, municipal agencies, and stakeholders, as well as parties requesting notification of all 401 water quality certification actions statewide.

| <u>Owner Name</u> | <u>Owner Address</u> |
|---|--|
| River Ranch, Homeowners Association | Route 2, Box 2341, Clatskanie, OR 97016 |
| Dianne Kim, Dave Christensen | 65640 Island Road, Deer Island, OR 97054 |
| James W. Ericksen | 12304 River Front Road, Clatskanie, OR 97016 |
| Webb Drainage District | P.O. Box 866, Clatskanie, OR 97016 |
| Scappoose Dairy, Loren Ellis Jr. & Sons | P.O. Box 1147, Scappoose, OR97056 |
| Fay K. Fraser | P.O. Box 611, Clatskanie, OR 97016 |
| Paul Godsil | P.O. Box 82249, Portland, OR 97282-049 |
| St. Helens Yacht Club, Mark Griffin | P.O. Box 714, St. Helens, OR 97051 |
| Charles and Marie Haglund | Route 6, Box 598, Astoria, OR 97103 |
| Lone Star Northwest, Doug Hale | 1050 North River Street, Portland, OR 97227 |
| Drams Inc., David J. Felgert | 12454 Riverfront Road, Clatskanie, OR 97016 |
| Scott R. Fraser | P.O. Box 611, Clatskanie, OR 97016 |
| Vance R. Fraser | P.O. Box 1426, Beaverton, OR 97075 |
| Morse Bros. Inc., Brian Gray | 65060 Col. Riv. Highway, Deer Island, OR 97054 |
| Charles Haglund Jr. | Route 6, Box 596, Astoria, OR 97103 |
| International Paper, Gene Harbeson | P.O. Box 854, Gardiner, OR 97441-0047 |
| Etsel & Bernice Honeycutt | 79944 Bodine Road, Clatskanie, OR 97016 |
| Ben J. Hudson, Jr. | 12632 River Front Road, Clatskanie, OR 97016 |
| Howard Kern | 65640 Island Road, Deer Island, OR 97054 |
| K.C. Klosterman | 32260 Old Highway 34, Tangent, OR 97389 |
| Lillian Hudson | 12632 River Front Road, Clatskanie, OR 97016 |

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|---|--|
| Board of County Commissioners, Tony Hyde | Columbia County Courthouse St. Helens, OR 97051 |
| Donna Jensen | 30803 SW Grahams Frry Rd., Wlsnvl, OR 97070 |
| City of St. Helens, Mayor, Don Kalberg | P.O. Box 278, St. Helens, OR 97051 |
| Zilpha & Mr. Pederson | 3491 NW Reeder Road, Portland, OR 97231 |
| George and Diane Lammi | 14141 Midland Dist. Rd, Clatskanie, OR 97016 |
| City of St. Helens City Administrator | P.O. Box 278, St. Helens, OR 97051 |
| Marshland Drainage Improvement Co., Margaret Magruder | 12589 Highway 30, Clatskanie, OR 97016 |
| Ruben & Ilma Lehto | 20787 Johns Dist. Road, Clatskanie, OR 97016 |
| Arnold Leppin | 68251 Col. Riv. Hghwy, Rainier, OR 97048 |
| Lone Star Northwest, Eric Muller | P.O. Box 1225, Scappoose, OR 97056 |
| Reichold Chemicals, John Oldham | P.O. Box 13582, RTP, NC 29709 |
| Scappoose Sand and Gravel, Scott Parker | P.O. Box AF, Scappoose, OR 97056 |
| Martin Phillip | 163 SW Freeman, Ste B, Hillsboro, OR 97123 |
| George and Roberta Price | 13800 Webb District Rd., Clatskanie, OR 97016 |
| Jerome and Joan Parson | 23000 NW Gillihan, Portland, OR 97231 |
| Columbia County Courthouse, Jack Peterson | St. Helens, OR 97051 |
| Larry D. Poor | 13876 River Front Road, Clatskanie, OR 97016 |
| OR DSL, Steve Purchase | 774 Summer St., NE, Salem, OR 97310 |
| ODFW, C. W. Rawlins | P.O. Box 59, Portland, OR 97208 |
| Larson and Mason | P.O. Box 823, Rainier, OR 97048 |
| Karsten & Edith Sjoli | 20665 Johns Dist. Rd., Clatskanie, OR 97016 |
| New Brix Maritime Co., M.A. Skiles | P.O. Box 83018, Portland, OR 97283-0018 |
| Chris and Lyn Soter | 14460 NW Oak Hills Drive, Beaverton, OR 97006 |
| Martin and Linda Sunnes | 163 SW Freeman, Ste. B, Hillsboro, OR 97123 |
| Lone Star Northwest, Bob Short | 050 North River Street, Portland, OR 97227 |
| Dennis and Sandra Sisseck | 35257 Sykes Road, St. Helens, OR 97051 |
| Louise A. Skaggs | 20619 Johns Dist. Rd., Clatskanie, OR 97016 |
| Svenson Island Landowner, Becki Smith | Route 6, Box 598, Astoria, OR 97103 |
| Patrick Sprague | 17365 Clatskanie Dist. Rd., Clatskanie, OR 97016 |
| Port or Portland, Alan Willis | P.O. Box 3529, Portland, OR 97208 |
| Port of St. Helens, Peter Williamson | P.O. Box 598, St. Helens, OR 97051-0598 |
| Columbia County Courthouse, Joel Yarbor | St. Helens, OR 97051 |

DESCRIPTION OF PROPOSED PROJECT

USACE is seeking approval to dredge for purposes of deepening or maintaining the Federal Navigation Channel from RM 3 to 192 and specified side channels to the depths specified below, which include advanced maintenance depths. Due to the inaccuracies of dredging, incidental removal or disturbance of material may occur below the advanced maintenance depth, though a disincentive of no payment to the contractor for material removed below the maximum depths is anticipated to limit incidental overdredging.

Portions of the deepening have already been completed under the existing 401 WQC and adequate analysis of water quality and beneficial use impacts for RM 125.3 to 192 has not been submitted to DEQ for this evaluation. Therefore, evaluation of the potential impacts from the proposal has been limited to the areas described below.

The types of dredging equipment that will be used for this project are: hopper, pipeline, clamshell, and excavator dredges and a drill barge (for drilling and blasting).

1. Deepening Completion - Areas of the channel remaining to be deepened include approximately RM 27 to 41 and RM 48 to 91. Material will be removed from these areas to a depth of up to -48 feet. Additional depth may result in areas where rock is currently present. These include:

- Warrior Rock: RM 87 to 88. Removal of rock to -50 feet with possible disturbance to -60 feet due to the necessity to drill holes for blasting.
- Slaughters Bar: RM 62 to 67. Removal of rock to -49 feet with possible disturbance to -55 feet due to the presence of boulders.

There is a possibility that other areas of small rock removal may be encountered as the remainder of the Project is deepened. These areas will be removed as to not cause a navigational hazard that could result in significant environmental damage.

2. Maintenance Dredging –

- **RM 3.0 to 106.5** – In areas where the channel deepening has been completed, maintenance dredging will occur to a depth of -48 feet (-43 feet with up to 5 feet of advanced maintenance depth) and overwidth dredging of up to 100 feet in selected high volume shoal areas specified on submitted maps. In areas yet to be deepened, maintenance dredging will occur to a depth of up to -45 feet (-40 feet with up to 5 feet of advanced maintenance depth) and overwidth dredging of up to 100 feet in selected high volume shoal areas specified on submitted maps.
- **RM 106.5 to 125.3** - Maintenance dredging to a depth of -19 feet (-17 feet with up to 2 feet of advanced maintenance depth) and up to 100 feet of over-width dredging where needed.
- **Side-channels**

- Skipanon Channel - dredging to -18 feet and overwidth where needed
- Hammond Boat Basin - dredging to -12 feet and overwidth where needed
- Wahkiakum Ferry/Westport Slough - dredging to -12 feet and overwidth where needed
- Oregon Slough (upstream end) - dredging to -12 feet and overwidth where needed

3. Disposal –A variety of in-water and upland methods are proposed for disposal of dredged material. Past and current DEQ Findings will inform the 401 WQC conditions to place limits on allowable locations from the following list of proposed locations:

- Flowlane sites are in or adjacent to the Columbia River federal navigation channel at depths generally from -50 to -65 feet. However, there would be exceptions to the general depth criteria for the channel improvement project. The actual disposal sites cannot be designated beyond the general description in the first sentence of this section. They vary from year to year depending on the condition of the channel. Flowlane disposal could occur at depths of -35 to -65 feet between RM 64 to 68 and RM 90 to 101. Flowlane disposal could occur in areas greater than -65 feet deep in the following specific areas in Oregon: downstream of RM 5; RM 29 to 40; RM 54 to 56.3; and RM 72.2 to 73.2. The substrate at these locations is predominately medium grain sand with some fine and coarse grain sand.
- Harrington Sump is a deepwater (~-40 feet) site located between RM 20 to 22 in Oregon waters that historically and currently is used for placement of dredged material by hopper dredges. The sandy substrate at this location is comparable to the dredged material placed there. The sump is typically filled over a 2 to 3 year period, to approximately -35 feet and then dredged to approximately -45 feet with material disposed on Rice Island.
- The two Oregon sites selected for beach nourishment, Sand Island and Miller Sands Spit, are non-vegetated erosive shoreline areas with sandy substrate.
- Various upland disposal sites properly designed and permitted under a DEQ Solid Waste Letter of Authorization.

4. Wetland Mitigation and Ecosystem Restoration - Mitigation is required for wetland losses due to the placement of dredge material impacting wetlands. In Oregon, wetland mitigation began at the Webb Mitigation site in 2007. On July 13, 2005, DEQ provided concurrence on the USACE determination that the project was covered by the programmatic 401 WQC issued for the USACE Nationwide Permit Package, as the project falls under Category 27 (*Aquatic Habitat Restoration, Establishment, & Enhancement Activities*). Therefore, this compensatory wetland mitigation project has not been evaluated under the existing or currently proposed 401 WQC.

Additional actions are proposed in conjunction with the deepening project which are anticipated to provide benefits to water quality and beneficial uses. The following ecosystem restoration features are occurring in Oregon with oversight on development, implementation, and success monitoring from the multi-agency Adaptive Management Team:

- Purple Loosestrife Control Program between RM 18-52
- Tenasillahe Island - Interim (Completed)
- Tenasillahe Island - Long Term
- Tide Box retrofits to provided fish passage at: Tide Creek, and Grizzly Slough
- Lord/Walker Islands (Completed)

ISSUANCE OF PUBLIC NOTICE

During the initial evaluation of the CRCIP for 401 WQC, Public Notice of USACE's application was released on December 2, 2002. A second, subsequent public notice was issued on April 29, 2003. Additionally, DEQ held three Public Hearings on January 6 & 7, 2003 and May 29, 2003.

USACE published a Public Notice, Reference Number NWPOP-CLA-F05-001 *Maintenance Dredging of the Columbia River and Side Channels (RM 3-192)* for O&M on January 21, 2005.

DEQ has evaluated the current application materials and all subsequent materials submitted to produce a Draft Evaluation Report and Findings document and a Draft 401 Water Quality Certification which are published for public review and comment on April 03, 2008, and collectively referred to as the proposed certification decision. The comment period was extended for 5 days following written request and closed on May 14, 2008. Comments received during the comment period are addressed in this final Evaluation and Findings document and appropriate changes have been incorporated into the final 401 Water Quality Certification.

APPLICABLE WATER QUALITY REGULATIONS AND DEQ EVALUATIONS

Oregon's water quality regulations are contained in Oregon Administrative Rules (OAR) Chapter 340, Divisions 40 through 56 and 71. Division 40 contains the state's groundwater standards. Division 41 entitled "Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon" contains the surface water standards, and is the most significant with respect to §401 certification evaluation of a proposed project. The requirements and standards set forth in Division 41 were adopted to comply with the surface water quality protection provisions of both state and federal law. The water quality standards in Division 41 are composed of three elements: beneficial uses, water quality criteria (both narrative and numeric), and the antidegradation policy.

Protection of Beneficial Uses

Both Oregon Law and the federal Clean Water Act are structured to require that water quality be protected and maintained so that existing and potential beneficial uses of public waters are not impaired or precluded by degraded water quality. The regulatory approach used is to:

- 1 identify beneficial uses that are recognized as significant with regard to water quality protection;
- 2 develop and adopt standards of quality for significant water quality parameters to define the quality that is necessary to protect the identified beneficial uses;
- 3 establish and enforce case-by-case discharge limitations for each source that is permitted to discharge treated wastes into public waters to assure that water quality standards are not violated and beneficial uses are not impaired; and
- 4 establish and implement "best management practices" for a variety of "land management" activities to minimize their contribution to water quality standards violations or impairment of

beneficial uses.

The beneficial uses of surface water for the Columbia River in the reaches subject to the proposed project are contained in Tables 1 (Main Stem Columbia Basin, OAR 340-41-0101);

Table 1: Beneficial Uses for the Columbia River - Mouth to River Mile 120

| |
|--|
| Public Domestic Water Supply |
| Private Domestic Water Supply |
| Industrial Water Supply |
| Irrigation |
| Livestock Watering |
| Anadromous Fish Passage |
| Salmonid Fish Rearing |
| Salmonid Fish Spawning |
| Resident Fish and Aquatic Life |
| Wildlife and Hunting |
| Fishing |
| Boating |
| Water Contact Recreation |
| Aesthetic Quality |
| Hydro Power |
| Commercial Navigation & Transportation |

Water Quality Standards

Water quality standards are developed for varying geographic areas to protect beneficial uses. Generally, if a water quality standard fully protects the most sensitive beneficial use, then all beneficial uses are fully protected. Water quality standards have been adopted for water quality parameters that are most significant or useful in regulating pollution. These standards take the form of both numeric limits and narrative criteria and have been established based on best available information at the time they were adopted. Development of standards is a continuing process. As new information becomes available, standards for additional parameters may be added and existing numeric standards or narrative criteria may be revised to better reflect the intent of protection of the identified beneficial uses.

Antidegradation Policy

Oregon's antidegradation policy (OAR 340-41-0004) applies to all surface waters. In the case of bodies of water that meet water quality standards, it provides for the maintenance of existing water quality. Specifically, it states that the existing quality of high quality waters (i.e., waters meeting

water quality standards) shall be maintained and protected unless the Environmental Quality Commission makes certain rigorous findings of need. For water quality-limited waters, water quality may in no circumstances be lowered; that is, these waters have a nondegradation status.

POTENTIAL MODIFICATION OF SURFACE WATER QUALITY

Biocriteria

340-041-0011 Waters of the State shall be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.

340-041-0002 defines "without changes in the resident biological community" as "no loss of ecological integrity when compared to natural conditions at an appropriate reference site or region." "Ecological integrity" is defined as "the summation of chemical, physical and biological integrity capable of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat for the region." An "appropriate reference site or region" is further defined as "a site on the same water body, or within the same basin or ecoregion that has similar habitat conditions, and represents the water quality and biological community attainable within the area of concern."

Application of Standard: The biocriteria standard is meant to complement the other parameter-specific criteria in the following manner. The parameter-specific criteria are designed to give full protection to the most sensitive beneficial use, with the implicit assumption that if the most sensitive beneficial use is protected, then all uses will be protected. However, the application of these criteria is very limited in considering multiple stressors and cumulative effects. By contrast, the biocriteria are aimed at gaining the ability to assess total impact to the community in situ. Biocriteria make it possible to evaluate the impact of a source without a need for measuring every possible water quality variable. Thus, the standard is applied as a measure of the impact of a source by comparing the biological integrity (as represented by appropriate expressions) downstream of the source with that at a reference site or region.

Present Condition: There are 13 salmonid species listed under federal and state endangered species statutes that inhabit the Columbia River. While the factors that have led to their decline are manifold, water quality has played a role. A number of National Marine Fisheries Service (NMFS) Biological Opinions cover these species.

Green and white sturgeon species are present in the Columbia River, more prevalently in the areas above the Mouth. Presence seems to be greater in summer, lower in winter and at some intermediate level in the spring.

Migrating eulachon (smelt) densities vary by season, but seem to be at their greatest abundance in the spring.

Dungeness crab are present in the river up to river mile 18.

River lamprey and Pacific lamprey migrate between the Columbia River and the Pacific Ocean.

Other anadromous or resident organisms which may be present in areas proposed for dredging and

disposal are: American Shad, Pacific tomcod; Northern anchovy; Sand sole; Shiner perch; Sand shrimp; Smooth bay shrimp; and multiple groups of benthic organisms.

Applicant's Position: USACE believes there are adequate Best Management Practices (BMPs) applied, adequate studies conducted, and adequate measures implemented through the multi-agency Adaptive Management Team (AMT), to demonstrate that the proposed activities are protective of ESA listed salmonids, green and white sturgeon, smelt, Dungeness crab and listed terrestrial species specific to this criteria. In addition, past submissions, study summaries and required reporting indicate that USACE believes impacts to the aquatic ecosystem associated with dredging and discharge of dredged material will occur, but are expected to be minimal for the following reasons: the substrate of the mainstem of the river naturally consists primarily of sand; organisms abundance is low and they are adapted to the dynamic nature of the habitat; impacts are short-term; and activities will be scheduled to avoid periods of species abundance in the following specific areas to the extent practicable. In Oregon side channels, the Chinook Channel and Hammond Boat Basin, dredging activities are conducted during September and October. For the Skipanon Channel, Wahkiakum Ferry/Westport Slough Channel, and Upper Oregon Slough Channel, dredging activities are conducted from November through February. Dredging in the reach from RM 106.5 to 125.3 is conducted during the period from August through September to be protective of chum salmon. To be protective of crab, USACE does not dredge in the Lower Desdemona Reach after July 1st of any year. To be protective of smelt, USACE does not perform in-water flowlane disposal of dredged material between the 8th and 20th weeks of the year in the reaches between RM 35 and 75. In addition, dragheads and/or cutterheads shall not be operating above certain depths more than 3 times in an 8-hour period. In the main channel from RM 4.4 to 106.4, this depth is -27 feet. In side channels and from RM 106.5 to 125.3, the associated depth is -9 feet.

Public Comment: DEQ received a comment from Northwest Environmental Advocates opining that information provided by the applicant was insufficient for adequate analysis as to the Biocriteria standard being met.

DEQ Evaluation: Issuance of a biological opinion by NMFS has evaluated the project for its impacts on species listed under the Endangered Species Act (ESA). That biological opinion contains provisions which, if implemented will be protective of the listed species. The opinion also calls for reinitiation of the consultation in the event of new species listings, significant project changes, or new information.

Green Sturgeon were listed since completion of the NMFS BOs, and there is currently a lack of meaningful information about their behaviors, stressors, or reasons for decline. Studies on the impacts of dredging and disposal to sturgeon have been undertaken by US Geological Survey (USGS) and are planned through the AMT, and it is anticipated that NMFS will conduct studies and evaluate available information through work in conjunction with the listing of and recovery planning for green sturgeon. Current understanding from the existing studies demonstrates minimal entrainment of sturgeon during dredging; and that sturgeon prefer areas with steep slopes, use areas with depths greater than -65 feet, and are known to have a high degree of site fidelity following dispersal from disturbance or seasonal migration.

A petition for listing smelt (eulachon) is currently being considered by NMFS due to recent declines. Adult smelt are susceptible to entrainment during dredging, though little data exists on actual smelt entrainment rates. Washington Department of Ecology (Ecology) and Washington Department of Fish and Wildlife (WDFW) responded to complaints from citizens observing adult smelt being discharged from upland dredged material placement site outfalls in early February of 2008. Additionally, during spawning and while incubating, smelt populations are vulnerable to entrainment during dredging and burial due to in-water disposal. Studies on smelt declines are anticipated through the NMFS listing process.

Through the AMT process, USACE continues to study impacts of dredging and disposal on crab populations at various locations within the river. The goals are to better understand distribution and susceptibility to entrainment and burial in order to adaptively alter dredging and disposal activities and locations to avoid these impacts to crab populations.

Other species susceptible to entrainment during dredging, burial during in-water disposal, loss or rejection of habitat due to alterations, and other behavioral impacts include: white sturgeon; Pacific and River lamprey; and other resident, migratory, and benthic organisms. Little information exists on the vulnerability of these species to dredging and disposal impacts, though it is understood that species use of and benthic productivity in areas with depths between -35 and -65 feet, are generally low.

Dredging has the potential to resuspend toxics which may be present in sediment, making them more bioavailable and thereby degrading the ecological integrity of the direct area, as well as areas downcurrent. However, due to a complex array of factors, the potential occurrence and magnitude of direct and indirect effects on the variety of biota potentially exposed are difficult to pinpoint. Further, an appropriate reference site is difficult to determine. Background measures of some toxics in the water column have been measured above levels determined to be harmful to aquatic life at both acute and chronic criteria. Without knowing more within both the broad and reach scale context about the sources of toxics, the duration of exposure, magnitude of distribution, bioavailability, synergistic effects, and cumulative contributions; the potential effects from toxics liberated due to sediment disturbance during dredging cannot be effectively isolated.

Blasting is proposed to occur at limited, discrete areas for rock removal to complete the deepening work in the Federal Navigation Channel. A variety of direct and indirect impacts to all life stages of aquatic organisms and habitat over a range of distances from a blast zone may result from associated effects such as: abrupt pressure changes, sedimentation, vibration, noise, toxics, and habitat alteration. Careful assessment of the microenvironment, species presence, and relevant sensitivities is necessary to minimize potential impacts through application of effective management, mitigation, and contingency measures.

There is notable likelihood of invasive species introductions from ballast water, and organisms adhering to vessels traversing the Columbia River.

DEQ Finding: Few conclusive determinations can be drawn with regard to the impacts from deepening and maintenance dredging and disposal activities to species inhabiting the Columbia River estuary to date. As such, it is essential that emerging information from existing, on-going,

and future studies by USACE, the fisheries agencies, and independent researchers be actively analyzed and applied through adaptive management of the proposed activities as warranted. Therefore, the adaptive management process initiated during initial certification of the CRCIP should continue in an appropriately evolved and refined format, such that the best available information can influence management decisions in implementing the project in the least impactful way.

A thoroughly assessed blasting plan must be prepared by USACE based upon the most current information of underwater blasting techniques and protective measures which are appropriate to the conditions of the river in the proposed blast area(s) and species which may be present there. This plan must be reviewed and approved by NMFS and ODFW and all required permits must be obtained prior to blasting taking place.

Although the deepening of the navigation channel has the potential to allow deeper draft ships to use the channel, conclusions about whether this will lead to more or different vessels using the channel cannot be readily determined. Therefore, the likelihood of invasive species introductions from ballast water, and organisms adhering to vessels is not greater than at present as a result of this project.

There is no record of the commenter reviewing DEQ's file on the project prior to submitting comments as to the inadequacy of the analysis on the Biocriteria standard. Although more data is usually a desirable component of a good analysis, in this case it is unclear whether more and better focused data would have led to a different conclusion. Meaningful analysis of all ecological aspects of this exceedingly complex and dynamic system over approximately 120 river miles is impractical to impossible. DEQ believes that the smaller scale and more focused studies required to be undertaken by USACE in the AMT process will yield information useful to decision making in the regulatory context and supportive of the analyses on individual water quality parameters and beneficial uses. DEQ participates in the required AMT process and will use the study analyses to continue to evaluate the effects of the proposed actions and will require changes to operations as supported by emerging information.

Dissolved Oxygen

340-041-0016 Dissolved Oxygen (DO): No wastes may be discharged and no activities may be conducted that either alone or in combination with other wastes or activities will cause violation of the following standards: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(1) For water bodies identified as active spawning areas in the places and times indicated on the following Tables and Figures set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, 121B, and 190B, and Figures 130B, 151B, 160B, 170B, 180A, 201A, 220B, 230B, 260A, 271B, 286B, 300B, 310B, 320B, and 340B, (as well as any active spawning area used by resident trout species), the following criteria apply during the applicable spawning through fry emergence periods set forth in the tables and figures and, where resident trout spawning occurs, during the time trout spawning through fry emergence occurs:

(a) The dissolved oxygen may not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

(b) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels must not be less than 95 percent of saturation;

(c) The spatial median intergravel dissolved oxygen concentration must not fall below 8.0 mg/l.

(2) For water bodies identified by the Department as providing cold-water aquatic life, the dissolved oxygen may not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen may not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and may not fall below 6.0 mg/l as an absolute minimum (Table 21);

(3) For water bodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen may not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(4) For water bodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen may not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen may not fall below 5.5 mg/l as a 30-day mean minimum, and may not fall below 4.0 mg/l as an absolute minimum (Table 21);

(5) For estuarine water, the dissolved oxygen concentrations may not be less than 6.5 mg/l (for coastal water bodies);

(6) For ocean waters, no measurable reduction in dissolved oxygen concentration may be allowed.

Application of Standard: Dissolved oxygen is essential for maintaining aquatic life. Historically, the depletion of dissolved oxygen was one of the most frequent water pollution problems. Its effect on aquatic organisms, especially at low concentrations, has been studied extensively. Sensitivity to low dissolved oxygen concentrations differs between species, between various life stages (egg, larvae, and adults), and between different life processes (feeding, growth, and reproduction).

Present Condition: The water quality standard for dissolved oxygen for the lower Columbia River is for cold-water aquatic life. Monitoring data held in Storet disclose dissolved oxygen concentrations ranging between 9.0 mg/l and 15.8 mg/l.

Applicant's Position: USACE believes that dredging has the potential to cause short-term localized decreases in dissolved oxygen in confined areas of fine-grained organic rich sediments. Despite this fact, the potential for such impacts from the proposed project is

negligible due to the location and nature of the material to be dredged. Specifically, with the exception of side-channels, dredging will occur in the river where the sediments are very low in organic material. Material tested in the main-stem is approximately 99.97% sand.

USACE has provided data from monitoring dissolved oxygen during dredging and disposal over three years as required by the existing 401 WQCs. Dissolved oxygen was measured 408 times in the 2006 dredging season and none of the measurements were below the compliance requirement of 6.5mg/l for the main-stem Columbia River.

Public Comment: Public comments on Dissolved Oxygen were not received during Public Notice by DEQ on the proposed certification decision.

DEQ Evaluation: DEQ concurs with the applicant that dredging and disposal will result in short-term, highly localized reductions in the quantity of dissolved oxygen in those areas in which finer grained sediment and organics may be present. This is not the nature of the sediments in the current mainstem navigation channel itself. For areas outside the navigation channel, there is insufficient data.

DEQ Finding: The Columbia River has more than sufficient flow to attenuate small reductions in dissolved oxygen levels. DEQ does not believe this will be a problem in the mainstem of the river. Further, in March 2008 USACE collected sediment samples from within the overwidth areas in Oregon waters at RMs 28, 31, 37, 38, 58, 60, 75, 84, 85 & 87, and conducted grain size analysis. The analysis determined that the material in these overwidth areas was 99% to 100% sand. Therefore, it is unlikely that dissolved oxygen will be impacted by dredging in these areas due to lack of fine, organic material.

Lack of data on dissolved oxygen in the off channel areas proposed for dredging, as well as higher likelihood of fine sediments being suspended there, and shallower waters potentially having higher temperatures, may all contribute to impacts to dissolved oxygen. Therefore, monitoring of dissolved oxygen coupled with adaptive measures in response to lowered levels of dissolved oxygen as a result of the dredging and disposal activities in off channel areas should be applied.

Nuisance Phytoplankton Growth

340-41-0019 (1)(a) The following values and implementation program must be applied to lakes, reservoirs, estuaries and streams, except for ponds and reservoirs less than ten acres in surface area, marshes and saline lakes:

(b) The following average Chlorophyll a values must be used to identify water bodies where phytoplankton may impair the recognized beneficial uses:

(A) Natural lakes that thermally stratify: 0.01 mg/l;

(B) Natural lakes that do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/l;

(C) Average Chlorophyll a values may be based on the following methodology (or other methods approved by the Department): A minimum of three samples collected over any three consecutive months at a minimum of one representative location (e.g., above the deepest point of a lake or

reservoir or at a point mid-flow of a river) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths); analytical and quality assurance methods must be in accordance with the most recent edition of Standard Methods for the Examination of Water and Wastewater.

(2) Upon determination by the Department that the values in section (1) of this rule are exceeded, the Department may:

(a) In accordance with a schedule approved by the Commission, conduct such studies as are necessary to describe present water quality; determine the impacts on beneficial uses; determine the probable causes of the exceedance and beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically practicable. Proposed strategies could include standards for additional pollutant parameters, pollutant discharge load limitations, and other such provisions as may be appropriate. Where natural conditions are responsible for exceedance of the values in section (1) of this rule or beneficial uses are not impaired, the values in section (1) of this rule may be modified to an appropriate value for that water body;

(b) Conduct necessary public hearings preliminary to adoption of a control strategy, standards or modified values after obtaining Commission authorization;

(c) Implement the strategy upon adoption by the Commission.

(3) In cases where waters exceed the values in section (1) of this rule and the necessary studies are not completed, the Department may approve new activities (which require Department approval), new or additional (above currently approved permit limits) discharge loadings from point sources provided that it is determined that beneficial uses would not be significantly impaired by the new activity or discharge.

Application of Standard: Certain types of wastes in water, under proper ambient conditions, may stimulate nuisance algal growths. The magnitude of such growths is determined by measuring chlorophyll a, a photosynthetic pigment which is very closely correlated to biomass. OAR 340-41-0019 sets forth a process for determining when phytoplankton growths may be reaching nuisance proportions. This rule is designed to trigger further study and control strategies if the chlorophyll a values exceed specified levels in streams or lakes. Where natural conditions are responsible for the algal blooms, the existing level of chlorophyll a is considered to be the upper level of acceptability.

Present Condition: There is no monitoring data on nuisance phytoplankton growth in the lower Columbia River.

Applicant's Position: The applicant did not provide data, or an evaluation of the project on nuisance phytoplankton growth. However, USACE prepared a Biological Assessment for the Operations and Maintenance dredging in the Columbia River, which discusses resident phytoplankton, generally. Although historical data on abundance is limited, current info suggests that phytoplankton productivity in the estuary is low due to quick flushing times and exposure to lethal levels of salinity. Additionally, higher populations are associated with increased light penetration which is not anticipated to occur due to deepening or maintenance

dredging or disposal. Modeling conducted by USACE during the feasibility study suggests that the salinity will not be decreased as a result of dredging or disposal.

Public Comment: Public comments were not received on Nuisance Phytoplankton Growth during Public Notice by DEQ on the proposed certification decision.

DEQ Evaluation: The potential for nuisance phytoplankton growth arising from this project is not apparent. Deepening and maintenance dredging and in-water disposal in the Columbia River and select side channels will not result in decreased salinity or flushing rates, nor increases of light penetration.

DEQ Finding: No violation of the standard for nuisance phytoplankton growth will arise from this project.

Temperature (excerpted relevant to projects under consideration)

340-041-0028 (1) Background. Water temperatures affect the biological cycles of aquatic species and are a critical factor in maintaining and restoring healthy salmonid populations throughout the State. Water temperatures are influenced by solar radiation, stream shade, ambient air temperatures, channel morphology, groundwater inflows, and stream velocity, volume, and flow. Surface water temperatures may also be warmed by anthropogenic activities such as discharging heated water, changing stream width or depth, reducing stream shading, and water withdrawals.

(2) Policy. It is the policy of the Commission to protect aquatic ecosystems from adverse warming and cooling caused by anthropogenic activities. The Commission intends to minimize the risk to cold-water aquatic ecosystems from anthropogenic warming, to encourage the restoration and protection of critical aquatic habitat, and to control extremes in temperature fluctuations due to anthropogenic activities. The Commission recognizes that some of the State's waters will, in their natural condition, not provide optimal thermal conditions at all places and at all times that salmonid use occurs. Therefore, it is especially important to minimize additional warming due to anthropogenic sources. In addition, the Commission acknowledges that control technologies, best management practices and other measures to reduce anthropogenic warming are evolving and that the implementation to meet these criteria will be an iterative process. Finally, the Commission notes that it will reconsider beneficial use designations in the event that man-made obstructions or barriers to anadromous fish passage are removed and may justify a change to the beneficial use for that water body.

(3) Purpose. The purpose of the temperature criteria in this rule is to protect designated temperature-sensitive, beneficial uses, including specific salmonid life cycle stages in waters of the State.

(4) Biologically Based Numeric Criteria. Unless superseded by the natural conditions criteria described in section (8) of this rule, or by subsequently adopted site-specific criteria approved by EPA, the temperature criteria for State waters supporting salmonid fishes are as follows:

(a) The seven-day-average maximum temperature of a stream identified as having salmon and steelhead spawning use on subbasin maps and tables set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, and 121B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B, may not exceed 13.0 degrees Celsius (55.4 degrees Fahrenheit) at the times indicated on these maps and tables;

... [numbering out of sequence due to excerpted material]

(11) Protecting Cold Water.

(a) Except as described in subsection (c) of this rule, waters of the State that have summer seven-day-average maximum ambient temperatures that are colder than the biologically based criteria in section (4) of this rule, may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the colder water ambient temperature. This provision applies to all sources taken together at the point of maximum impact where salmon, steelhead or bull trout are present.

(b) A point source that discharges into or above salmon & steelhead spawning waters that are colder than the spawning criterion, may not cause the water temperature in the spawning reach where the physical habitat for spawning exists during the time spawning through emergence use occurs, to increase more than the following amounts after complete mixing of the effluent with the river:

(A) If the rolling 60 day average maximum ambient water temperature, between the dates of spawning use as designated under subsection (4)(a) of this rule, is 10 to 12.8 degrees Celsius, the allowable increase is 0.5 degrees Celsius above the 60 day average; or

(B) If the rolling 60 day average maximum ambient water temperature, between the dates of spawning use as designated under subsection (4) (a) of this rule, is less than 10 degrees Celsius, the allowable increase is 1.0 degrees Celsius above the 60 day average, unless the source provides analysis showing that a greater increase will not significantly impact the survival of salmon or steelhead eggs or the timing of salmon or steelhead fry emergence from the gravels in downstream spawning reach.

(c) The cold water protection narrative criteria in subsection (a) do not apply if:

(A) There are no threatened or endangered salmonids currently inhabiting the water body;

(B) The water body has not been designated as critical habitat; and

(C) The colder water is not necessary to ensure that downstream temperatures achieve and maintain compliance with the applicable temperature criteria.

(12) Implementation of the Temperature Criteria.

(a) Minimum Duties. There is no duty for anthropogenic sources to reduce heating of the waters of the State below their natural condition. Similarly, each anthropogenic point and nonpoint source is responsible only for controlling the thermal effects of its own discharge or activity in accordance with its overall heat contribution. In no case may a source cause more warming than that allowed by the human use allowance provided in subsection (b) of this rule.

(b) Human Use Allowance. Insignificant additions of heat are authorized in waters that exceed the applicable temperature criteria as follows:

(A) Prior to the completion of a temperature TMDL or other cumulative effects analysis, no single NPDES point source that discharges into a temperature water quality limited water may cause the temperature of the water body to increase more than 0.3 degrees Celsius (0.5 Fahrenheit) above the applicable criteria after mixing with either twenty five (25) percent of the stream flow, or the temperature mixing zone, whichever is more restrictive; or

(B) Following a temperature TMDL or other cumulative effects analysis, waste load and load allocations will restrict all NPDES point sources and nonpoint sources to a cumulative increase of no greater than 0.3 degrees Celsius (0.5 Fahrenheit) above the applicable criteria after complete mixing in the water body, and at the point of maximum impact.

(C) Point sources must be in compliance with the additional mixing zone requirements set out in OAR 340-041-0053(2) (d).

(D) A point source in compliance with the temperature conditions of its NPDES permit is deemed in compliance with the applicable criteria.

(c) Air Temperature Exclusion. A water body that only exceeds the criteria set out in this rule when the exceedance is attributed to daily maximum air temperatures that exceed the 90th percentile value of annual maximum seven-day average maximum air temperatures calculated using at least 10 years of air temperature data, will not be listed on the section 303(d) list of impaired waters and sources will not be considered in violation of this rule.

(d) Low Flow Conditions. An exceedance of the biologically-based numeric criteria in section (4) of this rule, or an exceedance of the natural condition criteria in section (8) of this rule will not be considered a permit violation during stream flows that are less than the 7Q10 low flow condition for that water body.

... [numbering out of sequence due to excerpted material]

(h) Other Nonpoint Sources. The department may, on a case-by-case basis, require nonpoint sources (other than forestry and agriculture), including private hydropower facilities regulated by a 401 water quality certification, that may contribute to warming of State waters beyond 0.3 degrees Celsius (0.5 degrees Fahrenheit), and are therefore designated as water-quality limited, to develop and implement a temperature management plan to achieve compliance with applicable temperature criteria or an applicable load allocation in a TMDL pursuant to OAR 340-042-0080.

(A) Each plan must ensure that the nonpoint source controls its heat load contribution to water temperatures such that the water body experiences no more than a 0.3 degrees Celsius (0.5 degree Fahrenheit) increase above the applicable criteria from all sources taken together at the maximum point of impact.

(B) Each plan must include a description of best management practices, measures, effluent trading, and control technologies (including eliminating the heat impact on the stream) that the nonpoint source intends to use to reduce its temperature effect, a monitoring plan, and a compliance schedule for undertaking each measure.

(C) The Department may periodically require a nonpoint source to revise its temperature management plan to ensure that all practical steps have been taken to mitigate or eliminate the temperature effect of the source on the water body.

(D) Once approved, a nonpoint source complying with its temperature management plan is deemed in compliance with this rule.

(i) Compliance Methods. Anthropogenic sources may engage in thermal water quality trading in whole or in part to offset its temperature discharge, so long as the trade results in at least a net thermal loading decrease in anthropogenic warming of the water body, and does not adversely affect a threatened or endangered species. Sources may also achieve compliance, in whole or in part, by flow augmentation, hyporheic exchange flows, outfall relocation, or other measures that reduce the temperature increase caused by the discharge.

(j) Release of Stored Water. Stored cold water may be released from reservoirs to cool downstream waters in order to achieve compliance with the applicable numeric criteria. However, there can be no significant adverse impact to downstream designated beneficial uses as a result of the releases of this cold water, and the release may not contribute to violations of other water quality criteria. Where the Department determines that the release of cold water is resulting in a significant adverse impact, the Department may require the elimination or mitigation of the adverse impact.

(13) Site-Specific Criteria. The Department may establish, by separate rulemaking, alternative site-specific criteria for all or a portion of a water body that fully protects the designated use.

(a) These site-specific criteria may be set on a seasonal basis as appropriate.

(b) The Department may use, but is not limited by the following considerations when calculating site-specific criteria:

(A) Stream flow;

(B) Riparian vegetation potential;

(C) Channel morphology modifications;

(D) Cold water tributaries and groundwater;

(E) Natural physical features and geology influencing stream temperatures; and

(F) Other relevant technical data.

(c) DEQ may consider the thermal benefit of increased flow when calculating the site-specific criteria.

(d) Once established and approved by EPA, the site-specific criteria will be the applicable criteria for the water bodies affected.

Application of Standard: Oregon's water temperature standard for the Columbia River was adopted by the Environmental Quality Commission (EQC) based on research regarding effects of water temperature on salmonid productivity, modeling temperature effects of various activities, and

identification of sensitive habitats.

Water quality criteria produced by national fishery experts, and provided by the federal Water Pollution Control Administration, recommended a maximum not-to-be exceeded temperature of 68 degrees F for salmonid growth and migration routes and 55 degrees F for salmonid spawning and egg development waters. Because of the number of trout and salmon waters that had been destroyed or made marginal or non-productive nationwide, it was further recommended that the remaining trout and salmon waters be protected. "Inland trout streams and headwaters of salmon streams should not be warmed."

As temperatures increase above the optimal range, spawning and egg development becomes rapidly impaired, thus limiting reproduction. With increasing temperature, trout experience sublethal effects of impaired feeding, decreased growth rates, reduced resistance to disease and parasites, increased sensitivity to toxics, intolerance with migration, reduced ability to compete with more temperature resistant species, and increased vulnerability to predation. If temperatures are high enough for sustained periods, mortality occurs. In addition, other water quality parameters (such as dissolved oxygen) may also be adversely affected by elevated temperatures. Based on the available information, the temperature standard was established with the primary intent of protecting the resident trout populations. It was recognized that natural temperatures may exceed the desirable upper limit for protection of trout established in the standard as 68 degrees F. However, the determination made in the adoption of the standard was that when temperatures are above the 68 degrees F optimum established as the upper limit in the standard, discharges of waste or activities which cause a measurable increase should not be allowed.

At the time the temperature standard was adopted, the water pollution control program in Oregon arguably focused on point source discharges. As a result, the temperature standard was worded to apply to point source discharges of heated wastewater. The reference to "mixing zone", "a control point immediately upstream from a discharge", and "single source discharge" all apply to point source discharges. However, the initial wording of the standard in OAR 340-041 which read "No wastes shall be discharged and no *activities* shall be conducted which either alone or in combination with other wastes or *activities* will cause violation....." (*emphasis added*) clearly implies an intent to have broader application than just to point source discharges.

DEQ has traditionally applied the temperature standard to activities that cause a change in temperature as well as to discharges that cause a change in temperature. The intent is to protect the fishery values that the standard was adopted to protect. Thus, if natural temperatures are above 68 degrees F, a point source discharge will not be approved if it will cause a measurable increase in temperature outside of a limited size "mixing zone" which is established in the waste discharge permit for the source. (The mixing zone size and shape is established to assure that beneficial uses are not impaired, including fishery uses.) Similarly, an activity or project that does not result in a discharge of waste but would cause a measurable increase in the temperature of the stream compared to the temperature that would exist without the activity or project would not be approved.

Another consideration in applying the existing temperature standard is a determination of what is measurable in terms of a temperature increase. The wording of the standard itself implies that something less than 0.5 degrees F is measurable. Since temperature in water naturally varies due to

influence of sunlight and air temperatures, effective measurement of temperature changes in the stream can be difficult. Evaluation of temperature impacts of proposed discharges or activities generally is done using a variety of modeling techniques. In interpreting model results, DEQ has typically assumed that a calculated temperature increase of less than 0.25 degrees F would not be measurable in the stream.

Present Condition: The Columbia River is listed on the 303(d) list as water quality limited for temperature from the mouth to Bonneville Dam. The listings pertain to the summer months. Modeling work on a temperature TMDL for the Columbia River and the Snake River from its mouth at the Columbia to its confluence with the Salmon River discloses that the major impacts to temperature occur as a result of impoundments behind dams, and with the confluence of the Snake River. For the numerous point sources along the river, their impact is de minimus. Only a very few of the largest dischargers have any effect on temperature within the river.

Applicant's Position: USACE did not provide a position specific to this criteria. However, past submissions, study summaries and required reporting indicate that USACE believes that temperature changes could occur within the river and estuary for a number of reasons, including salinity changes, depth changes, and velocity changes, but that these potential factors for changing temperature conditions are not significantly altered by the proposed project activities. Therefore, no impact to salmonids or other organisms is anticipated due to temperature change.

Public Comment: DEQ received a comment from Northwest Environmental Advocates on Temperature during the comment period which expressed: a difference of opinion as to the history of the development of the Temperature standard in Oregon; that DEQ's analysis was weak because it was based on what DEQ thought USACE believed; that DEQ's finding lacked analysis of potential estuarine Temperature increases constituting a violation; that monitoring locations are not correlated with areas where Temperature may rise; that the AMT process is illegal; and referred to comments submitted during evaluation for the initial CRCIP 401 WQC in 2000.

DEQ Evaluation: Given the very high flow volumes, even at low flow times in the river, this project is not likely to contribute to or detract from the temperature regime in the river. Temperature standard exceedances on the river are produced by very large contributors such as dam forebays and the Snake River. This project is miniscule compared to these. However, channel deepening in the estuary may increase estuarine temperatures by increasing the amount of warmer up-river water to enter the estuary. This condition may cause an increase in localized river temperatures for limited durations.

DEQ Finding: No violation of the numeric or narrative criteria for temperature is expected. USACE should be required to monitor estuarine water temperatures using the CORIE stations. Water temperatures in the estuary should be continued to be evaluated by the Adaptive Management Team.

DEQ's Temperature analysis incorporated, but did not exclusively rely on, the position presented by USACE in multiple documents prepared for the initial environmental analysis and through subsequent studies and discussion in the AMT process. DEQ conducted an analysis (documented in DEQ's Evaluation and Findings 2003) for the initial CRCIP and O&M 401 WQCs, which

greatly informed the current analysis. Although development of the Total Maximum Daily Load (TMDL) for Temperature is underway by EPA, conclusive information as to separable impacts on Temperature impairment in the river are not yet discernable. The precautionary approach is to have USACE continue to monitor Temperature throughout the project area (all of which is considered the estuary), despite DEQ's finding that the project will not result in measurable increases in Temperature, so that adaptive management of project actions can be directed as warranted. DEQ participates in the required AMT process and will use the study analyses to continue to evaluate the effects of the proposed actions and will require changes to operations as supported by emerging information.

Toxic Substances

340-041-0033 (1) Toxic substances may not be introduced above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife, or other designated beneficial uses.

(2) Levels of toxic substances in waters of the state may not exceed the applicable criteria listed in Tables 20, 33A, and 33B. Tables 33A and 33B, adopted on May 20, 2004, update Table 20 as described in this section.

(a) Each value for criteria in Table 20 is effective until the corresponding value in Tables 33A or 33B becomes effective.

(A) Each value in Table 33A is effective on February 15, 2005, unless EPA has disapproved the value before that date. If a value is subsequently disapproved, any corresponding value in Table 20 becomes effective immediately. Values that are the same in Tables 20 and 33A remain in effect.

(B) Each value in Table 33B is effective upon EPA approval.

(b) The department will note the effective date for each value in Tables 20, 33A, and 33B as described in this section.

(3) To establish permit or other regulatory limits for toxic substances for which criteria are not included in Tables 20, 33A, or 33B, the department may use the guidance values in Table 33C, public health advisories, and other published scientific literature. The department may also require or conduct bio-assessment studies to monitor the toxicity to aquatic life of complex effluents, other suspected discharges, or chemical substances without numeric criteria.

Application of Standard: This standard provides protection for humans, wildlife, and aquatic life from adverse effects resulting from the presence of toxic substances above natural levels, either alone or in combination with other chemicals or substances. Where needed, DEQ can consider additional studies reported in the scientific literature to review applicability of numeric criteria, or to set guidance values. Bioassays can be used to determine effects of site-specific effluents or chemical substances on aquatic life.

Present Condition: The Columbia River is classified as water quality limited under the Federal Clean Water Act, Section 303(d), for the toxics parameters of: DDE (DDT metabolite); PCB; and Arsenic. An Environmental Protection Agency (EPA) approved Total Maximum Daily Load (TMDL) has been developed for the toxics parameter of Dioxin. Other toxics parameters listed for potential concern include: Cadmium; Copper; Iron; Lead; Mercury; Nickel; Silver; Tributyltin; Zinc; Aldrin; Alpha-BNC; Benzo(a)anthracene; Benzo(g, h, i)perylene; Bhc; Chlordane; Chrysene; Cyanide; DDD; DDT; Dieldrin; Endrin; Hexavalent Chromium; Phenol; Polynuclear Aromatic Hydrocabons (PAHs); Pyrene; and Radionuclides.

The Lower Columbia River Estuary is one of 27 estuaries in EPA's National Estuary Program and, because of the large amount of data showing pervasiveness of toxic compounds in the estuary, the presence of toxic contaminants is one of seven priority issues identified in the Estuary Partnership's *Comprehensive Conservation and Management Plan*. The Columbia River has recently been named by EPA as one of seven of the Nation's Great Water Bodies and elevated to a national priority for addressing watershed health. The two pronged focus of the EPA plan for this priority is to address toxics and wetland loss. DEQ is a funded partner in these goals and is undertaking a study on toxics in the upper reaches of the estuary.

Although the potential effects of exposure to pervasive toxic contaminants on aquatic life, wildlife and humans are known; currently the distribution, concentration, and sources of toxics contamination in the estuary are not well understood.

Applicant's Position: The USACE conducts sediment characterization sampling on 10-year cycles in the mainstem Columbia and on a 5 to 7 year cycle or as needed for side channels. The next cycle is scheduled for 2008. Due to the high sand content and low organic material content of the material dredged in the navigation channel and overwidth areas, USACE believes that the material does not allow for toxic compounds to adhere to the large grained particles. USACE prepared a compilation of all historic data that were readily available to USACE for sampled points in areas within and outside of the Federal Navigation Channel Drawing conclusions from this information, USACE believes that toxics are not present in sediments proposed for dredging and disposal and, therefore, resuspension of toxics in the water column due to disturbance by dredging and disposal will not occur as a result of the proposal.

Additionally, in March 2008 USACE collected sediment samples from within the overwidth areas in Oregon waters at RMs 28, 31, 37, 38, 58, 60, 75, 84, 85 & 87, and conducted grain size analysis. The analysis determined that the material in these overwidth areas was 99% to 100% sand. From this analysis, USACE has determined that the sediment characterization for the mainstem is representative of the material in these overwidth areas as well, and therefore, toxics are unlikely to be present in these Oregon overwidth areas either.

Public Comment: DEQ received a comment from Northwest Environmental Advocates on Toxics which opined: that the analysis of toxics impacts to water quality was inadequate; that material in side slopes which may adjust has not been adequately analyzed for contaminants; that sediment sampling protocols are unidentified; and that emerging studies have not been identified.

DEQ Evaluation: Disturbance of sediments in systems with naturally or otherwise occurring

levels of potentially toxic substances has been shown to increase total concentrations of those substances in the water column. However, fine silt, clay, and other organics are typically necessary for chemical adsorption to mobilize toxics into the water column and it is often unclear whether increased levels of toxics in the water column are due to dissolved or suspended solid forms. Other considerations in evaluating whether toxic substances are present in amounts that are detrimental to humans, wildlife, and aquatic life include: bioavailability of the form; dilution; uptake mechanism; and other risk contributing factors.

Byproducts from detonation of explosives underwater may contain substances toxic to fish and other aquatic organisms.

Storing, fueling, maintaining, and operation of heavy mechanized equipment in or near streams are widely recognized as having the potential to release harmful toxic substances to those waters.

DEQ Finding: The Columbia River is known to contain contamination in sediment and in the water column, likely resulting from municipal and industrial permitted discharges (including aluminum smelters, pulp and paper plants, wood products facilities, and chemical manufacturers); atmospheric deposition; urban, industrial, agricultural, and managed forest runoff; and accidental spills of petroleum products and other hazardous materials. Dredging and in-water disposal of sediments containing sufficient organic matter to adsorb contaminants may resuspend, distribute, and make more bioavailable contaminants which may be present in the sediments. Resuspension of contaminated sediments should be avoided. USACE should be required to conduct regular sediment sampling in the river and side channels proposed for dredging per the protocols in the Sediment Evaluation Framework (SEF), 2006.

DEQ believes that it is unlikely that toxics which may be present in the coarse-grained materials in the Federal Navigation Channel will be released at levels harmful to humans, wildlife, or aquatic organisms as a result of the continued dredging and disposal operations. However, emerging information not yet published indicate that some chemicals of concern are found in differing proportions associated with various grain sizes of sediments, including coarse grained material. Therefore, additional studies may be needed to better understand the potential impacts of chemicals present in all manner of grain sizes in the Columbia River, and whether past assumptions about bedload movement and contamination liberation risk hold. Additionally, there are complexities associated with: the variety of chemicals known to be present in the river; the currently poor understanding of their individual and synergistic behavior; the variety of aquatic species present at varying life stages; and a poor understanding of pathways of exposure to toxicity.

Therefore, DEQ believes that all known measures to minimize resuspension of toxics potentially present in sediment proposed for disturbance should be implemented, particularly in off channel areas. These measures include: pre-dredging sediment sampling and analysis; monitoring during dredging; BMP's to minimize disturbance during dredging; limits on in-water disposal when contaminants have been detected above current screening levels; and additional studies on biotic impacts from resuspension of chemicals present in the Columbia River estuarine environment.

A thoroughly assessed blasting plan must be prepared by USACE based upon the most current information of underwater blasting techniques which identifies explosives to be employed having the least toxic components and by-products to be protective of the particular sensitivities of the

species inhabiting the Columbia River. This plan must be reviewed and approved by NMFS and ODFW and all required permits must be obtained prior to blasting taking place.

Additionally, DEQ believes that releases of toxics from mechanized dredging equipment have the potential to occur as equipment is operated, fueled, and maintained on or near water. In accordance with the policies and preventive approach to water pollution in ORS 468B, typical conditions to prevent, limit, control, or abate pollution in waters of the state from these toxics should be applied. Typical conditions include: minimization of mechanized equipment use near water; use of least impactful equipment when it must be used near water; substitution of less toxic fluids; prescriptive equipment fueling, maintenance and storage; toxic materials and spills containment protocols; and other best management practices.

The commenter correctly states that side slope material has not been specifically characterized as to potential contamination. However, areas have been identified through analysis of bathymetry and modeling as to the greatest potential to experience side-slope adjustment resulting from channel deepening, and these areas are undergoing monitoring and discussion through the required AMT process. Further, the majority of this potentially slumping material has been identified as coarse-grained which, based on the currently published literature, is not prone to adsorb contaminants. Although the available data from the past decade on sediment analysis throughout the entire 120 river mile reach of the project is not comprehensive, not designed specifically toward the CRCIP and O&M project impacts, nor strictly following the Sediment Evaluation Framework (2006) sampling protocols; it does provide a body of information on a random basis which does not indicate elevated levels of contamination in coarse-grained material. Finally, sampling and analysis of all off-channel material is required prior to dredging and this sampling must meet the protocols of the SEF, which was developed through collaboration with USACE, NMFS, USFWS, EPA, DEQ, and Washington Department of Ecology. Therefore material in areas prone to side slope slumping will be characterized prior to dredging, either before it slumps or once it has settled into an area which will be dredged.

The emerging studies referenced in the draft Findings document which was available for public comment have not yet been published. This has been clarified in the above text of this finalized document.

Turbidity

340-041-0036 Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(1) Emergency activities: Approval coordinated by the Department with the Oregon Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

(2) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 14I-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

Application of Standard: Turbidity in water results from particulate and dissolved phase matter being held in suspension. The standard is designed to minimize the addition of soil particles or any other suspended substances that would cause significant increases in the river's normal, seasonal turbidity pattern.

Applicant's Position: USACE believes that turbidity induced by dredging and dredged material discharge is localized and limited in duration, which is attributable to the coarseness of the dredged material and the lack of fines present. Compared to natural fluctuations in suspended sediment levels, dredging-induced turbidity would be a minor constituent to the Columbia River system.

Per 401 WQC conditions, turbidity monitoring was conducted for CRCIP and O&M on the flood and ebb tidal cycles. During the last two years of turbidity testing at the CRCIP project 336 turbidity compliance measurements were taken. The water quality criteria were exceeded 12 times (3.5 %). These exceedance numbers are very low and demonstrate that the impact from dredging and disposal to water quality is minimal of short duration.

Public Comment: DEQ received comments from USACE and the Port of Portland discussing turbidity monitoring. Both expressed the following positions: that practicable techniques to control turbidity were not known for hopper and cutterhead dredging; that techniques such as lowering the discharge point to 20 feet below the surface during flowlane discharge or 30 feet below the surface for discharge from an upland facility have been effectively applied; that the number of exceedances of the turbidity standard experienced during duration of the previous 401 WQC are acceptable (66 of 2482 measurements in exceedance); that turbidity monitoring is expensive; that turbidity monitoring should no longer be required for dredging and disposal; and that the turbidity standard (no more than 10% exceedance over background) should be revised.

USACE also commented extensively on a perceived misapplication of the Turbidity standard in the 401 WQC Conditions.

DEQ also received comments from Northwest Environmental Advocates that "all practicable turbidity control techniques" were not identified.

DEQ Evaluation: Naturally occurring turbidity levels at the river and ocean interface are highly variable, rising to high levels during high flow events. Contributions to turbidity from dredging will be negligible compared to natural variations. The incidence of fine sediments in the navigation channel is very low. Sediments suspended during dredging will, therefore, settle out quickly. Such contributions as there will be are covered under the short-term exception criteria in the standard.

DEQ Finding: Limited exceedances of the numeric turbidity criterion are expected in the river during dredging and disposal. Although DEQ concurs that turbidity exceedances which have

occurred due to dredging and disposal in the Columbia River were of short durations, OAR 340-041-0036 requires implementation of all practicable turbidity control measures to allow limited duration exceedances. USACE does not propose or apply turbidity control measures during hopper dredging and disposal, and only as directed by the conditions of the existing 401 WQCs for other dredging and disposal. These include discharge depths, equipment controls, monitoring, and work stoppages. In order to continue to allow limited duration exceedances of the numeric criterion, these conditions should continue to be applied.

DEQ added the specific techniques commented on by the Port and USACE to the finalized 401 WQC. Where no practicable techniques to control turbidity have been identified, DEQ requires monitoring of turbidity such that turbidity causing actions can be stopped in the event of exceedances beyond those allowed under the limiting Conditions of the 401 WQC. Because exceedances of the numeric criterion have been recorded during the past channel deepening and maintenance dredging and disposal activities, the activities cannot be determined to consistently meet the criterion in the absence of allowable exceedances, as specified in the 401 WQC Conditions and limitations. Finally, the monitoring record provides reasonable assurance that the Turbidity numeric criterion and allowed exceedances for legitimate purposes are met.

Although USACE and the Port provide data which shows quick settling times of coarse-grained material dredged and disposed in the federal navigation channel, this data cannot be presumed to be representative of all material proposed for dredging and disposal during the course of the project. Specifically, side channels and turning basins are proposed for dredging and disposal which sediment characterization has demonstrated contain much higher percentages of fine and organic material. It is anticipated that dredging and disposal of material from these areas will result in significantly different turbidity levels, which should be subject to more controls and limits on exceedance.

DEQ has applied limitations on duration and timing of turbidity causing activities related to the project and specified turbidity control techniques for application by the applicant in the Conditions of the 401 WQC. DEQ believes these limits and Conditions appropriately interpret the Turbidity standard. DEQ has added a clarifying table to the 401 WQC to assist USACE in comprehending the allowable exceedances.

Although a proposed revision of the Turbidity standard is in development, DEQ must apply the standards currently in rule (see OAR 340-041-0036 at: http://arcweb.sos.state.or.us/rules/OARs_300/OAR_340/340_041.html).

pH

340-041-0021 (1) Unless otherwise specified in OAR 340-041-0101 through 340-041-0350, pH values (Hydrogen ion concentrations) may not fall outside the following ranges:

(a) Marine waters: 7.0-8.5;

(b) Estuarine and fresh waters: See basin specific criteria (OAR 340-041-0101 through OAR 340-041-0350).

(2) Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria are not in violation of the standard, if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria.

Application of Standard: pH values relate to the balance of acid and alkaline substances in the water. The theoretical range is from 1 (very acid) to 14 (very alkaline). Most streams in Oregon have pH values falling somewhere between 6.5 and 8.5. There may be seasonal fluctuations in the pH number due to substances entering the water from land or bio-chemical activity in the water. Since the fish and other aquatic life in any particular stream have evolved under rather specific pH conditions, it is important to set a pH standard that reflects natural conditions and will prevent any intolerable acid/alkalinity imbalances.

Present Condition: Monitoring on the river shows that the river meets the hydrogen ion concentration criteria.

Applicant's Position: USACE did provide a supported position specific to this criteria. However, in the 1999 Final Environmental Impact Statement USACE discussed their position on water quality impacts, stating: "Although the Columbia River is water quality limited for temperature, bacteria, dissolved oxygen, total dissolved gas, toxics, arsenic, and pH, the proposed project is not expected to cause or contribute to exceeding criteria for temperature, bacteria, pH, or total dissolved gas." Therefore, there should be no reasonable potential to violate the pH water quality standard.

Public Comment: Public comments were not received on the pH standard during Public Notice by DEQ on the proposed certification decision.

DEQ Evaluation: The project will not contribute to hydrogen ion concentrations.

DEQ Finding: No violation of this standard is expected as a result of this project.

Bacteria

340-041-0009 (1) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) may not exceed the criteria described in paragraphs (a) and (b) of this paragraph:

(a) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:

(A) A 30-day log mean of 126 *E. coli* organisms per 100 milliliters, based on a minimum of five (5) samples;

(B) No single sample may exceed 406 *E. coli* organisms per 100 milliliters.

(b) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.

(2) Raw Sewage Prohibition: No sewage may be discharged into or in any other manner be allowed to enter the waters of the State, unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;

(3) Animal Waste: Runoff contaminated with domesticated animal wastes must be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;

(4) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health may not be allowed;

(5) Effluent Limitations for Bacteria: Except as allowed in subsection (c) of this section, upon NPDES permit renewal or issuance, or upon request for a permit modification by the permittee at an earlier date, effluent discharges to freshwaters, and estuarine waters other than shellfish growing waters may not exceed a monthly log mean of 126 *E. coli* organisms per 100 ml. No single sample may exceed 406 *E. coli* organisms per 100 ml. However, no violation will be found, for an exceedance if the permittee takes at least five consecutive re-samples at four-hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken and the log mean of the five re-samples is less than or equal to 126 *E. coli*. The following conditions apply:

(a) If the Department finds that re-sampling within the timeframe outlined in this section would pose an undue hardship on a treatment facility, a more convenient schedule may be negotiated in the permit, provided that the permittee demonstrates that the sampling delay will result in no increase in the risk to water contact recreation in waters affected by the discharge;

(b) The in-stream criterion for chlorine listed in Table 20 must be met at all times outside the assigned mixing zone;

(c) For sewage treatment plants that are authorized to use reclaimed water pursuant to OAR 340, division 55, and that also use a storage pond as a means to dechlorinate their effluent prior to discharge to public waters, effluent limitations for bacteria may, upon request by the permittee, be based upon appropriate total coliform, limits as required by OAR 340, division 55:

(A) Level II limitations: No two consecutive samples may exceed 240 total coliform per 100 milliliters.

(B) Level III and Level IV limitations: No single sample may exceed 23 total coliform per 100 milliliters.

(C) No violation will be found for an exceedance under this paragraph if the permittee takes at least five consecutive re-samples at four hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample(s) were taken; and in the case of Level II effluent, the log mean of the five re-samples is less than or equal to 23 total coliform per 100 milliliters or, in the case of Level III and IV effluent, if the log mean of the five re-samples is less than or equal to 2.2 total coliform per 100 milliliters.

(6) Sewer Overflows in winter: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of November 1 through May

21, except during a storm event greater than the one-in-five-year, 24-hour duration storm. However, the following exceptions apply:

(a) The Commission may on a case-by-case basis approve a bacteria control management plan to be prepared by the permittee, for a basin or specified geographic area which describes hydrologic conditions under which the numeric bacteria criteria would be waived. These plans will identify the specific hydrologic conditions, identify the public notification and education processes that will be followed to inform the public about an event and the plan, describe the water quality assessment conducted to determine bacteria sources and loads associated with the specified hydrologic conditions, and describe the bacteria control program that is being implemented in the basin or specified geographic area for the identified sources;

(b) Facilities with separate sanitary and storm sewers existing on January 10, 1996, and which currently experience sanitary sewer overflows due to inflow and infiltration problems, must submit an acceptable plan to the Department at the first permit renewal, which describes actions that will be taken to assure compliance with the discharge prohibition by January 1, 2010. Where discharges occur to a receiving stream with sensitive beneficial uses, the Department may negotiate a more aggressive schedule for discharge elimination;

(c) On a case-by-case basis, the beginning of winter may be defined as October 15, if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change.

(7) Sewer Overflows in summer: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of May 22 through October 31, except during a storm event greater than the one-in-ten-year, 24-hour duration storm. The following exceptions apply:

(a) For facilities with combined sanitary and storm sewers, the Commission may on a case-by-case basis approve a bacteria control management plan such as that described in subsection (6)(a) of this rule;

(b) On a case-by-case basis, the beginning of summer may be defined as June 1 if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change;

(c) For discharge sources whose permit identifies the beginning of summer as any date from May 22 through May 31: If the permittee demonstrates to the Department's satisfaction that an exceedance occurred between May 21 and June 1 because of a sewer overflow, and that no increase in risk to beneficial uses, including water contact recreation, occurred because of the exceedance, no violation may be triggered, if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm.

(8) Storm Sewers Systems Subject to Municipal NPDES Stormwater Permits: Best management practices must be implemented for permitted storm sewers to control bacteria to the maximum extent practicable. In addition, a collection-system evaluation must be performed prior to permit issuance or renewal so that illicit and cross connections are identified. Such connections must be removed upon identification. A collection system evaluation is not required where the Department determines that illicit and cross connections are unlikely to exist.

(9) Storm Sewers Systems Not Subject to Municipal NPDES Stormwater Permits: A collection system evaluation must be performed of non-permitted storm sewers by January 1, 2005, unless the Department determines that an evaluation is not necessary because illicit and cross connections are unlikely to exist. Illicit and cross-connections must be removed upon identification.

(10) Water Quality Limited for Bacteria: In those water bodies, or segments of water bodies identified by the Department as exceeding the relevant numeric criteria for bacteria in the basin standards and designated as water-quality limited under section 303(d) of the Clean Water Act, the requirements specified in section 11 of this rule and in OAR 340-041-0061(12) must apply.

(11) In water bodies designated by the Department as water-quality limited for bacteria, and in accordance with priorities established by the Department, development and implementation of a bacteria management plan may be required of those sources that the Department determines to be contributing to the problem. The Department may determine that a plan is not necessary for a particular stream segment or segments within a water-quality limited basin based on the contribution of the segment(s) to the problem. The bacteria management plans will identify the technologies, best management practices and/or measures and approaches to be implemented by point and nonpoint sources to limit bacterial contamination. For point sources, their National Pollutant Discharge Elimination System permit is their bacteria management plan. For nonpoint sources, the bacteria management plan will be developed by designated management agencies (DMAs) which will identify the appropriate best management practices or measures and approaches.

Application of Standard: This is a stream standard of public health significance which takes into account the cumulative impacts of all coliform bacteria discharges; however, its major emphasis is on the control of human fecal coliform bacteria sources.

Present Condition: Bacteria discharges to the Columbia River occur at Portland and Astoria as a result of municipal wastewater discharges. Both of these sources are under agreed Orders from DEQ.

Applicant's Position: USACE did not provide a position specific to this criteria. However, DEQ believes the applicant does not see the project contributing to bacteria.

Public Comment: Public comments were not received on the Bacteria standard during Public Notice by DEQ on the proposed certification decision.

DEQ Evaluation: The project will not involve the discharge of bacteria.

DEQ Finding: No violation of this water quality standard is expected.

Total Dissolved Gas

340-041-0031(1) Waters will be free from dissolved gases, such as carbon dioxide hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such water.

(2) Except when stream flow exceeds the ten-year, seven-day average flood, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection may not

exceed 110 percent of saturation. However, in hatchery-receiving waters and other waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection may not exceed 105 percent of saturation.

Application of Standard: This rule refers to noxious gases that sometimes result from putrescible substances in the water. Such substances may be from discharged wastes or they may be from accumulations of naturally occurring organic debris settled in stream or reservoir bottoms. Such gases have two primary adverse properties when in excess concentrations: (1) some can be directly toxic to aquatic life, and (2) others consume dissolved oxygen which may lead to indirect mortalities. Also, some decomposition gases stink, especially hydrogen sulfide.

Present Condition: There is no data on this condition. There is, however, nothing to indicate that it is a problem.

Applicant's Position: USACE believes that total dissolved gas is an issue related to spill at upriver dams and therefore, that total dissolved gas levels in the river are not affected by dredging and disposal operations.

Public Comment: Public comments were not received on the Total Dissolved Gas standard during Public Notice by DEQ on the proposed certification decision.

DEQ Evaluation: Neither dredging nor sediment disposal is expected to cause, or contribute to the liberation of dissolved gases in water.

DEQ Finding: No violation of this water quality standard is expected.

Statewide Narrative Criteria (excerpted relevant to projects under consideration)

340-041-0007 (1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

(2) Where a less stringent natural condition of a water of the State exceeds the numeric criteria set out in this Division, the natural condition supersedes the numeric criteria and becomes the standard for that water body. However, there are special restrictions, described in OAR 340-041-0004(9)(a)(D)(iii), that may apply to discharges that affect dissolved oxygen.

(3) For any new waste sources, alternatives that utilize reuse or disposal with no discharge to public waters must be given highest priority for use wherever practicable. New source discharges may be approved subject to the criteria in OAR 340-041-0004(9).

... [numbering out of sequence due to excerpted material]

11) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish may not be allowed;

(12) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry may not be allowed;

(13) Objectionable discoloration, scum, oily sheens, or floating solids, or coating of aquatic life with oil films may not be allowed;

(14) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch may not be allowed;

Application of Standard: This standard is self-explanatory in its purpose to prohibit degradation of water quality, particularly with respect to aesthetic offenses, and to ensure that where natural (nonanthropogenic) causes result in water quality that exceeds the numeric criteria, that the naturally occurring condition shall be the standard.

Applicant's Position: USACE did not provide a position specific to narrative criteria. However, DEQ believes the applicant does not see the project degrading water quality or negatively affecting aesthetics.

Public Comment: Public comments were not received on the Statewide Narrative Criteria during Public Notice by DEQ on the proposed certification decision.

DEQ Evaluation: Dissolved Oxygen, Temperature, Bacteria, Toxics and Turbidity are addressed in the respective sections on the numeric standards. Aesthetically offensive conditions are not expected to result from the project activities.

Bottom deposits may have several adverse impacts with respect to: toxicity; blanketing and smothering bottom dwelling aquatic life; decimation of fish food organisms; and/or, hindering the percolation of oxygen bearing water to buried fish eggs. This project can be expected to result in suspension, redeposit and redistribution of bottom sediments. The project has the potential to create accretions of sediment on the bottom of the river and in slower moving depositional areas.

Neither dredging nor sediment disposal is expected to cause or contribute to objectionable: discoloration; odor; taste; scum; oily-sheen; floating solids; or other deleterious factors within the water or fish flesh. There is always the risk of accidental spills into waters of the State, although with reasonable care these can be avoided.

DEQ Finding: The 401 WQC Conditions and all best management practices must strive to minimize impairment to water quality parameters and aesthetics and maintain the highest possible overall water quality levels. No flowlane disposal should occur in areas of the river that are greater than 65 feet in depth. Flowlane disposal should occur in such a way as to ensure that sediments redeposit in a thin layer on the bottom of the river. The Oregon Emergency Response System must be notified immediately if any spill occurs. No violations of the Statewide Narrative Criteria is anticipated as long as the 401 WQC Conditions are adhered to.

Antidegradation

340-041-0004 (1) Purpose. The purpose of the Antidegradation Policy is to guide decisions that affect water quality such that unnecessary further degradation from new or increased point and nonpoint sources of pollution is prevented, and to protect, maintain, and enhance existing surface

water quality to ensure the full protection of all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 through 340-041-0350 are intended to supplement the Antidegradation Policy.

(2) Growth Policy. In order to maintain the quality of waters in the State of Oregon, it is the general policy of the Commission to require that growth and development be accommodated by increased efficiency and effectiveness of waste treatment and control such that measurable future discharged waste loads from existing sources do not exceed presently allowed discharged loads except as provided in section (3) through (9) of this rule.

(3) Nondegradation Discharges. The following new or increased discharges are subject to this Division. However, because they are not considered degradation of water quality, they are not required to undergo an antidegradation review under this rule:

(a) Discharges Into Existing Mixing Zones. Pollutants discharged into the portion of a water body that has been included in a previous mixing zone for a permitted source, including the zones of initial dilution, are not considered a reduction in water quality, so long as the mixing zone is established in accordance with OAR 340-041-0053, there are no other overlapping mixing zones from other point sources, and the discharger complies with all effluent limits set out in its NPDES permit.

(b) Water Conservation Activities. An increase in a pollutant concentration is not considered a reduction in water quality so long as the increase occurs as the result of a water conservation activity, the total mass load of the pollutant is not increased, and the concentration increase has no adverse effect on either beneficial uses or threatened or endangered species in the water body.

(c) Temperature. Insignificant temperature increases authorized under OAR 340-041-0028(11) and (12) are not considered a reduction in water quality.

(d) Dissolved Oxygen. Up to a 0.1 mg/l decrease in dissolved oxygen from the upstream end of a stream reach to the downstream end of the reach is not considered a reduction in water quality so long as it has no adverse effects on threatened and endangered species.

(4) Recurring Activities. Since the baseline for applying the antidegradation policy to an individual source is the water quality resulting from the source's currently authorized discharge, and since regularly-scheduled, recurring activities remain subject to water quality standards and the terms and conditions in any applicable federal and state permits, certifications and licenses, the following activities will not be considered new or increasing discharges and will therefore not trigger an antidegradation review under this rule so long as they do not increase in frequency, intensity, duration or geographical extent:

(a) Rotating grazing pastures,

(b) Agricultural crop rotations, and

(c) Maintenance dredging.

(5) Exemptions to the Antidegradation Requirement. Some activities may, on a short term basis, cause temporary water quality degradation. However, these same activities may also have substantial and desirable environmental benefits. The following activities and situations fall into

this category. Such activities and situations remain subject to water quality standards, and must demonstrate that they have minimized adverse affects to threatened and endangered species in order to be exempt from the antidegradation review under this rule:

(a) Riparian Restoration Activities. Activities that are intended to restore the geomorphology or riparian vegetation of a water body, or control invasive species need not undergo an antidegradation review so long as the Department determines that there is a net ecological benefit to the restoration activity. Reasonable measures that are consistent with the restoration objectives for the water body must be used to minimize the degradation;

(b) Emergency Situations. The Director or a designee may, for a period of time no greater than 6 months, allow lower water quality without an antidegradation review under this rule in order to respond to public health and welfare emergencies (for example, a significant threat of loss of life, personal injury or severe property damage); and

(c) Exceptions. Exceptions authorized by the Commission or Department under (9) of this rule.

(6) High Quality Waters Policy: Where the existing water quality meets or exceeds those levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, and other designated beneficial uses, that level of water quality must be maintained and protected. However, the Environmental Quality Commission, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, and with full consideration of sections (2) and (9) of this rule, and 340-041-0007(4), may allow a lowering of water quality in these high quality waters if it finds:

(a) No other reasonable alternatives exist except to lower water quality; and

(b) The action is necessary and benefits of the lowered water quality outweigh the environmental costs of the reduced water quality. This evaluation will be conducted in accordance with DEQ's "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and section 401 water quality certifications," pages 27, and 33-39 (March 2001) incorporated herein by reference;

(c) All water quality standards will be met and beneficial uses protected; and

(d) Federal threatened and endangered aquatic species will not be adversely affected.

(7) Water Quality Limited Waters Policy: Water quality limited waters may not be further degraded except in accordance with section (9)(a)(B), (C) and (D) of this rule.

(8) Outstanding Resource Waters Policy. Where existing high quality waters constitute an outstanding State or national resource such as those waters designated as extraordinary resource waters, or as critical habitat areas, the existing water quality and water quality values must be maintained and protected, and classified as "Outstanding Resource Waters of Oregon."

(a) The Commission may specially designate high quality water bodies to be classified as Outstanding Resource Waters in order to protect the water quality parameters that affect ecological integrity of critical habitat or special water quality values that are vital to the unique character of those water bodies. The Department will develop a screening process and establish a list of nominated water bodies for Outstanding Resource Waters designation in the Biennial Water

Quality Status Assessment Report (305(b) Report). The priority water bodies for nomination include:

- (A) Those in State and National Parks;
- (B) National Wild and Scenic Rivers;
- (C) State Scenic Waterways;
- (D) Those in State and National Wildlife Refuges; and
- (E) Those in federally designated wilderness areas.

(b) The Department will bring to the Commission a list of water bodies that are proposed for designation as Outstanding Resource Waters at the time of each triennial Water Quality Standards Review; and

(c) When designating Outstanding Resource Waters, the Commission may establish the water quality values to be protected and provide a process for determining what activities are allowed that would not affect the outstanding resource values. After the designation, the Commission may not allow activities that may lower water quality below the level established except on a short term basis to respond to public health and welfare emergencies, or to obtain long-term water quality improvements.

(9) Exceptions. The Commission or Department may grant exceptions to this rule so long as the following procedures are met:

(a) In allowing new or increased discharged loads, the Commission or Department must make the following findings:

(A) The new or increased discharged load will not cause water quality standards to be violated;

(B) The action is necessary and benefits of the lowered water quality outweigh the environmental costs of the reduced water quality. This evaluation will be conducted in accordance with DEQ's "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and section 401 water quality certifications," pages 27, and 33-39 (March 2001) incorporated herein by reference; and

(C) The new or increased discharged load will not unacceptably threaten or impair any recognized beneficial uses or adversely affect threatened or endangered species. In making this determination, the Commission or Department may rely upon the presumption that if the numeric criteria established to protect specific uses are met the beneficial uses they were designed to protect are protected. In making this determination the Commission or Department may also evaluate other State and federal agency data that would provide information on potential impacts to beneficial uses for which the numeric criteria have not been set;

(D) The new or increased discharged load may not be granted if the receiving stream is classified as being water quality limited under sub-section (a) of the definition of "Water Quality Limited" in OAR 340-041-0002, unless:

(i) The pollutant parameters associated with the proposed discharge are unrelated either directly or indirectly to the parameter(s) causing the receiving stream to violate water quality standards and being designated water quality limited; or

(ii) Total maximum daily loads (TMDLs), waste load allocations (WLAs) load allocations (LAs), and the reserve capacity have been established for the water quality limited receiving stream; and compliance plans under which enforcement action can be taken have been established; and there will be sufficient reserve capacity to assimilate the increased load under the established TMDL at the time of discharge; or

(iii) Effective July 1, 1996, in water bodies designated water-quality limited for dissolved oxygen, when establishing WLAs under a TMDL for water bodies meeting the conditions defined in this rule, the Department may at its discretion provide an allowance for WLAs calculated to result in no measurable reduction of dissolved oxygen (DO). For this purpose, "no measurable reduction" is defined as no more than 0.10 mg/L for a single source and no more than 0.20 mg/L for all anthropogenic activities that influence the water quality limited segment. The allowance applies for surface water DO criteria and for Intergravel dissolved oxygen (IGDO) if a determination is made that the conditions are natural. The allowance for WLAs applies only to surface water 30-day and seven-day means; or

(iv) Under extraordinary circumstances to solve an existing, immediate and critical environmental problem, the Commission or Department may, after the completion of a TMDL but before the water body has achieved compliance with standards, consider a waste load increase for an existing source on a receiving stream designated water quality limited under sub-section (a) of the definition of "Water Quality Limited" in OAR 340-041-0002. This action must be based on the following conditions:

(I) That TMDLs, WLAs and LAs have been set; and

(II) That a compliance plan under which enforcement actions can be taken has been established and is being implemented on schedule; and

(III) That an evaluation of the requested increased load shows that this increment of load will not have an unacceptable temporary or permanent adverse effect on beneficial uses or adversely affect threatened or endangered species; and

(IV) That any waste load increase granted under subparagraph (iv) of this paragraph is temporary and does not extend beyond the TMDL compliance deadline established for the water body. If this action will result in a permanent load increase, the action has to comply with sub-paragraphs (i) or (ii) of this paragraph.

(b) The activity, expansion, or growth necessitating a new or increased discharge load is consistent with the acknowledged local land use plans as evidenced by a statement of land use compatibility from the appropriate local planning agency.

(c) Oregon's water quality management policies and programs recognize that Oregon's water bodies have a finite capacity to assimilate waste. Unused assimilative capacity is an exceedingly valuable resource that enhances in-stream values and environmental quality in general. Allocation of any

unused assimilative capacity should be based on explicit criteria. In addition to the conditions in subsection (a) of this section, the Commission or Department may consider the following:

(A) Environmental Effects Criteria:

(i) Adverse Out-of-Stream Effects. There may be instances where the non-discharge or limited discharge alternatives may cause greater adverse environmental effects than the increased discharge alternative. An example may be the potential degradation of groundwater from land application of wastes;

(ii) Instream Effects. Total stream loading may be reduced through elimination or reduction of other source discharges or through a reduction in seasonal discharge. A source that replaces other sources, accepts additional waste from less efficient treatment units or systems, or reduces discharge loadings during periods of low stream flow may be permitted an increased discharge load year-round or during seasons of high flow, so long as the loading has no adverse affect on threatened and endangered species;

(iii) Beneficial Effects. Land application, upland wetlands application, or other non-discharge alternatives for appropriately treated wastewater may replenish groundwater levels and increase streamflow and assimilative capacity during otherwise low streamflow periods.

(B) Economic Effects Criteria. When assimilative capacity exists in a stream, and when it is judged that increased loadings will not have significantly greater adverse environmental effects than other alternatives to increased discharge, the economic effect of increased loading will be considered. Economic effects will be of two general types:

(i) Value of Assimilative Capacity. The assimilative capacity of Oregon's streams is finite, but the potential uses of this capacity are virtually unlimited. Thus it is important that priority be given to those beneficial uses that promise the greatest return (beneficial use) relative to the unused assimilative capacity that might be utilized. In-stream uses that will benefit from reserve assimilative capacity, as well as potential future beneficial use, will be weighed against the economic benefit associated with increased loading;

(ii) Cost of Treatment Technology. The cost of improved treatment technology, non-discharge and limited discharge alternatives may be evaluated.

Application of Standard: The above sections, which are part of Oregon's water quality standards, require that existing high quality waters where quality exceeds the levels necessary to protect fish, shellfish, wildlife, and recreation shall be maintained and protected unless the Environmental Quality Commission chooses to allow lowered water quality for justifiable reasons, or unless the Director allows lower water quality on a short-term basis to respond to emergencies or otherwise protect public health and welfare. These sections further require DEQ to minimize degradation of high quality waters and protect the recognized beneficial uses of such waters by requiring the highest and best practicable control of all waste discharges and activities. These sections, in conjunction with other provisions of the water quality standards contained in OAR 340- 41-0445(2), are intended to assure that water quality is not changed so as to impair designated beneficial uses of the water.

DEQ is required to interpret and apply the EQC water quality standards, including the antidegradation policy, in a manner consistent with the guiding federal rules. DEQ has traditionally interpreted the antidegradation policy to allow approval of new discharges or activities that may have some theoretical or detectable impact on high quality waters provided that:

- 1 Adverse impact on water quality will not be significant,
- 2 Any change in water quality will not adversely affect existing and designated beneficial uses, and
- 3 Highest and best practicable treatment and control of waste discharges and activities is employed to minimize any adverse effects on water quality.

Under ordinary circumstances, compliance with the water quality standards in OAR 340-041-0205 and 340-041-0445 would be considered sufficient to assure that beneficial uses will be protected. However, if a standard has not been adopted for a pollutant parameter of concern, or if new information indicates that an existing standard is not adequate to prevent adverse water quality impact on a beneficial use in the particular situation, DEQ is required to impose more stringent water quality protection measures to protect designated beneficial uses, including denial of project approval if necessary.

Present Condition: The waters of the Columbia River are not high quality waters. The Columbia River is classified as water quality limited under the Federal Clean Water Act, Section 303(d), for the parameters of: Temperature; DDE (DDT metabolite); PCB; and Arsenic. An Environmental Protection Agency (EPA) approved Total Maximum Daily Load (TMDL) has been developed for the parameters of: Dioxin and Total Dissolved Gas. Other parameters listed for potential concern include: Cadmium; Copper; Iron; Lead; Mercury; Nickel; Silver; Tributyltin; Zinc; Aldrin; Alpha-BNC; Benzo(a)anthracene; Benzo(g, h, i)perylene; Bhc; Chlordane; Chrysene; Cyanide; DDD; DDT; Dieldrin; Endrin; Hexavalent Chromium; pH; Phenol; Polynuclear Aromatic Hydrocabons (PAHs); Pyrene; and Radionuclides. However, EPA has designated the Lower Columbia as one of seven of the Nation's Great Water Bodies and one of 27 estuaries in the national Estuary Partnership Program.

Applicant's Position: The applicant offers no specific comment on this water quality parameter. However, USACE has conducted extensive turbidity and dissolved oxygen monitoring and sediment testing, and having found no significant alteration of water quality standards, believes that the project will not result in degradation of the Columbia River's water quality below current levels.

Public Comment: DEQ received a comment from Northwest Environmental Advocates on Antidegradation which: questioned wording choices; pointed out that the Findings did not demonstrate that Narrative Criteria were applied in the evaluation; that analysis and review by DEQ was superficial; that DEQ failed to discuss River Lamprey as an existing beneficial use; and that decline of this species in the Columbia River and side channels illustrates DEQ's failure to maintain water quality standards as required in the Antidegradation policy.

DEQ Evaluation: The waters of the Columbia River are not high quality waters. However, this status requires particular attention so as not to allow exacerbation of listed parameters of

impairment. It is expected that the established narrative and numeric criteria, in conjunction with applicable TMDLs are protective of beneficial uses.

Although ODFW has established preferred in-water timing windows to be protective of the most sensitive fish uses in the Columbia, ODFW and NMFS have recognized the difficulty of dredging in the active Federal Navigation Channel of the primary commercial and recreational passageway for the Northwest Region of the U.S.

USACE has engaged DEQ, Ecology, DLCD, and EPA in a process to develop a Regional Sediment Management (RSM) Plan for the lower Columbia River. Completion and implementation of the plan should be an integral part of certifications for this and future proposals.

DEQ Finding: Although maintenance dredging is considered a recurring activity and not subject to Antidegradation review as a new source, construction of a deepened navigation channel is subject to Antidegradation review. No lowering of water quality is expected from either the new construction, maintenance dredging, dredged material disposal, or mitigation proposed if: best management practices are employed; in-water timing restrictions are adhered to as identified by fisheries agencies; regional sediment management actions are identified, funded, and implemented; on-going coordination and study is undertaken through the multi-agency Adaptive Management Team; and all conditions formulated by DEQ in a 401 water quality certification are followed.

DEQ has clarified wording choices around beneficial uses in response to the comment. DEQ believes that the Narrative Criteria were incorporated into the evaluation, but in response to the comment, has added a section to the Findings (above) which explicitly demonstrates this. Contrary to the comment, DEQ considered River Lamprey and refers the commenter to the “Present Condition” discussion in the Biocriteria section of the Findings (above). DEQ acknowledges the impaired state of the Columbia River and associated declines in beneficial uses and is working through multiple programs, as directed by the Clean Water Act, to improve conditions. The Antidegradation review conducted through evaluation of the current proposal is not intended to address the complex and cumulative potential sources of degradation in the whole of the Columbia River. Rather, this evaluation is limited to the USACE’s proposed actions to continue to deepen and maintain the federal navigation channel. DEQ finds that deepening and maintaining the Columbia River navigation channel are activities essential for the safe and efficient movement of large commercial vessels to upriver ports, these activities have broad social and economic benefits, and adverse impacts to the estuary can be minimized such that Antidegradation has been met.

EVALUATION OF WATER QUALITY-RELATED REQUIREMENTS OF STATE LAW

DEQ has reviewed the information in the record and the requirements of the state laws to determine the water quality-related requirements that may be applicable to the applicant's proposed project. In determining whether particular requirements may be water quality-related, DEQ has relied on the following considerations:

- a. The statute, or rules promulgated pursuant to the statute, contain explicit reference to water quality and are applicable to the proposed project.
- b. The statute, or rules promulgated pursuant to the statute, address factors that are necessary for maintenance of water quality in conjunction with the proposed project, or for evaluation of water quality impacts of the proposed project.
- c. The statute, or rules promulgated pursuant to the statute, authorize, require, or control actions or activities that may, in conjunction with the proposed project, be reasonably expected to impact water quality.

Based on these initial criteria, DEQ has identified the following as potential water quality-related requirements of state law:

Laws Administered by the Oregon Department of State Lands

ORS 196.795 to 196.990 requires that permits be obtained from the Division of State Lands prior to any fill and removal of material from the bed or banks of any stream. Such permits, when issued, may be expected to contain conditions to assure protection of water quality so as to protect fish and aquatic habitat.

Laws Administered by Oregon department of Fish and Wildlife

ORS 496.275 addresses salmon resource protection and restoration

ORS 496.430 to 496.465 addresses salmon and trout enhancement

ORS 496.470 to 496.480 adopts plans for natural production of anadromous fish runs

OAR 635-412-0005 et. seq. addresses fish passage

OAR 635-500-0002 et. seq. addresses fish management plans

Laws Administered by Department of Environmental Quality

ORS 466.635 to 466.645 establish requirements for reporting and cleanup of spills of petroleum products and hazardous materials.

Laws Administered by Department of Land Conservation and Development

ORS Chapter 197 contains provisions of state law requiring the development and acknowledgement of comprehensive land use plans. This chapter also requires state agency actions to be consistent with acknowledged local land use plans and implementing ordinances.

In addition to this state agency review of the Section 401 certification documents, the Clatsop County Planning Department has provided a Land Use Compatibility Statement indicating areas in which the project is inconsistent with the local comprehensive plan.

Department of Land Conservation and Development must develop a Coastal Zone Management Act consistency determination for this project.

Laws Administered by Oregon Water Resources Department

Laws administered by the Water Resources Department relate to issuance and administration of water withdrawal rights. No water withdrawals requiring State water rights are contemplated in this project.

Laws Administered by Oregon Watershed Enhancement Board

ORS 541-351 et. seq. Oregon Plan for Salmon and Watersheds

Summary

Pursuant to 33 USC 1341(d) and OAR 340-048-0025, DEQ has included conditions in the 401 WQC that are consistent with these other requirements of state law. However, issuance of a 401 WQC does not obviate the need for any applicable permits, licenses, or other permissions required by local, state, or federal laws as interpreted by the agency charged with implementing the laws.

EVALUATION OF COMPLIANCE WITH SECTIONS 301, 302, 303, 306, AND 307 OF THE CLEAN WATER ACT

In order to certify a project pursuant to Section 401 of the federal Clean Water Act, DEQ must find that the project complies with Sections 301, 302, 303, 306, and 307 of the Act and state regulations adopted to implement these sections, provided appropriate permits are obtained as required.

Sections 301, 302, 306, and 307 of the federal Clean Water Act deal with effluent limitations, water quality related effluent limitations, national standards of performance for new sources, and toxic and pretreatment standards. All of these requirements relate to point source discharges and are the foundation for conditions to be incorporated in National Pollutant Discharge Elimination System (NPDES) permits issued to the point sources.

Section 303 of the Act relates to Water Quality Standards and Implementation Plans. The EPA has adopted regulations to implement Section 303 of the Act. The EQC has adopted water quality standards consistent with the requirements of Section 303 and the applicable EPA rules. The EQC standards are codified in Oregon Administrative Rules Chapter 340, Division 41. The EPA has approved the Oregon standards pursuant to the requirements of Section 303 of the Act. Therefore, the applicant's project must comply with Oregon Water Quality Standards and TMDLs to qualify for certification. The Water Quality Standards Section of this evaluation and findings report detailed the conditions considered necessary by DEQ to ensure compliance with water quality standards and TMDLs.

Section 306 of the Clean Water Act provides that new sources of pollutant discharge meet

particular standards of performance for the control and reduction of pollutants being discharged. The project is not a new source since maintenance dredging has occurred for many years over the same stretch of river.

Section 307 of the Clean water Act provides that dischargers of toxic pollutants meet certain pretreatment and effluent requirements. The likelihood of contaminants within the navigation channel has been determined to be extremely low. Conditions have been developed to cover dredging outside the channel. As a result, the project complies with Section 307 of the Act.

Finding

DEQ is reasonably assured that conducting these projects will comply with Sections 301, 302, 303, 304, and 306 of the Clean Water Act if the applicants meet the conditions provided in the certification for these projects.

CONCLUSIONS

This project is a continuation of activities needed for navigational access of Oregon's primary commercial and recreational passageway. The applicant has provided a project that has addressed many water quality issues. Those matters that are not addressed by the applicant, or that may result in water quality violations, can be addressed through the implementation of best management practices, and the conditions identified herein and in the accompanying water quality certification.

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