



WASHINGTON STATE

Joint Aquatic Resources Permit Application (JARPA) Form^{1,2}

USE BLACK OR BLUE INK TO ENTER ANSWERS IN THE WHITE SPACES BELOW.



US Army Corps
of Engineers®
Seattle District

AGENCY USE ONLY

Date received: _____

Agency reference #: _____

Tax Parcel #(s): _____

Part 1–Project Identification

1. Project Name (A name for your project that you create. Examples: Smith’s Dock or Seabrook Lane Development) [help]
Cooperville, LLC new pier, boatlift and double-mini PWC lift

Part 2–Applicant

The person and/or organization responsible for the project. [\[help\]](#)

2a. Name (Last, First, Middle)			
MacPherson, Roger			
2b. Organization (If applicable)			
Cooperville, LLC			
2c. Mailing Address (Street or PO Box)			
22605 SE 56 th St., Ste. 140			
2d. City, State, Zip			
Issaquah, WA 98029			
2e. Phone (1)	2f. Phone (2)	2g. Fax	2h. E-mail
(425) 391-3333	()	()	roger@macphersonconstruction.com

¹Additional forms may be required for the following permits:

- If your project may qualify for Department of the Army authorization through a Regional General Permit (RGP), contact the U.S. Army Corps of Engineers for application information (206) 764-3495.
- If your project might affect species listed under the Endangered Species Act, you will need to fill out a Specific Project Information Form (SPIF) or prepare a Biological Evaluation. Forms can be found at <http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx>.
- Not all cities and counties accept the JARPA for their local Shoreline permits. If you need a Shoreline permit, contact the appropriate city or county government to make sure they accept the JARPA.

²To access an online JARPA form with [help] screens, go to http://www.epermitting.wa.gov/site/alias_resourcecenter/jarpa_jarpa_form/9984/jarpa_form.aspx.

For other help, contact the Governor’s Office of Regulatory Assistance at 1-800-917-0043 or help@ora.wa.gov.

Part 3—Authorized Agent or Contact

Person authorized to represent the applicant about the project. (Note: Authorized agent(s) must sign 11b of this application.) [\[help\]](#)

3a. Name (Last, First, Middle)			
Ashley, Gregory Wayne			
3b. Organization (If applicable)			
Ashley Shoreline Design & Permitting			
3c. Mailing Address (Street or PO Box)			
16412 NE 10 th Pl.			
3d. City, State, Zip			
Bellevue, WA 98008-3707			
3e. Phone (1)	3f. Phone (2)	3g. Fax	3h. E-mail
(425) 591-3994			greg@shoreline-permitting.com

Part 4—Property Owner(s)

Contact information for people or organizations owning the property(ies) where the project will occur. Consider both **upland and aquatic** ownership because the upland owners may not own the adjacent aquatic land. [\[help\]](#)

- Same as applicant. (Skip to Part 5.)
- Repair or maintenance activities on existing rights-of-way or easements. (Skip to Part 5.)
- There are multiple upland property owners. Complete the section below and fill out [JARPA Attachment A](#) for each additional property owner.
- Your project is on Department of Natural Resources (DNR)-managed aquatic lands. If you don't know, contact the DNR at (360) 902-1100 to determine aquatic land ownership. If yes, complete [JARPA Attachment E](#) to apply for the Aquatic Use Authorization.

4a. Name (Last, First, Middle)			
4b. Organization (If applicable)			
4c. Mailing Address (Street or PO Box)			
4d. City, State, Zip			
4e. Phone (1)	4f. Phone (2)	4g. Fax	4h. E-mail
()	()	()	

Part 5–Project Location(s)

Identifying information about the property or properties where the project will occur. [\[help\]](#)

- There are multiple project locations (e.g. linear projects). Complete the section below and use [JARPA Attachment B](#) for each additional project location.

5a. Indicate the type of ownership of the property. (Check all that apply.) [help]			
<input checked="" type="checkbox"/> Private <input type="checkbox"/> Federal <input type="checkbox"/> Publicly owned (state, county, city, special districts like schools, ports, etc.) <input type="checkbox"/> Tribal <input type="checkbox"/> Department of Natural Resources (DNR) – managed aquatic lands (Complete JARPA Attachment E)			
5b. Street Address (Cannot be a PO Box. If there is no address, provide other location information in 5p.) [help]			
5330 Butterworth Rd.			
5c. City, State, Zip (If the project is not in a city or town, provide the name of the nearest city or town.) [help]			
Mercer Island, WA 98040			
5d. County [help]			
King			
5e. Provide the section, township, and range for the project location. [help]			
¼ Section	Section	Township	Range
NE	19	24 North	05 East
5f. Provide the latitude and longitude of the project location. [help]			
<ul style="list-style-type: none"> Example: 47.03922 N lat. / -122.89142 W long. (Use decimal degrees - NAD 83) 			
47.555466° N Lat. / -122.2095° W Long.			
5g. List the tax parcel number(s) for the project location. [help]			
<ul style="list-style-type: none"> The local county assessor’s office can provide this information. 			
866140-0045			
5h. Contact information for all adjoining property owners. (If you need more space, use JARPA Attachment C.) [help]			
Name	Mailing Address		Tax Parcel # (if known)
MacPherson Sammamish Reside	5320 Butterworth Rd.		866140-0040
John M. Anderson	5336 Butterworth Rd.		866140-0050

5i. List all wetlands on or adjacent to the project location. [help]
N/A
5j. List all waterbodies (other than wetlands) on or adjacent to the project location. [help]
Lake Washington
5k. Is any part of the project area within a 100-year floodplain? [help]
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Don't know
5l. Briefly describe the vegetation and habitat conditions on the property. [help]
The property has an existing rock bulkhead with a manicured lawn up to the bulkhead. There is no rooted aquatic vegetation in the water.
5m. Describe how the property is currently used. [help]
Private singly-family residential
5n. Describe how the adjacent properties are currently used. [help]
Private singly-family residential
5o. Describe the structures (above and below ground) on the property, including their purpose(s) and current condition. [help]
There is a private single-family residence on the property. The property has an existing rock bulkhead with a manicured lawn up to the bulkhead. There is no rooted aquatic vegetation in the water.
5p. Provide driving directions from the closest highway to the project location, and attach a map. [help]
Head west on I-90 toward Seattle. Take Exit #7 toward Island Crest Way. Turn left onto Island Crest Way. Turn right onto Merrimount Dr. Turn left onto W Mercer Way. End at 6705 W Mercer Way which is on the right

Part 6–Project Description

6a. Briefly summarize the overall project. You can provide more detail in 6b. [help]
Build new 480 SF fixed pier. Install one free-standing aluminum boatlift and one freestanding aluminum double-mini PWC lift.
6b. Describe the purpose of the project and why you want or need to perform it. [help]
The purpose is to provide safe water access and watercraft moorage.
6c. Indicate the project category. (Check all that apply) [help]
<input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Institutional <input type="checkbox"/> Transportation <input checked="" type="checkbox"/> Recreational <input type="checkbox"/> Maintenance <input type="checkbox"/> Environmental Enhancement
6d. Indicate the major elements of your project. (Check all that apply) [help]

<input type="checkbox"/> Aquaculture <input type="checkbox"/> Bank Stabilization <input type="checkbox"/> Boat House <input type="checkbox"/> Boat Launch <input checked="" type="checkbox"/> Boat Lift <input type="checkbox"/> Bridge <input type="checkbox"/> Bulkhead <input type="checkbox"/> Buoy <input type="checkbox"/> Channel Modification	<input type="checkbox"/> Culvert <input type="checkbox"/> Dam / Weir <input type="checkbox"/> Dike / Levee / Jetty <input type="checkbox"/> Ditch <input checked="" type="checkbox"/> Dock / Pier <input type="checkbox"/> Dredging <input type="checkbox"/> Fence <input type="checkbox"/> Ferry Terminal <input type="checkbox"/> Fishway	<input type="checkbox"/> Float <input type="checkbox"/> Floating Home <input type="checkbox"/> Geotechnical Survey <input type="checkbox"/> Land Clearing <input type="checkbox"/> Marina / Moorage <input type="checkbox"/> Mining <input type="checkbox"/> Outfall Structure <input type="checkbox"/> Piling/Dolphin <input type="checkbox"/> Raft	<input type="checkbox"/> Retaining Wall (upland) <input type="checkbox"/> Road <input type="checkbox"/> Scientific Measurement Device <input type="checkbox"/> Stairs <input type="checkbox"/> Stormwater facility <input type="checkbox"/> Swimming Pool <input type="checkbox"/> Utility Line
<input type="checkbox"/> Other:			

6e. Describe how you plan to construct each project element checked in 6d. Include specific construction methods and equipment to be used. [\[help\]](#)

- Identify where each element will occur in relation to the nearest waterbody.
- Indicate which activities are within the 100-year floodplain.

Install twelve (12) 8" diameter and two (2) 4" diameter epoxy coated steel support piles via a vibratory pile driving system. Build a 480 SF pier. The bottom of the pier will be eighteen (18) inches above the OHWM. The pier decking will be Titan grated decking (47% open space). Dimensional lumber will be cut to size on shore and assembled over water. Install a freestanding aluminum boatlift and a freestanding aluminum double-mini PWC lift. All activities take place in Lake Washington. There is no creosote treated timber or galvanized metal on site. All activities take place in Lake Washington.

6f. What are the anticipated start and end dates for project construction? (Month/Year) [\[help\]](#)

- If the project will be constructed in phases or stages, use [JARPA Attachment D](#) to list the start and end dates of each phase or stage.

Start date: July 16 End date: December 31 See JARPA Attachment D

6g. Fair market value of the project, including materials, labor, machine rentals, etc. [\[help\]](#)

\$81,400.00

6h. Will any portion of the project receive federal funding? [\[help\]](#)

- If **yes**, list each agency providing funds.

Yes No Don't know

Part 7–Wetlands: Impacts and Mitigation

Check here if there are wetlands or wetland buffers on or adjacent to the project area. (If there are none, skip to Part 8.) [\[help\]](#)

7a. Describe how the project has been designed to avoid and minimize adverse impacts to wetlands. [\[help\]](#)

Not applicable

7b. Will the project impact wetlands? [\[help\]](#)

Yes No Don't know

7c. Will the project impact wetland buffers? [\[help\]](#)

Yes No Don't know

7d. Has a wetland delineation report been prepared? [\[help\]](#)

- If Yes, submit the report, including data sheets, with the JARPA package.

Yes No

7e. Have the wetlands been rated using the Western Washington or Eastern Washington Wetland Rating System? [\[help\]](#)

- If Yes, submit the wetland rating forms and figures with the JARPA package.

Yes No Don't know

7f. Have you prepared a mitigation plan to compensate for any adverse impacts to wetlands? [\[help\]](#)

- If Yes, submit the plan with the JARPA package and answer 7g.
- If No, or Not applicable, explain below why a mitigation plan should not be required.

Yes No Not applicable

7g. Summarize what the mitigation plan is meant to accomplish, and describe how a watershed approach was used to design the plan. [\[help\]](#)

7h. Use the table below to list the type and rating of each wetland impacted, the extent and duration of the impact, and the type and amount of mitigation proposed. Or if you are submitting a mitigation plan with a similar table, you can state (below) where we can find this information in the plan. [\[help\]](#)

Activity (fill, drain, excavate, flood, etc.)	Wetland Name ¹	Wetland type and rating category ²	Impact area (sq. ft. or Acres)	Duration of impact ³	Proposed mitigation type ⁴	Wetland mitigation area (sq. ft. or acres)

¹ If no official name for the wetland exists, create a unique name (such as "Wetland 1"). The name should be consistent with other project documents, such as a wetland delineation report.

² Ecology wetland category based on current Western Washington or Eastern Washington Wetland Rating System. Provide the wetland rating forms with the JARPA package.

³ Indicate the days, months or years the wetland will be measurably impacted by the activity. Enter "permanent" if applicable.

⁴ Creation (C), Re-establishment/Rehabilitation (R), Enhancement (E), Preservation (P), Mitigation Bank/In-lieu fee (B)

Page number(s) for similar information in the mitigation plan, if available: _____

7i. For all filling activities identified in 7h, describe the source and nature of the fill material, the amount in cubic yards that will be used, and how and where it will be placed into the wetland. [\[help\]](#)

7j. For all excavating activities identified in 7h, describe the excavation method, type and amount of material in cubic yards you will remove, and where the material will be disposed. [\[help\]](#)

Part 8–Waterbodies (other than wetlands): Impacts and Mitigation

In Part 8, “waterbodies” refers to non-wetland waterbodies. (See Part 7 for information related to wetlands.) [\[help\]](#)

Check here if there are waterbodies on or adjacent to the project area. (If there are none, skip to Part 9.)

8a. Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment. [help]
<input checked="" type="checkbox"/> Not applicable - BMP's
8b. Will your project impact a waterbody or the area around a waterbody? [help]
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

8c. Have you prepared a mitigation plan to compensate for the project’s adverse impacts to non-wetland waterbodies? [help]
<ul style="list-style-type: none"> • If Yes, submit the plan with the JARPA package and answer 8d. • If No, or Not applicable, explain below why a mitigation plan should not be required.
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not applicable
8d. Summarize what the mitigation plan is meant to accomplish. Describe how a watershed approach was used to design the plan.
<ul style="list-style-type: none"> • If you already completed 7g you do not need to restate your answer here. [help]

8e. Summarize impact(s) to each waterbody in the table below. [help]					
Activity (clear, dredge, fill, pile drive, etc.)	Waterbody name ¹	Impact location ²	Duration of impact ³	Amount of material (cubic yards) to be placed in or removed from waterbody	Area (sq. ft. or linear ft.) of waterbody directly affected
Install 2-2" pin piles	Lake Washington	Landward of waterbody	1 hour	2 - 2" pin piles	2 - 2" pin piles
Install 12-8" epoxy coated steel pies	Lake Washington	In the waterbody	3 days	12-8" piles	12-8" piles
Install caps	Lake Washington	In the waterbody	2 days	30 LF	30 LF
Install stringers	Lake Washington	In the waterbody	3 days	349 LF	105 LF
Install Titan grated decking	Lake Washington	Not in the waterbody	4 days	480 SF	480 SF

¹ If no official name for the waterbody exists, create a unique name (such as “Stream 1”) The name should be consistent with other documents provided.
² Indicate whether the impact will occur in or adjacent to the waterbody. If adjacent, provide the distance between the impact and the waterbody and indicate whether the impact will occur within the 100-year flood plain.
³ Indicate the days, months or years the waterbody will be measurably impacted by the work. Enter “permanent” if applicable.

8f. For all activities identified in 8e, describe the source and nature of the fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody. [help]
None
8g. For all excavating or dredging activities identified in 8e, describe the method for excavating or dredging, type and amount of material you will remove, and where the material will be disposed. [help]
None

Part 9—Additional Information

Any additional information you can provide helps the reviewer(s) understand your project. Complete as much of this section as you can. It is ok if you cannot answer a question.

9a. If you have already worked with any government agencies on this project, list them below. [help]			
Agency Name	Contact Name	Phone	Most Recent Date of Contact
Corps of Engineers	Kylie Sterling	(816) 389-2300	10/6/2025
		()	
		()	
9b. Are any of the wetlands or waterbodies identified in Part 7 or Part 8 of this JARPA on the Washington Department of Ecology's 303(d) List? [help]			
<ul style="list-style-type: none"> • If Yes, list the parameter(s) below. • If you don't know, use Washington Department of Ecology's Water Quality Assessment tools at: http://www.ecy.wa.gov/programs/wq/303d/. 			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
9c. What U.S. Geological Survey Hydrological Unit Code (HUC) is the project in? [help]			
<ul style="list-style-type: none"> • Go to http://cfpub.epa.gov/surf/locate/index.cfm to help identify the HUC. 			
17110012			
9d. What Water Resource Inventory Area Number (WRIA #) is the project in? [help]			
<ul style="list-style-type: none"> • Go to http://www.ecy.wa.gov/services/gis/maps/wria/wria.htm to find the WRIA #. 			
8			
9e. Will the in-water construction work comply with the State of Washington water quality standards for turbidity? [help]			
<ul style="list-style-type: none"> • Go to http://www.ecy.wa.gov/programs/wq/swqs/criteria.html for the standards. 			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable			
9f. If the project is within the jurisdiction of the Shoreline Management Act, what is the local shoreline environment designation? [help]			
<ul style="list-style-type: none"> • If you don't know, contact the local planning department. • For more information, go to: http://www.ecy.wa.gov/programs/sea/sma/laws_rules/173-26/211_designations.html. 			
<input type="checkbox"/> Rural <input checked="" type="checkbox"/> Urban <input type="checkbox"/> Natural <input type="checkbox"/> Aquatic <input type="checkbox"/> Conservancy <input type="checkbox"/> Other _____			
9g. What is the Washington Department of Natural Resources Water Type? [help]			
<ul style="list-style-type: none"> • Go to http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_watertyping.aspx for the Forest Practices Water Typing System. 			
<input checked="" type="checkbox"/> Shoreline <input type="checkbox"/> Fish <input type="checkbox"/> Non-Fish Perennial <input type="checkbox"/> Non-Fish Seasonal			
9h. Will this project be designed to meet the Washington Department of Ecology's most current stormwater manual? [help]			
<ul style="list-style-type: none"> • If No, provide the name of the manual your project is designed to meet. 			
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not applicable			

Name of manual:
9i. Does the project site have known contaminated sediment? [help] <ul style="list-style-type: none"> If Yes, please describe below. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
9j. If you know what the property was used for in the past, describe below. [help] Do not know
9k. Has a cultural resource (archaeological) survey been performed on the project area? [help] <ul style="list-style-type: none"> If Yes, attach it to your JARPA package. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

9l. Name each species listed under the federal Endangered Species Act that occurs in the vicinity of the project area or might be affected by the proposed work. [help] Chinook Salmon (<i>Oncorhynchus tshawytscha</i>), Coho Salmon (<i>Oncorhynchus kisutch</i>), Bull Trout (<i>Salvelinus confluentus</i>), Puget Sound steelhead (<i>Oncorhynchus mykiss</i>)
9m. Name each species or habitat on the Washington Department of Fish and Wildlife's Priority Habitats and Species List that might be affected by the proposed work. [help] Wild cutthroat trout (<i>Oncorhynchus clarkii</i>), Rainbow trout (<i>Oncorhynchus mykiss</i>), Largemouth bass (<i>Micropterus salmoides</i>), Smallmouth bass (<i>Micropterus dolomieu</i>), Yellow perch (<i>Perca flavescens</i>), Brown Bullhead catfish (<i>Ameiurus nebulosus</i>), Sockeye salmon (<i>Oncorhynchus nerka</i>)

Part 10–SEPA Compliance and Permits

Use the resources and checklist below to identify the permits you are applying for.

- Online Project Questionnaire at <http://apps.ecy.wa.gov/opus/>.
- Governor's Office of Regulatory Assistance at (800) 917-0043 or help@ora.wa.gov.
- For a list of addresses to send your JARPA to, click on [agency addresses for completed JARPA](#).

10a. Compliance with the State Environmental Policy Act (SEPA). (Check all that apply.) [help] <ul style="list-style-type: none"> For more information about SEPA, go to www.ecy.wa.gov/programs/sea/sepa/e-review.html. <input type="checkbox"/> A copy of the SEPA determination or letter of exemption is included with this application. <input type="checkbox"/> A SEPA determination is pending with _____ (lead agency). The expected decision date is _____. <input type="checkbox"/> I am applying for a Fish Habitat Enhancement Exemption. (Check the box below in 10b.) [help] <input type="checkbox"/> This project is exempt (choose type of exemption below). <input type="checkbox"/> Categorical Exemption. Under what section of the SEPA administrative code (WAC) is it exempt? _____ <input type="checkbox"/> Other: _____ <input type="checkbox"/> SEPA is pre-empted by federal law.
--

10b. Indicate the permits you are applying for. (Check all that apply.) [help]
LOCAL GOVERNMENT

Local Government Shoreline permits:

- Substantial Development Conditional Use Variance
- Shoreline Exemption Type (explain):

Other city/county permits:

- Floodplain Development Permit Critical Areas Ordinance

STATE GOVERNMENT

Washington Department of Fish and Wildlife:

- Hydraulic Project Approval (HPA) Fish Habitat Enhancement Exemption – [Attach Exemption Form](#)

Effective July 10, 2012, you must submit a check for \$150 to Washington Department of Fish and Wildlife, unless your project qualifies for an exemption or alternative payment method below. **Do not send cash.**

Check the appropriate boxes:

- \$150 check enclosed. (Check # _____)
Attach check made payable to Washington Department of Fish and Wildlife.
- Charge to billing account under agreement with WDFW. (Agreement # 12-1495)
- My project is exempt from the application fee. (Check appropriate exemption)
 - HPA processing is conducted by applicant-funded WDFW staff.
(Agreement # _____)
 - Mineral prospecting and mining.
 - Project occurs on farm and agricultural land.
(Attach a copy of current land use classification recorded with the county auditor, or other proof of current land use.)
 - Project is a modification of an existing HPA originally applied for, prior to July 10, 2012.
(HPA # _____)

Washington Department of Natural Resources:

- Aquatic Use Authorization
Complete [JARPA Attachment E](#) and submit a check for \$25 payable to the Washington Department of Natural Resources.
Do not send cash.

Washington Department of Ecology:

- Section 401 Water Quality Certification

FEDERAL GOVERNMENT

United States Department of the Army permits (U.S. Army Corps of Engineers):

- Section 404 (discharges into waters of the U.S.) Section 10 (work in navigable waters)

United States Coast Guard permits:

- General Bridge Act Permit Private Aids to Navigation (for non-bridge projects)

Part 11—Authorizing Signatures

Signatures are required before submitting the JARPA package. The JARPA package includes the JARPA form, project plans, photos, etc. [\[help\]](#)

11a. Applicant Signature (required) [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities, and I agree to start work only after I have received all necessary permits.


I hereby authorize the agent named in Part 3 of this application to act on my behalf in matters related to this application. ✓ RM (initial)

By initialing here, I state that I have the authority to grant access to the property. I also give my consent to the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project. ✓ RM (initial)

Roger MacPherson ✓  ✓ 5/19/2025
Applicant Printed Name Applicant Signature Date

11b. Authorized Agent Signature [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities and I agree to start work only after all necessary permits have been issued.

Gregory W. Ashley-Ashley Shoreline Design & Permitting  5/14/2025
Authorized Agent Printed Name Authorized Agent Signature Date

11c. Property Owner Signature (if not applicant). [\[help\]](#)

Not required if project is on existing rights-of-way or easements.

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

Property Owner Printed Name Property Owner Signature Date

18 U.S.C §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.

If you require this document in another format, contact the Governor's Office of Regulatory Assistance (ORA) at (800) 917-0043. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call (877) 833-6341.
ORA publication number: ENV-019-09 rev. 06-12