

**D.R. HORTON – BLACK HORSE AT WHISKEY CREEK
KITITAS COUNTY
CRITICAL AREAS REPORT**

Prepared For:

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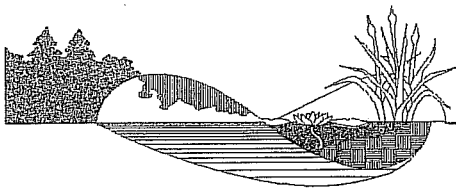
Attn: Jennifer Steig

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Kittitas County
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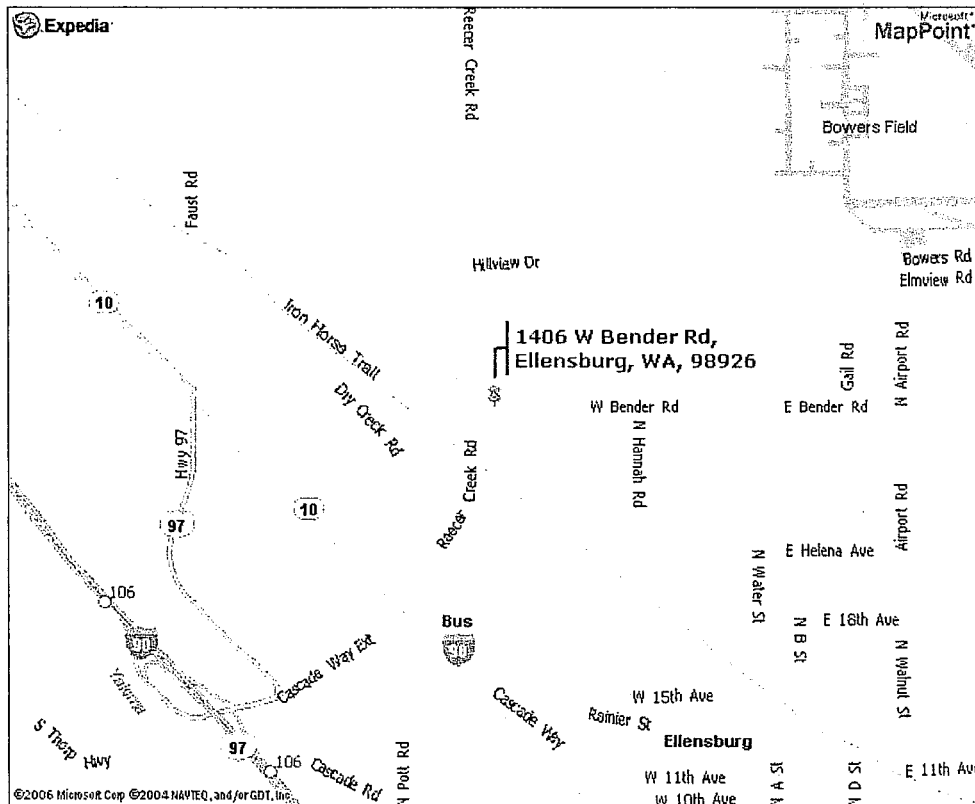
August 31, 2006
Job#A5-339



**D.R. HORTON - BLACK HORSE AT WHISKEY CREEK
KITITAS COUNTY
CRITICAL AREAS REPORT**

1.0 INTRODUCTION

This report describes our observations of any jurisdictional wetlands and streams on or within 100' of the site (Tax Parcel #18-18-27010-0002) of the proposed D.R. Horton plat known as "Black Horse at Whiskey Creek", located on the north side of West Bender Road in unincorporated Kittitas County, Washington (the "site").



Above: Vicinity Map of the site.

Specifically, the site is a 75 acre, rectangular shaped parcel located in the western 1/2 of the northeast 1/4 of Section 27, Township 18 North, Range 18 East of the

W.M. in Kittitas County Washington. The site is bordered by Reecer Creek Road to the west, West Bender Road to the south, Whiskey Creek and agricultural land to the east, and Hillview Drive (currently under construction) to the north.



Above: Aerial photograph of the site.

The site contains a single family home, gravel driving areas, landscaping, as well as numerous agricultural buildings on the south end of the site. The Town Ditch crosses the southwest corner of the site, and Whiskey Creek borders the eastern boundary for approximately the southern 1/3 of the eastern property line. The remainder of the site is utilized for growing timothy hay.

The site is proposed to be developed into a 375 single family lots with associated roads, open space and stormwater facilities.

2.0 METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. (formerly known as B-12 Wetland Consulting, Inc.) marked the wetland edges on-site on April 26, 2006. Other visits to the site to confirm hydrology conditions occurred in November of 2005 and in July of 2006. The site was reviewed using methodology described in the *Washington State Wetlands Identification Manual* (WADOE, March 1997). This

is the methodology currently recognized by Kittitas County and the State of Washington for wetland determinations and delineations. The wetland area identified would also be considered wetlands using the methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), as required by the US Army Corps of Engineers. Soil colors were identified using the 1990 Edited and Revised Edition of the *Munsell Soil Color Charts* (Kollmorgen Instruments Corp. 1990).

All wetland edges were marked with pink wire flagging numbered sequentially. Data points were marked with lime colored wire flags and were labeled DP#__. Flags placed on the site were subsequently surveyed by ESM, Consulting Engineers, Inc.

The *Washington State Wetlands Identification and Delineation Manual* and the *Corps of Engineers Wetlands Delineation Manual* both requires the use of the three-parameter approach in identifying and delineating wetlands. A wetland should support a predominance of hydrophytic vegetation, have hydric soils and display wetland hydrology. To be considered hydrophytic vegetation, over 50% of the dominant species in an area must have an indicator status of facultative (FAC), facultative wetland (FACW), or obligate wetland (OBL), according to the National List of Plant Species That Occur in Wetlands: Northwest (Region 9) (Reed, 1988). A hydric soil is "a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part". Anaerobic conditions are indicated in the field by soils with low chromas (2 or less), as determined by using the Munsell Soil Color Charts; iron oxide mottles; hydrogen sulfide odor and other indicators. Generally, wetland hydrology is defined by inundation or saturation to the surface for a consecutive period of 12.5% or greater of the growing season. Areas that contain indicators of wetland hydrology between 5%-12.5% of the growing season may or may not be wetlands depending upon other indicators. Field indicators include visual observation of soil inundation, saturation, oxidized rhizospheres, water marks on trees or other fixed objects, drift lines, etc. Under normal circumstances, indicators of all three parameters will be present in wetland areas.

3.0 OBSERVATIONS

3.1 Existing Site Documentation.

Prior to visiting the site for the delineation, a review of several natural resource inventory maps was conducted. Resources reviewed included the National

Wetland Inventory Map, as well as data on file at the Kittitas County NRCS office in regards to soil data for the site.

3.1.1 Soil Survey

According to data on file at the Kittitas County NRCS office, the site is mapped as containing three soil complexes; Nack-Brickmill complex on the northern end of the site, Brickmill complex in the central portion of the site, and Nock-Opnish complex on the south end of the site in the vicinity of the structures, Town Canal and Whiskey Creek.

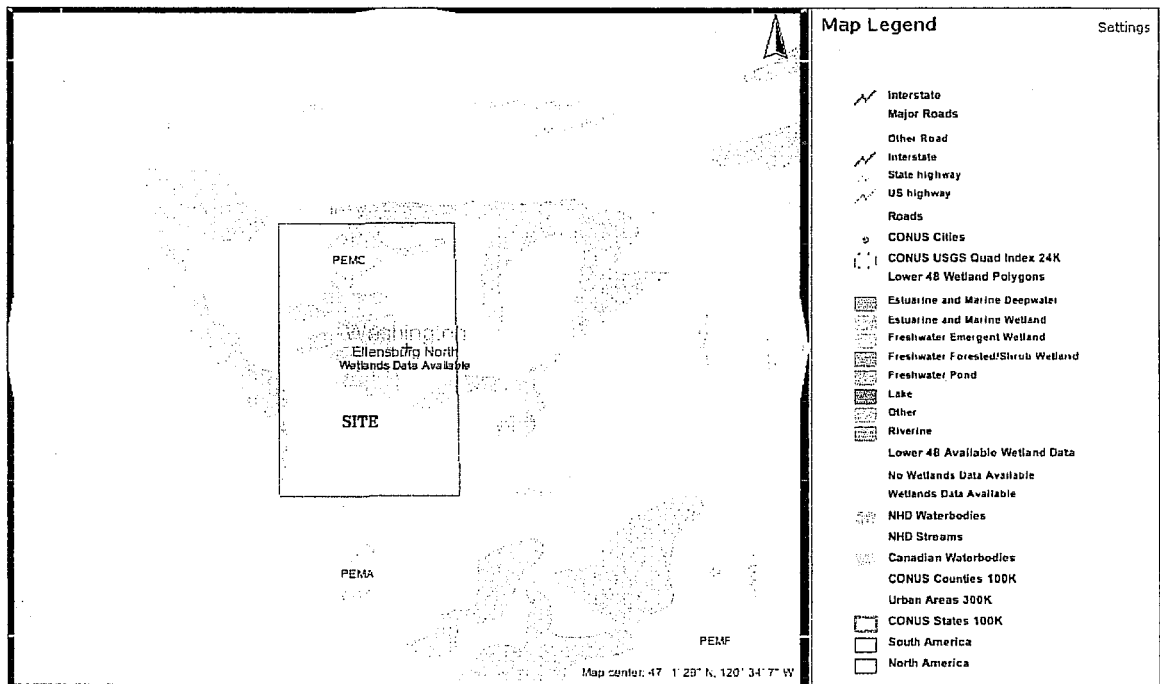
These soil types found on the site are a mix of gravelly and cobbly loam with slopes of 0%-5%. None of these soil types are recorded as having any flooding or ponding events. The upper limit of the water table on these soil types ranges from -18" to -42" below the surface. None of these soils meets the criteria to be considered "hydric" or wetland soils.



Above: Kittitas County Soil Map of the site.

3.1.2 National Wetlands Inventory (NWI)

According to the NWI map for the site, there is a portion of an irregular shaped emergent wetland that extends over the central portion of the site. This wetland was identified entirely off aerial photographs and was never field verified. The area appears to represent areas where soil saturation was observed during previous flood irrigation of the site and not naturally occurring wetland conditions.



Above: National Wetlands Inventory Map of the site.

3.2 Field observations

3.2.1 Uplands

The site is generally comprised of timothy fields with the exception of several agricultural outbuildings near the south end of the site bordering the Town Canal. Whiskey Creek flows south along the southeast side of the site. Numerous irrigation ditches, pipes, and diversions are found along the property leading from Whiskey Creek as well as the Town Canal. The property owner informed me that the irrigation system on the north and east sides of the site was recently re-built and relocated changing the way irrigation water gets to and is used on the site. This was required because the County road under construction along the

north side of his property would block existing drainage features which provided irrigation water to the north end of the site. These features have been removed.

A large gravel "French drain" is located along the east property line to intercept flood irrigation water from the neighbor to the east and direct it south to Whiskey Creek. The property owner has switched to wheel irrigation on the north side of the site, an area formerly flood irrigated.

As previously described, the majority of the site is planted and cropped in timothy hay (*Phleum pretense*). Timothy although a planted species on this site, is also considered a facultative wetland plant.

Soil pits excavated throughout the remainder of the site in portions of the areas identified in the Ellensburg UGA inventory as wetland did reveal dry, clay loam soils with soil colors of 10YR 2/1.5- 10YR 2/2.

The site is currently under a mixed flood and wheel irrigation program. Irrigation covers the entire site and can create artificial wetland conditions.

Due to the long term irrigation practices which mask the natural hydrologic condition of the site on the site, it appears the dark soil colors on the majority of the site are more an indicator of the artificial flood irrigation practices that have occurred for years and not of natural wetland or hydric conditions.

3.2.2 Wetlands & Streams

A single non-jurisdictional Category 4 wetland was identified and delineated on the site as well as a Type 3 water (Whiskey Creek).

Wetland A

Wetland A (Flags A1-A13, total size 49,764sf) is an isolated depression near the southwest corner of the site just east of the Town Canal. Wetland A was noted to have saturated soils at a marginal depth of -12" of the surface during our early growing season review of the site prior to the start of irrigation practices. This area was also reviewed after recent heavy rains so it is unknown if the hydrology observed is only a result of that rain. The extent of influence that irrigation runoff has had on this area is unknown, although it has undoubtedly helped in

the creation of wetland characteristics in this area. The fact that cattails are growing in a currently dry to moist soil indicates that the irrigation water in the summer heavily influences this area. However, since marginal hydrology was present in this area in the early growing season, it was delineated as wetland for the purposes of this project.

The wetland is vegetated with a mix of hydrophytic species including Baltic rush (*Juncus balticus*), cattail (*Typha latifolia*), curley dock (*Rumex crispus*), reed-canary grass (*Phalaris arundinacea*), and sedge (*Carex* spp.). Timothy (*Phleum pratense*) has also encroached into this portion of the site that is cropped with timothy and covers >50% of the wetland.

Soil pits excavated within this wetland revealed an A-horizon comprised of a cobbly, clay loam with a color of (7.5YR 2.5/3) overlying B-horizon with a matrix color of 2.5Y 2.5/1 with few, medium, distinct redoximorphic concentrations. Soils were saturated at a depth of -12" in the delineated area during our site inspection.

Using the US Fish and Wildlife Wetland Classification Method (Cowardin et al. 1979), Wetland A would be classified as PEM1K (palustrine, emergent, persistent, artificially flooded).

Wetlands A meets the criteria of Category 4 wetlands due to small size (<2ac), and predominance of invasive species (timothy) as listed in the rating form. According to Chapter 17.04.020 of the Kittitas County Code, Category 4 wetlands over 1 acre in size can have a buffer determined by the zoning lot line setbacks, but shall not exceed 25'. It also states this *Includes only nonirrigation induced or enhanced Category IV wetlands. Irrigation water does influence ground water tables in Kittitas County.*

It is our opinion that the hydrology of this area is artificially influenced by tailwater runoff and irrigation runoff from the site. It is clear from its low point on the landscape that irrigation runoff flows into this low spot during the irrigation season. This area was dry during our November 2005 inspection of the property as well as in July of 2006. We have concluded that this area is only wet from and artificial source; irrigation water and should not be considered a jurisdictional wetland.

Whiskey Creek

Whiskey Creek borders the east side of the site. Whiskey Creek is dry much of the year north of the Town Canal, including the portion ordering the site. South of the site and Bender Road, the Town Canal has a diversion which keeps water within the channel south of this area. An inspection of the area around the west side of Whiskey Creek revealed no areas meeting jurisdictional wetland criteria. Some jurisdictional wetlands may be present off-site on the east side of Whiskey Creek. We did not have access to this off-site area.

According to WDFW biologist Brett Renfrow, Whiskey Creek contains up to 14 species of fish including rainbow trout and juvenile steelhead. This stream would be considered a Type 3 water under Kittitas County Code. In Kittitas County, Type 3 streams typically have a 20'-50' buffer measured from the ordinary high water mark of the streams. As with wetlands, the width of the buffer depends upon the intensity of land use, the use of enhancement as a way to reduce buffer width, slope and the presence of any listed species.

5.0 REGULATIONS

In addition to the wetland regulations previously described for wetlands and streams, certain activities (filling and dredging) within "waters of the United States" may fall under the jurisdiction of the US Army Corps of Engineers (ACOE). The ACOE regulates all discharges into "waters of the United States" (wetlands) under Section 404(b) of the Clean Water Act.

Discharges (fills) into isolated and headwater wetlands up to 0.5 (1/2) acre are permitted under the Nationwide 39 Permit (NWP 39). However, discharges that result in over 0.1 (1/10th) acre of fill (and less than 0.5 acres) will require "Notification" and mitigation at a ratio of 1:1 (minimum). Washington State Department of Ecology has placed Regional Conditions on the Nationwide 39 permit that are more restrictive than the national regulations. The limits of fill can be modified if the agencies conclude that ESA fisheries could be impacted by the proposed wetland or stream fill activities.

Due to the increasing emphasis on Endangered Species Act compliance for all fills of Waters of the United State and Waters of the State, both the Corps of Engineers and Washington Department of Ecology should be contacted

regarding permit conditions, compliance, and processing prior to commitment to any fill of wetlands or streams.

6.0 PROPOSED PROJECT

The proposed project is the construction of a 375 lot subdivision. The project is located over 100' from Whiskey Creek. No impacts to Whiskey Creek or its buffer are proposed. A portion of an artificially supported and non-jurisdictional wetland (Wetland A) will be filled for the plat. Under Kittitas County Code, no mitigation is required for impacts to this man-made non-jurisdictional wetland. However, an equal area of created wetland to that impacted will be constructed to the south of the existing wetland from flags A10 and A13 along the Town Ditch in an 80' wide band.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com.

Sincerely,
Sewall Wetland Consulting, Inc.



Ed Sewall
Senior Wetlands Ecologist



REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

Kittitas County Code, Title 17A Critical Areas

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

WEST BENDER ROAD

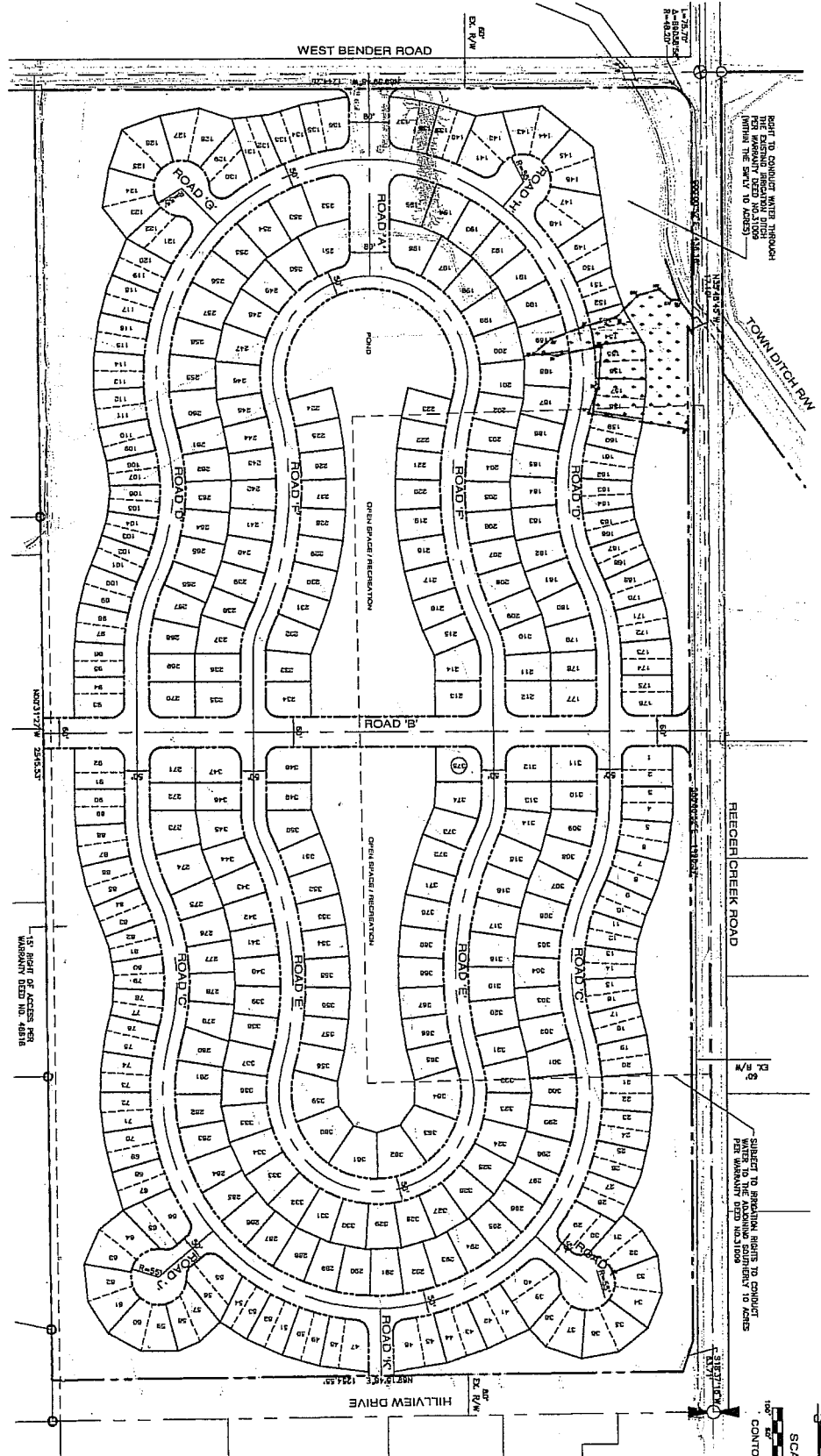
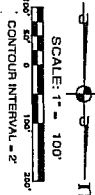
NOTE TO SUBMITTER: WHERE THROUGH
TRAIL EXISTING, RESERVATION DURING
CONSTRUCTION SHOULD BE MAINTAINED
WITHIN THE SETBACK TO AVOID

TOWN DITCH P.W.

HEBER CREEK ROAD

SUBJECT TO SPECIATION RIGHTS TO CONDUIT
PER WARRANTY DEED NO. 201009

HILLYVIEW DRIVE



WETLANDS RATING FIELD DATA FORM

BACKGROUND INFORMATION:

Name of Rater: Ed Sewall Affiliation: _____ Date: 5.30.06

Name of wetland (if known): Wetland A - Astman - Border Rd
Reeder Crk Rd

Government Jurisdiction of wetland: Kittitas County

Location: 1/4 S: _____ of 1/4 S: NE SEC: 27 TOWNSHIP: 18N RANGE: 18E

SOURCES OF INFORMATION: (Check all sources that apply)

Site visit: USGS Topo Map: NWI map: Aerial Photo: Soils survey:

Other: Describe: _____

WHEN THE FIELD DATA FORM IS COMPLETE ENTER CATEGORY HERE:

Q.1. High Quality Natural Heritage Wetland.

Circle answers

Answer this question if you have adequate information or experience to do so. If not find someone with the expertise to answer the questions. Then, if the answer to questions 1a, 1b and 1c are all NO, contact the Natural Heritage program of DNR.

1a. Is there significant evidence of human-caused changes to topography or hydrology of the wetland? Significant changes could include clearing, grading, filling, logging of the wetland or its immediate buffer, or culverts, ditches, dredging, diking or drainage of the wetland. Briefly describe the changes and your information source/s: _____

Yes: go to Q.3.
No: go to 1b.

1b. Are there populations of non-native plants which are currently present and appear to be invading native populations? Briefly describe any non-native plant populations and information source(s): _____

Yes: go to Q.3.
No: go to 1a.

1c. Is there significant evidence of human-caused disturbance of the water quality of the system? Degradation of water quality could be evidenced by culverts entering the system, direct road/parking lot runoff, evidence of historic dumping of wastes, oily sheens, extreme eutrophic conditions, livestock use or dead fish etc. Briefly describe: _____

Yes: go to Q.3.
 No: Possible Category I

Irrigated + cropped, livestock
graze

<p>Q.2. <u>Regionally Rare Native Wetland Communities</u></p> <p>The Department of Ecology is developing a methodology for regionally rare native wetland communities. It is not yet available for use.</p>	
<p>Q.3. <u>Irreplaceable Ecological Functions:</u></p> <p>Does the wetland:</p> <ul style="list-style-type: none"> - have at a least 1/2 acre of contiguous peat wetland;..... - <u>or</u>, have a forested class greater than 1 acre ;..... - <u>or</u>, have characteristics of an estuarine system;..... - <u>or</u>, have eel grass, floating <u>or</u> non-floating kelp beds?..... 	<p>No to <u>all</u>: go to Q.4.</p> <p>Yes: go to 3a.</p> <p>Yes: go to 3b.</p> <p>Yes: go to 3c.</p> <p>Yes: go to 3d.</p>
<p>3a. <u>Peat Wetlands.</u></p> <p>3a1. Does at least 1/2 acre of the contiguous peat wetland have < 25% areal cover of any combination of species from the list of invasive/exotic species on p.19, <u>and</u> have < 80% areal cover of <i>Spirea douglasii</i>?.....</p>	<p>Yes: Category I No: go to Q.4.</p>
<p>Q.3b. <u>Mature forested wetland.</u></p> <p>3b1. Is the average age of dominant trees in the forested wetland > 80 years?</p> <p>3b2. Is the average age of dominant trees in the forested wetland 50-80 years, <u>and</u> is the structural diversity high as characterized by a multi-layer community of trees > 50' tall <u>and</u> trees 20'-49' tall <u>and</u> shrubs <u>and</u> herbaceous groundcover? ..</p> <p>3b3. Is > 50% (areal cover) of the dominant plants in one or more layers (canopy, young trees, shrubs, herbs) invasive/exotic plant species from the p.19 list?..</p>	<p>Yes: Category I No: go to 3b2.</p> <p>Yes: go to 3b3. No: go to Q.5.</p> <p>Yes: go to Q.5. No: Category I</p>

<p>Q.3c. <u>Estuarine wetlands.</u></p>	
<p>3c1. Is the wetland listed as National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park, or Educational, Environmental or Scientific Reserves designated under WAC 332-30-151?</p>	<p>Yes: Category I No: go to 3c2.</p>
<p>3c2. Is the wetland > 5 acres; or is the wetland 1-5 acres; <u>or</u> is the wetland < 1 acre?</p>	<p>Yes: Category I Yes: go to 3c3. Yes: go to 3c4.</p>
<p>3c3. Does the wetland meet at least 3 of the following 4 criteria:</p> <ul style="list-style-type: none"> - minimum existing evidence of human related disturbance such as diking, ditching, filling, cultivation, grazing or the presence of non-native plant species (see guidance for definition); - surface water connection with tidal saltwater or tidal freshwater; - at least 75% of the wetland has a 100' buffer of ungrazed pasture, open water, shrub or forest; - has at least 3 of the following features: low marsh; high marsh; tidal channels; lagoon(s); woody debris; or contiguous freshwater wetland. 	<p>Yes: Category I No: Category II</p>
<p>3c4. Does the wetland meet <u>all</u> of the four criteria under 3c3. (above)?</p>	<p>Yes: Category II No: Category III</p>
<p>Q.3d. <u>Eel Grass and Kelp Beds.</u></p>	
<p>3d1. Are eel grass beds present?</p>	<p>Yes: Category I No: go to 3d2.</p>
<p>3d2. Are there floating or non-floating kelp bed(s) present with greater than 50% macro algal cover in the month of August or September?</p>	<p>Yes: Category I No: Category II</p>
<p>Q.4. <u>Category IV wetlands</u></p>	
<p>4.1. Is the wetland: less than 1 acre <u>and</u>, hydrologically isolated <u>and</u>, comprised of <u>one</u> vegetated class that is dominated (> 80% areal cover) by <u>one</u> species from the list in guidance p.18.</p>	<p>Yes: Category IV No: go to 4.2.</p>
<p>4.2. Is the wetland: less than two acres <u>and</u>, hydrologically isolated, with <u>one</u> vegetated class, and > 90% of areal cover is <u>any</u> combination of species from the list in guidance p.19.</p>	<p>Yes: Category IV No: go to Q.5.</p>

ROUTINE WETLAND DETERMINATION DATA FORM
(Washington State Wetlands Identification & Delineation Manual, 1997)

SEWALL WETLAND CONSULTING, INC.
 1103 West Meeker Street
 Kent, Washington 98032
 (253) 859-0515

Project Name/#: Axtman Date: 4-26-06 Investigator: Ed Sewall Data Point: DP#1
 Jurisdiction: Kittitas Co. State: WA Atypical Analysis: Problem Area:

VEGETATION

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Phalaris arundinacea</i>		FACW	
2. <i>Phleum pratense</i>		FAC	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: _____ Hydrophytic vegetation criteria met: Yes No Marginal
 Comments: maintained timothy hay field - grazed

SOILS

Mapped Soil Series: _____ On Hydric Soils List?: Yes No Drainage Class: _____

Depth (0 in)	Matrix color	Redox concentration color	Texture
6 in.	7.5YR 2.5/3		cobby, low
16 in.	2.5Y 2.5/1	fine med distinct	
in.			
in.			

Organic soil __, Histic epipedon __, Hydrogen sulfide __, gleyed __, redox concentrations , redox depletions __, pore linings __, iron concretions __, manganese concretions __, organic matter in surface horizon (sandy soil) __, organic streaking (sandy soils) __, organic pan (sandy soil) __
 Hydric soil criteria met: Yes No Basis: change of 2 w/ redox features
 Comments: _____

HYDROLOGY

Recorded data __, inundation __, saturation ⁻¹² __, watermarks __, drift lines __, sediment deposits __, drainage patterns __
 Wetland hydrology criteria met: Yes No Basis: _____
 Comments: Artificially hydrated with irrigation water

SUMMARY OF CRITERIA

Soil Temp. at 19.7" depth: _____ Growing Season?: Y N
 Hydrophytic vegetation: Y N Hydric soils: Y N Wetland hydrology: Y N
 Data point meets the criteria of a jurisdictional wetland?: Yes No - art. fluently irrigated

ROUTINE WETLAND DETERMINATION DATA FORM
(Washington State Wetlands Identification & Delineation Manual, 1997)

SEWALL WETLAND CONSULTING, INC.
 1103 West Meeker Street
 Kent, Washington 98032
 (253) 859-0515

Project Name/#: Axtman Date: 4-26-06 Investigator: Ed Sewall Data Point: DPZ
 Jurisdiction: Kittitas Co. State: WA Atypical Analysis: Problem Area:

VEGETATION

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Phleum pratense</i>		FAL	
2. <i>Phalaris arundinacea</i>		FALW	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 100 Hydrophytic vegetation criteria met: Yes No Marginal
 Comments: maintained timothy hay field

SOILS

Mapped Soil Series: _____ On Hydric Soils List?: Yes No Drainage Class: _____
 Depth (0 in) Matrix color Redox concentration color Texture
 1/6 in. 7.5YR 2.5/3 cobby 1cm
 _____ in. _____
 _____ in. _____
 _____ in. _____

Organic soil, Histic epipedon, Hydrogen sulfide, gleyed, redox concentrations, redox depletions, pore linings, iron concretions, manganese concretions, organic matter in surface horizon (sandy soil), organic streaking (sandy soils), organic pan (sandy soil)
 Hydric soil criteria met: Yes No Basis: no indicators
 Comments: _____

HYDROLOGY

Recorded data, inundation, saturation, watermarks, drift lines, sediment deposits, drainage patterns
 Wetland hydrology criteria met: Yes No Basis: no indicators
 Comments: Artificially hydrated with irrigation water

SUMMARY OF CRITERIA

Soil Temp. at 19.7" depth: _____ Growing Season? Y N
 Hydrophytic vegetation: Y N Hydric soils: Y N Wetland hydrology: Y N
 Data point meets the criteria of a jurisdictional wetland?: Yes No

ROUTINE WETLAND DETERMINATION DATA FORM
(Washington State Wetlands Identification & Delineation Manual, 1997)

SEWALL WETLAND CONSULTING, INC.
 1103 West Meeker Street
 Kent, Washington 98032
 (253) 859-0515

Project Name/#: Axtman Date: 4-26-06 Investigator: Ed Sewall Data Point: D1003
 Jurisdiction: Kittitas Co. State: WA Atypical Analysis: Problem Area:

VEGETATION

Dominant plant species	Stratum	Indicator	Coverage %
1. <u>Falx pasture</u>		<u>FAL</u>	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: 100 Hydrophytic vegetation criteria met: Yes No Marginal
 Comments: maintained timothy hay field

SOILS

Mapped Soil Series: _____ On Hydric Soils List?: Yes No Drainage Class: _____
 Depth(0 in) Matrix color Redox concentration color Texture
1/2 in. 2.5Y/2 _____ cobby loam
 _____ in. _____
 _____ in. _____
 _____ in. _____

Organic soil __, Histic epipedon __, Hydrogen sulfide __, gleyed __, redox concentrations __, redox depletions __, pore linings __, iron concretions __, manganese concretions __, organic matter in surface horizon (sandy soil) __, organic streaking (sandy soils) __, organic pan (sandy soil) __.
 Hydric soil criteria met: Yes No Basis: no indicators
 Comments: _____

HYDROLOGY

Recorded data __, inundation __, saturation __, watermarks __, drift lines __, sediment deposits __, drainage patterns __.
 Wetland hydrology criteria met: Yes No Basis: _____
 Comments: Artificially hydrated with irrigation water

SUMMARY OF CRITERIA

Soil Temp. at 19.7" depth: _____ Growing Season?: Y N
 Hydrophytic vegetation: Y N Hydric soils: Y N Wetland hydrology: Y N
 Data point meets the criteria of a jurisdictional wetland?: Yes No

ROUTINE WETLAND DETERMINATION DATA FORM
(Washington State Wetlands Identification & Delineation Manual, 1997)

SEWALL WETLAND CONSULTING, INC.
 1103 West Meeker Street
 Kent, Washington 98032
 (253) 859-0515

North end

Project Name/#: Axtman Date: 4-26-06 Investigator: Ed Sewall Data Point: *DP#4*
 Jurisdiction: Kittitas Co. State: WA Atypical Analysis: Problem Area:

VEGETATION

Dominant plant species	Stratum	Indicator	Coverage %
1. <i>Phleum pratense</i>		<i>FAC</i>	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

% of species OBL, FACW and/or FAC: *100* Hydrophytic vegetation criteria met: Yes No Marginal
 Comments: *maintained timothy hay field*

SOILS

Mapped Soil Series: _____ On Hydric Soils List?: Yes No Drainage Class: _____
 Depth(0 in) Matrix color Redox concentration color Texture
1/4 in. 7.5YR 2.5/2 cobbly loam
 _____ in. _____
 _____ in. _____
 _____ in. _____

Organic soil , Histic epipedon , Hydrogen sulfide , gleyed , redox concentrations , redox depletions , pore linings , iron concretions , manganese concretions , organic matter in surface horizon (sandy soil) , organic streaking (sandy soils) , organic pan (sandy soil) .
 Hydric soil criteria met: Yes No Basis: *no indicators*
 Comments: _____

HYDROLOGY

Recorded data , inundation , saturation , watermarks , drift lines , sediment deposits , drainage patterns .
 Wetland hydrology criteria met: Yes No Basis: _____
 Comments: *Artificially hydrated with irrigation water*

SUMMARY OF CRITERIA

Soil Temp. at 19.7" depth: _____ Growing Season?: Y N
 Hydrophytic vegetation: Y N Hydric soils: Y N Wetland hydrology: Y N
 Data point meets the criteria of a jurisdictional wetland?: Yes No