THE WETLAND CORPS
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WETLAND INVENTORY AND HABITAT AND SPECIES REPORT OF THE PALMER PROPERTY

Kittitas County, Washington

Prepared For: Pacific Clean / O2 Compost
December 10, 2012

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Project# TWC13E107

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INTRODUCTION

The Wetland Corps was authorized by Mr. Larry Condon to perform a Wetland Inventory and to prepare an Analysis Report of The Palmer Property, located at 8860 Thorpe Prairie Road, in Cle Elum, Washington (Kittitas County). The Palmer ownership consists of five parcels. However, for the purpose of this report, only four of the five parcels will be addressed. The largest of the parcels is not addressed in this report as is isolated from the project site by the main branch of the KRD Canal. The main project site, which is a proposed to be a state of the art compost facility, lies mainly with in the 65.85 acre parcel (#236734) and partly within the 17.59 acre parcel (#206734). The remaining parcels are to act as buffer zones from the compost facility.

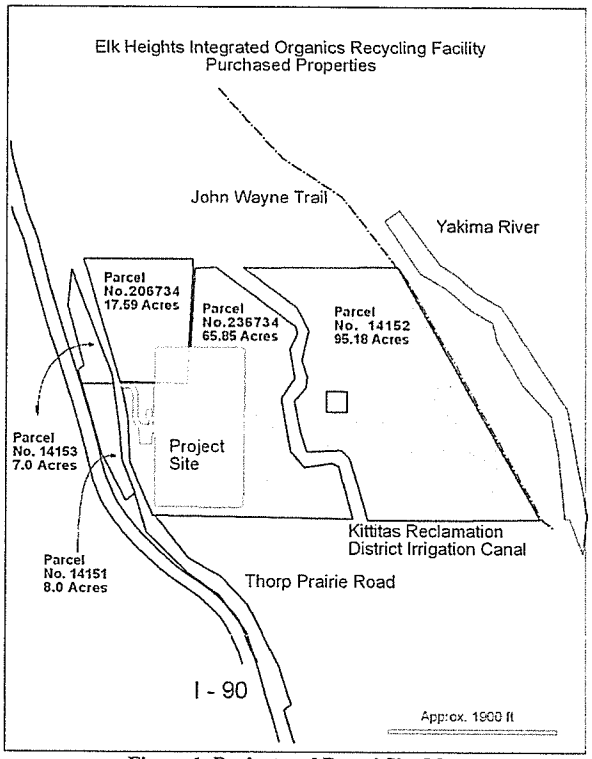


Figure 1. Project and Parcel Site Map

A second part of this report will address threatened and endangered species as it relates to the region and specifically to the project site.

METHODOLOGY

For the purposes of Federal, Washington State, and the Kittitas County jurisdictional oversight, methodology used for the wetland delineation is consistent with the wetland definition provided in paragraph 25a of the Washington State Wetlands Identification and Delineation Manual (Washington State Department of Ecology, 1997) and as amended by WAC 173-22-080: Wetland Delineation Manual. The sections below provide: (1) an introduction to the site; (2) a description of methods used in the field delineation; and, (3) technical results.

Review of Existing Information

Consistent with procedures detailed in the Washington State Wetlands Identification and Delineation Manual (Washington State Department of Ecology, 1997) preliminary information on the project site was gathered prior to the field review and delineation. General information sources included: United States Geological Service (USGS) topographic maps, United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and the Kittitas County critical areas regulations.

Field Delineation

Methodology used for wetland delineation (if necessary) is consistent with the technical approaches articulated in the 1997 Manual and there amended. This document is the wetland delineation manual that is used in determining wetland areas when applying state and local government regulations under the Shoreline Management Act and the Growth Management Act in Washington State.

The project site field work was conducted over the course of two days. The initial site visit was performed in October, 2012. A follow up visit was made in November 2012 , The time of year and recent precipitation history were considered in assessing the type and extent of any wetlands existing on site.

Specific field methodology used in determining the extent and location of wetland areas include:

- As part of the initial project site reconnaissance, the site was walked to determine the general extent and location of potential wetland areas in relation to property boundaries;
- Potential wetland and upland sample plots were established in the identified potential wetland areas and in the adjacent upland area; and
- Potential wetland boundaries (if identified) were delineated with flagging, by noting localized topography and vegetation patterns and comparing parameters of hydrology, soil, and vegetation with data collected at the wetland and upland sample plots.

WETLAND EVALUATION

The project area was investigated and data was collected at 4 sample plot locations. Data collected at each sample plot were entered onto a Routine Wetland Determination Data Form (Washington State Department of Ecology 1997). (Appendix A).

Any wetlands identified on the property would be classified and rated using the categories set forth in the new rating manual, *Washington State Wetland Rating System for Eastern Washington* (Hruby 2004). This system identifies various complexities within wetland structures, habitat attributes and various functions associated with wetlands.

GENERAL SITE CONDITIONS

The ownership is comprised of upland pasture areas with a variation in gradient (2%-8%) running mainly south to north and west to east, with some variation in topographic features. The subject property has been historically agricultural, and currently is utilized as grass hay and forage pasture. In the past different varieties of crops had been grown on the property. The main branch of the KRD canal runs along the northern boundary of the property, much of this canal is lined with concrete, and it is at a much lower elevation than the project site. No other irrigation laterals or other side ditches are located on the property. Due to the lack of irrigation water on the project site, it does not have seepage or other hydrology commonly found near large canals and other irrigation laterals. The lateral is highly channelized and maintained for entire north reach through the project site. There is also a maintenance road along the canal bank. The upland herbaceous communities are dominated by pasture grasses some common weeds. There are many overstory trees on the periphery of the project site, as well as some scrub shrub. Ponderosa pine trees dominate the overstory.

The main area of study consisted of the main 40 acres of the proposed project site, and any area that had lowest general topography. Since the National Wetland Inventory (NWI) Mapper did not show any of the project site as areas of potential wetland, the focus of the study was on topography, drainage patterns and any areas that revealed hydrophytic vegetation or species that are indicative of growing in areas of saturated soil. These areas are where soil data points were concentrated.

No surface inundation or saturated soils were observed at the time of field review, as were no indicators that the area may be seasonally inundated. Currently, there are several structures on the periphery of the proposed project site.

BACKGROUND INFORMATION

National Wetlands Inventory

The USFWS NWI map - Online wetlands mapper shows potential wetlands on the subject property (Appendix A).

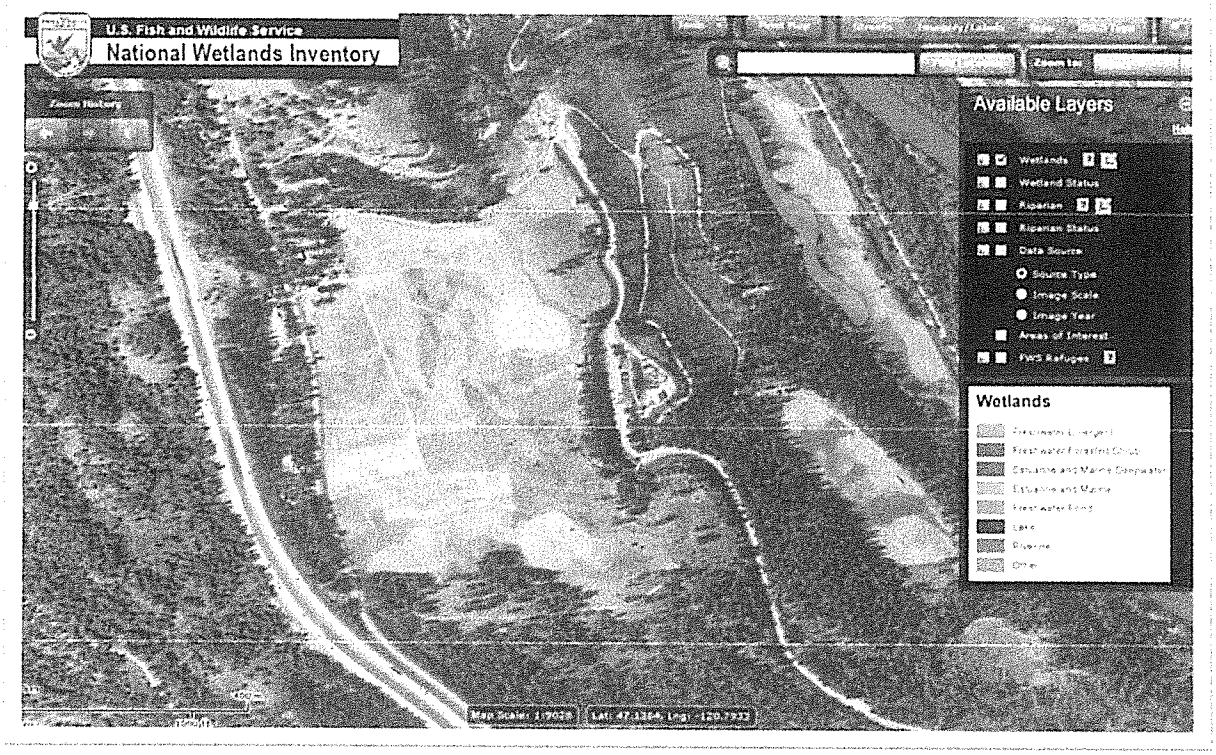


Figure 2. National Wetland Inventory Mapper

WETLAND INVENTORY RESULTS

Data was collected at 4 sample plot locations within potential wetland area. The sample plots were mapped and labeled with numbers for identification (DP1 – DP4).

- Soils

Soils inspected in soil pits were silty clay loams ranging from 10YR 3/3 to 10YR 4/4. No data points revealed any saturated soils or standing water in pits down to 13 inches. No redoxomorphic features or oxidized root channels were observed in any of the data points. Strong abundant distinct mottling of the soil is indicative of a fluctuating or elevated water table, and gleyed soil is indicative of areas of long term saturation, neither of these soil conditions were observed within 13" of the surface in any data points.

- Hydrology

This ownership is non-irrigated hay and pasture land. It is not supplied irrigation water through diversion points from any Creek or the Kittitas Reclamation District (KRD). The current farming practice is dependent on rain or spring and winter moisture for its limited growing season. There were no other hydrologic sources observed. No ponding or inundation was observed.

- Vegetation

The main project site does exhibit a presence of wetland vegetation. The majority of the property consists of pasture grasses and common weeds. Although some very limited hydrophytic vegetation was

observed, no strong hydrophytic indicators were present. Other indicators of hydric soil and system hydrology were absent.

WETLAND INVENTORY SUMMARY

It is the findings of The Wetland Corps, that no jurisdictional wetlands exist on the subject parcels as outlined in this report. Although there is some small amount of hydrophytic vegetation present scattered and intermixed on portions of the project site, other wetland indicators such as hydric soil and system hydrology are simply not present.

HABITAT AND THREATENED AND ENDAGERED SPECIES FINDINGS

This section of this report is intended to address any priority species habitat, threatened and endangered species and any other species of local importance. Although, one cannot make a large assumption of an area or region regarding wildlife after one or two visits, but I would like to emphasis my personal knowledge and experience in this particular region and countless hours of work and research on this land and throughout the Yakima River Corridor.

Kittitas County Code Chapter 17A.07 is the local regulation that applies to this project. Of course all state and federal laws apply as well and will be addressed in this section. I would like to first outline the sections of this code and address them one at a time.

17A.07.010 Riparian habitat.
17A.07.015 Designation of big game winter range.
17A.07.020 Priority species habitat.
17A.07.025 Habitats for species of local importance.
17A.07.030 Species of local importance.

- **Riparian habitat-** The proposed project site does not impact any small or large riparian habitat and is not required to maintain any setback from Ordinary high water mark, as none are within the proposed project boundaries.
- **Designation of big game winter range-** This particular area does support a large number Big Game Animals such as Elk and Mule Deer. However, the project site will not negatively impact range or wintering habits for these animals as it still leaves ample room in the surrounding parcels and does not eliminate a corridor or isolate the animals from passage along the River Corridor. Furthermore, the code refers to big game winter range as "*Big game winter range constitutes all federal land and all land owned or leased by the Washington State Department of Fish and Wildlife. The existing range conservation and management program of the State Department of Fish and Wildlife is long established and relies upon voluntary agreements with landowners together with state purchase of appropriate lands.*" This land is privately owned, but any land use action of this property may have comments solicited by Washington State Fish and Wildlife and other agency's by Kittitas County Planning.
- **Priority species habitat-** None are Currently Listed
- **Habitats for species of local importance-** None are Currently Listed
- **Species of local importance-** None are Currently Listed

Federal and State listed Species

Common Name	*Scientific Name*	Animal Type	State	Federal
Northern Spotted Owl	*Strix occidentalis*	Bird	SE	FT
Columbian Sharp-tailed Grouse	*Tympanuchus phasianellus*	Bird	ST	FCo
Columbian white-tailed deer	*Odocoileus virginianus leucurus*	Mammal	SE	FE
Gray wolf	*Canis lupus*	Mammal	SE	FE
Lynx	*Lynx canadensis*	Mammal	ST	FT
Marbled murrelet	*Brachyramphus marmoratus*	Bird	ST	FT
Pygmy rabbit	*Brachylagus idahoensis*	Mammal	SE	FE
Grizzly bear	*Ursus arctos*	Mammal	SE	FT
Steelhead (Middle Columbia)	*Oncorhynchus mykiss*	Fish	SC	FT

Many species that were once listed either at the federal or state level have been delisted in the recent past, due to conservation and recovery efforts. The species listed above are the main species that are listed as endangered or threatened in Washington state that have are the most likely to be found in Eastern Washington. Although the habitat in the Cle Elum area has some similar characteristics to some of the habitat these species may be found in, they are just not common to the area. There is currently no recovery work in the immediate area of the proposed project site. Most of these species are found in very select habitats such as the pygmy rabbit and sharp-tailed grouse. No priority nesting grounds or rookeries are in the area of the project site. Many of these species are only found North in the states wilderness areas. The project site is a long way from the shoreline of the Yakima River and has contingency planning for stormwater recovery and treatment.

Based on the site specific circumstances of the project site, lack of suitable habitat for the above referenced listed species, it is the finding of The Wetland Corps, that the proposed project will have "***NO EFFECT***" on federal or state listed species.

We trust this information is sufficient for your needs at this time. Thank you for choosing The Wetland Corps as your environmental consultant. If you have any questions feel free to call. (509) 899-0355

Respectfully submitted,

Joe Gilbert
Plant Ecologist
Senior Wetland Specialist

Appendix A. Soil Data Sheets

Routine Wetland Determination

DATA FORM 1 *(Revised)*

WA State Wetland Delineation Manual or 1987 Corps Wetland Delineation Manual)

Project/Site: Palmer Ranch / Pacific Clean Applicant/owner: Larry Condon Investigator(s): J.R. Gilbert	Date: October 2012 County: Kittitas State: Wa S/T/R:
Do normal circumstances exist on the site? X Yes ☐ No Is the site significantly disturbed (atypical situation)? ☐ Yes X No Is the area a potential problem area? ☐ Yes X No Explanation of atypical or problem area:	Community ID: Herbaceous Pasture Transect ID: Upland 1 Plot ID: DP 1 - DP4

VEGETATION (For *strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	*Stratum	% cover	Indicator	Dominant Plant Species	*Stratum	% cover	Indicator
Abies grandis	T	20	FACU				
Pinus ponderosa	T	30	FACU				
Rosa woodsii	S	10	FACU				
Bromus tectorum	H	15	NI				
Various Pasture Grasses			NI				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 0/5 = 0% or greater of Dominants are FAC, FACW, or OBL

Check all indicators that apply and explain below:

- ☐ Visual observation of plant species growing in areas of prolonged inundation/saturation
- ☐ Morphological adaptations
- X Technical Literature
- ☐ Physiological/reproductive adaptations
- ☐ Wetland plant database
- X Personal knowledge of regional plant communities
- ☐ Other (explain)

Hydrophytic vegetation present? ☐ Yes X No

Rationale for decision/Remarks: Indicators Present

HYDROLOGY

Is it the growing season? X Yes ☐No	Water Marks: ☐ Yes X No on	Sediment Deposits: ☐ Yes X No
Based on: ☐ Soil temp (record temp) X Other (explain) - October	Drift Lines: ☐ Yes X No	Drainage Patterns: ☐ Yes X No
Depth of inundation: No Inundation	Oxidized Root (live roots) Channels <12 in.: ☐ Yes X No	Local Soil Survey: ☐ Yes X No
Depth to free water in pit: >14+ inches	FAC Neutral: ☐ Yes X No	Water-stained Leaves: ☐ Yes X No
Depth to saturated soil: >14+ inches		

Check all that apply & explain below:	Other (explain):
☐ Stream, lake or gage data X Aerial photographs ☐ Other	

Wetland hydrology present? ☐ **Yes** **X No**

Rationale for decision/remarks: No Indicators Present

SOILS

Map Unit Name (Series and Phase) : Swauk Qualla comlex

Drainage Class: Moderately well drained

Field observations confirm mapped type? X Yes ☐ No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-14		10 YR 3/3			Silt Loam / Silt Clay Loam	

Hydric Soil Indicators: (check all that apply)

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma (=1) matrix
- ☐ Matrix chroma ≤ 2 with mottles
- ☐ Mg or Fe Concretions
- ☐ High Organic Content in Surface Layer of Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on National/Local Hydric Soils List
- ☐ Other (explain in remarks)

Hydric soils present? ☐ **Yes** **X No**

Rationale for decision/Remarks: No primary or Secondary indicators present

Wetland Determination

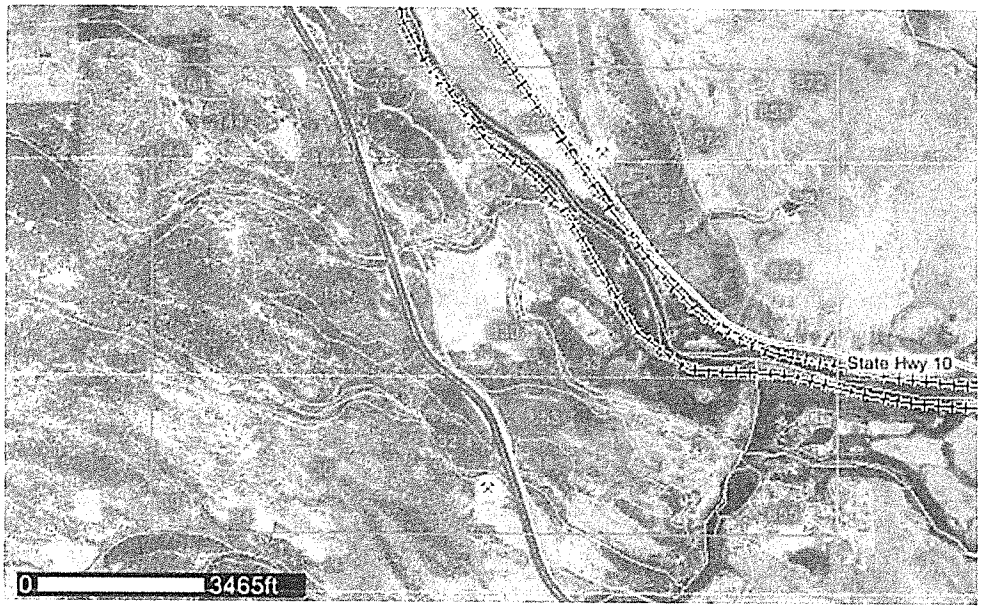
Hydrophytic vegetation present?	☐ **Yes**	**X No**
Hydric soils present?	☐ **Yes**	**X No**
Wetland hydrology present?	☐ **Yes**	**X No**
Is the sampling point within a wetland?	☐ **Yes**	**X No**

Rationale/Remarks: Negative for all three parameters

NOTES:

Revised 4/97

Appendix B. Soil Survey Maps



Appendix C. Soil Survey Descriptions

830—Swauk-Qualla complex, 5 to 15 percent slopes

Map Unit Setting

Landscape: Till plains
Elevation: 1,600 to 2,500 feet
Mean annual precipitation: 17 to 18 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 90 to 120 days

Map Unit Composition

Swauk and similar soils: 60 percent
Qualla and similar soils: 40 percent

Description of Swauk

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loess over glacial till

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: 29 to 40 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.0 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: LOAMY 16-24 PZ (R006XY102WA)

Typical profile

0 to 5 inches: Loam
5 to 18 inches: Clay loam
18 to 31 inches: Clay
31 to 60 inches: Gravelly clay loam

Description of Qualla

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Glacial till with loess in the upper part

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 28 to 34 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.1 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: LOAMY 16-24 PZ (R006XY102WA)

Typical profile

0 to 7 inches: Loam
7 to 28 inches: Silt loam
28 to 38 inches: Silt loam
38 to 42 inches: Clay loam
42 to 60 inches: Clay loam

144—Nard ashy loam, 5 to 25 percent slopes

Map Unit Setting

Landscape: Mountains
Elevation: 1,800 to 4,500 feet
Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 80 to 120 days

Map Unit Composition

Nard and similar soils: 85 percent
Minor components: 15 percent

Description of Nard

Setting

Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum and colluvium from sandstone and old alluvium with an influence of volcanic ash in the upper part

Properties and qualities

Slope: 5 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 20 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.7 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 4e
Hydrologic Soil Group: C/D
Other vegetative classification: grand fir/pinemat manzanita (CWS338)

Properties and qualities

Slope: 5 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 20 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.7 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability (nonirrigated): 4e
Hydrologic Soil Group: C/D
Other vegetative classification: grand fir/pinemat manzanita (CWS338)

Typical profile

0 to 1 inches: Slightly decomposed plant material
1 to 4 inches: Ashy loam
4 to 12 inches: Ashy loam
12 to 24 inches: Loam
24 to 34 inches: Clay loam
34 to 60 inches: Clay loam

Minor Components

Ampad

Percent of map unit: 10 percent

Kiper

Percent of map unit: 5 percent

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SSA acoustics

Environmental Noise Impact Assessment

PacifiClean Elk Heights
Organics Processing Facility
Cle Elum, Washington

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December 26, 2012

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