



State of Oregon
Department of
Environmental
Quality

Application for a Solid Waste Beneficial Use Determination

DEQ USE ONLY - BUSINESS OFFICE	
Date Received:	_____
Amount Received:	_____
Check No.:	_____
Deposit No.:	_____
Forward confirmation of fee payment for: Eastern Region to DEQ, The Dalles Northwestern Region to DEQ-NWR, Portland Western Region to DEQ, Salem	

A. REFERENCE INFORMATION *(Please type or print clearly.)*

Nathaniel Ruda		_____	
Legal name of applicant		Business name of applicant if different	
7200 NE Airport Way, PO Box 3529		Portland	OR 97218
Mailing address		City	State Zip
503-415-6220		sam.ruda@portofportland.com	
Phone	Mobile	E-mail	Fax

Same as applicant			
Generator of solid waste (may be same as applicant)			

Mailing address		City	State Zip
_____		_____	_____
Phone	Mobile	E-mail	Fax

B. TYPE OF BENEFICIAL USE DETERMINATION REQUESTED

Beneficial Use Determination applications are categorized based on the type of information and potential amount of work required by DEQ staff to review application materials and render a decision. A tiered review and fee system has been established in rule. The tiers are:

- Tier 1 For a beneficial use of a solid waste that does not contain hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product and that will be used in a manufactured product;
- Tier 2 For a beneficial use of a solid waste that contains hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product, or involves application on the land;
- Tier 3 For a beneficial use of a solid waste that requires research, such as a literature review or risk assessment, or for a demonstration project to demonstrate compliance with this rule.

I am applying for a Tier 1 Tier 2 Tier 3 determination.

C. DOES THIS PROPOSED BENEFICIAL USE INVOLVE LAND APPLICATION OF ANY MATERIAL?

Yes No

D. SIGNATURE

I hereby certify by my signature below that the information contained in this application, and the documents I have attached, are true and correct to the best of my knowledge and belief.

Nathaniel M. Ruda NATHANIEL RUDA DIRECTOR 7.1/10
Signature of legally authorized representative Print name Title Date

E. REQUIRED ATTACHMENTS TO THIS APPLICATION *(For an application to be complete, it must provide the required information for each listed item of the tier which is being applied for.)*

Tier 1

- A description of the material, manner of generation, and estimated quantity to be used each year;
- A description of the proposed use;
- A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace;
- A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing; and
- Any other information that DEQ may require to evaluate the proposal.

Tier 2

- The information required for a Tier 1 application;
- Sampling and analysis that provides chemical, physical, and biological characterization of the material and that identifies potential contaminants in the material or the end product, as applicable;
- A risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrating compliance with acceptable risk levels;
- Location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk;
- Contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude); and
- A description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment.

Tier 3

- The information required for a Tier 1 & 2 application;
- A discussion of the justification for the proposal;
- An estimate of the expected length of time that would be required to complete the project, if it is a demonstration; and
- If it is a demonstration project, the methods proposed to ensure safe and proper management of the material.

F. PERFORMANCE CRITERIA *(For all tiers - An application for a beneficial use determination must demonstrate satisfactory compliance with the following performance criteria.)*

The use is productive, including:

- ◆ There is an identified or reasonably likely use for the material that is not speculative;
- ◆ The use is a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by DEQ, and does not constitute disposal; and
- ◆ The use is in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices.

The use will not create an adverse impact to public health, safety, welfare, or the environment, including:

- ◆ The material is not a hazardous waste under ORS 466.005;
- ◆ Until the time the material is used in accordance with a beneficial use determination, the material will be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions;
- ◆ Hazardous substances in the material do not significantly exceed the concentration in a comparable raw material or commercial product, or do not exceed naturally occurring background concentrations, or do not exceed acceptable risk levels, including evaluation of persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination.

The use will not result in the increase of a hazardous substance in a sensitive environment.

The use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions.

The use will comply with all applicable federal, state, and local regulations.

G. FEES (Must accompany the application for it to be considered complete)

<input type="checkbox"/>	Tier 1 beneficial use determination	\$1,000
<input checked="" type="checkbox"/>	Tier 2 beneficial use determination	\$2,000
<input type="checkbox"/>	Tier 3 beneficial use determination	\$5,000

Make checks out to: **Oregon DEQ**

Total fees included: \$2000

H. APPLICATION PROCEDURE

Step 1

Contact a DEQ staff person for assistance with the preparation of the application. DEQ staff will help with: 1) Determination of the eligibility for a beneficial use determination of a particular waste or process; and, 2) If eligible, establish the tier of beneficial use determination review required and associated fee to submit with the application.

Step 2

Mail the original signed application, all attachments, including the fee payment plus one extra copy to the appropriate regional office (see listing below.) Note that DEQ review work will not begin until a complete application packet is received. Incomplete applications may be returned. DEQ recommends the applicant keep a full copy of all application materials to guard against possible loss in transit.

Step 3

DEQ will contact the applicant, acknowledging receipt of the application, and will identify the staff person assigned to carryout the review. This staff person will contact the applicant if any additional information is needed.

Region	Counties Served	Address & Phone
Eastern Region	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler	Eastern Region Department of Environmental Quality 400 E Scenic Drive, Ste 2.307 The Dalles, OR 97058 (541) 298-7255 ext. 221
Northwest Region	Clatsop, Clackamas, Columbia, Multnomah, Tillamook, and Washington	Northwest Region DEQ Solid Waste Programs 2020 SW Fourth Ave. Ste 400 Portland, OR 97201 (503) 229-5353
Western Region	Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, and Yamhill	Western Region DEQ Solid Waste Programs 750 Front St. NE Suite 120 Salem, OR 97301 (503) 378-5047

Tier 1 and 2

1. *A description of the material, manner of generation, and estimated quantity to be used each year.*

Approximately 75,000 cubic yards of fine-grained sediments (mix of clay, silt, and fine-grained sand) that will be dredged from the Willamette River at Post Office Bar (RM 2.2).

2. *A description of the proposed use.*

Fill material to increase site grade elevation prior to future development at West Hayden Island.

3. *A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace.*

This material (dredged material) has similar characteristics to soil fill, except for relatively low concentrations of detected chemical constituents (see attached Table 1).

4. *A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing.*

The use is productive. The sediments are a suitable substitute for fill material. The location is an existing dredge sediment placement facility.

The use will not create an adverse impact to public health, safety, welfare or the environment. The material is not a hazardous waste, and will be dewatered and otherwise managed consistent with the dredged materials at the facility. Hazardous substance concentrations in the sediments are below screening values for commercial or industrial use of the property. The material has been tested, is of a productive use, and will not create an adverse impact to public health, safety, welfare, or the environment (see Table 1).

5. *Any other information that DEQ may require to evaluate the proposal.*

No additional information is necessary.

6. *Sampling and analysis that provides chemical, physical, and biological characterization of the material and that identifies potential contaminants in the material or the end product, as applicable.*

Tables 1 provides the chemical data on the dredged material. Relatively low concentrations of detected chemical constituents have been identified.

7. *A risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrating compliance with acceptable risk levels.*

Table 1 provides the screening levels based on human occupational direct contact screening values and ecological screening values for non-threatened and endangered species, unless natural background concentrations were higher. The dredged material meets these screening levels.

8. *Location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk.*

The land use is zoned MUF19 (Multiple Use Forrest, 19 Acre Minimum). This is a low density land use designation within Multnomah County. The dredge material placement facility is used exclusively for dredged material placement and has not other land use associated with the site. This land use has less potential for exposure than the exposures assumed under an occupational use scenario as presented in the May 21, 2009, letter.

9. *Contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude).*

Mr. Nathaniel (Sam) Ruda
Port of Portland
7200 NE Airport Way, PO Box 3529
Portland, Oregon 97218
sam.ruda@portofportland.com
503-415-6220

Site Address: West Hayden Island Placement Facility
Approximate Coordinates: 45° 37' 25" N, 122° 42' 9" W

10. *A description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment.*

Upland placement involves pumping dredge material directly from the transport barge to a diked area created on West Hayden Island. The dikes are constructed to contain and direct the slurry of dredge material as it is pumped from the barge. Return water is held in settling ponds controlled by one or more weirs; no surface water would be released back into the adjacent Columbia River. After dewatering, the dredged sediment will be graded. The West Hayden Island Placement Facility is not readily accessible to the general public. The material meets screening levels that are protective of human health and the environment.

Upon development of the area, the fill will likely be covered with landscaping or hardscape, further preventing any potential exposures.

References:

DEQ, 2001. *Guidance for Ecological Risk Assessment*. April 1998. SLVs updated December 2001.

DEQ, 2002. *Default Background Concentrations for Metals*. October 28, 2002.

DEQ, 2009. Excel® Spreadsheet for Risk Based Concentrations for Individual Chemicals. September 15, 2009.

DEQ, 2009. Placement of Dredged Material / West Hayden Island. Letter from Wendy Wiles of the DEQ to Sam Ruda of the Port of Portland. May 21, 2009

U.S. Army Corps of Engineers, Seattle District, Portland District, Walla Walla District, and Northwestern Division; U.S. EPA, Region 10; Washington Departments of Ecology and Natural Resource; Oregon Department of Environmental Quality; Idaho Department of Environmental Quality; National Marine Fisheries Service; and U.S. Fish and Wildlife Service, 2009. *Sediment Evaluation Framework for the Pacific Northwest*. May 2009.

U.S. Army Corps of Engineers (Corps), 2009. Willamette River RNC, Post Office Bar Reach (RN 2.2), Sediment Quality Evaluation Report. February 2009.

Table 1 - Sediment Chemical Analyses Results
Post Office Bar
Portland, Oregon

Chemical Compound	Maximum Detected Concentration	Screening Levels
Metals in mg/kg		
Antimony	0.17	25
Arsenic	3.2	7
Cadmium	0.264	20
Chromium	24.7	42
Copper	37	250
Lead	14.5	80
Mercury	0.075	0.5
Nickel	21.8	150
Silver	0.226	10
Zinc	89	250
Butyltins in µg/kg		
Tributyltin (TBT) Dry Weight	8.1	--
SVOCs in µg/kg		
<u>LPAHs</u>		
Naphthalene	28	23,000
Acenaphthylene	19	--
Acenaphthene	36	100,000
Fluorene	22	150,000
Phenanthrene	150	--
Anthracene	35	310,000
2-Methylnaphthalene	17	--
<u>HPAHs</u>		
Fluoranthene	160	29,000,000
Pyrene	170	21,000,000
Benzo(a)anthracene	83	2,700
Chrysene	100	270,000
Benzo(b)fluoranthene	130	2,700
Benzo(k)fluoranthene	43	27,000
Benzo(b+k)fluoranthenes	173	2,700
Benzo(a)pyrene	130	270
Indeno(1,2,3-cd)pyrene	110	2,700
Dibenz(a,h)anthracene	22	270
Benzo(g,h,i)perylene	120	--
<u>Chlorinated Hydrocarbons</u>		
1,4-Dichlorobenzene	3.0	U 57,000
1,2-Dichlorobenzene	3.0	U 5,000,000
1,2,4-Trichlorobenzene	2.7	U --
Hexachlorobenzene	1.3	U 1,800
<u>Phthalates</u>		
Dimethyl Phthalate	1.1	U --
Diethyl Phthalate	1.6	--
Di-n-butyl Phthalate	8.2	U 2,250
Butyl Benzyl Phthalate	5.3	J --
Bis(2-ethylhexyl) Phthalate	47	J 22,500
Di-n-octyl Phthalate	1.8	U --

Please refer to notes on the last page of this table.

Table 1 - Sediment Chemical Analyses Results
Post Office Bar
Portland, Oregon

Chemical Compound	Maximum Detected Concentration		Screening Levels
SVOCs in µg/kg (cont.)			
<i>Phenols</i>			
Phenol	7.7	J	--
2-Methylphenol	1.6	U	--
4-Methylphenol	19		--
2,4-Dimethylphenol	5.7	U	--
Pentachlorophenol (PCP)	1.5	U	13,000
<i>Miscellaneous Extractables</i>			
Benzyl Alcohol	7.0	J	--
Benzoic Acid	99	U	--
Dibenzofuran	9.5	J	10
Hexachlorobutadiene	2.6	U	--
n-Nitrosodiphenylamine	1.7	U	--
Pesticides in µg/kg			
4,4'-DDE	2.3		50
4,4'-DDD	4.4		50
4,4'-DDT	4.0		50
Total DDx			
Aldrin	0.17	U	--
alpha-Chlordane	0.71	U	7,200
Dieldrin	0.29	U	130
Heptachlor	1.1	U	480
gamma-BHC (Lindane)	13	U	1,700
PCBs in µg/kg			
Aroclor 1016	1.4	U	50,000
Aroclor 1221	1.4	U	--
Aroclor 1232	1.4	U	--
Aroclor 1242	27		7,500
Aroclor 1248	1.4	U	--
Aroclor 1254	29		3,500
Aroclor 1260	1.4	U	--
Total PCBs	56		980

Notes:

1. Maximum detected concentration of core samples 021108WRPB-VC-01A, -VC-03A, and -VC-05A (Corps, 2009).
2. Screening levels are the lowest of the Oregon Department of Environmental Quality's risk-based concentrations for occupational direct contact with soil (DEQ, 2009) or ecological screening level values for non-threatened and endangered species (DEQ, 2001). If the screening value was below natural background concentration (e.g., metals), the screening value was set at the natural background concentration (DEQ, 2002).
3. For undetected compounds, the method detection limit (MDL) is shown.
4. -- = Not available.
5. J = Estimated concentration between MDL and method reporting limit (MRL).
6. U = Not detected at the indicated MDL.



Jul 2008

501

W Mill Plain Blvd

Hayden Island

120

W Delta Park

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Image © 2010 Metro, Portland Oregon

Image © 2010 DigitalGlobe

45°37'37.63" N 122°42'53.39" W elev 18 ft

Google

Eye alt 12418 ft

3585 ft



State of Oregon
Department of
Environmental
Quality

Memo

To: Audrey O'Brien, Manager, Northwest Region Solid Waste

From: Tom Roick, LQ Senior Policy Analyst

CC: The File
Port of Portland, Post Office Bar, Beneficial Use Determination

Date: 6 July 2010

Re: BUD Evaluation Report

1. Applicant

Port of Portland
7200 NE Airport Way
PO Box 3529
Portland, OR 97218

In addition to the application submitted by the Port of Portland, the U.S. Army Corps of Engineers provided a sediment characterization report: *Willamette River FNC Post Office Bar Reach (RM 2.2) Sediment Quality Evaluation Report*, February 2009.

2. Proposal

The Port of Portland proposes to use approximately 75,000 cubic yards of sediments that the Portland District U.S. Army Corps of Engineers will dredge from the Willamette River at Post Office Bar (River Mile 2.2) as fill material at the established West Hayden Island Placement Facility.

The proposal requires risk screening and involves land application, and therefore meets the conditions for a Tier 2 beneficial use of solid waste application.

3. Performance Criteria

The application includes sufficient characterization information. The Sediment Quality Evaluation Report, February 2009, includes three samples (VC-01A, VC-03A, and VC-05A) that are representative of the material that will be dredged. Nine other samples in the data set represent material below or adjacent to the dredge prism. Slightly higher hazardous substance concentrations were detected in the sediments below the dredge prism; otherwise the results amongst the twelve samples analyzed are fairly consistent.

The use is productive. The sediments are a suitable substitute for fill material. The Port of Portland has indicated to DEQ in the application and in past meetings that a large volume of

fill material is necessary to meet the future development objectives for this location at West Hayden Island. The location is an existing dredge sediment placement facility.

The use will not create an adverse impact to public health, safety, welfare, or the environment. The material is not a hazardous waste, and will be dewatered and otherwise managed consistent with other dredge materials at the facility. The February 2009 *Sediment Quality Evaluation Report* sample data (VC-01A, VC-03A, and VC-05A) are below terrestrial ecological screening level values or background concentrations for metals, but exceed clean fill criteria due to detections of polynuclear aromatic hydrocarbons above human health residential risk-based concentrations, DDT and related compounds above sediment bioaccumulation screening levels, and petroleum hydrocarbons above the 100 mg/kg screening level. The detected concentrations are below levels of concern for commercial or industrial use of the property.

4. Recommendation

I recommend issuance of a Beneficial Use Determination with the condition that if the property is not developed for commercial or industrial use, the Port of Portland must re-evaluate risk to human health and the environment to ensure hazardous substance concentrations are below levels of concern for the intended use. Covering the material is not necessary in the short-term because hazardous substance concentrations are below current ecological screening level values.

Attachments:

- Application for a Solid Waste Beneficial Use Determination, 7/1/2010
- Sediment Quality Evaluation Report, February 2009.



Oregon

Theodore R. Kulongoski, Governor

Department of Environmental Quality

Northwest Region

2020 SW 4th Ave, Suite 400

Portland, OR 97201

(503) 229-5263

FAX (503) 229-6945

OTRS 1-800-735-2900

July 8, 2010

Nathaniel Ruda
Port of Portland
PO Box 3529
7200 NE Airport Way
Portland, OR 97218

Re: Beneficial Use Determination BUD20100708:
Use of Willamette River Post Office Bar Dredged Sediments as Fill Material at West
Hayden Island

Dear Mr. Ruda:

The Department of Environmental Quality reviewed the Port of Portland's July 1, 2010 Application for a Solid Waste Beneficial Use Determination. The application is for the Port of Portland to use dredged sediments from the Willamette River Post Office Bar as fill material at the West Hayden Island Placement Facility consistent with plans for future development of that property.

In a letter to the Port of Portland on May 21, 2009, DEQ agreed that a solid waste permit would not be required for the placement of dredged material at the West Hayden Island facility in accordance with specified conditions. Because West Hayden Island was previously designated to receive dredged material, DEQ agreed to a site-specific evaluation of the protective steps needed for upland placement. That agreement remained in effect until the Environmental Quality Commission adopted the beneficial use of solid waste rules on May 30, 2010. On June 24, 2010, DEQ issued a beneficial use determination to the Port of Portland for sediments dredged from Terminal 5 to be placed at the West Hayden Island facility.

DEQ has determined that the Port of Portland's beneficial use proposal for the Post Office Bar material meets the requirements for a case-specific beneficial use determination under Oregon Administrative Rules 340-093-0260 through -0290. The BUD is limited to the materials, approved uses, conditions and reporting specified below. The conditions of the BUD are intended to prevent adverse impacts to human health and the environment.

Material

The material consists of approximately 75,000 cubic yards of sediments that the U.S. Army Corps of Engineers will dredge from the Willamette River at Post Office Bar, River Mile 2.2.

The application includes laboratory chemical analytical results of sediments from the area that the Corps will dredge. This approval applies to the characterized, dredge prism, Post Office Bar sediments. Dredged materials from other locations will need to be evaluated through separate beneficial use determinations.

The analytical results shown in Table 1 of the application and representative of the dredge prism are below human health occupational risk-based concentrations, DEQ's ecological screening level values, or default metals soil background values. DDT, DDD, and DDE and a number of other chemicals were detected, but at concentrations below screening levels.

Approved Uses

DEQ approves placement of the dredged material at the existing West Hayden Island Placement Facility, located at approximately 45° 37' 25" N, 122° 42' 9" W. The use is as fill material to increase site grade prior to future development of the property. The material characterization and risk screening indicate that contaminant concentrations in the sediment are below levels protective of human health and the environment for future commercial or industrial use of the property.

Conditions on Use

The application indicates the land is zoned MUF 19 (Multiple Use Forest, 19 Acre Minimum), a low density Multnomah County designation, and DEQ understands that the Port of Portland intends to develop the property for commercial or industrial use. If land use changes from the proposed commercial or industrial use to another use, the Port of Portland must reevaluate the risk screening of the material to ensure the use is protective of human health and the environment.

The US Army Corps is in the process of obtaining DEQ's 401 water quality certification. Dewatering and placement of sediments must be done to prevent discharges to waters in accordance with a DEQ 401 water quality certification.

If the material is proposed to be moved from the West Hayden Island Placement Facility to some other location, the Port of Portland must manage the material as solid waste.

Annual Reporting

The Port of Portland must report to DEQ annually on the status of the work until the dredging and placement of the material is completed or otherwise discontinued. Reports must include the status of proposed dredging, volume of material under this BUD placed at the West Hayden Island facility, and any characterization information if changed from that in the application. Annual reports must be submitted to DEQ with a \$250.00 fee payment by July 7 of each year. Submit reports to:

Audrey O'Brien, Manager
Northwest Region Environmental Partnerships Section
Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, OR 97201

If you have any questions about this BUD, please contact me at 503-229-5072 or Tom Roick at 503-229-5502. We hope to continue working cooperatively with the Port of Portland on the future beneficial uses of dredged materials.

Sincerely,

A handwritten signature in black ink that reads "Audrey M O'Brien". The signature is written in a cursive style with a large, looped "A" and "B".

Audrey O'Brien, Manager
Northwest Region Environmental Partnerships

Ecc: Annette Price, Port of Portland Annette.Price@portofportland.com
Michelle Hollis, Port of Portland Michelle.Hollis@portofportland.com
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