



Application for a Water Right Permit

For Ecology Use
(Date Stamp)



Follow the attached instructions. Attach additional sheets as necessary.

- GROUND WATER SURFACE WATER DROUGHT
 PERMANENT SHORT TERM TEMPORARY

***A NON-REFUNDABLE MINIMUM FEE OF \$50.00 MUST ACCOMPANY COMPANY THIS APPLICATION.**

Section 1. APPLICANT

I have participated in a pre-application conference with Ecology.

Applicant/Business Name: WA Dept. of Transportation; W. Brian White, Asst. Regional Administrator		Phone No: 509-577-1700	Other No:
Address: 2809 Rudkin Road			
City: Union Gap	State: WA	Zip: 98903	
Email Address (if available): WhiteB@wsdot.wa.gov			

Contact Name (if different from above): Bill Sauriol, WSDOT Environmental Manager		Phone No: 509-577-1752	Other No:
Relationship to Applicant: Point of Contact			
Address: Same			
City:	State:	Zip:	
Email Address (if available): SaurioW@wsdot.wa.gov			

Legal Land Owner or Part Owner Name of the Proposed Place of Use: Same as applicant		Phone No:	Other No:
Address:			
City:	State:	Zip:	
Email Address (if available):			

For Ecology Use	APPLICATION NO: <u>64-33133</u>	SEPA: Exempt/Not Exempt		
	Fee Paid: <u>50⁰⁰</u>	Check No: <u>03-13-2015</u>	ECY Coding: 001-001-WR1-0285-000011	
Date Returned	By	Priority Date <u>03-13-2015</u>	By <u>[Signature]</u>	WRIA: <u>38 YAKIMA</u>
Pre-application interviewer:				

Section 2. STATEMENT OF INTENT

Do you own the land on which the proposed point of diversion/withdrawal is located? YES NO
 If no, do you have legal authority to make this application for use of another's land? YES NO

Briefly describe the purpose of your proposed project: As part of the Nile Valley landslide emergency response, WSDOT is restoring approximately 3 acres of ground which requires irrigation water using two temporary, shallow wells. This application is a continuation of an approval received through the Yakima River adjudication process in 2012, using a surface water right claim (#00525) as mitigation. See Attachment #1.

Anticipated length of time to complete your project: 2024

Water Use List all purposes for which water will be applied to a beneficial use and list quantity required for each.

Purpose(s) of Use	Rate (check one box only)		Acre-Feet per Year (AF/YR) (If known)	Period of Use (Continuously or Seasonal)
	<input type="checkbox"/> Cubic Feet per Second (CFS)	<input checked="" type="checkbox"/> Gallons per Minute (GPM)		
restoration site plant watering (Well #1)	<65 gpm		5	April 1-Oct. 31
restoration site plant watering (well #2)	<65 gpm			
TOTAL:	130 gpm		5	

Short Term/Temporary Water Use

Is this a request for a short term project (less than four months and non-recurring)? YES NO

Is this request for a temporary permit? YES NO

If yes to either question above, indicate the dates that the water will be needed:

FROM: 04 / 01 / 2016 TO: 10 / 31 / 2024

Section 3. POINT OF DIVERSION OR WITHDRAWAL

(Complete A or B, and C below)

A.) If Surface Water Source	B.) If Ground Water Source
<input type="checkbox"/> Spring <input type="checkbox"/> Creek <input type="checkbox"/> River <input type="checkbox"/> Lake <input type="checkbox"/> Other: _____ Source Name: _____ Tributary to: _____ Number of proposed diversion points: _____ Do you have an existing diversion? <input type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> Well(s) <input type="checkbox"/> Other: <u>2 existing wells</u> See Attachment #2 Well diameter & depth: <u>6 inch diam; 32 and 46 feet deep</u> Number of proposed points of withdrawal: <u>2</u> Do you have an existing well? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If available, attach Water Well Report and pump test. Well Tag ID No. <u>BCF833; BCF834</u>

C.) Point of Diversion/Withdrawal – Legal Description

Parcel No.	¼	¼	Section	Township	Range	County
15151122007	NW	NW	11	15	15	Yakima
Lot(s)	Block(s)		Subdivision			

If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner:

_____ Feet (North/ South) and _____ feet (East/ West)
 from the (NW SW NE SE _____) corner of Section_____.

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YAK

Parcel No.	¼	¼	Section	Township	Range	County
15150233400/401	SW	SW	2	15	15	Yakima
Lot(s)	Block(s)		Subdivision			

If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner:

_____ feet (North/ South) and _____ feet (East/ West)
 from the (NW SW NE SE _____) corner of Section_____.

NOTE: If more than two points of diversion/withdrawal attach additional information on a separate sheet of paper.

Section 4. PLACE OF USE

Attach a copy of the legal description of the property (on which the water will be used) taken from a real estate contract, property deed or title insurance policy, or copy it carefully in the space below.

The place of use consists of 2 areas of restoration on parcels acquired by WSDOT. See Map and list of parcels in Attachment 3

¼	¼	Section	Twp.	Range	County	Parcel No.
	SW and NW	2 and 11	15	15	Yakima	Multiple

Do you own all the lands on which the proposed place of use is located? YES NO.

If no, do you have legal authority to make this application for use of another's land? YES NO

Provide owner name(s), address, and phone number: _____

Are there any other water rights or claims associated with this property or water system? YES NO

If yes, provide the water right and/or claim numbers: Claim #01007, #1577, 1578; 1399

Attach a map of your project showing the point of diversion/withdrawal and place of use. If platted property, be sure to include a complete copy of the plat map.

Section 5. WATER SYSTEM DESCRIPTION

Describe your proposed water system (include type and size of devices used to divert or withdraw water from source): Two shallow wells were drilled in 2012 for landscape irrigation supplies. (See Attachment #2).

The wells have temporary power supplies, meters, and supply water to above ground PVC irrigation equipment.

Section 6. DOMESTIC WATER SUPPLY SYSTEM INFORMATION
(Complete A or B, and C below)

A.) Domestic Water Systems only	B.) Municipal Water Systems only <i>(defined under RCW 90.03.015)</i>
Projected number of connections to be served: _____	Present population to be served water: _____
Type of connections: _____ <i>(e.g., home, recreational cabin)</i>	Estimate future population to be served: _____ (20 year projection)

C.) Water System Planning

Do you have a Water System Plan approved by the Washington State Department of Health, Drinking Water Division? YES NO

If yes, date plan was approved ____/____/____ Water System Number: _____

Name of water system: _____

Are you within the service area of an existing water system? YES NO

If yes, explain why you are unable to connect to the system: _____

Section 7. IRRIGATION/STOCKWATER/OTHER FARM USES

Irrigation

Total number of acres requested to be irrigated under this application = _____ ACRES

NOTE: Outline the area to be irrigated on your attached map.

Stockwater

List number and kind of stock: _____

Is the proposed project for a dairy farm? YES NO

n/a

Other Proposed Farm Uses

Describe all proposed uses: _____

Family Farm Water Act (RCW 90.66):

Calculate the acreage in which you have a controlling interest, including only:

- Acreage irrigated under water rights acquired after December 8, 1977,
- Acreage proposed to be irrigated under this application, and
- Acreage proposed to be irrigated under other pending application(s).

Is the combined acreage under existing rights greater than 6000 acres? YES NO

Do you have a controlling interest in a Family Farm Development Permit? YES NO

If yes, enter Permit No: _____

Section 8. OTHER WATER USES

Hydropower

Indicate total feet of head _____ and proposed capacity in kilowatts: _____

Describe works: _____

n/a

Indicate all uses to which power is to be applied: _____

FERC License No: _____

Mining/Industrial Use

Describe use, method of supplying and utilizing water:

Other Use

n/a

Section 9. WATER STORAGE

Will you be using a dam, dike, or other structure to retain or store water? YES NO

Are you proposing to store more than 10 acre-feet of water? YES NO

Will the water depth be 10 feet or more? YES NO

If you answered yes to any of the above questions, please describe: _____

NOTE: If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point and some portion of the storage will be above grade, you must also complete an Application for Permit to Construct a Reservoir and a Dam Construction Permit and Application.

Section 10. DRIVING DIRECTIONS

Provide detailed driving directions to the project site: Driving west from Yakima on US 12, continue on State Route 410 past the US 12 intersection approximately 9 miles to the intersection of Nile Road (The Woodshed gas/store).

1. For the SR 410 well and restoration area, continue on SR 410 approximately 1.2 miles to a maintenance access gate (on left);
2. For the other well and restoration area, turn left on Nile Road and continue 0.5 miles to Landslide Road, turn right, and drive to end (river).

Site Address: N/A - Vacant land off State Route 410 and Landslide Road, Naches WA

Section 11. REQUIRED SIGNATURES

I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though the employees of the Department of Ecology may have assisted me in the preparation of the above application, all responsibility for the accuracy of the information rests with me, the applicant.

W. Brian White
 Print Name
 (Applicant or authorized representative)

W. Brian White
 Signature

3/6/15
 Date

 Print Name
 (Legal Owner or Part Owner Place of Use)

 Signature

 Date

 Print Name
 (Legal Owner or Part Owner Place of Use)

 Signature

 Date

Please check the region in which the project is located:

<p>*Submit your application to: DEPARTMENT OF ECOLOGY CASHIERING SECTION PO BOX 47611 OLYMPIA, WA 98504-7611</p>	<input checked="" type="checkbox"/> Central Regional Office 15 W Yakima Avenue, Suite 200 Yakima, WA 98902 -3463 (509) 575-2490	<input type="checkbox"/> Eastern Regional Office 4601 N. Monroe Street Spokane, WA 99205-1265 (509) 329-3400
	<input type="checkbox"/> Northwest Regional Office 3190 – 160 th Avenue SE Bellevue, WA 98008-5452 (425) 649-7000	<input type="checkbox"/> Southwest Regional Office PO Box 47775 Olympia, WA 98504-7775 (360) 407-6300

If you need this document in an alternate format, please call the Water Resources Program at 360-407-6872.
 Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

If you have questions about your application, contact the Water Resources program at the regional office in which your project is located.

ATTACHMENT #1

Section 2. Statement of Intent

As part of the Nile Valley landslide emergency response, WSDOT reconstructed a part of State Route 410, moved a section of the Naches River and is restoring the site. Tree and plant watering of ~3 acres for 10 years must be done to meet riparian and wetland plant success standards as required by permit approvals issued by regulatory agencies for the highway reconstruction project.

WSDOT acquired several water right claims in association with land acquisitions in the landslide area (e.g., Claims 00525, 01007, etc). WSDOT received an Order Pendente Lite (OPL) in 2012 using a portion of Claim 00525 as mitigation that allowed:

- a temporary change of place of use -in adjoining areas to the claim boundary
- a temporary change to the point of diversion – water withdrawal from two shallow wells
- a temporary change to the purpose – irrigating plants and trees in restoration areas

The OPL approval expires in Oct. 2015 and WSDOT is pursuing a temporary permit in lieu of an OPL extension or new OPL due to the possibility that the adjudication process will conclude prior to the ten year period.

Attachments:

- An Order Pendente Lite issued by Yakima Superior Court, April 12, 2012.
- Exhibit D of the Motion - Technical Memorandum Hydrogeologic Analysis of Irrigation Wells Proposed for the SR 410 Nile Landslide Reconstruct Route Project. Dated January 2012.
- Claim 00525 – WSDOT
- Claim 01007 – Dexter (Substitute party filed for WSDOT)

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STATE OF WASHINGTON
YAKIMA COUNTY SUPERIOR COURT

IN THE MATTER OF THE DETERMINATION
THE RIGHTS TO THE USE OF THE
SURFACE WATERS OF THE YAKIMA
RIVER DRAINAGE BASIN, IN
ACCORDANCE WITH THE PROVISIONS OF
CHAPTER 90.03, REVISED CODE OF
WASHINGTON,

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Plaintiff,

vs.

JAMES J. ACQUAVELLA, et al.,

Defendants.

NO. 77-2-01484-5

ORDER *PENDENTE LITE*

RE: WSDOT PETITION FOR
TEMPORARY CHANGE IN PURPOSE,
POINT OF DIVERSION AND PLACE OF
USE FOR A PORTION OF

CLAIM NO. 0525

SUB-BASIN NO. 16
(Upper Naches)

Petition
THIS MATTER came before the Court on the ~~stipulation~~ of the parties hereto being
the State of Washington, Department of Transportation (WSDOT) by and through its attorneys
Robert M. McKenna, Attorney General, and Guy M. Bowman, Assistant Attorney General;
and _____ appearing by and through _____
; and the parties having stipulated to this Order and the Court being advised in
the premises; **NOW, THEREFORE,**

IT IS SO ORDERED, ADJUDGED AND DECREED as follows:

1. That the subject water right was claimed by Mr. Boyd Brown under Court
Claim No. 0525. Said water right, as described in the Report of Referee Re: Sub-

1 basin No. 16 (Volume 9), and subsequently confirmed by the Court pursuant to
2 its April 8, 1993, Conditional Final Order ("CFO") for Sub-basin No. 16
3 (Upper Naches), AS MODIFIED BY this Court's Order dated October 13,
4 2011 (the "Water Right"), is as follows:

5 Claimant: Boyd A. Brown

6 Court Claim No.: 0525

7 Certificate Number: S4-83443-J

8 Sub-Basin: No. 16, Upper Naches

9 Source: Rattlesnake Creek

10 Use: Irrigation of 53 acres

11 Period of Use: April 1 through October 31

12 Quantity: 1.5 cubic feet per second, 195 acre-feet per year

13 Priority Date: April 1, 1885

14 Point of Diversion: 300 feet south and 1050 feet east of the center of Section 3,
15 within the NW ¼ SE ¼ of Section 3, T. 15 N., R. 15
E.W.M.

16 Place of Use: That portion of the W ½ SW ¼ of Section 2 lying westerly of the
17 county road (Nile Road); EXCEPT the south 534 feet lying
18 easterly of the Carmack Parker Ditch. That portion of the E ½
19 SE ¼ of Section 3 lying southerly of the county road (Nile
Road). That portion of the NW ¼ NW ¼ NW ¼ of Section 11
lying east of a flowing stream; ALL in T. 15 N., R. 15 E.W.M.

- 20 2. The original Place of Use, located in Yakima County, was subsequently divided by
21 Mr. Brown into six (6) contiguous parcels. Pursuant to the October 2011 Order,
22 the Confirmed Water Right was partitioned and divided by stipulation between the
23 current owners, including Petitioner WSDOT. As set forth in the Order, WSDOT
24 acquired the water right associated with three (3) of the six (6) parcels (the former
25 Vian water right, the former Rose water right and the former Stine water right).
26

1 3. As set forth in the October 13, 2011 Order, WSDOT is the rightful owner of a portion
2 of the Confirmed Water Right in the total amount as follows:

3 45 af/y

4 .3 cfs

5 4. In October of 2011, the Washington State Department of Ecology (WSDOE) accepted
6 WSDOT's temporary ten (10) year donation of its portion of the Confirmed Water
7 Right (45 af/y, .3 cfs - comprising the former Vian water right, the former Rose water
8 right and the former Stine water right) into the State's Water Right Trust Program. In
9 connection with the work to be performed as outlined in 5. below, WSDOT seeks to
10 take a portion of its Confirmed Water Right out of the Water Trust Program. The right
11 which WSDOT will take out of the Trust Program is the former Vian water right, which
12 consists of 11 acres, ^{.21992}~~.22~~ cfs and 33 af/yr. The former Rose water right and the former
13 Stine water right will remain in the Trust Program, along with the remainder of the
14 former Vian water right, 28 af/yr and ^{.21992}~~.22~~ cfs.

15 5. In connection with its restoration work associated with the repair of SR 410/Nile Valley
16 Road, WSDOT seeks to change the place of use, purpose of use and point of diversion
17 in connection with its use of up to five (5) af/y total water use for up to three (3)
18 irrigation seasons (ending in October of 2015) to support landscaping, mitigation area
19 plant establishment, dust control, and embankment compaction.

20
21 THAT THE TEMPORARY CHANGE IN PLACE OF USE, CHANGE IN PURPOSE
22 AND CHANGE IN THE POINT OF DIVERSION FOR UP TO 5 ACRE-FEET/YEAR
23 ^{.21992}~~(.22)~~ CFS) OF WSDOT'S PORTION OF THE SUBJECT WATER RIGHT UNDER
24 COURT CLAIM NO. 0525 IS AS FOLLOWS:
25
26

6. Change in Purpose of Use: For landscape watering, plant restoration, dust control, and embankment compaction along SR 410/Nile Valley Road.

7. Change in Period of Use: April 1 – October 31

8. Change in Place of Use: SR 410 Reconstruction area between Mileposts 107.4 and 108.5, and mitigation site locations, all located within portions of Sections 2, 3, 10 and 11, Township 15 North, Range 15 East, W.M, as indicated in Ex. 1 hereto.

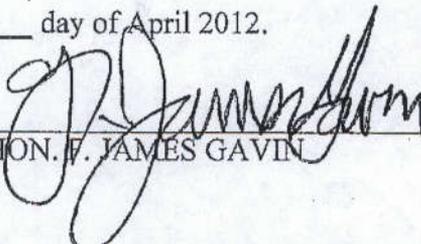
9. Change in Point of Diversion: Two (2) shallow wells: (1) along the east side of the Naches River on the upland terrace of SR 410 and the river; (2) on the west side of the Naches River in a low flood plain area, as indicated in Ex. 1 hereto.

10. Quantity: The total quantity subject to this Order is **5 af/yr**, and instantaneous flow (cfs) according to the following table: 07-21992

Quantity transferred	April	May	June	July	August	September	October
5 acre feet/year	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Acre-feet	0.71	0.71	0.71	0.71	0.71	0.71	0.71
cfs	.22	.22	.22	.22	.22	.22	.22

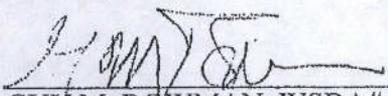
11. This order is effective when WSDOT takes 5 af/yr portion of the former Vian water right out of the Trust Program and for the 2012 - 2015 irrigation seasons only or for the pendency of the adjudication, whichever period is shorter. This approval does not set a precedent for water transfers in future years. Approval shall not be used as evidence of, nor waive any argument concerning, future proposed permanent or temporary transfers under either applicable federal law or contract or state law, including RCW 90.03.380.

DONE IN OPEN COURT this 12 day of April 2012.


HON. F. JAMES GAVIN

1 Presented by:

2 ROBERT M. MCKENNA
3 Attorney General

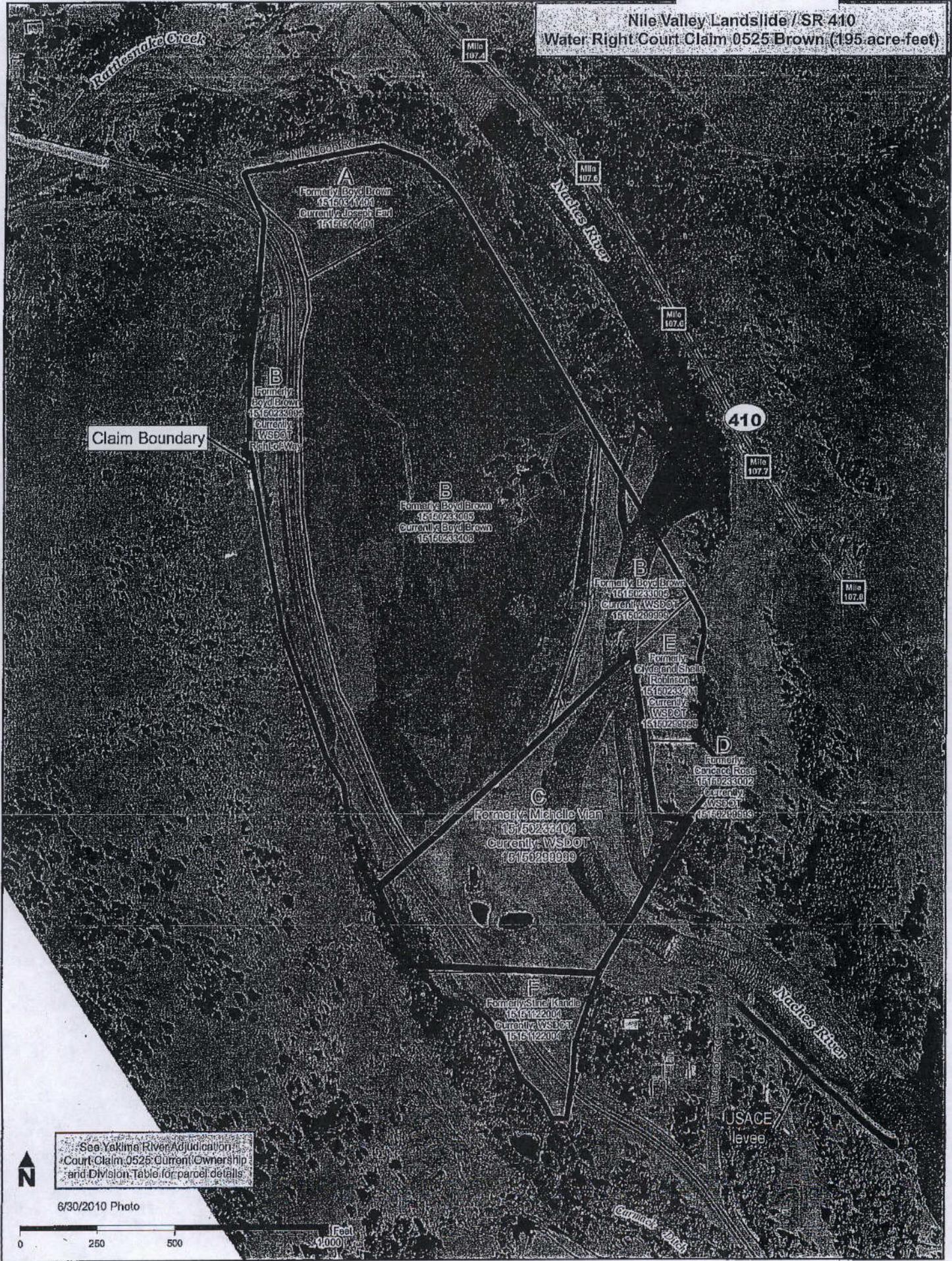
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5 GUY M. BOWMAN, WSBA# 29214
6 Assistant Attorney General
7 Attorneys for MOVANT
8 STATE OF WASHINGTON
9 DEPARTMENT OF TRANSPORTATION

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Exhibit 1

Nile Valley Landslide / SR 410
Water Right Court Claim 0525 Brown (195 acre-feet)



See Yakima River Adjudication
Court Claim 0525 Current Ownership
and Division Table for parcel details

Technical Memorandum
**Hydrogeologic Analysis of Irrigation Wells Proposed for
the SR 410 Nile Landslide Reconstruct Route Project**

Work Order XL 3811

Rob Schanz, R.G., LHG
WSDOT Environmental Services
Hydrology Program

January 2012



Washington State Department of Transportation
Environmental and Engineering Service Center
Environmental Services Office

Hydrogeologic Analysis of Irrigation Wells Proposed for the SR 410 Nile Landslide Reconstruct Route Project

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SR 410 Nile Valley Hydrogeologic Analysis

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Introduction and Background

The Washington State Department of Transportation (WSDOT) is proposing to install two wells to irrigate riparian and wetland restoration sites for the SR 410 Nile Valley Landslide Reconstruct Route project. This project will reconstruct portions of SR 410 that were destroyed during the 2009 Nile Valley Landslide between mileposts (MP) 107.4 and 108.5. WSDOT is installing riparian and wetland plants on both sides of the adjacent Naches River floodplain as mitigation for project impacts.

Two wells will be installed to irrigate plants while they are becoming established (Figure 1). Well 1 will be located on the left/east side of the Naches River on an upland terrace between SR 410 and the river. Well 2 will be located on the right/west side of the river in a low floodplain area. The two wells combined are anticipated to withdraw about three acre-feet per year. Pumping rates will range between 20 and 60 gallons per minute (gpm) for each well.

WSDOT plans to obtain a temporary authorization for water withdrawal from these wells utilizing an existing upstream surface water right on Rattlesnake Creek (Figure 1). WSDOT owns a 45 acre-feet per year portion of Claim 0525 from the properties that were purchased after the slide. Rattlesnake Creek enters the Naches River about 2000 feet upstream of the project area.

This report analyzes hydrogeologic conditions near the wells and assesses potential for impairment of existing groundwater uses and surface and groundwater rights. It is intended to support WSDOT's application for a temporary authorization to change the point of diversion, place of use, and purpose for the existing water right.

SR 410 Nile Valley Hydrogeologic Analysis

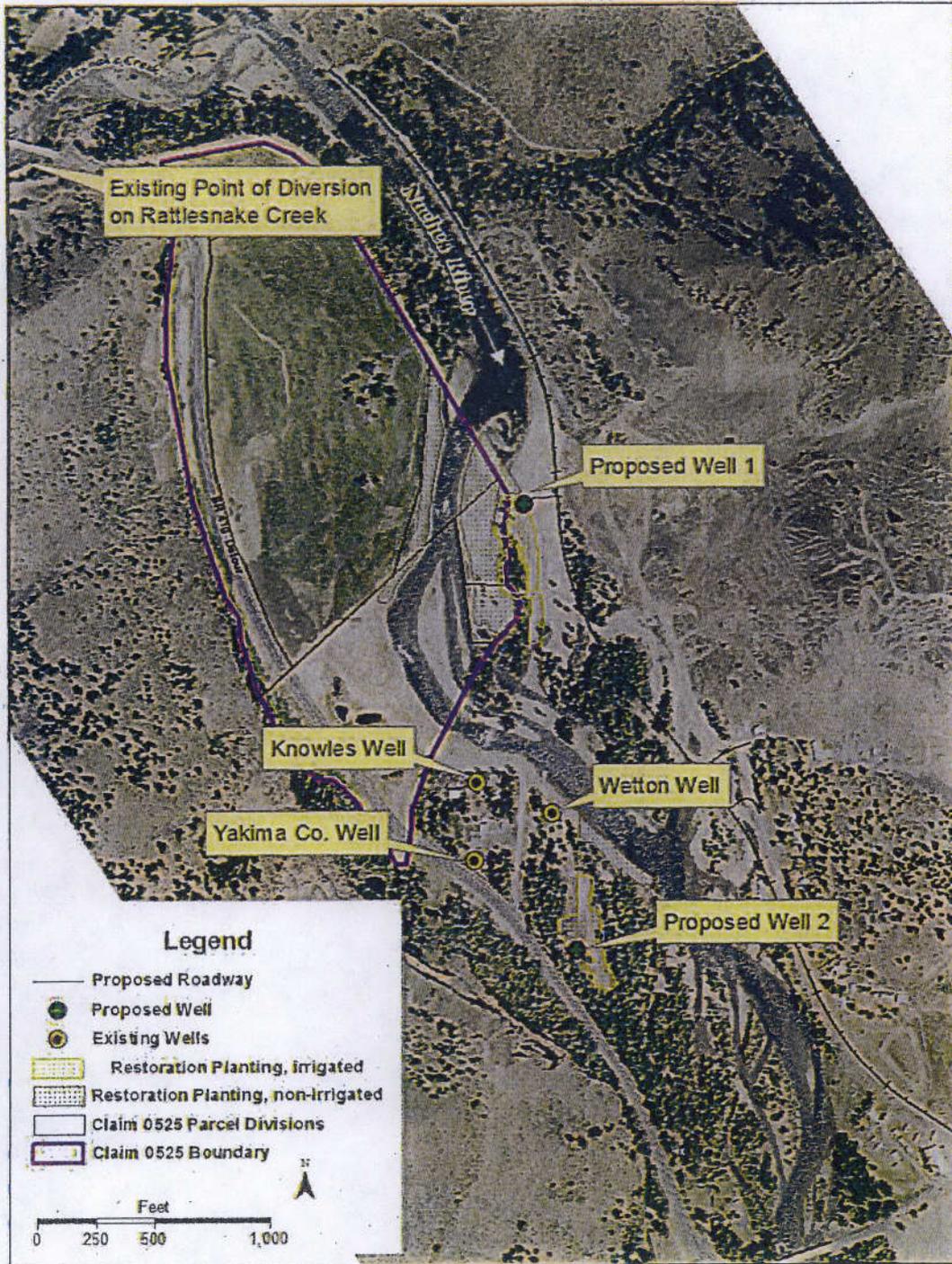


Figure 1. Locations of the proposed wells.

Hydrogeologic Setting

WSDOT has installed a number of monitoring wells and borings in the project area for wetland mitigation planning and geotechnical analysis as part of the emergency response to the October 2009 Nile Valley Landslide. This section uses this data to describe hydrogeologic conditions near the proposed wells. Appendix A contains bore logs for wells and piezometers near the proposed well locations.

Stratigraphy of the aquifer tapped by the proposed wells

The new wells would be drilled into a shallow unconfined aquifer in alluvial deposits on the Naches River valley floor. This alluvium is made up of poorly sorted sand and gravel deposited by glaciers and streams (Yakima County, 2006). In 2009 a massive slide of volcanic rock fell across SR 410 and blocked the Naches River. Yakima County subsequently relocated the river into a new channel that curves around the slide deposits. The slide deformed and uplifted areas of alluvium on the east side of the valley (near Well 1), but did not cover either of the proposed well sites.

The alluvium near proposed Well 1 is covered by Weirman sandy loam soil (USDA, 1985). These soils occur in areas with frequent flooding and channel migration, and contain stratified layers of permeable gravel and sand with minimal organic matter. Well 1 will be located near WSDOT piezometer H-11P-10. The bore log for this 15-foot piezometer shows silty gravel with sand down to a depth of 14 feet. This is underlain by poorly graded gravel with sand.

The west side of the valley near Well 2 is covered by Logy and Wenas silt loam soils that typically form on floodplains where velocities are lower. Well 2 will be located near WSDOT piezometer H-02P-11. The bore log for this 6-foot piezometer shows silty gravel near the surface underlain by well-graded gravel with sand.

The Wetton well is the closest domestic well to proposed Well 2. This bore log shows boulders, gravel, sand, and brown clay down to a depth of 50-feet. The log implies that the brown clay becomes more predominant below 11-feet depth, but does not describe the layering of these deposits in detail.

The bore log for a 60-foot well drilled by the North Yakima Conservation District (believed to be on behalf of Boyd Brown) shows more detail on the stratigraphy in the alluvial deposits on the west side of the valley. This well encountered gravel and sand near the surface that transitioned at 23-foot depth into layers of silt-bound sandy gravel and cobbles. The silt-bound layers were underlain by coarse sandy gravels and cobbles at 34-foot depth. The well casing was perforated between 34- and 60-foot depth to obtain water from this deep coarse layer.

Seasonal water levels

Figure 2 shows monthly water levels measured by WSDOT in piezometers located near the proposed wells. The depth to water at H-11P-10 near Well 1 ranged from 4.5 feet in June when Naches River flows were elevated by snowmelt to 11 feet at the end of the dry season. Depths to water at H-02P-11 near Well 2 followed a similar pattern but were much shallower, ranging from 2.3 to 4.5 feet.

SR 410 Nile Valley Hydrogeologic Analysis

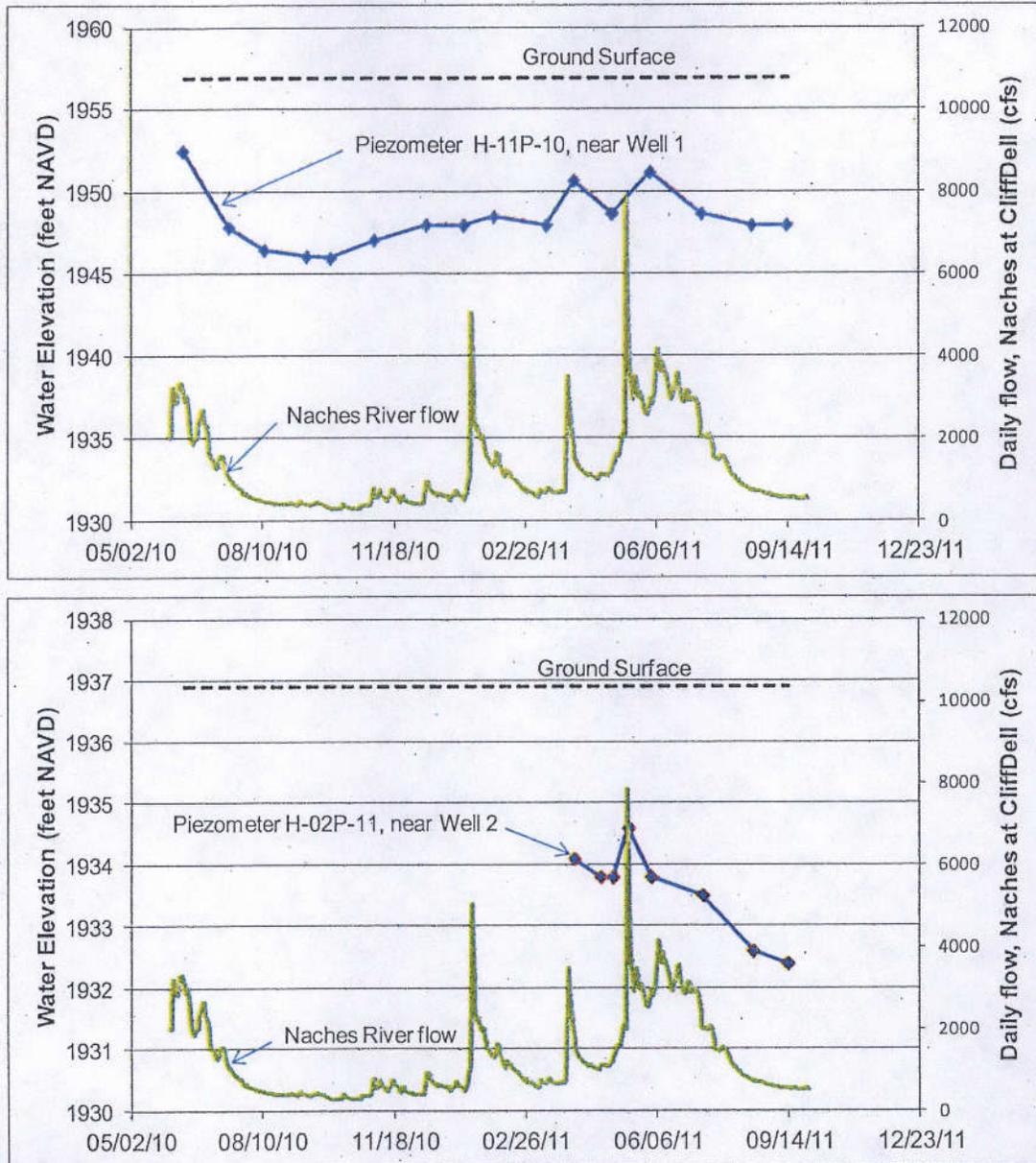


Figure 2. Water levels measured in piezometers near the proposed wells

Connectivity to the Naches River

The shallow groundwater levels shown in Figure 2 closely track seasonal flow patterns recorded in the Naches River at CliffDell (USBR, 2011). Groundwater elevations were lowest at the end of the summer dry season when river flows were lowest. River and groundwater elevations rose in the fall and winter in response to rainstorms, and reached their maximum levels in the late spring when snowmelt from the upper watershed feeds the Naches River. This direct response of shallow groundwater to snowmelt-elevated flows indicates a high level of connectivity with surface flow in the Naches River.

SR 410 Nile Valley Hydrogeologic Analysis

Figures 3 and 4 compare measured groundwater levels to river valley cross sections near the proposed wells. Minimum summer groundwater levels lie near the bottom of the adjacent river and side channels, while maximum spring levels rise to within a few feet of channel bankfull stage. This again points to a strong connection between groundwater levels and river flows.

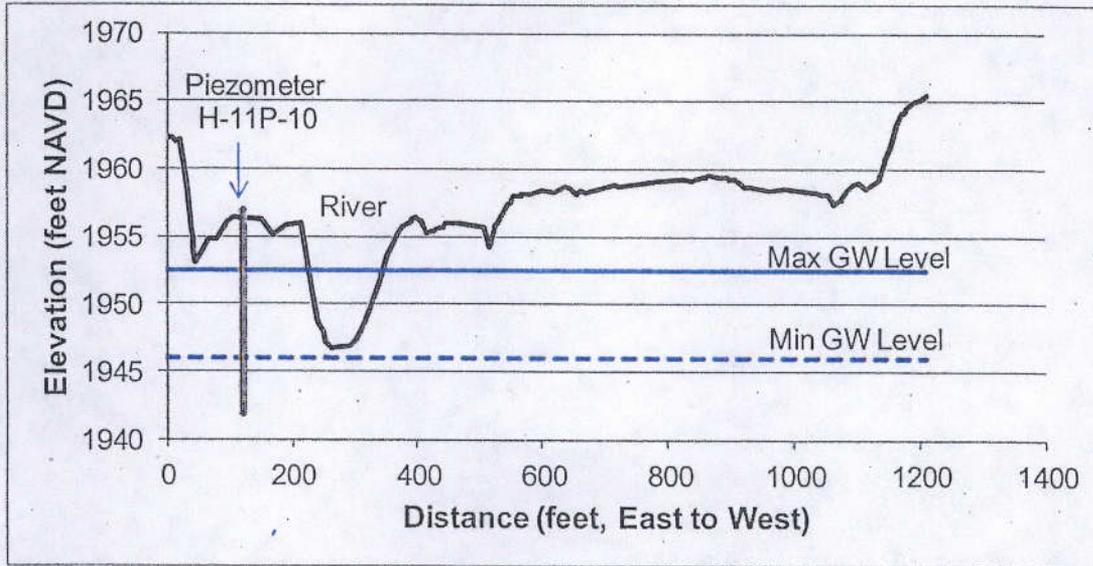


Figure 3. River cross section and groundwater levels near proposed Well 1

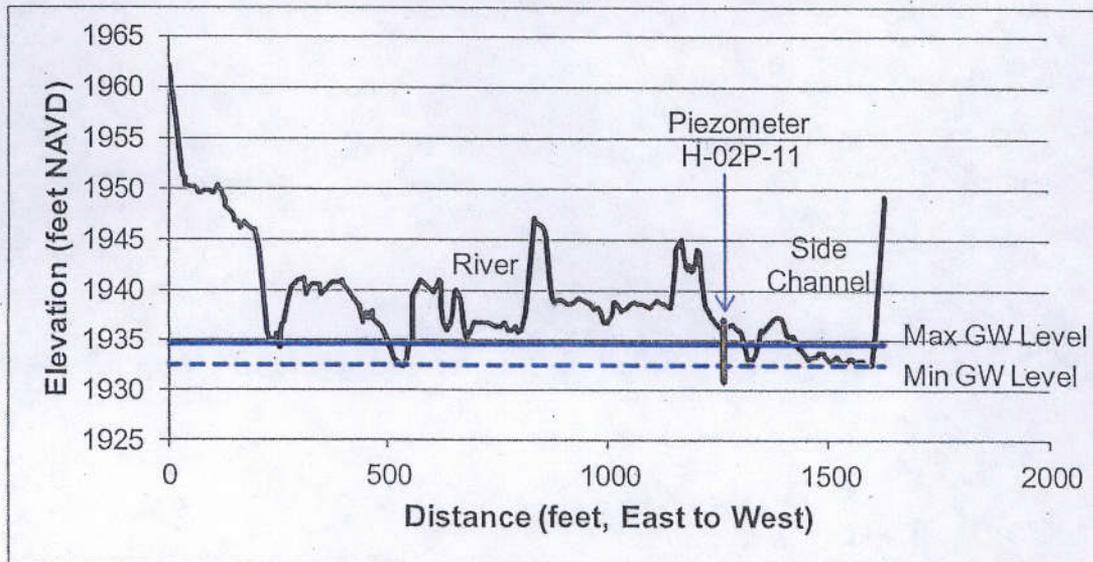


Figure 4. River cross section and groundwater levels near proposed Well 2

Impacts to Beneficial Uses

Surface Water

The analysis above demonstrates that the alluvial aquifer is strongly connected to surface flow in the Naches River. Some portion of the water pumped from the proposed wells will therefore be drawn from the river.

The point of diversion for the original surface water right is located on Rattlesnake Creek upstream of the proposed wells. Moving the point of diversion downstream would result in a net gain in flow in the lower reaches of Rattlesnake Creek and the Naches River upstream of the project area, and would have no impact on flows downstream. Water use for the proposed wells is anticipated to be substantially less than WSDOT's portion of the existing surface water right.

Groundwater wells

Table 1 lists all wells contained in the Department of Ecology's well log database in the area between Rattlesnake Creek and the Nile Road bridge (Washington State Department of Ecology, 2011). Figure 5 shows approximate locations based on listed quarter sections. Four of these wells are listed as decommissioned, most likely as part of emergency demolition after the landslide. This coincides with WSDOT's records regarding the number of homes demolished. Table 1 also does not include two wells that are not in the well log database but will be decommissioned by WSDOT (Figure 5). This has decreased demand from the alluvial aquifer.

There are no active wells identified on the east side of the Naches River valley floor near proposed Well 1. Drawdown from this well will therefore have no impact on existing groundwater users or wells.

Three wells are located near proposed Well 2 (Figure 1). The Wetton well is located about 580 feet to the north next to the Naches River. This unscreened well was constructed to draw water from the bottom of the 50-foot deep casing. The Knowles and Yakima County wells are located 820 and 520 feet respectively to the northwest. These two wells are not included in Ecology's well log database, and little is known about their construction.

Drawdown calculations were performed for Well 2 to examine the potential for interference with these wells (Appendix B). We assumed the alluvial aquifer is fully connected down to the depth of the Wetton well, and used a hydraulic conductivity of 165 ft/day (middle of the typical range for coarse alluvium). These are conservative assumptions, since it is likely that the deeper Wetton well is at least partially separated from the surface water table aquifer by silt or clay layers. At the end of a typical irrigation pumping cycle drawdown would be less than 0.1 feet at a distance of 200 feet from the well. Pumping from Well 2 would therefore not interfere with existing uses of nearby wells. Note that the Wetton well was approved as a three-party well to serve three lots that were created by a short plat. WSDOT has acquired two of the three lots served by this well.

Figure 6 shows the extent of acquisitions by WSDOT in response to the Nile Landslide. These have been acquired for the interim detour highway that will be turned back to Yakima County to maintain as a local access road, new river channel and the highway re-

SR 410 Nile Valley Hydrogeologic Analysis

construction. These parcels are generally located between the existing highway and temporary detour, are mostly located within the Naches River floodplain, and will be restricted from future re-development.

Water Rights in the Project Area

According to Ecology's records, WSDOT's acquisitions involved properties with other water right claims besides the Brown Claim 0525. These include Claim #1007 (Dexter), #1399 (Chandlee), #1577 and #1578 (Randall) for a total of 39-acre feet with priority dates of June 1892. The only other claim known to be active at the time of the landslide was #1650 (Dexter) for 65 acre-feet with a place of use east of SR 410; however this diversion was damaged by the landslide and has not been re-established. No groundwater rights were identified.

Potential for Impairment

Based on the above, the installation of two wells and the short term temporary use for mitigation site irrigation will not impair existing groundwater use or surface and ground water rights identified in the area.

Table 1: Inventory of existing wells located near the proposed wells

Original Owner/Well ID	Parcel Number or Address	Type	Depth (feet)	Perforations (feet)	Static Water Depth (feet)	Status
Brown/171453	151502-32400	Irrigation	11	3 to 11	5	Drilled 2007, decommissioned 2009
Brown/ W242665		Irrigation	65			
Smith	8961 SR 410	Domestic	40	None	9	Drilled 1994
Hobbs	151502-33001	Domestic	23	None	9	Drilled 1977
N Yak Cons. Dist	151502-33404	Irrigation	60	34 to 60	11	Drilled 2008, decommissioned 2009
Milligan (Rose)	151502-32002	Domestic	30	None	12	Drilled 1976, decommissioned 2009
Milligan	151502-32002	Irrigation	21	None	9.5	Drilled 1976, no decommission filed
Davidson	151502-33006	Domestic	10	None	4	Decommissioned, 2009
Will	12420 SR 410	Domestic	50	None	10	Drilled 1986
Earl	151503-41401	Domestic	70	None	17	Drilled 2010
Sainsbury	151503-41406	Domestic	125	104 to 125	25	Drilled 2010
Skeath	150503-14002	Domestic	65	None	7	Drilled 2008
WSDOT only						
Wetton	622 Nile Road	Domestic	50	None	9	Drilled 1998
McDonald	11601 SR 410	Domestic	32	22 to 32	15	Drilled 1973
Yakima County	River nr bridge	Resource	7	6.5 to 7	Not listed	Drilled and decommissioned, 2004

SR 410 Nile Valley Hydrogeologic Analysis

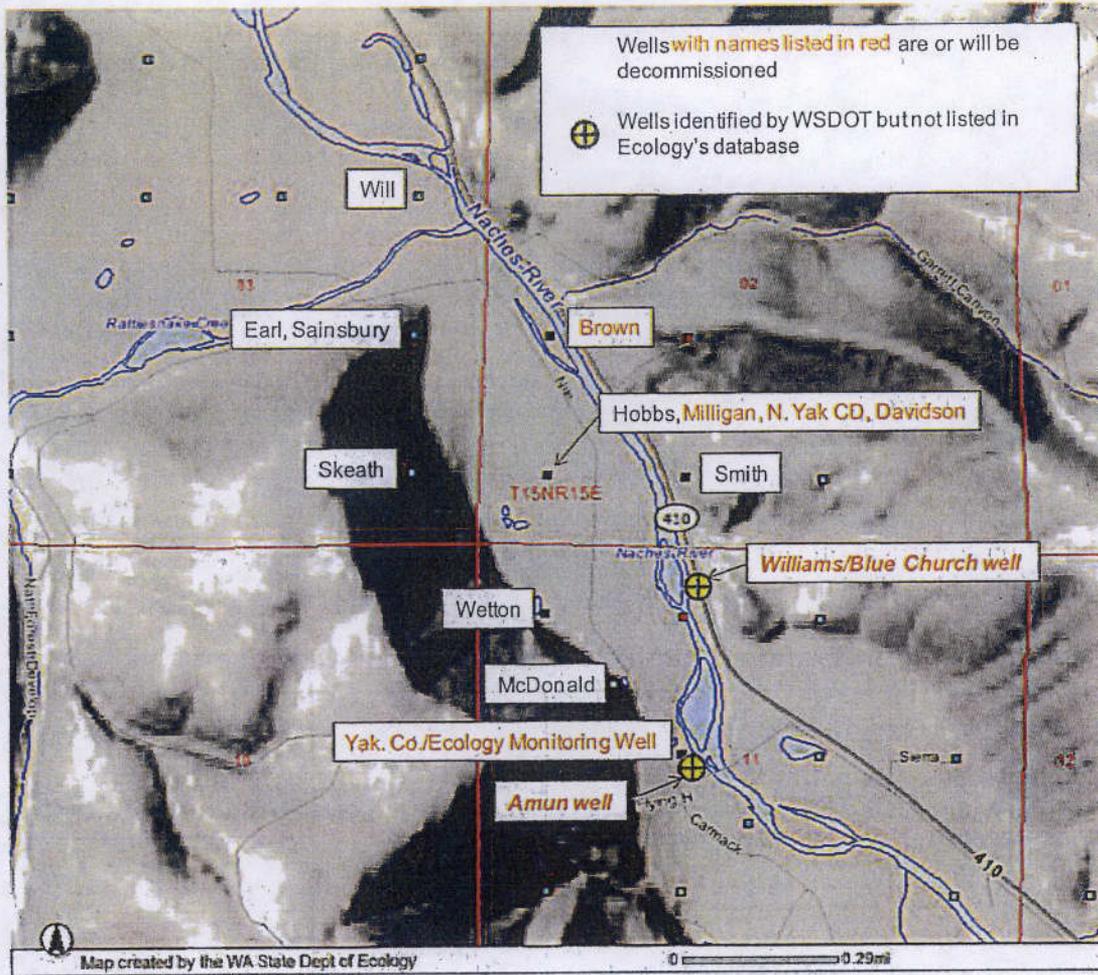


Figure 5. Approximate locations of nearby wells by quarter section

SR 410 Nile Valley Hydrogeologic Analysis

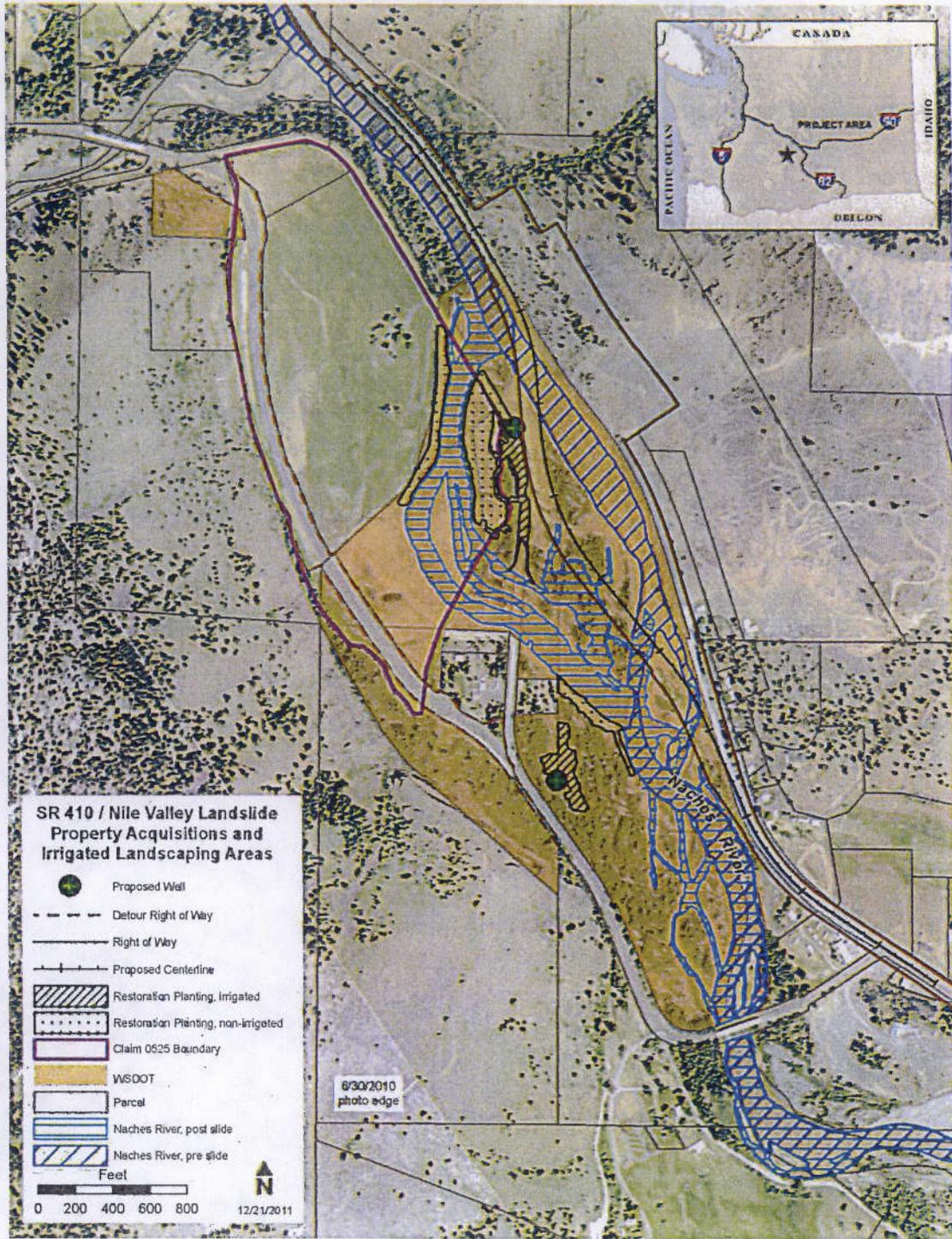


Figure 6. WSDOT property acquisitions in response to the Nile landslide

References

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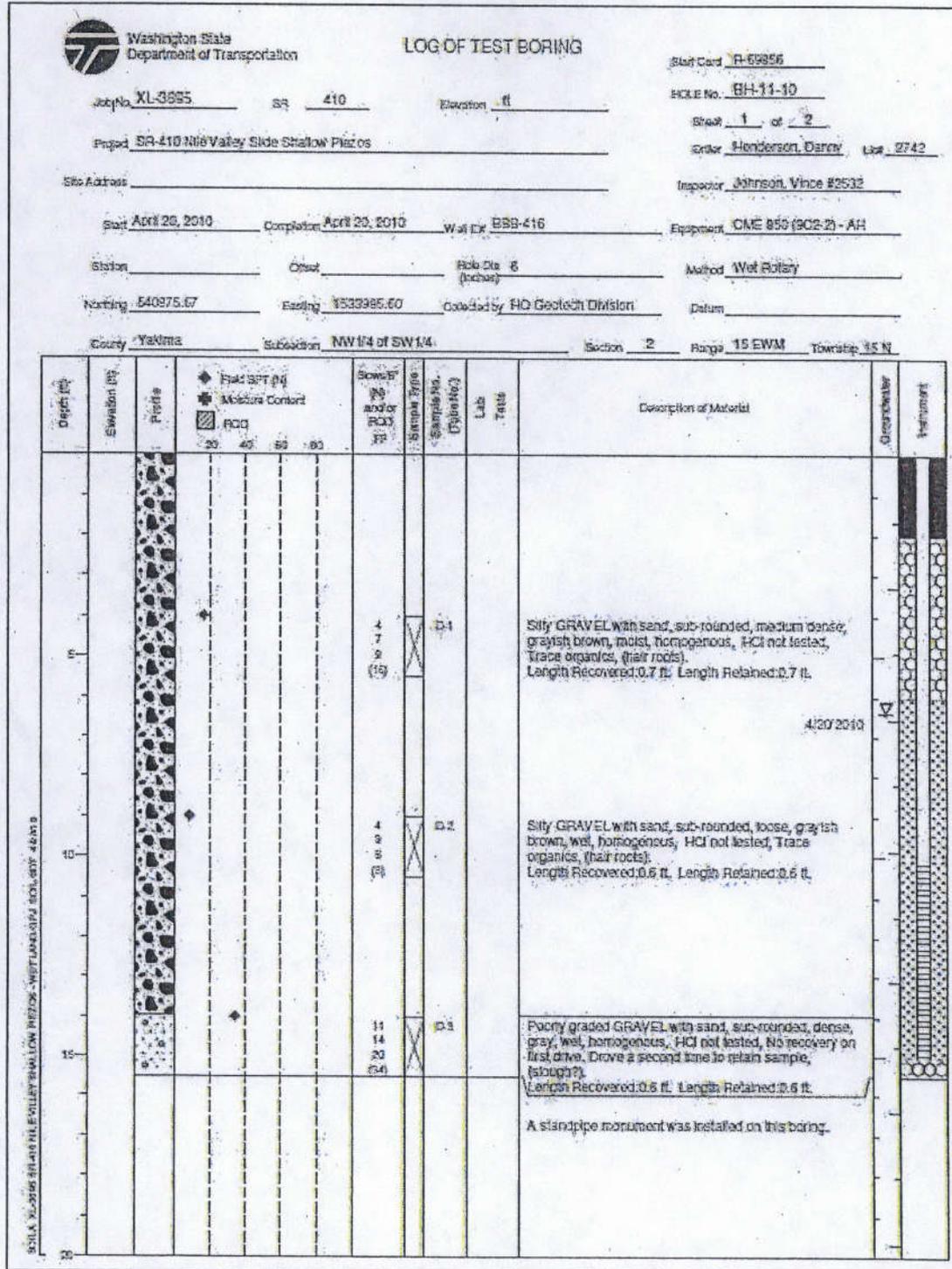
Yakima County, 2006. Comprehensive Flood Hazard Management Plan for the Naches River.

Yakima County, 2003. Naches River Channel Migration Study.

Freudenthal, Debi. 2011. WSDOT South Central Region Environmental Office. Personal communication. December 2011.

SR 410 Nile Valley Hydrogeologic Analysis

Appendix A – Selected Bore Logs for Existing Wells in the Project Area



SR 410 Nile Valley Hydrogeologic Analysis



Washington State
Department of Transportation

LOG OF TEST BORING

Start Card: R 62698

HOLE No: H-020-11

Sheet: 1 of 1

Date: Henderson, Danny List: 2742

Inspector: Andrews, Cleo #1677

Equipment: CME 850 (9C2-3) - AH

Method: Wet Rotary

Datum: State Plane South

County: Yakima Subsection: NW1/4 of NW1/4 Section: 11 Range: 15 EWM Township: 15

Job No: XL-3611 SR: 410 Division: R

Project: Nile Valley Landslide - (Phase 2)

Site Address: SR 410 Vicinity of Nile valley Road

Start: March 22, 2011 Completion: March 22, 2011 Well ID: BBS-595 (1" Piezo Well)

Station: _____ Offset: _____ R/A Dia: 4 (Inches) Method: Wet Rotary

Nothing: _____ Existing: _____ Collected by: Region Survey Crew Datum: State Plane South

Depth (ft)	Elevation (ft)	Profile	Field SPT (blows)				Blow Count (N) and/or RCO	Sample Type	Sample No. (Flow No.)	Lab. Tests	Description of Material	Orientation	Instrument
			20	40	60	80							
0						6		D-1		Silty GRAVEL with sand, sub-rounded, with traces of coarse Sand, medium dense, dark gray, moist, homogeneous, HCl not tested. Length Recovered: 0.8 ft. Length Retained: 0.8 ft.			
4						4		P-2		Silty GRAVEL with sand, sub-rounded, with traces of coarse Sand and Clay, medium dense, dark gray, moist, homogeneous, HCl not tested. Length Recovered: 1 ft. Length Retained: 1 ft.			
16						20		D-3		Well graded GRAVEL with sand, sub-rounded, very dense, dark gray, wet, homogeneous, HCl not tested. Length Recovered: 0.5 ft. Length Retained: 0.5 ft.			
20						50		D		Well graded GRAVEL with sand, sub-rounded, with traces of coarse Sand and Silt, very dense, brownish gray, wet, homogeneous, HCl not tested, Pictures taken of drill site and surrounding area. Length Recovered: 0.9 ft. Length Retained: 0.9 ft.			
20						REF				A standpipe monument was installed on this boring. A standpipe monument was installed on this boring.			
20										The implied accuracy of the borehole location information displayed on this boring log is typically sub-meter in (X,Y) when collected by the HQ Geotech Division and sub-centimeter in (X,Y,Z) when collected by the Region Survey Crew.			
20										End of test hole boring at 6 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data. Note: REF = SPT Refusal			

SR 410 Nile Valley Hydrogeologic Analysis

Appendix B – Example Drawdown Calculation for Well 2

This Solution for drawdown by a pump near a Stream									
This equation:		Drawdown = $[Q/(4\pi T)] * [W(u)]$							
		$u = (r^2 S)/(4Tt)$							
		$W(u) = -0.5772 - \ln u + u - u^2/2*2! + u^3/3*3! - u^4/4*4! + u^5/5*5! \dots\dots$							
T is transmissivity, = Hydraulic Conductivity times aquifer thickness									
S is storativity, or specific yield in unconfined aquifers									
t is time, r is distance of drawdown from well, and Q is pumping rate									
Streams can be treated as constant head boundary by putting an image recharge well on opposite side of stream									
		$r_{image} = 2*(\text{distance of well from stream}) - r$							
		Drawdown = $[Q/(4\pi T)] * [W(u) - W(u_{image})]$							
		Steady-state drawdown = $[Q/(2\pi T)] * \ln(r_{image}/r)$							
Input Data: in yellow									
all other values calculated:									
Location for drawdown		260 feet from naches							
Pump location		460 feet from naches river							
r for drawdown calculation:		200 feet from well							
r_{image}		720 feet from image well							
pump rate		60 gallons/minute, maximum of estimated range per well							
		11551.68 ft ³ /day							
		0.13 cfs							
Hydraulic conductivity		165 ft/day, mid range for sand and gravel from 30 to 300							
Aquifer Thickness		50 feet, depth of Wetton well							
Transmissivity		8250 ft ² /day							
Specific Yield		0.25 value for fine gravel							
Time (hrs)	Time (days)	u	Wu	u_{image}	Wu_{image}	$x/\sqrt{4TtS}$	Drawdown with stream (ft)	Drawdown (ft) without stream	Flow pumped from stream (cfs)
12	0.500	0.606060606	0.448896	7.854545455	0.000045	1.79054757	0.05	0.05	0.00
24	1.000	0.303030303	0.898258	3.927272727	0.0043	1.26610833	0.10	0.10	0.01
48	2.000	0.151515152	1.455833	1.963636364	0.051446	0.89527379	0.16	0.16	0.03
168	7.000	0.043290043	2.605459	0.561038961	0.491977	0.47854397	0.24	0.29	0.07
Long Time	1.00E+05	3.0303E-06	12.12965	3.92727E-05	9.56782	0.00400379	0.29	1.35	0.13
Steady-State		0.29							

CLAIMANT NAME: WA State Dept of Transportation COURT CLAIM NO. 00525

Certificate Number: S4-85133-J

Subbasin: 16 Upper Naches

Source: Rattlesnake Creek

Use: Irrigation of 3 acres

Period of Use: April 1 through October 31

Quantity: .06 cubic foot per second, 9 acre-feet per year, 26.9 gpm

Priority Date: April 1, 1885

Point of Diversion: 300 feet south and 1050 feet east of the center of Section 3, within the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 3, T. 15 N., R. 15 E.W.M.

Place of Use: That portion of the hereinafter described Parcel A, lying northeasterly of a line beginning at the northwest corner of Section 11, T., 15 N., R. 15 E.W.M.; thence S 30° 05' 57" E 669.44 feet; thence S 38° 35' 19" E 200.91 feet; thence S 49° 37' 24" E 1061.92 feet, more or less, to a point on the east line of the W $\frac{1}{2}$ NW $\frac{1}{4}$ of said Section 11 and the end of said line description.

Parcel A: The W $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 11, T. 15 N., R. 15 E.W.M.; Except a tract of land lying in the W $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 11, lying north and east of the following described line: Beginning at a point on the north line of said Section 11, and the west right-of-way line of State Highway No. 5, as existed on August 16, 1924, which point is 1581 feet west of the north quarter corner of said Section 11; running thence S 3° 13' E along this westerly right-of-way line 490 feet, more or less, to the beginning of a 10° curve toward the east, the central angle of which is 40° 36'; thence following the arc of this curve on the westerly right-of-way line 427.3 feet, more or less, to the point of tangency with a line bearing S 37° 24' E along this right-of-way line a distance of 153 feet, more or less, to the east line of the W $\frac{1}{2}$ NW $\frac{1}{4}$ of said Section 11; thence south along this subdivision line 264 feet, more or less, to the base of a rock cliff, locally known as "Eagle Rock"; and the true point of beginning of the following described line; thence following the base of said rock cliff, in a northwesterly direction 835 feet, more or less, to the westerly bank of a running stream, the bearing of which is approximately north and south; thence following this westerly bank 643.5 feet, more or less, to a point on the north line of Section 11, 363 feet west of the point of beginning and the terminus of the herein described line, situated in Yakima Co., WA. The lands herein described contain an area of 9.04 acres, more or less; And as indicated in Attachment 1 and further clarified by Attachment 2 and made a part hereof.

CLAIMANT NAME: Donald L. Dexter
& Debra A. Dexter COURT CLAIM NO. 01007

Certificate Number: S4-83388-J

Subbasin: 16 Upper Naches

Source: Naches River

Use: Irrigation of 2 acres

Period of Use: April 1 through October 31

Quantity: 0.04 cubic foot per second; 6 acre-feet per year for
irrigation, 0.012 cubic foot per second for conveyance

Priority Date: June 30, 1892

Point of Diversion: 675 feet south and 575 feet east of the west quarter corner
of Section 2, within the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 2, T. 15 N.,
R. 15 E.W.M.

Place of Use: That portion of the SE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 2, T. 15 N.,
R. 15 E.W.M. described as follows: Beginning at the
intersection of the south line of said section and the
westerly right of way of the county road (Nile Road);
thence northerly along said right of way 534 feet; thence
west 75 feet more or less to the west bank of a running
stream (an irrigation ditch); thence southwesterly along
said stream bank 545 feet more or less to the south line of
said section; thence east 382 feet to the point of
beginning.

ATTACHMENT #2

Section 3 – Points of Withdrawal

WSDOT will use two existing, temporary shallow wells to supply the landscape irrigation water in two restoration areas adjacent and on each side of the Naches River.

WSDOT's hydrogeologic report completed in 2012 and accepted as part of the OPL found hydrologic connection between the proposed wells and the Naches River.

See photos (two installed wells and aerial maps with approximate locations)

Well Information

1. Well Tag ID BCF833. 6-inch diameter; 32-foot depth; Located off Nile Road at its intersection of Landslide Road
2. Well Tag ID BCF834. 6-inch diameter; 46-foot depth; Located off State Route 410



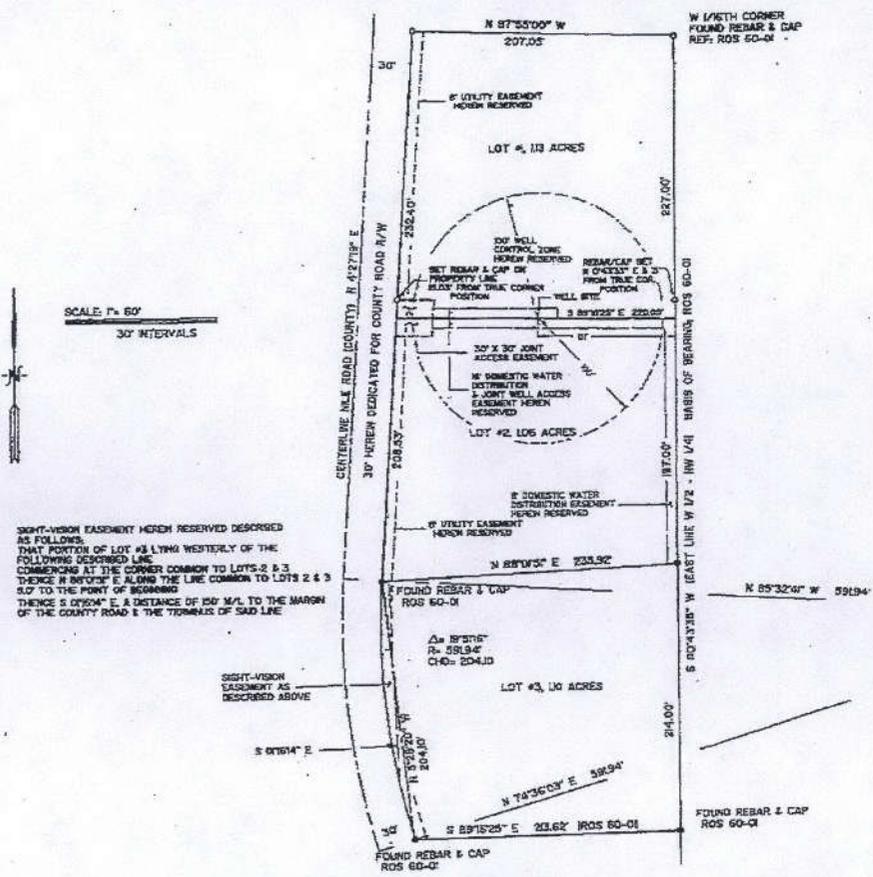
Latitude = 46.8100, Longitude = -120.9245
Lat = 46 degrees, 48.6 minutes North
Long = 120 degrees, 55.5 minutes West



Latitude = 46.8152, Longitude = -120.9255
Lat = 46 degrees, 48.9 minutes North
Long = 120 degrees, 55.5 minutes West

SPM 7114451
SP 39-96
PA 2-11-94

SHORT PLAT SURVEY OF A PORTION OF THE
W 1/2 - NW 1/4 SECTION 11 T15N R15EWM



SIGHT-VISION EASEMENT HEREN RESERVED DESCRIBED AS FOLLOWS:
THAT PORTION OF LOT #1 LYING WESTERLY OF THE FOLLOWING DESCRIBED LINE COMMENCING AT THE CORNER COMMON TO LOTS 2 & 3 THENCE N 07°14' E ALONG THE LINE COMMON TO LOTS 2 & 3 S 0.7 TO THE POINT OF BEGINNING THENCE S 07°04' E A DISTANCE OF 150' MAL TO THE MARGIN OF THE COUNTY ROAD & THE TERMINAL OF SAID LINE

AUDITORS CERTIFICATE
FILED FOR RECORD THIS 3 DAY OF MAY 1999
AT 10:22 A.M. IN VOLUME OF SHORT PLATS, PAGE
RECORDS OF YAKIMA COUNTY AT THE REQUEST OF THE SHORT PLAT ADMINISTRATOR 7114451
AUDITOR
DEPUTY AUDITOR

SURVEYORS CERTIFICATE
THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME IN CONFORMANCE WITH THE SURVEY RECORDING ACT AT THE REQUEST OF
DICK WEITON
CRAIG D. SUNQUIST, PLS 21579 4/28/96

BASIS OF BEARING & SCALE, AS NOTED
MONUMENTATION VISITED 3/29/96
SURVEY METHOD: FIELD TRAVERSE W/
TOPCON STS-02-05
REPRESENTS REBAR & CAP SET
EXCEPT AS NOTED
DRAWING BY: CDS PAGE 1 OF 1

SUNQUIST LAND SURVEYING
CRAIG D. SUNQUIST, PLS
408 SO. 32ND AVE.
YAKIMA, WA. 98902
PHONE: 248-2255

Richard Weiton
I KNOW ALL MEN BY THESE PRESENTS THAT I HAVE THE OWNERSHIP & ALL OTHER PARTIES INTEREST IN THE LAND HEREIN DESCRIBED HEREBY WITH HEARER THEREOF CONSENT. I AM ACCORDING WITH HEARER THEREOF DESIRES HEREN RESERVED HEREBY WITH HEARER THEREOF CONSENT. I AM ACCORDING WITH HEARER THEREOF DESIRES HEREN CAUSED THE SAME TO BE SHORT PLATTED AS SHOWN HEREN. DOES DOES HEREBY WARRANT THOSE ROADS SHOWN BY THIS SHOWN AS PUBLIC ROADS HEREN TO THE USE OF THE PUBLIC DOES DOES HEREBY WARRANT ON BEHALF OF HIMSELF AND HIS SUCCESSORS IN INTEREST ALL CLAIMS AGAINST YAKIMA CO. & ANY OTHER PERSONS (THEMSELVES & THEIR SUCCESSORS IN INTEREST) ALL CLAIMS AGAINST YAKIMA CO. & ANY OTHER GOVERNMENTAL AUTHORITY WHICH MAY BE OCCASIONED TO THE ADJACENT LAND BY THE ESTABLISHED CONSTRUCTION, MAINTENANCE & IMPROVEMENTS OF SAID INDICATED ROADS SHOWN BY THIS DOES DOES HEREBY GRANT & RESERVE THE EASEMENTS AS SHOWN HEREN FOR THE USES INDICATED.

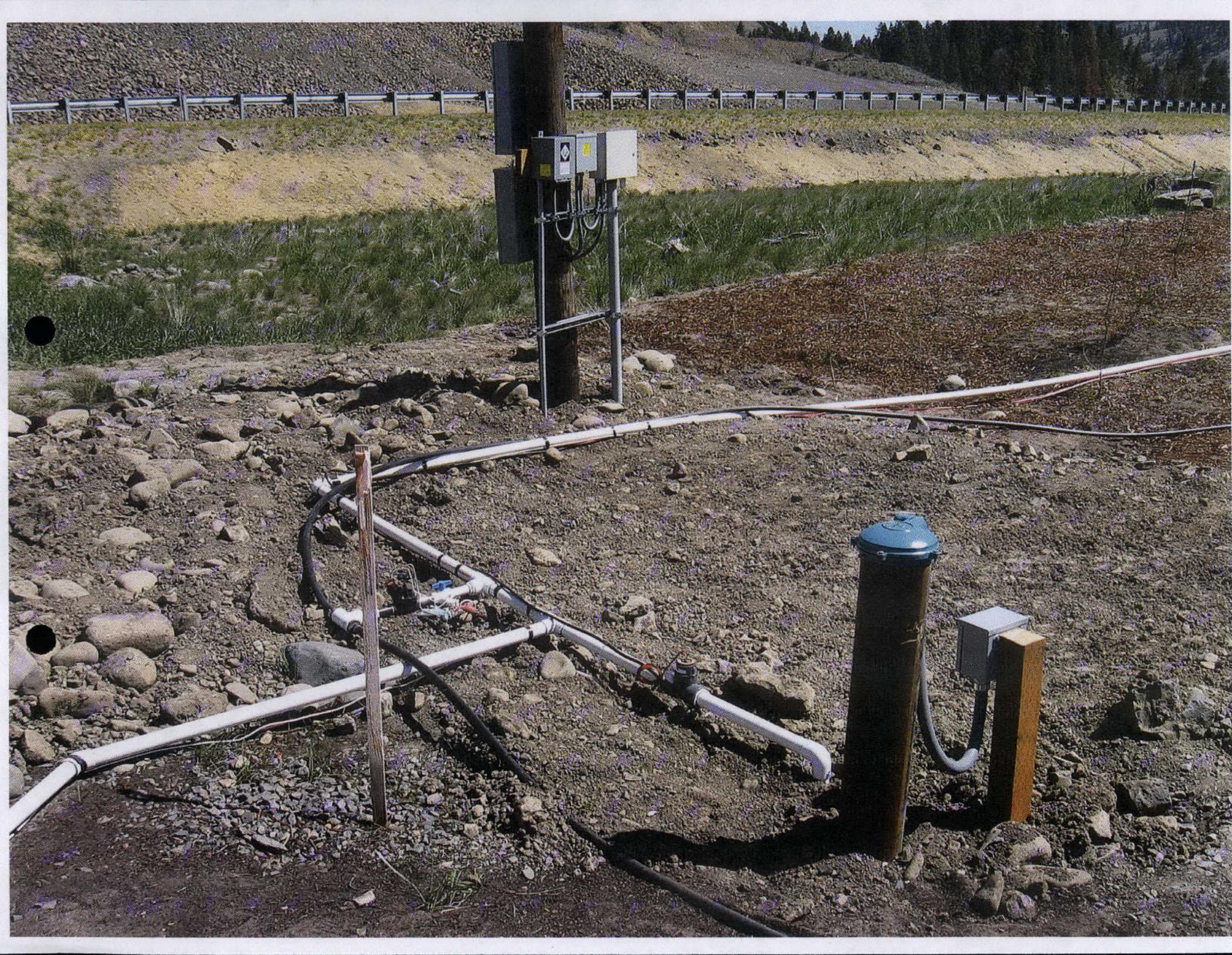
STATE OF WASHINGTON
COUNTY OF YAKIMA
ON THIS 29th DAY OF Oct 1999, BEFORE ME APPEARED Richard Weiton
I KNOW TO BE THE PERSONS DESCRIBED IN & WHO EXECUTE THE FOREGOING INSTRUMENT & ACKNOWLEDGE TO ME THAT HEAVEN THEY SIGNED THE SAME AS RESPECTED THEIR OWN PERSONS & AS TO THE PURPOSES & USES THEREIN EXPRESSED, IN WITNESS WHEREOF I HAVE HEREON SET MY HAND & SEAL OF MY OFFICIAL SEAL.
Cecilia A. Costa
NOTARY PUBLIC
JUNE 22, 1999
STATE OF WASHINGTON
I HEREBY CERTIFY THAT ALL CHANGABLE REGULAR & SPECIAL ASSESSMENTS COLLECTIBLE BY THIS OFFICE THAT ARE DUE & OWNE ON THE PROPERTY DESCRIBED HEREN, ON THE DATE OF CERTIFICATION HAVE BEEN PAID.
CRAIG D. SUNQUIST
YAKIMA COUNTY TREASURERS OFFICE
DATE: 4-28-99
APPROVALS
CRAIG D. SUNQUIST
YAKIMA COUNTY DIRECTOR OF PUBLIC WORKS
CRAIG D. SUNQUIST
YAKIMA COUNTY SHORT PLAT ADMINISTRATOR
DATE: 5-5-99

YAKIMA CO. HAS NO RESPONSIBILITY TO BUILD, IMPROVE, MAINTAIN OR OTHERWISE SERVICE ANY PRIVATE ROAD FOR THE SHORT PLAT. ANY PUBLIC ROAD PLAT DEDICATED TO THE PUBLIC BY THIS PLAT SHALL NOT BE SERVICED BY THE COUNTY OR OPENED AS A COUNTY ROAD STANDARDS & ACCEPTED AS A PART OF THE COUNTY ROAD SYSTEM. PURCHASERS & LESSEES ARE HEREBY NOTIFIED THAT THIS SHORT PLAT IS SITUATED IN AN AGRICULTURAL AREA & THE LOTS ARE HEREBY SUBJECT TO HOED, DIRT, DRIVE, DRIVE & THE APPLICATIONS OF CHEMICALS RESULTING FROM USUAL & NORMAL PRACTICES ASSOCIATED WITH NEARBY AGRICULTURAL USES.
THE LOTS WITHIN THIS PLAT ARE ENTIRELY WITHIN THE 100 YR FLOODPLAIN OF THE RACHES R. AS DEFINED BY THE FEDERAL EXCESSIVITY MANAGEMENT AGENCY PERMITS AS PART OF THE NATIONAL FLOOD INSURANCE PROGRAM. AS SUCH SPECIAL FLOOD HAZARD DEVELOPMENT STANDARDS WILL APPLY. SPECIAL FLOODPLAIN INFORMATION MAY BE OBTAINED IN THE YAKIMA CO. PLANNING DEPT.
PORTIONS OF LOTS 1 & 2 WITHIN THIS PLAT ARE SUBJECT TO THE YAKIMA CO. SHORELINE MANAGEMENT PROGRAM (SMP) PERMITS. A 30' BUFFER DISTANCE MUST BE MAINTAINED BETWEEN NON-WATER DEPENDENT STRUCTURES & THE OCEANOGRAPHY HIGH WATER MARK OF THE RACHES R. OTHER SPECIAL DEVELOPMENT STANDARDS MAY APPLY & PERMITS MAY BE REQUIRED FOR CERTAIN TYPES OF DEVELOPMENT. INFORMATION MAY BE OBTAINED FROM THE YAKIMA CO. PLANNING DEPARTMENT.
NO DIRECT ACCESS WILL BE PERMITTED TO MILE ROAD EXCEPT VIA THE APPROVED INTERIOR ACCESS EASEMENTS UNLESS OTHERWISE APPROVED BY THE COUNTY ENGINEER.
THE OWNERS SHOWN HEREN THEIR GRANTEES & ASSIGNEES IN INTEREST HEREBY CONVEYANT & AGREE TO PARTICIPATE IN THE MAINTENANCE OF THE PRIVATE ROAD SERVING THIS SHORT PLAT & TO JOIN IN AN OWNERS OF ROAD MAINTENANCE ASSOCIATION DEEMED TO PROVIDE FOR ITS PERPETUAL MAINTENANCE.
THE OWNERS SHOWN HEREN THEIR GRANTEES & ASSIGNEES IN INTEREST HEREBY CONVEYANT & AGREE TO RETAIN ALL SURFACE WATER GENERATED WITHIN THE PLAT ON-SITE. ANY NATURAL DRAINAGEWAYS MUST NOT BE ALTERED OR IMPROVED.
YAKIMA CO. HAS IN PLACE AN URBAN & RURAL ADDRESSING SYSTEM STREET NUMBER & NUMBERS FOR LOTS WITHIN THIS PLAT ARE ISSUED BY THE YAKIMA CO. PUBLIC WORKS DEPT. UPON OBTAINMENT OF AN APPROVED BUILDING PERMIT.
PURCHASERS & LESSEES ARE HEREBY NOTIFIED THAT THIS SHORT PLAT IS SITUATED WITHIN ZONING OF A DESIGNATED MINERAL EXTRACTION SITE & MAY BE SUBJECT TO MINER, DIRT, DRIVE, DRIVE & OTHER RELATED IMPACTS ASSOCIATED WITH PRESENT OR FUTURE MINERAL EXTRACTION ACTIVITIES OR SUBJECT TO OR IN THE VICINITY OF THE PROPERTY.



LEGAL DESCRIPTION PARCEL #028-22004
THAT PORTION OF THE NW 1/4 - NW 1/4 OF SECTION 11 T15N R15EWM LYING EAST OF THE EASTERLY R/W OF THE COUNTY ROAD MILE ROAD EXCEPT THAT PORTION OF SAID PARCELS DESCRIBED AS FOLLOWS: COMMENCING AT THE NW CORNER SAID SECTION & THENCE EAST ALONG THE NORTH LINE THEREOF A DISTANCE OF 300.00' MAL TO THE NE CORNER OF THE NW 1/4 - NW 1/4 SECTION 11 T15N R15EWM THENCE SOUTH ALONG THE EAST LINE OF THE NW 1/4 - NW 1/4 OF SAID SECTION & A DISTANCE OF 316.00' MAL TO THE POINT OF BEGINNING WESTERLY PERPENDICULAR TO THE EAST LINE A DISTANCE OF 207.05' MAL TO THE EASTERLY R/W LINE OF THE MILE ROAD THENCE SOUTHWESTERLY ALONG SAID EASTERLY R/W LINE TO A POINT OF INTERSECTION WITH SAID EAST LINE THENCE SOUTHWESTERLY ALONG SAID EAST LINE A DISTANCE OF 233.92' MAL TO THE T.P.M.S.

5-06849





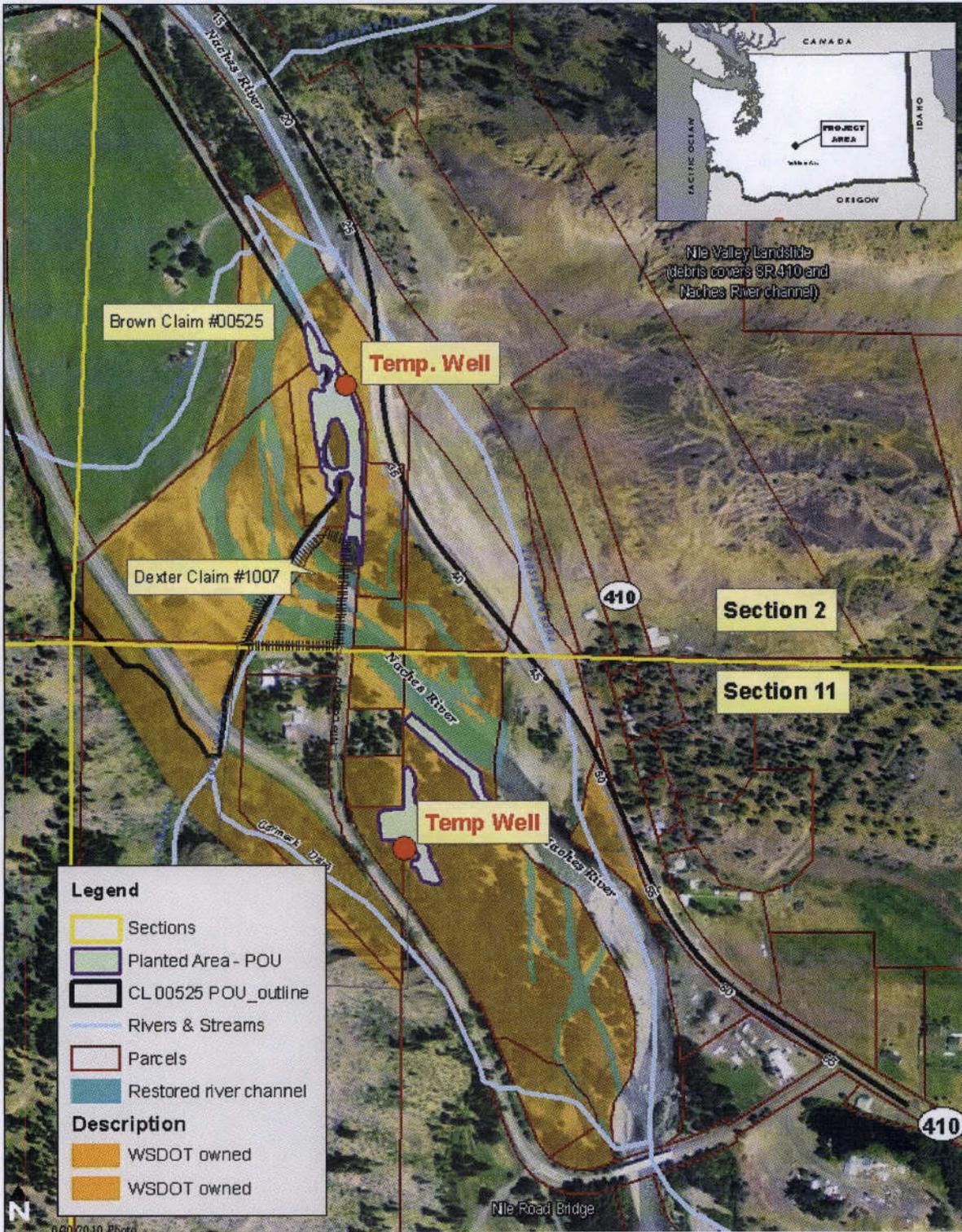
ATTACHMENT #3

Section 4 – Place of Use.

D.) Place of Use - Highway Right of Way						
Parcel No.	¼	¼	Section	Township	Range	County
Restoration area; 151502-33400, 400, 407	SW	SW	2	15N	15	Yakima
Restoration area; 151511-22007	NW	NW	11	15N	15	Yakima

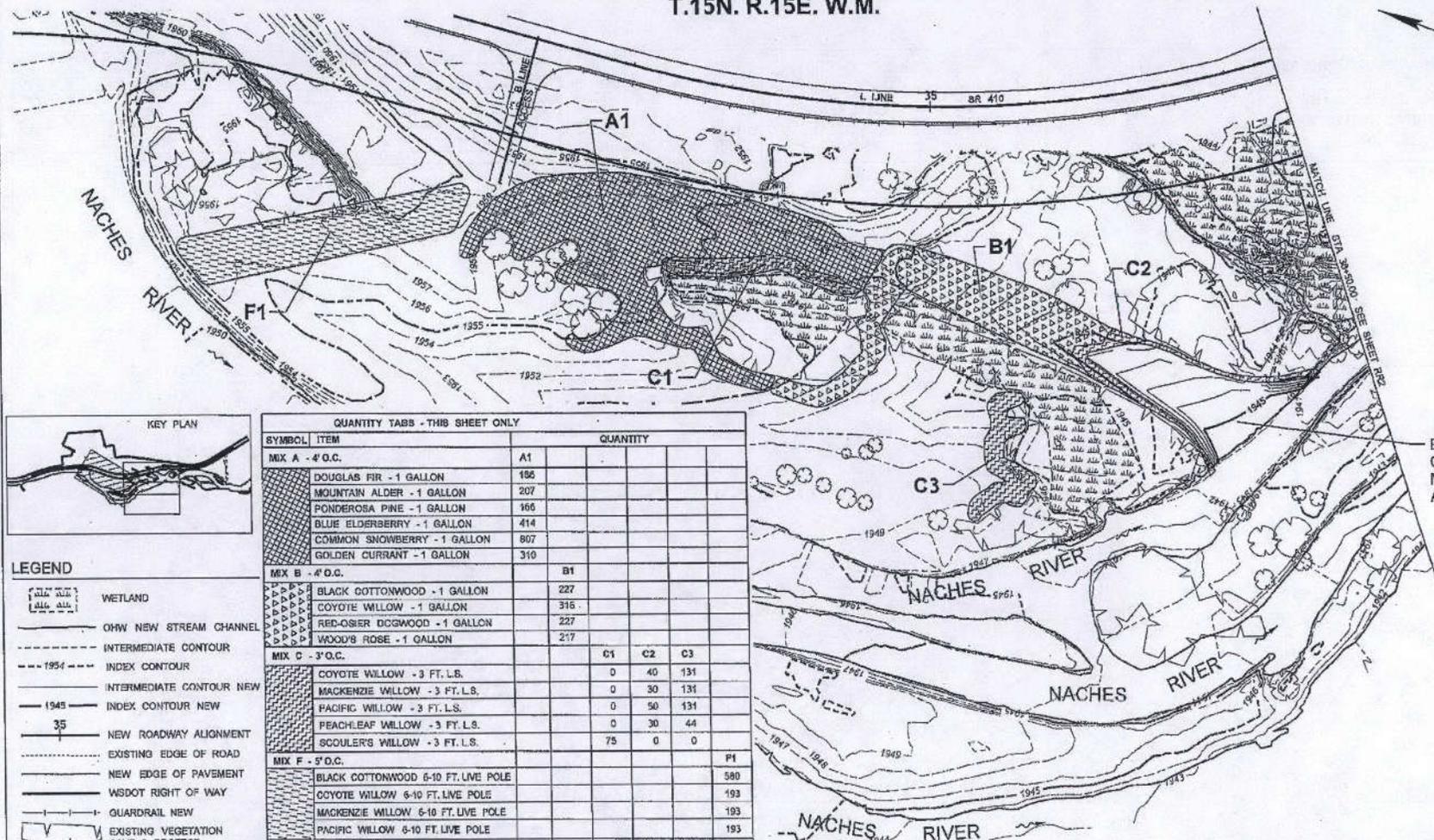
See attached planting plans.

See Map

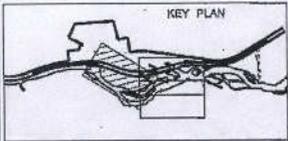


Nile Valley Landslide / SR 410 Restoration
 Water Right Temp. Permit Application
 Feb. 2015

T.15N. R.15E. W.M.



BACKWATER CHANNEL MITIGATION AREA



LEGEND

- WETLAND
- OHW NEW STREAM CHANNEL
- INTERMEDIATE CONTOUR
- INDEX CONTOUR
- INTERMEDIATE CONTOUR NEW
- INDEX CONTOUR NEW
- NEW ROADWAY ALIGNMENT
- EXISTING EDGE OF ROAD
- NEW EDGE OF PAVEMENT
- WSDOT RIGHT OF WAY
- GUARDRAIL NEW
- EXISTING VEGETATION SAVE & PROTECT
- TREE-SAVE & PROTECT

QUANTITY TABS - THIS SHEET ONLY

SYMBOL	ITEM	QUANTITY	A1	B1	C1	C2	C3	PI
MIX A - 4' O.C.								
	DOUGLAS FIR - 1 GALLON	195						
	MOUNTAIN ALDER - 1 GALLON	207						
	PONDEROSA PINE - 1 GALLON	166						
	BLUE ELDERBERRY - 1 GALLON	414						
	COMMON SNOWBERRY - 1 GALLON	807						
	GOLDEN CURRANT - 1 GALLON	310						
MIX B - 4' O.C.								
	BLACK COTTONWOOD - 1 GALLON	227						
	COYOTE WILLOW - 1 GALLON	316						
	RED-OSIER DOGWOOD - 1 GALLON	227						
	WOOD'S ROSE - 1 GALLON	217						
MIX C - 3' O.C.								
	COYOTE WILLOW - 3 FT. L.S.	0	40	131				
	MACKENZIE WILLOW - 3 FT. L.S.	0	30	131				
	PACIFIC WILLOW - 3 FT. L.S.	0	50	131				
	PEACH-LEAF WILLOW - 3 FT. L.S.	0	30	44				
	SCOULER'S WILLOW - 3 FT. L.S.	75	0	0				
MIX F - 5' O.C.								
	BLACK COTTONWOOD 6-10 FT. LIVE POLE							580
	COYOTE WILLOW 6-10 FT. LIVE POLE							193
	MACKENZIE WILLOW 6-10 FT. LIVE POLE							193
	PACIFIC WILLOW 6-10 FT. LIVE POLE							193
SEEDING, FERTILIZING, AND MULCHING (ACRE)								0.32
SOIL AMENDMENT (2" DEPTH) (ACRE)		0.76	0.36					
FINE COMPOST (1" DEPTH) (ACRE)		0.76	0.36	0.06				
BARK OR WOOD CHIP MULCH (3" DEPTH) (ACRE)		0.76	0.36	0.06	0.06			

L.S.= LIVE STAKE
0 50 100
SCALE IN FEET

NOTE:
SEE PLANTING DETAILS SHEETS RD1 AND RD2.

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DATE	12/12/11
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DESIGNED BY	I.ARLINE
ENTERED BY	K.LEISETH
CHECKED BY	S.SALISBURY
PROJ. ENGR.	J.MINNICK
REGIONAL ADM.	D.WHITEHOUSE

REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.	
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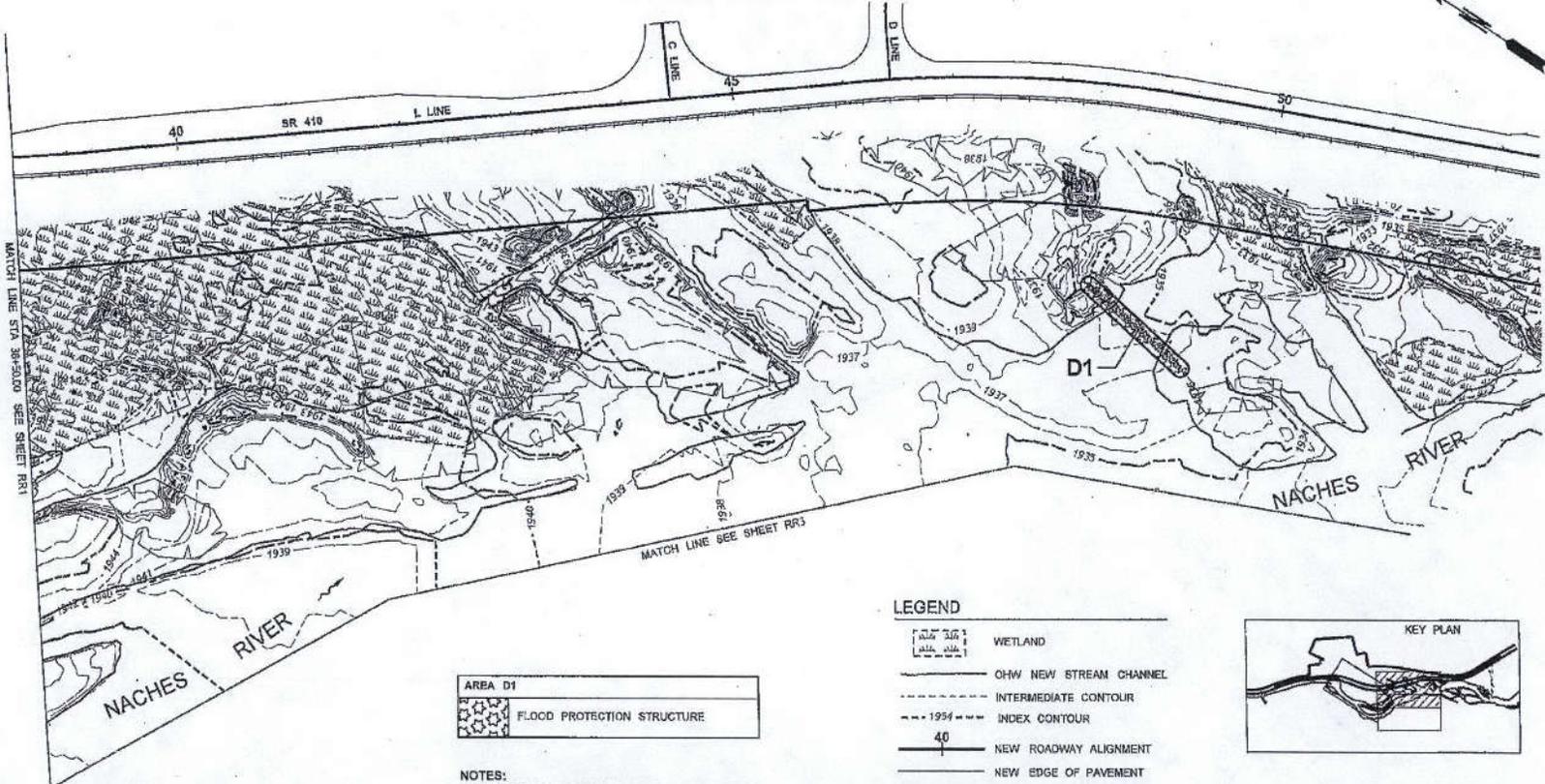
STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
Sandra L. Salisbury
SANDRA L. SALISBURY
CERTIFICATE NO. 959
DATE: 12-12-11

Washington State
Department of Transportation

SR 410
NILE VALLEY LANDSLIDE -
RE-CONSTRUCT ROUTE
RESTORATION PLANTING PLAN

Plot 2
PLAN REF NO
RR1
SHEET
61
OF
92
DATE

T.15N. R.15E. W.M.



MATCH LINE VIA SENSATION SEE SHEET RR1

MATCH LINE SEE SHEET RR3

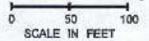
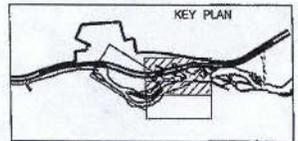
AREA D1
 FLOOD PROTECTION STRUCTURE

NOTES:
 SEE SPECIAL PROVISION FLOOD PROTECTION STRUCTURE FOR QUANTITIES AND PAYMENT OF FLOOD PROTECTION STRUCTURE.

SEE PLANTING DETAILS SHEET RD1 FOR FLOOD PROTECTION STRUCTURE LAYOUT.

LEGEND

-  WETLAND
-  OHW NEW STREAM CHANNEL
-  INTERMEDIATE CONTOUR
-  INDEX CONTOUR
-  40
NEW ROADWAY ALIGNMENT
-  NEW EDGE OF PAVEMENT
-  WSDOT RIGHT OF WAY
-  GUARDRAIL NEW
-  EXISTING VEGETATION SAVE & PROTECT
-  TREE-SAVE & PROTECT

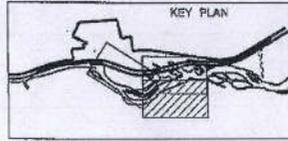


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TIME 12:49:02 PM	DATE 12/12/2011	PLOTTED BY Intaalk	JOB NUMBER 11Y012	LOGATION NO.	RESTORATION PLANTING PLAN				Sheet 62 of 92 8/2011	
DESIGNED BY I. ARLENE	ENTERED BY K. LEIBETH	CHECKED BY S. SALISBURY	PROJ. ENGR. J. MINNICK	REGIONAL A.C.M. D. WHITEHOUSE	REVISION	DATE	BY			

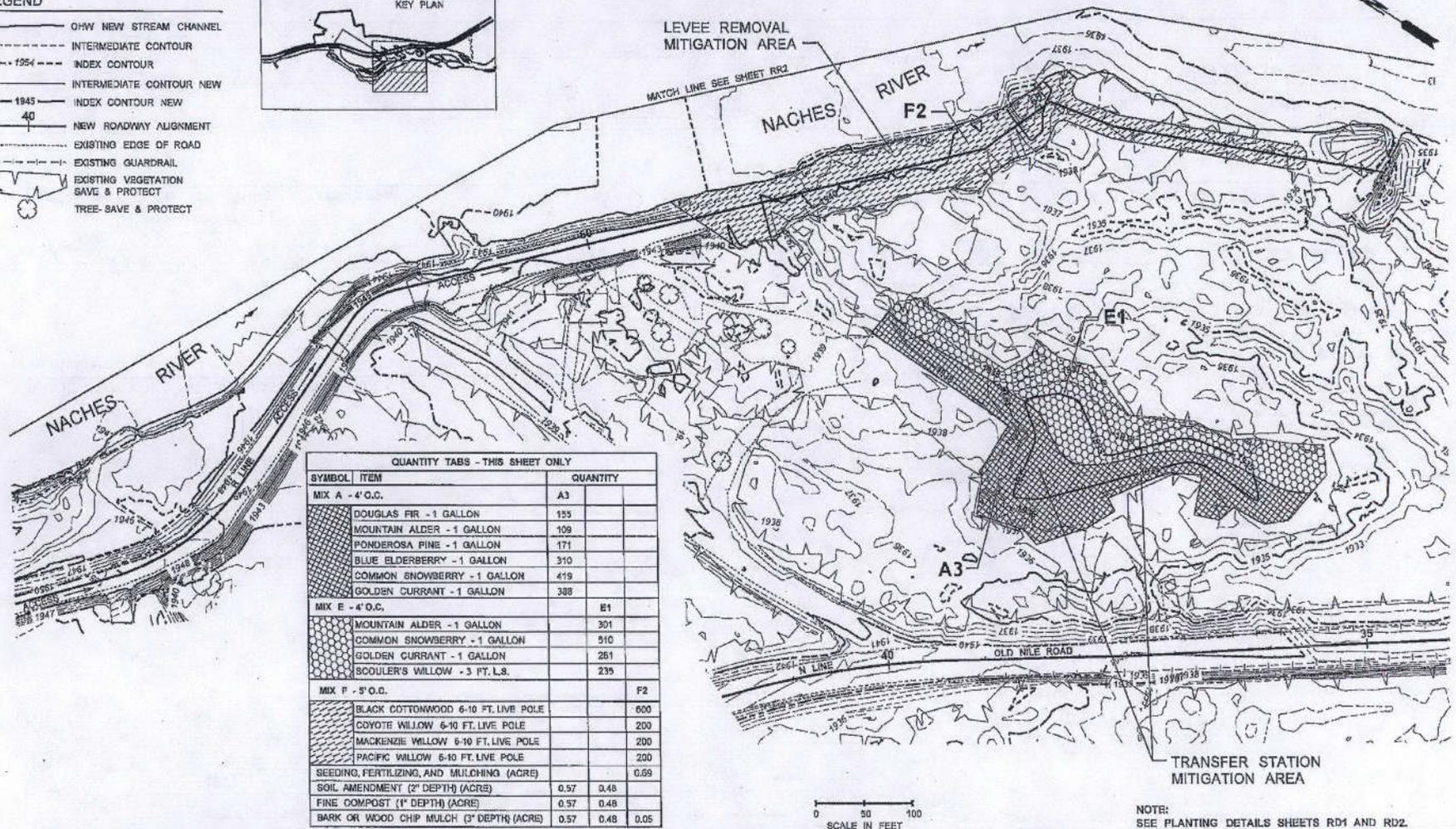
T.15N. R.15E. W.M.

LEGEND

- OHW NEW STREAM CHANNEL
- - - INTERMEDIATE CONTOUR
- - - 1954 INDEX CONTOUR
- - - INTERMEDIATE CONTOUR NEW
- - - 1945 INDEX CONTOUR NEW
- 40 NEW ROADWAY ALIGNMENT
- - - EXISTING EDGE OF ROAD
- - - EXISTING GUARDRAIL
- - - EXISTING VEGETATION
- SAVE & PROTECT
- TREE-SAVE & PROTECT



LEVEE REMOVAL MITIGATION AREA



QUANTITY TABS - THIS SHEET ONLY

SYMBOL	ITEM	QUANTITY
	MIX A - 4' O.C.	A3
	DOUGLAS FIR - 1 GALLON	155
	MOUNTAIN ALDER - 1 GALLON	109
	PONDEROSA PINE - 1 GALLON	171
	BLUE ELDERBERRY - 1 GALLON	310
	COMMON SNOWBERRY - 1 GALLON	419
	GOLDEN CURRANT - 1 GALLON	388
	MIX E - 4' O.C.	E1
	MOUNTAIN ALDER - 1 GALLON	301
	COMMON SNOWBERRY - 1 GALLON	510
	GOLDEN CURRANT - 1 GALLON	261
	SCOULE'S WILLOW - 3 FT. L.S.	235
	MIX F - 5' O.C.	F2
	BLACK COTTONWOOD 6-10 FT. LIVE POLE	600
	COYOTE WILLOW 6-10 FT. LIVE POLE	200
	MACKENZIE WILLOW 6-10 FT. LIVE POLE	200
	PACIFIC WILLOW 6-10 FT. LIVE POLE	200
	SEEDING, FERTILIZING, AND MULCHING (ACRE)	0.59
	SOIL AMENDMENT (2" DEPTH) (ACRE)	0.57 0.48
	FINE COMPOST (1" DEPTH) (ACRE)	0.57 0.48
	BARK OR WOOD CHIP MULCH (3" DEPTH) (ACRE)	0.57 0.48 0.05
	L.S. = LIVE STAKE	

TRANSFER STATION MITIGATION AREA

NOTE: SEE PLANTING DETAILS SHEETS RD1 AND RD2.

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DATE	12/12/2011	JOB NUMBER	11Y012	LOCATION NO.	
PLOTTED BY	leisek	CONTRACT NO.			
DESIGNED BY	I. ARLENE				
ENTERED BY	K. LEIBETH				
CHECKED BY	S. SALISBURY				
PROJ. ENGR.	J. WANNICK				
REGIONAL ADM.	D. WHITEHOUSE	REVISION		DATE	BY

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT

Sandra L. Salisbury

SANDRA L. SALISBURY
CERTIFICATE NO. 869
DATE: 12-12-11

Washington State Department of Transportation

SR 410 NILE VALLEY LANDSLIDE - RE-CONSTRUCT ROUTE

RESTORATION PLANTING PLAN

Plot 4
PLAN REF NO
RR3

SHEET
63
OF
92
DICKER

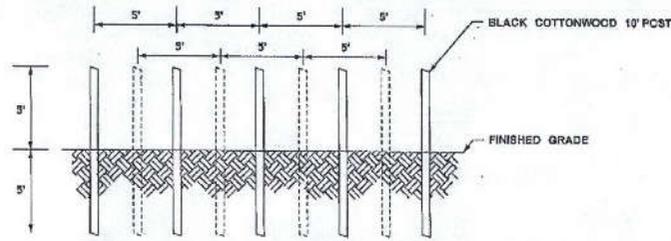
PLANT MATERIAL LIST

COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	A.N.S.I.	ROOT CONDITION	REMARKS
TREES						
BLACK COTTONWOOD	POPULUS BALSAMIFERA SSP. TRICHOCARPA	227	1 GAL.	1.7	TALL POTS	
DOUGLAS FIR	PSEUDOTSUGA MENZIESII	321	1 GAL.	1.7	TALL POTS	
MOUNTAIN ALDER	ALNUS INDIANA	617	1 GAL.	1.7	TALL POTS	
PONDEROSA PINE	PINUS PONDEROSA	337	1 GAL.	1.7	TALL POTS	
SHRUBS						
BLUE ELDERBERRY	SAMBUCUS CERULRA	724	1 GAL.	1.7	TALL POTS	
COMMON SNOWBERRY	SYMPHORICARPOS ALBUS	1736	1 GAL.	1.7	TALL POTS	TWO CANES MINIMUM
COYOTE WILLOW	SALIX ERIOUA	316	1 GAL.	1.7	TALL POTS	
GOLDEN CURRANT	RIBES AUREUM	859	1 GAL.	1.7	TALL POTS	TWO CANES MINIMUM
RED-Osier DOGWOOD	CORNUS SERICEA	227	1 GAL.	1.7	TALL POTS	TWO CANES MINIMUM
WOOD'S ROSE	ROSA WOODSHI	217	1 GAL.	1.7	TALL POTS	TWO CANES MINIMUM
LIVE POLES AND LIVE STAKES						
BLACK COTTONWOOD	POPULUS BALSAMIFERA SSP. TRICHOCARPA	1180	6-10 FT. LENGTH		CUTTING	LIVE POLE
COYOTE WILLOW	SALIX ERIOUA	393	6-10 FT. LENGTH		CUTTING	LIVE POLE
COYOTE WILLOW	SALIX ERIOUA	171	3 FT. LENGTH		CUTTING	LIVE STAKE
MACKENZIE WILLOW	SALIX RIBIDA	293	6-10 FT. LENGTH		CUTTINGS	LIVE POLE
MACKENZIE WILLOW	SALIX RIBIDA	861	3 FT. LENGTH		CUTTINGS	LIVE STAKE
PACIFIC WILLOW	SALIX LABIANDRA CAUDATA	393	6-10 FT. LENGTH		CUTTINGS	LIVE STAKE
PACIFIC WILLOW	SALIX LABIANDRA CAUDATA	181	3 FT. LENGTH		CUTTINGS	LIVE STAKE
PEACHLEAF WILLOW	SALIX AMYGDALOIDES	74	3 FT. LENGTH		CUTTINGS	LIVE STAKE
SCOLEL'S WILLOW	SALIX SCOLLEBRANA	310	3 FT. LENGTH		CUTTINGS	LIVE STAKE

- NOTES:**
1. ALL PLANT MATERIAL SPECIFICATIONS FOR SIZE AND CONDITION ARE MINIMUM REQUIREMENTS AT THE TIME OF PLANTING, AND ARE IN ACCORDANCE WITH THE CURRENT EDITION OF "AMERICAN STANDARDS FOR NURSERY STOCK." IF A CONFLICT OCCURS BETWEEN THESE SPECIFICATIONS AND THE A.S.N.S., THESE SPECIFICATIONS SHALL APPLY. IF A CONFLICT OCCURS BETWEEN THE AMERICAN STANDARD FOR NURSERY STOCK AND THESE SPECIFICATIONS THEN THESE SPECIFICATIONS SHALL APPLY.
 2. ALL PLANT MATERIALS SHALL BE NURSERY GROWN STOCK.
 3. PLANTS SHALL BE RANDOMLY MIXED THROUGHOUT EACH PLANTING ZONE AS APPROVED BY THE ENGINEER. SEE SCHEDULE FOR MINIMUM GROUPINGS OF EACH SPECIES.

ABBREVIATIONS

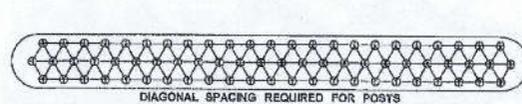
A.S.N.S. - A.N.S.I. 260.1-2004, AMERICAN STANDARDS FOR NURSERY STOCK.
 FT. — FOOT/FEET GAL. — GALLON



FLOOD PROTECTION STRUCTURE LAYOUT - AREA D1

SECTION VIEW

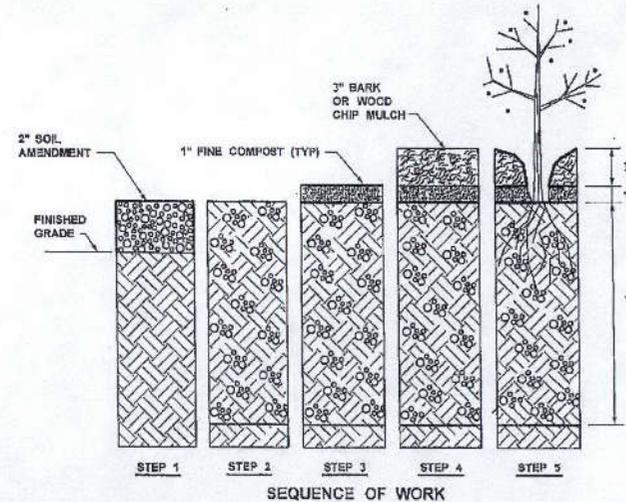
NOT TO SCALE



FLOOD PROTECTION STRUCTURE LAYOUT - AREA D1

PLAN VIEW

NOT TO SCALE



PLANTING AREA PREPARATION - PLANTING AREAS A1, A3, B1, AND E1

SECTION VIEW

NOT TO SCALE

- PLANTING AREA PREPARATION (SEE SECTION 8-02.3(5) IN THE SPECIAL PROVISIONS)
- STEP 1**
 LOOSEN/CULTIVATE SOIL TO 18" DEPTH
 PLACE 2" SOIL AMENDMENT
- STEP 2**
 INCORPORATE SOIL AMENDMENT TO 18" DEPTH ACCORDING TO SECTION 8-02.3(6), SOIL AMENDMENT IN THE SPECIAL PROVISIONS
- STEP 3**
 PLACE 1" FINE COMPOST
- STEP 4**
 INSTALL BARK OR WOOD CHIP MULCH 3" DEEP
- STEP 5**
 INSTALL PLANT (SEE STANDARD PLANS)

FILE NAME	K:\43228\1\CADD\SR410\XL3811\CADContractPlans\XL3811_P8_PD.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.	
TIME	12:48:53 PM	CONTRACT NO.	11Y042	DATE	12/12/2011	LOCATION NO.	
DATE	12/12/2011	DESIGNED BY	T. ARLENE	PROJECT NO.			
FLIGHT BY	teleak	ENTERED BY	K. ELBETH				
CHECKED BY	S. SALIBURY						
PROJ. ENGR.	J. MINNICK						
REGIONAL ADM.	D. WHITEHOUSE	REVISION		DATE	BY		



STATE OF WASHINGTON
 REGISTERED
 LANDSCAPE ARCHITECT
Sandra L. Salisbury
 SANDRA L. SALIBURY
 CERTIFICATE NO. 860
 DATE: 12-12-11

Washington State
 Department of Transportation

SR 410
 NILE VALLEY LANDSLIDE
 RE-CONSTRUCT ROUTE

PLANTING DETAILS

Plot 1
PL 410 SR 410
RD1
SHEET
64
OF
92
8-8278

ATTACHMENT #4

SEPA Determination

DETERMINATION OF NONSIGNIFICANCE

Description of proposal

The proposed project on State Route (SR) 410 in Yakima County, Washington. The project is to reconstruct a portion of a highway damaged as a result of a natural disaster, specifically the October 2009 Nile Valley landslide. The project is the final emergency action to be taken in response to the disaster. The project includes construction of the restored roadway from MP 107.40 to 108.45; the removal of landslide material and the construction of a shear-key rock buttress as landslide stabilization measures; levee removal; bank stabilization including groin structures; and associated clearing and grubbing.

Proponent

Washington State Department of Transportation, South Central Region

Location of proposal, including street address, if any

The project is located on SR 410 (MP 107.4 to 108.45) in a portion of Sections 2 and 11, Township 15 North, Range 15 East, WM, Yakima County, Washington

Lead agency

Washington State Department of Transportation

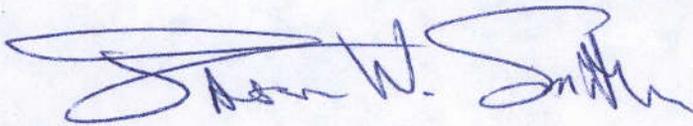
The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request. This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below.

Responsible official: Jason W. Smith

Position/title: SCR Environmental Program Manager

Phone: (509) 577-1750

Address: PO Box 12560, Yakima, WA 98909-2560



Signature _____

Date _____

3/3/2011