

EXHIBIT I

SOILS

OAR 345-021-0010(1)(i)

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I.1 INTRODUCTION

OAR 345-021-0010(1)(i) *Information from reasonably available sources regarding soil conditions and uses in the analysis area, providing evidence to support findings by the Council as required by OAR 345-022-0022, including:*

I.2 IDENTIFICATION AND DESCRIPTION OF SOIL TYPES

OAR-345-021-0010(1)(i)(A) *Identification and description of the major soil types in the analysis area.*

Response: The near surface soils at the project site and in its vicinity were identified using the U.S. Natural Resources Conservation Service (NRCS) Soil Survey of Sherman County, Oregon (NRCS, 1999). The soils in the project area are grouped into five General Soil Units(GSU) – Walla Walla-Anderly, Wato Anders, Wrentham-Lickskillet-Rock Outcrop, Lickskillet-Nansene, and Mikkalo-Ritzville. Each of these general soil units is comprised of several soil series units, which are mapped at a greater level of detail but share relatively similar spatial coverage and engineering properties as the more General Soil Unit. Figure J-5 of Exhibit J shows the soil series map and Table I-1 provides a list of soil series within the project site and vicinity.

The Walla Walla-Anderly series soils are extensive on mesas in the north-central part of Sherman County in mostly flat and gently sloping areas. They have formed from loess over basalt in a 12- to 13-inch precipitation zone. This GSU is approximately 73 percent Walla Walla soils and 22 percent Anderly soils. The rest is soils of minor extent. Walla Walla soils are very deep or deep and are well drained. The surface layer is very dark brown silt loam. The subsoil is dark brown silt loam. Anderly soils are moderately deep and well drained. The surface layer is very dark grayish brown silt loam. The subsoil is dark brown silt loam. Of minor extent in this unit are very deep Endersby soils on terraces, very deep Hermiston soils on flood plains, and shallow Kuhl soils on north-facing canyonsides. The soils in this unit are used mainly for wheat, barley, alfalfa hay, and as pasture. Areas too steep for cultivation are used for livestock grazing and as wildlife habitat (NRCS, 1999).

The Wato Anders series soil are extensive on mesas in the northwestern part of Sherman County in gently sloping and steep areas. They have formed from loess over basalt in a 12- to 13- inch precipitation zone. This GSU is approximately 82 percent Wato soils and 10 percent Anders soils. The rest is soils of minor extent. Wato soils are very deep and well drained. The surface layer is very dark brown very fine sandy loam. The subsoil is dark brown very fine sandy loam. Anders soils are moderately deep and well drained. The surface layer is very dark grayish brown very fine sandy loam. The subsoil is dark brown very fine sandy loam, silt loam, or gravelly silt loam. Of minor extent in this unit are very deep Quincy soils on dunes and terraces adjacent to the Columbia River and its tributaries. The soils in this unit are used mainly for wheat and barley grown in a grain-summer fallow system and for alfalfa hay. Areas too steep for cultivation are used for livestock grazing and as wildlife habitat (NRCS, 1999).

Wrentham-Lickskillet-Rock Outcrop series soils are moderately deep to shallow, well drained silt loam and very stony loam that formed over basalt and in residuum derived from basalt in an 11- to 12-inch precipitation zone. They occur mainly in canyons. This map unit is adjacent to the Deschutes and John Day Rivers, in the southern part of the county. This map unit consists of about 30 percent Wrentham soils, 30 percent Lickskillet soils, and 26 percent Rock outcrop. Wrentham soils are moderately deep and well drained. The surface layer is very dark brown silt loam. The subsoil is dark brown extremely cobbly silt loam. Lickskillet soils are shallow and well drained. The surface layer is very dark grayish brown very stony loam. The upper part of the subsoil is dark brown very gravelly loam, and the lower part is dark brown very gravelly clay loam, very gravelly loam, or very cobbly loam. Rock outcrop consists of areas of exposed bedrock on the shoulders and convex side slopes of very steep canyons. The soils in this unit are used mainly for livestock grazing and as wildlife habitat (NRCS, 1999).

Lickskillet-Nansene series soils are composed of shallow to deep, well drained, very stony loam and silt loam that have formed in residuum derived from basalt and in loess over basalt in a 12- to 13-inch precipitation zone. This map unit is located in the northern part of Sherman County. It is about 45 percent Lickskillet soils and 12 percent Nansene soils. The rest consists of soils of minor extent. Lickskillet soils are shallow and well drained. The surface layer is very dark grayish brown very stony loam. The upper part of the subsoil is dark brown very gravelly loam, and the lower part is dark brown very gravelly clay loam, very gravelly loam, or very cobbly loam. Nansene soils are deep and well drained. The surface layer and subsoil are very dark brown silt loam. The substratum is dark brown silt loam. Of minor extent in this unit are very shallow Bakeoven soils on ridgetops and benches of canyons, very deep Sagemoor soils on dissected terraces, and moderately deep Wrentham soils on north-facing canyonsides. The soils in this unit are used mainly for livestock grazing and as wildlife habitat (NRCS, 1999).

The Mikkalo-Ritzville GSU consists of moderately deep and deep, well-drained silt loam that has formed in loess over basalt in a 9- to 11-inch precipitation zone, typically on mesas. This map unit is in the northeastern corner of the survey area. It is about 56 percent Mikkalo soils and 38 percent Ritzville soils. The rest is soils of minor extent. Mikkalo soils are moderately deep and well drained. The surface layer is very dark grayish brown silt loam. The subsoil is dark brown, calcareous silt loam. Ritzville soils are deep and well drained. The surface layer is dark brown silt loam. The subsoil is dark yellowish brown, calcareous silt loam. Of minor extent in this unit are shallow Lickskillet Soils. The soils in this unit are used mainly for wheat and barley grown in a grain-summer fallow system. Areas too steep for cultivation are used for livestock grazing and as wildlife habitat (NRCS, 1999).

I.3 IDENTIFICATION AND DESCRIPTION OF LAND USES

OAR-345-021-0010(1)(i)(B) *Identification and description of current land uses in the analysis area, such as growing crops, that require or depend on productive soils.*

Response: Land uses within and surrounding the site consist of private agricultural land generally used for dryland wheat production. Permanent project facilities will occupy

approximately 96 acres of agricultural land and 8 acres of non-agricultural land. Temporary impacts from construction will disturb an additional 709 acres of agricultural land and 334 acres of non-agricultural land.

I.4 IDENTIFICATION AND ASSESSMENT OF IMPACTS TO SOILS

OAR 345-021-0010 (1)(i)(C) *Identification and assessment of significant potential adverse impact to soils from construction, operation, and retirement of the facility, including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.*

Response: Unavoidable impacts to soils within the site boundary will result from placement of permanent project facilities such as gravel roads and concrete pads on approximately 104 acres. Additionally, facility construction will temporarily disturb soils on up to 1040 acres. These soil impacts will be limited according to the same methods identified in the ASC. Where temporary impacts would occur in cultivated areas, the approximately three feet of top soil would be salvaged and stockpiled in windrows. The windrows would be protected with plastic sheeting or mulch. Upon removal of temporary features, subsoils would be cultivated to a depth of at least 12 inches (except where bedrock prohibits archiving this depth), then salvaged topsoil would be redistributed to match adjacent grades. There are no cooling towers or land application of effluent. Because the quantities of chemical use will be minimal, the risk of spills is minor; appropriate measures will be taken to clean up and restore the area if any spill should occur.

I.5 DESCRIPTION OF PROPOSED MITIGATION MEASURES

OAR 345-021-0010(1)(i)(D) *A description of any measures the Applicant proposes to avoid or mitigate adverse impact to soils.*

Response: Direct permanent impacts to soils due to construction of access roads, turbine foundations, laydown areas, underground collectors and other features will be unavoidable. Construction of all features of the Project will be in compliance with an amended NPDES 1200-C construction permit (see Attachment I-1 for the Application). Measures outlined in the existing Erosion Control Plan submitted with the ASC will be implemented to minimize soil impacts and erosion. During retirement activities, turbines and turbine pads and unwanted roads will be removed, and the soils restored to farmable condition or habitat. This may require the import of appropriate topsoil as it is not practical to stockpile topsoil for the duration of the facilities operation.

I.6 MONITORING PROGRAM

OAR 345-021-0010(1)(i)(E) *The Applicant's proposed monitoring program, if any, for adverse impact to soils during construction and operation.*

Response: Monitoring of soil-disturbing activities during construction will be in accordance with the 1200-C permit; during operations, the Applicant will visually inspect project facilities periodically.

ATTACHMENT I-1
NPDES Permit Application



NPDES #1200-C Permit Application Form

Oregon Department of Environmental Quality
APPLICATION FOR NEW NPDES GENERAL PERMIT #1200-C
For stormwater discharges to surface waters from construction activities disturbing 1 acre or more.

Please answer all questions. No line may be left blank. An incomplete application will not be processed and will be returned. If the information requested is not applicable or not yet available, please indicate as such.

A. PROJECT INFORMATION

<p>1. <u>BP Alternative Energy North America Inc.</u> Applicant (Owner, Developer, or General Contractor)</p> <p><u>Kelly O'Brien</u> Contact Name</p> <p><u>700 Louisiana St. Suite 3300</u> Address</p> <p><u>Houston</u> <u>Texas</u> <u>77002</u> City State Zip</p> <p><u>(713) 354-2157</u> _____ Telephone E-Mail Address</p>	<p>2. If fee invoicing is different than Applicant, provide contact info: <u>BP Alternative Energy North America Inc.</u> <u>Attn Scanning Dept.</u></p> <p>Invoice Name</p> <p><u>P. O. Box 22024</u> Address</p> <p><u>Tulsa</u> <u>OK</u> <u>74121</u> City State Zip</p> <p>_____ _____ Telephone E-Mail Address</p>
<p>3. <u>David Evans and Associates, Inc</u> Architect/Engineering Firm (Erosion & Sediment Control Plan)</p> <p><u>Dana Siegfried</u> Project Manager</p> <p><u>(503) 499-0369</u> <u>dns@deainc.com</u> Telephone E-Mail Address</p>	<p>4. <u>the inspector will be selected by the contractor</u> Applicant's Designated Erosion and Sediment Control Inspector</p> <p>_____ _____ Contact Name</p> <p>_____ _____ Telephone E-Mail Address</p>
<p>5. <u>Golden Hills Wind Project</u> Name of Project</p> <p>_____ _____ Address or Cross Street</p> <p><u>Wasco</u> <u>Oregon</u> City State Zip</p> <p><u>Sherman County</u> County</p>	<p>6. Nature of the Construction Activity</p> <p><input type="checkbox"/> Single Family (SIC Code 1521) <input type="checkbox"/> Multi-Family Residential (SIC Code 1522) <input type="checkbox"/> Commercial (SIC Code 1542) <input checked="" type="checkbox"/> Industrial (SIC Code 1541) <input type="checkbox"/> Highway (SIC Code 1611) <input type="checkbox"/> Utilities (SIC Code 1623): _____ <input type="checkbox"/> Other: _____</p>
<p>7. Site Location by Latitude and Longitude:</p> <p>Latitude: <u>45</u> / <u>58</u> / <u>0.98N</u> Degrees Minutes Seconds</p> <p>Longitude: <u>120</u> / <u>56</u> / <u>1.46W</u> Degrees Minutes Seconds</p>	<p>8. Project Size:</p> <p>Total Site Acreage (acres): <u>approximately 30,100</u></p> <p>Total Construction Area (acres): <u>1147 acres</u></p> <p>Disturbed Area for this phase, if multiple phases: <u>1147 acres</u></p> <p>Total Number of Lots: _____</p>

DEQ USE ONLY

App. #: _____ File #: _____ LLID #: _____ River Mile: _____
Date Received: _____ Amount: _____ Check Name: _____ Check #: _____
Deposit #: _____ Receipt #: _____ Legal Name Confirmed:

A. PROJECT INFORMATION Continued

9. Runoff from proposed construction activities goes to:
- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Creek/Stream: _____ | <input type="checkbox"/> Ditch: _____ |
| <input type="checkbox"/> Municipal Storm Sewer or Drainage System | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Infiltration device | |
10. Proposed site runoff discharges directly to, or into a storm sewer or drainage system that discharges to, a Total Maximum Daily Load (TMDL) or 303(d) listed water body for turbidity or sedimentation (if applicable).


B. LAND USE COMPATIBILITY STATEMENT

Attach the *original* and complete Land Use Compatibility Statement (LUCS) signed by the local land use authority. The application will not be processed unless the local land use authority approves it and it meets statewide planning goals. (See Attachment C for the LUCS statement)

C. SIGNATURE OF LEGALLY AUTHORIZED REPRESENTATIVE

- The legally authorized representative *must* sign the application. The following are authorized to sign the document:
- ◆ **Corporation** — president, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million that is assigned or delegated in accordance to corporate procedure to sign such documents
 - ◆ **Partnership** — General partner
 - ◆ **Sole Proprietorship** — Owner. If more than one person is the sole proprietor, each person must sign the form.
 - ◆ **City, County, State, Federal, or other Public Facility** — Principal executive officer or ranking elected official
 - ◆ **Limited Liability Company** — Member
 - ◆ **Trusts** — Acting trustee
- Please see 40 CFR 122.22 for more detail, if needed.

I hereby certify that the information contained in this application is true and correct to the best of my knowledge and belief. In addition, I agree to pay all permit fees required by Oregon Administrative Rules 340-045. This includes a renewal application fee to renew the permit and a compliance determination fee invoiced annually by DEQ to maintain the permit.

<p><u>Robert L. Lukefahr</u></p> <p>Name of Legally Authorized Representative (Type or Print)</p>	<p><u>President</u></p> <p>Title</p>
<p></p> <p>Signature of Legally Authorized Representative</p>	<p><u>July 14, 2007</u></p> <p>Date</p>

- In order to authorize permit registration, the following must be completed and submitted to DEQ office listed below or to a DEQ Agent (see Attachment A for list of Agents):**
- Signed Application form.
 - Land Use Compatibility Statement with signature of the local land use authority
 - Stormwater Erosion and Sediment Control Plan Narrative
 - Stormwater Erosion and Sediment Control Plan Drawings
 - \$670 fee to the appropriate DEQ regional office and make the check payable to DEQ of Environmental Quality. If you are sending your application to a DEQ Agent, check with the DEQ Agent for the appropriate fees and make check payable to the DEQ Agent.

DEQ Northwest Region 2020 SW 4 th Ave., Suite 400 Portland, OR 97201-4987 503-229-5263 or 1-800-452-4011	DEQ Western Region 750 Front St. NE, Suite 120 Salem, OR 97301-1039 503-378-8240 or 1-800-349-7677	DEQ Eastern Region 700 SE Emigrant, Suite 330 Pendleton, OR 97801 541-276-4063 or 1-800-452-4011
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DEQ AGENT

(Note: See Table A-2 for appropriate local Agent contact information.)



NPDES General Permit 1200-C Application Instructions For Construction Activities

A. PROJECT INFORMATION

- A1 Enter the legal name of the applicant. Permit coverage will be issued to this entity. This is the person, business, public organization, or other entity responsible for assuring that erosion and sediment controls are in place and in working order through the life of the project. This must be the **legal** Oregon name (i.e., Acme Products, Inc.) or the **legal** representative of the company if it operates under an assumed business name (i.e., John Smith, dba Acme Products). The name must be a legal, active name registered with the Oregon Department of Commerce, Corporation Division in Salem at 503-378-4752 or http://egov.sos.state.or.us/br/pkg_web_name_srch_inq_login, unless otherwise exempted by their rules. If the name of the applicant is not registered with the Corporation Division and the applicant is a partnership or doing business as a corporate entity, attach legal documents that verify the entity's existence with the application. The applicant may not use an assumed business name.
- To streamline administration and provide continuous permit coverage, the permit may be transferred from one party to another. For example, if a contractor feels that they will not be able to get a permit before the projected start date, the developer may apply for a permit and then transfer the permit over to the contractor. The transfer fee is \$60. Transfer forms are available from DEQ or at <http://www.deq.state.or.us/wq/wqpermit/PmtTfrAppl.pdf>.
- A2 Enter invoicing information for annual fee billing if different from the Applicant in A1 (e.g., "Invoice To: Business Office – Accounts Payable"). Provide permanent address or P.O. Box, if applicable.
- A3 Provide the contact information for the Architect or Consulting Engineer who designed the Erosion and Sediment Control Plan (ESCP) so that they may be contacted should questions concerning the ESCP Drawings or Narrative arise.
- A4 Provide information on the Erosion and Sediment Control Inspector. This is a person that works for the applicant and not a government employee. If the inspector has not been selected yet, please provide the name of consultant who prepared the Erosion and Sediment Control Plan (ESCP). Upon designating an inspector(s), submit to the DEQ or the Agent an Action Plan, which is an addendum to the ESCP, that identifies their name(s), contact information and training and experience as required in Schedule A, condition 6(b) of the permit.
- A5 Provide the common name of the site. What is it to be called? Provide the location of the site with respect to cross roads in the area or a street address if appropriate.
- A6 Place a check mark in the box that best describes the use for which the site is being constructed. If other is selected, describe the use.
- A7 Enter the latitude and longitude of the approximate center of the facility or site in degrees/minutes/seconds to the nearest 15 seconds. Latitude and longitude can be obtained from United States Geological Survey (USGS) quadrangle topographic maps by calling toll-free at 1-888-ASK-USGS (1-888-275-8747) or by using DEQ's location finder web site at <http://deq12.deq.state.or.us/website/findLoc/data.asp>. In using DEQ's location finder web site, if you do not know your address, go to "locate place" on the left side of the page and click on "latitude and longitude" and then click on "map it." To get the longitude and latitude to appear you may have to zoom in and re-center until you find the area. You may want to turn off DEQ interests to eliminate the yellow dots and you may want to turn on the Aerial Photos to help you locate the site. The latitude and longitude will be indicated on the left side of the page. Instructions for obtaining latitude and longitude from topographic maps may be obtained at <http://www.deq.state.or.us/wq/wqpermit/LatLongInstr.pdf>.
- A8 Provide property size information. What is the total acreage of the site? Provide an estimate, in the case of a multi-phased project, or if all of the property has not yet been purchased.
- A9 Indicate where the runoff goes after leaving the site during construction. If it goes in to the City storm drain system, provide best estimate of the receiving stream in addition to checking the Municipal Storm Sewer box.
- A10 Indicate whether stormwater runoff will be discharging directly to, or into a storm sewer or drainage system that discharges to "impaired" waters listed on the 303(d) list or are covered by a Total Maximum Daily Load (TMDL) for sediment or turbidity. A map and table identifying "impaired" water bodies and affected river miles for sediment or turbidity is available on DEQ's web site at: <http://www.deq.state.or.us/wq/stormwater/docs/tmdl303dsedturblist.pdf>.

B. LAND USE COMPATIBILITY STATEMENT

Land Use Compatibility Statement (LUCS) must be signed by local planning department. If there are any conditions placed on the land use approval, the findings must be included. The LUCS form may be obtained from DEQ at <http://www.deq.state.or.us/pubs/permithandbook/lucs.htm>.

C. SIGNATURE

The legally authorized representative for the applicant must sign the application. The following are authorized to sign the document

- ◆ **Corporation** — president, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million that is assigned or delegated in accordance to corporate procedure to sign such documents.
- ◆ **Partnership** — General partner.
- ◆ **Sole Proprietorship** — Owner. If more than one person is the sole proprietor, each person must sign the form.
- ◆ **City, County, State, Federal, or other Public Facility** — Principal executive officer or ranking elected official.
- ◆ **Limited Liability Company** — Member
- ◆ **Trusts**— Acting trustee

APPLICATION SUBMITTAL AND FEES

If you have a DEQ Agent in the area where your project is located, send the application to the DEQ Agent (See the DEQ Agent list in Attachment A). Otherwise, send the application to the DEQ office in your area (See DEQ office locations in Attachment B).

The permit application fee is **\$670**, which includes a \$60 filing fee, \$280 application processing fee, and \$330 annual fee. The permittee will also be billed an annual fee for every year the permit is in effect. If you have a DEQ Agent in the area, where your project is located contact them and verify fees. (See Attachment A for list of Agents)

In order to authorize permit registration, the following must be completed and submitted to DEQ office or a DEQ Agent (see Attachment A for list of Agents):

- Application form with original signature
- Land Use Compatibility Statement with original signature of the local land use authority
- Stormwater Erosion and Sediment Control Plan Narrative
- Stormwater Erosion and Sediment Control Plan Drawings
- \$670 fee to the appropriate DEQ regional office and make the check payable to the Department of Environmental Quality. If you are sending your application to a DEQ Agent, check with the Agent for the appropriate fees.

Erosion and Sediment Control Plan Worksheet

Project Name: Golden Hills Wind Farm

Prepared By: Sean P. Sullivan, L.A. (Oregon No. 412)

Company Name: David Evans and Associates, Inc.

Telephone: 503-223-6663

Please answer the following questions as indicated. If needed, additional space is provided for you at the end of this form. You may also attach any information you feel is pertinent to the project.

1. Is your Erosion and Sediment Control Plan for an activity that covers 20 acres or more of disturbed land?

YES NO

If yes, the plan must be prepared by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society). Please complete question #4.

2. Does your Erosion and Sediment Control Plan require engineered facilities such as settling basins and/or diversion structures?

YES NO

If yes, the plan must be prepared by an Oregon Registered Professional Engineer.

3. If you answered "YES" to question #1 or 2, please provide the following information and use the space provided to imprint your seal.

Name: Sean P. Sullivan, L.A. (Oregon No. 412)

Address: David Evans and Associates, Inc.

2100 SW River Parkway

Portland, OR 97201

Telephone: 503.223.6663

Imprint Seal Above

4. Describe the nature of the construction activity: The Applicant proposes to construct a wind generation project in Sherman County, Oregon. The proposed project will involve construction of up to 267 turbines and generate up to 400 MW of power.

5. Describe in detail the phases of construction and the erosion control measures to be implemented during each phase. Also complete the table on the next page to assist with the narrative description.

See Attached.

Fill in the year(s) and the month(s) at the top of the chart during which the project will occur, and check the appropriate boxes to indicate when the items in the left column will be performed and/or installed. You may photocopy the chart if your project will last longer than 12 months.

YEAR: 2008	2008											
MONTH:	1	2	3	4	5	6	7	8	9	10	11	12
CLEARING				x								
EXCAVATION				x	x							
GRADING				x	x	x	x	x				
CONSTRUCTION				x	x	x	x	x	x	x	x	x
EROSION CONTROLS:												
Vegetative Buffer Strips				x	x	x	x	x	x	x	x	x
Mulching				x	x	x	x	x	x	x	x	x
Netting/Mats/Blankets												
Temporary Seeding												
Permanent Seeding										x	x	x
Sod Stabilization												
Other: Graveling				x	x	x	x	x	x	x	x	x
SEDIMENT CONTROLS:												
Silt Fencing				x	x	x	x	x	x	x	x	x
Straw Bales				x	x	x						
Sediment Traps				x	x	x						
Sediment Basins												
Storm Inlet Protection												
Drainage Swales												
Check Dams												
Contour Furrows												
Terracing												
Pipe Slope Drains												
Rock Outlet Protection												
Other: Sediment moat				x	x	x						

6. Describe the origin and nature of fill material to be used:

Native soils will be excavated for construction of the concrete turbine pads and temporary staging areas. These soils will be stockpiled until after construction when they will be redistributed over the temporarily disturbed areas.

7. Describe the soils present on the site and erosion potential of the soils.

Soil type(s): The near surface soils at the project area were identified using the U.S. Soil Conservation Service (SCS) Soil Survey of Sherman County, Oregon. The near surface soils in the project area are grouped into five General Soil Units: Walla Walla-Anderly, Wato Anders, Wrentham-Lickskillet-Rock Outcrop, Lickskillet-Nansene, and Mikkalo-Ritzville.

The Walla Walla-Anderly series soils are extensive on mesas in the north-central part of Sherman County in mostly smooth and gently sloping areas. They have formed from loess over basalt in a 12- to 13-inch precipitation zone. This General Soil Unit is approximately 73 percent Walla Walla soils and 22 percent Anderly soils. The rest is soils of minor extent. Walla Walla soils are very deep or deep and are well drained. The surface layer is very dark brown silt loam. The subsoil is dark brown silt loam. Anderly soils are moderately deep and well drained. The surface layer is very dark grayish brown silt loam. The subsoil is dark brown silt loam. Of minor extent in this unit are very deep Endersby soils on terraces, very deep Hermiston soils on flood plains, and shallow Kuhl soils on north-facing canyon sides. The soils in this unit are used mainly for wheat and barley grown in a grain-summer fallow system, for alfalfa hay, and as pasture. Areas too steep for cultivation are used for livestock grazing and as wildlife habitat.

The Wato Anders series soil are extensive on mesas in the northwestern part of Sherman county in gently sloping and steep areas. They have formed from loess over basalt in a 12- to 13- inch precipitation zone. This General Soil Unit is approximately 82 percent Wato soils and 10 percent Anders soils. The rest is soils of minor extent. Wato soils are very deep and well drained. The surface layer is very dark brown very fine sandy loam. The subsoil is dark brown very fine sandy loam. Anders soils are moderately deep and well drained. The surface layer is very dark grayish brown very fine sandy loam. The subsoil is dark brown very fine sandy loam, silt loam, or gravelly silt loam. Of minor extent in this unit are very deep Quincy soils on dunes and terraces adjacent to the Columbia River and its tributaries. The soils in this unit are used mainly for wheat and barley grown in a grain-summer fallow system and for alfalfa hay. Areas too steep for cultivation are used for livestock grazing and as wildlife habitat.

Wrentham-Lickskillet-Rock Outcrop series soils are moderately deep and shallow, well drained silt loam and very stony loam that formed in loess over basalt and in residuum derived from basalt in an 11- to 12-inch precipitation zone. They occur mainly in canyons. This map unit is adjacent to the Deschutes and John Day Rivers, in the southern part of the county. This map unit consists of about 30 percent Wrentham soils, 30 percent Lickskillet soils, and 26 percent Rock outcrop. Wrentham soils are moderately deep and well drained. The surface layer is very dark brown silt loam. The subsoil is dark brown extremely cobbly silt loam. Lickskillet soils are shallow and well drained. The surface layer is very dark grayish brown very stony loam. The upper part of the subsoil is dark brown very gravelly loam, and the lower part is dark brown very gravelly clay loam, very gravelly loam, or very cobbly loam. Rock outcrop consists of areas of exposed bedrock on the shoulders and convex side slopes of very steep canyons. The soils in this unit are used mainly for livestock grazing and as wildlife habitat.

Lickskillet-Nansene series soils are composed of shallow and deep, well drained very stony loam and silt loam that have formed in residuum derived from basalt and in loess over basalt in a 12- to 13-inch precipitation zone. This map unit is located in the northern part of Sherman County. It is about 45 percent Lickskillet soils and 12 percent Nansene soils. The rest consists of soils of minor extent. Lickskillet soils are shallow and well drained. The surface layer is very dark grayish brown very stony loam. The upper part of the subsoil is dark brown very gravelly loam, and the lower part is dark brown very gravelly clay loam, very gravelly loam, or very cobbly loam. Nansene soils are deep and well drained. The surface layer and subsoil are very dark brown silt loam. The substratum is dark brown silt loam. Of minor extent in this unit are very shallow Bakeoven soils on ridgetops and benches of canyons, very deep Sagemoor soils on dissected terraces, and moderately deep Wrentham soils on north-facing canyon sides. This soil unit is used mainly for livestock grazing and as wildlife habitat.

The Mikkalo-Ritzville General Soil Unit consists of moderately deep and deep, well drained silt loam that has formed in loess over basalt in a 9- to 11-inch precipitation zone, typically on mesas. This map unit is in the northeastern corner of the survey area. It is about 56 percent Mikkalo soils and 38 percent Ritzville soils. The rest is soils of minor extent. Mikkalo soils are moderately deep and well drained. The surface layer is very dark grayish brown silt loam. The subsoil is dark brown, calcareous silt loam. Ritzville soils are deep and well drained. The surface layer is dark brown silt loam. The subsoil is dark yellowish brown, calcareous silt loam. Of minor extent in this unit are shallow Lickskillet Soils. The soils in this unit are used mainly for wheat and barley grown in a grain-summer fallow system. Areas too steep for cultivation are used for livestock grazing and as wildlife habitat.

b) Erosion Potential: Based on the soil types present, soil erosion potential at the facility site varies, being high in some areas and not high in others (USDA 1964; Table 2).

Table 2. Detailed soil map units present on project site and their properties.

Soil Series	Drainage Class	Erosion Potential
Anderly silt loam, 1 to 7 percent slopes	Well drained	Highly
Anderly silt loam, 7 to 15 percent slopes	Well drained	Highly
Anderly silt loam, 15 to 35 percent south slopes	Well drained	Highly
Anderly silt loam, 15 to 35 percent north slopes	Well drained	Highly
Anders very fine sandy loam, 15 to 35 percent slopes	Well drained	Highly
Endersby fine sandy loam, 0 to 3 percent slopes	Somewhat excessively drained	Not highly
Endersby-Hermiston complex, 0 to 3 percent slopes	Well drained	Not highly
Kuhl very stony very fine sandy loam, 3 to 20 percent slopes	Well drained	Highly
Kuhl-Rock outcrop complex, 20 to 40 percent north slopes	Well drained	Highly
Lickskillet-Rock outcrop complex, 40 to 70 percent south slopes	Well drained	Not highly
Lickskillet very stony loam, 7 to 40 percent south slopes	Well drained	Not highly
Lickskillet-Bakeoven complex, 2 to 20 percent slopes	Well drained	Not highly
Mikkalo silt loam, 2 to 7 percent slopes	Well drained	Highly
Mikkalo silt loam, 7 to 15 percent slopes	Well drained	Highly
Nansene-Rock outcrop complex, 35 to 70 percent north slopes	Well drained	Not highly
Rock outcrop-Rubble land-Lickskillet complex, 50 to 80 percent south slopes	Well drained	Not highly
Walla Walla silt loam, 1 to 7 percent slopes	Well drained	Not highly
Walla Walla silt loam, 7 to 15 percent slopes	Well drained	Not highly
Walla Walla silt loam, 15 to 35 percent north slopes	Well drained	Not highly
Walla Walla silt loam, 15 to 35 percent south slopes	Well drained	Not highly
Wato very fine sandy loam, 3 to 7 percent slopes	Well drained	Not highly
Wato very fine sandy loam, 7 to 15 percent slopes	Well drained	Not highly
Wato very fine sandy loam, 15 to 35 percent north slopes	Well drained	Not highly
Riverwash*		

8. Submit two copies of site maps and constructions plans. The following checklist is provided for your convenience:

IS THE FOLLOWING INFORMATION PROVIDED AND DETAILED ON THE MAPS SUBMITTED TO THE DEQ?	YES	NO	NOT APP.	EXHIBIT
a. The complete development, including any phases.	x			Figure C-2
b. The areas of soil disturbance on the site, including areas that will be cleared, graded or excavated.	x			Figure C-2
c. The areas of cut and fill.	x			Figure C-2
d. The drainage patterns and slopes of the land both before and after major grading activities.	x			Figure C-2
e. The location of existing and proposed storm drains and outfalls.			x	
f. The receiving water body for drainage from the site.	x			Figure C-2
g. The areas used for storage of soils or wastes. (laydown areas)	x			Figure C-2
h. The location of all erosion and sediment control facilities and/or structures.			x	
i. The areas on the site where vegetative practices will be used.			x	
j. The location of existing and future impervious structures and areas.	x			Figure C-2
k. The location and name of all springs, wetlands, and surface waterbodies near the project.	x			Figure C-2
l. The boundaries of the 100 year flood plain if known.			x	
m. The location of graveled access entrance and exit drives and graveled parking areas to be used by construction vehicles. (at each turbine string entrance)	x			Figure C-2
n. The locations of graveled roads traveled by more than 25 vehicles per day.	x			Figure C-2
o. Installation details of vegetative and other erosion control practices (vegetative buffer strips, seeding, mulching, erosion blankets, etc.).			x	
p. Installation details of sediment control practices (silt fences, straw bale dikes, storm drain inlet protection, etc.). (per DEQ BMP for Stormwater Discharges Associated with Construction Activities guide)	x			
q. List the temporary and permanent vegetative seed in the seed mix. *	x			
r. If concrete work is done on site, then note the concrete truck washout procedure used and locate any sump, if used, on the drawing.			x	

* No temporary seeding is proposed because of arid conditions during construction period. Mulch will be used instead. Permanent seeding will be completed in Fall 2008.

9. Describe the truck drippage precautions you will take to prevent discharge of water from trucks hauling wet soils or stone excavated from the site: See Attached.

10. Describe the procedures you will use to assure prompt maintenance and repair of graded surfaces and erosion and sediment control measures: See Attached.

Attachments

5. Describe in detail the phases of construction and the erosion control measures to be implemented during each phase. Also complete the table on the next page to assist with the narrative description.

Response: Construction activities for the project are anticipated to begin in the second quarter of 2008 and conclude in the fourth quarter of 2008. Phases of construction and the erosion control measures (best management practices or “BMPs”) to be implemented during each phase are generally as follows:

Mobilization, Staging, and Laydown

It is anticipated that one or more general contractors would mobilize to the project area and would require staging areas for temporary construction offices, temporary laydown facilities, and materials staging (Figure C-2). These staging areas would be used to park construction vehicles, construction employees’ personal vehicles, and other construction equipment.

Laydown areas will be required during tower construction and turbine installation. Tower sections, nacelles, blades, and appurtenances would be temporarily stored in laydown facilities as each turbine is constructed. Fueling and chemical/solvent storage will occur at staging areas at each turbine string. At the end of the turbine string, an area approximately 300 feet in diameter (1.6 acres) would be needed to allow construction equipment to turn around.

BMPs anticipated for use during this phase include silt fences placed on the down slope side of the staging areas, gravel construction entrances, gravel laydown facilities, and container and waste storage bins/dumpsters. Additionally, the following BMPs would also be developed to prevent or minimize the mixing of runoff with pollutants such as hydraulic fluid, fuel, and lubricants: written spill prevention and response procedures, employee training on spill prevention and proper disposal, emergency spill kits, and regular maintenance schedule for vehicles and equipment.

After completion of construction within the expanded site boundary, these temporary staging/laydown areas would be restored to their pre-construction conditions. Disturbed areas would be re-seeded to wheat or native grasses as appropriate to establish permanent vegetation. Silt fences and other BMPs would be removed once vegetation provides soil stabilization.

Road Construction

To the extent possible, existing roads would be used to minimize the need to construct new roads. New roads would be constructed to provide access to the turbine locations (Figure C-2). All unpaved roads used for construction purposes would be graveled or paved as appropriate, or effective BMPs would be placed on the road or down slope of the road to prevent the discharge of fugitive sediment in lieu of graveling.

A variety of BMPs would be used during road construction to control erosion and sedimentation. These BMPs may be used individually or in concert as site conditions and levels of disturbance warrant. BMPs for road construction include graveling, watering or applying other dust palliatives, preserving existing vegetation, silt fence, mulching, and reestablishing permanent vegetation. Silt fences would be removed once vegetation stabilized soils.

Underground Utility Construction

Underground electrical and communications cables would be placed in a trench approximately 2 feet wide and at least 3 feet deep, generally along the length of the proposed turbine access roads and County roads linking turbine strings to two collector substations within the Project. Topsoil would be stripped and stockpiled adjacent to the work area. The remaining trench excavation would be sidecast adjacent to the trench and later used as backfill. Upon the installation of electrical cables, and communications cables, the trench would be backfilled with native material and then top-dressed with the salvaged topsoil. The trench excavation would be reseeded with wheat or native seed as appropriate.

BMPs for underground utility construction include phasing the work as practical to minimize disturbance at any given time, preserving existing vegetation, and reestablishing permanent vegetation. If construction persists in the wet season, additional BMPs such as covering the sidecast and topsoil stockpiles would be considered.

Turbine Foundation Construction

It is anticipated that up to 267 turbine foundations would be designed by conventional methods including: (1) spread foundations below the loess (i.e., wind-formed soils), (2) drilled shaft foundations that support in the materials below the loess, (3) removal of the loess and replacement with compacted fill, and/or (4) in situ improvements of the loess soils. One or more of these approaches have been used in the design and construction of the foundations at nearby projects and will be used to design the foundations for the project.

Construction would likely require excavation approximately nine to ten feet deep and approximately 50 feet in diameter. Excavated material would be stockpiled for use as backfill adjacent to the turbine pad for approximately 14 to 28 days while the concrete cures. Silt fences or sediment moats would be installed on the downslope side of stockpiles. Sediment moats are ditches dug around the perimeter of the stockpile with the excavation sidecast to the outboard side of the ditch to form a temporary dike. The temporary dike provides a physical barrier that traps sediment “in the moat” and prevents its discharge. Once the concrete cures, the stockpiled materials would be used for backfilling. The contractor would be responsible for locating a disposal site, which may include placing and cultivating the excess material on upland agricultural lands within the lease boundary for excess materials if saturated soils are encountered and must be hauled away from the site, loads would be drained on-site until dripping is reduced to minimize spillage on roads. Disturbed areas resulting from foundation and crane pad construction would be seeded to establish crops or native species as appropriate.

BMPs used as part of turbine foundation construction would include phasing the work as practical to minimize disturbance at any given time, preserving existing vegetation, graveled access road, draining saturated soils on site, silt fences, sediment moats, and reestablishing permanent vegetation. If construction persisted in the wet season, additional BMPs such as covering the stockpiles and heavy mulching would be considered. Silt fences would be removed once the stockpile has been removed and the disturbed areas stabilized with vegetation.

Tower and Rotor Assembly

Turbine tower pieces, nacelle, hub, blades and appurtenances would be transported by trucks to each turbine location and erected using a construction crane. The base tower section would be bolted to the foundation pedestal, the middle section would then be bolted to the base section, and the top section would then be bolted to the middle section. The nacelle is then lifted to the top of the tower and bolted in place. The rotor (hub and three blades) is assembled on the ground and then the rotor assembly is hoisted and attached to the turbine nacelle.

No additional BMPs would be required for this phase of construction. BMPs previously installed as part of road construction and/or turbine foundation construction should provide adequate erosion and sedimentation control.

Mitigation Site

Portions of the mitigation site may be plowed in preparation of habitat mitigation. A 100-foot wide vegetated filter strip will be left on the downslope side of the mitigation site, to prevent exposed soils from eroding.

Stormwater Management

Stormwater management will be ongoing through the life of the project. The use of water for construction practices (*e.g.*, dust suppression, road compaction) is not anticipated to generate runoff. Wastewater would not be discharged into wetlands or other adjacent resources. The area receives approximately 12 inches of precipitation annually, most of which occurs between October 1 and March 31. Stormwater runoff resulting from precipitation is anticipated to be minimal and would infiltrate onsite.

Demobilization

Demobilization would include final road grading, site cleanup, and decommissioning the erosion and sedimentation BMPs among other activities. The Applicant will remove all silt fences and other BMPs as appropriate and would end 1200-C permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occurred. Table 1 lists construction equipment typically used during wind project construction.

Table 1.- Equipment Typically Used for Wind Facility Construction

Equipment	Use
Bulldozer	Road and pad construction
Grader	Road and pad construction
Water trucks	Compaction, erosion and dust control

Table 1.- Equipment Typically Used for Wind Facility Construction

Roller/compactor	Road and pad compaction
Backhoe/trenching machine	Digging trenches for underground utilities
Excavator	Foundation excavation
Heavy duty rock trencher	Underground trenching
Truck-mounted drilling rig	Drilling power pole holes
Concrete trucks/concrete pumps	Pouring tower and other structure foundations
Cranes	Tower/turbine erection
Dump trucks	Hauling road and pad material
Flatbed & Low-bed trucks	Hauling towers, turbines and components, and construction equipment
Pickup trucks	General use and hauling minor equipment
Small hydraulic cranes/forklifts	Loading and unloading equipment
Four-wheel-drive all-terrain vehicles	Rough grade access and underground cable installation
Rough-terrain cranes / forklifts	Lifting equipment and pre-erection assembly

Additional Information

A revegetation plan describing revegetation methods and seedmixes is attached. Erosion and Sediment Control (ESC) BMPs will be installed according to the guidance provided in NPDES Storm Water Regulations for Construction Projects, December 2002.

In addition to the NPDES guidance, practices that can be used to control erosion of loess soils include seeding early in the spring, stubble-mulch tillage, and construction of terraces, diversions, and grassed waterways. Leaving crop residue near the surface helps conserve moisture, maintain tilth, and control erosion.

9. *Describe the truck drippage precautions you will take to prevent discharge of water from trucks hauling wet soils or stone excavated from the site:*

Because of the climate and soil types in the area, excessively wet soils and/or stone excavation are not anticipated. Therefore, truck drippage is not expected to be an issue. In the unlikely event of hauling wet soils or stone, trucks would be allowed to drain on-site before entering public right-of-way (i.e., county road system). If draining on-site is determined to be inadequate, the ESC Lead would coordinate additional BMPs to minimize truck drippage.

10. Describe the procedures you will use to assure prompt maintenance and repair of graded surfaces and erosion and sediment control measures.

Response: A copy of the ESC Plan (Plan) and all inspection reports (described below) for the Project would be retained on-site and made available to the Department of Environmental Quality, its agent, or the local municipality upon request. The contractor would designate an ESC Lead who would be responsible for implementing the ESC Plan and following through on all maintenance requirements. The ESC Lead would be a person with knowledge and experience in construction stormwater controls and management practices. The ESC Lead's contact information, including an emergency contact number, would be provided as part of the ESC Plan.

All roads, pads, trenched areas, stockpiles and disturbed areas resulting from facility construction would be inspected regularly and maintained to minimize erosion and sedimentation. For active sites, inspections would occur daily during stormwater runoff or snowmelt runoff and at least once every seven calendar days and within 24 hours after any storm event greater than 0.5 inches of rain in a 24-hour period. For inactive periods greater than seven days, inspections would occur once every two weeks. If a site is inaccessible due to adverse weather conditions, inspections would not occur, but the adverse weather conditions would be noted on the inspection report.

The inspections would document the following:

- Inspection date, inspector's name, weather conditions, and rainfall amount in the last 24 hours.
- List observations of all BMPs.
- At representative discharge point(s), document the quality of discharge for any turbidity, color, sheen, or floating materials.
- Recommended corrective actions required, if any.

The applicant would implement the following maintenance activities and guidelines:

- Significant amounts of sediment that leave the site would be cleaned up within 24 hours and placed back on the site or disposed of in a legal manner.
- Under no circumstances would sediment be intentionally washed into storm sewers or drainages unless it was to be captured by a BMP (e.g., basin insert) before entering receiving waters.
- For silt fences, the trapped sediment would be removed before it reaches one third of the above ground height of the fence.
- All erosion and sedimentation control BMPs not directly in the path of work would be installed before any land disturbance.
- All disturbed areas that would be revegetated with native species would be reseeded at appropriate intervals until a performance standard of 70 percent cover is met.
- Fertilizers would not be used when seeding native species, and would only be used in such a way to minimize nutrient-laden runoff when seeding wheat.
- If construction activities cease for 45 days or more, all disturbed areas would be stabilized using vegetation, heavy mulch, or other appropriate BMPs as necessary.
- All temporary erosion and sediment control measures will be removed within 30 days after final stabilization of the site. Final stabilization is deemed to have occurred when the impacted areas demonstrate 70% cover and the risk of erosion has been minimized.
- Adequate stockpiles of silt fences, straw bales, spill kits, and other measures as appropriate will be maintained on site for emergency situations and to allow for the prompt response for repairs.