



Castle-Rose Environmental

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Critical Areas Report

Wetlands and Riparian Habitat

1514 NW 339th Street, La Center WA 98629

- Clark County Account #: 986028830 (1514 NW 339TH ST, LA CENTER, 98629)
- Clark County Account #: 986028825 (No Situs)
- Clark County Account #: 986030206 (1518 NW 339TH ST, LA CENTER, 98629)

October 5, 2016

Prepared For:

Tim Wines

Table of Contents

Section	Page
Executive Summary	1
1.0 Introduction	2
2.0 Site Description	3
3.0 Wetland Delineation	4
4.0 Riparian Habitat	11
5.0 Qualifications of Environmental Professional	12
6.0 Signature	13
List of Tables	
<i>1 Critical Areas Presence</i>	1
<i>2 Property Identification</i>	3
<i>3 Wetland Hydrology Indicators</i>	7
<i>4 Farm Pond Wetland Plants</i>	5
<i>5 Washington State Wetland Rating System Summary and Discussion</i>	9
Appendices	
<i>A Maps & Figures</i>	
<i>B Wetland Data</i>	
<i>C Riparian Habitat Maps and Photos</i>	
<i>D Statement of Qualifications</i>	

Executive Summary

In accordance with the City of La Center Development Code 18.300 Critical Areas, Castle-Rose Environmental has prepared this Critical Areas Report (CAR) for three parcels within the city limits of La Center, Washington:

1. Clark County Account #: 986028830 (1514 NW 339TH ST, LA CENTER, 98629)
2. Clark County Account #: 986028825 (No Situs)
3. Clark County Account #: 986030206 (1518 NW 339TH ST, LA CENTER, 98629)

As defined by section 18.300.030, the following critical areas are present on the parcels:

Table 1: Critical Areas Presence	Parcel 986028830	Parcel 986028825	Parcel 986030206
Wetlands		X	
Critical Aquifer Recharge Area*	X	X	X
Streams	X		
Fish and Wildlife Habitat Conservation Area	X		X
Frequently Flooded Areas			
Geologically Hazardous Areas*	X		
<i>*As mapped by Clark County Maps Online</i>			

- *Wetlands*
 - Parcel 986028825 has a Category IV, isolated depressional wetland created artificially by soil impoundment in a non-wetland area. As defined by the Shoreline Management Act (RCW 90.58.030), an artificial wetland such as farm ponds that are created from a non-wetland site are not regulated wetlands. No permit-required development will occur within any wetland buffer.
 - Parcel 986028830 has a drainage ditch along the north and northwest boundaries. The drainage ditch exhibits possible indicators of hydrology and hydrophytic vegetation, but is ephemeral with no direct connection to waters of the United States.
- *Critical Aquifer Recharge Area*
 - All three parcels are mapped as Category 2 Critical Aquifer Recharge Areas. No further assessment included with this report.
- *Streams*
 - One Type Ns stream has headwaters on parcel 986028830 in a ravine area that will remain undeveloped. A second stream mapped as a Type Ns by the Washington State Dept. of Natural Resources was determined to not exist on the properties or within 75 feet of development boundaries.
- *Fish and Wildlife Habitat Conservation Area*
 - Riparian habitat is associated with the Type Ns stream on parcel 986028830 has some overlap on parcel 986030206. No permit-required development will occur within the 75-foot riparian-habitat buffer.
- *Geologically Hazardous Areas*
 - Clark County Maps online indicates two small Landslide Hazard Areas in the SW section of parcel 986028830. One Landslide Hazard area is based on slopes >15% (but <25%) and the second area is a combination of slope instability and slopes >15%. Any additional discussion of these areas will be included in engineering review by others.

1.0 Introduction

1.1 Project Proponents

Tim Wines
Co-Developer
604 N. 16th Ave
Kelso, WA 98626
tim@plsengineering.com

Randy & Kari Goode
Property Owners
707 N Abrams Park Rd
Ridgefield, WA 98642

1.2 Consultant

Jason Smith
Castle-Rose Environmental
1263 Commerce Ave. Suite 206
Longview, WA 98632
360.232.8279 (direct office)
360.353.3285 (general office)
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Qualifications detailed in Appendix D, Statement of Qualifications.

1.3 Proposed Development

The developmental proposal includes multi-family units, single family units and associated access and utility infrastructure on Parcels 986028830 (1514 NW 339TH ST, LA CENTER, 98629), 986028825 (No Situs) and 986030206 (1518 NW 339TH ST, LA CENTER, 98629).

1.4 Permits Requested

Based on wetland and riparian buffer information available on the date of this report, no Critical Areas permits are anticipated. Non-exempt development is not proposed within the boundaries of a regulated wetland or riparian habitat.



2.0 Site Description

2.1 Location and Legal Description

Table 2: Property Identification

Parcel 986028830			
Address(es):	1514 NW 339 th Street, La Center WA 98629		
Latitude/Longitude (center):	N	45.868225°	W -122.688205°
Abbreviated Legal Description (s):	EAST FORK ESTATES LOT 2/10 311651		
Area:	37.42 Acres		
Parcel 986028825			
Address(es):	No Situs		
Latitude/Longitude (center):	N	45.870287°	W -122.689276°
Abbreviated Legal Description (s):	EAST FORK ESTATES LOT 1/10 2.60A 311651		
Area:	2.6 Acres		
Parcel 986030206			
Address(es):	1518 NW 339TH ST, LA CENTER, 98629		
Latitude/Longitude (center):	N	45.867686°	W -122.690419°
Abbreviated Legal Description (s):	EAST FORK ESTATES PH 2 LOT 9 1.06A 311670		
Area:	1.06 Acres		

Additional location information available in Appendix A: Maps & Figures.

2.2 Site and Vicinity General Characteristics

Property use, structures and improvements:

- All three parcels are currently farm/agricultural land. On the date of this report, a crop of oats had been recently harvested from parcels 986028830 and 986030206. Parcel 986028825 was recently hayed.
- Parcel 986028830 has some drainage improvements along the north and east boundaries.

Physical setting:

Parcels have mixed physical characteristics. See Appendix A Maps and Figures for details.



3.0 Wetland Delineation

3.1 Wetland Summary

An artificial, Category IV, isolated, depressionnal wetland was delineated on Parcel 986028825 in accordance with City of La Center Municipal Code Title 18 Development Code, Chapter 18.300.090 Critical Areas.

The wetland is mapped in the National Wetland Inventory as Palustrine, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded (PUBHH).

The approximate 7,000 square foot pond was artificially created by a soil impoundment approximately three to four feet high on the downhill side. The impoundment is not a wetland. Without the impoundment, the wetland would not exist. The wetland appears to be an artifact of a stock pond created for farming/agricultural purposes. A similar stock pond exists on an adjacent parcel approximately 200 feet to the northwest. The wetland has no surface channel/outlet for discharge. No drainage channel exists adjacent to the wetland.

Parcel 986028830 has a drainage ditch along the north, east and northwest boundaries. The drainage ditch is ephemeral, with scattered secondary indicators of wetland hydrology, such as dry cracked soils, unvegetated patches, etc. No other primary indicators of wetland hydrology were observed. The ditch was observed after periods of precipitation with no visible surface water. Vegetation is a mix of hydrophytic and upland species, with no obligate species observed. FAC Neutral test was not performed due to exemption of artificial drainage ditches with ephemeral flow patterns.

As defined by the Shoreline Management Act (RCW 90.58.030(2)(h)), an artificial wetland such as farm ponds or drainage ditches that are created from a non-wetland site are not regulated wetlands:

(h) "Wetlands" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. **Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds,** and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.

The primary indicators that the pond was created from a non-wetland are the lack of wetlands adjacent to the pond. It is possible that human-induced alterations such as vegetation mowing/removal and construction of a drainage ditch affected wetland hydrology. However, there is no documentation of historical wetland hydrology in the project area.

A detailed evaluation of the farm pond wetland was performed to support wetland rating analysis. Wetland data sheets and Wetland Rating System forms are included in Appendix B – Wetland Data.



3.2 Methodology

Title 18.300.090(6)(f)(iii)(A)(IV) requires discussion of methods and results with special emphasis on technique used from the wetlands delineation manual. The “wetlands delineation manual” is defined by 18.300.030 Definitions:

(78) “Wetlands delineation manual” means the Washington State Wetland Identification and Delineation Manual (Publication No. 96-94) dated March 1997, and as subsequently amended. [Ord. 2012-01 § 1 (Exh. A), 2012; Ord. 2007-2 § 1, 2007.]

State laws require that wetlands protected under the Growth Management Act and the Shoreline Management Act be delineated using a manual that is developed by Ecology and adopted into rules (RCW 36.70A.175; RCW 90.58.380). The Department of Ecology adopted the wetland delineation manual in 1997 (WAC 173-22-080) that was based on the original 1987 Corps of Engineers manual and subsequent Regulatory Guidance Letters.

During the last few years the Army Corps of Engineers has updated and expanded their delineation manual with regional supplements. To maintain consistency between the state and federal delineations of wetlands, Ecology has repealed WAC 173-22-080 (the state delineation manual) and replaced it with a revision of WAC 173-22-035 that states delineations should be done according to the currently approved federal manual and supplements.

Therefore, this wetland delineation was performed in accordance with City of La Center Municipal Code Title 18.300.090(6)(f) Wetland Delineation and Marking using the 1987 Corps of Engineers Wetlands Delineation Manual (Corps Manual) and the Western Mountains, Valleys, and Coast Regional Supplement (Western Supplement; Version 2.0, May 2010). Title 18.300.090(6)(g) of the City of La Center Municipal Code requires Wetland Rating using the Washington State Wetland Rating System for Western Washington ((Revised, Publication No. 04-06-025, August 2004), as updated. The 2014 update to the ratings system has been applied to the farm pond wetland, subject to interpretation under Title 18.300.090(6)(g)(IV) Wetland Rating System.

In accordance with the Corps Manual Part IV: Methods, Section D – Routine Determinations – the wetland delineation was performed using Subsection 2 - Onsite Inspection Necessary.

3.3 Section 404 of the Clean Water Act

Based on Shoreline Management Act (RCW 90.58.030(2)(h)), the farm pond and various site drainage ditches are not state-regulated wetlands, even if meeting the technical definition of a wetland.

Similarly, the drainage ditches and farm pond may not be jurisdictional wetlands under Section 404 of the Clean Water Act based on the following exemptions:

- 40 CFR 230.3 Clean Water Rule: Definition of “Waters of the United States”:
 - (2) The following are not “waters of the United States” even where they otherwise meet the terms of paragraphs (o)(1)(iv) through (viii) of this section.
 - (iii) The following ditches:
 - (A) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.



- (B) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
 - (B) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
- (3)(v) Significant nexus
 - The term significant nexus means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (o)(1)(i) through (iii) of this section.
 - For an effect to be significant, it must be more than speculative or insubstantial.
 - Functions relevant to the significant nexus evaluation are the following:
 - (A) Sediment trapping,
 - (B) Nutrient recycling,
 - (C) Pollutant trapping, transformation, filtering, and transport,
 - (D) Retention and attenuation of flood waters,
 - (E) Runoff storage,
 - (F) Contribution of flow,
 - (G) Export of organic matter,
 - (H) Export of food resources, and
 - (I) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (o)(1) through (3) of this section.

Based on field evaluation following periods of recent and active precipitation, the drainage ditches appears to exhibit ephemeral flow patterns – with active flow only following long periods of significant rain. Isolated small segments of the ditch are unvegetated and exhibit other secondary indicators of wetland hydrology. The secondary hydrology indicators reflect relatively low flow volumes. The drainage ditch does not contribute substantial functions relevant to significant nexus.

- No evidence of sediment trapping;
- No evidence the drainage ditch receives significant nutrient loading from adjacent farmland (drains a very small percentage of the adjacent farmland);
- Does not receive significant runoff (does not receive any runoff from impervious surfaces – and no evidence of surface runoff drainage patterns to the ditch);
- No evidence of significant flow volumes;
- Low flow volumes indicate no substantial contribution to flow, export of organic matter or food resources;
- Exhibits no aquatic habitat features

The farm pond is both created in an upland area and has no significant nexus to waters of the United States. The pond has no surface discharge, and any functions related to significant nexus are insubstantial due to location (does not receive surface runoff) and size.

3.4 Site Description

Parcel 986028825 is approximately 2.6 acres with limited access (access via adjacent pasture/oat field). The south boundary is a drainage ditch segment, with agricultural land on the other side of the ditch. A single-family residence is to the west; and pasture is to the west and north.



Mapped slopes (Clark County Maps Online) are 0-5%, with approximately half the parcel sloping north and east, with the southwest corner relatively flat. The wetland is on the north/northwest gradient.

The parcel is heavily influenced by human-induced alteration. The drainage ditch directly impacts hydrology (if wetland hydrology ever existed), and the area outside the farm pond is regularly harvested for pasture grass/hay. Aerial photography available on Google Earth shows a clear pattern of mowing/harvesting from 2000 to 2015 (Appendix B – Wetland Data).

3.5 Wetland Hydrology

The farm pond wetland hydrology was created by construction of a soil impoundment on a low-gradient slope. Hydrology factors were documented according Wetland hydrology indicators for the Western Mountains, Valleys, and Coast Region

Table 3: Wetland hydrology indicators for the Western Mountains, Valleys, and Coast Region		
Farm Pond Wetland		
Indicator	Category	
	Primary	Secondary
Group A – Observation of Surface Water or Saturated Soils		
A1 – Surface water	X	
A2 – High water table		
A3 – Saturation	X	
Group B – Evidence of Recent Inundation		
B1 – Water marks	X	
B2 – Sediment deposits	X	
B3 – Drift deposits	X	
B4 – Algal mat or crust	X	
B5 – Iron deposits		
B6 – Surface soil cracks		
B7 – Inundation visible on aerial imagery	X	
B8 – Sparsely vegetated concave surface	X	
B11 – Salt crust		
B13 – Aquatic invertebrates	X	
B9 – Water-stained leaves	X	
B10 – Drainage patterns		
Group C – Evidence of Current or Recent Soil Saturation		
C1 – Hydrogen sulfide odor		
C3 – Oxidized rhizospheres along living roots		
C4 – Presence of reduced iron		
C6 – Recent iron reduction in tilled soils		
C2 – Dry-season water table		
C9 – Saturation visible on aerial imagery		X
Group D – Evidence from Other Site Conditions or Data		



D1 – Stunted or stressed plants		
D2 – Geomorphic position		
D3 – Shallow aquitard		
D5 – FAC-neutral test		
D6 – Raised ant mounds		
D7 – Frost-heave hummocks		

- The maximum pond water depth is estimated between six inches and two feet in elevation;
- The pond receives no direct surface runoff (no drainage patterns leading to the pond);
- The pond has no surface discharge (no outlet channel or other indicators of surface water flow out of the wetland);
- Surface water was observed late in the dry season, indicating year-round ponding of at least one to two inches of depth in the center of the pond.

The drainage ditch exhibited one primary indicator – cracked soil – in a small percentage of the ditch (<1% of the ditch length). No other primary or secondary indicators observed. A FAC-neutral test was not performed due to the artificial nature of the ditch, ephemeral flow pattern, and lack of significant nexus to waters of the United States.

In areas adjacent to the farm pond wetland, there were no observed primary or secondary indicators of wetland hydrology. A FAC-neutral test was not feasible due to the disturbed vegetation (harvested pasture grass). In the harvested areas, species such as Bull thistle, Canada thistle, Tansy ragwort, Dandelion, Hairy cat’s ear, and Himalayan blackberry showed potential for dominance. Common rush (*Juncus effusus*) exists in small patches (non-dominant). Some reed canarygrass may comprise the pasture grass species – as evidenced by some rhizomes in the root layer. However, rhizomes characteristic of reed canarygrass were limited, and bunchgrass species such as orchardgrass appear to be the dominant harvested species.

Undisturbed fringes of the pasture land included a mix of FAC, FACU and two FACW species. No FAC or FACW species are dominant. A single Oregon White Oak occupies the center of the flats area – a FACU species. Under the oak canopy, Himalayan blackberry – another FACU species – dominates.

3.6 Wetland Vegetation

A species count was performed for vegetation within the boundaries of the farm pond wetland. A species count is required for the Washington State Wetland Rating System for Western Washington.

Table 4: Farm Pond Wetland Plants

Common Name	Scientific Name	Wetland Indicator	At least 10 ² s.f.
1. Reed canarygrass	<i>Phalaris arundinacea</i>	FACW	NA
2. Common rush (soft rush)	<i>Juncus effusus</i>	FACW	X
3. Slough sedge	<i>Carex obnupta</i>	OBL	X
4. Parrot’s feather	<i>Myriophyllum aquaticum</i>	OBL	X
5. Western milfoil	<i>Myriophyllum hippuroides</i>	OBL	X
6. Oregon (bog) saxifrage	<i>Micranthes oregana</i>	FACW	X
7. Carex species	<i>Identified at Genus level only</i>		
8. Unidentified herbaceous species			X



9. Pacific willow	<i>Salix lasiandra</i>	FACW	X
10. Weeping willow	<i>Salix babylonica</i>	FACW	X
11. Unidentified herbaceous species			

FAC-neutral and Upland plants at the wetland fringe include Lodgepole pine, Red alder, Himalayan blackberry, Tansy ragwort, Bull thistle, Canada thistle, Curly dock, etc. A single Oregon White Oak sapling was observed at the fringe. No dominant FACW species at the wetland fringe. No OBL species outside the inundated areas. The wetland fringe lies outside the boundaries of the wetland.

The Washington State Habitat Rating Function (H 1.3. Richness of plant species) scores plant richness on three levels, with a threshold of counting species covering at least 10 square feet (combined patches)

- 1) >19 species
- 2) 5-19 species
- 3) <5 species

Invasive species such as Eurasian milfoil, Reed canarygrass, Canada thistle, and Purple loosestrife are not included in the species count. The farm pond species count is approximately 8 species covering at least 10 square feet of wetland surface area.

3.7 Wetland Rating and Classification

The NWI farm pond wetland rating is PUBHH. No changes to this classification recommended.

The Washington State Wetland Rating System for the farm pond wetland is Category 4 (see Appendix B):

(D) Category IV. Category IV wetlands have the lowest levels of functions and are often heavily disturbed. These wetlands score less than 30 points (26 points) in the Ecology rating system.

- Habitat Functions Score:
 - H1: 5 points
 - H2: 2 points
 - H3: 0 points
- Depressional Wetland
 - Water Quality Functions
 - D1: 10 points
 - D2: 1 point
 - D3: 1 point
 - Hydrologic Functions
 - D4: 7 points
 - D5: 0 points
 - D6: 0 points

Table 5: Washington State Wetland Rating System Summary and Discussion

Habitat Function	Score	Discussion
H 1.0. Does the site have the potential to provide habitat??	5	Scores for subcategories based on thresholds for significance (e.g., >90% of wetland is permanently submerged or inundated; count only species >10 s.f., etc.
H 2.0. Does the landscape	2	Estimated that undisturbed habitat within 1 km



have the potential to support the habitat functions of the site?		polygon is 10-50% in >1-3 patches (based on review of aerial photographs and level of agricultural and residential development within the polygon. <50% high intensity land use in the 1 km polygon.
H 3.0. Is the habitat provided by the site valuable to society?	0	No sub-criteria met.
<i>Habitat Sub-Total</i>	7	
Water Quality Functions		
D 1.0. Does the site have the potential to improve water quality?	10	Scored high for >1/2 total area = seasonally ponded; persistent, ungrazed plants >1/2 area; wetland has no outlet
D 2.0. Does the landscape have the potential to support the water quality function of the site?	1	Scored 1 point for a septic system within 250 feet.
D 3.0. Is the water quality improvement provided by the site valuable to society?	1	Wetland is within East Fork of the Lewis River – 303d- listed stream.
<i>Water Quality Sub-Total</i>	12	
Hydrologic Functions		
D 4.0. Does the site have the potential to reduce flooding and erosion?	7	Site rated high for no outlet; marks of ponding >6” <2’. Score of 0 for storage (basin >100x size of wetland)
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	0	Wetland does not receive runoff/stormwater discharge; marking a 1 for intensive land use in this category would require marking -2 under H 2.0.
D 4.0. Does the site have the potential to reduce flooding and erosion?	0	No outlet = high score, same as D1.0.
<i>Hydrologic Function Sub-Total</i>	7	



4.0 Riparian Habitat

The headwaters of a type Ns stream (seasonal; non-fish bearing) was observed in the central-west area of parcel 986028830. The headwaters of the stream are approximately 150 feet east of the west parcel boundary. A precise GPS point was not feasible due to tree canopy and ravine topography.

The riparian buffer for a Type Ns stream is 75 feet, measured horizontally. Based on DRAFT proposed development, no development will occur within the 75-foot buffer.

The location of this Type Ns stream does not match Washington Department of Natural Resources (WDNR) FPARS GIS data. Similarly, the Type Ns stream segment mapped by the WDNR extending to the farm pond wetland and continuing to the adjacent parcel stock pond (parcel 258741000) and up to an artificial lake on parcel 258656000 does not exist (no stream channels; no artificial lake currently existing on parcel 258656000). Headwaters for that Type Ns stream are a minimum 125 feet west of the parcel 986028830 boundary.

See Appendix C, Riparian Maps and Photos for additional details.

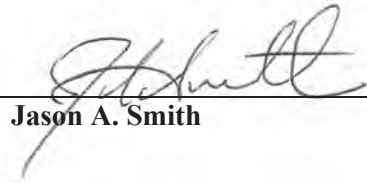


5.0 Qualification(s) of Environmental Professional(s)

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Qualified professional* as defined in City of La Center Title 18.300.

Full statement of qualifications (SOQ) is included in Appendix D.

6.0 Signature(s) of Environmental Professional(s)



Jason A. Smith

October 3, 2016

Date



Appendix A

Maps & Figures

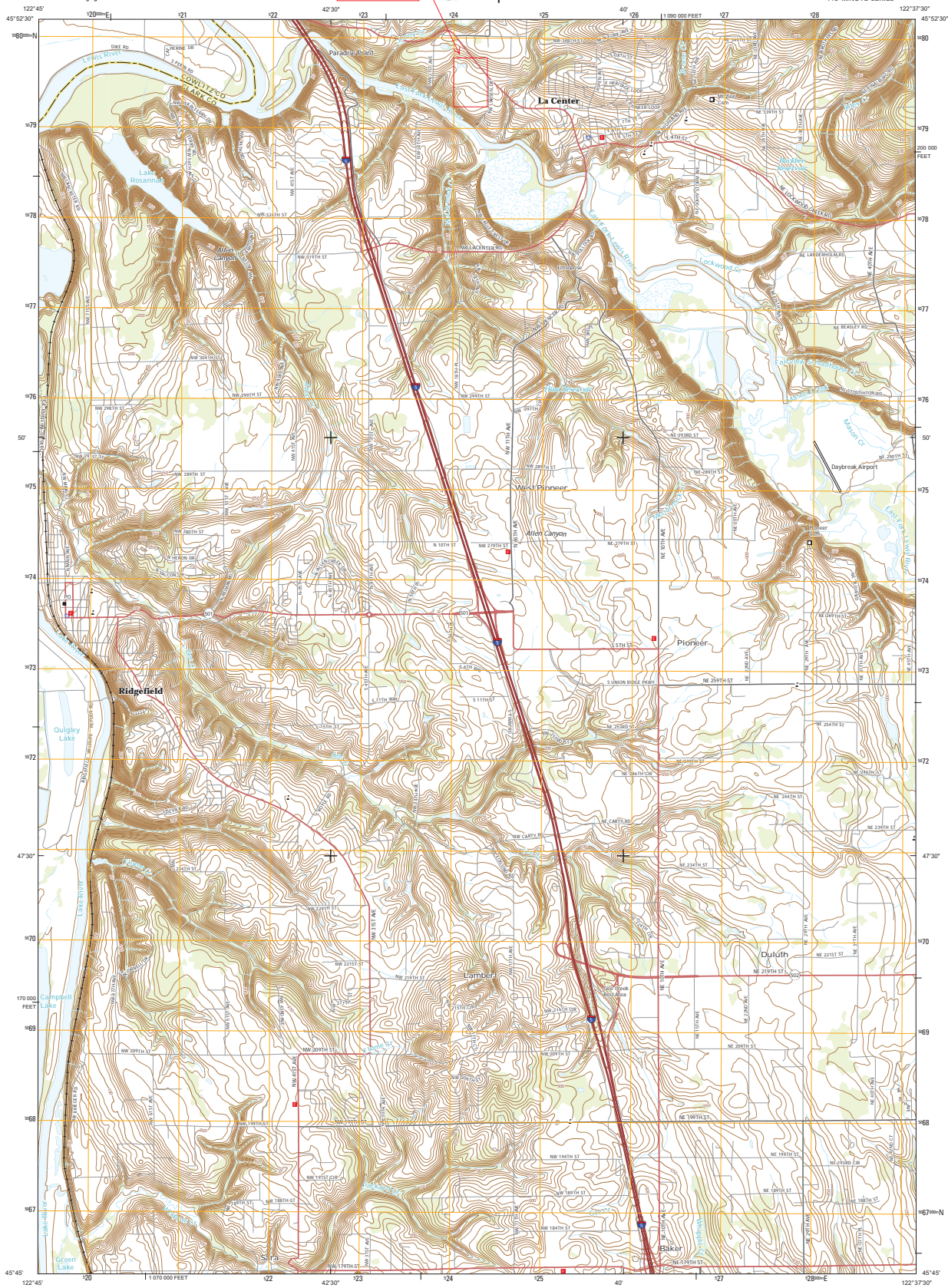


U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

1514 NW 339th St
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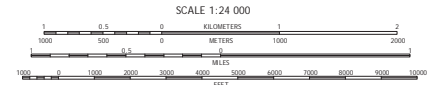
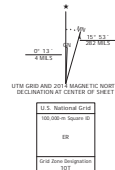
RIDGEFIELD QUADRANGLE
WASHINGTON
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83), Projection and
World Geodetic System of 1984 (WGS84), Projection and
10 000-foot scale: Washington Transverse Mercator, Zone 10T
10 000-foot scale: Washington Coordinate System of 1983 (south
zone)

This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery: MDP, August 2011
Roads: 2008-2011 Topform
Hydrography: National Hydrography Dataset, 2011
Contours: National Elevation Dataset, 1999
Boundaries: Census, BPL, BC, USGS, 1972-2012
Public Land Survey System: BLM, 2011



ADJOINING 1:5 QUADRANGLES

Clear Island	Bloodland	Arrol
Saint Helens	Ridgefield	Battle Ground
Silver Island	Thompson	Chimney



RIDGEFIELD, WA
2014





NWI Mapped Wetland



1,069.1 0 534.53 1,069.1 Feet

1: 6,414

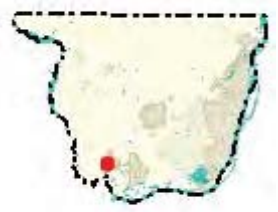
This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA. GIS - <http://gis.clark.wa.gov>

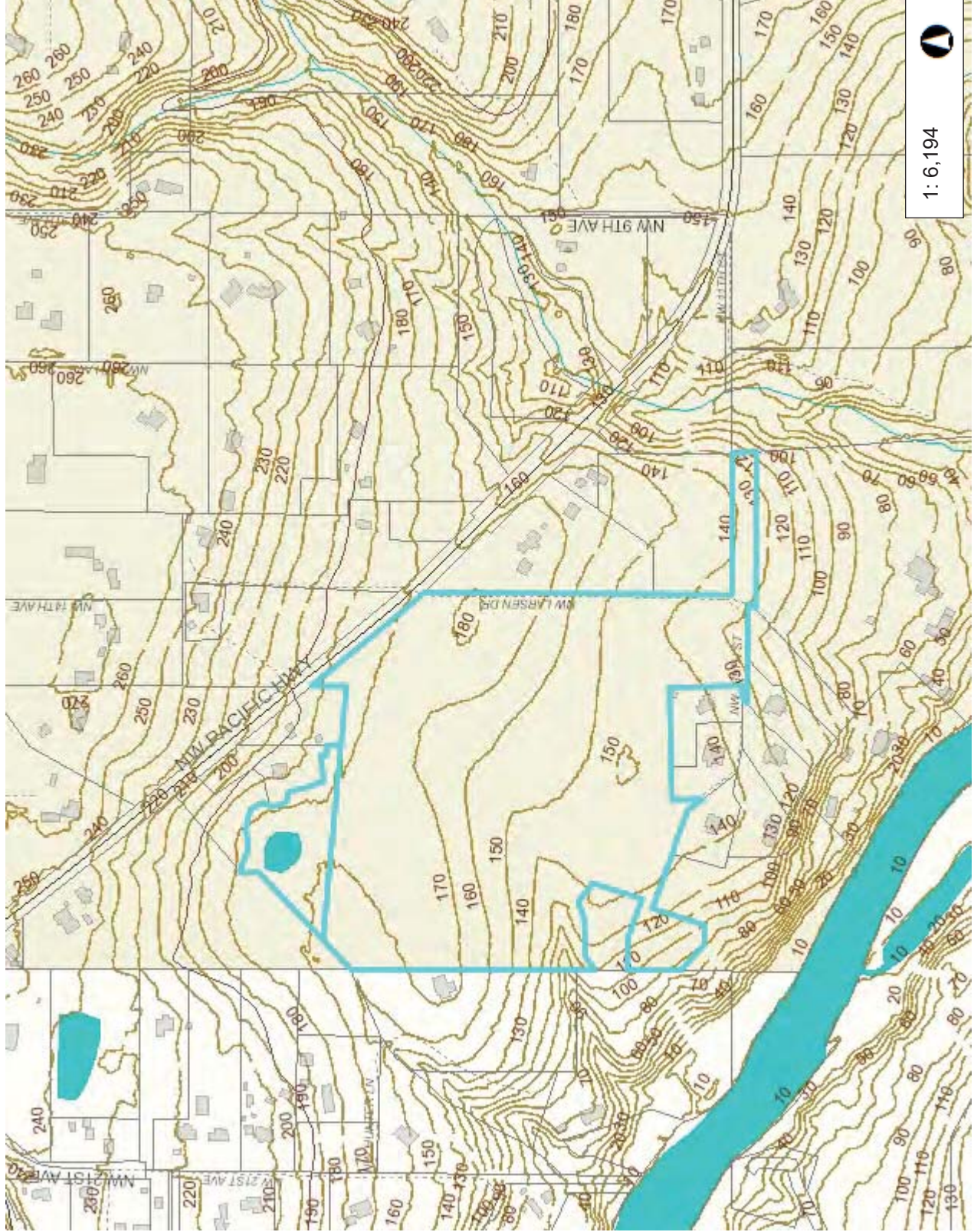
Notes:

Legend

- Building Footprints
- Taxlots
- NWI Wetland
- Cities Boundaries
- Urban Growth Boundaries



1514 NW 339TH ST - Topo



1:6,194

1,032.3 0 516.17 1,032.3 Feet

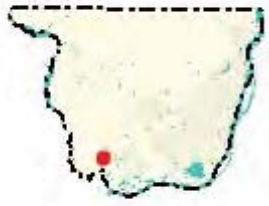
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Clark County, WA. GIS - <http://gis.clark.wa.gov>

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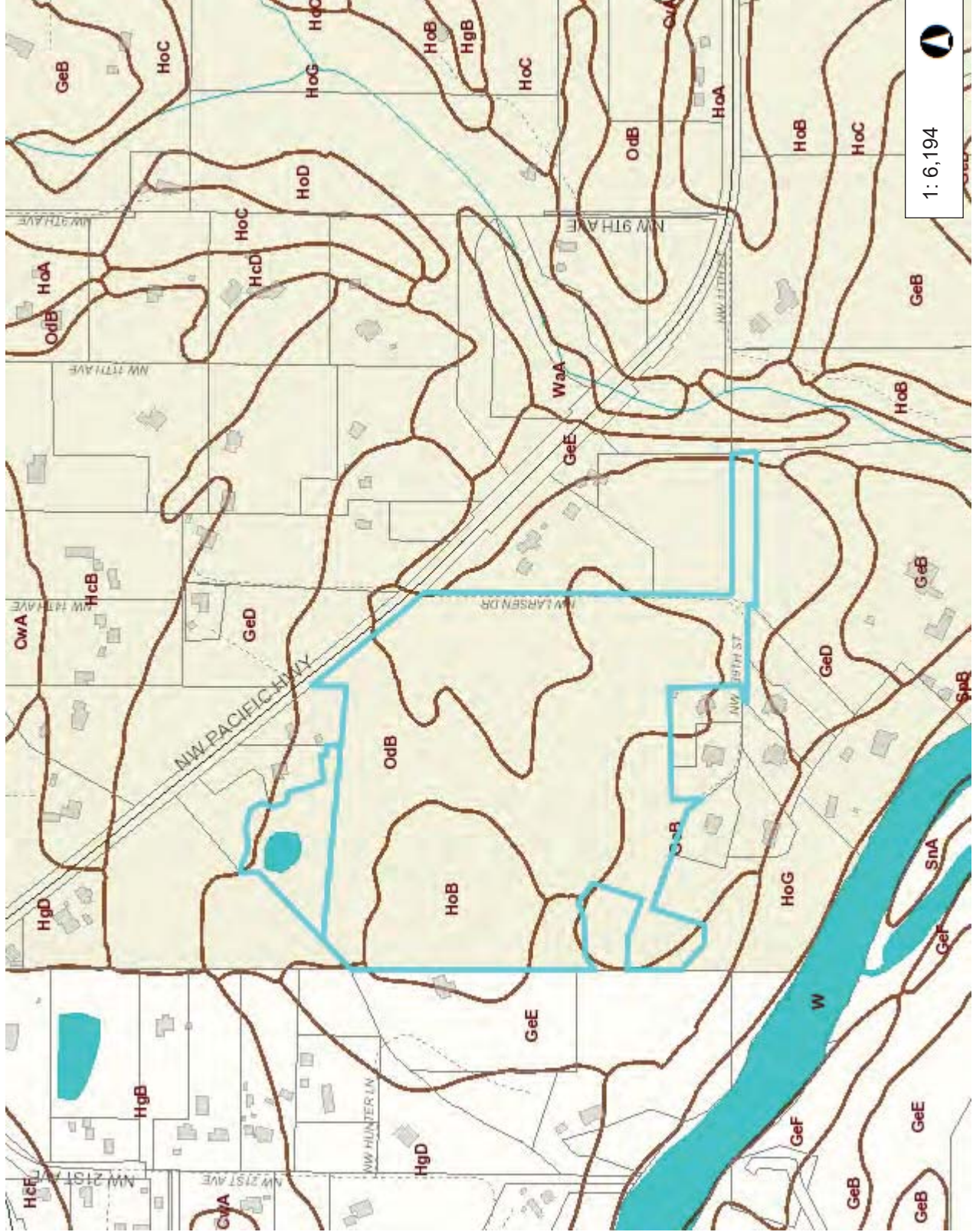
Legend

- Building Footprints
- Taxlots
- Contour Lines - 10 ft
- Contour Lines - 200 ft
- Cities Boundaries
- Urban Growth Boundaries

Notes:



1514 NW 339TH ST, Soils



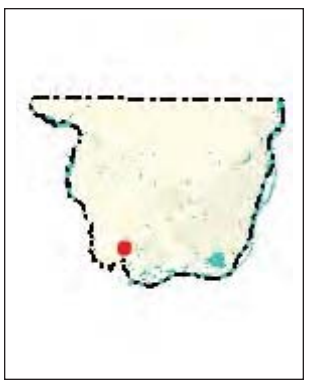
1: 6,194



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Legend

- Building Footprints
- Taxlots
- Soil Type
- Cities Boundaries
- Urban Growth Boundaries



Notes:



Farm Pond Site Map



Similar farm pond on adjacent property

Approximate Wetland Boundary (inside the treeline)

Parcel 986028825

Drainage Ditch Extends Along Entire North Property Line of Parcel 986028830

Sample Points/Transects on Subsequent Maps & Figures

1: 1,604



267.3
 0 133.63 267.3 Feet
 WGS_1984_Web_Mercator_Auxiliary_Sphere
 Clark County, WA. GIS - <http://gis.clark.wa.gov>

This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information.



- Legend**
- Building Footprints
 - Taxlots
 - ImageBestRes**
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3
 - Cities Boundaries
 - Urban Growth Boundaries

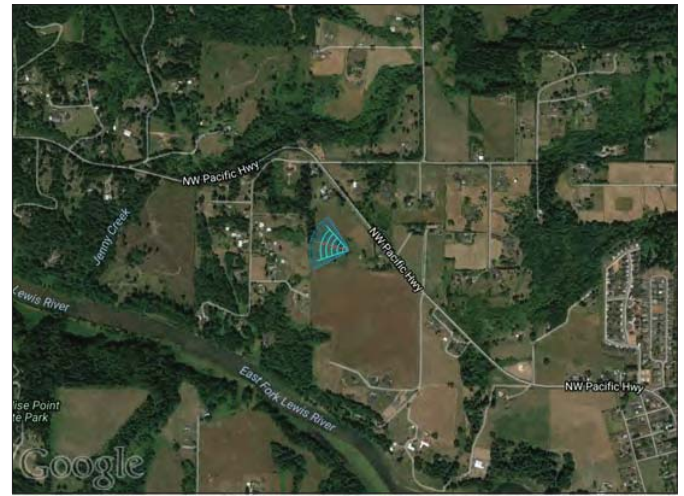
Notes:

Project: 1514 NW 339th
 Selection: [auto] All photos
 Location: La Center, WA 98629, USA

No	Type	Latitude	Longitude	Altitude	Azimuth	Pitch	Roll	HVA	VVA	Zoom
1		N45.870511° ±3m	W122.689192° ±3m	27m ±3	285° ±10	0° ±3	0° ±1	67°	53°	



Google Maps (satellite) (level 20 /step 20)



Google Maps (satellite) (level 20 /step 20)



Wetland boundary inside tree line (approximated by OHW/vegetation boundary)

1

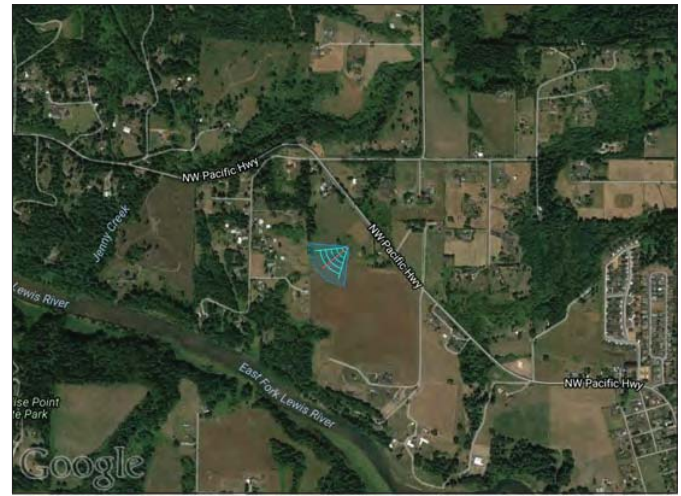
Farm Pond wetland delineation had two objectives: 1) establish the wetland boundary; 2) complete the Washington State Wetland Rating System. Total species count >10² in area = <19. No outlet channel. No drainage patterns into the wetland.

Project: 1514 NW 339th
 Selection: [auto] All photos
 Location: La Center, WA 98629, USA

No	Type	Latitude	Longitude	Altitude	Azimuth	Pitch	Roll	HVA	VVA	Zoom
1		N45.870513° ±3m	W122.689182° ±3m	29m±3	230°±11	16°±5	0°±2	67°	53°	



Google Maps (satellite) (level 20 /step 20)



Google Maps (satellite) (level 20 /step 20)



1

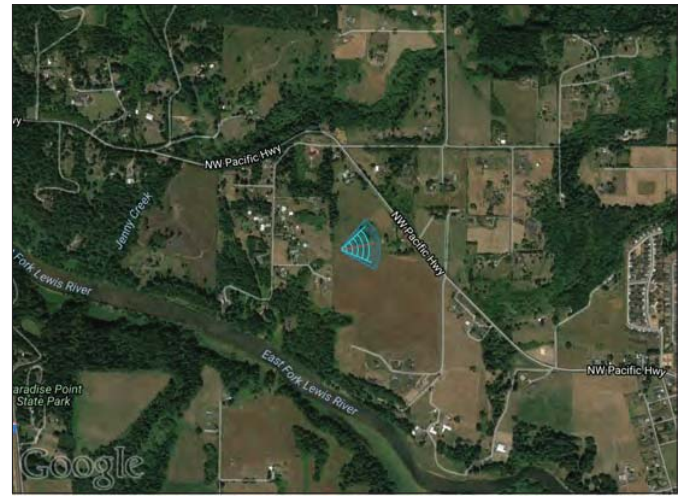
Some trees appear to have been planted along the artificial berm (non-native Lodgepole Pine and Weeping Willow intermixed with patches of Pacific Willow). On the uphill slope, natural Red Alder patch shows clear distressed/dead trees near the wetland boundary and thriving trees just outside the boundary. Ponded water 2-3" deep in August/September. OHW indicates max depth less than 1-foot.

Project: 1514 NW 339th ST
 Selection: [auto] All photos
 Location: La Center, WA 98629, USA

No	Type	Latitude	Longitude	Altitude	Azimuth	Pitch	Roll	HVA	VVA	Zoom
1		N45.869996° ±3m	W122.690534° ±3m	22m±3	79°±7	-1°±5	0°±3	67°	53°	



Google Maps (satellite) (level 20 /step 20)



Google Maps (satellite) (level 20 /step 20)



1

Drainage ditch had no visible surface water or damp soil following several days of precipitation in September, 2016.

Project: 1514 NW 339th
 Selection: [auto] All photos
 Location: La Center, WA 98629, USA

No	Type	Latitude	Longitude	Altitude	Azimuth	Pitch	Roll	HVA	VVA	Zoom
1		N45.869963° ±3m	W122.690905° ±3m	29m±3	322°±6	10°±6	0°±2	67°	53°	



Google Maps (satellite) (level 20 /step 20)



Google Maps (satellite) (level 20 /step 20)



1

Drainage ditch channel. Although some ditch segments show hydrology indicators such as cracked soil; bare patches; erosion marks - those hydrology indicators are a very low percentage of the overall drainage ditch reach.

Appendix B

Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Parcel 986028825 City/County: City of La Center; Clark County Sampling Date: 08 SEP 2016 (et al)
 Applicant/Owner: Tim Wines State: WA Sampling Point: _____
 Investigator(s): Jason Smith, Castle-Rose Environmental Section, Township, Range: SE 1/4,S33,T5N,R1E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5%
 Subregion (LRR): Northwestern Forest, Forage, and Specialty Crop Region Lat: 45.870208° Long: -122.689656° Datum: WGS84
 Soil Map Unit Name: ODNE SILT LOAM, 0 TO 5 PERCENT SLOPES NWI classification: PUBHH

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	
Remarks: <u>Artificial farm pond created by impoundment</u>			

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiandra</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. <u>Salix babylonica</u>	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. <u>Salix lasiandra</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	_____	_____	_____	
2. <u>Juncus effusus</u>	_____	_____	_____	
3. <u>Carex obnupta</u>	_____	_____	_____	
4. <u>Myriophyllum aquaticum</u>	_____	_____	_____	
5. <u>Myriophyllum hippuroides</u>	_____	_____	_____	
6. <u>Micranthes oregana</u>	_____	_____	_____	
7. <u>Carex species (unspecified)</u>	_____	_____	_____	
8. <u>Unidentified herbaceous species</u>	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>				
Remarks: <u>Wetland vegetation is not disputed. Routine delineation, option 2 (onsite inspection) performed for purpose of Wetland Rating (Functions and Values).</u>				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
Visible muck surface layer over top of mapped hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</u> Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Historical aerial photos available via Google Earth show surface water dating to year 2000.

Remarks:
None of the wetland indicators are disputed. Wetland has no discharge channel, and no surface drainage patterns. Wetland boundary is clearly defined by FACU species/OHW mark. Max water depth <1', based on ponding marks.

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 986028825 - Pond Date of site visit: Multiple
 Rated by Jason Smith Trained by Ecology? Yes No Date of training _____

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).
 Source of base aerial photo/map Clark County Maps Online

OVERALL WETLAND CATEGORY IV (based on functions or special characteristics _____)

1. Category of wetland based on FUNCTIONS

- _____ **Category I** – Total score = 23 - 27
- _____ **Category II** – Total score = 20 - 22
- _____ **Category III** – Total score = 16 - 19
- Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input type="checkbox"/> L <input checked="" type="checkbox"/>	
Landscape Potential	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input type="checkbox"/> L <input checked="" type="checkbox"/>	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	
Value	H <input type="checkbox"/> M <input checked="" type="checkbox"/> L <input type="checkbox"/>	H <input type="checkbox"/> M <input type="checkbox"/> L <input checked="" type="checkbox"/>	H <input type="checkbox"/> M <input type="checkbox"/> L <input checked="" type="checkbox"/>	TOTAL
Score Based on Ratings	7	4	4	15

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H
 8 = H,H,M
 7 = H,H,L
 7 = H,M,M
 6 = H,M,L
 6 = M,M,M
 5 = H,L,L
 5 = M,M,L
 4 = M,L,L
 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|---|
| <input checked="" type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input type="checkbox"/> Saturated only | 1 type present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

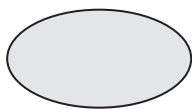
Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

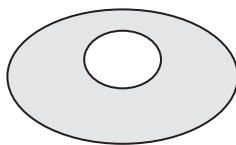
- | | | |
|------------------------------|------------|---|
| If you counted: > 19 species | points = 2 | 1 |
| 5 - 19 species | points = 1 | |
| < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

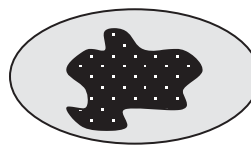
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



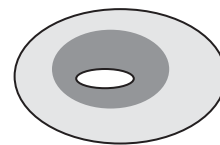
None = 0 points



Low = 1 point

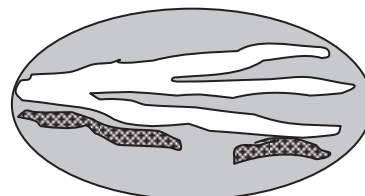
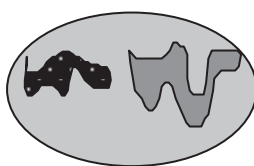


Moderate = 2 points



2

All three diagrams in this row are **HIGH** = 3points



<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		
Total for H 1	Add the points in the boxes above	5

Rating of Site Potential If score is: 15-18 = H 7-14 = M X 0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat <u> </u> + [(% moderate and low intensity land uses)/2] <u> </u> = <u> </u>% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % undisturbed habitat <u> </u> + [(% moderate and low intensity land uses)/2] <u> </u> = <u> </u>% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0</p>		0
Total for H 2	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 4-6 = H X 1-3 = M < 1 = L *Record the rating on the first page*

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i> Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0</p>		0

Rating of Value If score is: 2 = H 1 = M X 0 = L *Record the rating on the first page*

Wetland name or number 986028825 - Pond

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 3 points = 2 points = 1 points = 1 3
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0	0
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area	points = 5 points = 3 points = 1 points = 0 3
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland	points = 4 points = 2 points = 0 4
Total for D 1	Add the points in the boxes above 10

Rating of Site Potential If score is: 12-16 = H x 6-11 = M 0-5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0 0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0 0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0 1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0 0
Total for D 2	Add the points in the boxes above 1

Rating of Landscape Potential If score is: 3 or 4 = H x 1 or 2 = M 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0 0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0 1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0 0
Total for D 3	Add the points in the boxes above 1

Rating of Value If score is: 2-4 = H x 1 = M 0 = L Record the rating on the first page

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	7

Rating of Site Potential If score is: 12-16 = H X 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		0
• Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
• Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the sub-basin.	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why <u>Wetland is isolated, thousands of feet from flood areas.</u>	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0




Rating of Value If score is: 2-4 = H 1 = M X 0 = L Record the rating on the first page

Appendix C






Riparian Maps & Photos

FPARS MAPS LEGEND

BOUNDARIES

-  County Boundary
-  Townships
-  Section Survey Lines





WATER BODIES

-  Open Water
-  Flats/Gravel Bars
-  Ice
-  Man Made Feature
-  Wet Area
-  Unknown/Unclassified




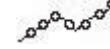
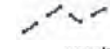
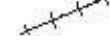
ELEVATION

-  Contours, 40' interval

STREAMS

-  Stream Water Type S, F, N
-  U, unknown
-  X, non-typed per WAC 222-16
-  Water Type Change




TRANSPORTATION

-  Paved Road
-  Unpaved Road / Surface Unknown
-  Abandoned Road (not on Activity map)
-  Orphaned Road (not on Activity map)
-  Trail
-  Railroad

SITE CLASS – On Site Class Map only

-  Site Class I
-  Site Class II
-  Site Class III
-  Site Class IV
-  Site Class V

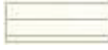

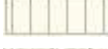

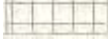
SITE INDEX – On Site Class Map only

-  Non-Commercial or Marginally Commercial
-  No Data
-  Red Alder


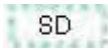
SLOPE – On Resource Map only

-  Medium Slope Instability
-  High Slope Instability

SOILS – On Resource Map only

-  Hydric Soils
-  Highly Unstable
-  Highly Erodible
-  Highly Unstable & Highly Erodible
-  No Data or Gravel Pits



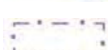

RAIN ON SNOW – On Resource Map only

-  Rain on Snow
-  Snow Dominant

WETLANDS – Resource & Water Type Maps only

-  Type A
-  Type B
-  Forested
-  other

OTHER

-  WAU (Activity, Base & Water Type maps)
-  WRIA (Activity, Base & Water Type maps)
-  Fire Shutdown Zones (Activity & Base maps only)
-  + Map Registration Tics (All map types)

Notes to Applicant or other user:

See the FPA/N instructions for Activity Map standards.

Site indices are based on the WA-DNR State Soil Survey. If the site index does not exist or indicates red alder, noncommercial, or marginally commercial species, the following apply:

- a) If red alder is indicated and the whole RMZ width is within that site index, then use site class V. If red alder is indicated for only a portion of the RMZ width, or there is on-site evidence that the site has historically supported conifer, then use the site class for conifer in the most physiographically similar adjacent soil polygon.
- b) In Western Washington, if there is no site index information, use the site class for conifer in the most physiographically similar adjacent soil polygon.
- c) In Eastern Washington, if there is no site index information, assume site class III, unless site specific information indicates otherwise.
- d) If the soil polygon indicates noncommercial or marginally commercial, then use site class V.

See Forest Practices Rules WAC 222-16-010 for a more complete definition of site class.

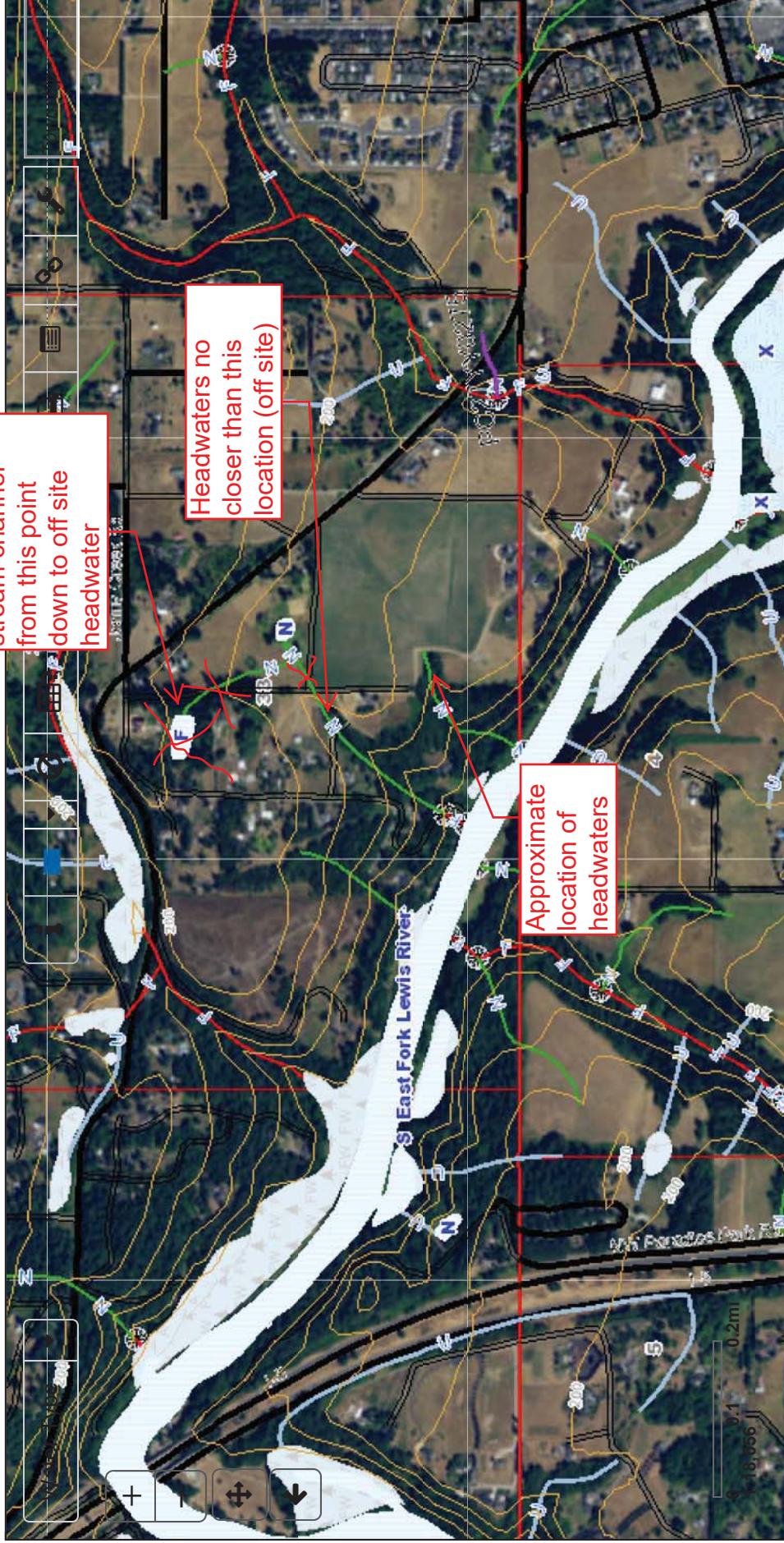
Disclaimer: Features shown on Forest Practices Application Review System (FPARS) maps represent data stored in the Washington State Department of Natural Resources (DNR) Geographic Information Systems database. As some of the data sets rely on outside sources of information, the DNR cannot accept responsibility for errors or omissions, and therefore there are no warranties that accompany this material.



Forest Practices Application Mapping Tool

DNR Home (<http://www.dnr.wa.gov/>) FPARS Home (<http://www.dnr.wa.gov/programs-and-services/fore>)

-application-review-system-fpars) Forest Prac



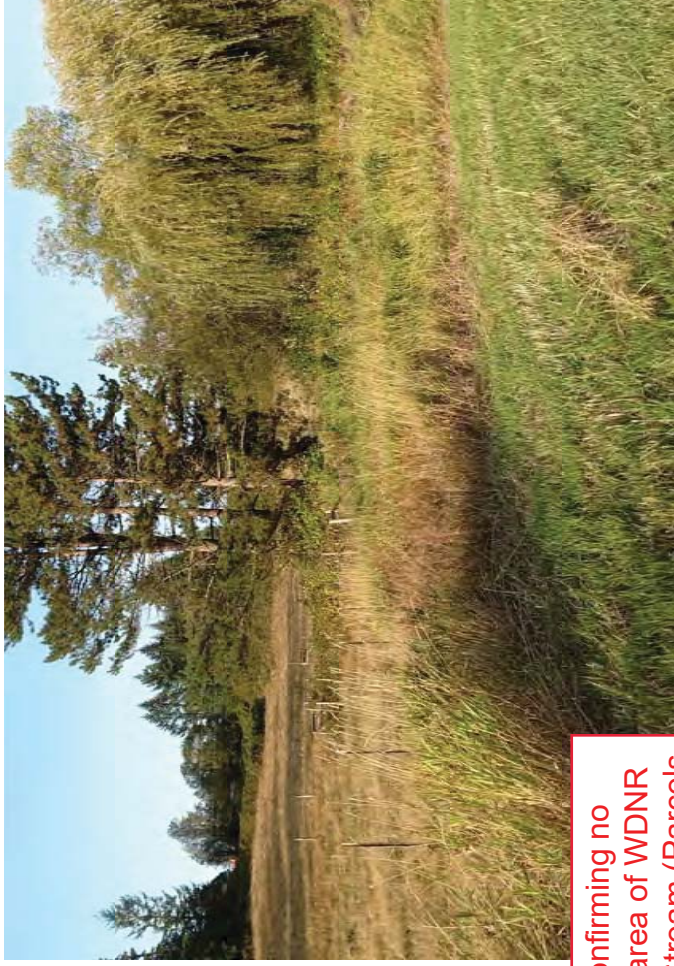
Forest Practices Application Mapping Tool

DNR Home (<http://www.dnr.wa.gov>) FPARS Home (<http://www.dnr.wa.gov/programs-and-services/forest-practices-application-review-system-fpars>)

The screenshot displays a web-based mapping application interface. At the top, there is a navigation bar with the title "Forest Practices Application Mapping Tool" and several icons for map navigation and editing. Below the navigation bar, the main map area shows an aerial view of a rural landscape with a stream network highlighted in green. Several features are annotated with red boxes and arrows:

- Artificial lake currently dry.**: Points to a white polygon labeled 'F' on the left side of the map.
- Stream segment does not exist.**: Two instances of this text point to specific segments of the green stream network.
- Headwater vicinity Type Ns stream (downstream of culvert)**: Points to a culvert structure on the stream.
- Stream segment does not exist**: Points to another segment of the stream network.
- Stream segment does not exist.**: Points to a final segment of the stream network.

At the bottom of the map, there is a scale bar showing 0, 25, and 50 units, and a north arrow. The map also shows various terrain features, roads, and buildings.



Series of photos confirming no stream channel in area of WDNR mapped Type Ns Stream (Parcels 986028830 and 986028825)



Appendix D

Statement of Qualifications

Castle-Rose Environmental
P.O. Box 670
Kelso, WA 98626
360.270.8497



Jason A. Smith
President
jason@castle-rose.net

STATEMENT OF QUALIFICATIONS – Environmental Assessment

**Experience &
Capabilities**

Castle-Rose Environmental (Oct 2005 – Present)
Pacific Tech Construction, Inc. (Nov 2006 – Dec 2007)
Natural Resource Consulting, Inc. (Mar 2002 – Oct 2005)

- Corporate Environment, Health & Safety Manager
- Develop Quality Assurance Project Plans, Sampling and Analysis Plans, NEPA & SEPA Environmental Assessments, ASTM Phase I & II ESA's, Environmental Health Assessments, etc.
- Project manager, designer, & estimator for environmental construction projects
- Develop environmental management plans for projects and works
- Provide specialist advice on environmental protection measures
- Undertakes environmental monitoring auditing and surveillance
- Perform critical areas delineations and impact assessment
- Provide environmental awareness and safety training
- Assess construction-related impacts to offsite receptors and develops appropriate control measures
- Provides scientific and technical support for project scoping & planning, impact assessment, risk assessment, and site assessment
- Provides field analytical methods, sampling for all media, and QA/QC for data collection, analysis, and reporting
- Works with federal, state and local agencies to develop projects within regulatory, economic, and functional constraints

Education

- **University of Idaho (2004 – 2011)**
 - Master of Science, Environmental Science (2007)
 - Graduate Certificate, Environmental Contamination Assessment (2005)
 - Graduate Certificate, Restoration Ecology (Fall 2008)
- **University of Hawaii @ Hilo (1994 – 1998)**
 - Bachelors in Natural Science, Minor in Chemistry

Graduate, Continuing Education & Training Summary

University of Idaho (Graduate Study & Research)

- Risk Assessment
- Toxicology
- Sampling & Analysis
- Environmental Chemistry
- Natural Resource Management
- Restoration Ecology
- GIS Applications

Northwest Environmental Training Center

- Fundamental Contaminant Chemistry - An Overview of Chemistry Principles Essential to Understanding Contaminant Behavior in the Environment (2004)
- Contaminant Chemistry and Transport in Soil, Surface Water, and Groundwater (2004)
- Understanding the Amended Model Toxics Control Act (2004)
- Establishing Groundwater, Surface Water, and Soil Cleanup Levels Under the Amended Model Toxics Control Act (2004)
- Quality Assurance/Quality Control Management of Environmental Analytical Data (2003)
- Computer Statistical Models for Environmental Sampling (Visual Sampling Plan software training from the Pacific Northwest National Laboratories) (2005)

Agency Training

- Naval Facilities Engineering Service Center, Environmental Restoration Technology Transfer
 - The PCB Training Tool (2004)
 - Assessing Risks to Amphibians Training Tool (2005)
 - The DNAPL Detection and Characterization Tool (2004)
- USACE Nationwide Permit Training (Vancouver, 2003)
- USACE Wetland Regulatory Assistance Program, Wetland Training (2005)
- Advanced Biological Assessment Preparation (WA Technology Transfer Center, 2003, 2006, 2008)
 - WSDOT-Certified as a Senior Biological Assessment Writer (2006, recertified 2008)
- Channel Migration Zone training (WA DNR, Enumclaw, 2003)
- USACE Construction Quality Management Certificate, 2011

EPA Watershed Academy

- Watershed Management Training Certificate (2005)

Hazardous Materials & Environmental Health & Safety

- EPA AHERA Building Inspector (Asbestos) [2003 - 2015]
- EPA Lead Paint Inspector & Lead Risk Assessor (University of Oregon Western Regional Lead Training Center, 2004; Refresher 2010)
- EPA Certified Hazardous Material Incident Response Operations (40-hour) [2002 - 2007]
- Field Chemistry for Hazardous Materials (by Marine & Environmental Testing, 2003)
- Mold in Construction (by Argus Pacific, 2002)
- Forensic Epidemiology, University of West Virginia, 2011
- Fundamentals of Industrial Hygiene (CIH Prep), Bowen, 2011
- Construction Safety, Miscellaneous Programs, including NAVFAC EM385-1-1 Training

Technical Experience Summary:

Provide scientific & technical support for development and maintenance projects impacting natural resources in urban and rural settings. Work directly with federal and state agencies and local governments to develop projects within regulatory, economic, and functional constraints. Project types include government, industrial, commercial, and residential:

1. *Outdoor and indoor small arms firing ranges*
2. *Federal facilities including military bases, hydropower and flood control dams*
3. *In-water and over-water work including wharfs/piers/docks/dolphins/marinas/weirs/dredging, etc.*
4. *Wetland fills & enhancement, restoration, creation, monitoring*
5. *Riparian & aquatic habitat restoration (including fish passage improvement), etc.*
6. *Wind and water erosion control, construction erosion control, industrial runoff control*

Independently performed data collection for spatial, physical, chemical, biological and cultural elements.

1. *Used advanced laser ranging, GPS methods (including RTK) and CADD to locate and delineate natural resource features within the context of project impacts. Calculations and delineations included aquatic, riparian, and wetland habitat surface areas, fill volumes, buffers, mitigation areas, stream velocity & discharge, percolation & infiltration rates, and surface runoff calculations.*
2. *Evaluated project sites to determine environmental baseline conditions for various habitat indicators including hydric soil, hydrology, vegetation, fish, wildlife, etc., in context of natural and anthropogenic disturbances.*
3. *Evaluated sites for soil, water and sediment contamination. Developed scientifically rigorous Sampling and Analysis Plans, Quality Assurance Project Plans (federal projects), executed fieldwork (including field chemistry), analyzed data, and developed final analytical reports. Fieldwork included upland soil, water-column, and sediment sample collection.*

Analyzed data and prepared reports, permit applications and supporting documents including:

1. *NEPA Environmental Assessments & Impact Statements*
2. *Biological Assessments & Evaluations*
3. *Critical Habitat Assessments*
4. *Wetland Delineations & Wetland Mitigation Plans*
5. *Habitat Restoration Plans*
6. *Riparian Functional Assessments*
7. *WA, OR & CA Joint Applications w/ maps & figures*
 - a. *401 Water Quality Certifications*
 - b. *Federal Section 10 & 404 Permits*
 - c. *Hydraulic Project Approvals*
 - d. *Aquatic Use Authorizations*
 - e. *Fill & Removal Permits*
8. *Dredged Material Characterizations*
9. *Oregon Preliminary & Expanded Preliminary Assessments*
10. *Ecological Risk Assessments*
11. *NPDES Permits, including Stormwater Management Plans*
12. *SEPA checklists*